

2018/19 KSP Policy Consultation Report

Paraguay Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay



Government Publications
Registration Number

11-1051000-000951-01



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Paraguay Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay



Ministry of Economy
and Finance



Korea Development
Institute



KRIHS Korea Research Institute for
Human Settlements

2018/19 KSP Policy Consultation Report

Project Title Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay
Prepared for The Government of the Republic of Paraguay
In Cooperation with Ministry of Urban Planning, Housing, and Habitat (Ministerio de Urbanismo, Vivienda, y Habitat, MUVH)

Supported by Ministry of Economy and Finance (MOEF), Republic of Korea
Korea Development Institute (KDI)

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English Editor IVYFORCE - Tway Trans - Unilecture

2018/19 KSP Policy Consultation Report
Establishment of a Policy Research Institute
in Urban and Housing Sector in Paraguay

Preface

Since its launch in 2004, the Knowledge Sharing Program (KSP) has provided a platform for knowledge sharing and mutual learning between Korea and 76 partner countries. It has facilitated the expansion of economic and political cooperation between Korea and the partner countries, contributing to an active policy dialogue for both parties to disseminate their own development experience and gain benefit from the mutual learning. KSP focuses on customized solutions for each partner country's economic, social, and administrative settings, fostering and strengthening its policymaking capacity and global networks for development cooperation.

The 2018/19 KSP with Paraguay was conducted by the Korea Development Institute (KDI) and the Korea Research Institute for Human Settlements (KRIHS) to establish a policy research institute in the urban and housing sector of Paraguay. The project began with the request of the Ministry of Urban, Housing, and Habitat (MUVH) of Paraguay. Amid rapid urbanization, MUVH has recognized the importance of research capacity for more effective policymaking in the urban and housing sector. In 2016, at the Korea-IDB Urban Development Academy (KIUDA) co-hosted by KRIHS and Inter-American Development Bank (IDB), the minister of Secretaría Nacional de la Vivienda y el Hábitat (SENAVITAT, the predecessor of MUVH) requested a consultation for the establishment of a policy research institute on the basis of the experience of KRIHS. To this end, SENAVITAT submitted a demand survey for the 2018/19 KSP project titled Establishment of Paraguay Research Institute for Human Settlements. KRIHS has been selected as an implementation agency of the 2018/19 KSP with Paraguay in November 2018 and has conducted a joint research with the counterpart of Paraguay, sharing Korea's development experience in the urban and housing sector. On the basis of this research, KRIHS research team has designed an action plan for the establishment and development of the research institute. I firmly believe the result of this research and the policy research institute to be established based on it would contribute to the systematic planning and policymaking in the urban and housing sector and, in the end, to the sustainable territorial development of the country.

I extend my profound gratitude to Dr. Park, Sehoon, the principal investigator, and his research team for their hard work and dedication to the successful completion of the 2018/19

KSP with Paraguay. We also sincerely appreciate the continuous support and contribution from the Ministry of Economy and Finance and the KDI, including Dr. Taihee Lee, the project manager of KDI. Lastly, we send out special thanks to the Government of Paraguay, including the Ministry of Urban, Housing, and Habitat, and all the advisers and consultants for their continued interest and support for the establishment of the policy research institute in the urban and housing sector. In return for their dedication to the research, we promise our extended support and cooperation in the future.

Hyun-Soo Kang

President

Korea Research Institute for Human Settlements

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2018/19 KSP with Paraguay

Heeyoun You (Project Officer, Korea Research Institute for Human Settlements)

2018/19 KSP with Paraguay

Heeyoun You (Project Officer, Korea Research Institute for Human Settlements)

Although Paraguay is one of the least urbanized countries in Latin America with an urbanization rate of 64% as of 2017, the country has experienced rapid urbanization since the 1960s. From 2004 to 2014, the urban population of Paraguay grew at an average rate of 1.8%, showing relatively fast growth compared to most Latin America and the Caribbean (LAC) countries. The urbanization of Paraguay features imbalanced development centered on the Asunción Metropolitan Area and Ciudad del Este. The country is exposed to numerous challenges, such as low-density development, urban sprawl, and lack of basic infrastructure.

Given this situation, the Government of Paraguay has endeavored to systemically address the country's urban and housing issues. In 2009, the Secretaría Nacional de la Vivienda y el Hábitat (SENAVITAT) was established to manage and implement a national housing sector policy. In 2018, the institution was promoted to the Ministerio de Urbanismo, Vivienda, y Habitat (MUVH) in order to strengthen its function by adding the urban sector as its core mission. The importance of establishing a policy research institute has been raised by MUVH to deal with its urban and housing issues more systemically.

In May 2016, the minister of SENAVITAT participated in KRIHS–IDB Urban Development Academy (KIUDA) organized by Korea Research Institute for Human Settlements (KRIHS) and Inter-American Development Bank (IDB). The objective of KIUDA is to exchange knowledge and experiences between South Korea and LAC countries on the topic of urban development and housing. Following this program, SENAVITAT and KRIHS signed a memorandum of understanding (June 2016) and organized a tailored training program in the area of housing for SENAVITAT staff in December 2016. In addition, SENAVITAT submitted a demand survey for the 2018/19 KSP (September 2017) titled “Establishment of Paraguay Research Institute for Human Settlements.” Since November 2018, KRIHS has become an execution agency of the 2018/19 KSP with Paraguay.

The 2018/19 KSP with Paraguay was launched under the title “Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay,” consisting of four research topics selected in accordance with the priority of the Government of Paraguay: (1) urban development issues and policy recommendations for Paraguay, (2) housing development issues and policy recommendations for Paraguay, (3) recommendations for the establishment of a research institute in the urban and housing sector of Paraguay, and (4) recommendations for the operation and development of a research institute in the urban and housing sector of Paraguay. As an implementing organization, KRIHS gathered a group of experts. The following table lists the consultation areas and associated researchers.

Sub-topics	Researchers	Local Consultants
Urban development issues and policy recommendations for Paraguay	Sangyon Lim (KRIHS) Yongwoo Lee (KRIHS)	Iris Ibarra
Housing development issues and policy recommendations for Paraguay	Miseon Park (KRIHS)	Karen Stanley Spezini
Recommendations for the establishment of a research institute in the urban and housing sector of Paraguay	Sehoon Park (KRIHS) Songsu Choi (KRIHS)	Patricia Giménez Franco
Recommendations for the operation and development of a research institute in the urban and housing sector of Paraguay	Seonghee Min (KRIHS) Wonsup Lee (KRIHS)	Juan Carlos Cristlado
<ul style="list-style-type: none"> • Senior Adviser: Dr. Kyunghwan Kim (Professor, Sogang University) • Project Manager: Mr. Taihee Lee (Specialist, CID, KDI) • Principal Investigator: Dr. Sehoon Park (Director, Global Development Partnership Center, KRIHS) 		

In the first stage of the project, the Korean experts—headed by Dr. Kyunghwan Kim, the former vice minister of the Ministry of Land, Infrastructure, and Transport (MOLIT) and currently a professor of Sogang University—visited Paraguay from January 5 to 13, 2019, to conduct the launching seminar and high-level meeting. In the high-level meeting, Dr. Kyunghwan Kim introduced the 2018/19 KSP with Paraguay to the minister of MUVH, Mr. Dany Durand, on January 7. Minister Dany Durand agreed on the importance of the 2018/19 KSP with Paraguay and showed his willingness to support this project. After the meeting, the minister interviewed with the main media of Paraguay, such as ABC. The launching seminar was held on January 8 at Academia Diplomática y Consular. Presentations were made concerning the current situation of urban and housing issues, research institute, and Korea’s related policy and experiences. In addition, the Korean delegation identified the urban and housing issues and job market conditions through in-depth interviews with the relevant organizations such as the KOICA Paraguay Office and KOTRA Paraguay Office. Lastly, KRIHS conducted an on-site visit to the flooded area of Bañado Sur, Asunción, Paraguay.

In the second stage of the project, a Korean delegation, headed by Dr. Sehoon Park, visited Asunción from March 9 to 16, 2019, for an in-depth study of local circumstances in regard to the research topic. The Korean delegation conducted in-depth interviews with the relevant organizations such as STP, MOPC, CIDI, CADEP, and UNDP Paraguay Office in order to identify the role of each organization. For the KSP Policy Seminar, the Korean delegation presented the research progress and future plan. The participants from MUVH and the relevant organizations provided their feedback on March 11. Further, the Korean delegation distributed a questionnaire regarding housing policy to government officials at MUVH. The result was reflected in the interim report. Lastly, they conducted a joint workshop with four local consultants on March 13 at MUVH. The local consultants presented the progress of their research, which was followed by a Q&A and discussion session with the Korean experts.

During April 16 to 23, 2019, Paraguayan officials—led by Mr. Jorge Luis Bosch, the vice minister at MUVH—visited Korea for the Interim Reporting and Policy Practitioners’ Workshop. In the workshop, Korean researchers presented their interim research findings and obtained feedback from the Paraguayan delegation on April 16. The Paraguayan delegation visited various institutions related to the four research topics, including Korea Territorial Development Museum, KDI, KRIHS, and MOLIT, in order to understand the status of urban development and research institutes in Korea.

In the final stage of the project, the Korean delegation headed by Dr. Kyunghwan Kim conducted the Final Reporting Seminar and Senior Policy Dialogue in Asunción from June 22 to 29, 2019. On June 24, the Korean delegation and MUVH staff, including Minister Dany Durand and Vice Minister Jorge Luis Bosch, had a meeting with the President of Paraguay, Mr. Mario Abdo, in order to report the progress and its findings of the 2018/19 KSP with Paraguay. The president agreed on the importance of the establishment of a research institute and promised to support the establishment of one in the urban and housing sector of Paraguay. In addition, a high-level policy dialogue was held with a senator, Blas Lanzoni Achinelli, on June 25. The Korean delegation introduced the KSP project and requested cooperation to establish a research institute in Paraguay. On June 26, the Final Reporting Seminar was held at Academia Diplomática y Consular to share the final research findings and policy recommendations with 50 participants, comprising high-level policy makers, policy practitioners, and other stakeholders. Lastly, a high-level dialogue was held with 15 representatives at the Parliament of Paraguay on June 27. The Korean delegation shared the final policy recommendations and requested their continued support and cooperation to materialize the policy recommendations.

The key objective of the 2018/19 KSP with Paraguay was to make policy recommendations in order to establish a research institute in the urban and housing sector of Paraguay. The Korean experts provided solutions for MUVH from diverse perspectives, and the Paraguayan officials expressed satisfaction with the result. KRIHS hopes that the policy recommendations made by this project contribute toward establishing a policy research institute for solving the urban and housing issues in Paraguay in the medium to long term. To this end, KRIHS is grateful for the cooperation of MUVH, STP, MOPC, and MRE and also to the Korean Embassy in Paraguay for the facilitation of this project.

Executive Summary

Sehoon Park (Korea Research Institute for Human Settlements)

Executive Summary

Sehoon Park (Korea Research Institute for Human Settlements)

Based on rapid urbanization, Paraguay is now facing various urban and regional problems, such as a housing shortage, unplanned urban development, and regional disparity. The Paraguayan government established the National Secretary of Housing and Habitat (SENAVITAT) in 2009 in response to its deepening urban and housing problems. In 2018, the SENAVITAT had been replaced by the Ministry of Urban Housing and Habitat (MUVH), which strengthened its function by adding the urban sector as its core mission. The importance of establishing a policy research institute has been raised by MUVH to deal with the aforementioned problems, and this led to the Korean government being asked to cooperate in the establishment of said institute.

The case of Korea can provide a good example of how a country can effectively utilize policy research institutes for economic development. Since the 1970s, Korea has established national research institutes in each policy sector. This produced the knowledge needed in the policy arena. In the territorial policy sector, Korea Research Institute for Human Settlements (KRIHS) played a key role in establishing the Comprehensive National Territorial Plan and developing urban, housing, land, infrastructure, and geospatial information policies. Such plans and policies enabled Korea to effectively establish a symbiotic relationship between economic development and urban and regional development. As a result, this led to significant quality-of-life improvements for the people.

The objective of this study is to draw implications and lessons from Korea's urban and housing policies and make policy recommendations regarding systematic urban and housing solutions for Paraguay. Also, this paper strives to provide guidelines for the establishment and operation of a national research institute in the urban and housing sector of Paraguay. After reviewing previous research on think tank and research institute establishment experiences in Korea, this paper discusses the mission, governance, organization structure, human resources and budget of the research institute as a baseline for the establishment of the organization.

Multiple implications can be drawn from Korea's experiences addressed in each chapters.

1. Urban Development Issues and Policy Recommendations for Paraguay

First, Korea's urban policy evolved while the country was effectively addressing urban problems over time. Second, Korean cities have overcome the chronic urban poverty and "slumization" that surface in underdeveloped countries and achieved great environmental quality in a relatively short amount of time. However, the Korean government's response to the new challenges of the post-industrial era, such as low growth and aging, was insufficient, as its urban policy was formed and the results experienced during the economic development period.

For Paraguay, which is undergoing rapid urbanization similar to that of Korea, several implications can be considered when designing policies to resolve urban problems. First, it is necessary to prepare a comprehensive and fully implementable plan for national, metropolitan, and urban development. In Korea, the development plan and the management plan represented by the National Territorial Development Plan were continuously established, and this led the systematic urban development. In developing Paraguayan urban policy, it is essential to provide a plan for solving the present urban problems along with a large framework for urban policy as the core of economic growth, as is done in Korea.

Next, for systematic planning and implementation, a legal system should be established to form the foundation of the statutory plan, and the role of the plan maker should be clarified. In Korea's case, the institutional basis of the statutory urban plan and the Comprehensive National Territorial Plan was provided through the establishment and revision of the Urban Planning Act, the Metropolitan Area Maintenance Planning Act, and the National Planning and Utilization Law. In Paraguay, it is difficult to create long-term comprehensive plans due to the lack of laws and regulations related to urban development. Therefore, the urban-related legal system, which is the foundation of statutory urban planning, should be improved, and the statutory urban plan should be prepared accordingly.

Further, it is necessary to prepare and implement a management plan for solving urban problems in the future Asunción Metropolitan Area (AMA). To induce high-density development of the AMA in the future, it is vital to establish a system to encourage the

construction of high-rise buildings and the development of a large number of public facilities while supplying infrastructure facilities, such as water and sewage, transportation, and waste treatment. It is also important to promote cooperation with the private sector.

Finally, it is necessary to strengthen the planning capacity and financing strategies of the relevant agencies, including the local government. The individual municipalities in Paraguay have to establish PDS and land-use plans (POUT), but they are not linked to the regulations and plans of the central government. Local governments should secure budgets to fund departments responsible for urban planning and land management and establish relevant administrative regulations, guidelines, and manuals to enable systematic planning. Local governments should also support relevant research and nurture professional personnel so that the expertise and technical capacity of relevant institutions can be improved in the future.

2. Housing Policy Issues and Policy Recommendations for Paraguay

The highest priority in housing policy is the supply of affordable housing and serviced land. Given the severity of the housing deficit and the low income level in Paraguay, the type of housing that needs to be supplied most urgently is affordable housing. To promote the supply of affordable housing, the government should first strengthen the legal framework for the supply of residential land and then appropriately incentivize the private sector to build affordable housing units in compliance with proper regulations.

In addition, the accessibility of housing finance for low-income households should be enhanced. The current eligibility criteria for subsidizing housing finance are too broad to target low-income households, resulting in limited support for such groups. A simplified and deep subsidy scheme should be considered to make the support more accessible for low-income households.

It is of utmost importance to strengthen the government's institutional capacity in the housing sector to successfully apply these recommendations to Paraguay. In particular, planning for housing development should be comprehensively coordinated with the urban planning system, regional development, and infrastructure in collaboration with related ministries. Moreover, the research capacity in related sectors should be enhanced to integrate housing policy into the territorial and urban contexts. In this regard, the

recommended institute, the Paraguay Research Institute for Human Settlements (PRIHS), would play a critical role as KRIHS did in Korea. Finally, establishing a systematic framework for monitoring and evaluation of housing policy implementation should be considered.

3. Recommendations for the Establishment of a Research Institute in the Urban and Housing Sector of Paraguay

By referring to the implications drawn from the establishment experiences of KRIHS, major factors can be proposed. These factors concern the function, governance, organization, and budget of the planned research institute in Paraguay. First, it is suggested that the research institute be called the Paraguay Research Institute for Human Settlement (PRIHS). This considers the characteristics of territorial research functions. Its work scope varies from core areas of MUVH, such as territorial planning, geospatial information, and urban housing policy and planning, to complimentary areas, such as infrastructure planning and land and environment policy.

Next, three types of governance alternatives are identified in terms of the relationship with ministries and funding. The first is to establish the research institute as a part of MUVH, the second is to establish it as a separate body from MUVH but within MUVH, and the third is to establish it as an organization for supporting multifold ministries. The second option is practical and better than the other options in terms of independence and stability. Other matters, such as the procurement of human and financial resources, should be carefully considered before establishing the research institute.

Third, the research institute's organization should consist of a board of directors, a president, a vice president, research divisions, an administrative office, a consultation committee, etc. Regarding the human resources, the initial number of researchers should be around 40. The research position system should start with three ranks, "Research Fellow", "Associate Research Fellow", and "Assistant Research Fellow", and higher-ranking positions can be added in the future when necessary.

Lastly, the research institute's operations financing can be categorized as follows: contributions from MUVH, income from commissioned research projects, sales income from publications, income from research funds, etc. It is inevitable that the research institute is initially going to be dependent on contributions from MUVH for establishment and stable

operation. MUVH should review the research institute’s business plans every fiscal year and support the necessary budget for its operation. If the relevant condition matures in the long term, it is possible to research grants from the Ministry of Finance and create another organization for management—like in the case of KRIHS.

4. Recommendations for the Operation and Development of a Research Institute in the Urban and Housing Sector of Paraguay

First, PRIHS should be organized by considering the purpose and role of the agency. The organization of PRIHS may comprise of an executive branch consisting of a director and an assistant director, along with various internal committees, research departments, and an administration office. Medium-and large-size divisions will be most suitable when organizing the PRIHS research department. Given the difficulties in recruiting the total number of employees and staffing at the beginning of the establishment stage, the focus on researchers must be maximized while minimizing the organization’s management work. We consider this to be a more suitable organizational form. It will be appropriate for the research department to be comprised of a National Territory Planning department, an Urban Research department and a Housing Research department.

Second, regarding human resource management, PRIHS’s staff consists largely of research positions in the research department and non-research positions in administration. Because of the nature of policy research institutions, recruiting high-quality human capital for conducting research is the most important issue. To secure talented personnel, PRIHS needs to operate a strong performance-based pay system and an objective and fair personnel system to provide high pay levels and additional benefits to attract talented people. The researcher position should consist of a research fellow who has a PhD in principle, an assistant researcher who holds a master’s degree, and a researcher who holds a bachelor’s degree.

Third, PRIHS’s role is to strengthen its position as a comprehensive research institute by actively coping with the problem facing Paraguay by providing opinions on long-term policy issues, short-term policy issues, and requests for policy advice from the government. To do this, a variety of research tasks must be carried out. The types of studies that PRIHS will undertake can be largely divided into basic research tasks and trusteeship research projects. Basic research tasks refer to research tasks for use as basic data for policy-making and decision-making in Paraguayan urban and housing research.

Considering that PRIHS is to be established based on the KRIHS model, both institutes need to effectively cooperate to foster the development potential of PRIHS. It is necessary to cooperate with KRIHS in various aspects at the initial stage of its establishment. By signing a mutual agreement, KRIHS and PRIHS can strengthen joint research, joint discussions, research advisory, and personnel exchanges. By establishing a mutual research and operation system with KRIHS, there may be a plan to periodically conduct joint research by discovering research topics in Paraguay's urban and housing areas. In addition, PRIHS can also promote and spread research results by holding such joint seminars in both Paraguay and Korea. Meanwhile, experts should be dispatched to international organizations to strengthen their global research capabilities and to pursue practical joint research and expand human networks through the mutual exchange of experts. Efforts should also be made to strengthen research capabilities by verifying the direction, method, and outcome of research through a network of internationally renowned relevant field experts or scholars.

01

CHAPTER

Urban Development Issues and Policy Recommendations for Paraguay

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1. Introduction
2. Urbanization Trends and Urban Policy of Paraguay
3. Analysis of Urbanization Status and Policy Conditions of Korea
4. Implications from the Korean Case
5. Policy Recommendation for Paraguay

Keywords

Urbanization, Urban Policy, Balanced National Development, New Town, Regional Disparity, Paraguay

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Summary

As of 2017, the urbanization rate of Paraguay was 64%. Even though the number is relatively low compared to other LAC countries, the country is under the rapid process of urbanization centered on the Asunción and Ciudad del Este metropolitan areas. The major tasks of the urban sector in Paraguay include unplanned expansion of the metropolitan area, low density development, lack of urban services and infrastructure, deepening regional disparities and insufficient integrated planning system and institution.

Over the past 60 years, South Korean cities have experienced globally unprecedented growth since 1960s. Coping with the situation, the government has utilized different policy measures by different time period. The major policy measures include Comprehensive National Territorial Plan, new town development, balanced national development policy, and urban regeneration and renewal. The implications from the experience of Korea can be summarized as follows: Korea's urban policy has evolved while effectively addressing urban problems over time; Korean cities have overcome the chronic urban poverty and slumization that surface in underdeveloped countries and achieved great environmental quality in a relatively short amount of time; and the Korean government's response to the new challenges of the post-industrial era, such as low growth and aging, was insufficient, as its urban policy was formed and experienced during the economic development period.

Considering the current status and policy conditions of the urban sector in Paraguay, the following suggestions can be drawn from Korea's experience. First, it is necessary to prepare a comprehensive plan for national, metropolitan, and urban development that can guarantee concrete implementation ability. Second, for systematic planning and implementation, a legal system should be established to form the foundation of the statutory plan, and the role of the plan maker should be clarified. Third, it is necessary to establish

governance for land management and provision of urban infrastructure in the metropolitan area, to review the tax system for solving the institutional capacity and lack of resources, to revitalize the underdeveloped areas through redevelopment of low utilization areas. Finally, it is necessary to strengthen the planning capacity and financing strategy of the relevant agencies including the local government.

1. Introduction

Though Paraguay is one of the least urbanized countries in Latin America with urbanization rate of 64% as of 2017, the country has experienced a rapid urbanization process since 1960s. From 2004 to 2014, the urban population of Paraguay grew at an average rate of 1.8%, showing relatively fast growth compared to most of South American countries. The urbanization of Paraguay features imbalanced development centered on Asunción Metropolitan Area. Moreover, without proper institutional and legal framework for urban planning, the country is exposed to numerous challenges such as low density development, urban sprawl, lack of basic infrastructure, and etc. The government of Paraguay has been seeking systematic policy measures to deal with the issues, but due to lack of data, human resources, and institutional capacity, the measures have not been effectively implemented.

As Paraguay, Korea has experience of rapid urbanization causing multiple problems. Through the process of economic development from 1960s to 90s, the country had experienced unprecedented rapid urbanization, having the government confront the serious side effect such as formation of informal settlement, centralization of the capital region, pollution, and imbalanced development. Coping with those challenges, Korea has utilized different policy measures for different stages of urbanization. Some of the policies were successfully mitigated the challenges, and some are not. Overall, however, the policy measures utilized by Korea contributed to the management of unprecedented urbanization in the country, providing valuable lessons to the countries in the process of economic development.

The objective of this study is to draw implications and lessons from Korea's urban development policy, and suggest policy recommendation for the effective urban development in Paraguay. The first part of the study covers the current state of the urban sector in Paraguay, diagnosing the main challenges to be tackled. In the second part of the study, Korean experience in urban development and related policy measures are introduced. Based on the first and second part of the study, policy recommendation which is applicable in political, social, and economic context of Paraguay will be presented.

2. Urbanization Trends and Urban Policy of Paraguay

2.1. Current State and Trends of Urbanization

2.1.1. Urbanization and Demographic Transition

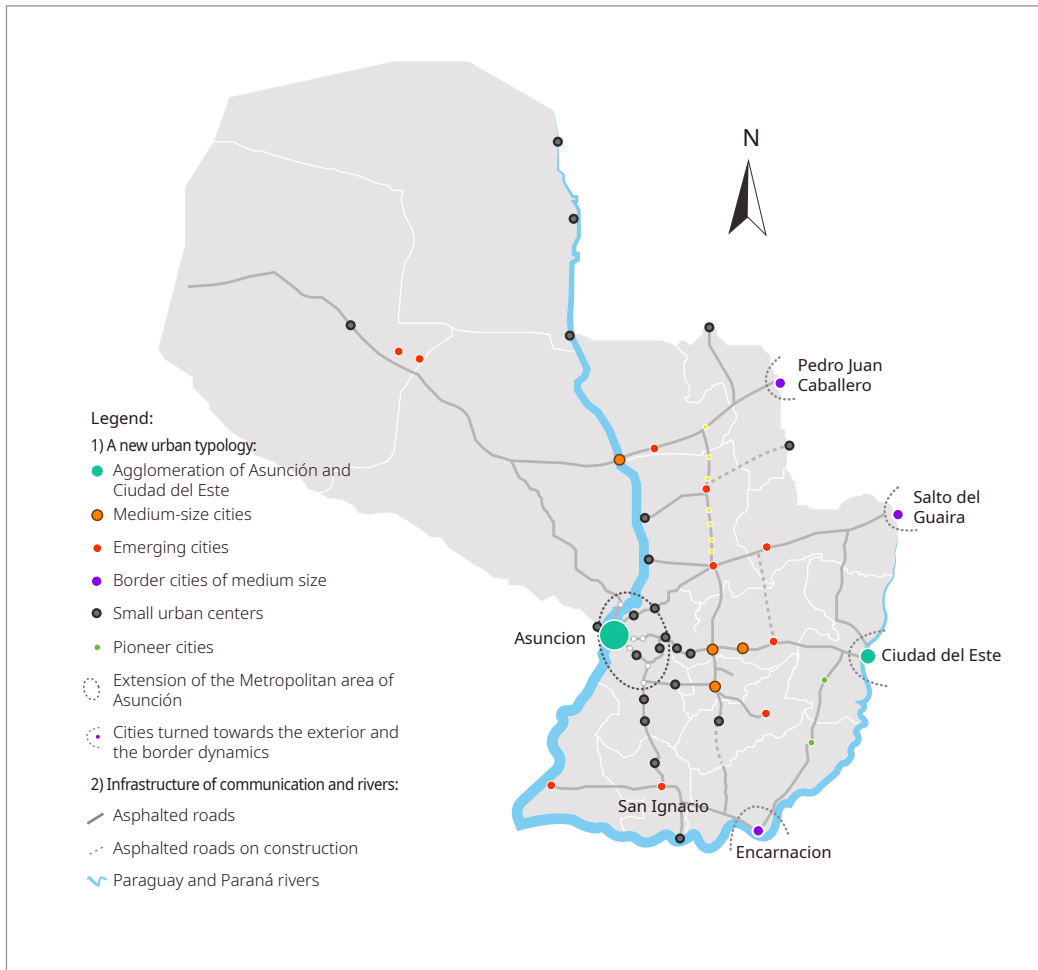
The administrative district of Paraguay consists of the capital city Asunción, 17 departments, and 238 municipalities. The national territory of Paraguay is penetrated by Paraguay River, dividing the country into two regions: the East, with a semitropical humid climate, and the Chaco region, an alluvial plain with semi-arid lands and high temperatures (OECD 2016). Traditionally, the majority of population and the economic activities have been concentrated in the east region with the favorable climate and fertile. As a result, all of the medium to large sized cities of Paraguay are located in the east region.

The major cities in the eastern region of Paraguay such as Asunción, Concepción, and Encarnación started to be developed from the Spanish colonial period. The cities are located along the Paraguay River, which make it easy for the residents to defend the external invasion and export the agricultural products. From the 1970s, with the construction of the Itaipú and Yacyreta, the binational dams shared with Brazil and Argentina respectively, the border cities started to rise. Adding to the fact, the government's endeavor to expand the social infrastructure and foster new cities contributed to developing Ciudad del Este, one of the border cities to be the second largest city in the country.

The urban population of Paraguay is mainly concentrated in the metropolitan area of Asunción and Ciudad del Este. Those are the biggest cities in Paraguay, and respectively forming the metropolitan areas with neighboring medium to small sized cities. Both of the cities have captured the largest rural migration in Paraguay for decades. In the department level, Central, the department belong to the capital region with Asunción, is the most populated department in the country. As of 2016, about 29.6% of the total population resides in the Central (DGEEC 2016). Adding up the population of Asunción, the capital region has more than 1/3 of total population of the country. Recently, however, the traditional large cities are experiencing slowdown of the growth, while the growth of medium-sized cities near the border or major routes such as route 3, 5, 7, and 8 is accelerated¹ (STP, 2015).

¹ The emerging cities include Coronel Oviedo, Caaguazu, Villarrica, San Estanislao, Santa Rosa del Aguaray, Curuguaty, Horqueta, Campo, J. Eulogio Estigarribia, San Juan Nepomuceno, and San Ignacio.

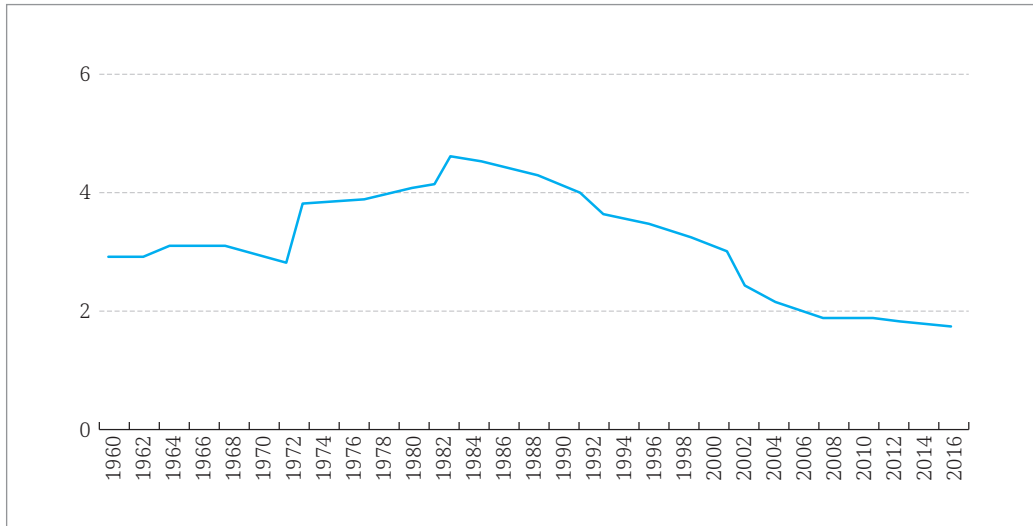
[Figure 1-1] Urban Area of Paraguay



Source: STP and DGEEC (2016).

[Figure 1-2] Urban Growth Rate of Paraguay (1960-2017)

(Unit: %)

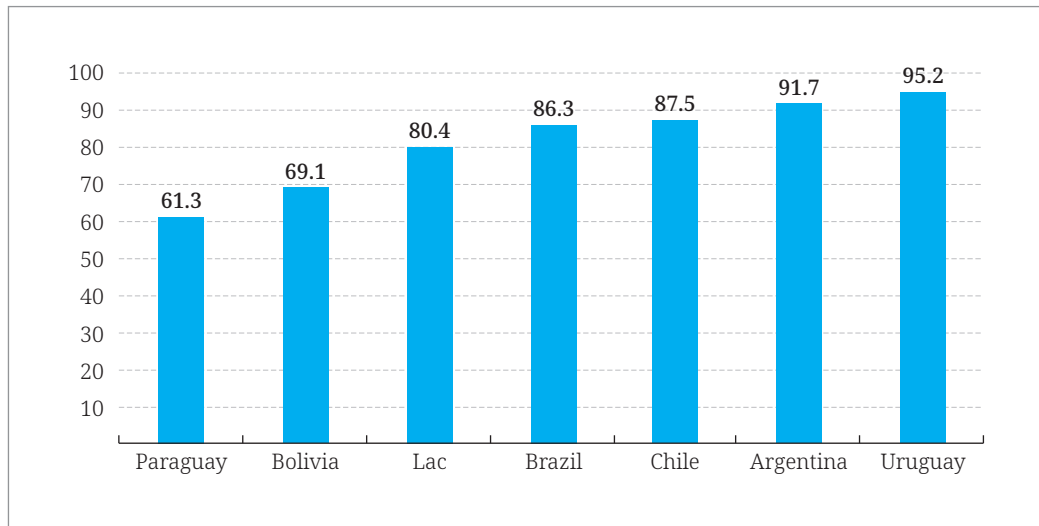


Source: World Bank (2019).

Paraguay has experienced a rapid process of urbanization for several decades since 1960s. The urban growth rate of Paraguay had remarkably increased from 1960s to 1980s, reaching its peak of 4.6% in 1983. The growth rate has gradually decreased since 1980s, but sustained around 1.7% during the 2010s. The urbanization rate of Paraguay as of 2017 was 61.3%. Considering the average urbanization rate of LAC countries in the same year was 80.4%, the country is considered to have the lowest share of urban population in LAC. Nonetheless, the urbanization rate of Paraguay is expected to sustain the up-trend, reaching 74.3% in 2050 (United Nations, 2018).

[Figure 1-3] Urbanization Rate of Selected LAC Countries (2017)

(Unit: %)



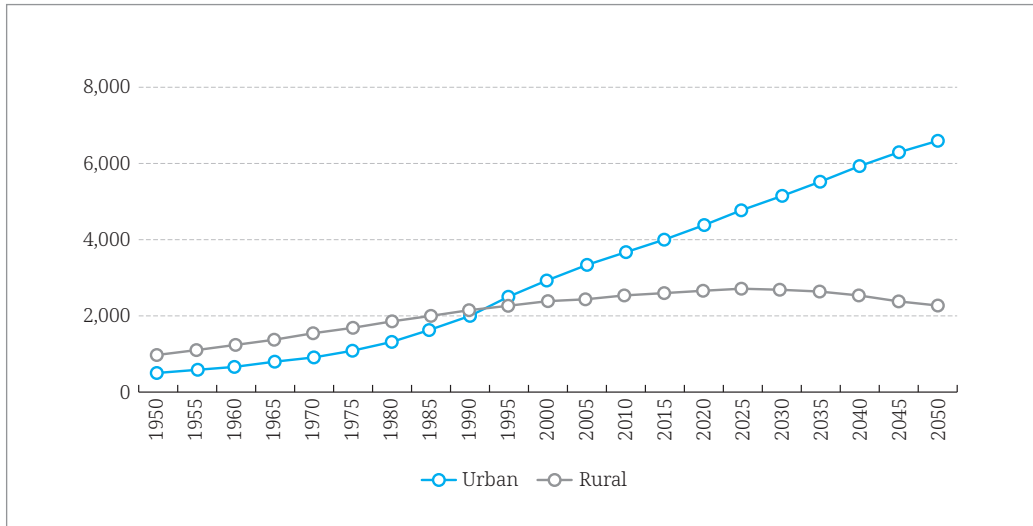
Source: World Bank (2019).

The process of the urbanization in Paraguay can be divided into the 3 periods. First period covers from the 1950s to the 60s, a stage in which the peasant population is mobilized to other rural areas. The second period corresponds to the 1970s to the 90s, when the rural migration was mainly destined for large cities. Recently, adding to the rural to urban migration, urban to urban migration has also been increasing (GeAm, 2014).

From the 1970s to the 1990s was the period when urban areas became the main alternative of rural migration, largely due to the failure of the cotton plant and the growing importance of mechanized agriculture of soybean, wheat, and corn, which led to the migration of the peasant population to the urban area. The major destination departments were Central, Alto Paraná, Asunción, and Ciudad del Este. The rural-to-urban migration had been the dominant trends for decades, but according to the Census, the inter-urban migration and urban-rural migration has also gained significance since the end of the 1980s (DGEEC, 2005). The recent trend of urban-urban migration is partly due to the depletion of migratory attractions in the large cities and the importance and growing dynamics of the intermediate cities, but mainly because of the migration of population from the small cities to the metropolitan area (GeAm, 2014).

[Figure 1-4] Demographic Transition of the Urban and Rural Area in Paraguay

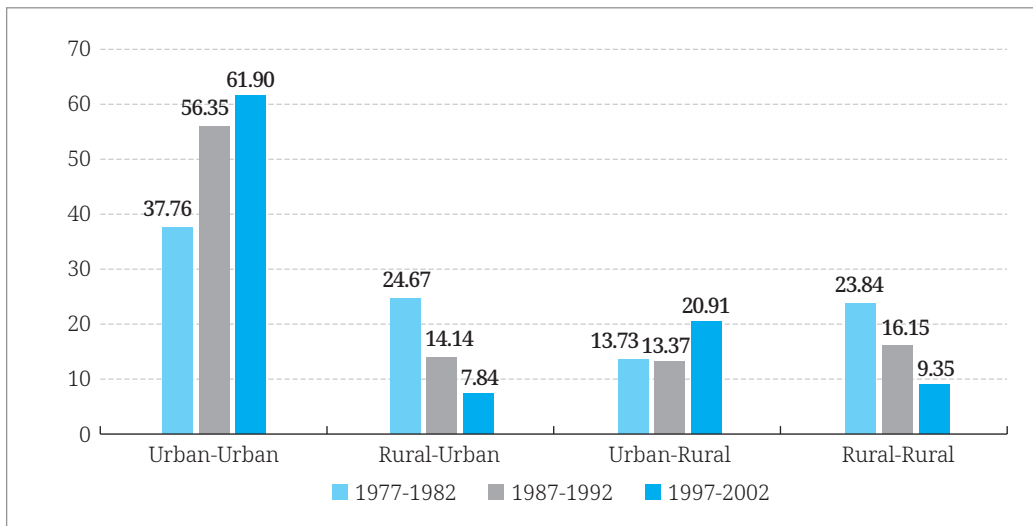
(Unit: 1,000 people)



Source: United Nations (2018).

[Figure 1-5] Internal Migratory Trends of Paraguay (1977-2002)

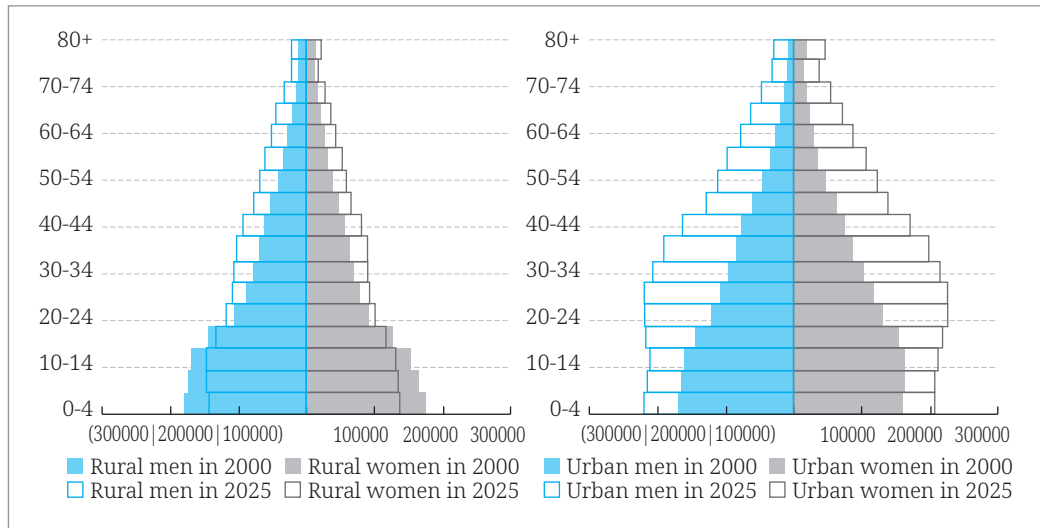
(Unit: %)



Source: DGEEC (2005).

The increase of the urban population is mainly due to the inflow of the young population looking for the better access to employment. Technical Secretariat for Economic and Social Development Planning (Secretaría Técnica de Planificación del Desarrollo Económico y Social: STP) specified the characteristics of the demographic transition of Paraguay as rapid inflow of young population aged from 20 to 44 to urban area and increase of middle-aged population in the rural area (STP 2015).

[Figure 1-6] Expected Demographic Behavior of Paraguay (2000-2025)



Source: STP (2015).

2.1.2. Economy and Urban Development

The economic development of Paraguay has been largely dependent on the agroforestry industry and hydroelectric plants. During the last decade, the country has been one of the most dynamic economies among the LAC countries, with an average growth rate close to 5% per year (IDB, 2018). Though it has kept relatively stable growth trends, the economy is highly sensitive to the price of raw materials, climate change and dependent on the major commercial partners such as Argentina and Brazil (IDB, 2018).

It is important to notice that the socio-economic structure of the country lacks a secondary economic sector to add value to the commodities and contribute to the generation of employment in the urban area. The construction of Itaipu and Yacyreta dams in 1970s attracted an unprecedented amount of foreign investment, but the capital was not invested in the constitution of an industrial capital capable of sustainably generating income and employment.

Vazquez (2006) states that the economic and social structure of the country have materialized in the territories with various incidents:

First, the population settlements have been concentrated or dispersed in the certain region, triggering demographic imbalances. The inequality in the occupation and exploitation of the territory has aggravated poverty in the certain region, and reduced

the effectiveness in the utilization of the urban services and infrastructure. Second, the structure contributed to the increased urbanization and the transition to the urban model. The regional imbalances have caused migrations from poorly equipped and serviced region to the better equipped, endowed with services and economic opportunities. The migrations from the rural to the urban areas have accelerated urbanization process, which affects the periphery of the most attractive cities. Lastly, the it forced aggressive transformation of the productive model and regional integration. The territorial consequence of the transformation is the productive reconversion that has implied new way of land usage, introduction of new technologies, and new pressures on the environment. In the socio-economic aspect, the displaced peasants are reterritorialized with new productive activities that are characterized by fragility and informality (Vázquez, 2006).

2.1.3. Urban Structure and Regional Disparity

The urban regions of Paraguay can be categorized into the 5 levels;

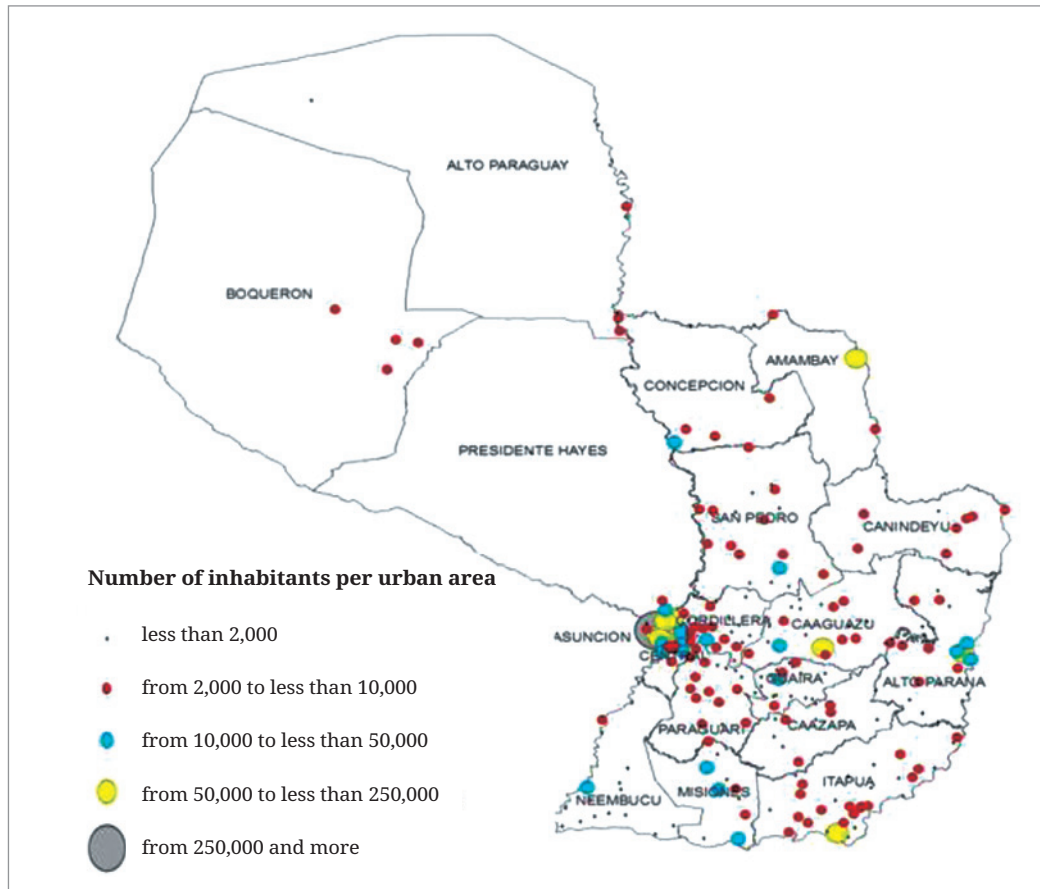
- a) Localities with less than 2,000 inhabitants: Basic level of urban area, typically providing services for the agriculture and rural sector
- b) Localities with 2,000 to 10,000 inhabitants: Service centers for the rural areas in usual
- c) Localities with 10,000 to 50,000 inhabitants: Mostly small cities responsible for the revitalization of the rural area, which accommodate the agrifood industries and other regional businesses, and the group of cities linked to the metropolitan areas of Asunción and Ciudad del Este
- d) Localities with more than 50,000 inhabitants: Encarnación, Ciudad del Este, and part of the cities belong to the Asunción metropolitan area
- e) Localities with more than 250,000: Capital Region of Asunción

<Table 1-1> Urban Population Strata of Paraguay

Urban Population Strata	No. of the Cities	Total Population
Less than 2,000	102	97,775
2,000 to 10,000	97	440,956
10,000 to 50,000	18	471,453
50,000 to 250,000	12	1,429,585
More than 250,000	1	513,399

Source: STP (2011).

[Figure 1-7] Urban Structure of Paraguay



Source: STP (2011).

One of the distinctive features of the national territory of Paraguay is the clear regional disparity between the eastern and western region. The western region, better known as the Chaco, occupies more than 60% of the national territory, yet accommodates only 3% of the population. Some major commercial districts are formed in Chaco centering the urban-rural complexes such as Mariscal Estigarribia, Neuland, Filadelfia, and Loma Platta, but the population density of the area is very low, and the basic infrastructure is insufficient.

On the other hand, the eastern region, especially the metropolitan area of Asunción is occupied with the concentrated urban population and social and economic entities. All the cities with the population more than 50,000 are located in the eastern region. The metropolitan area of Asunción is composed of 12 cities² including Asunción. Even though the area accounts for only 0.2% of the national territory, it produces more than 50% of GDP, and

2 Asunción, Capiatá, Luque, San Lorenzo, Limpio, Ñemby, Lambaré, San Antonio, Fernando de la Mora, Villa Elisa, Mariano Roque Alonso, and Itauguá

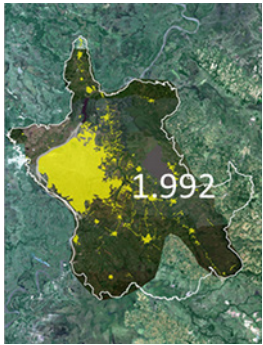
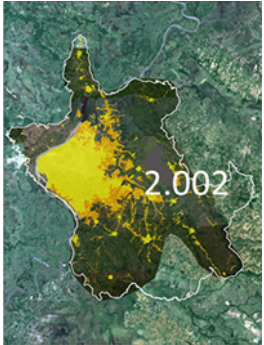
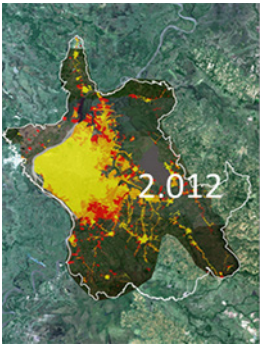
accommodates more than 30% of the total population and 50% of the urban population (IDB 2014). The imbalanced development among the cities is causing a cost overrun, informal settlements in the area precarious to the natural disaster, and environmental issues in the metropolitan area, while it creates vicious circle of depopulation and deterioration in the under developed regions.

2.1.4. Spatial Characteristics of the Major Cities

A. Asunción

Asunción is the social and economic center of Paraguay. The area has been developed as a center of the country from the Spanish colonial periods, and currently leading the national economy taking up 70% of total GDP (Lee et al, 2016). The city is located on the eastern bank of Paraguay River and the riverbank has traditionally been occupied with the port, logistics, and industrial activities. While Asunción accommodates only 7% of the total population, the population of AMA takes up more than 30% of the total population. The population growth of AMA has remained stable for the last decade, and the projections estimate that by 2050, the population will increase to 3.8 million (UNDP 2017). The population of Asunción increased rapidly in the 1970s and has been stagnant since the 1990s, but the population of AMA is still growing rapidly. Analysis of satellite imagery shows that the area of AMA expanded 1.9 times from 427.45km² to 809.83km² between 1992 and 2012, with the population doubled from 1.23 million to 2.53 million between 1992 and 2013.

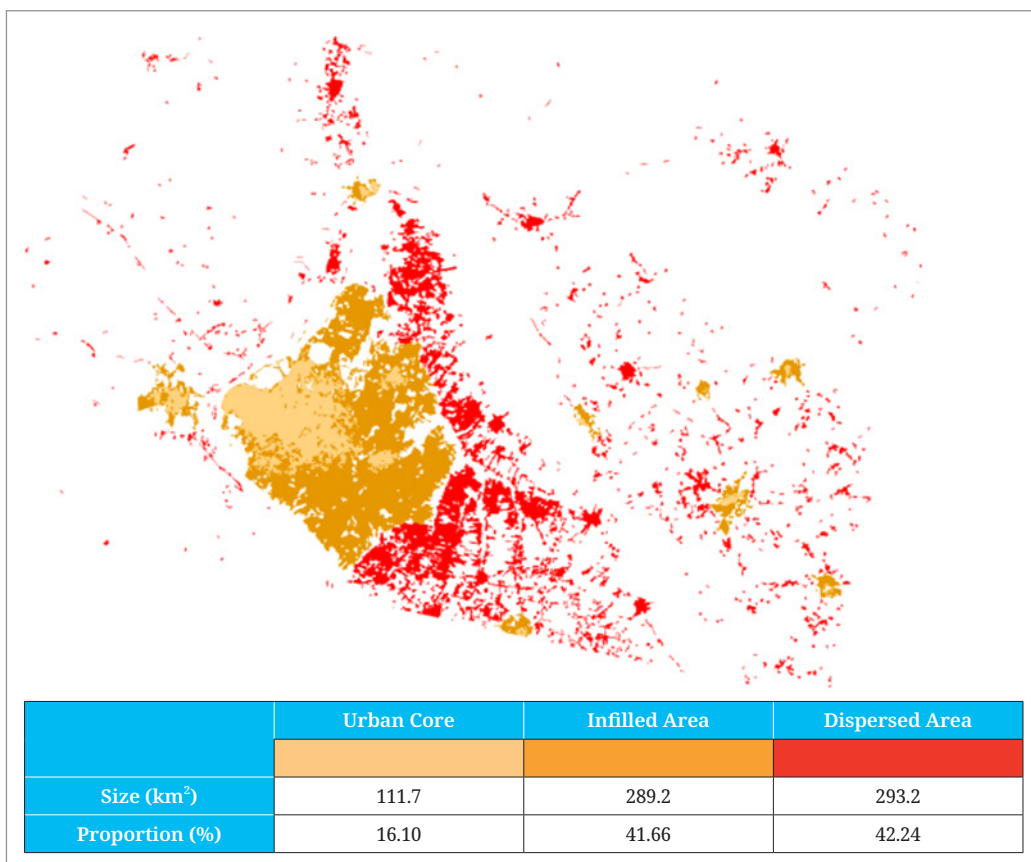
<Table 1-2> Expansion of Asunción Metropolitan Area (1992-2012)

Year	1992	2002	2012
Satellite Pictures			
Size of Urban Area	427.45km ²	652.98km ²	809.83km ²
Population	1,246,009	1,763,627	2,536,195

Source: SENAVITAT (2016).

For past 60 years, AMA has been spreading to the south-eastern outskirts at low density. As a result, the residential area of the outskirts lacks of basic infrastructure, and urban sprawl of the center of Asunción is severe. The analysis of satellite imagery in 1987 and 2015 suggests that the urban core has increased by 111.7km², while the infilled area has increased by 289.2km². The expansion of the infilled area contributed to the widening the functional boundary of the metropolitan area.

[Figure 1-8] Spatial Expansion of AMA (1987–2015)



Source: Lee, Soyounng et al. (2016).

B. Ciudad Del Este

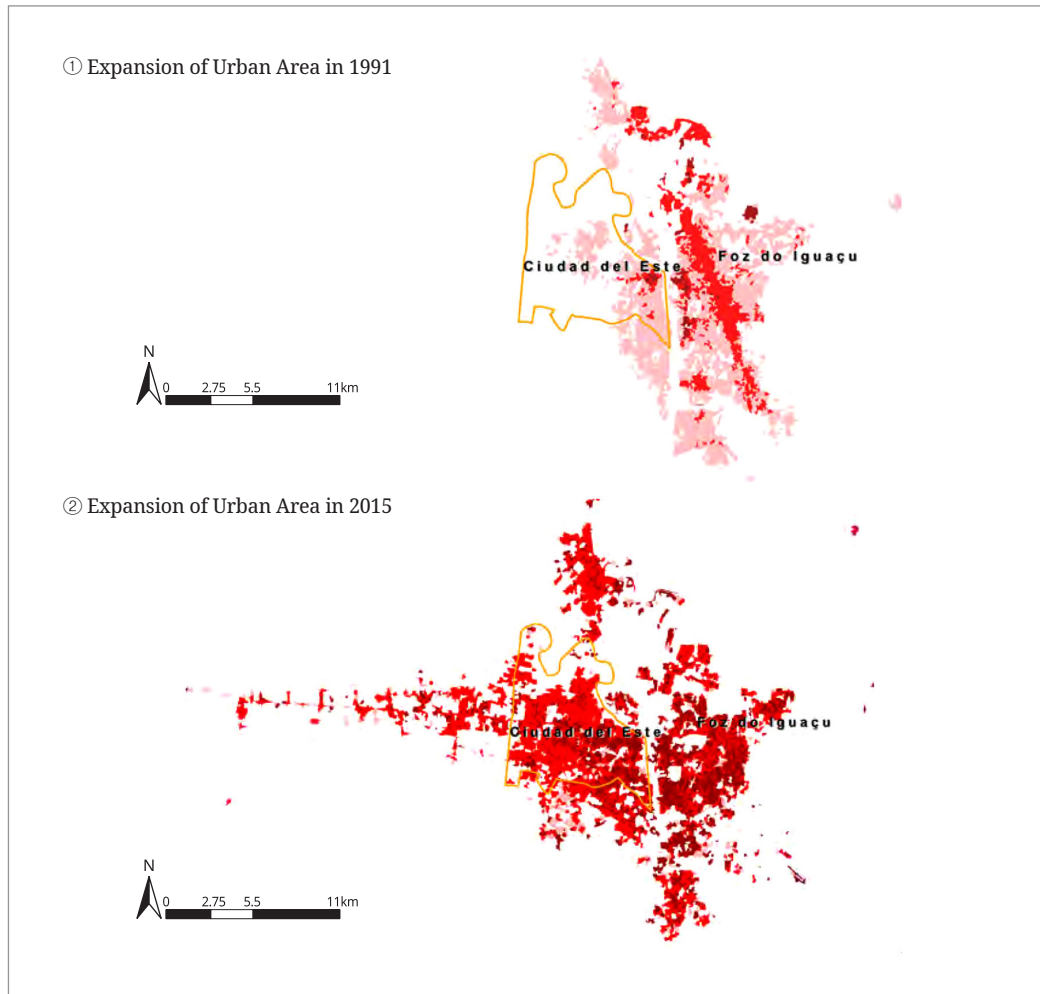
Ciudad del Este is the second largest city of Paraguay. The city is located near the border of Paraguay and Brazil. As a border city and major port, Ciudad del Este plays strategically critical role in Paraguay, a landlocked country. The city started to be developed under the governmental plan. The growth of the city was accelerated with the construction of Itaipu in 1970s. The rapid urbanization caused from the massive inflow of the capital with the construction project induced unregulated urban growth. Also, the increase of the illegal

immigrants from Brazil has caused growth of informality of economy. Nevertheless, the housing development project for 3,400 units for the construction workers in 1970s is considered to be a successful case of the housing development in Paraguay.

According to analysis of satellite imagery in 1991 and 2015, the population of Ciudad del Este rose about 23%, while the urban area increased by 40%. Between 1991 and 2015, the city's population increased from 1.75 million to 2.17 million, with its urban area increasing from 167.4 km² to 234 km², with an annual average increase of 2.3 km².

As the city grows, urban space is spreading across the city's boundaries and around the south and west. In 1991, the city developed in areas around the Parana River, which borders Brazil, but gradually expanded its urban boundaries around the western part of the country with roads connecting with Asunción to the south in accordance with the urban development around the river. While the problem of low density development is not severe compared to Asunción, the areas extending south and west are developed at low density, making it difficult to provide adequate infrastructure for the residents.

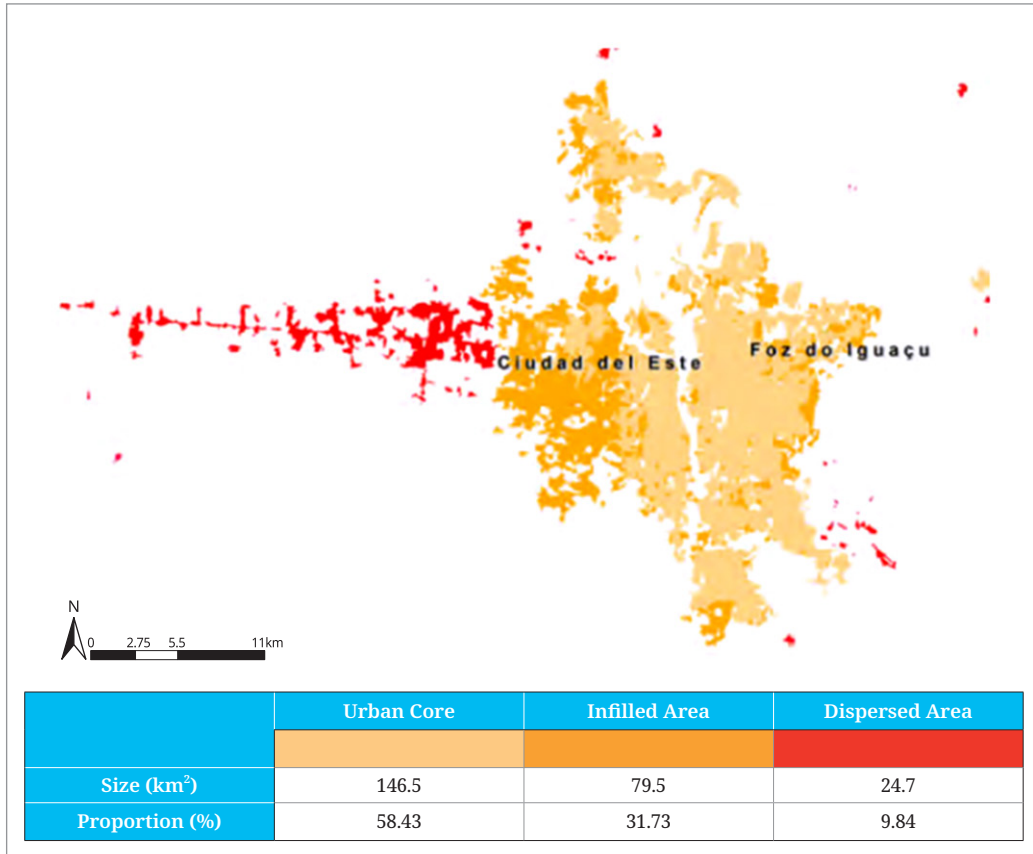
[Figure 1-9] Analysis of the Expansion of the Ciudad del Este Metropolitan Area



Source: Lee, Soyoung et al. (2016).

The pattern of expansion of the Ciudad del Este urban area can be summarized as follows: According to the analysis of satellite imagery in 1991 and 2015, the Urban Core increased by 146.5 km². During the same period, the area of 79.5km² was increased in the southwest direction, centered on the Ciudad del Este administrative region. The low-density dispersed area increased to 24.7 km², showing relatively good performance. However, it seems necessary to manage urban growth as only the western part of the city where the main road linking Asunción is located is spreading intensively.

[Figure 1-10] Spatial Spread of Ciudad del Este in Urban Area (1991-2015)



Source: Lee, Soyung et al. (2016).

2.2. Overview of the Urban Policy in Paraguay

2.2.1. Legal Framework

Despite the fact that urban planning was not institutionalized as a practice, there are several institutions at different levels of government that have territorial planning and planning competences, such as the Ministry of Housing and Urban Development (MUVH) or the STP. In addition, urban planning in the country has the support of a broad legal framework at national and international level, promulgated and ratified, respectively, by our country. There is also a great wealth and diversity of policies and plans formulated by the State, as well as initiatives promoted by civil society. The main legal and political norms related to urban planning in Paraguay are presented below.

A. Main Regulations on Urban Development

In national Constitution (1992), the articles, 6, 7, 81, 100, 156 establish topics such as the promotion of the quality of life, the right to a healthy environment, the preservation of cultural heritage, the right to housing and the state political and administrative structure. International agreements such as Universal Declaration of Human Rights (UN, 1948) which establishes the right to an adequate standard of living and the right to property and International Pact on Economic, Social and Cultural Rights (UN, 1996) in which the right of everyone to an adequate standard of living is recognized are also established.

Laws and decrees related to urban development in Paraguay are as follows:

- Law No. 6152/2018, which creates the Ministry of Urban Planning, Housing and Habitat (MUVH) and establishes its charter;
- Law No. 3909/2010, which creates the National Secretariat for Housing and Habitat, (SENAVITAT);
- Law No. 3637/2009, of the National Fund for Social Housing (FONAVIS);
- Law 5638/2016, on the Promotion of Housing and Urban Development;
- Decree No. 6043 of October 4, 2016 “By which the Habitat III National Committee is created, as a coordinating body and pre-opinioner of issues related to housing and sustainable urban development in order to draft the country report to be presented in the third conference on housing and sustainable urban development to be held in the city of Quito, Ecuador, in October 2016”;
- Decree No. 7559 of August 8, 2017 “By which Decree 6043 of October 4, 2016 is extended”;
- Law No. 2329/2003, which establishes the administration framework for Housing Cooperatives and the Cooperative Housing Fund;
- Law No. 1309/1998, which establishes the distribution and deposit of part of the so-called “Royalties” and “Compensations due to flooded territory” to the departmental and municipal governments;
- Decree Law No. 281/1961, by which the National Development Bank is created;
- Law 2640/2005, which creates the Financial Development Agency;
- Law No. 2880/2005 approving the decision MERCOSUR / CMC / DEC No. 18/05 “Integration and Functioning of the Fund for Structural Convergence and Strengthening of the Institutional Structure of MERCOSUR (FOCEM)”;
- Law No. 5102/2013, “On the Promotion of Investment in Public Infrastructure and Enlargement and Improvement of Goods and Services in Charge of the State.” (Public Private Partnership Law);
- Law No. 1618/2000 “Concessions for Public Works and Services.”

In particular, the Local Government Act (Law No. 3996) enacted in 2010 is intended to provide 1) the authority of the city government regarding urban planning, public service provision, 2) management and allocation of resources, and 3) regulations on public transportation and other means of transportation.

Law No. 5638, The Housing and Urban Development Promotion Act is intended to strengthen accessibility to urban areas and decent housing, to promote housing supply as a determinant of urban development, to determine priority areas for the recovery of housing functions, and establishing a framework for formulation of rental market.

Law No. 6152, The Act on the Establishment of the Urban Housing Department is intended to 1) implement strategies within the jurisdiction, prioritize and manage plans, 2) to design, enforce, and implement programs for vulnerable populations, and 3) to enforce of implementation and evaluation of subsidy system.

B. The Role of Central and Local Governments

The public administration in Paraguay is highly centralized and has institutions for strengthening the vertical and horizontal linkages between administrative departments, and these agencies are required to play a cross-sectoral role in relations with provincial and municipal governments.

The Policy function of central government is fragmented to Ministerio de Urbanismo, Vivienda y Habitat(MUVH), Secretaría Técnica de Planificación del Desarrollo Económico y Social(STP), Secretaría del Ambiente(SEAM) and etc. SEAM is responsible for the management of national and regional environmental planning and STP is in charge of establishing national development plans and regional development goals. On the other hand, the municipal governments should establish Sustainable Development Plan(PDS) and Plan of Urban and Territorial Organization (POUT).

<Table 1-3> Main Department and Their Roles Related to Urban Policy of Paraguay

Main Department	Main Role
Government Center (Centro de Gobierno)	<ul style="list-style-type: none"> CG is established in accordance with Law 1294 enacted in 2014 and is under the jurisdiction of the Secretary-General of the Presidency. It provides political advices to the President, Secretary and Presidential Secretariat.
STP	<ul style="list-style-type: none"> The Technical Secretariat for Economic and Social Development Planning (STP) is the governing body for planning in Paraguay and is responsible for coordinating the formulation of the National Development Plan. The same, goes through a process of consultation and public and private participation of agencies and entities of the State (OEE), governorates, municipalities and the National Country Strategy Team. Finally, a final version of the document is made available to the Economic Team and the Social Cabinet before being approved by the Executive Power.
SEAM	<ul style="list-style-type: none"> SEAM is primarily responsible for the management of national and regional environmental planning, on the other hand, STP is responsible for national development plans and regional development goals.
Ministry of Finance (Ministerio de Hacienda)	<ul style="list-style-type: none"> Ministry of finance has no direct authority to establish land use planning, but plays a key role in making economic policies, development strategies and annual investment plans regarding land development and use. And it is responsible for the national budget, responsible for the transfer of funds to provincial and municipal governments. In 2010, it opened the Departments and Municipalities Unit to coordinate cooperative activities with provincial and local governments.
Municipal Governments	<ul style="list-style-type: none"> The municipal government has a duty to establish the sustainable development plan (Plan de Desarrollo Sustentable; PDS) and the Land Use Plan (Plan de Ordenamiento Urbano y Territorial : POUT) in accordance with the Local Autonomy Act, but there is no means to enforce the plan. Thus, most municipalities have not established their own urban plans.

In general, the central government leads the dominant scheme of the urban development plan. The departmental governments and municipal government have the authority for the urban planning, but the competencies, resources, and mechanisms of each government are different, and the scope of the role of the localities are not clearly defined. As a result, the central government continues to concentrate most of the competencies related to the urban planning (SENAVITAT, 2016) At the level of municipality, public interventions are often carried out in an uncoordinated manner and the municipal governments have very limited financing capability and power to produce strategic plans or planning systems (Goetz et al, 2017).

2.2.2. Policies and Plans

A. National Plans

1) National Development Plan Paraguay 2030 (PND)

The PND intends to coordinate actions in the sectoral instances of the Executive Power, as well as with different levels of government, civil society, private sector and, eventually, the Legislative and Judicial powers. It was established by STP in 2014 (STP, 2014). The PND establishes objectives for each of the 12 strategies that result from combining the strategic axis with the transversal lines. The summary of the 12 strategies can be seen in the table below:

<Table1-4> Main Strategies of National Development Plan Paraguay 2030

Transverse Lines Strategic Axis	Equal Opportunities	Efficient and Transparent Public Management	Land Management and Development	Environmental Sustainability
Poverty reduction and social development	1.1 Equitable social development	1.2 Quality social services	1.3 Participatory local development	1.4 Adequate and sustainable habitat
Inclusive economic growth	2.1 Employment and social Security	2.2 Competitiveness and innovation	2.3 Regionalization and productive diversification	2.4 Valorization of environmental capital
Insertion of Paraguay in the world	3.1 Equality of opportunities in a globalized world	3.2 Attraction of investments, foreign trade and country image	3.3 Regional economic integration	3.4 Sustainability of the global habitat

Source: Gobierno Nacional (2014).

The interaction of the 3 strategic axis with the 4 transversal lines, results in 12 strategies that guide the public policies for Paraguay until 2030. Within the framework of urban development, the following stand out:

- Within axis 1 “Poverty reduction and social development”:
 - Strategy 1.3 “Participatory local development”: it is proposed to improve precarious settlement conditions through an adequate urban planning and improvement process, the decentralization of the management of public policies and territorial planning at the municipal level.
 - Strategy 1.4 “Adequate and sustainable habitat”: it is proposed to reduce the housing deficit by 70%, to universalize access to basic services, and to reduce deaths attributable to air pollution by 95%.

- Within axis number 2 “Inclusive economic growth”
 - Strategy 2.2 “Competitiveness and innovation”: a multimodal transport network is proposed and regularization of land tenure
 - Strategy 2.4 “Valorization of environmental capital”: it is proposed to increase the consumption of renewable energies by 60% and reduce fossil fuel by 20%.
- Within the axis number 3 “Insertion of Paraguay in the world”
 - Strategy 3.4 “Sustainability of the global habitat”: it is proposed to restore at least 20% of the degraded ecosystems, reduce the costs of recovery in the event of disasters caused by climatic effects, exploit the aquifers based on environmental plans duly monitored and increase the coverage of forest areas and protected biomass.

2) National Habitat and Housing Plan (PLANHAVI)

The PLANHAVI is defined as a road map to progressively eliminate the housing deficit and ensure decent housing in a healthy habitat for the entire population. It was prepared by SENAVITAT in 2011. The Plan adopts a focus on human rights, the concept of innovation and as transversal axis communication and the environmental and territorial perspective (SENAVITAT, 2011).

The strategic lines are the following:

- Production of quality habitat and housing through endogenous developments that promote the use of resources and alternative energies with appropriate processes and technologies.
- Improvement of the institutional capacity of SENAVITAT and the articulation of public policies that affect habitat and housing.
- Inclusion and social cohesion through the promotion of the participation of social organizations and citizens in general.
- Promotion of housing finance and the productive chain of habitat and quality housing, through incentives that stimulate investment and the generation of jobs.

Regarding new housing, the PLANHAVI establishes a goal of 142,600 new homes for the year 2020, and in terms of expansion and improvement actions, a goal of 154,400 actions is determined.

In this regard, it is established that in the period between August 15, 2013 and December 2017, 25,237 new housing solutions have been built, and 6,522 are in execution. These figures suggest that in the five-year period 2013-2018 s would produce 31,759 new homes, which

represents 22.27% of the goal set in the PLANHAVI. In this sense, it seems highly relevant to make an updated study of the housing deficit at country level and an evaluation of the produced, with the intention of reviewing the strategies and goals that are proposed to solve the housing deficit.

3) Guideline for the Establishment of the Urban and Regional Plans (Guia para la Elaboracion de los Planes de Ordenamiento Urbano y Territorial: POUT)

The guideline for the establishment of the urban and regional plans was established in order to provide guidelines for the central and local governments to establish the urban and regional plans. This guideline introduces the concept of internationally available land use plan and establishes the appropriate methodology, stakeholders and the activities of local government of each stage of planning. The stages of the establishment of urban and regional planning are as follows:

<Table 1-5> Main Process of the Establishment of the Urban and Regional Plans in POUT

1. General Condition of the Project	2. Generation of Spatial Data	3. Territorial Diagnosis
1.1 Construction of Political Consensus 1.2 Mobilization of the Financial Resources 1.3 Work Schedule 1.4 Constitution of the Technical Team	2.1 Collection of Internal Data 2.2 Collection of External Data 2.3 Validation of Cadastral Cartography 2.4 Creation of Spatial Data	3.1 Graphical Diagnosis 3.2 Spatial Diagnosis
4. Territorial Strategy	5. Urban and Territorial Project	6. Legal Documents
4.1 Validation of the Vision of National Development Plan 4.2 Organization of a Participatory Workshop with the Table of Actors 4.3 Dissemination and Communication of the Program	5.1 Design of the spatial project 5.2 Validation of the municipality for each phase 5.3 Descriptive written and graphic memory 5.4 Descriptive written and graphic memory	6.1 Zoning of space by land use 6.2 Preparation of municipal ordinances

Source: STP (2018).

4) National Plan of Development and Territorial Regulation of Paraguay (PLAN MARCO NACIONAL DE DESARROLLO Y ORDENAMIENTO TERRITORIAL DEL PARAGUAY) (2011)

This regulation identifies the paradigm of national land development in Paraguay and Latin America, emphasizes the necessity of national plan and suggests the methodology and strategic goals of national plan as follows:

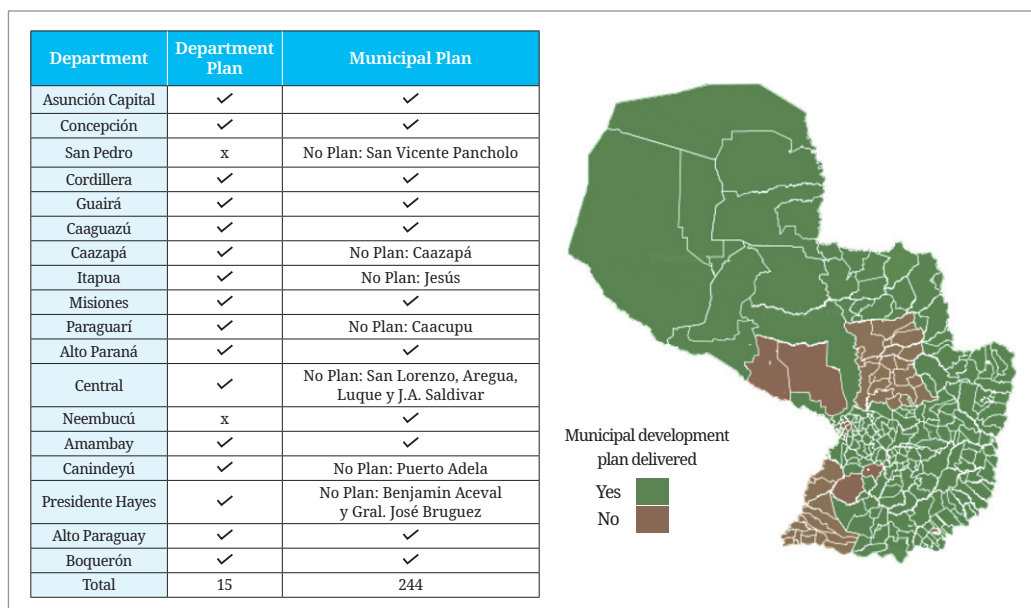
- Goal 1: Effective national land consolidation through improved transportation and communication networks

- Goal 2: Facilitating development of rural areas through integrated national development strategy
- Goal 3: Strengthening the function of urban center through integration of multi-core urban network
- Goal 4: Strategies for land use planning and conservation of national unique assets through cultural and natural resource conservation
- Goal 5: Strengthening the infrastructure, technology/policy capacity and institutional leadership to promote all levels of national development management

B. Local Development Plans

The municipal government has a duty to establish the sustainable development plan (Plan de Desarrollo Sustentable; PDS) and the Land Use Plan (Plan de Ordenamiento Urbano y Territorial: POUT) in accordance with the Local Autonomy Act, but there is no means to enforce the plan. Even though the law designates the authority for the urban planning to the municipal government, the capacity of municipal governments is limited because of inefficient fiscal management related to the poor execution of the budget. The problem of budget execution is mainly related to the institutional weaknesses such as the absence of strategic and operational planning, integrated financial management systems, and monitoring systems for the budget execution. As a result, most municipalities except Asunción have not established their own urban plans.

[Figure 1-11] Development Plans by Region (2016-2030)



Source: STP (2018).

The urban plans established in Asunción is as follows: Asunción Urban Environmental Plan (PDUA) in 2000, Master Plan for the Coastal Strip of Asunción(PFC), Strategic Plan for the Great Asunción (PEMA), and ICES Action Plan.

- Strategic Plan for the Great Asunción (PEMA) is jointly established by MOPC, IDB, and the municipal government. It establishes land use planning of Asunción Metropolitan Area and institutional reorganization for utilizing private funds.
- ICES Action Plan is jointly established by IDB and the Paraguayan government. It establishes the sustainable urban development program for the 10 cities in Asunción Metropolitan Area.
- Masterplan for Historic Center of Asunción (PLAN CHA) proposes the project planning for urban planning and mobility, cultural heritage management and application of new technology, social development and protection of ecosystem, attraction of private investment, and institutional development.

2.3. Major Issues in Urban Sector of Paraguay

The major tasks of the urban sector in Paraguay include unplanned expansion of the metropolitan area, low density development, lack of urban services and infrastructure, deepening regional disparities and insufficient integrated planning system and institution.

In the case of the Asunción metropolitan area, environmental and social problems have arisen due to the low density development in the suburbs of the metropolitan area where the infrastructure is poor in the process of concentration of population in Asunción city. The population of the Asunción metropolitan area, which was about 2 million in 2012, is expected to increase more than twice as much as 5.60 million by 2050. If the urban sprawl continues to expand to the outskirts of the city of Asunción as it is now, the cost of constructing the necessary infrastructure will increase, which is expected to cause huge economic losses in the future. While the demand for traffic between the suburbs and the city center has increased rapidly due to the spreading of the Asunción metropolitan area, the quality of public transportation to cope with it has been poor and traffic congestion in urban areas is also serious. However, there is no specific management plan to control the spreading of the Asunción metropolitan area and the prevent low density development, and there is no laws or institutional systems to support it.

Regional disparity is also one of the major challenges in the urban sector. The disparities between the eastern and western regions are particularly severe. Only 3% of the population lives in the western region, which accounts for 60% of the entire country, while there are

more than 90% of population and production services in the eastern regions. In Paraguay, the degree of imbalanced development in the metropolitan area is also serious, and all of the slums with a poverty rate of over 50% in the city of Asunción are located in the vicinity of the Paraguay River, forming a largely informal settlement (Precarious Settlement). Paraguay does not have integrated data on informal housing, but according to a study conducted by Paraguayan nonprofit TECHO in 2016, there are 405 informal settlements in 10 cities in the Asunción metropolitan area, and about 38,179 households (TECHO 2016).

Another issue is the lack of institutional and legal systems to systematically address these issues and the lack of technical competence of the relevant institutions. Paraguay has established planning system in each level of a national, regional, and municipal government through the establishment of a national system for the national land development in 2011, but it is not well implemented due to lack of planning tools and lack of capacity. Especially, urban development is not properly managed due to the lack of land use planning and management plans in metropolitan areas, which is a major cause of urban expansion to the suburbs.

Lastly, the lack of general data on the national territory and urban transition and analysis on it limits the capacities for the public authorities to properly plan the urban development. The accumulation of the detailed knowledge on the national territory through the development of the precise cadasters and the appropriate methodologies for the collection of data is essential to the effective implementation of the territorial planning and the management. In Paraguay, however, the systems for collecting, and managing data and institutional capacity to analyze the collected data is limited. Consequently, it is highly recommended for the country to create a public entity to manage the data, produce the data-based analysis on the previous, current, and future situation of the national territory, and establish and monitor the territorial, region, and urban plans.

3. Analysis of Urbanization Status and Policy Conditions of Korea

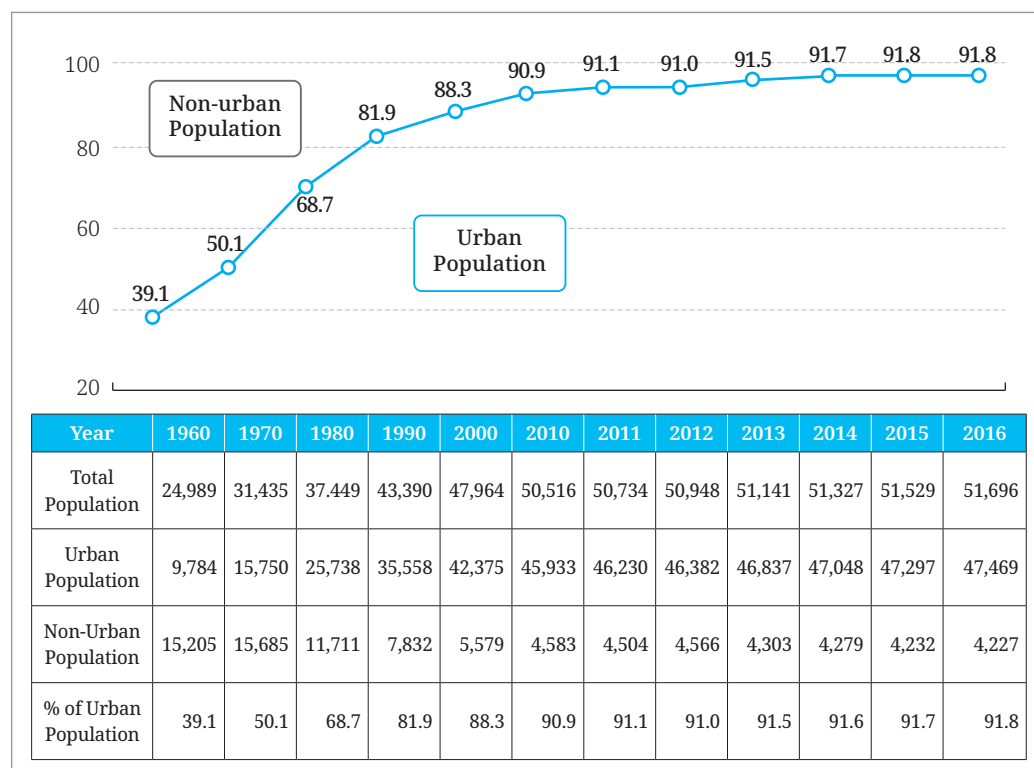
3.1. Urbanization Status and Changes in Various Conditions

Over the past 60 years, South Korean cities have experienced globally unprecedented growth in terms of their number and size. Korea's rapid urbanization began in the 1960s, when economic development was actively underway. An analysis of Korea's urbanization

rate, which is the ratio of the urban population to the total population, shows the rate was only 39.1 percent in 1960, that it increased to 50.1 percent in 1970, with half the Korean population living in rural areas and the other half living in cities, and then further increased to 91.8 percent as of December 2016. Korea is now in an age where most of its population resides in cities, a fact that has caused complex and diverse urban problems. The figure below shows the detailed changes in the urban population ratio since the 1960s.

[Figure 1-12] Percentage of Urban Population Over the Years

(Unit: 1,000 people, %)



Note: "Urban population" refers to the number of people residing within urban planning zones for the years up to and including 2000, as well as the number of people residing within urban areas after 2000.

Source: Ministry of Land, Infrastructure and Transport (2018).

The table below shows the population distribution in Korean cities by size. As of 2015, there were 85 cities in Korea, and 48.4 percent of the total population lived in the seven major cities (Seoul and six metropolitan cities; Busan, Incheon, Daegu, Daejeon, Gwangju and Ulsan), directly showing the population's concentration in metropolises. Additionally, 24.6 percent of the total population lived in cities with a population of over 500,000, while 1.8 percent lived in cities with a population of less than 100,000.

<Table 1-6> Current Status of Korean Cities by Size

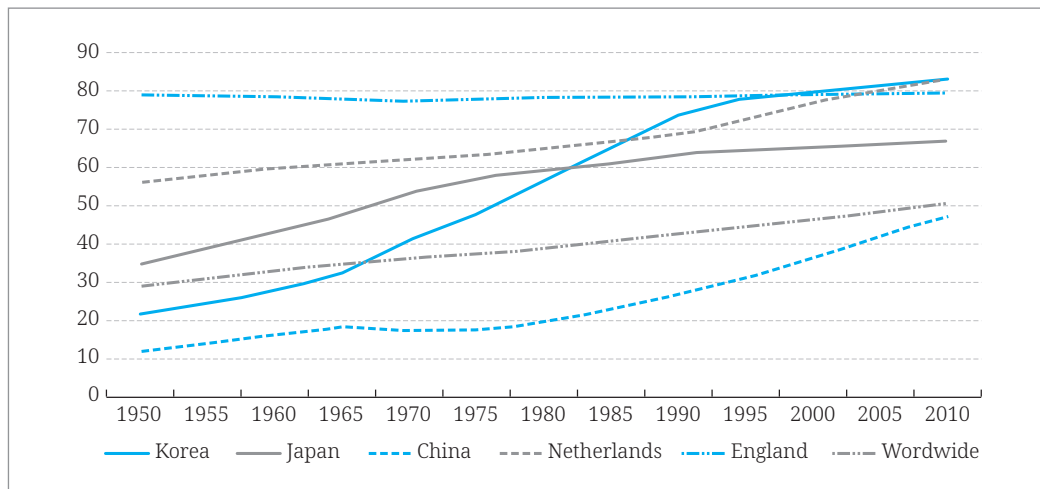
By Population Size		No. of Cities	Population (count)	%	Area (km ²)	%
Total		85	47,770,822	100.0	50,616.176	100.0
Special City (Seoul)		1	10,022,181	21.0	605.267	1.2
Metropolitan Cities		6	13,091,929	27.4	5,214.392	10.3
Regional Cities	Subtotal	78	24,656,712	51.6	44,796.517	88.5
	Over 500,000	15	11,762,463	24.6	7,034.059	13.9
	300,000 – 500,000	13	4,884,157	10.2	6,391.100	12.6
	200,000 – 300,000	16	3,971,759	8.3	9,685.514	19.1
	100,000 – 200,000	23	3,187,913	6.7	16,195.966	32.0
Less than 100,000	11	850,420	1.8	5,489.878	10.8	

Note: As of Dec. 31, 2015. (Only cities (si-level) were counted for the purpose of this table, including Jeju and Seogwipo).
 Source: Ministry of the Interior and Safety, "Statistics on the Registered Resident Population"; Ministry of Land, Infrastructure and Transport (2018).

Korean urbanization possesses characteristics akin to those of advanced Organization for Economic Co-operation and Development (OECD) countries, but it experienced much more dramatic changes within a shorter period. In the '50s, Korea had an urbanization rate lower than major advanced countries around the world, yet in 2010, Korea showed a higher level of urbanization compared to those same advanced countries. The current growth rate of Korean cities is higher than that of other OECD countries, and we can say that Korean urbanization has nearly reached its limit.

[Figure 1-13] Comparison of the Urbanization Curves Between Korea and Other Advanced Countries

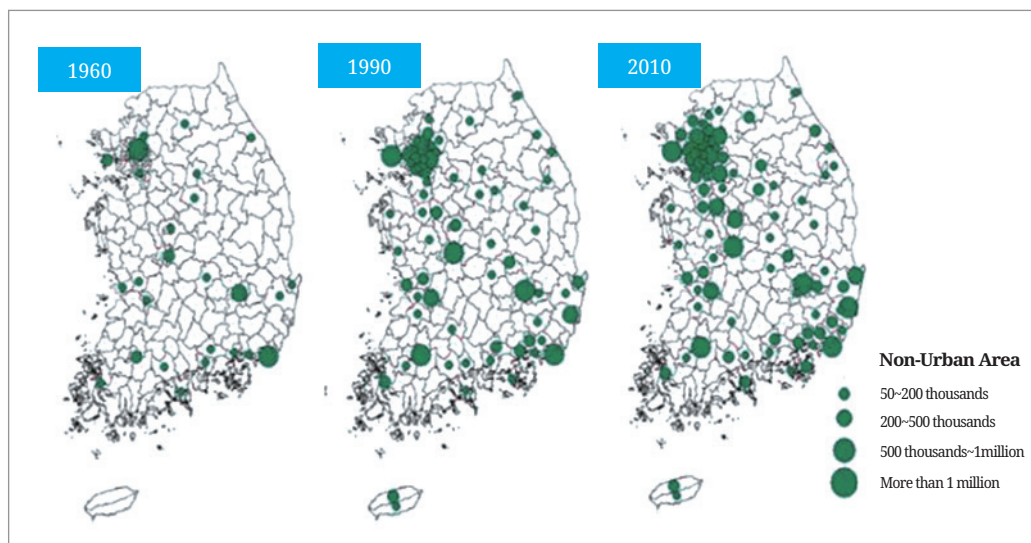
(Unit: %)



Source: United Nations, Department of Economic and Social Affairs, Population Division (2010).

Korean urbanization was spearheaded by Seoul and other metropolises. As a result, the development of both the Seoul Metropolitan Area (SMA) and the southeastern region became clear. Large cities—including Seoul, Busan, Daegu, Gwangju, and Ulsan—became the basis for industrialization, and population concentration in these cities was accelerated.

[Figure 1-14] Urban Population Growth by Region (1990-2010)

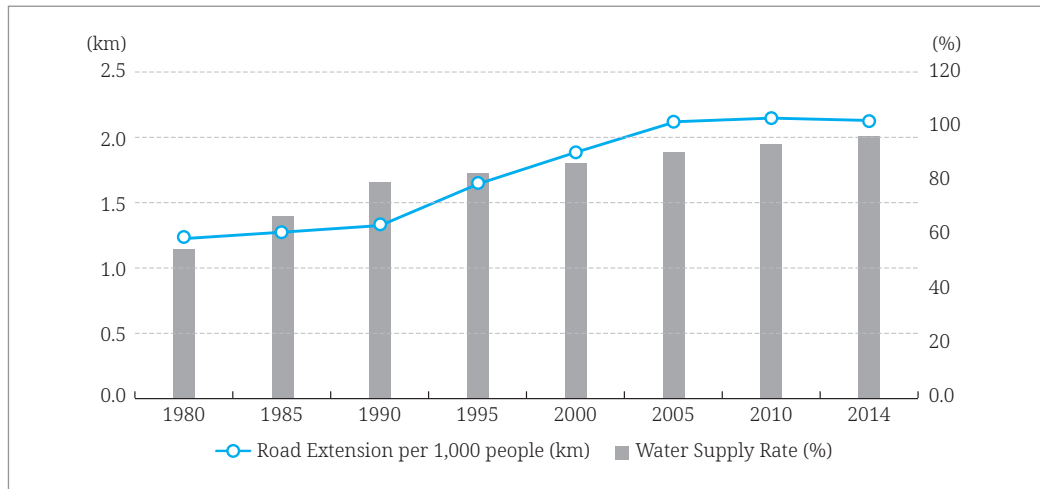


Source: Park, Sehoon et al. (2012).

Through the process of urbanization, investments in housing, roads, water supply and drainage, parks, cultural facilities, and other urban infrastructure increased city-dwellers' standards of living. Every year, the construction of almost half a million apartments is begun in Korea, and about half of these are built in the SMA, where the population is most concentrated. The percentage of the Korean population with running water reached 96 percent; the road extension per 1,000 people was 2.12 km²; and cultural facilities, such as museums and libraries, continued to be built, all contributing to the improvement of the residents' quality of life.

[Figure 1-15] Trend in Access to Water Supply and Road Extension

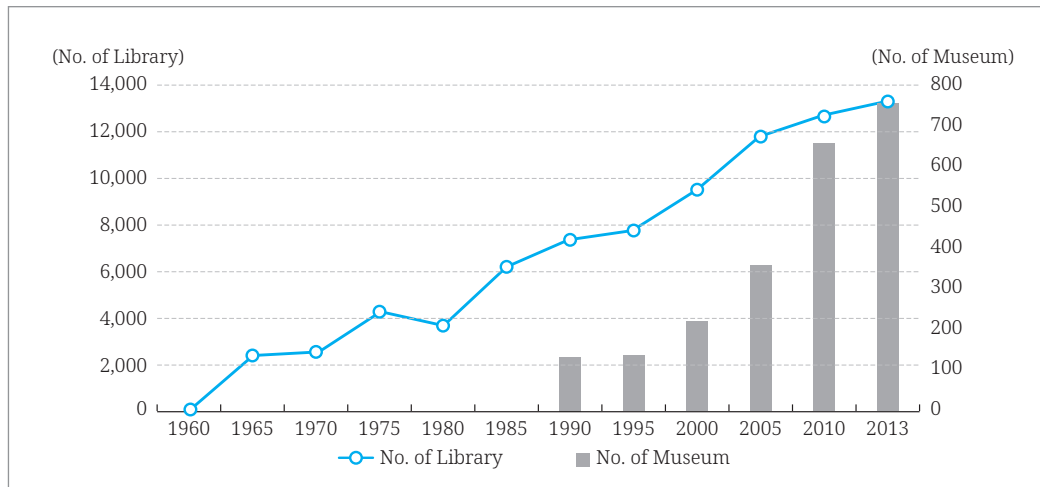
(Unit: km, %)



Source: Statistics Korea (2019); Kim Taehwan et al. (2015).

[Figure 1-16] Trend in the Number of Museums and Libraries

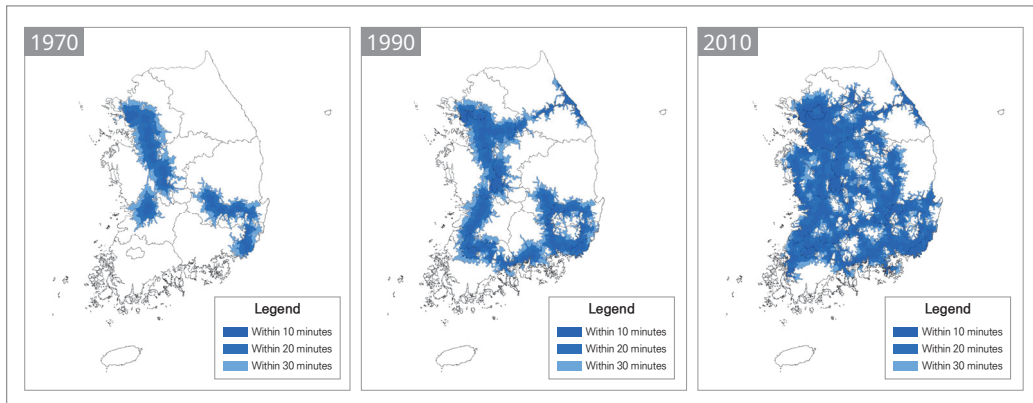
(Unit: No. of Library, No. of Museum)



Source: Statistics Korea (2019); Kim Taehwan et al. (2015).

The continuous expansion of the highway network that connects cities to one another has greatly improved accessibility between metropolises. Areas (30 km²) accessible within 30 minutes via highway increased 3.8 times, from 14.7 percent in 1970 to 55.4 percent in 2010.

[Figure 1-17] Improved Accessibility Across Korean Territory



Source: Lee, Yong Woo (2014); Kim, Taehwan et al. (2015).

3.2. Urban Problems and Policy Responses by Time Period

Major urban policies in Korea have been provided as a basis for resolving urban conditions and problems by time period.

3.2.1. Laying the Foundations for Growth: 1960s to 1970s

In the 1960s and 1970s, economic growth was a top priority, and Korean urban policy was used as a means to realize such growth. Post-war reconstruction and restoration projects were carried out in the '50s, but full-fledged urban development began in the 1960s as economic growth took off. In order to support this economic growth, the construction of urban infrastructure, such as industrial complexes, manufacturing cities, and highways, emerged as key tasks in urban policy. In the 1970s, rapid urbanization led to the swift growth of Seoul's population, and the problem of high population density emerged as a national issue. Seoul's population had more than doubled from 2.45 million in 1960 to 5.43 million by 1970; as a result, the Korean government pursued policies focused on deterring population concentration in Seoul, such as population distribution plans, development restriction zones, and strengthened land use plans.

To address these urban problems, the government implemented the Urban Planning Act in 1962. The historical significance of this law is that the Decree on Urban Planning in Joseon, which had been established under Japan's colonial rule (1910–1945), was finally amended in line with Korea's reality. With the enactment of the Urban Planning Act, urban construction initiatives received a boost and urban policies were established to focus on leading or supporting economic development.

3.2.2. Quantitative Expansion and Risk Management: 1980s to 1990s

The 1980s and 1990s were marked by a deepening social crisis, the result of rapid industrialization and urbanization, as well as new social demands in the environmental and welfare sectors over the development of urban areas. The housing issue was intensified by the increase in poorly built houses in large cities, especially in Seoul, and was only amplified by the social conflict surrounding their demolition and the development of such areas. The demand for a better quality of life increased with the rise of income levels, the development of popular culture, and the growth of civil society. Meanwhile, new values aside from economic growth, such as environment, culture, and welfare also emerged.

The urbanization rate jumped from 56.7 percent in 1980 to 79.6 percent in 2000, but its pace began to slow in the 1990s as Korea joined the ranks of highly urbanized societies. In particular, the growth of the SMA was remarkable, with the area's population surging from 13.29 million in 1980 to 21.35 million in 2000. The percentage of the population living in the SMA also rose from 35.5 percent to 46.3 percent in the same period. Meanwhile, since the mid-90s, signs pointing to the limits of urbanization—the slowing pace of urbanization, the commencement of declining populations in major Korean cities, and the reduced population inflow into the SMA—had become increasingly prominent. While the population inflow into the cities relatively slowed, more and more areas were annexed into city limits or promoted to the city level, which led to continuous increase of urban populations. While urbanization increased following the quantitative expansion of large cities and vehicle ownership grew with increasing income levels, repairs and expansion of road facilities were delayed, resulting in the deterioration of transportation conditions. Additionally, though there was an increasing demand for pleasant environment, leisure and cultural facilities, and a better quality of life, the urban environment and public facilities in the old cities did not undergo remarkable improvements. In the 1990s, the resurgence of the autonomous local government system, rapid progress of conditions for opening up to foreign countries, and intensifying intercity conflicts raised issues with the central government-led policies, government-initiated policies, and regulation-centered policies. With the increased awareness in environmental problems and surging interest in a better quality of life, circumstances became complex as people began to reflect on the consequences of prioritizing development over everything else while also demanding new regulations for sustainable development.

As such, during this period, urban renewal began to take place, focusing on the development of areas with decrepit housing occupied by the low-income class began to take place. The 1990s were a time when the New Town Initiative progressed in earnest to stabilize

housing prices and resolve the housing shortage situation for the working class. Problems surrounding damages inflicted on the natural environment due to the development of new towns within the SMA became highlighted as social issues, and interest and consideration of the natural environment increased in the process of urban development.

3.2.3. Pursuit of a Better Quality of Life and Balanced Development: 2000s to Present

The urbanization rate, which had increased by 20 percent every decade since the 1960s, began to slow down to about 2 percent in the 2000s, and Korea entered the maturation period of urbanization. Due to the aging and draining of the rural population, the population capable of giving up farming and moving to urban areas decreased, and urbanization reached its limits. The reckless growth that mainly took place in the SMA in the late 1990s resulted in over-development, and the Korean government combined the Urban Planning Act with the National Land Utilization and Management Act to implement the National Land Planning and Utilization Act in order to systematically prevent the problem of reckless development and integrate the management of urban and rural areas. The problems of population decline in small- and mid-sized cities and the deterioration of old city centers emerged as key issues in urban policy. As globalization progressed, the gap between the SMA and the areas outside it increased. One of the most important policies that had a significant impact on changing the Korean paradigm of urban policy in the 2000s was the Roh Moo-hyun administration's balanced national development policy. The Roh administration (February 2003- February 2008) found that the unbalanced, SMA-centered development strategy led to the chronic issues of overpopulation of the capital area, weakening of the development potential in areas outside of the SMA, and a drastic decline in national competitiveness and social integration. In order to resolve these problems, the Roh administration implemented five policies—innovation city policy, balanced national development policy and industrial city policy—as the core to realize balanced development. Among these policies, the “spatial policy” and “qualitative development policy” were the two that were directly related to the urban policy. The Roh administration aimed to resolve the overpopulation of the SMA and improve the quality both of space and of life to promote qualitative development. Strategies were implemented to relocate central administrative agencies and other public institutions to outside the SMA so as to revitalize the local economy and local industries, and simultaneously pursue balanced development and strengthen the national competitiveness. In terms of the content and the scope of this project, the Roh administration pursued a national land reform initiative that was more extensive than any other initiatives promoted by previous administrations. During this time, the construction of the administrative city, 10 innovation cities, and six enterprise cities was initiated.

The results of urban policies pursued by the Korean government over the past 60 years can be largely summarized in two parts. First, the policies accomplished the desired results by linking economic development with urbanization. In the 1960s and 1970s, the government pursued both economic development and urbanization to create a virtuous cycle. Both land and urban development were at the center of the economic development policy, and the national land development was integrated into the First Five-Year Economic Development Plan (1962–66). In addition to fostering industries, the government also constructed supporting social infrastructure and manufacturing cities to effectively bolster the country's economic growth. As the initial economic development was successful, Korea secured the power to continue to expand urban infrastructure. Korea was able to expand its urban infrastructure based on the profits gained from development, without having to use public financial resources. Since economic development gained a certain degree of driving force in the 1980s, the government focused its capacity on improving the quality of the urban environment. Second, the policies created a framework for policy planning and effective enforcement. The strategic, state-led policy establishment allowed for the efficient allocation of limited resources, contributing to Korea's successful urbanization. The Korean government continued to establish development and maintenance plans, represented by the comprehensive land development plan, and effectively allocated resources. At the onset of industrialization, both an effective bureaucratic system and the strong administrative capabilities of the Korean government amplified the effectiveness of its urban policies. Successful urban policies, such as the construction of industrial complexes, manufacturing cities, and new towns in the SMA, as well as the introduction of development restriction zones, were generally based on strong administrative functions. The government also effectively addressed the urban problems that emerged in each period of urbanization while effectively and efficiently responding to urban policy tasks for each period of urbanization—from the creation of an industrial basis to the expansion of living infrastructure and the improvement of innovative capabilities.

The following table summarizes the purpose of urban policies in Korea, as well as major urban planning and policy issues.

<Table 1-7> Overview of Korea's Urban Policies by Time Period

Category	1960s–1970s	1980s–1990s	2000s and Later
Urbanization (%)	20–50	50–80	More than 80
Purpose	<ul style="list-style-type: none"> To establish a basis for economic growth 	<ul style="list-style-type: none"> To promote both growth and distribution 	<ul style="list-style-type: none"> To promote balanced development and acknowledge diversity
Major urban planning and legal framework	<ul style="list-style-type: none"> Implemented the Urban Planning Act in 1962. Separated and implemented the Land Compartmentalization and Rearrangement Projects Act from the Urban Planning Act in 1966. Revised the Urban Planning Act in 1971 to introduce the Development Restriction Zone system Implemented the Industrial District Development Promotion Act in 1973. 	<ul style="list-style-type: none"> Introduced the Urban Master Plan and the Urban Design System in 1981. Implemented the Seoul Metropolitan Area Readjustment Planning Act in 1982. Introduced the Metropolitan Development Plan and detailed planning system in 1991. 	<ul style="list-style-type: none"> Implemented the Act on Special Measures for Designation and Management of Development Restriction Zones in 2000. Implemented the National Land Planning and Utilization Act in 2002.
Major policy issues	<ul style="list-style-type: none"> Rural-urban migration Infrastructure provision for economic development Squatter areas formed 	<ul style="list-style-type: none"> Rapid population concentration in Seoul Metropolitan Area (SMA) Housing shortage Urban sprawl and environment problems 	<ul style="list-style-type: none"> Social conflict over uneven territorial development Low economic growth, population decline and aging
Key policy responses	<ul style="list-style-type: none"> Greenbelt policy Industrial complexes and industrial towns 	<ul style="list-style-type: none"> New town developments for housing construction Public housing policies installed Tightening land development regulation with introduction of national land use act 	<ul style="list-style-type: none"> National balanced development policies Land use deregulations for economic revitalization
Urban development policies	<ul style="list-style-type: none"> Residential developments in Seoul for city's expansion Industrial town developments nation wide Eviction and relocation for squatter areas 	<ul style="list-style-type: none"> 5 new town developments in SMA Diverse redevelopment tools including 'Joint redevelopment project' 	<ul style="list-style-type: none"> New Administrative city, Innovation cities, and free economic zones Community planning movements National urban regeneration policy

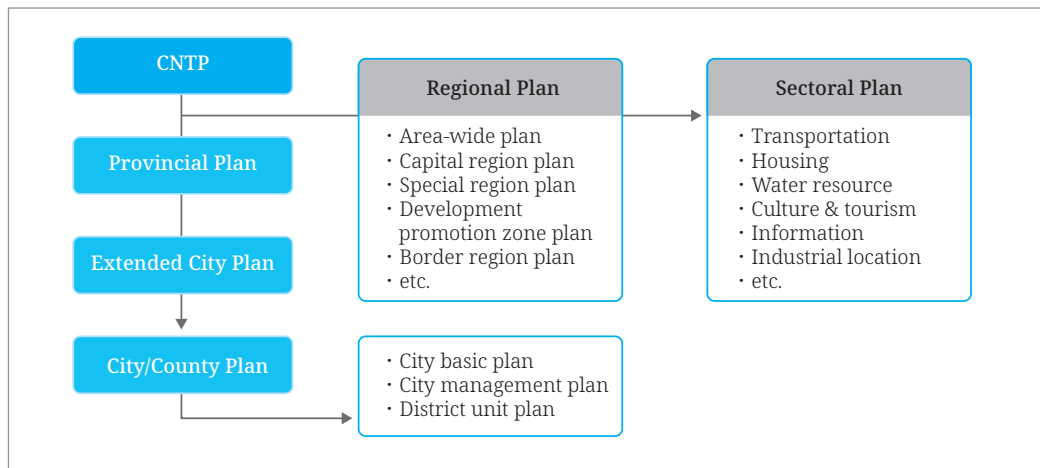
Source: Park, Jae Hong and Song, Ki Sup (2011).

3.3. Analysis of Major Urban Policy Examples

3.3.1. Comprehensive National Territorial Plan

Korea's national territorial and urban city planning system has a structure ranging from the comprehensive national territorial plan, the highest-level national planning for national land to urban(provincial) management planning, the action plan for basic urban plan. The provincial plan as a sub-plan of the comprehensive national territorial plan is the long-term development plan for areas under the jurisdiction of provinces. Extended city plan is the long-term development plan for two or more administrative districts. On the other hand, City basic plan is the comprehensive long-term development plan for each cities and city management plan is the action plan for city basic plan.

[Figure 1-18] Urban Planning System in Korea



Source: Park, Sehoon (2017).

In Korea, national land development and planning in the modern sense began in the 1960s. The Comprehensive National Territorial Plan was established in the 1970s and contributed to the construction of various social infrastructure necessary for the national development and the improvement of settlement conditions in Korea. The Revised Fourth Comprehensive National Territorial Plan (2011–2020), which is a revision of the Fourth Comprehensive National Territorial Plan (2000–2020), is currently in effect. The First Comprehensive National Territorial Development Plan (1972–1981) focused on the development of hubs, centered on the SMA and the industrial belt along the southeastern coast, for rapid economic growth. The Second Comprehensive National Territorial Development Plan (1982–1991) focused on deterring high concentration in the SMA and development of conurbations, aiming for people's settlement outside of the

SMA and improvement of their daily lives. The Third Comprehensive National Territorial Development Plan (1992–2001) emphasized the fostering of the new industrial district along the western coast and the distributed development of the national territory with the aim of harmony between development and conservation, as well as improved welfare. Then, in order to take the lead to address the changes in the new conditions and developments in the 21st century, the Korean government terminated the Third Comprehensive National Territorial Development Plan early and changed the name of the plan to the Comprehensive National Territorial Plan. As such, the Fourth Comprehensive National Territorial Plan was established and implemented in 2000, and the plan was extended to 20 years, from 2000 to 2020. The Fourth Comprehensive National Territorial Plan aimed to resolve the problems accumulated during the national territory’s developmental process, such as the imbalance of development and environmental damage, and also to propose a new master plan for the development of the national territory for the Korean Peninsula to join the ranks of advanced countries in the world. Therefore, the plan was based on the basic idea of the “realization of integrated national territory in the 21st century” through the implementation of the plan and the integration of economic and social spaces. Korea’s Comprehensive National Territorial Plan has changed with several characteristics since the country’s liberation from Japanese rule. The following table shows the periodic characteristics from the perspective of national territorial planning.

<Table 1-8> Changes in the National Territorial Plan by Time Period

Time Period	Periodic Characteristic	Periodic Circumstances	Progress of the National Territorial Development	Future Aim
1950s	Confusion period	<ul style="list-style-type: none"> • Ravaged national territory due to liberation and the Korean War • Beginning of regional disparities 	<ul style="list-style-type: none"> • Discussed a national territorial development policy in the late 1950s 	
1960s	Germination period	<ul style="list-style-type: none"> • Continued instability of the nation from the 1950s 	<ul style="list-style-type: none"> • Implemented the Act on Comprehensive Plans for Construction in the National Territory • Attempted to design the First and Second Five-Year Economic Development plans 	<ul style="list-style-type: none"> • Modernization of the industrial structure
1970s	Revival period	<ul style="list-style-type: none"> • Increased efficiency due to the change in the industrial structure pursued in the 1960s, but continued social imbalance 	<ul style="list-style-type: none"> • Promoted the First Comprehensive National Territorial Development Plan • Implemented the Third and Fourth Five-Year Economic Development Plans 	<ul style="list-style-type: none"> • Efficient utilization of the national territory • Environmental conservation • Deterrence of population concentration in large cities

<Table 1-8> Continued

Time Period	Periodic Characteristic	Periodic Circumstances	Progress of the National Territorial Development	Future Aim
1980s	Maturation period	<ul style="list-style-type: none"> • Achieved rapid growth • Concentrated population in large cities • Reckless development and intensified speculative investment in real estate 	<ul style="list-style-type: none"> • Implemented the Second Comprehensive National Territorial Development Plan • Implemented the Fifth and Sixth Five-Year Economic Development Plans 	<ul style="list-style-type: none"> • Entire extension of the development potential • Dispersion of population outside of the SMA • Conservation of the natural environment
1990s	Stability period	<ul style="list-style-type: none"> • Intensified imbalance in the development of the national territory • Increased land value • Proliferation of environmental pollution • Insufficient infrastructure 	<ul style="list-style-type: none"> • Promoted the Third Comprehensive National Territorial Development Plan • Implemented the Seventh Five-Year Economic Development Plans 	<ul style="list-style-type: none"> • Deterrence of overpopulation in the SMA • Elimination of regional disparities • Environmental conservation • Advancement of the national competitiveness • Expansion of the national infrastructure
2000s	Overall integration period	<ul style="list-style-type: none"> • Age of diversity • Advent of the age of advanced technology and informatization of knowledge • Era of global competitiveness • Beginning of full-fledged localization • Global environmental problems; energy and resource crises 	<ul style="list-style-type: none"> • Promoted the Fourth Comprehensive National Territorial Plan (including the revised plan) • Promoted the First Five-Year Plan for Balanced National Development • Promoted the Five-Year Plan for Regional Development • Promoted the development of the metropolitan economic zones and super-metropolitan zones • Promoted low-carbon green growth 	<ul style="list-style-type: none"> • Active response to globalization and the growth of Northeast Asia • Localization and informatization of knowledge • Promotion of inter-Korean economic cooperation and integration of the national territory • Sustainability of the national territory

Source: Ministry of Land, Infrastructure and Transport (2018).

The content of each time period's Comprehensive National Territorial Plan reflects the conditions and necessities of the time period in which the plans were established. The following table provides a summary of the main aspects of the plans for each time period.

<Table 1-9> Changes in the Comprehensive National Territorial Plan

Category	The First National Territorial Plan (1972–1981)	The Second National Territorial Plan (1982–1991)	The Third National Territorial Plan (1992–1999)	The Fourth National Territorial Plan (2000–2020)
GNP per capita (USD)	\$ 319 (1972)	\$ 1,824 (1982)	\$ 7,007 (1992)	\$ 10,841 (2000, GNI)
Background	<ul style="list-style-type: none"> • Increased national power • Promotion of industrialization 	<ul style="list-style-type: none"> • Improvement of national living environment • Alleviation of overpopulation in the SMA 	<ul style="list-style-type: none"> • Weakened competitiveness due to the lack of social overhead capital (infrastructure) • Voluntary regional development 	<ul style="list-style-type: none"> • Active response to the changes in conditions in the 21st century • Need for a new vision and strategies for the national territory to secure national prosperity and a better quality of life for the people
Basic aims	<ul style="list-style-type: none"> • Efficiency of the utilization and management of the national territory • Securing of additional social overhead capital • Development of the national territory and resources; nature conservation • Improvement of people's living environments 	<ul style="list-style-type: none"> • Inducement of the population to settle down outside of the SMA • Nationwide expansion of the development potential • Improvement of the national welfare level • Conservation of the natural environment in the national territory 	<ul style="list-style-type: none"> • Formation of the framework for balanced regional development • Construction of a system for productive and resource-saving utilization of the national territory • Improvement of welfare for the people and environmental conservation • Creation of a national territorial basis to prepare for the unification of South and North Korea 	<ul style="list-style-type: none"> • Balanced national territory for everyone • Green national territory in harmony with nature • Open national territory through globalization • Unified national territory through reconciliation
Development strategies and policies	<ul style="list-style-type: none"> • Establishment of a large-scale industrial basis • Organization of communication, transportation, water sources, and energy supply networks • Strengthening of local functions for the development of underdeveloped regions 	<ul style="list-style-type: none"> • Formation of poly-centric national territory and regional settlement zones • Deterrence and management of the growth of Seoul and Busan • Securing of the social overhead capital for transportation and communication to strengthen regional functions • Promotion of the development of underdeveloped regions 	<ul style="list-style-type: none"> • Fostering of regions outside of the SMA and focused deterrence of concentration of the SMA • Formation of new industrial zones and advancement of the industrial structure • Creation of a comprehensive high-speed exchange network • Increased investments in people's lives and environments • Strengthened implementation of the national territorial plan and organization of systems related to the utilization of the national territory 	<ul style="list-style-type: none"> • Formation of an open-type integrated national territorial axis • Advancement of regional competitiveness • Creation of a healthy and pleasant national territorial environment • Construction of high-speed transportation and information networks • Formation of a base for inter-Korean exchange and cooperation

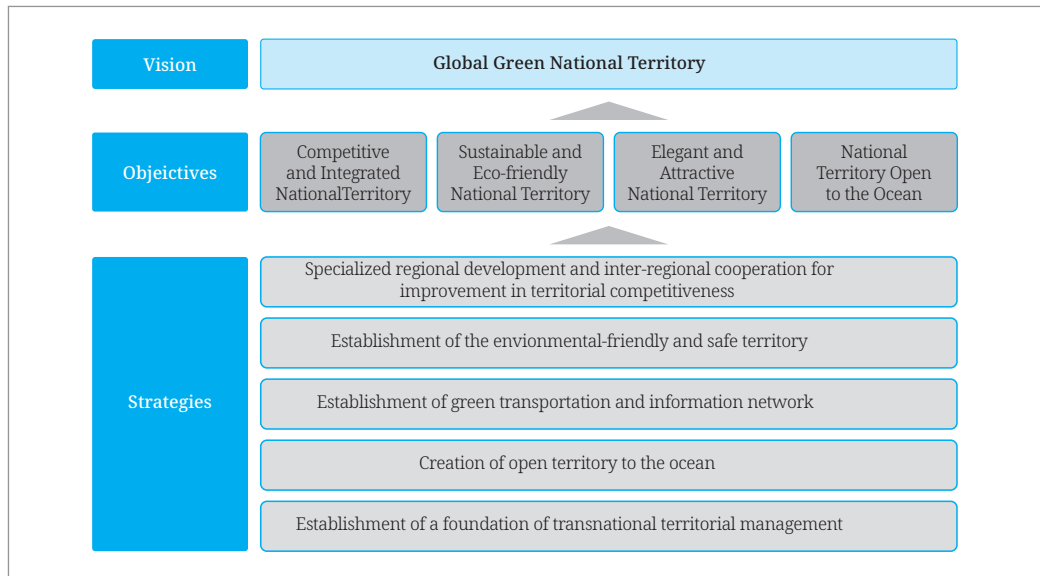
<Table 1-9> Continued

Category	The First National Territorial Plan (1972–1981)	The Second National Territorial Plan (1982–1991)	The Third National Territorial Plan (1992–1999)	The Fourth National Territorial Plan (2000–2020)
			<ul style="list-style-type: none"> Management of the development of inter-Korean exchange zones 	
Characteristics and problems	<ul style="list-style-type: none"> Hub-based development methods Seoul- and Busan-centered development and polarization 	<ul style="list-style-type: none"> Promotion of balanced development of the national territory by deterring the growth of Seoul and Busan and fostering other growth hub cities Lack of specific means of implementation, resulting in continued regional disparities; revised plan in 1987 due to the hosting of the Olympic Games 	<ul style="list-style-type: none"> Insufficient consideration of conditions in globalization, opening of Korea, and localization Change in the basic national territorial development conditions due to the founding of the World Trade Organization, etc. 	<ul style="list-style-type: none"> Development of open-type, pi (π)-shaped territorial axes along the coast and 10 metropolitan zones to promote balanced regional development Strategies to create harmony between development and environment for active conservation of the national territorial environment

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Source: Ministry of Land, Infrastructure and Transport (2018).

[Figure 1-19] Basic Framework of the Revised Comprehensive National Territorial Plan



Source: Ministry of Land, Infrastructure and Transport (2011).

3.3.2. New Town Development

In Korea, the new town in the modern sense began in the 1960s for providing residential areas for workers in industrial complex in 1960s and 70s. As in the case of Ulsan, most of the new towns developed after that were mostly developed as the adjacent towns of the industrial complex rather than being developed primarily for population distribution and housing supply. As the heavy chemical industry stagnated and the economic situation deteriorated in the early 1980s, nationwide development of new towns became worse. However, the situation in the metropolitan area was different. The government has implemented various policies to distribute the population and functions of the Seoul metropolitan area to non-metropolitan areas, but it has not been effective. The population of Seoul has been steadily increasing by the mid and late 1980s, the housing crisis has become serious. It began to actively develop new cities. As the large-scale land to be developed in the inner city disappears, the Korean government began to supply housing through the construction of new towns. The New Town Initiative began with the goal of constructing two million housing units, and the government revised related laws and systems to achieve this goal. The result was that within a short period of seven or eight years, five new cities were created. Starting in 1988, construction on Bundang, Ilsan, Pyeongchon, Sanbon, and Jungdong began. Development plans for Pyeongchon and Sanbon New Town were announced in September 1988, followed by plans for Bundang, Ilsan, and Jungdong in April 1989. The new housing units in Bundang New Town were opened up for sale in November 1989, and new residents began to move in in September 1991. The five new town development projects were completed in 1996.

<Table 1-10> Overview of the First Round of New Towns in the Seoul Metropolitan Area

New Towns	Total	Bundang	Ilsan	Pyeongchon	Jungdong	Sanbon
Administrative District	-	Seongnam	Goyang	Anyang	Bucheon	Gunpo
Area (1,000 m ²)	50,136	19,639	15,736	5,106	5,452	4,203
Population to be Accommodated (1,000 people)	1168	390	276	168	166	168
Housing Construction (1,000 units)	292	97.6	69	42	41.4	42
Project Period	-	1989–1996	1990–1995	1989–1995	1990–1996	1989–1995
Implementing Agency	-	Korea Land Corporation	Korea Land Corporation	Korea Land Corporation	Korea Land Corporation, City of Bucheon, and Korea National Housing Corporation	Korea National Housing Corporation

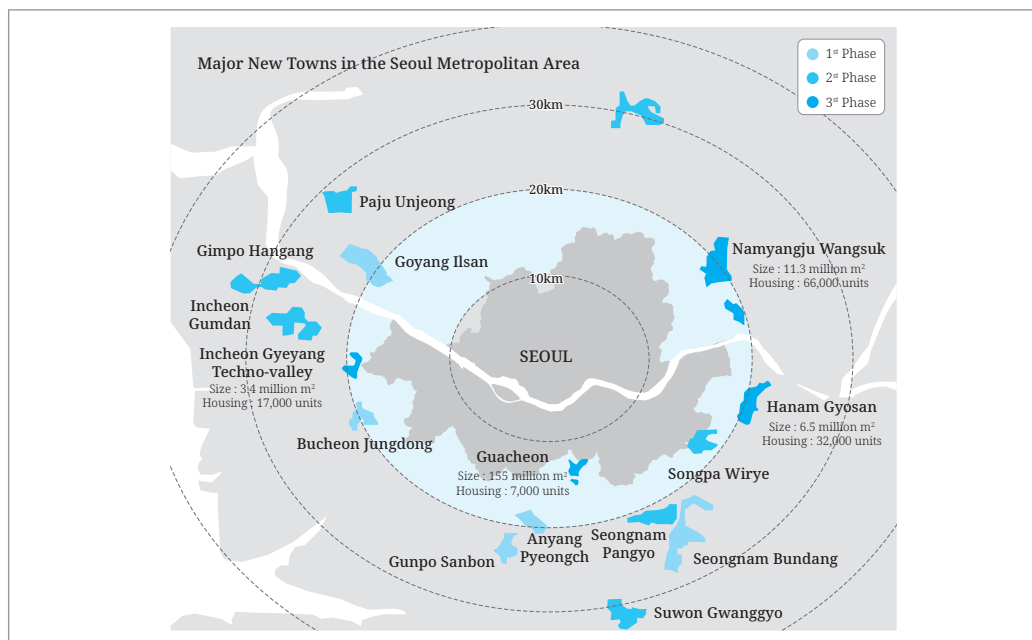
Source: Ministry of Land, Infrastructure and Transport (2019); Kim Taehwan et al. (2015).

In December 1980, the Korean government implemented the Housing Site Development Promotion Act and adopted the public development method to achieve the quantitative goal for housing supply. Since the government led the development directly, it was possible to pursue the development project systematically and within a short period of time. The government acquired large plots of potential housing sites, developed these affordable housing sites, and supplied housing to the people. At the time, the Korea Land Corporation and the Korea National Housing Corporation were in charge of establishing the plans for new towns and undertook the purchase of land, as well as the creation of housing sites and sale of housing units, while the private sector participated in the project as constructors. The financial sources for the development project were acquired from the profits generated through housing site development, and the corporations sold the land to private construction companies at a high price after the housing sites were created. The Korean government reinvested the development profits into the construction of public areas, such as parks and metropolitan infrastructure. In 1981, the National Housing Fund was created to secure funding for the construction of housing sites and housing units.

The first round of new towns in the SMA stabilized housing and real estate prices through the large-scale supply of housing. Yet many side effects and problems arose since the large-scale project was completed within a very short period of time. Positive effects of the housing project included: 1) the stabilization of housing prices through the large-scale supply of housing, 2) the dispersion of Seoul's population concentrated to the city's outskirts as a spatial policy, and 3) the creation of a smooth flow of excess liquid funds. As for the negative effects, there were concerns that 1) the expansion of the SMA's residential area caused population concentration in that same area, 2) the construction of large-scale new towns led to the imbalance of labor and construction material supply, resulting in the rise of labor and material costs, as well as overheating of the economy.

Despite these issues, the need for new cities in the SMA led to the construction of the second round of new towns in nine locations—Pangyo, Wirye, Dongtan, Gimpo, Gwanggyo, Paju, Yangju, Geomdan, and Godeok—in 2003. In 2018, the plan for the construction of four new towns in Namyangju, Hanam, and Gyeyak-gu in Incheon, and Gwacheon was announced. Unlike the 1st and 2nd new towns, the 3rd new town has a special feature that it focuses on attracting companies and expanding transportation networks by focusing on ensuring self-sufficiency from the development planning stage.

[Figure 1-20] Major New Towns in the SMA



Source: Ministry of Land, Infrastructure and Transport (2019).

3.3.3. Balanced National Development Policy

In 2003, the Roh Moo-hyun administration promoted three policies for balanced national development: the development of strategic bases for balanced growth, innovative regional development, and strengthening of local governments' capacity. The balanced development strategy was central to the national territory and urban policies, which led to the transfer of various institutions and businesses in the SMA to the area's outside through a series of regional urban development policies, such as the administrative city, innovation city, and enterprise city projects.

<Table 1-11> The Roh Moo-hyun Administration's Major Urban Development Projects (2003)

Category	Area (km ²)	Population (1,000 people)	Count
Administrative city	73.1	500	1
Enterprise city	117.9	154	6
Innovation city	44.9	272	10
Free economic zone	434.4	-	6

Note: "Urban population" refers to the number of people residing within urban planning zones for the years up to and including 2000, as well as the number of people residing within urban areas after 2000.
Source: Website for each initiative; Kim Taehwan et al. (2015).

The balanced national development policy was effective in revitalizing the local economy by transferring the central function of the SMA to regions outside of it; yet it also caused regional conflicts over the allocation of development projects for an administrative city, enterprise cities, and innovation cities to cities and provinces, as well as conflicts between the SMA and non-SMA. Many of the new towns that are currently under development are also facing difficulties due to a lack of demand.

A. Relocation of Public Institutions to Outside of the SMA and the Construction of Innovation Cities

Korea is tasked with securing national competitiveness by vitalizing underdeveloped regional economies through specialized development of regions outside of the SMA and by alleviating the concentration of the SMA that resulted from the previous one-sided imbalanced development strategy. One of the measures the Korean government has pursued since 2005 is a regional development policy that focuses on the relocation of public institutions in the SMA to the area's outside and the construction of 10 innovation cities in 11 metropolitan cities and provinces.

The government planned to relocate public institutions to 11 metropolitan cities and provinces, with the exception of the SMA and Daejeon. The selection of cities and provinces for the relocation was based on: 1) the principle of fairness in consideration of the level of development of the cities or provinces, 2) the comprehensive consideration of each institution's characteristics and of regional conditions on the basis of efficiency, and 3) the consideration of the cities' or provinces' choice of institutions they wanted to attract, and the institutions' choice of locations (cities or provinces), within the extent of possibility.

In order to grow innovation cities into regional hubs by attracting public institutions and related companies, universities, and research institutes and to promote sustainable regional development by strengthening national competitiveness and creating jobs, the Korean government has pursued the creation of industry-university-research institute clusters in innovation cities since 2007. With the completion of the construction of the infrastructure for innovation cities and the completion of office buildings for the relocation of public institutions, the government plans to support the fostering of self-sufficient cities and the vitalization of investments in industry-university-research institute clusters in innovation cities.

**<Table 1-12> Results of the Relocation of Public Institutions by City or Province
(Total 154 Institutions)**

Region	Institutions to be Relocated	Region	Institutions to be Relocated
Busan (13)	13 institutions, including Korea Housing and Urban Guarantee Corporation, Korea Asset Management Corporation, and Korean Film Council	Daegu (11)	11 institutions, including Korea Gas Corporation, Korea Evaluation Institute of Industrial Technology, and the National Research Foundation
Gwangju/Jeollanam-do (16)	16 institutions, including Korea Electric Power Corporation, Korea Plant Service and Engineering, and Korea Power Exchange	Ulsan (9)	9 institutions, including Korea National Oil Corporation, Human Resources Development Service of Korea, and the National Disaster Management Research Institute
Gangwon-do (12)	12 institutions, including Korea Resources Corporation, National Health Insurance Service, and Korea Tourism Organization	Chungcheongbuk-do (11)	11 institutions, including Korea Information Society Development Institute, Korea Institute of S&T Evaluation and Planning, and the Korean Educational Development Institute
Jeollabuk-do (12)	12 institutions, including the Rural Development Administration, Korea Food Research Institute, and the National Pension Service	Gyeong sang nam-do (11)	11 institutions, including the Korea Land and Housing Corporation, Small and Medium Business Corporation, and the Defense Agency for Technology and Quality
Gyeong sangbuk-do (12)	12 institutions, including Korea Expressway Corporation, KEPCO E&C, and the National Agricultural Products Quality Management Service	Individual relocation (19)	19 institutions, including the National Defense University, Korean National Police University, and the Korean Police Investigation Academy
Jeju-do (8)	8 institutions, including the Korea Foundation, Training Institute of Land Infrastructure and Transport, and the Government Employees Pension Service	Sejong (20)	20 institutions, including the Korea Development Institute and the Korea Legislation Research Institute

Note: Since the announcement of the relocation of public institutions to cities and provinces outside of the SMA (June 24, 2005), some of the institutions have been abolished or integrated through the Measures for the Advancement of Public Institutions (August 2008), their relocation areas have been changed, and the number of institutions to be relocated has been confirmed to be 154.

Source: Ministry of Land, Infrastructure and Transport Council for the Promotion of the Relocation of Public Agencies.

<Table 1-13> Development Direction by Innovation City

Category	Regional Development Strategy	Development Direction
Busan	The center of maritime affairs, fisheries, films, and finance	The maritime capital of the Northeast Asian era of the 21st century
Daegu	The center of education and academic industry, as well as industrial clusters in the southeast	Knowledge creation innocity Brain City
Gwangju / Jeollanam-do	Unified and shining advanced industry cluster	Renewable energy and agro-bioindustry-centered city Green-Energypia
Ulsan	The mecca of eco-friendly and advanced energy	Landscape-centered Energypolis
Gangwon-do	The capital city of the life and health industry	Vibrant city of health, life and tourism
Chungcheongbuk-do	Technopolis for IT and BT industries	Education and cultural innovalley

<Table 1-13> Continued

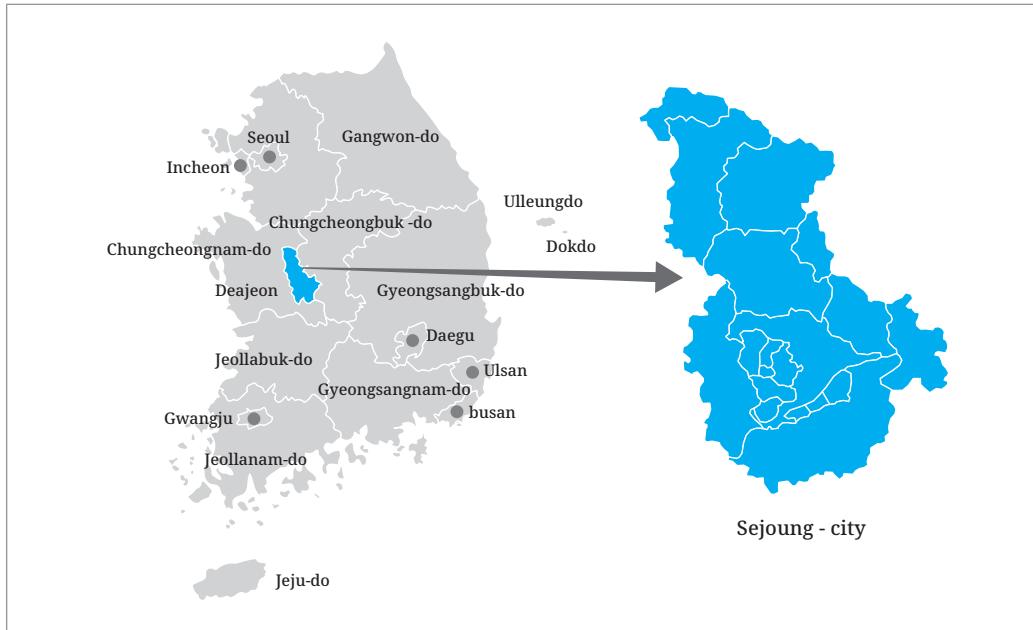
Category	Regional Development Strategy	Development Direction
Jeollabuk-do	The center of agro-life industry that links tradition and innovation	Agro-life hub, Agricon City
Gyeongsangbuk-do	Advanced science, technology, and transportation hub	Dream-Valley in Gyeongsangbuk-do with KTX and waterways
Gyeongsangnam-do	Central hub of the industrial belt along the southern coast	Inno Hub City Industrial support base, leading city in advanced housing
Jeju-do	City of international exchange, education, and training	International exchange and training polis

Source: Ministry of Land, Infrastructure and Transport Council for the Promotion of the Relocation of Public Agencies.

B. Construction of the Sejong Special Autonomous City (Administrative City)

In 2003, construction of the Sejong Special Autonomous City as an administrative city began in connection with the innovation city project, which was established to resolve the high-density problem in Seoul and realize the balanced development of the national territory. The nine major ministries (bu), two minor ministries (cheo) and two agencies (cheong), which had previously been located in Seoul and Gwacheon, were all relocated to the Government Complex Sejong, and Sejong—named after the Joseon Dynasty’s King Sejong and meaning the “best in the world”—took off as a special autonomous city in July 2012. At the time of its founding, Sejong had a population of 115,000, which increased to 288,790 as of 2018 in terms of registered residents. Private institutions began to relocate to Sejong in 2010, and public institutions followed in 2012; all relocation was completed in 2014.

[Figure 1-21] Location of the Sejong Special Autonomous City



Source: Sejong Special Autonomous City (2019). [www.sejong.go.kr].

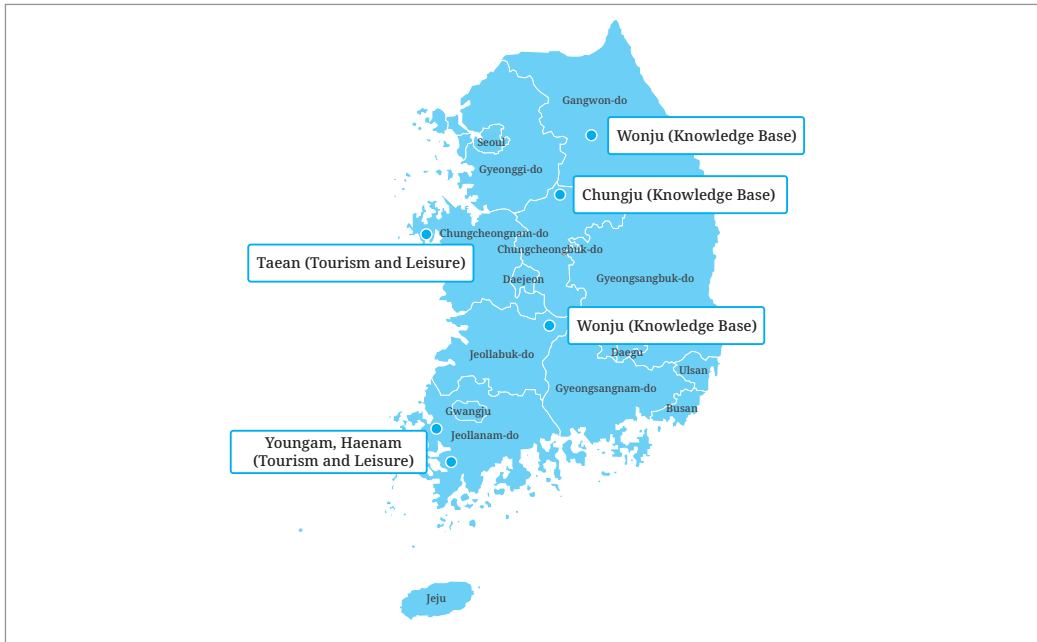
C. Enterprise Cities

Despite efforts to alleviate the concentration in the SMA for the past 40 years, it has continued to be plagued by high population and industry concentrations. As a result, over 60 percent of economic activities in industries and finance are concentrated in the SMA. Non-SMA regions suffer from population decline, and the reduced income and increased unemployment rates, the results of the industrial doughnut effect, have greatly weakened the foundation for regional independence.

The government began to promote the development of enterprise cities to encourage regional development by vitalizing regional economies and expanding companies' domestic investment through urban development using private capital. Considering the location of industries and economic activities, enterprise cities' development is led by private companies. These enterprise cities are metropolises developed by companies to maximize efficiency and connection with related industries in terms of production and research and development (R&D), and, simultaneously, are self-sufficient in terms of housing, education, medical services, and other functions necessary to be settlements. Depending on their major functions, enterprise cities are divided into four types: industry and trade city, knowledge-based city, tourism and leisure city, and innovative base city. In order to prevent the contractors from focusing on real estate development instead of industrial investment,

they are obligated to use certain areas of the development site. The Korean government established legal basis for enterprise cities to increase local governments' interest in projects and promoted a pilot project to attract active investment from companies. When the government announced the plan for the pilot project in January 2005, eight cities and provinces applied for it and six finalists were selected through on-site investigation, evaluation, and deliberation of the Enterprise City Committee in August 2005. Currently, the development project for these pilot cities is underway.

[Figure 1-22] Areas for the Promotion of the Enterprise City Pilot Projects



Source: Ministry of Land, Infrastructure and Transport (2018).

Sejong City and Innovative City have been evaluated as contributing to the regional innovation by transferring the public institutions in the metropolitan area to the provinces. On the other hand, the effectiveness of policies is decreasing as the government departments are divided between Seoul and Sejong City, and the problems of the straw effect that the population flows out of the old inner city around the new cities also appeared. Therefore, the symbiosis between newly created cities and surrounding old cities are important challenges for future urban policies in Korea.

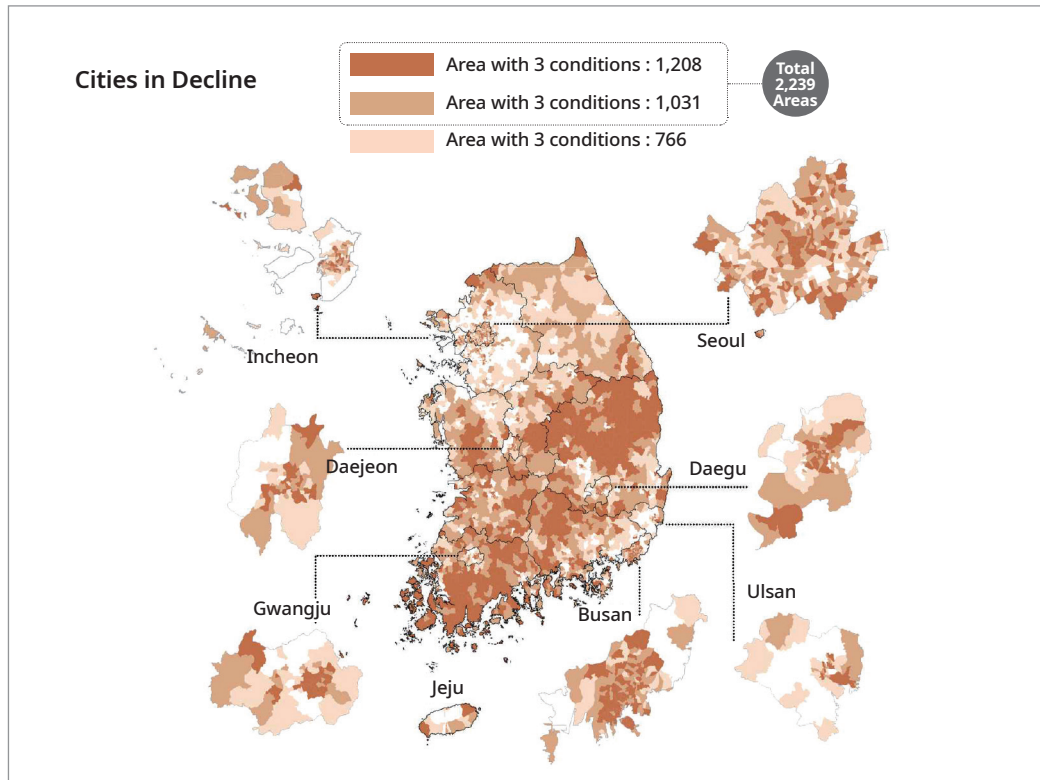
3.3.4. Urban Regeneration and Renewal

Since the 2000s, Korea's urbanization rate has exceeded 91 percent. Yet population growth has stagnated due to low fertility and aging, and the economic base for regions with traditional industries, such as manufacturing, has declined due to industries' relocation. This kind of economic and social decline is under way in many regional cities. An analysis of data from December 2015 revealed that 2,241 (65 percent) of 3,488 towns (eup), townships (myeon), and neighborhoods (dong) are showing signs of population decline, industrial stagnation, and aging of structures.

Despite the decline of regional cities, urban policies are still focused on developing large-scale housing sites and complexes in low-cost, undeveloped areas on cities' outskirts. There is also a lack of support from the central government or local governments for the cities in decline, other than urban renewal projects, such as the redevelopment of housing sites, that depend on private capital. Yet with the end of rapid economic growth and the stagnation of population growth over low birthrate and aging, the method of expanding urban areas through outskirts' development has reached its limits, and the importance of landscape, design, culture, leisure, and other factors related to a "better quality of life" and "intangible values" has begun to rise. As a result, the regeneration policy for old cities that have historical and cultural value has emerged as an alternative. Private-led urban renewal projects were also not promoted at all in small- and mid-sized cities outside of the SMA with low profitability, which showed that such projects were impossible to be applied throughout the country, and there was criticism that these projects were limited to superficial renewal.

This led to the need for a paradigmatic change of urban regeneration policy, from focusing on physical renewal to a more comprehensive renewal in terms of economy, society, and culture, of regions in decline. In 2012, members of the National Assembly filed motions for four legislations related to the vitalization of urban renewal—proposed by Yang Seung-jo, Park Joo-sun, Suh Byung-soo, and An Min-suk—and the Special Act on Promotion of and Support For Urban Regeneration was enacted in June 2013.

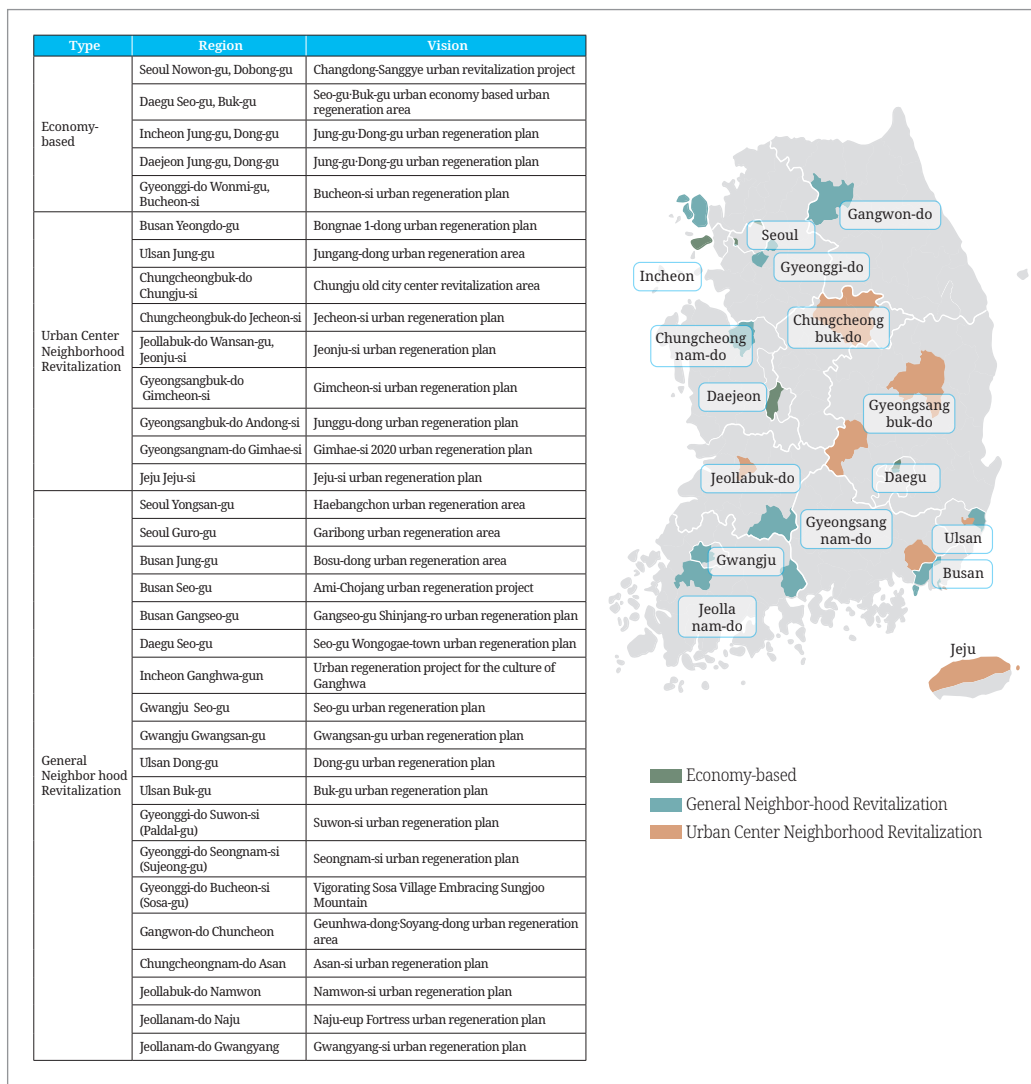
[Figure 1-23] Cities in Decline



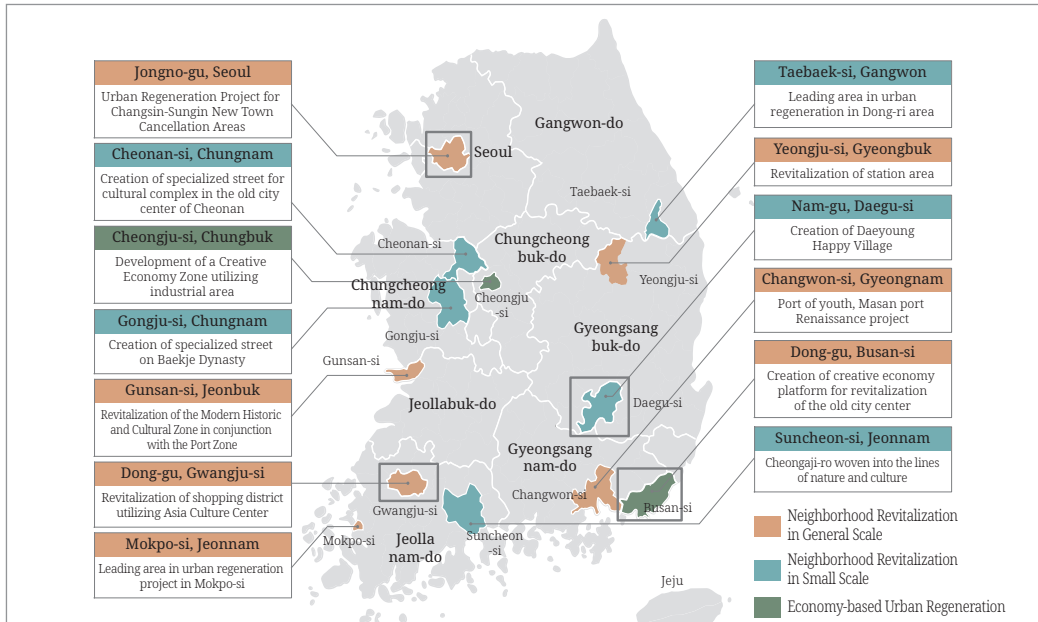
Source: Ministry of Land, Infrastructure and Transport (2014).

Understanding urban decline as a problem at the national level, the Korean government established urban regeneration policies to offer a clear definition of the state's role and created mechanisms to encourage local communities' participation in urban regeneration projects. The demand for new sites was met by the supply of sites in old town centers, and the urban regeneration projects' paradigm was changed to focus on maximizing appeal and conditions for settlements. The budget for urban regeneration-related projects in each government agency were also invested in declining regions and an additional budget for priming the pump was also provided. Additionally, the Korean government is making various efforts, such as using the housing fund to support urban regeneration projects and introducing various financial measures to foster social economic organizations into agents of urban regeneration.

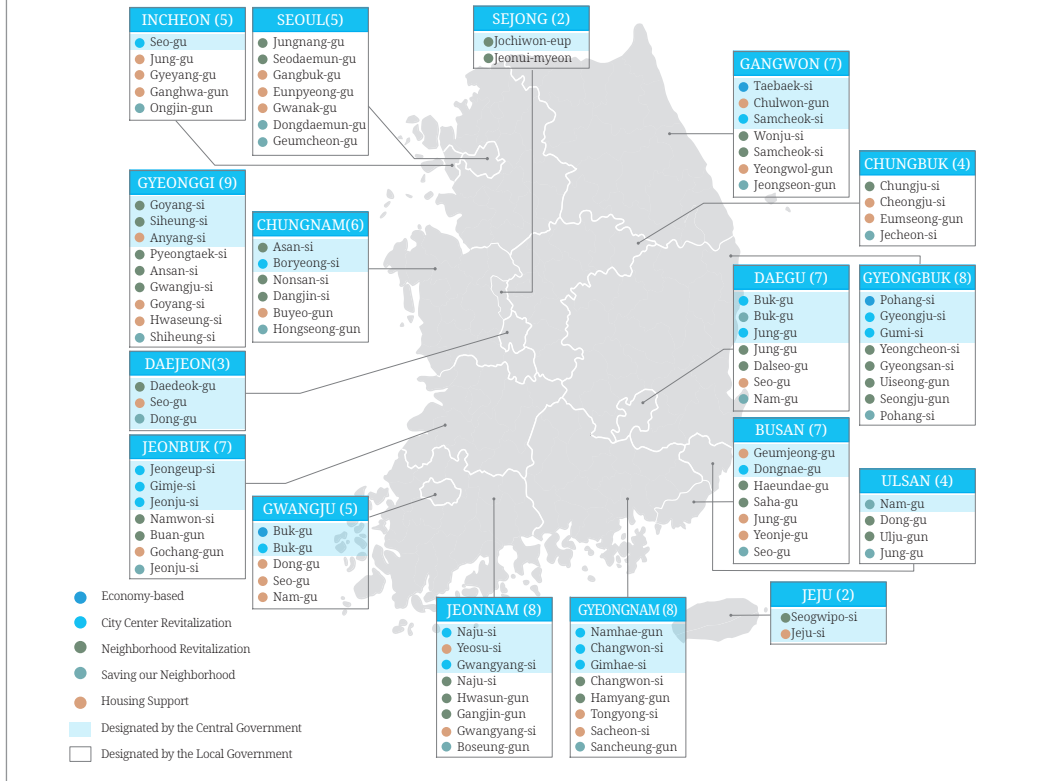
[Figure 1-24] Location of the Leading Cities in Urban Regeneration, Ordinary Cities, and New Deal Project Areas



[Figure 1-24] Continued



Urban Regeneration New Deal Project Area (2018)



Source: Urban Regeneration Information System [www.city.go.kr];
 Leading cities in urban regeneration (designated in 2014);
 Leading cities in urban regeneration (designated in 2016);
 Urban regeneration new deal project areas (designated in 2014).

In addition to urban regeneration policies that supply scarce infrastructures and improve the urban environment, a smart city policy is introduced that allows users to use real-time urban services by combining physical urban facilities and space with IoT(Internet of Things) and ICT. Since the mid 1990s, Korea has been making efforts to foster smart cities by establishing smart city policies. In order to settle the smart city successfully, It is necessary to build a system in which the city's technology, infrastructure, and new convergence services and businesses can operate smoothly.

4. Implications from the Korean Case

This paper examined the status of Korea's urbanization, the challenges it faced, and major urban policy examples. Through this process, it was possible to understand both the kind of urbanization process Korea underwent and the kind of urban policy policymakers sought to discover and apply to Korea. For Paraguay, which is undergoing rapid urbanization similar to that of Korea, the following implications can be derived for consideration when designing urban policies to resolve urban problems:

First, Korea's urban policy has evolved while effectively addressing urban problems over time. In the 1960s and 1970s, establishing a base for economic growth was the most important task, and the Korean government created an institutional foundation and established industrial bases. In the 1980s and 1990s, the demand for a better quality of life emerged, and the state supplied basic infrastructure, such as housing and roads. With the emergence of problems of low growth and population decline in the 2000s, the government made various efforts to respond to new urban policy challenges. As such, with development urban policies, it would be important for Paraguay to create a large framework to establish urban policies as the key to economic growth and prepare measures to resolve urban issues the country is currently facing.

Second, Korean cities have overcome the chronic urban poverty and slumization that surface in underdeveloped countries and achieved great environmental quality in a relatively short amount of time. In the initial stage of urbanization, there were concerns of overurbanization in which the urbanization progress occurred so rapidly that urban infrastructure could not catch up to its level. Yet Korea expanded infrastructure afterward to enhance the quality of people's lives (Jo Hye-in, 1978). The state established plans, created institutions, procured funding, and implemented projects, taking charge as the main agent of urban policy. Paraguay is also experiencing rapid urbanization similar to that of Korea and various problems resulting from rapid population concentration and the absolute lack

of urban infrastructure. After the Paraguayan government establishes adequate plans for its cities, it would be important to establish specific strategies for the procurement of funding, establishment of institutions, and implementation of projects.

Finally, the Korean government's response to the new challenges of the post-industrial era, such as low growth and aging, was insufficient, as its urban policy was formed and experienced during the economic development period. After 2000, the decentralization of urban policy was accelerated, and the state's role has declined in the areas of traditional urban policy. The existing approaches to new issues, such as urban regeneration and social integration, have also reached their limits. As a result, Korea continues to focus on a new urban policy paradigm. Unlike from the 1960s to 1980s, when Korea experienced rapid urbanization, the paradigm of urban policy has drastically changed due to globalization, development of information and communication technologies, and participation of the civil society. It is important that Paraguay refer to Korean urban policies that were carried out in the field of traditional urban planning, as well as Korea's urban policy experiences with different paradigms, such as urban regeneration, smart city, and inclusive city.

5. Policy Recommendation for Paraguay

Considering the current status and policy conditions of the urban sector in Paraguay, the following suggestions can be drawn from Korea's experience.

It is necessary to prepare a comprehensive plan for national, metropolitan, and urban development that can guarantee concrete implementation ability. In Korea, the development plan and the management plan represented by the national regional development plan were continuously established and it leads the systematic urban development. In developing Paraguayan urban policy in Paraguay, it is necessary to provide a plan for solving the present urban problems and a big framework for urban policy as the core of economic growth like the case of Korea.

The National Development Plans established by the Paraguayan government now provide the entire direction of urban and territorial development, but they do not provide specific implementation plans and the legal systems to support the planning are insufficient. In addition, it is necessary to establish accurate demographic database, strengthen the national statistical system, and conduct preliminary survey to identify social and economic problems in each city in order to establish a systematic and integrated plan for concrete realization of development goals.

For systematic planning and implementation, a legal system should be established to form the foundation of the statutory plan, and the role of the plan maker should be clarified. In the case of Korea, the institutional basis of the statutory urban planning and the comprehensive national land planning has been provided through establishment and revision of Urban Planning Act, the Metropolitan Area Maintenance Planning Act, and the National Planning and Utilization Law. In Paraguay, it is difficult to plan long-term comprehensive plans due to the lack of laws and regulations related to urban development. Therefore, the urban-related legal system which is the foundation of the statutory urban planning should be improved, and the statutory urban planning should be prepared accordingly.

Urban development is not properly managed due to the lack of land use planning and management plan in Asunción. Therefore, it is necessary to prepare and implement a management plan for solving urban problems in the future. Like Korea, Paraguay is experiencing an absolutely scarce urban infrastructure as a result of rapid urbanization and rapid population concentration in metropolitan areas. In order to induce the high density development of the Asunción metropolitan area in the future, it is necessary to establish a system to encourage the construction of high-rise buildings and the development of a large number of public facilities, and to supply infrastructure such as water and sewage, transportation infrastructure and waste treatment facilities. It is necessary to promote cooperation with the private sector.

It is necessary to establish governance for land management and provision of urban infrastructure in the metropolitan area, to review the tax system for solving the institutional capacity and lack of resources, to revitalize the underdeveloped areas through redevelopment of low utilization areas.

Finally, it is necessary to strengthen the planning capacity and financing strategy of the relevant agencies including the local government. The individual municipalities in Paraguay have to establish a sustainable development plan (PDS) and a land use plan (POUT), but the plans have problems that are not linked to the regulations and plans of central government. Local governments should secure budgets for the department responsible for urban planning and land management, and establish relevant administrative regulations, guidelines and manuals to enable systematic planning. Local governments should also support relevant research and nurture professional personnel so that the expertise and technical capacity of relevant institutions can be improved in the future.

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02

CHAPTER

Housing Policy Issues and Policy Recommendations for Paraguay

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1. Introduction
2. Current Situation and Issues of the Housing Sector in Paraguay
3. Experience in the Housing Policy of Korea
4. Policy Recommendations for Paraguay

Keywords

Affordable Housing, Housing Policy, Housing Deficit, Housing Supply, Public Rental Housing, Paraguay

Housing Policy Issues and Policy Recommendations for Paraguay

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Summary

Amid rapid urbanization, the housing deficit in Paraguay has become a significant challenge. As of 2012, the housing deficit in Paraguay reached about 780,000 units, of which 87.6% is the qualitative deficit, representing 683,527 units. The government of Paraguay has put significant effort into addressing the issues in the housing sector, but the results have fallen short of expectations because of weak demand and the government's lack of institutional and financial capacity. Korea used to struggle with absolute housing shortages; however, through the implementation of different policy measures and legal frameworks over different periods of time, the country managed to overcome its chronic housing deficit. In terms of housing supply, the government introduced a legal framework for large-scale residential land and housing development and promoted the participation of the private sector. On the demand-side, various housing programs, including caps on new apartment prices and housing finance guarantees, have been utilized to support actual demand. Considering the current situation of the housing sector in Paraguay and the experience of Korea, the political priorities and recommendations that Paraguay should consider include: establishing legal and institutional frameworks for the provision of affordable residential land, induce the private sector to produce affordable housing through proper financial incentives and regulation, consolidating the role of the Ministerio de Urbanismo, Vivienda, y Habitat (MUVH) in the integration of housing policy into national policy and coordination between housing policy and territorial and urban policy, and strengthening the monitoring of the evaluation system, research capacity, and policy research on housing issues.

1. Introduction

As urbanization accelerates, the provision of decent housing has become a common social issue in Latin American and Caribbean (LAC) countries. The Paraguayan government faces the particularly significant challenge of controlling its nation-wide housing deficit while securing decent housing for all citizens. Paraguay is growing rapidly in terms of both demography and urbanization. According to the OECD (2018), Paraguay is in the middle of a long demographic transition, with about 28% of the population now being considered young (15 to 29 years old). As of 2015, Paraguay's urbanization rate surpassed 60% and is expected to exceed 70% in the next three decades.

Amid Paraguay's rapid population growth and urbanization, the housing deficit has become a major issue in the country. The Dirección General de Estadística, Encuestas y Censos (DGEEC) of Paraguay estimated that, as of 2012, the housing deficit in Paraguay reached about 780,000 units, of which 87.6% is the qualitative deficit, representing 683,527 units (DGEEC, 2016a).

Given the seriousness of the situation, the Paraguayan government has endeavored to systemically address the country's housing issues. In 2008, the Secretaría Nacional de la Vivienda y el Hábitat (SENAVITAT) was established, replacing the Consejo Nacional de la Vivienda (CONAVI), the former housing authority of Paraguay, to manage and implement the country's housing sector policy for low-income families. In 2018, the institution was promoted to the Ministerio de Urbanismo, Vivienda, y Habitat (MUVH), thus strengthening and expanding its political coverage to urban planning. To further strengthen the institution, the Política Nacional de la Vivienda y el Hábitat (PNVH) was established in 2018 for the purpose of providing a consistent framework for public policy intervention in the housing sector and ensuring access to adequate housing and living spaces for the people.

As this shows, the government of Paraguay has put significant effort into addressing the country's housing issues, but the results have fallen short of expectations. The reasons for the inefficiency of policy implementation are the lack of institutional framework, complexity and inconsistency of the housing programs, and lack of basis for data collection and research on the housing sector.

Korea used to struggle with absolute housing shortages. Because the government prioritized industrial development in the early stages of the country's economic growth, the housing sector became significantly underfunded. As a result, the country struggled with

chronic housing deficits from the 1960s to the early 1990s. In response to the situation, the government implemented diverse housing policy measures in accordance with its changing housing needs. On the demand-side, the government sought to reduce housing costs through financial support, including loan programs for home buyers and tenants and a cap on new apartment prices. On the supply side, the government set up the legal and institutional framework for large-scale residential land and housing development and promoted the participation of public entities in development projects. As a result, the country's housing supply ratio is now more than 100%. Korea's remarkable achievement shows that effective policy intervention can help increase the quality and quantity of housing in a country.

The objective of this study is to review Korea's housing policy experiences and to draw meaningful implications in housing solutions for Paraguay. The first part of the study covers the current state of the housing sector in Paraguay and identifies the main challenges to be addressed. In the second part of the study, Korea's experience with housing policy is introduced. Based on the foregoing content, practical policy recommendations, given the political, social, and economic contexts of Paraguay, are presented to lay the groundwork for the establishment of a national research institute in Paraguay.

2. Current Situation and Issues of the Housing Sector in Paraguay

2.1. Housing Situation

2.1.1. Demographic Trends and Housing Stock

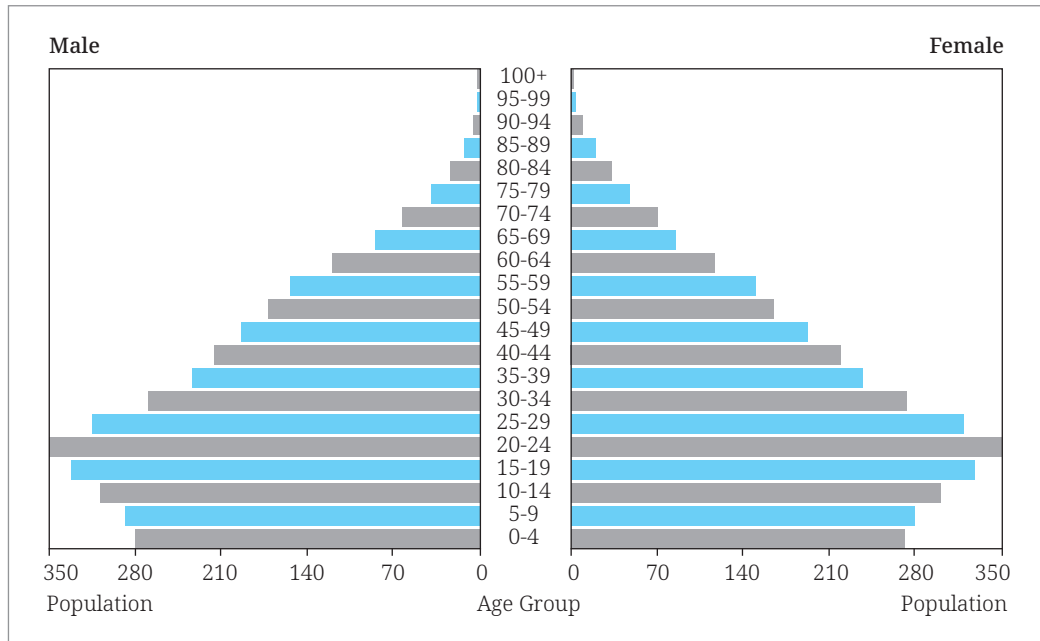
As of 2017, the urbanization rate of Paraguay was 61.3% (World Bank, 2019). Although Paraguay is one of the least urbanized countries in Latin America, the country is experiencing rapid urbanization. The process of urbanization currently underway in Paraguay is characterized by the rapid inflow of young people, ranging from 20 to 44 years of age, into urban areas and the increase in middle-aged people in rural areas (STP, 2015).

Paraguay is in the early stage of a demographic transition. People under 30 years of age make up almost 60% of the total population, making Paraguay one of the youngest countries in the world. It is expected that Paraguay will benefit from the resulting population dividend for almost 30 more years (World Bank, 2018). The relatively young demographic structure is viewed as an opportunity for economic growth and poverty reduction, but as young

people flock to urban areas looking for employment, the housing deficit is growing. The growth of the young population, combined with the country's poorly planned urbanization, will require the introduction of more systematic housing policies designed to promote quantitative and qualitative improvements in the housing supply, particularly in urban areas.

[Figure 2-1] Population Pyramid of Paraguay (2016)

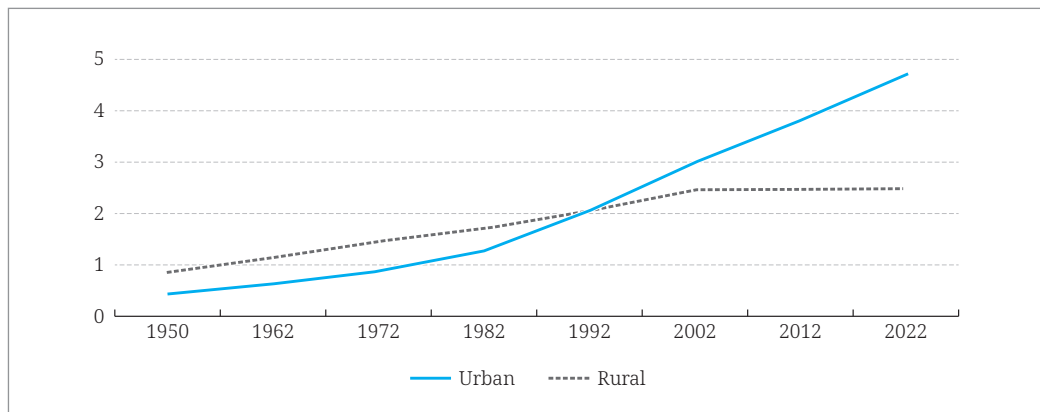
(Unit: 1,000)



Source: CIA (2019).

[Figure 2-2] Trends of Rural and Urban Population in Paraguay

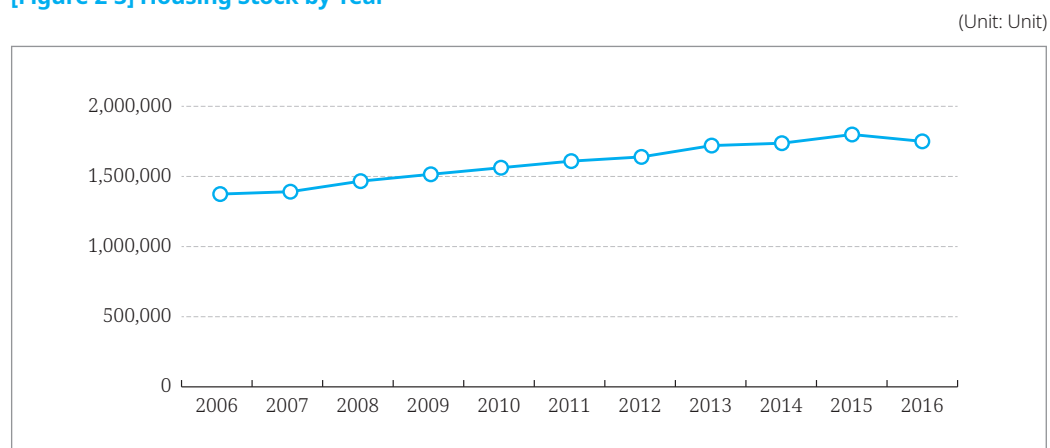
(Unit: Million people)



Source: DGEEC (2015a).

The housing stock in Paraguay has recorded gradual growth throughout the last decade. According to the statistical yearbook published by the General Directorate of Statistics (Dirección General de Estadística, Encuestas y Censos: DGEEC), the housing stock in Paraguay as of 2016 was 1.75 million units. Although this number is slightly lower than that of the previous year, the overall trajectory of the housing stock from 2006 to 2016 showed gradual growth, increasing by 27%.

[Figure 2-3] Housing Stock by Year



Source: DGEEC (2006; 2007; 2008; 2009; 2010; 2011; 2012; 2013; 2014; 2015b; 2016b).

The number of households during the same period followed a similar trajectory to that of the housing stock. <Table 2-1> shows the trends of the number of housing units, households, and population of Paraguay from 2006 to 2016, as suggested by statistical yearbooks published by the DGEEC during the same period. Over the decade, the number of households increased by 27%, from 1.37 million to 1.75 million. In nominal terms, the housing supply ratio of Paraguay has been more than 99%, showing no indication of a quantitative or qualitative housing deficit.

<Table 2-1> Changes in Housing Stock and Demography (2006-2016)

(Unit: 1,000)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Housing Units (a)	1,373	1,390	1,463	1,511	1,560	1,607	1,637	1,720	1,739	1,796	1,745
Households (b)	1,376	1,393	1,470	1,520	1,576	1,615	1,653	1,733	1,745	1,800	1,751
Population	5,946	6,055	6,164	6,245	6,382	6,492	6,600	6,710	6,818	6,926	6,855
Housing supply ratio (a/b*100)	99.8	99.8	99.5	99.3	99.0	99.5	99.0	99.2	99.6	99.8	99.7

Source: DGEEC (2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015b, and 2016b).

2.1.2. Housing Deficit

The qualitative situation of existing housing stock, however, suggests that the housing deficit in Paraguay is quite severe. According to the Report on the Analysis of the Housing Deficit in Paraguay, the number of deficient housing units in Paraguay increased by 780,073 units in 2012 (DGEEC, 2016a). Cardozo and Fernández (2016) estimated that about 3.08 million people (46% of the total population) were struggling with urgent housing problems in 2012 (Cardozo and Fernández, 2016). They estimated that this substantial number of deficient housing units reflects the high proportion of substandard housing that needs improvement but cannot be repaired. The deficit is composed of a qualitative deficit, representing housing units that need improvement, enlargement, or both, and a quantitative deficit, representing non-recoverable housing units, grouped housing, and overcrowded housing. <Table 2-2> summarizes the housing deficits in 2002 and 2012, as analyzed in the report.

<Table 2-2> Housing Deficit in Paraguay

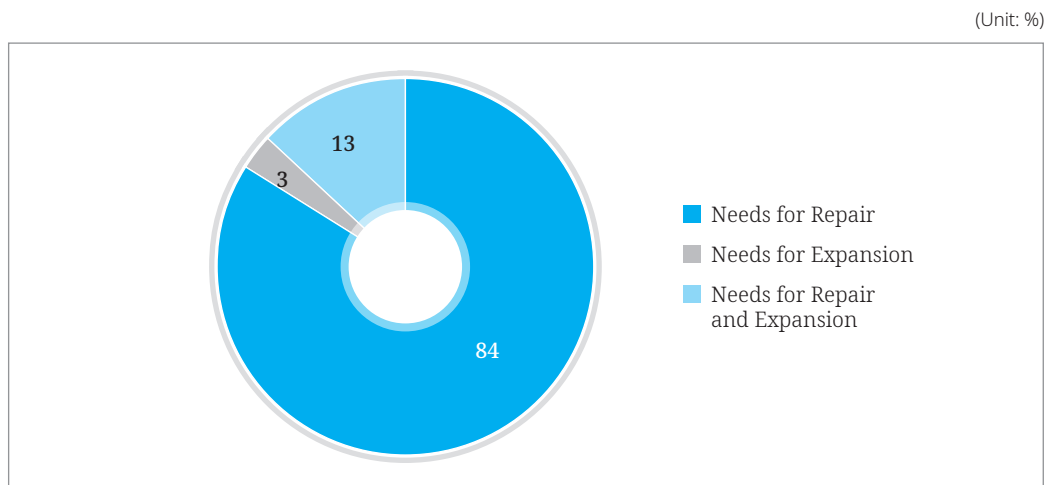
		2002			2012		
		Total	Urban Areas	Rural Areas	Total	Urban Areas	Rural Areas
Total housing*		1,098,005	643,920	454,085	1,223,165	732,941	490,224
Total deficit		804,017	398,294	405,723	780,073	394,511	385,562
Qualitative deficit	Total	705,298	326,492	378,806	683,527	316,641	366,886
	Demand for improvement	517,713	260,071	257,642	574,264	277,909	296,355
	Demand for enlargement	23,616	16,846	6,770	19,436	12,160	7,276
	Demand for both improvement and enlargement	163,969	49,575	114,394	89,827	26,572	63,255
Quantitative deficit	Total	98,719	71,802	26,917	96,546	77,870	18,676
	Housing to be replaced (irrecoverable)	75,247	49,578	25,669	76,346	58,487	17,859
	Collective housing	9,248	8,000	1,248	9,331	8,514	817
	Overcrowded housing	14,224	14,224	-	10,869	10,869	-

Note: *The total housing suggested in the Analisis del Deficit Habitacional en Paraguay 2012 has a gap of about 400,000 units, which indicates inconsistency in the survey method.

Source: DGEEC (2016a).

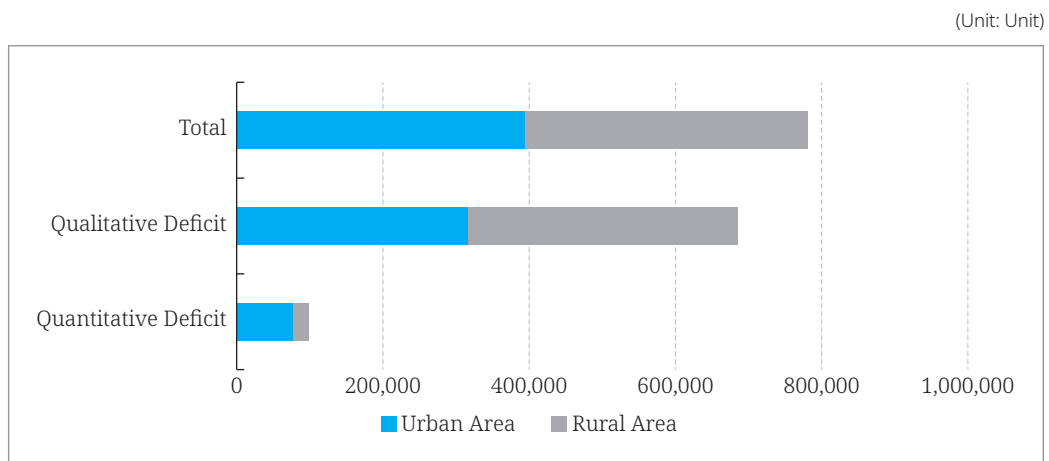
Even though the housing deficit decreased by 24,000 units from 2002 to 2012, more than half of the housing stock was considered to be in need of repair or enlargement in 2012. Of the total deficit, the qualitative deficit accounts for 87.6%, representing 683,527 units, while the quantitative deficit accounts for the remaining 13.4%, representing 96,546 units. More than half of the qualitative deficit can be categorized as in need of improvement (574,264 units), followed by in need of enlargement (142,283 units). The distribution of the total housing deficit between urban and rural areas was almost equal, at 50.6% and 49.4%, respectively, but the quantitative housing deficit is mainly concentrated in urban areas. The proportion of deficient housing of the total housing stock was much higher in rural areas, at 78.7%. The proportion in urban areas was 53.8%.

[Figure 2-4] Composition of Qualitative Housing Deficit



Source: DGEEC (2016a).

[Figure 2-5] Distribution of Housing Deficit between Urban and Rural Areas



Source: DGEEC (2016a).

The qualitative deficit is closely related to the lack of basic services, including sanitation, electricity, garbage collection, road infrastructure, and other urban facilities at the neighborhood and community levels. According to the 2012 census, the major causes of the qualitative housing deficit in Paraguay are the poor building materials and inadequate drainage system. As of 2012, more than 50% of housing units in rural areas lacked adequate drainage, or had exterior walls, and ceilings that needed repairs or reconstruction (STP & DGEEC, 2012). It is believed that this lack of quality housing in rural areas was a result of the high proportions of informal settlements and rancho, a type of house made with adobe or palm trunk and featuring stacked walls, earth floor, and straw roof, in rural areas.

<Table 2-3> Qualitative Index of Housing in Paraguay

	Total		Urban		Rural	
	Unit	%	Unit	%	Unit	%
Total	1,232,496	100	732,941	100	490,224	100
Exterior wall						
Acceptable	862,952	70.6	624,291	85.2	238,661	48.7
Recoverable	338,617	27.7	104,063	14.2	234,554	47.8
Irrecoverable	21,596	1.8	4,587	0.6	17,009	3.5
Ceiling						
Acceptable	742,628	60.7	537,330	73.3	205,298	41.9
Recoverable	469,031	38.3	186,771	25.5	282,260	57.6
Irrecoverable	11,506	0.9	8,840	1.2	2,666	0.5
Floor						
Acceptable	756,125	61.8	440,086	60	316,039	64.5
Recoverable	258,305	21.1	244,172	33.3	14,133	2.9
Irrecoverable	208,735	17.1	48,683	6.6	160,052	32.6
Water Supply Facilities						
Acceptable	1,140,889	93.3	717,735	97.9	423,154	86.3
Deficient	82,276	6.7	15,206	2.1	67,070	13.7
Drainage System						
Acceptable	898,013	73.4	670,147	91.4	227,866	46.5
Deficient	325,152	26.6	62,794	8.6	262,358	53.5

Source: STP and DGEEC (2012).

At the department level, the capital region, including Asunción and the Central Department, is the area with the largest housing deficit, accounting for more than 22% of the total housing deficit, followed by Alto Paraná, Caaguazú, Itapúa, and San Pedro (DGEEC, 2016). The housing deficit in these five departments accounts for 64.1% of the total housing deficit, representing a deficit of 499,838 units. In general, the departments with major housing deficits are in metropolitan areas (Asunción and Central, Alto Paraná, and Itapúa) and areas with high proportions of extreme poverty (Caaguazú and San Pedro). The differences in the housing deficits among the departments implies that a significant portion of the housing deficit in Paraguay is caused by the concentration of population and poverty.

<Table 2-4> Departments with Largest Housing Deficits

Department	2002		2012	
	Housing Units	Housing Deficit (%)	Housing Units	Housing Deficit (%)
Asunción, Central	212,703	26.5	174,065	22.3
Alto Paraná	100,335	12.5	102,225	13.1
Caaguazú	78,934	9.8	81,588	10.5
Itapúa	78,487	9.8	71,971	9.2
San Pedro	59,605	7.4	69,989	9.0
Total	530,064	65.9	499,838	64.1

Note: The authors used the Spanish terms here because there are no English terms that match those used in the figure.
Source: DGEEC (2016a).

2.1.3. Types of Housing and Tenure

The types of housing in Paraguay can be categorized into *casa*, *rancho*, *pieza de inquilinato*, *departamento o piso*, and others (usually informal or improvised housing).

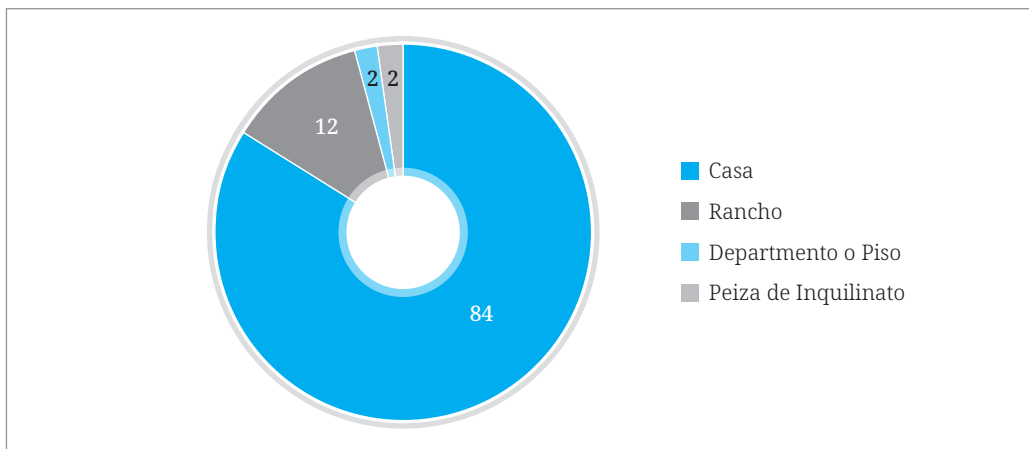
- *Casa*: a detached house built with durable material, such as brick, cement, or wood, that has more than one room and direct access to the road.
- *Rancho*: a type of house usually built with adobe and/or palm trunk and features stacked walls and earth floor.
- *Peiza de inquilinato*: a type of housing with a patio, a type of terrace, and usually features shared sanitary facilities.
- *Departamento o piso*: a unit in a building with two or more floors that has access to the street through shared facilities, including a corridor, stairway, or elevator.

The most common type of housing in Paraguay is *casa*, accounting for 84% of the total housing as of 2012 (DGEEC, 2012). The proportion of vertical housing, i.e. *departamento o*

piso, is very limited, although it increased gradually from 19,484 units in 2006 to 34,113 units in 2012 (DGEEC, 2006, 2007, 2008, 2009, 2010, 2011, and 2012).

[Figure 2-6] Distribution of Housing Types (2012)

(Unit: %)



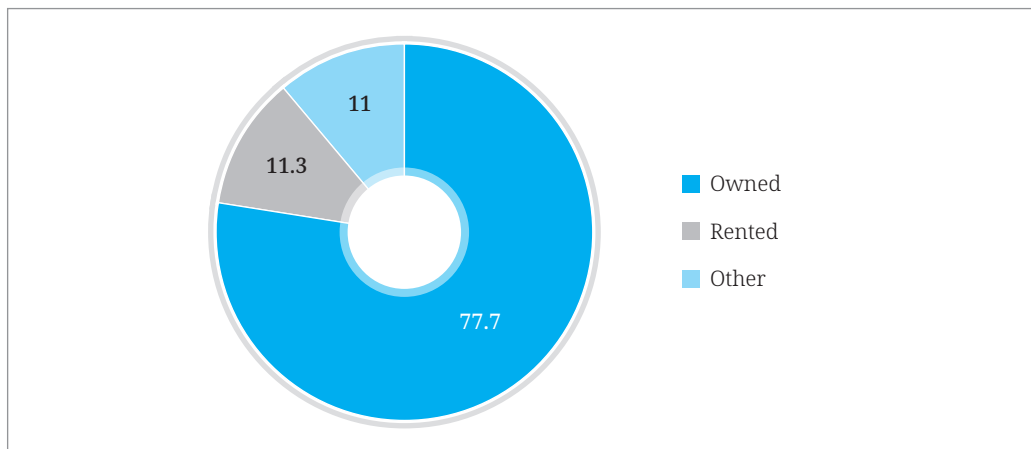
Note: The authors used the Spanish terms here because there are no English terms that match those used in the figure.
Source: DGEEC (2012).

The development of horizontal housing, combined with the minimum size of a housing site, results in low-density development. The minimum lot size equals to 360m² based on Municipal Organic Law No. 1294/1981(Morris, 2014). Although the new Municipal Organic Law No. 3966/2010 relaxed the requirement by allowing different municipalities to establish their own minimum lot sizes depending on their particular circumstances, the typical size of a lot has remained the same (Morris, 2014).

Similar to other LAC countries, the most common type of housing tenure in Paraguay is owner-occupancy. As of 2016, the proportion of owner-occupancy reached 77.7% of the total housing (DGEEC 2016b). The proportion of rent increased only slightly, from 8.33% in 2006 to 11.3% in 2016. The proportion of rent tenure in Paraguay is low compared to other countries, including Argentina, Bolivia, and Brazil [Figure 2-8]. Households living on illegitimate or informal tenure accounted for 11% in 2016.

[Figure 2-7] Distribution of Housing Tenure in Paraguay in 2016

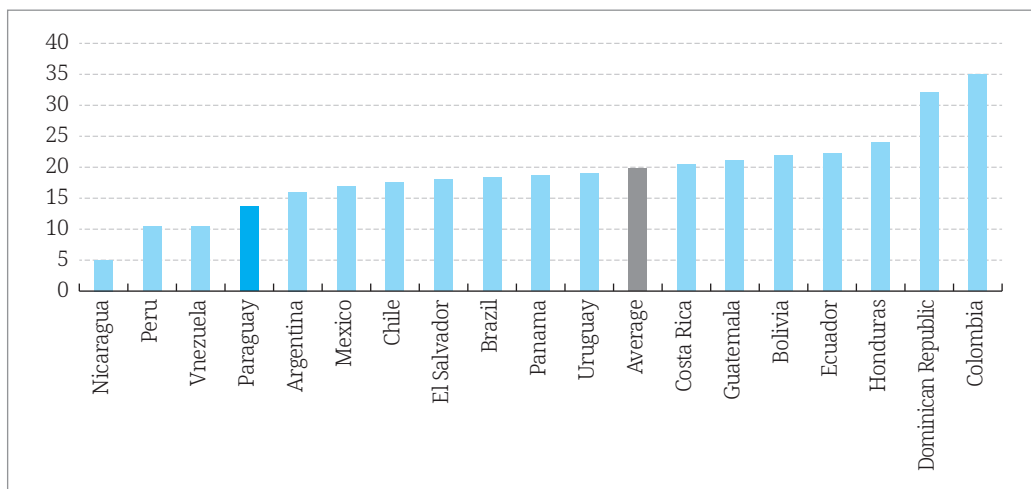
(Unit: %)



Source: DGEEC (2016).

[Figure 2-8] Rental Rates in Paraguay and Other LAC Countries

(Unit: %)



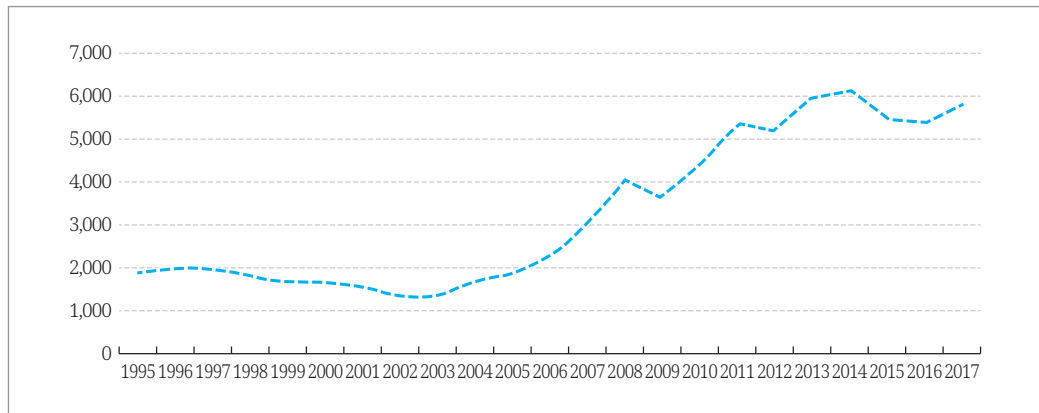
Source: Blanco, Cibils, and Mirand (2014).

2.2. Housing Demand

The income level of Paraguay has increased gradually over the last two decades. As of 2017, the country's GDP per capita was USD 5,823, having more than doubled since 1995 (World Bank, 2019a).

[Figure 2-9] Growth of Nominal GDP per Capita of Paraguay (1995-2017)

(Unit: USD)



Source: World Bank (2019a).

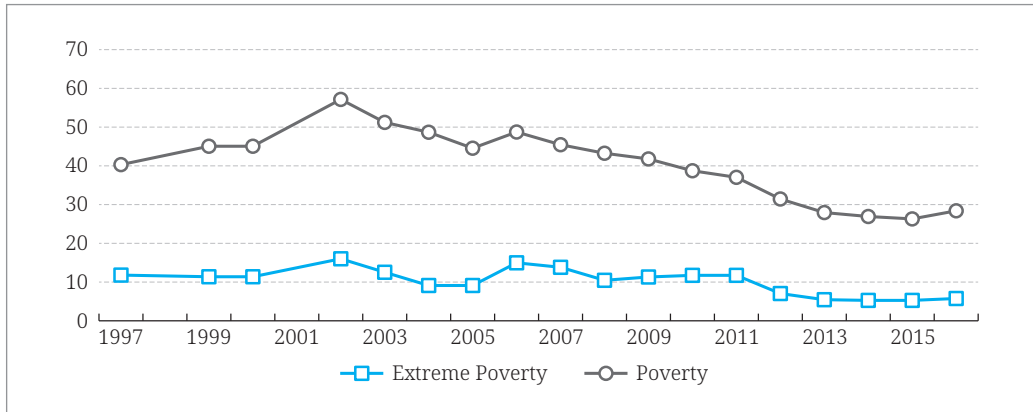
As of 2018, the minimum wage in Paraguay is PYG 2,112,562 (PYG=Paraguayan Guarani), which is about USD 346. Paraguay's minimum wage is relatively high considering the level of the country's development. However, the OECD (2018) estimated that 9.6% of public sector workers and 44.5% of private sector workers were earning less than the minimum wage as of 2016. In terms of the informal sector, it is assumed that more than half of workers earn less than the minimum wage. Because the minimum wage in real terms has remained at roughly the same level for years, the purchasing power of workers is estimated to have been in decline over the last decade (OECD, 2018).

In addition, ILO (International Labor Organization) shows that more than 70% of workers in Paraguay are informally employed. The figure has been in down term overall, but informal employment still accounted for 71.3% of total employment in 2017 (ILO, 2019).

Despite its high level of income disparity, Paraguay has significantly reduced poverty and extreme poverty at the national level over the last couple of decades. The poverty headcount ratio, based on the national poverty line, decreased from 45% in 2007 to 27% in 2015, and the extreme poverty headcount ratio decreased from 14% to 5.4% over the same period (OECD, 2018).

[Figure 2-10] Trend of Poverty (Based on National Poverty Line)

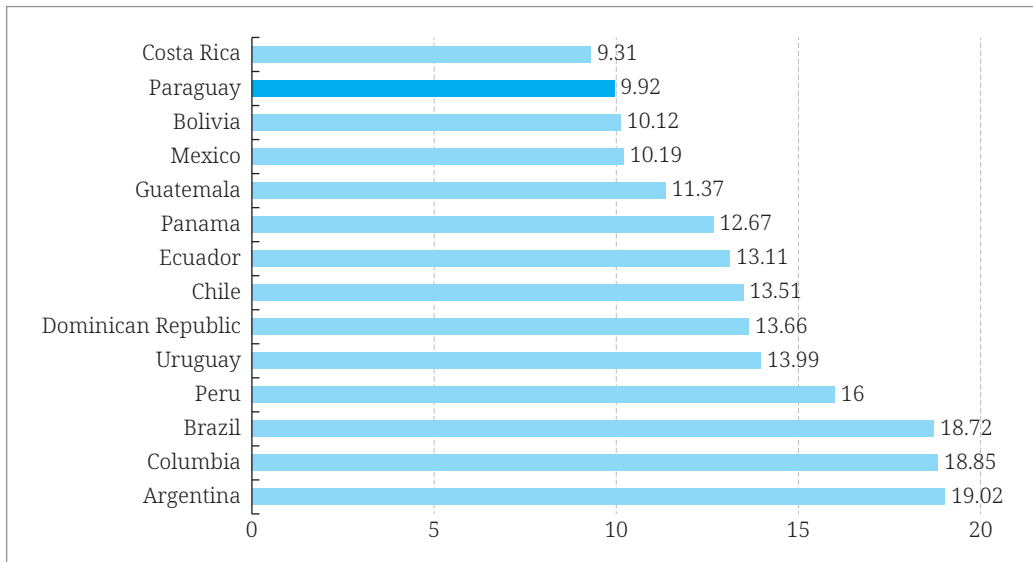
(Unit: %)



Source: OECD (2018).

There are no official data on housing costs in Paraguay, but the price-to-income ratio of the country is estimated to be 9.92 (NUMBEO, 2019), which is relatively low compared to other LAC countries. However, it is hard to be a homeowner for low-income household.

[Figure 2-11] Price-to-Income Ratios of LAC Countries



Note: As the author utilized statistics from an unofficial source, due to the lack of official data on the housing market in Paraguay, the figures presented here may differ from the actual figures.

Source: Numbeo (2019).

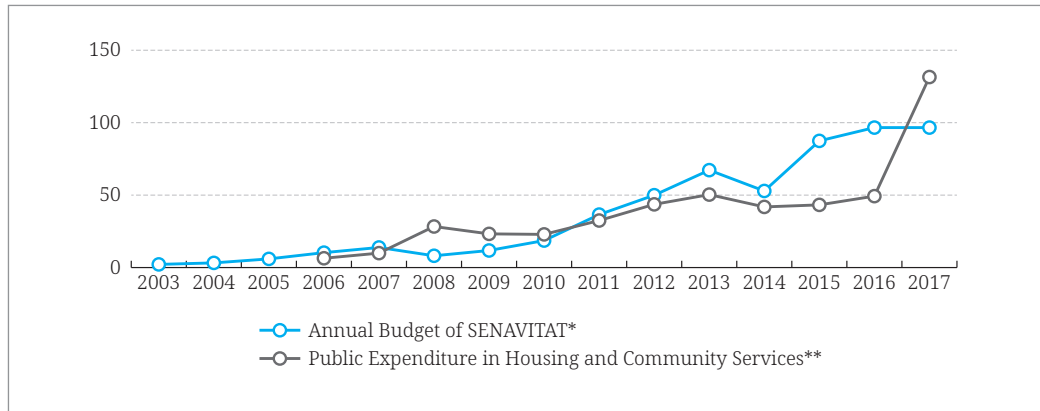
2.3. Housing Supply

At present, there are no available official data on the housing supply in Paraguay. Nonetheless, it is possible to estimate the average annual housing supply using the results of the 2002 and 2012 censuses. Given that the numbers of housing units in 2002 and 2012, were 1,098,005 and 1,223,165 units, respectively, the estimated annual housing supply from 2002 to 2012 is 12,516 units.

Housing construction in Paraguay largely relies on the private sector (Morris, 2014). Considering the transition of public expenditure, however, it can be assumed that the housing supply of the public sector has increased over the past decade. Public expenditure on housing and community services increased more than tenfold, from USD 6.7 million in 2006 to USD 97 million in 2017. Especially with the establishment of SENAVITAT in 2010, the government has drastically increased its investment in the housing sector (Morris 2014). During the transition from CONAVI to SENAVITAT, the government doubled the organization's annual budget from about USD 18 million in 2010 to USD 36 million in 2011 (Ministry of Finance, 2019). Since then, the government has maintained the upward trend of its investment in the housing sector overall.

[Figure 2-12] Trends of Annual Budget of SENAVITAT and Public Expenditure in Housing and Community Services

(Unit: Million USD)



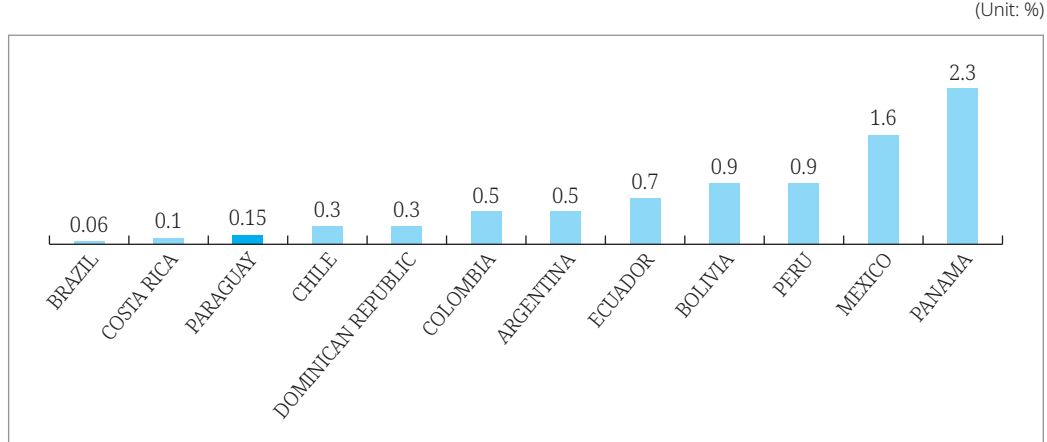
Notes: *The figures for the period from 2003 to 2010 represent the annual budget of CONAVI, the former institution of SENAVITAT.

**Data on public expenditure for housing and community services from 2003 to 2006 are unavailable.

Source: Ministry of Finance (2018).

Government investment in the housing sector has increased rapidly, however, the share of public expenditure on housing and community services of the total GDP in 2016 was less than 0.2%. This is quite low compared to other LAC countries. Considering the housing deficit that Paraguay is currently facing, it is necessary for the government to expand the expenditure on and policy intervention in the housing sector in the future.

[Figure 2-13] Share of Public Expenditure on Housing and Community Services of the GDPs of LAC Countries (2016)



Source: CEPAL (2016).

2.4. Institutional Framework and Policy Overview

2.4.1. Policy Overview and Major Programs

A. Building of Institutional Framework for Housing Policy: 1964 to 1990

From the early 1960s to the late 1980s, the economy of Paraguay was led by the military government of General Alfredo Stroessner, who adopted an agricultural export-centered economic model that was characterized by the concentration of land in latifundia¹ and the empowerment of a small number of elite (Vila, 2012). With the subsequent injection of foreign capital through the construction of the Itaipú and Yacyreta hydroelectric dams in the 1970s, rural residents of those areas flocked to the cities, giving rise to large cities such as Asunción and Ciudad del Este and promoting land price speculation, horizontal development, and the establishment of precarious settlements (Amarilla, 2018).

In this socio-economic context, the institutional framework of housing and living spaces in Paraguay started to be built in the 1960s with the establishment of the IPVU (Instituto Paraguayo de Vivienda y Urbanismo), the country's first housing authority. The objective of the IPVU was to satisfy the housing needs of families and plan, guide, and promote the growth of cities and urban centers. Law No. 970/1964 provided the IPVU with a wide range of means with which to tackle the country's housing challenges, including: elaborating housing and urbanization plans, conducting and financing housing projects, selling and renting houses or properties, establishing savings systems, promoting the construction

¹ Large-scale, privately owned farms.

industry, training technical and administrative personnel, and providing loans and technical assistance to families building their own housing.

From its establishment to 1990, the IPVU helped supply 4,300 housing units. However, that number was insufficient to absorb the population increase in urban areas, and the impact was very limited (Guzmán Garcés, 2004). The main focus of the IPVU was to provide housing loans for salaried persons, mainly people in the middle-income socioeconomic group (low- to upper-middle), while the most vulnerable groups were not a priority.

At the end of 1971, the National Housing Bank, known as the BNV (Banco Nacional de la Vivienda), and Saving and Lending Societies for Housing, known as the SAPV (Sociedades de Ahorro y Préstamo para la Vivienda), were created in accordance with Law No. 325. The main objective was to provide financing for land purchases and the acquisition, construction, expansion, and renovation of housing (Guzmán Garcés, 2004). The BNV offered housing loans for the middle class with the aim of promoting the construction of dwellings with an area of 60m² or more. As a result, approximately 12,000 housing units were built. However, 50% of the borrowers had debt problems, causing the system to collapse (CIDIFADA, 2017).

B. Housing Policy Targeting Low-income Households: 1990-2010

In 1992, with the end of the dictatorship that had lasted for more than 30 years, the Constituent Assembly was convened with the aim of preparing a new national constitution. The new constitution allowed the creation of departmental governments in charge of territorial planning and included a guarantee of decent housing for all people.

In 1990, the Paraguayan government decided to create a new housing institution called the National Housing Council, or CONAVI (Consejo Nacional de la Vivienda). The objective of the establishment of CONAVI was to include national housing policies within both the macro-economic policies and the National Development Plan (Law No. 118/90, 1991). With the establishment of CONAVI, the IPVU was abolished, and the BNV became subordinate to CONAVI. Unlike the IPVU, the role of CONAVI in urban and territorial planning was limited, and low-income households became the major target of the housing policy (Guzmán Garcés, 2004).

CONAVI supported the housing of low-income households through the Direct Housing Subsidy (Subsidio Habitacional Directo: SHD). The SHD was the main state investment in housing. The SHD system is regulated through Law No. 815/95, regarding the acquisition,

construction, expansion, and improvement of housing. (Law No. 815/95, 1996). It is constituted as state aid, free of charge restitution, and granted only once to each CONAVI beneficiary (Amarilla, 2018). Until 1995, CONAVI had intervened directly in the construction and provision of social housing, producing about 7,400 units (Cristaldo, 2004). Nonetheless, the housing supply remained insufficient.

The institutional weakness of CONAVI contributed to the creation of another public institution named the Social Action Secretariat, or the SAS (Secretaría de Acción Social), the functions of which overlapped with those of CONAVI in terms of land management and housing construction (Amarilla, 2018, and Flores, 2010). During the period from 2004 to 2010, CONAVI and the SAS carried out housing projects, both in the urban periphery and countryside. During this period, 4,000 housing units were provided annually, setting a record for the construction of new housing by the government (CIDi-FADA, 2017).

Adding to the country's housing authorities, including CONAVI and the SAS, the Paraguayan government created the National Fund for Social Housing (Fondo Nacional para la Vivienda Social: FONAVIS) in 2019 to implement national housing policy based on a medium- to long-term perspective. FONAVIS was established in accordance with Law No. 815/95, which enables the government to provide funding for subsidized housing (Ley N° 3637/09, 2009). Since its creation, this governmental financing mechanism has provided housing to a significant number of beneficiaries in the lower-income segment of the population as well as funding for the middle-income group.

C. Institutional Transition: 2010-2017

In 2010, the National Secretariat for Housing and Habitat, known as SENAVIDAT (Secretaría Nacional de la Vivienda y el Hábitat), replaced CONAVI. Its main purpose was to manage and implement housing sector policy mainly for low-income families, including basic infrastructure such as basic services, roads, and transportation (Ley N° 3.909/10, 2010). With the establishment of SENAVIDAT, public expenditure for low-income households and affordable housing through FONAVIS was increased, and the housing provision process became independent from the external cooperating countries and agencies.

Another important milestone during this period was the introduction of the “Law on the Promotion of Housing and Urban Development” in 2016. The main objective of the law is to increase access to affordable housing for middle-income families in urban areas by facilitating the provision of loans with preferential conditions, and establish the referential framework for the formalization of the rental market (Ley N° 5638).

D. Establishment of MUVH: 2018-Present

In 2018, the Ministry of Urbanism, Housing and Habitat, known as the MUVH (Ministerio de Urbanismo, Vivienda y Habitat), was established as a technical entity and governing body responsible for the elaboration, design, coordination, implementation, monitoring, and evaluation of urban development and housing policies, plans, programs, projects, and activities. The function of the ministry is broader than that of SENAVITAT, covering urban planning, like the IPVU. The creation of the MUVH represents an opportunity to address the current urban and housing challenges in a more holistic way, but the risk remains that the objectives set forward in the law will not be achieved in practice due to the lack of capacity and the complexity of the current problems.

Based on the four periods described above, it can be stated that, since 1964, the government has intervened in the housing sector by means of different institutions and approaches. In conclusion, roughly three types of mechanisms can be distinguished:

- 1) Development, construction, and funding of housing for middle-income groups;
- 2) Organization and control of a housing financing system through savings and loan mechanisms;
- 3) Construction of subsidized housing for low-income groups.

In recent years, the government has taken actions to address the different needs related to housing, community services, and urbanism.

2.4.2. Government and Public Entity

The leading institutions of the national housing system include MUVH (formerly known as SENAVITAT), Secretaría Técnica de Planificación(STP), Ministerio de Obras Publicas y Comunicaciones), and AFD (Agencia Financiera de Desarrollo(MOPC) (Law No. 5638/2016). MUVH is the main governing body in Paraguay's housing sector, having inherited all of the obligations, activities, and budgetary resources of SENAVITAT. As a housing authority, the MUVH plays a comprehensive role in promoting adequate and affordable housing in the country. The function of the ministry can be categorized into: 1) designing, executing, and supervising the housing and urban development policies and programs; 2) regulating, evaluating, and monitoring the housing and urban development programs; 3) coordinating the related institutions in the national housing system, including the municipalities; 4) advising and providing technical assistance to related state entities, private companies, and civic organizations; and 5) promoting and coordinating the usage of FONAVIS. With

broadened responsibility including housing and urban planning, the MUVH can take a more holistic approach to housing issues compared to SENAVITAT.

Since the ministry is in the initial stage of institutional building, however, a number of challenges remain. First, because the housing authority has not had a planning function since the closure of the IPVU, the role and responsibility of the MUVH in urban planning has not yet been specified. Second, the institutional capacity of the MUVH has not yet strong enough to perform all the functions assigned to the ministry. Third, the ministry lacks the basic data and research needed to support the successful design and implementation of the policy.

2.4.3. Planning and Legal Framework

In 2018, SENAVITAT published the National Policy for Housing and Habitat, known as the PNVH (Politica Nacional de la Vivienda y el Habitat). Announced by SENAVITAT in 2018, the PNVH was prepared in consideration of the rights and guarantees related to the quality of life of the citizens of Paraguay, including the rights to decent housing and a healthy environment enshrined in the constitution. The goal of the PNVH is to establish guidelines on ensuring access to decent and adequate housing and living environments for citizens, with the participation of different actors of society, within the framework of a process consistent with the priorities of national development. Currently, most objectives of the PNVH are being pursued by the MUVH. The policy is divided into three parts, with each being made up of several main objectives, as listed below (SENAVITAT, 2018):

1) Governance and Institutional Framework:

- a. Promote inter-institutional coordination.
- b. Facilitate citizen participation in and transparency of the planning, implementation, and evaluation phases of housing development.
- c. Strengthen capacities in the production of housing and living spaces.
- d. Adapt legal frameworks, such as by creating new instruments or making improvements.

2) Planning and Design:

- a. Promote sustainable territorial development and social cohesion.
- b. Promote the development of an integrated information system for the design and development of public housing and habitat policies.
- c. Promote secure land rights for all.
- d. Promote coordinated action to overcome the qualitative and quantitative housing deficits.

3) Economics and Finance:

- a. Promote the optimization of government resources to strengthen public investment in the housing sector.
- b. Promote the creation and strengthening of alternative financing mechanisms for the development of housing and living spaces.
- c. Encourage economic efficiency in the production of housing and living spaces.
- d. Promote financing options for territorial development and increase access to affordable housing.

The major legal framework for the housing policy in Paraguay is the Law on the Promotion of Housing and Urban Development, which was introduced in 2016. The objective of the law is to establish the norms and mechanisms necessary to improve accessibility to decent housing, promote housing development, and establish formal framework of the rental market (Law No. 3637/2009).

2.4.4. Housing Programs

Currently, the MUVH is operating 10 housing programs, including housing financing programs such as FONAVIS and Créditos Hipotecarios. In general, to be eligible for a housing program administered by the MUVH, a household needs to earn an amount equivalent to no more than five times the monthly minimum wage, which corresponds to a maximum of USD 1,746. Since the DGEEC estimates that the highest 10% income strata at the national level earns PYG 5,771,521, which corresponds to about USD 954 a month, it can be assumed that more than 90% of households in the country would be eligible for the housing programs (Morris, 2014). A major challenge regarding eligibility is to design and match the programs to different income groups, ranging from people in extreme poverty to middle-income groups, as no clear guidelines exist for defining the groups within the housing framework.

<Table 2-5> Eligibility Criteria for Housing Programs in Paraguay

Category	Income Level	Maximum Cost of Acquiring or Building a House	Maximum Cost of Enlarging or Improving a House
Category 1	3.5 to 5 times MMW	260 times MMW	100 times MMW
Category 2	2 to 3.4 times MMW	200 time MMW	65 times MMW
Category 3	1 to 1.9 times MMW	150 times MMW	65 times MMW
Category 4	Less than minimum wage	100 times MMW	50 times MMW

Note: MMW refers to Monthly minimum wage.
Source: Law No. 5638.

According to the accountability report produced by SENAVITAT during the period of the Horacio Cartes administration (2013-18), a total of 37,164 units of housing were provided from 2013 to 2018 through the government programs administered by SENAVITAT (SENAVITAT, 2018). The capital injected into the housing programs recorded a total of USD 422 million. The largest housing program implemented during this period was FONAVIS, accounting for more than 40% of the total capital injection and about 54% of the total housing units provided. SENAVITAT reported that of the 37,161 housing units provided through the housing programs, 98% were given to people in poverty or extreme poverty (SENAVITAT, 2018).

<Table 2-6> Capital Injection and Housing Supply of SENAVITAT by Housing Program (2013-2018)

Program	Housing Supply (Unit)	Capital Injection (USD)
Che Tapýi	4,502	51 million
Convenio con EBY	1,480	36 million
Créditos Hipotecarios	16	0.3 million
FOCEM	214	2 million
FONAVIS	20,358	206 million
FONCOOP	458	7 million
Convenio con Itaipú	1,222	34 million
MOPC/SENAVITAT	114	-
Pueblos Originarios	448	3 million
Sembrando Oportunidades	6,769	68 million
Viviendas Económicas	436	6 million
Vy'a Renda	1,144	10 million
Total	37,161	422 million

Source: SENAVITAT (2018).

The typical modality of the housing programs operated by the MUVH is subsidized housing construction. In terms of housing construction, two types of housing are considered: affordable housing and social housing. Affordable housing refers to housing for low- to middle-income groups that have a certain level of ability to pay but are unable to make the entire payment. Social housing is intended for groups living in poverty or extreme poverty (Morris, 2014). The main sources of financing for the programs include contributions from the state, loans from the Inter-American Development Bank, and a grant from the Taiwanese government.

Most of the housing programs focus on the supply of new housing units rather than the qualitative improvement of existing ones. Although there are some programs for the qualitative improvement of housing, such as Proyecto AMA and Mejoramiento Integral Del Barrio Chicarita Alta, these programs account for only a very small portion of all the housing programs and are geographically concentrated in the capital region. The major components of the programs include: improvement of roofs, walls, floors, and electrical and sewage systems; enlargement of rooms, kitchens, and bathrooms; and provision of technical assistance for housing improvement.

The major program in terms of quantitative improvement is CHE TAPYI. It is noteworthy that the program's main source of funds is a USD 71 million grant from Taiwan. The program covers the provision of not only social housing units but also basic infrastructure, including health and community centers. The major target of the program is low-income households joining the community association. The dominant trends of the programs promoting quantitative improvement clearly show a mismatch between the housing supply and demand. Moreover, the fragmented financial resources and requirements of each program introduce unnecessary bureaucracy and complexity into the implementation process.

2.4.5. Housing Finance

Currently, the MUVH is operating three housing finance programs: FONAVIS, Crédito Hipotecario (mortgage loan), and FONCOOP.

FONAVIS was established to provide a stable source of funds for the housing program for low-income households. The objective of the establishment of FONAVIS is to: 1) promote the construction of social housing, 2) enable the operation of housing programs for people living in poverty and extreme poverty, 3) encourage self-help and mutual aid among low-income households, and 4) secure donations, loans, and internal and external financial contributions for social housing (Law No. 3467/09). The four modalities of the program are: 1) purchasing of new or used housing, 2) construction of housing on own lot, 3) construction of housing for local communities, and 4) construction of residential complexes for organized groups. The subsidized financing scheme for this housing program is divided into four levels according to family income, with Level 1 representing middle-income families and Level 4 representing families living in extreme poverty. The financing components consist of the savings of beneficiaries, subsidies, and complimentary credit (loans). <Table 2-7> outlines the financial scheme of FONAVIS. Social housing units constructed utilizing FONAVIS may be sold or leased only 10 years after the units are first provided and are granted to beneficiaries only once in a lifetime (SENAVITAT, 2010).

<Table 2-7> Financial Scheme of FONAVIS

Level	Family Income	Housing Type	Area (m ²)	Subsidy	Maximum House Price (USD)	Subsidy (USD)	Savings (USD)	Loan (USD)
1	3.5 to 5 MMW*	Affordable housing	60	15%	31,520	4,728	1,919	24,873
2	2 to 3.4 MMW	Social housing	60	40%	22,475	8,990	685	12,800
3	1 to 1.9 MMW	Social housing	46	70%	13,156	9,209	164	3,782
4	Less than 1 MMW	Social housing	40	95%	10,964	10,415	69	480

Note: MMW refers to Monthly minimum wage.
Source: SENAVITAT (2011).

Crédito Hipotecario is a mortgage loan program that provides lines of credit for housing associations, credit unions, trade unions, and their members. The target group of Crédito Hipotecario is households earning less than 13 times of monthly minimum wage (USD 4,539) (MUVH, 2019). The eligibility criteria for beneficiaries varies, because the objective of the program is to provide affordable housing for low- to medium-income groups.

FONCOOP is a financing program for housing associations that supports the construction of “cooperative neighborhoods” (barrios cooperativos) with a maximum of 40 housing units per project (MUVH, 2019). One of the program’s main objectives is to build social capital. It helps low-income families organize housing associations, thus giving them access to credit funds.

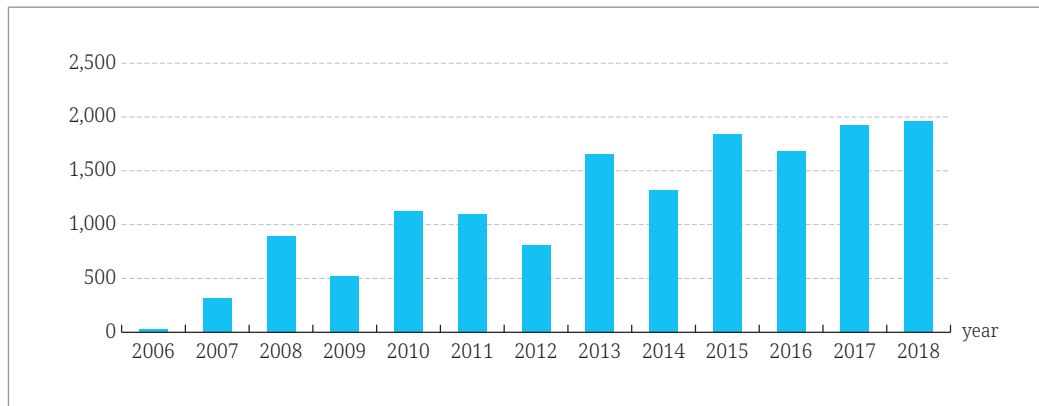
In terms of capital injection, FONAVIS is considered to be the most important programs. The regulations formulated in the framework of the FONAVIS program, such as basic dwelling attributes and infrastructure, are also being utilized for other MUVH programs. One of the shortcomings of the program is the missing link between sustainable urban development and mobility for the intervened areas. For instance, the road system requirements of the Regulation of the Housing Programs (Cap.5, Titulo V: Red Vial) do not mention bike paths or sidewalks for pedestrians, focusing instead on only car accessibility. Several articles (Articles 15 and 21) of the Regulation of the Housing Programs encourage urban sprawl through the formation or consolidation of suburban areas. The definition of density (Article 31) and its disaggregation in “Site Conditions” (Articles 103-d, 109-e, 114-e, 120-e, and 131-e) results in lower income groups being located further away from dense urban areas.

Another key player in housing financing is the Development Finance Agency, or the AFD (Agencia Financiera de Desarrollo). The purpose of the AFD is to provide mid- to long-term housing financing through several mechanisms: 1) purchase of a finished house, 2) purchase and renovation of a house, 3) pre-sale for home purchase, 4) house construction (beneficiaries own their own plot), and 5) house renovation or expansion. Through AFD housing loans, banks can offer interest rates (7.5% to 9.5%) that are lower than their usual rates (9.9% to 17.23%) (AFD, 2019, and BCP, 2019).

The “First Home” program finances the purchase of a house for an individual or family who does not own a home. Individuals who earn between 1 and 4 monthly minimum wage (MMW). can get a loan of up to USD 45,455 at a maximum interest rate of 7.5%, while families that earn 4 to 7 times MMW can get a loan of up to USD 72,727 at 9.5% interest rate. Both groups have the same mortality for mortgage payment of 20 to 30 years (AFD, 2018). From its creation in 2006 until December 2018, the AFD channeled resources to finance 15,560 housing units with a total value of USD 614,064,706. Of this total amount, 5% was set aside for housing in Asunción; 72%, in the Asunción Metropolitan Area² (excluding Asunción); and 23%, in other regions of the country (AFD, 2018). [Figure 2-14] below shows the increasing trend of housing units financed by the AFD from 2006 to 2018.

[Figure 2-14] Number of Housing Units Financed by AFD (2006-2018)

(Unit: Number of Financed Housing)



Source: AFD (2018).

Although the AFD offers loans with attractive interest rates, the beneficiary must still pay several associated administrative costs, such as the property appraisal fee, notary and registry fees (which depend on the value of the property), and the cost of property and life insurances for the debtor sufficient to cover the loan amount.

2 San Antonio, Capiatá, Luque, San Lorenzo, Limpio, Ñemby, Lambaré, Fernando de la Mora, Villa Elisa, Mariano Roque Alonso, Guarambaré, and Itáy Villeta.

2.5. Major Issues of the Housing Sector in Paraguay

Based on the current status of the housing sector in Paraguay, the major issues can be summarized as follows.

First, there is a mismatch between housing need and housing demand. Paraguay is a country with high housing need but low housing demand. According to the OECD (2018), more than one quarter of the population was living in poverty or extreme poverty as of 2015. Although people living in poverty are exposed to a high risk of homelessness or informal settlement, many cannot afford housing in the formal market. Despite the high housing need of low-income households, the housing demand is relatively low, because only a small fraction of the population is able to afford a home. Moreover, such low-income households have limited access to housing financing options (Fernández, 2016). Although there are some alternatives to housing financing for people earning 1.5 times the minimum wage or more, it is almost impossible for them to purchase a decent home with the amount provided by loan agencies, and the interest rates are extremely high.

To cope with the need for housing, it is necessary provide affordable housing for low-income households. However, housing development in Paraguay depends largely on the private sector, and the government has not established the proper legal and institutional framework to provide affordable residential land. Low- and middle-income households generally purchase a plot for housing on new or empty urbanized land. Real estate companies purchase extended land that lacks basic services, such as accessibility and water, at low prices and make it available for low- and middle-income households for long-term monthly installments.

In short, the housing supply offered by the private sector is limited to the high-income class. Though there have been initiatives to provide accessible housing to the middle-income class in recent years, housing financing remains a heavy burden for the majority of households. NGOs and housing associations are helping to address these challenges, but public intervention is sorely needed.

Second, in terms of governance, the state lacks the institutional capacity and framework to properly manage the housing sector. Although it is clear that the MUVH is the primary authority in the housing sector, its goals, vision, procedures, and responsibilities are vaguely defined, as is still in the early stage of building its institutional capacity.

For example, the classifications and definitions of the target social and income groups of each program are unclear. The fragmentation and inconsistency of the eligibility requirements creates unnecessary bureaucracy and complexity in the implementation of the programs. The lack of capacity for project planning and management at the institutional level also poses a challenge. To carry out a project, the MUVH must cooperate with other institutions, such as the MOPC, municipalities, and others, which is highly challenging. Weak governance sometimes results in a cessation of institutional intervention due to prolonged procedures or financial and/or technical difficulties. Another problem is the lack of effective regulation to control the formal and informal housing markets. Over the past several years, the housing market has not been controlled properly, and housing prices have increased substantially despite the increase in income.

Third, the lack of a national development plan with a territorial vision and uncoordinated regional policies have resulted in inefficient spatial development in urban and rural areas. Moreover, there is only minimal coordination among neighboring municipalities and national agencies. This can be observed in the differences in regulations and property taxes and lack of or outdated urban development plans. Generally, in the municipalities, there is no local technical capacity to propose and implement densification tools, policies, and strategies for abandoned buildings in central areas or create new incentive zones for social housing.

3. Experience in the Housing Policy of Korea

3.1. Overview of Housing Policy in Korea

Throughout its rapid economic growth and urbanization, Korea has faced different housing issues at different stages of its transition, and responded to such issues with diverse policy measures.

Before the 1980s, the government had endeavored to lay the legal and institutional foundation for systemized solutions to its housing issues. In the 1950s, Korea's housing policy focused on post-war reconstruction, with the government relying mainly on foreign in order to supply relief-type housing. In the 1960s, the housing policy dealt mainly with housing issues in terms of economic policy. During this period, the government introduced housing policies as a part of its Five-year Economic Development Plan, which was a government-led economic and industrial development plan. In accordance with the plan, the government realigned the institutional framework of its housing policy through the establishment of a

housing policy division under the Ministry of Construction (presently the Ministry of Land, Infrastructure and Transport: MOLIT) as well as the Korea National Housing Corporation and the Housing and Commercial Bank.

The drastic industrialization and urbanization in the 1970s caused major socio-economic changes, including sharp increases in urban population, nuclear families, and income, which made the housing shortage even more severe. In an effort to address the situation, the government established a 10-year housing construction plan to increase the housing supply and stabilize housing prices. In terms of the legal framework, the government established the Housing Construction Promotion Law and Land Development Promotion Law in 1972 and 1980, respectively, to facilitate housing production by public sector developers.

In the 1980s, based on the country's rapid economic growth, a large amount of capital was injected into the real estate market, causing real estate prices to rise quickly. The steep hikes in housing prices destabilized the housing supply for low- to middle-income households. Looking at the sociopolitical aspect, the spread of political democracy encouraged more people to call for the distribution income among the different income groups and increased social welfare, including housing as a social safety net. In response to the housing shortage and public requests, the government launched the Two Million Housing Drive (TMHD) to expand the housing supply and stabilize housing prices. The government planned to supply two million new housing units from 1988 to 1992, including five new towns in the suburbs of Seoul. To implement the plan, the government expanded the supply of developable land through the Korea National Housing Corporation and Korea Land Development Corporation and increased the provision of housing loans through the National Housing Fund.

<Table 2-8> Structure of Plan for the Construction of Two Million Housing Units

Category	Income Group	Housing Type	No. of Units Built (1,000 units)	Financial Assistance	Developers/Suppliers
Public sector	Urban poor	Permanent rental (20-36m ²)	250	Government fund	LH, local government
	Potential middle class	Long-term rental (33-50m ²)	350	National housing fund	LH, local government, private company
		Small home (40-60m ²)	250		
Private sector	Middle class	Medium-sized home (60-85m ²)	480	Private housing fund	Private company
	Above middle class	Medium-sized or large home (85m ² or above)	670	Housing owner's	Private company

Source: Ministry of Construction and Transportation (2002).

The TMHD is a milestone of Korea's housing policy that made a significant contribution to the drastic increase in the country's housing supply (Kim and Park, 2016, and KDI, 2012). Furthermore, it was the government's first attempt to allocate housing units by target income group in accordance with people's ability to pay. Permanent public rental housing for the lowest-income households, small for-sale units, and medium- or large-sized for-sale units for middle- to upper-middle-income households were constructed through the TMHD. The plan made a particularly large contribution to increasing the supply of public rental housing, designating 250,000 units as permanent rental housing units for the lowest income bracket.

<Table 2-9> Goals and Achievements of the Two Million Housing Drive

Category	Goal (A)	Annual Achievements					Ratio
		1988	1989	1990	1991	Total (B)	B/A (%)
Total	2,000	317	462	750	613	2,143	107.2
Public sector	900	115	161	270	164	700	79.0
Permanent rental units	190	-	43	60	50	153	80.5
Homes for working class	250	-	-	61	37	98	39.2
Long-term rental units	150	52	39	65	15	171	114.0
Small-sized homes for sale	310	63	79	84	63	289	93.2
Private sector	1,100	202	301	480	449	1,432	130.2

Source: Joo, Jongwon (1994).

With the successful implementation of the TMHD, housing prices in the early 1990s remained relatively stable. The outbreak of the Asian Financial Crisis in 1997, however, caused a dramatic decrease in housing demand, creating a backlog of unsold apartments. The government introduced various policy measures to boost housing demand, including lowering the acquisition and registration taxes, and offered financial support for home buyers and private sector builders through the National Housing Fund (Kim and Park, 2016).

In the early 2000s, the government began focusing on stabilizing the housing market and enhancing housing welfare. With the vitalization of the redevelopment of dilapidated housing, the price of redeveloped housing jumped. To solve this problem, the government implemented measures to control speculation and stabilize the real estate market, including the introduction of comprehensive real estate taxation, establishment of housing price ceilings, imposition of a transfer tax on households that own more than two homes, and introduction of real price registration for housing transactions, among others. In the meantime, the government drafted a housing welfare road map with a plan to supply one million public rental housing units over a 10-year period for the purpose of stabilizing the

housing of vulnerable groups.³

<Table 2-10> Housing Welfare Roadmap

Income Bracket	Characteristics	Support
Lowest decile	<ul style="list-style-type: none"> • Lack of ability to pay rent 	<ul style="list-style-type: none"> • Purchased housing and Jeonse³ housing • Small-scale national rental housing • Expansion of housing benefit
2nd to 4th decile	<ul style="list-style-type: none"> • Lack of ability to purchase a home 	<ul style="list-style-type: none"> • Supply of national rental housing • Maintenance of substandard housing • Expansion of support for Jeonse deposit and monthly rent
5th to 6th decile	<ul style="list-style-type: none"> • Capable of purchasing a home with government funding 	<ul style="list-style-type: none"> • Supply of small- and medium-sized affordable housing • Strengthening of financial support for housing purchase
Above 7th decile	<ul style="list-style-type: none"> • Capable of purchasing a home without government funding 	<ul style="list-style-type: none"> • Determined by the market • Financial assistance such as mortgage loan

Source: Ministry of Land, Infrastructure and Transport (2012).

Housing policy in the late 2000s focused on economic stimulus. The housing price in Korea reached a peak in 2007, but due to the sub-prime mortgage crisis in the United States in 2008, it began declining rapidly. In response to this downturn in the real estate market, the government made efforts to boost the real estate market through deregulation and tax cuts. Especially, for those who bought unsold homes outside the Seoul metropolitan area, tax benefits were provided to stimulate the regional housing markets. Regulations on redevelopment projects were also eased, by reducing the mandatory percentage of small homes and rental homes to be subject to redevelopment, increasing the floor area ratio, and relaxing safety standards.

Currently, the major housing policy issue in Korea is the need to tackle the diverse housing needs of socially vulnerable groups. Although Korea successfully resolved its quantitative and qualitative housing shortages, achieving a housing supply ratio of more than 100%, the lack of access to decent housing for non-home owners with mid to low incomes still remains a problem (Kim and Park, 2016). High dependency on private rental housing, including Jeonse and monthly rent, has caused more instability in the housing of such households. Furthermore, with rapid demographic and social change, housing needs have become diversified with the emergence of new target groups, including young people, single-person households, newlyweds, and the elderly. To cope with this situation, the current government established a new housing welfare roadmap that included the construction of 300,000 units of public rental housing, reflecting the different housing needs of people in different lifecycle stages and income levels.

3 Jeonse is a type of lease contract. Under a jeonse contract, the tenant consigns a large lump-sum deposit to the homeowner in lieu of paying monthly rent during the lease period. The deposit is returned to the tenant in full at the end of the lease period.

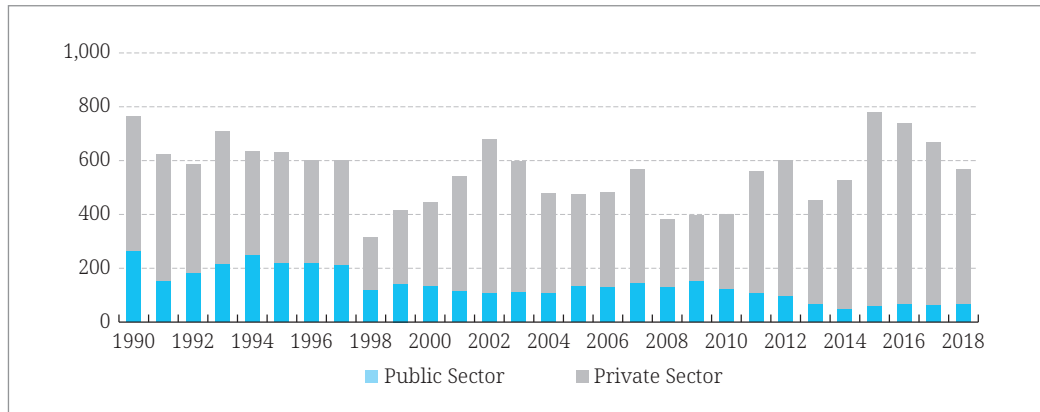
3.2. Achievements in the Housing Sector

3.2.1. Role of the Public and Private Sectors in Housing Production

Overall, Korea has successfully resolved the chronic housing shortage that had persisted from the 1950s to 1980s by increasing the housing supply through diverse policy measures. The housing policy over this period played a pivotal role in stabilizing the housing supply system and facilitating financing for housing development. The sharp increase in housing stock was a result of the massive housing construction that was carried out through the TMHD from the late 1980s to early 1990s. The TMHD caused annual housing construction to skyrocket from 200,000 to 250,000 units to over 500,000 units. From 1990 until the Asian Financial Crisis in 1997, the annual housing supply in Korea continued its upward trend. Having reached 400,000 to 500,000 units after the country recovered from the crisis, housing construction declined again due to the global financial crisis but soon bounced back (Kim and Park, 2017).

[Figure 2-15] Annual Housing Supply

(units: 1,000 units)



Source: Ministry of Land, Infrastructure and Transport (2019).

Although private builders supplied two-thirds of the total number of housing units constructed, the government played a pivotal role in the dramatic increase in the housing supply. The government sought to increase the housing supply in a short period of time by establishing an institutional foundation for the housing supply system and private sector participation. A legal framework, including the Housing Construction Promotion Act and Residential Land Development Promotion Act, was established to facilitate land and housing development, and public entities such as the Korea Land Corporation and National Housing Fund were founded to take charge of land development and housing finance.

With a legal framework for the public supply of land having been created through the Residential Land Development Promotion Act, a large area of residential land on the outskirts of the city was provided for new town development and large-scale housing construction, resolving the housing shortage problem in the short term. According to the act, once the operators of the construction project, including LH, local governments, government-invested public corporations, and a limited number of authorized private companies, secured approval for the project, they could be considered to obtain the determination, authorization, permission, consultation, consent, license, approval, disposition, cancellation, order, or designation of many other regulations and/or laws. That is, the act made the housing production process much quicker and easier.

In addition, to provide affordable land for housing development, public land is supplied at a fair price, and all small apartments on housing sites are supplied at prices below the construction cost.

3.2.2. Quantitative and Qualitative Achievements

With the different housing supply measures introduced by the government and active participation of the private sector in housing supply, Korea succeeded in closing the housing gap that had emerged amid the country's rapid industrialization and urbanization process. The housing stock increased by 3.9 times, from 4.36 million units in 1970 to 17.123 units in 2017. The housing supply ratio also increased substantially, rising from 78.2% in 1970 to 103.3% in 2017 (KOSTAT, 2019).

<Table 2-11> Changes in Housing Stock by Year in Korea

Year	1970	1980	1990	2000	2005*	2010	2017
Housing stock (1,000 units)	4,360	5,319	7,357	11,472	13,223	14,677	17,123
Households (1,000 households)	5,576	7,470	10,167	11,928	15,887	17,656	19,674
Housing supply ratio (%)	78.2	71.2	72.4	96.2	98.3	100.5	103.3

Note: *From 2005, single-person households started being counted as households, which led to the substantial increase in households and decrease in the growth rate of the housing supply ratio.

Source: KOSTAT (2019).

In line with the quantitative achievement in housing stock, the quality of housing has also been considerably improved. In 2000, the government introduced minimum housing standards regarding the number of rooms and floor area depending on the size and composition of households. The indicators of housing quality clearly show this improvement. The average area per person, for instance, increased by more than three times, from 10.1m² in 1970 to 31.2m² in 2017. As apartments account for a large proportion of newly supplied

dwellings, almost every housing unit is equipped with modern facilities, including piped water, hot water, and a modern toilet and bathroom.

<Table 2-12> Selected Housing Quality Indicators (1980-2017)

Indicators	1980	1990	2000	2010	2017
Average number of rooms per household	2.2	2.5	3.4	3.7	3.5
Average floor area per person (m ²)	10.1	14.3	20.2	25.0	31.2
Average floor area per household (m ²)	45.8	51.0	63.1	67.4	65.4
Dwellings per 1,000 inhabitants	142	170	249	364	395
Share of dwellings with piped water (%)	56.1	74.0	85.0	97.9	99.7
Share of dwellings with modern toilets (%)	18.4	51.3	86.9	97.0	99.1
Share of dwellings with a bathroom (%)	22.1	44.1	89.1	98.4	99.2
Share of dwellings with hot water (%)	9.9	34.1	87.4	96.9	99.0

Source: KOSTAT (2019).

As this table shows, Korea has achieved major improvements in terms of the quantity and quality of housing. Compared to other developed countries, however, Korea still needs to make improvements in terms of housing welfare, including floor space per person, owner-occupancy rate, and share of public rental housing of total housing. Recognizing this, the government is currently working to strengthen its demand-side housing policy for low-income households.

3.3. Mechanisms to Facilitate Housing Supply

As stated earlier, Korea's remarkable achievement in the housing sector was made possible through the utilization of diverse legal and institutional mechanisms of the public sector to facilitate the housing supply. Particularly during the country's period of economic development, the government focused on the development of large-scale residential land to increase the supply of housing units in response to the rapid urbanization and concentration of population in the capital region. The major issue was the need to secure large areas of residential land and facilitate the construction industry with limited financial resources. Considering the current housing shortage and level of urbanization in Paraguay, this paper will focus on how Korea's large-scale housing development mechanisms facilitated the quantitative expansion of housing supply from the 1970s to the late 1980s.

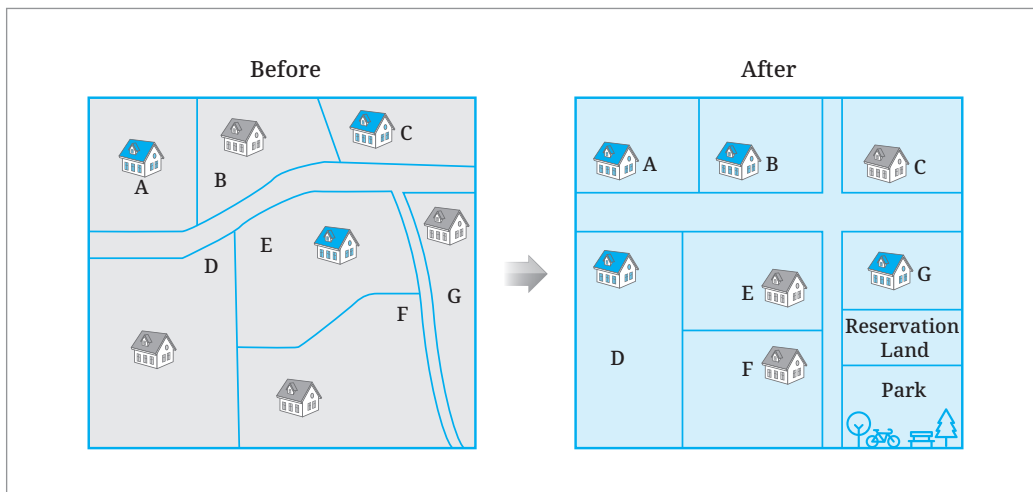
3.3.1. Land Policy

The representative mechanisms for developing land during the economic growth era were land compartmentalization and rearrangement and public development (Park et al, 2017). The land development policy played a pivotal role in the rapid growth of the housing stock from the 1970s to the early 1990s.

A. Land Compartmentalization and Rearrangement

In 1966, the government enacted the Land Compartmentalization and Rearrangement Projects Act in an effort to meet the massive need for urban development. Land compartmentalization and rearrangement projects were implemented using a land-replotting method, where the developer asks for the landowners' permission to rearrange the land within the project boundaries in order to secure public land and redistribute it to the landowners (Seoul Solution, 2019). The landowners designate a certain portion of the land for public facilities, and receive the developed land back with a much higher value. Under the land compartmentalization and rearrangement projects, different plots of raw land are fragmented or integrated into serviced land through modification of the shape, categories, and quality of the land (Park et al., 2017). The projects are also accompanied by the reorganization of the public facilities on the land and their building sites.

[Figure 2-16] Concept of Replotting Method



Source: KRIHS (2008).

The advantage of a land compartmentalization and arrangement project is that it enables the prompt supply of large-scale residential land at comparatively low cost. The disadvantage of the project is the privatization of the development gains generated through

the redistribution of serviced land to the original landowners.

Since real estate speculation became a major social issue in the 1980s, land compartmentalization and rearrangement projects have gradually been replaced with public development. Currently, given the high demand for urban development, the mechanism is utilized as a kind of urban development project.

B. Public Development

In the late 1970s, the need for an improved land development system emerged in order to supply large-scale apartment complexes in response to the increase in population. To address this situation, the government enacted the Housing Sites Development Promotion Act in 1980. This act allowed the government to designate certain sites as planned land development sites, and purchase such sites at the appraisal prices determined by public entities. Under the act, the government could alter the utilization of raw land, farmland, and forest land, and develop such land for residential purposes. The price of the land was appraised considering the inflation rate and land value appreciation. When the owner of a site disagreed with the appraised price, the land was expropriated in accordance with the land expropriation law and Housing Sites Development Promotion Act. The planning and implementation of the site was conducted by public entities such as the Korea Land Development Corporation, National Housing Corporation, or a local government, and the developed residential land was sold to private developers or public developers built the housing units by themselves. In cases where public developers expropriated the land and developed it by themselves, the mechanism was referred to as public land development.

With the land development projects led by the public sector, Korea was able to provide huge areas of land for housing development in a short period of time. The advantages of public development are outlined in the following paragraph.

First, public development enables the prompt implementation of land development projects. Public developers can expropriate land, compensate the landowner in accordance with related laws, and acquire land ownership all in a comparably short period of time. Second, during a public development project, the public developer can recapture the development gains produced through the development of the land. These recaptured development gains can be utilized for the development of basic infrastructure, such as roads, water supply and sewage systems, and parks, among others. Part of the developed land can be designated as a site for rental housing units. Lastly, the public developer can plan and promote systematic urban development while taking a holistic view of urban spaces in the process of promoting large-scale development projects.

C. Public Entities for Land Development

The major public entities for land development were the Korea National Housing Corporation (1962) and Korea Land Development Corporation (1981), which were merged to form the current Land and Housing Corporation (LH) in 2009. All large-scale land development projects were implemented by these institutions, vested with the power to purchase non-urban land through eminent domain. The whole process, including the selection of the location and area of land to be developed, determination of the number and composition of the housing units to be constructed, and allocation of housing units to buyers, was governed according to government plans and regulations. The private builders were de facto subsidiaries of the public sector developers and earned guaranteed profits. Through this mechanism, the government could secure and provide developable land for housing and proceed with the construction in a timely manner. The LH was established to revive the domestic housing supply using a fund fully supported by the central government. It has supplied more than 60% of public rental housing and contributed to providing affordable housing and land. National Housing Fund

D. National Housing Fund

The National Housing Fund was established to raise funds to help non-home owning households purchasing housing, taking up the national housing financing role of the Korea Housing and Commercial Bank. While the Korea Housing and Commercial Bank was in charge of financing large-scale housing, the National Housing Fund was responsible for providing financing for smaller housing targeting low-income households. To stabilize the housing of low-income households, the National Housing Fund financed the construction of low-income housing and permanent rental housing and the purchase and lease of housing for low-income households. The main financial resources of the National Housing Fund were the government, Housing Subscription Accounts, the National Housing Bonds, and Lottery.

3.3.2. Legal and Institutional Framework

Throughout each transition period of its housing policy, Korea has utilized various legal frameworks to facilitate housing production and effectively mobilize the public and private sectors. The major legal frameworks that have played critical roles in this process include the Housing Construction Promotion Act and Residential Land Development Promotion Act. In terms of an institutional framework, the government introduced a pre-sales system to support the housing supply with limited financial resources and promote the participation of the private sector. On the demand side, the government utilized a price-cap regulation to

raise the housing demand and control the housing price.

A. Housing Construction Promotion Act (1972)

The Housing Construction Promotion Act was designed to regulate the construction, supply, financing, and management of housing and improve and stabilize the residential environment of all citizens. In particular, the act was legislated to systemically mobilize the private sector in promoting housing construction in response to the massive demand for housing in the 1970s. Through this legislation, the government could legally manage the development, construction, and sale plans of public housing projects and private housing projects supported by public funds. Also, the act enabled the construction permission process to be easy and fast through one stop service.

B. Land Development Promotion Act (1980)

Until the 1970s, land readjustment projects had been the major land development measure, and land development highly relied upon private funds. This method, however, was not appropriate for the large-scale land development that was necessary to cope with the rapid increase in the urban population in Korea in the 1970s. To deal with this problem, the government applied land expropriation to the development of residential land, and to establish a legal basis for the development method, it legislated the Land Development Promotion Act in 1980. This act enabled the government to designate certain areas as planned land development sites and re-zone agricultural or forest land as residential land. The land price was determined in accordance with the land price before the designation and re-zoning. It also facilitated the land acquisition and compensation process and ensured the quick and easy construction of housing units on residential land.

C. Price Cap Regulation on New Apartment Prices

The price cap regulation on new apartment prices was introduced to address the chronic housing shortage, soaring housing price and speculation, and the difficulty of renter-occupiers in purchasing housing. The regulation was introduced in earnest in the middle of the 1970s. In the early stage of its introduction, the regulation was applied regardless of the size of the housing units. From 1989, a cost-linking system was adopted, and the price ceiling was set in accordance with the land and construction costs. In response to criticism over real estate speculation caused by the excessive gains being made from the difference between purchase prices and selling prices, the regulation limited the transfer of ownership titles for several years.

The regulation was suspended in 1999, with the enforcement of price deregulation, and activated again in 2005. In the 1990s, the cost-linking system was applied only to apartments built on residential land supplied by the public sector, but the price cap regulation expanded the coverage of the regulation in the 2000s.

The price cap regulation helped stabilize the housing market and supply new apartment units at reasonable prices by controlling the rise of the selling price of new apartment units.

D. Pre-sales of Housing

Under the pre-sales system, a housing unit is sold to a buyer before the completion of construction, with the buyer paying almost 80% of the housing price through a down payment and intermediate payment. The payments made up front by the buyer cover the construction cost. This system provides advantages for builders, as it secures housing demand in advance and uses the funds from the buyer to offset construction financing shortages (Kim, 2003).

It was 1984 when the pre-sales system was introduced in Korea. The government wanted to supply a massive number of housing units to enhance housing stability. However, due to the lack of funds among private builders and the limitations of external funds, it was difficult to supply large quantities of housing units in a short period of time. With the introduction of the pre-sales system, the government was able to achieve its goal without relying on special financial investment (Lee and Son, 2015).

The biggest advantage of the system is that it facilitates the housing supply. Construction of housing units requires a large amount of funds, but by selling the housing units in advance, the builder can start the construction work without having to secure huge amounts of external funds. On the other hand, the home buyers take on the risk involved in making an advance purchase of an expensive property without having first secured the final product and must be prepared for the possibility of quality degradation due to the builder's moral hazard and construction delays.

In conclusion, Korea's pre-sales system has contributed to the expansion of the housing supply and the quantitative growth of private housing developers. However, there has been criticism regarding the system's weakening of the competitiveness of private builders and causing them to undergo excessive expansion (Kim, 2003).

3.3.3. Monitoring and Evaluation Framework

Monitoring and evaluation is a process that helps improve policy performance and achieve policy goals. The purpose of monitoring and evaluation in policy arena is to improve policy outputs. For example, housing policy would be evaluated by its performance and outputs. Monitoring and evaluation process provide the information on what the policy activities are doing, how well it is performing and whether it is achieving its aims and objectives. As a result, it will give guidance on future policy intervention. It is assumed as an important part of accountability for public sector and gives a ground for further or limited intervention.

Housing policy in Korea has developed a monitoring and evaluation system incorporating planning, implementing, and feedback based on data, evidence, and information. First of all, long-term planning in housing policy has been established and the responsible ministry, the MOLIT, publishes annual strategic plan based on the long-term plan. Numerous programs are implemented based on the annual plan including housing benefits, construction of public and private housing, subsidizing funds for the target population, and housing related services among others. Annual housing survey releases the changes of households' situation such as rent burden, affordability, needs for housing subsidy, and perception on government policy and housing needs etc. This information based on the data also influences the government' policy and programs.

One of the distinguished tool is Korea Housing Survey conducted every year based on the Framework Act on Residence. The Korea Research Institute for Human Settlements has been responsible for conducting survey, analyzing the results, and providing implication for housing policy. Structured questionnaire was surveyed by the trained investigators to ask on the household's housing mobility, price, rent, financial sources, future demand, preferences, and socio-economic characteristics. Wide range of questions provides useful information on whether the policy achieves intended results or reveals unintended consequences. The government puts constant efforts to monitor and evaluate policy through constant monitoring housing market price and transaction, registering private landlords, and data collection etc.

4. Policy Recommendations for Paraguay

The policy recommendations for Paraguay have been drawn from: 1) a diagnosis of the current situation of the housing sector in Paraguay; 2) lessons learned from the Korean experience, and 3) analysis of the results of a survey targeting the government officials of the MUVH. More than 30 officials from the ministry participated in the survey, in which they evaluated the urgency and importance of each category of housing issue, including housing supply, land supply, housing finance, legal and regulatory framework, and housing need and demand. In each category, the issues with high urgency and importance were ranked as the prioritized policy sector. To summarize the diagnosis of the current situation of the housing sector and the results of the survey, the prioritized political sector and policy recommendations, reflecting Korea's experience, are outlined in the paragraph below.

The highest priority housing policy issue is the supply of affordable housing and the land required to build it. For countries undergoing economic and demographic growth like Paraguay, an institutional foundation for securing housing inventory is essential in addressing the social, demographic, and spatial changes that accompany such growth. Considering the level of housing deficit and general income level in Paraguay, the type of housing to be supplied most urgently is affordable housing. Unfortunately, however, due to the lack of incentives for the production of affordable housing and lack of an institutional and legal framework for land management and facilitation, the Paraguayan government will find it challenging to promote the construction of affordable housing.

To cope with this situation, the government should first strengthen the legal framework for the supply of affordable residential land. The current housing supply of Paraguay is led by the private sector. However, to systematically scale up the supply of affordable housing, the active intervention of the public sector is required. Similar to Korea during its economic development period, however, Paraguay has limited public funds to utilize for the housing sector and has no institutional mechanism with which to intervene in housing development. It is thus necessary for Paraguay to establish a legal and institutional framework to effectively provide serviced land at low cost. The Korean government succeeded in developing large-scale residential lands with relatively small capital injections by utilizing such a legal framework, such as the Land Development Promotion Act. This legislation facilitated the process of acquiring and providing compensation for land and simplified the construction of housing units. Given this experience, it is possible for Paraguay to create a new legal framework for land development that is applicable to its current situation.

Second, a regulatory framework and incentive for the private sector should be established. In Paraguay, the majority of housing construction is conducted by the private sector, and the government budget for the housing sector is limited. As a result, the participation of the private sector is essential to the expansion of affordable housing. Korea has used financial incentives to promote the participation of the private sector, such as a pre-sales system and home builder's loan. In terms of the demand side, the accessibility of housing finance programs for low-income households should be enhanced. The wide range of eligibility requirements of current housing finance programs creates inefficiency in housing policies and limits the support for low-income households. The government should simply the eligibility requirements to make the support more accessible to low-income households. In addition, the paradigm of housing programs, which focus on the provision of subsidized housing construction, should be changed, and alternatives such as public rental housing should be considered. Public rental housing in Korea is evaluated as one of the most effective policy tools for addressing the issue of housing for low-income households.

To successfully apply these recommendations to Paraguay, it is of utmost importance to strengthen the government's institutional capacity in the housing sector. Especially, efforts to systematically coordinate the housing supply plan with the territorial and urban plans are essential. Unlike SENAVITAT, the former housing authority, the MUVH is responsible for urban planning. It is thus necessary for the MUVH to coordinate the housing, territorial, and urban planning and establish housing policies integrated into the country's territorial, urban, and infrastructure plans.

To integrate the housing policy into the territorial and urban planning, it is necessary to enhance the research capacity in related sectors. In this regard, the establishment of the Paraguay Research Institute for Human Settlements (PRIHS) would play a critical role. In Korea, the Korea Research Institute for Human Settlements (KRIHS) has conducted comprehensive research on territorial planning, regional development, urban development, housing, and other related areas. These studies have greatly contributed to the systematic linkage of policies in each field and the development and introduction of appropriate policy alternatives in each period of the country's growth and development in a timely manner, successfully integrating housing and land policies into Korea's national policy.

In the housing sector, in particular, the KRIHS has endeavored to increase the quality of life of citizens by conducting diverse research on housing policies. In the 1980s, the institution focused on establishing a foundation for the housing and land policies and proposing a new direction for them. In particular, it supported the government's Two Million Housing Drive (TMHD), new town development, and land development, use, and

zoning. In the 1990s, the specific plans for the new towns and measures for strengthening the institutional foundation of and transparency in the housing market were established. In this context, the institute conducted studies on speculative demand, real-name financial transaction systems, housing finance empowerment, and real estate market stabilization. After the 2000s, the KRIHS shifted its focus from the middle-class and owner-centered policies to policies for vulnerable social groups and housing welfare. Also, it became increasingly interested in the management of housing inventory and carried out research on diverse rental housing policy and distribution systems for low-income households. Additionally, the institute started conducting the survey on housing demand on a regular basis. Currently, the KRIHS is focusing on providing recommendations on customized housing policies for different social groups.

Lastly, in addition to establishing the PRIHS and enhancing research capacity, a systematic framework for monitoring and evaluating policy and enhancing the effectiveness of housing policy implementation should be established, and policy research based on data collected through the monitoring and evaluation should be conducted and strengthened.

In Paraguay, there is a serious lack of official data on the housing sector, and the existing data lacks reliability. For instance, there is a large gap between the numbers of families and housing stock in the statistical yearbook for 2012 and those in the population and housing census for the same year. As a result, it is highly difficult to conduct an objective analysis of the housing supply during that period. Korea has been able to respond to its housing problems in a timely manner through the systematic monitoring, evaluation, and planning of the housing sector. One of the major monitoring and evaluation tools used in Korea's housing sector is the Korea Housing Survey. Conducted on an annual basis, the survey collects information on housing, residential environments, household characteristics, and demand for residential welfare in order to accurately identify the status of housing in the country, including housing prices, housing purchases, and ownership. The Ministry of Land, Infrastructure and Transport is in charge of the survey, but the KRIHS conducts it, enhancing the professionalism and accuracy of the survey results. It is thus necessary for Paraguay to establish a similar systematic monitoring and evaluation system for policy-making purposes while also supporting the training of specialized personnel with the skills necessary to operate the system. This will make it possible for Paraguay to establish housing policies that can respond effectively to environmental changes such as demographic transitions and changes in rental market structures and housing demand. Considering the available budget and personnel, the priority should be the regularization of a 10-year census. After doing so, it is recommended that Paraguay expand the scope of the 10-year census to a five-year intercensus, and conduct data collection and policy research based on that.

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Appendix

Major Housing Programs of the MUVH

Housing Programs	Financial Resources	Contents
Qualitative Improvement		
Proyecto AMA	IDB Loan USD 14 million	<p>Objective:</p> <ul style="list-style-type: none"> To contribute to reducing the qualitative housing deficit in the AMA <p>Beneficiaries:</p> <ul style="list-style-type: none"> Households living in the AMA with homes in need of improvement or enlargement (with income less than 2 MMW) <p>Activities:</p> <ul style="list-style-type: none"> Housing improvement with technical assistance, including the improvement of roofs, walls, floors, and water, electrical, and sewage systems, etc. Enlargement of rooms, kitchen, bathroom, water facilities, sewage system, etc.
Mejoramiento Integral Del Barrio Chicarica Alta	IDB Loan USD 14 million	<p>Objective:</p> <ul style="list-style-type: none"> To improve the habitability of the Chacarita Alta neighborhood <p>Beneficiaries:</p> <ul style="list-style-type: none"> Residents of Chacarita Alta, Asunción <p>Activities:</p> <ul style="list-style-type: none"> Installation of drinking water networks and sanitary sewer and drainage systems Improvement of access to the neighborhood Extension of the electricity network and public lighting Construction of public spaces and infrastructure Improvement and management of solid waste Resettlement of residents living in dangerous neighborhoods
Quantitative Improvement		
CHE TAPYI	Grant from Taiwan USD 71 million	<p>Objective:</p> <ul style="list-style-type: none"> Improve the living conditions of inhabitants through the provision of housing, health and community centers, energy services, and drinking water Increase housing supply for people living in poverty or extreme poverty <p>Beneficiaries:</p> <ul style="list-style-type: none"> Low-income households joining a community association <p>Activities:</p> <ul style="list-style-type: none"> Construction of social housing and basic infrastructure
Sembrando Oportunidades	Sovereign bonds	<p>Objective</p> <ul style="list-style-type: none"> To increase the income of and access to basic social services for families living in extreme poverty <p>Beneficiaries:</p> <ul style="list-style-type: none"> Households living in extreme poverty, verified by the STP and MUVH <p>Activities</p> <ul style="list-style-type: none"> Construction of 5,800 housing units

Housing Programs	Financial Resources	Contents
FOCEM	Fund from Mercosur (85%) and state contribution (15%)	<p>Objective</p> <ul style="list-style-type: none"> • To improve access to safe and healthy living spaces with community services and facilities <p>Beneficiaries</p> <ul style="list-style-type: none"> • Households living in poverty or extreme poverty, preferably in the border area <p>Activities</p> <ul style="list-style-type: none"> • Construction of 1,088 housing units with access to infrastructure and community facilities
Pueblos Originarios	MUVH fund	<p>Objective</p> <ul style="list-style-type: none"> • To improve the living conditions of indigenous people by providing better access to housing <p>Beneficiaries</p> <ul style="list-style-type: none"> • Indigenous communities <p>Activities</p> <ul style="list-style-type: none"> • Construction of housing for Indigenous communities

Source: MUVH (2019).

03

CHAPTER

Recommendations for the Establishment of a Research Institute in the Urban and Housing Sector of Paraguay

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1. Background
2. Definition of the Policy Research Institute and its Development in Korea
3. Establishment and Operation of the Korea Research Institute for Human Settlements (KRIHS)
4. Analysis of Conditions for Establishing a Research Institute in Paraguay
5. Recommendations for Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay

Keywords

Policy Research Institute, Ministry of Urban Planning and Housing, Governance, Establishment of a Research Institute, Paraguay

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Summary

Based on rapid urbanization, Paraguay is now facing various urban and regional problems, such as a housing shortage, unplanned urban development, and regional disparity. To adequately address these issues, it is necessary to develop urban and housing policies. The Paraguay government established the National Secretary of Housing and Habitat (SENAVITAT) in 2009 and expanded it to the Ministry of Urban, Housing and Habitat (MUVH) to better address urban and housing problems. With a view to further development of policy-making capacity, the MUVH proposed a consulting project on the establishment of a research institute in the urban and housing sector of Paraguay with the Korean government in 2017.

In Korea, the Korea Research Institute for Human Settlements (KRIHS) was established in 1978 in response to the problems in the territorial, urban and housing sectors during the process of rapid economic growth, and to develop long-term territorial development policy. Since its establishment, the KRIHS has been leading national territorial development with its research activities.

This paper strives to provide guidelines for the establishment of a national research institute in the urban and housing sector of Paraguay. After reviewing previous research on think tank and research institute establishment experiences in Korea, we will discuss the mission, governance, organization structure, human resources and budget of the research institute as a baseline for the establishment of the organization.

1. Background

Based on rapid urbanization, Paraguay is now facing various urban and regional problems, such as a housing shortage, unplanned urban development, and regional disparity. To adequately address these issues, it is necessary to develop urban and housing policies. The Paraguay government established the National Secretary of Housing and Habitat (SENAVITAT) in 2009 and expanded it to the Ministry of Urban and Housing Development (MUVH) to better address urban and housing problems. With a view to further development of policy-making capacity, the MUVH proposed a consulting project on the establishment of a research institute in the urban and housing sector of Paraguay with the Korean government in 2017.

Policy research institutes play an important role in the development of policies in many countries. In today's complex policy environment, extensive data analysis and technical support are required to enable adequate policy response. Policy research institutes analyze relevant data, review existing policy cases, and present effective alternatives for developing government policies. Policy makers can create more objective and reasonable policy alternatives, refraining from arbitrary judgment and interest biases by referring to the proposals of policy research institutes. The role of policy research institutes is particularly important in developing countries with weak policy competencies. While knowledge and expertise are essential to the long-term development of a country, developing countries tend to have weak research capabilities in universities and the private sector. In this case, policy research institutes can be an effective means for the country to secure and accumulate the knowledge and expertise needed at the initial stage of economic development.

The case of the Republic of Korea can provide a good example of how a country can effectively utilize policy research institutes for economic development. Since the establishment of the Korea Development Institute (KDI) in 1971, Korea has established national research institutes in each policy sector and has produced the knowledge needed for policy decisions. In the sector of national territorial policy, the Korea Research Institute for Human Settlements (KRIHS) has played an important role. The KRIHS adopted a key role in establishing the Comprehensive National Territorial Plan, the top-level plan in the national territorial sector, as well as in developing local development policies, urban policies, housing and territorial policies, infrastructure policies, and spatial information policies. Such plans and policies have enabled Korea to effectively establish a virtuous circle of economic development and urban and regional development, and significantly improve the quality of life of the population as a result.

The purpose of this study is to propose a plan for establishing a policy research institute suitable for Paraguay based on the experiences of the KRIHS. This study will focus on the conditions that enabled the successful establishment and operation of KRIHS and draw implications for Paraguay. Korea's experience can be an important reference, but it is not a model that can be utilized in all countries. Therefore, it is important to prepare a plan for establishing a policy research institute that fits the economic and social conditions of Paraguay. For this purpose, this research project will identify the functions of the Paraguayan Ministry of Urban Housing and Habitat (MUVH) and related departments, the existing partnerships between the government and experts, and the nature of existing research institutes. On the basis of this information, this study will propose the role, function, governance, organization and budget of a policy research institute established for the urban and housing sector in Paraguay.

This study strives to provide overall guideline for the establishment of the research institute. The role, governance, organization and budget of the research institute suggested here are neither restrictive nor binding. Actual decisions on the establishment and development of the research institute should be made by the Paraguayan government with full consideration of the social and economic circumstances of Paraguay. Thus, this study refrains from providing more details than necessary to avoid conflicting with potential changes required in the actual implementation stage.

2. Definition of the Policy Research Institute and its Development in Korea

2.1. Definition of the Policy Research Institute

Policy research institutes are often called think tanks. A think tank is a term derived from the space where defense strategies were discussed during World War II. It is not easy to find a generalized definition of a policy research institute because these institutes exist in a wide variety of forms given their legal status, the level of independence and business model. Some definitions provided by scholars include the following: “relatively autonomous organizations engaged in the research and analysis of contemporary issues independently of government, political parties, and pressure groups” (Stone, 2001); “organizations that are distinct from governments and whose objective is to provide advice on a diverse range of policy issues through the use of specialized knowledge and the activation of networks” (Ladi, 2011); and “independent, non-interest based, non-profit organizations that produce and

principally rely on expertise and ideas to obtain support and to influence the policymaking process” (Rich, 2004). Such definitions that emphasize the independence of research institutes mainly originate from the Anglo-American tradition. There is, however, a need for a broader definition considering the existence of many countries with a large number of government-led policy research institutions, like those in Asia.

McGann analyzes and evaluates policy research institutes around the world every year and provides a more comprehensive definition: “organizations that generate policy-oriented research, analysis, and advice on domestic and international issues, thereby enabling policy makers and the public to make informed decisions about public policy” (McGann, 2017). While policy research institutes can be independent or affiliated with another institution, they are permanent organizations, not temporary committees. Policy research institutes generally link academia and policy makers, and play a role in connecting the government and civil society. They produce an independent view that meets the public interest based on applied research or basic research.

From this viewpoint, policy research institutes can be understood as organizations with certain characteristics, the first being that they are research-centric. Policy research institutes are, above all, places where policy consulting is conducted through research and analysis. The strictness and demonstrability of research are very important considering the fact that ideological orientation cannot be completely eliminated in policy research. Good policy research institutes are based on these excellent research capabilities. The second characteristic of policy research institutes is independence. Many researchers suggest that independence from stakeholders is an important feature of policy research institutions because the results of the research should not be utilized in a direction that favors specific groups, but for universal public interest. In this regard, a question arises as to whether research institutes under the governance of private companies can be regarded as policy research institutes. McGann’s study includes such institutes as policy research institutes in a broad sense. However, such research institutes have inherent limitations in their independence. The third characteristic of policy research institutes is a public nature. Policy research institutes support policies that correspond with the public interest. Research institutes established to support the interests of particular groups or companies are not included in the policy research institutes referenced in this study.

McGann categorizes policy research institutes into seven groups according to their nature: autonomous and independent, quasi-independent, government affiliated, quasi-governmental, university affiliated, political party affiliated, and corporate. His classification is centered on the affiliation of policy research institutes. The existence and nature of a

policy research institute’s affiliation is the most important factor in understanding the institute because affiliation has a large influence on the publicness, independence and budget of the institute. On the other hand, it is also possible to classify policy research institutes according to research themes and ideological positions.

According to McGann, there are 7,815 policy research institutes globally, 1,972 in North America, 979 in Latin America, 664 in Sub-Saharan Africa, 2,045 in Europe, 479 in Northeast Africa, and 1,676 in Asia. Policy research institutes are growing in number, especially in Asia and Latin America (McGann, 2017).

<Table 3-1> Categories of Think Tank Affiliations

Category	Definition
Autonomous and Independent	Significant independence from any one interest group or donor and autonomous in operation and funding from government
Quasi-Independent	Autonomous from government but controlled by an interest group, donor or contracting agency that provides a majority of the funding and has significant influence over the operations of the think tank
Government Affiliated	A part of the formal structure of government
Quasi-Governmental	Funded exclusively by government grants and contracts but not a part of the formal structure of government
University Affiliated	A policy research center at a university
Political Party Affiliated	Formally affiliated with a political party
Corporate (For Profit)	A for-profit public policy research organization affiliated with a corporation or merely operating on a for-profit basis

Source: McGann (2017).

2.2. Development of Policy Research Institutes in Korea

Policy research institutes in Korea are mainly government led. This stands in contrast to the policy research institutes in developed countries, such as the U.S. or U.K., which are dominated by the private sector. As latecomers to industrialization, policy research institutes in Korea were established to support government policies in the promotion of government-led economic growth. Unlike Western society, the lack of research manpower in the private sector was another reason why the government led the establishment of policy research institutes in Korea.

The Korean government established the Korea Institute of Science and Technology (KIST) in 1966 for science and technology and the Korea Development Institute (KDI) in 1971 for social sciences. Since then, research institutes have been established for each administrative

department, forming the structure of national research institutes of Korea today. Starting with the establishment of the Seoul Institute in 1992, metropolitan governments have formed their own research institutes. There are also corporate, political party and civil society research institutes. The following section will explain each of these institutes in detail.

The central government's policy research institutes in Korea are called government-supported research institutes and there are 51. Twenty-six institutes belong to the National Research Council for Economic, Humanities and Social Sciences (NRC) under the Office for Government Policy Coordination and 25 institutes belong to the National Research Council of Science & Technology (NST) under the Ministry of Science and ICT. The need for government-supported research institutes has increased since the 1960s to facilitate accurate analysis and policy for national economic development. These institutes were established within a system in which the state directly manages and operates research functions. The basis of science and technology research was established in 1966 with the Korea Institute of Science and Technology (KIST) and the basis of economic, humanities and social science research was established in 1971 with the Korea Development Institute (KDI).

Later, the research institutes were separated from the related ministries and transferred to independent administrative bodies to enhance research independence and encourage collaborative research among the institutes. Following the enactment of "the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes and so forth", the supervising offices of the 42 government-supported research institutes were then unified to the Prime Minister's Office. Five research councils were established as medium management bodies for economic and social sciences, humanities, public technology, basic technology and industrial technology. Since then, the council for economic and social sciences has been combined with the council for humanities, the council for public technology has been dissolved, and the council for basic technology was combined with the council for industrial technology in 2014. It is an important feature of the government-supported research institutes in Korea to have a separate administrative body independent from the related ministry so as to maintain independence while receiving support from the government.

<Table 3-2> Public Research Institutes under NRC

Name	Acronym	Establishment Year
Korea Development Institute	KDI	1971
KDI School of Public Policy and Management	KDIS	1997
Korea Institute for Health and Social Affairs	KIHASA	1971
Korean Educational Development Institute	KEDI	1972
Korea Institute for Industrial Economics and Trade	KIET	1976
Korea Rural Economic Institute	KREI	1978
Korea Research Institute for Human Settlements	KRIHS	1978
Architecture and Urban Research Institute	AURI	2007
Korean Women's Development Institute	KWDI	1983
Korea Information Society Development Institute	KISDI	1985
Korea Energy Economics Institute	KEEI	1986
Science and Technology Policy Institute	STEPI	1987
The Korea Transport Institute	KOTI	1987
Korea Labor Institute	KLI	1988
Korean Institute of Criminology	KIC	1989
National Youth Policy Institute	NYPI	1989
Korea Institute for International Economic Policy	KIEP	1989
Korea Legislation Research Institute	KLRI	1990
Korea Institute for National Unification	KINU	1990
The Korea Institute of Public Administration	KIPA	1991
Korea Institute of Public Finance	KIPF	1992
Korea Environment Institute	KEI	1992
Korea Maritime Institute	KMI	1997
Korea Research Institute for Vocational Education and Training	KRIVET	1997
Korea Institute for Curriculum and Evaluation	KICE	1998
Korea Institute of Child Care and Education	KICCE	2005

Source: NRC, visited on March 13, 2019 (www.nrc.re.kr).

<Table 3-3> Public Research Institutes under NST

Name	Acronym	Establishment Year
Korea Institute of Science and Technology	KIST	1966
Green Technology Center	GTC	2013
Korea Basic Science Institute	KBSI	1988
National Fusion Research Institute	NFRI	2005
Korea Astronomy and Space Science Institute	KASI	1974
Korea Research Institute of Bioscience and Biotechnology	KRIBB	1985
Korea Institute of Science of Technology Information	KISTI	1962
Korea Institute of Oriental Medicine	KIOM	1994
Korea Institute for Industrial Technology	KITECH	1989
Korea Electronics and Telecommunications Research Institute	ETRI	1976
National Security Research Institute	NSRI	2000
Korea Institute of Civil Engineering and Building Technology	KICT	1983
Korea Railroad Research Institute	KRRI	1996
Korea Research Institute of Standard and Science	KRISS	1975
Korea food Research Institute	KFRI	1987
World Institute of Kimchi	WIKIM	2010
Korea Institute of Geoscience and Mineral Resource	KIGAM	1948
Korea Institute of Machinery and Materials	KIMM	1976
Korea Institute of Materials Science	KIMS	2007
Korea Aerospace Research Institute	KARI	1989
Korea Institute of Energy Research	KIER	1977
Korea Electro-technology Research Institute	KERI	1976
Korea Research Institute of Chemical Technology	KRICT	1976
Korea Institute of Toxicology	KIT	2012
Korea Atomic Energy Research Institute	KAERI	1959

Source: NST, visited on March 13, 2019 (www.nst.re.kr).

Another type of institute is the local government-supported research institute (hereinafter referred to as a local research institute). Local research institutes can be located in metropolitan cities or cities with populations of more than one million based on the Act on the Establishment and Operation of Local Government-Invested Research Institutes. Starting

with the establishment of the Seoul Institute in 1992, sixteen local research institutes have been established. Local research institutes receive financial support from local governments, but take the form of a separate independent corporation. They conduct research for the policy development of local governments and conduct research services and networking activities to address current challenges. With the recent settlement of the local autonomy system, the development of city- and provincial-level policy has been active, and the role of local research institutes is expanding accordingly.

The Seoul Institute was established in 1992 as a foundation for the Seoul Metropolitan Government, based on the Act on the Establishment and Operation of Local Government-Invested Research Institutes and the Ordinance on the Promotion of the Seoul Development Institute. According to this ordinance, the Seoul Institute was established with the purpose of promoting the welfare of the citizens of Seoul and contributing to the sustainable development of Seoul. Its main activities include: 1) research on mid- and long-term plans and data regarding local administration and the council activities of the Seoul Metropolitan Government, 2) research on the major issues of city administration and council activities, 3) assigned projects from the government, local government, domestic and international research institutes, and private organizations, such as research service and cost accounting, 4) the publication of books and periodicals related to research on city administration and council activities, and 5) collaboration with other research institutes, including joint research, academic conferences and information exchange. The Seoul Metropolitan Government has set up a fund to provide necessary financial support for the operation of the Seoul Institute, and the important issues of the Institute are deliberated on and decided by a board of directors. The Seoul Institute is currently composed of the Board of Directors, Office of Planning and Coordination, and six research departments (Urban Society Research, Civil Economy Research, Urban Management Research, Transport System Research, Safety and Environment Research, and Urban Planning and Design Research) along with the Urban Data and Information Center, City Diplomacy Research Center and Seoul Public Investment Management Service.

<Table 3-4> Public Research Institutes Established by Local Government

Name	Acronym	Establishment Year
Chungbuk Research Institute	CRI	1990
Daegu Gyeongbuk Development Institute	DGI	1991
Jeonnam Research Institute	JERI	1991
The Seoul Institute	SI	1992
Busan Development Institute	BDI	1992
Gyeongnam Development Institute	GNDI	1992
Jeonbuk Institute	JI	1992
Research Institute for Gangwon	RIG	1994
Gyeonggi Research Institute	GRI	1995
Chungnam Institute	CNI	1995
The Incheon Institute	II	1996
Jeju Research Institute	JRI	1997
Daejeon Sejong Research Institute	DSRI	2001
Ulsan Development Institute	UDI	2001
Suwon Research Institute	SRI	2013
Changwon Research Institute	CHARI	2015
Goyang Research Institute	GYRI	2017

Source: Ministry of the Interior and Safety (2018).

Other research institutes include those established by private companies and political parties. However, these institutes tend to have large limitations in the autonomy and independence of their research, and conduct studies that reflect the interests of the founding organization. Therefore, there is a limit to these institutes' ability to function as policy research institutes based on the aspect of publicness.

On the other hand, there are independent research institutes that are not affiliated with any organization. Many of these institutes provide funding through donations and membership fees and have roots in a civil society organization, such as the East Asia Research Institute, Korea Research Institute and the Hope Institute. While these institutes play an important role in terms of independence and publicness, the share in the total activities of all research institutes is not large due to budget constraints.

The following table summarizes the functions and governance of the policy research institutes in Korea by type. As mentioned above, national research institutes are active in Korea, while independent research institutes are relatively weak. This discrepancy is closely related to the funding of research institutes. National research institutes have relatively stable financing because the government invests funds to cover the research needs of each ministry for policy development. In contrast, local government or private company research institutes are relatively vulnerable because their funding conditions change as perceptions of their needs change. Independent research institutes are usually operated with donations and membership fees, making it difficult to secure a stable financial structure. On the other hand, independent research institutes have the highest level of independence, while private company research institutes have the lowest. National research institutes can be said to have a high level of independence compared to local government research institutes because national research institutes are operated by separate administrative bodies that are independent from government ministries, which are the subject of policy demand.

<Table 3-5> Types and Functions of Policy Research Institutes in Korea

Types	Role	Governance and Funding	Examples
National Research Institutes	<ul style="list-style-type: none"> • Research support for national government policy development • 26 institutes in all policy areas 	<ul style="list-style-type: none"> • Funded and under the governing body of National Research Council • Independent from individual ministries 	<ul style="list-style-type: none"> • Korea Research Institute for Human Settlements (KRIHS), Korea Development Institute (KDI), etc.
Local Government Research Institutes	<ul style="list-style-type: none"> • Research support for local government policy development • Covering all policy areas 	<ul style="list-style-type: none"> • Funded and independent from local governments 	<ul style="list-style-type: none"> • Seoul Institute, Gyeonggi Research Institute, etc.
Private Company Research Institutes	<ul style="list-style-type: none"> • Supporting private company activities • Mostly focused on economic policies 	<ul style="list-style-type: none"> • Funded and belong to private company 	<ul style="list-style-type: none"> • Korea Economic Research Institute, Samsung Economic Research Institute, etc.
Independent Research Institutes	<ul style="list-style-type: none"> • Alternative policy development for general public 	<ul style="list-style-type: none"> • Independent foundation or from donors 	<ul style="list-style-type: none"> • East Asia Institute, The Hope Institute, etc.

Source: Author.

3. Establishment and Operation of the Korea Research Institute for Human Settlements (KRIHS)

3.1. Background of the Establishment of KRIHS

The Korea Research Institute for Human Settlements (KRIHS) was established in October 1978. The 1970s was a period of rapid urbanization after the start of rapid economic growth in the 1960s. In 1978, the urbanization rate of Korea was rapidly increasing to around 67% and as a result, problems such as overcrowding of the Seoul Metropolitan Area, regional imbalances, a housing shortage and a lack of major social overhead capital emerged. Accordingly, the Korean government sought to establish a comprehensive national territorial plan for the systematic use of national territory.

Before the establishment of the KRIHS, there was a National Territorial Planning Survey and Research Team within the then Ministry of Construction.¹ This team was an organization established to support the preparation of the First Comprehensive National Territorial Plan. This first plan was supported by the United Nations Development Programme (UNDP) and the actual research was carried out by Otam Metra, a French company. Although this first plan was established by Otam Metra, the National Territorial Planning Survey and Research Team played a leading role according to the testimony of many experts at that time. In addition, the Comprehensive National Territorial Plan of Japan at that time seems to have been an important reference point (Kim, 1982, Eom, 1993).

Until the establishment of the KRIHS, the plan making and research in the territorial sector was carried out by the public officials themselves, commissioned to a foreign company, or university professors invited for each policy agenda. The Housing, Urban and Regional Planning Institute (HURPI) and the National Territorial Planning Survey and Research Team were the organizations established as the need for such policy research emerged within the government. However, because they were operated in the short run for specific purposes, they had difficulty carrying out long-term, systematic research and attracting a high-quality workforce. For this reason, the government opened the KRIHS on October 4, 1978 as a specialized research institute to develop national territorial development policies through more scientific and continuous research. The Enactment of the KRIHS Promotion Act was

1 Even prior to the establishment of the National Territorial Planning Survey and Research Team, survey and research institutes existed within the Ministry of Construction, such as the Office of Urban Planning Research (1965.5-1966.12), Office of Housing Research (1966.12-1967.12), Office of Housing, Urban and Regional Planning (1966.12-1968.11), and Office of National Territorial Planning (1968.11-1979.7). However, in terms of the nature of the function and manpower, the National Territorial Planning Survey and Research Team can be understood as the predecessor of KRIHS (refer to Eom, 1993 for more detail).

promulgated in December 1978, shortly after the establishment of the KRIHS.²

The KRIHS was first established under the then Ministry of Construction and Transportation on an independent legal basis. At that time, the Korea Development Institute (KDI) under the then Economic Planning Board and the Korea Institute for Science and Technology (KIST) under the then Ministry of Science and Technology were very active. It seems that the then Ministry of Construction and Transportation also wanted to establish a good research institute dedicated to national territorial research. The KRIHS was operated by its president, but it was managed and supervised by the Ministry of Construction until it was transferred to the National Research Council for Economic, Humanities and Social Sciences (NRC) when “the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes and so forth” was enacted in 1999.

According to the Enactment of the KRIHS Promotion Act, the KRIHS aims to “contribute to the welfare of the people and economic development through efficient use, development and conservation of national territorial resources”. The Promotion Act made it possible to establish funds for the operation of the KRIHS and allowed the government to allocate budgets. The act also allowed for the transfer and loan of state-owned assets and public property free of charge. On the other hand, the KRIHS was placed under the direct supervision of the Ministry of Construction, meaning the business plan and financial statements had to be approved by the Minister.

2 At the time of the establishment of the KRIHS, the then Economic Planning Board established the Korea Development Institute (KDI) and the Ministry of Agriculture and Forestry also established the Korea Rural Economic Institute. According to the testimony of Kim Il-won, the second president of the KRIHS, the then Minister of Construction, Shin Hyung-sik, contributed greatly to the establishment of the KRIHS. At that time, the Ministry of Construction was realizing the need for a research institute to provide policy directions in the face of numerous national territorial development projects and Minister Shin reported to President Park to derive a decision. Minister Shin paid close attention to the enactment of the Act on the Establishment of Research Institutes, the establishment of the articles of association, the composition of the board of directors, budget securement, and the preparation of the office building (KRIHS, 1998).

<Table 3-6> Main Contents of the 「Enactment of the KRIHS Promotion Act」

Classification	Main Contents
Purpose	<ul style="list-style-type: none"> This Act protects and fosters the Korea Research Institute for Human Settlements, which was established to carry out research and development for national territorial development and perform research necessary for the establishment of the national territorial plans at all levels in a comprehensive and systematic manner, to contribute to the promotion of the welfare of the people and economic development by efficient utilization, development and conservation of national territorial resources
Fund	<ul style="list-style-type: none"> Establish a fund at the KRIHS to cover the funds needed for the facilities and operations of the institute.
Contribution	<ul style="list-style-type: none"> The government shall provide the necessary funding within the budget to cover the facilities and operating expenses of the KRIHS and the fund under Article 2.
Free transfer of national and public property	<ul style="list-style-type: none"> A national or local government may transfer or lend state-owned or public property to the research institute free of charge as necessary for the facilities and operation of the research institute.
Commissioning of research and data provision	<ul style="list-style-type: none"> When a national or local government intends to commission important research or a survey for the establishment of policies and plans regarding each enactment of Article 2 of the Act on Comprehensive Plans for Construction in the National Territory, it shall commission the work to the KRIHS with priority over others. The KRIHS may request the distribution of publications and other materials related to the matters of Article 2 of the Act on Comprehensive Plans for Construction in the National Territory to national and local governments as well as national or public educational and research institutions. In this case, the institutions receiving the request shall provide the materials unless there are special reasons.
Approval of the business plan	<ul style="list-style-type: none"> The KRIHS shall prepare a business plan and budget for each fiscal year and submit them to the Minister of Construction and Transportation for approval.
Submission of financial statements	<ul style="list-style-type: none"> The KRIHS shall prepare an income statement for each fiscal year and submit it to the Minister of Construction and Transportation in accordance with the audit of a certified public accountant designated by the Minister.
Reporting, inspection	<ul style="list-style-type: none"> The Minister of Construction and Transportation may, when necessary for supervision, instruct the KRIHS to report on its work or make public officials inspect the work.

Source: 「Enactment of the KRIHS Promotion Act」.

Dr. Yung-hee Rho, the first president of the KRIHS, was a professor at the Graduate School of Public Administration at Seoul National University and had a strong reputation in academia and politics. He contributed greatly to establishing the foundation of the institute in the early days, emphasizing the importance of research excellence and the independence of research institutes. In particular, it seems that Dr. Rho made significant efforts to secure good research manpower at the initial stage of the institute's establishment. Much of the initial workforce was transferred from the National Territorial Planning Survey and Research Team. In addition, many competent researchers were recruited from abroad. According to the testimonies of the early members,³ the KRIHS dispatched a group to the U.S. to attract talent, interviewing doctoral students and inviting them with great incentives.

3 Interview of Professor Won-yong Kwon (February 8, 2019).

For the early members, the KRIHS provided a 30–40 pyeong apartment for residence free of charge along with relocation expenses. The wage level was also set at a level well above the standard wage of public officials at that time. The funds for establishing and operating the KRIHS appeared to be almost entirely dependent on the government budget at that time, and some researchers' apartments were subsidized by companies under the umbrella of the Ministry of Construction.

3.2. Missions and Roles of KRIHS

The Enactment of the KRIHS Promotion Act does not detail the functions and roles of the institute. KRIHS Magazine (1983), which was published in commemoration of the fifth anniversary of the establishment of KRIHS, specifies the purpose and functions of the institute (KRIHS, 1983).

Due to population pressure and the rapid increase of development demand in the limited national territorial space, there was an urgent need to strengthen the national territorial research functions that can develop long-term national territorial development policies. In response to this demand, KRIHS was established to research and develop the systematic management plan of the national territory in a scientific and comprehensive manner by attracting talented people who majored in the field of national territorial planning for many years at home and abroad.

The basic task of the KRIHS is to present the scientific management plan of the national territory that can efficiently utilize, develop and preserve the territorial resources by systematically conducting comprehensive research on a long-term national territorial development policy and the research necessary to establish national territorial plans at all levels. The KRIHS performs the following functions:

- Comprehensive and systematic study of policies on the efficient use and development and conservation of territorial resources;
- Establishment of national territorial, regional and urban plans;
- Research on land, housing, traffic, environmental policies and systems;
- Development of basic research and planning techniques in the field of national territorial planning;
- Scientific and intensive management and the provision of territory-related data;
- Cultivation of human resources in the field of national territorial planning;
- Mutual information and academic exchanges with specialized institutions at home and abroad.

According to KRIHS Magazine (1983), the main function of the KRIHS is conducting a macroscopic and comprehensive study of national territorial development policy. Rapid economic growth and urbanization were underway at that time, and the government seemed to have recognized the need for a research institute that could manage the national territorial-related issues in a comprehensive manner. The function of the KRIHS encompassed all policy areas in charge of the then Ministry of Construction, including urban, land, housing, transportation and environment.

The tasks that would have been given to the KRIHS at the time of its establishment can be ascertained by looking at the major research projects in the early days of the institute, which can be divided into research related to national territorial planning, land policies and urban housing.

The research related to national territorial planning centered on the second Comprehensive National Territorial Plan because this document was being prepared at the time of KRIHS establishment. Such research includes the “Performance and Evaluation of the First Comprehensive National Territorial Plan” (1979~1982), “Long-term Research on National Territorial Development” (1979), and “Response to the Second Comprehensive National Territorial Plan” (1981). In addition, the KRIHS published five copies each of the “Materials of the First Comprehensive National Territorial Plan” (1981) and “Report by Sector Regarding the Second Comprehensive National Territorial Plan” (1982), compiling all the data related to national territorial planning and including the background, indicators and detailed approach regarding the development direction of each sector of the Comprehensive National Territorial Plan. Policy research to support the government’s regional development policy also formed a flow of initial research. The KRIHS played a leading role in the early regional planning policy through research, such as the “Survey on the Regional Planning for Industrial Belts of the Southeast Coast” (1979), “Allocation of Population and Industry and Traffic System Survey” (1979) and “Preliminary Feasibility Study for the Comprehensive Development Plan and Major Investment Projects for Taebaek Area” (1979). To prepare a pilot plan and implementation plan for regional development policy, the KRIHS carried out research, such as “Basic Research on Local Neighborhoods” (1982), the “Study on the Settlement in Regional Neighborhoods” (1982), the “Study on the Development of Regional Cities” (1982), and the “Study on Promoting Growth Base Cities” (1982).

Land-related research focused on the capacity to control the rising land prices and effectively supply urban land. The KRIHS carried out the “National Survey of People’s Perception of Land” (1979) to understand the actual condition of the distorted land market and to secure basic data for future land policy. In addition, the KRIHS published “Land Policy

Direction for High-tech Industrial Society in the 1980s” (1979), which presented the direction of future land policy. Based on these policy directions, the KRIHS conducted research on the development profit-seeking system and efficient land use necessary for land market stabilization, including the “Study on Social Returns of Development Profit” (1980), the “Study on the Institutional and Technical Apparatus and Influence of Restitution of Development Profit” (1981) and the “Study on the Improvement of the Use Zoning for the Efficiency of Land Use” (1980).

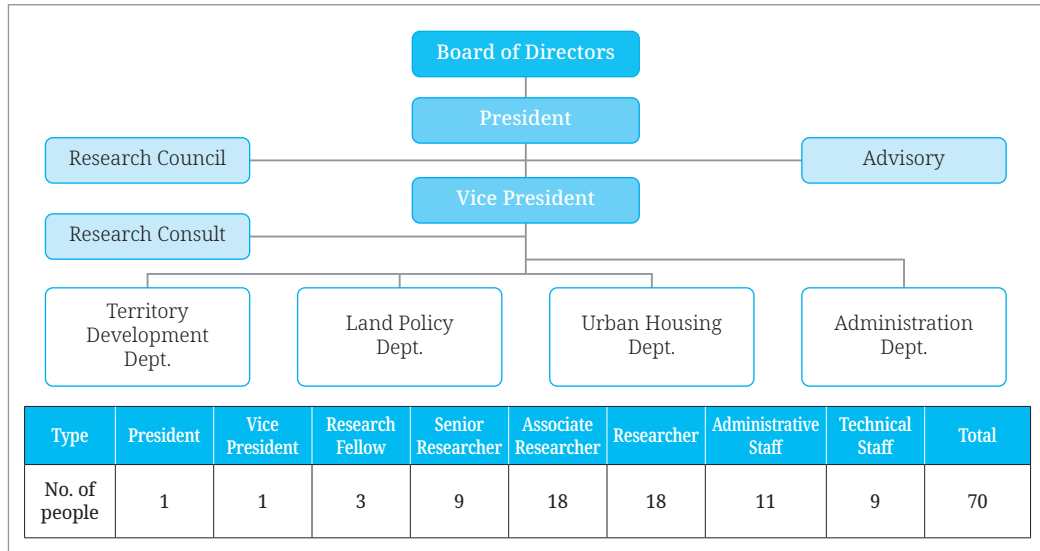
Following the increase of the urban population, the urban housing research sector focused on the improvement of urban infrastructure, expansion of housing supply and expansion of public transportation. KRIHS conducted basic studies to develop the logic of growth suppression to respond to the overcrowding of metropolitan cities, such as the “Study on the Appropriate Size of Metropolitan Cities” (1980), and research to determine the appropriateness of dispersion, such as “Basic Research on the Proper Arrangement of Cities” (1980). As for detailed implementation plans, KRIHS recorded accomplishments such as “Population Relocation Plan for the Seoul Metropolitan Area (Draft): 1982~1991” (1981). To identify the direction of housing policy and to enact practical measures, the KRIHS conducted research such as “Looking for the Direction of Housing Policies in the 1980s” (1979), the “Promotion Plan for Rental Housing Industry” (1980), the “Improvement Plan for Apartment Housing Management” (1980), and the “Study on Housing Investment” (1981). In particular, as the concentration of population into the Seoul Metropolitan Area (SMA) deepened, the government enacted the Metropolitan Area Maintenance Act and strived to manage it systematically. In response, another research stream was formed by the research focused on restraining the population of the SMA and relocating the functions efficiently, including the “Study on the Relocation of Functions of the SMA” (1980), the “Study on the Rearrangement Plan of the SMA” (1981), and the “Study on the Establishment of the Rearrangement Plan of the SMA” (1985).

3.3. Organization of KRIHS

Upon being established, the KRIHS had a board of directors as the legislative body, the office of president, a vice-president of three research divisions and an administrative division as the executive body, and a research advisory committee, research council and research deliberation committee as the advisory body. [Figure 3-1] shows the organization chart at the time of establishment. The research divisions consisted of a national territorial and regional development research division, a land policy research division and a housing and urban policy research division, and consisted of 70 people, including 20 administrative staff members. The organizational structure shows the most important research fields at

the time and the core missions of the research institute. For the KRIHS, national territorial and regional research, land research, and housing and urban research were the core fields in the early years of establishment. The KRIHS had a rank system of four levels: researcher, associate researcher, senior researcher, and research fellow. The research fellows were also directors of each research division.

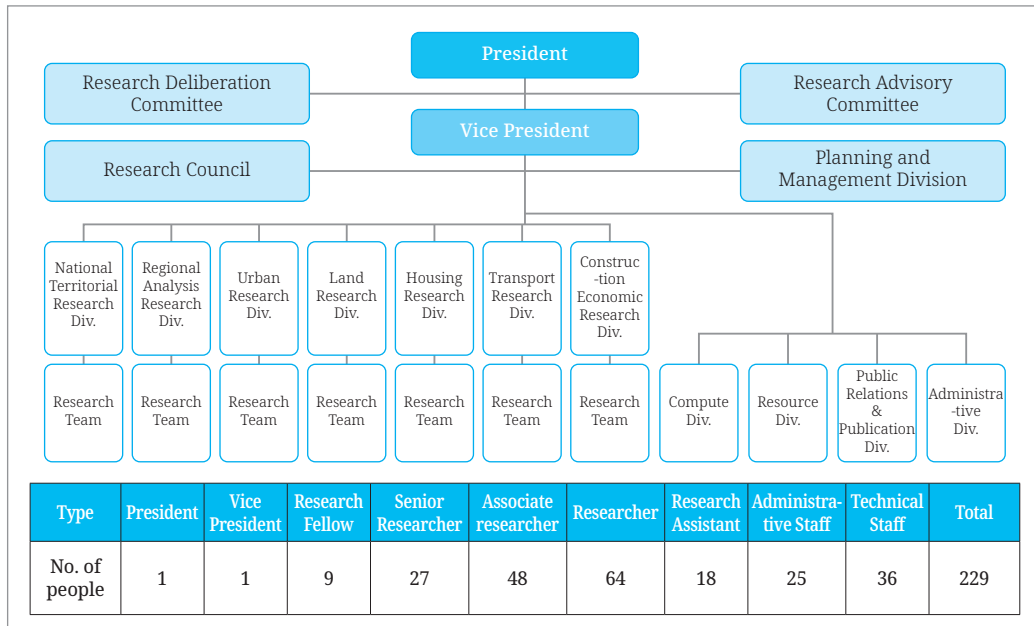
[Figure 3-1] Organization and Human Resources of KRIHS at the Time of Establishment



Source: KRIHS (2008).

[Figure 3-2] shows the organizational chart and human resource composition of KRIHS in 1988, ten years after its establishment. It can be seen that the initial three research divisions were expanded to seven. National territorial planning, regional, urban, land and housing were divided into one division each, and the divisions of transport research and construction and economic research were newly established. This change reflected the increasing research demand in the 1980s. In particular, research teams were organized for each division to respond to the subdivided policy issues and strengthen their expertise. In addition, a computer vision, resource division and public relations and publication division were added to respond to the expansion of the KRIHS. Meanwhile, the number of staff members increased from 70 in the early stage to 229 in 10 years. The ranking system of researcher, associate researcher, senior researcher and research fellow did not change after 10 years. The proportion of administrative staff also maintained the ratio of 25~30% in 1988.

[Figure 3-2] Organizational Chart and Human Resources of KRIHS in 1988



Source: KRIHS (2008).

3.4. The Governance of KRIHS

The governance of a research institute refers to the superior organization and legal and institutional status of a research institute, a key factor in determining the nature of a research institute because it directly affects the mission and budget of the institute. Governance also directly affects the independence and stability of the institute and the protection of the identity of the researchers.

The KRIHS was established under the Ministry of Construction based on the enactment of the KRIHS Promotion Act. This meant that the organization had a legal basis for stable operation. The KRIHS was established through social consensus and the president of the KRIHS had authority over human resources. Therefore, individual researchers were able to maintain a relatively stable status against political change, such as the change of the government. On the other hand, the KRIHS had limitations in independence under the direct management of the Ministry of Construction. The KRIHS received an annual budget and approval for its business plan and financial statements from the Ministry of Construction. This meant that the research carried out by the KRIHS played a role in directly supporting the Ministry of Construction and it was difficult to carry out independent research that conflicted with the interests of the ministry, which inherently limited the institute's role in providing various policy alternatives.

The independence of the research institute seems to have been a subject of discussion from the early stage of the establishment of the KRIHS. Dr Yung-hee Rho, the first president, had great interest in the independence of the research institute and hoped that the KRIHS would have an independent status from the government. The enactment of the KRIHS Promotion Act allowed a fund to be set up to raise money independently. However, the actual establishment of this fund was not realized and KRIHS operation depended on the budget of the Ministry of Construction.

The KRIHS faced a turning point in terms of governance in 1999. All 43 government-supported research institutes, including the KRIHS, were separated from the existing ministries and transferred to the Prime Minister's Office with separate management bodies, such as the National Research Council for Economic, Humanities and Social Sciences (NRC). To do this, the government abolished the existing act that stipulated the establishment and operation of each research institute and enacted the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes and so forth in 1999. As a result, the KRIHS was separated from the Ministry of Construction and began to be managed by the NRC under the Prime Minister's Office.

There were several conditions required for the government to build this new governance structure. The first was to ensure the independence and autonomy of the research institutes. As mentioned earlier, if research institutes are under the direct management of ministries, there are restrictions placed on independent research and autonomous management. The current issues of the ministries are inherently reflected in the research content, and it becomes difficult to pursue separate mid-term and long-term studies or alternative research. To improve this structure, the government decided to have research institutes pursue more independent management by separating the management, budget and evaluation from the ministries while working closely with the ministries in terms of research content. The second condition was the prevention of the duplication of functions among research institutes and promotion of cooperation. As various research institutes were established by topic, functional overlapping areas appeared. However, it was difficult to coordinate the functions and cooperation among research institutes because they were organized under different ministries. For this reason, the government decided to promote coordination and cooperation by placing research institutes under one management organization. The third condition was the rationalization of management and strengthening of the evaluation of research institutes. As the research institutes were managed by the Prime Minister's Office in an integrated manner, the responsibilities of the presidents of each research institute were strengthened with regard to budget, human resources and management. In addition, the government wanted to enhance the effectiveness of evaluation and ultimately strengthen

competitiveness through comparative evaluations among the research institutes.⁴

The National Research Council for Economic, Humanities and Social Sciences (NRC) was established in 1999 as a management organization of government research institutes in accordance with the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes and so forth. According to the act, the NRC aims to “contribute to the nation’s development of R&D policy and knowledge industry by supporting and fostering government-supported research institutes and systematically managing them”. The following <Table 3-7> shows the main contents of the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes and so forth. Under this act, all boards of directors that were operated independently were abolished and a new board of directors was established within the NRC as the highest decision-making body. This act stipulates the legal status of the research council, the funding of research institutes, the autonomous operation of research institutes, the roles and duties of the presidents of the research institutes, and the approval of the budget and business plan of the research institutes. All the roles that were previously managed by individual ministries were transferred to the NRC. Currently, the NRC is carrying out the following five roles: 1) planning for the research and development direction of research institutes in the field of economics, humanities and social sciences, 2) the coordination and rearrangement of the functions of research institutes (including matters concerning the new establishment, integration and dissolution of research institutes), 3) the evaluation of research performance and management contents, 4) support for collaborative research among institutes, and 5) other projects for achieving the purpose of the council.⁵

4 Mael Economy, “Integrated Management of Government-Supported Research Institutes by the Prime Minister’s Office” (November 9, 1998).

5 Refer to the NRC website, visited on March 13, 2019 (www.nrc.re.kr).

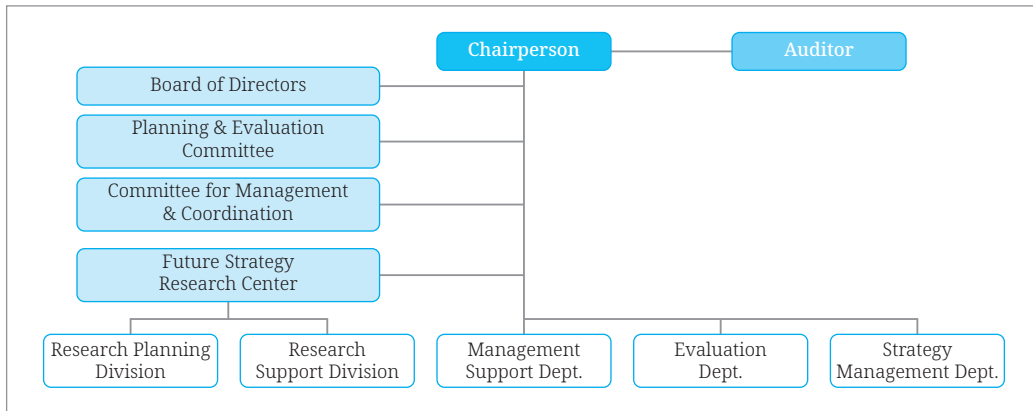
<Table 3-7> Key points of the 「Act of the Establishment, Operation and Fostering of Government-funded Research Institute, Etc.」

Category	Key Point
Purpose	<ul style="list-style-type: none"> To promote the establishment of a rational national research system and the managerial rationalization and development of government- invested research institutions
Legal Personality	<ul style="list-style-type: none"> Research institutions and the Korea Research Council for Economy, Humanities and Social Sciences established under this Act shall be juristic persons.
Operational Resources	<ul style="list-style-type: none"> Research institutions and the Research Council shall be funded by government contributions and other sources. The government may grant contributions to research institutions and the Research Council within the limits of the budget to meet the expenses required for their establishment and operation.
Guarantee of Autonomous Management	<ul style="list-style-type: none"> A research institution's independence and autonomy in its research and management shall be guaranteed. The head of a research institution shall take necessary measures for innovation in the management of the research institution.

Source: Act of the Establishment, Operation and Fostering of Government-funded Research Institute, etc.

Since the establishment of the NRC, the KRIHS has received evaluations on its management and budget operation from the NRC. In addition, the selection of research projects and evaluation of major research projects are conducted by the NRC every year. While the Ministry of Land, Infrastructure and Transport (MOLIT) is the competent ministry of the KRIHS and a key partner in research projects, it is not directly involved in management and budget.

This governance structure has the effect of guaranteeing the autonomy of the research institute to a certain extent, as mentioned above, because the research institute is out of direct control of the competent ministry while receiving financial support from the government. Under this system, the research institute can cooperate more easily with other ministries and local governments, not only the competent ministry. However, limitations still exist. Although the research institute is not under the direct control of the ministry, it still receives budgetary support from the government. Completely independent operation is not possible without the securement of an independent budget. As the function of the research council is strengthened, the research institute has a tendency to be subordinate to the evaluation guidelines of the research council. This tendency should perhaps be regarded as the basic limitation of the KRIHS based on the fundamental purpose of its establishment.

[Figure 3-3] Organization of the NRC

Source: NRC website, visited on March 13, 2019 (www.nrc.re.kr).

<Table 3-8> Main Organizations and Functions of the NRC

Category	Functions
Board of Directors	<ul style="list-style-type: none"> • Approval of the budget, settlement and business plan of the research council and research institutes • Appointment and dismissal of the president and auditor of research institutes • Approval of the management goal of the president of research institutes • Coordination and rearrangement of the functions of research institutes (including matters concerning the new establishment, integration and dissolution of research institutes) • Evaluation of research performance and management contents • Collaborative research among institutes, etc.
Planning and Evaluation Committee	<ul style="list-style-type: none"> • Planning for the research and long-term development directions in the fields of economics, humanities and social sciences • Coordination and rearrangement of the functions among research institutes • Support for the evaluation of research institutes • Planning and execution of collaborative research among the research council and research institutes • Business plan and budget of the research council and research institutes, etc.
Management Council	<ul style="list-style-type: none"> • Consultation on the major policy decisions of the research council • Consultation and support for the major issues of research institutes and common issues among research institutes

Source: NRC website, visited on March 13, 2019 (www.nrc.re.kr).

3.5. Implications of the Establishment and Operation of KRIHS

The preceding section examined the conditions and efforts enacted in the early stage of KRIHS establishment, which provided an understanding of the kind of research institute the initial policy makers and planners were attempting to establish at the time. In reviewing the points of emphasis at the time of KRIHS establishment, the following implications can be drawn for Paraguay to consider when establishing a similar research institute.

The first implication is strong support from the central government. There was some confusion concerning the role of the KRIHS as an independent organization in the first couple of years after its establishment. However, an intense relationship with and strong initiation by the central government made it possible for the KRIHS to develop as a research institute focused on policy development. From the very beginning, the establishment of the KRIHS was discussed because of the needs of the Ministry of Construction and established based on the president's will. The central government provided a legal basis for the KRIHS and supported the budget. The reason the KRIHS was able to accumulate an excellent policy research capacity in the field of national territory is because it played a monopolistic role in supporting the policies of the central government. The KRIHS provided objective and scientific analysis, a long-term vision of the central government and experience with various policy issues, and developed capabilities by cooperating with the central government. In addition, the central government recognized the necessity of policy research, ensured autonomy, and respected the research results. Today's KRIHS would not have existed without this long-term partnership with the central government.

The second implication is the pursuit of independence and autonomy in management and research. Partnership with the central government is a reliable resource on one hand, but it can also be a hindrance to the growth of the research institute. This is because it is difficult to carry out basic tasks as a think tank objective and independent research and suggestions of alternative policy measures in the context of being subordinate to government agencies. Although the KRIHS started as an institute under the Ministry of Construction, it attempted to develop an independent voice while maintaining tensions, rather than being subjugated to the government. The KRIHS conducted many mid- and long-term basic studies in addition to providing policy support for current issues, and accepted critical discussion through networking with academia. The KRIHS became more independent when it was separated from the Ministry of Construction and transferred to the Prime Minister's Office in 1999. It is impossible to have complete autonomy due to the nature of being a research institute established to conduct policy research. However, the KRIHS sought to pursue autonomy and independence as a research institute by maintaining a critical distance from the government as much as possible.

The third implication is the securement of excellent researchers. In the beginning, the KRIHS was troubled by a lack of competent researchers. Most of the workforce had no experience in research and some Ph.D. holders were not familiar with policy research. The KRIHS tried to overcome these difficulties by making extra efforts to recruit quality researchers at home and abroad. The KRIHS was able to attract the best talent that surpassed the level of university professors at the time by providing high-level incentives

and remunerations. Because of this practice, scholars and researchers from the KRIHS are playing a pivotal role in the field of national territorial and land research in Korea. Research institutes must demonstrate their value through excellent research and excellent research is possible when it is supported by excellent researchers. The efforts to attract good researchers have become the foundation for the achievements of the KRIHS today.

The fourth implication is the pursuit of research excellence. The KRIHS emphasized the quality of research from the early days of its establishment. The institute prioritized the reliability of data and the rigor of analysis, even for policy studies. The KRIHS also made efforts to exchange ideas with leading scholars in developed countries and introduce good research methodologies and techniques to Korea from overseas. Furthermore, the KRIHS sought to raise the quality of research through rigorous research deliberation by a committee. The reports published by the KRIHS were a great help to experts and policy makers in the related fields at a time when there were not enough good quality books, and became the basis for raising the reputation of the KRIHS as a result. Through these efforts, the KRIHS was able to become a research institute that is recognized by both academia and the government.

The fifth implication is that the KRIHS has made efforts to transform in response to changes in the surrounding social and economic environment over time. In the past four decades, Korea's economy and national territory has experienced tremendous transformation, and the role of the KRIHS has been changed a lot. In the 1970s and 1980s, the KRIHS focused on infrastructure development to support the nation's economic growth, but in the 1990s and 2000s, environmental issues and balanced national development emerged as the major national agenda. Recently, Korea has been more concerned with issues of urban revitalization, people's wellbeing and disaster prevention. The KRIHS expanded its organization in response to facilitate the emerging research demand, particularly in recent years, in areas such as geospatial information, smart cities and international cooperation. In terms of human resources, at first the KRIHS focused on urban and regional planning experts, but with the expansion of the research demand over time, the KRIHS strived to invite experts from diverse backgrounds, such as economics, environment and geography. The KRIHS has constantly tried to find the right social role in a changing social and economic environment.

4. Analysis of Conditions for Establishing a Research Institute in Paraguay

4.1. Ministries in the Urban and Housing Sector in Paraguay

4.1.1. MUVH

The MUVH, established in September 2018, is currently in charge of urban and housing planning, replacing the formal institution SENAVITAT. The newly established research institute is slated to be established by the MUVH with its initiatives, and understanding the function and role of the MUVH will emphasize the significance of the function and role of the research institute. The Law on the Establishment of MUVH (Law No. 6152) clearly shows the main functions and roles of the MUVH.

In 2010, based on Law 3909/10, the “National Secretariat of Housing and Habitat” (SENAVITAT) was created, replacing CONAVI. SENAVITAT thus became the only institution responsible for housing policy. SENAVITAT incorporated the concepts of housing and habitat. Starting in 2013, SENAVITAT began a process of institutional reorganization. The period from 2013 to 2018 established a national quantitative production record. But it is still important to consider the territorial approach and the firm criteria of the institution in relation to criteria for the selection of land, criteria for the location of housing, access to basic and general services, infrastructure and so forth, leaving aside the construction enacted far from urban centers and without access to basic and general infrastructure.

At the end of 2015, intense work was being conducted to reorganize the institutional structure of the institute, and directorates were introduced with urban-territorial views, such as the Territorial Planning Directorate, with an emphasis on scale and territory that included not only transfer concepts related to urbanism, but also design management tools that considered the look of comprehensive planning in the territory. They did not only think about the number of dwellings, but also began to introduce the concept of: where do we place the dwellings and with what criteria do we make decisions about housing and urban planning? Until now, it is still a process to install that vision in the daily work, to articulate institutions, criteria and concepts, and concretize them in the urban and territorial reality with more comprehensive interventions. In this way, the aspiration for urban and territorial planning in the institutional agenda is included again, comprising work that still depends significantly on how the technical capacities and the views of the decision makers are strengthened.

The last phase of this process of institutional evolution took place last year. On August 8, 2018, the House of Representatives passed Law No. 6152 created by the MUVH. The new ministry replaced the SENAVITAT, promoting a new approach to public policies, positioning Urbanism and Territory at the center of the political agenda.

According to the Law on the Establishment of MUVH, the MUVH designs, develops, manages, implements and monitors the “National Housing and Habitat Policy” (PN-UVH) based on constitutional law and other related laws. This ministry also aims to improve the quality of life of residents by improving basic infrastructure, the environment, roads, transport services and so forth.

The MUVH is comprised of two vice ministries, housing infrastructure and urban habitat, and its functions are organized as follows. The vice ministry of housing infrastructure is comprised of the FONAVIS (Social Housing Fund) Bureau, Real Estate Bureau and Housing Project Bureau. The vice ministry of urban habitat is comprised of the Habitat Bureau, Urban Project and Program Bureau. There are other bureaus that are in charge of general affairs, social matters, technical matters, planning and strategy, human resource development, the legal notary, finance and administration, internal audits, anti-corruption and transparency.

Since the MUVH has been transferred from SENAVITAT, functions related to housing have been emphasized, but functions such as territorial and urban planning, infrastructure, transport and the environment have been neglected. There are also other ministries, such as STP, which is in charge of national planning, and MOPC, which deals with infrastructure planning and construction; therefore, coordination on the issue of work duplication among these ministries is underway. In particular, the planning function is to be transferred from the STP to the MUVH, and discussions on coordinating the work areas are ongoing.⁶

6 This was confirmed through interviews of officials working at the STP and MOPC (March 12, 2019).

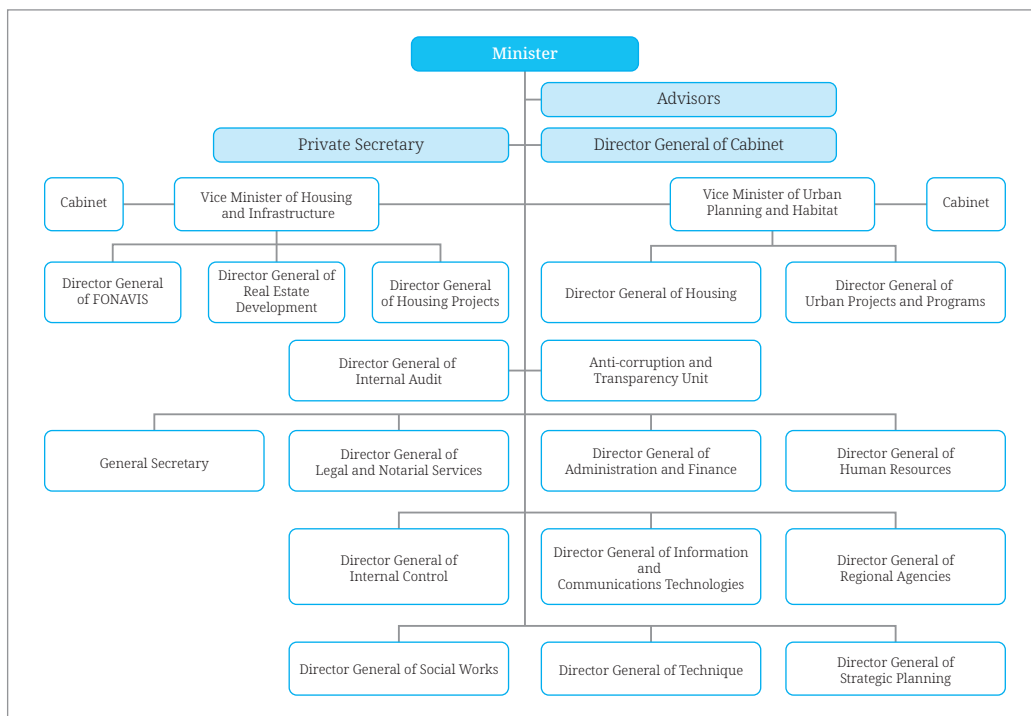
<Table 3-9> Main Contents of the Law on the Establishment of MUVH

Category	Main Contents
Purpose of Establishment	<ul style="list-style-type: none"> • Based on Article 100 of the Constitution, to design, develop, manage, implement and monitor national city and housing policies for the enhancement of access to the universal and appropriate housing of the population • To develop short-, mid-, and long-term urban and housing plans
Major Functions	<ul style="list-style-type: none"> • Implement strategies within jurisdictions, prioritize and manage plans • Design, execute, oversee and implement programs for vulnerable groups, including those afflicted by poverty and extreme poverty • Implement subsidies and evaluate the implementation of the subsidy system • Regulate, implement and, evaluate the beneficiary's mutual aid systems in response to consultations with social institution and labor unions • Utilize the National Social Housing Fund (FONAVIS) • Promote, organize, oversee and evaluate the public works that are related to the purpose of MUVH • Consultation and technical cooperation on public institutions, private companies, civil society, government ministries, etc. • Design and implement plans and programs in response to the housing needs of special residents, such as non-residents and indigenous people • Design and implement the urbanized real estate buying system for low-income people • Implement the system for the regulation of informal settlements in urban areas • Design and implement the urbanized real estate system for the middle income group • Enforce the authority for the application of Article 5638, "Law on Promotion of Housing and Urban Development" • Manage and supervise the business operations within the program and plan systems of MUVH
Organization Structure	<ul style="list-style-type: none"> • Ministry / Secretary General / Vice Minister / Director General of General Counsel / Advisory of Legal Service / Internal Audit

Source: Paraguay Law No. 6152.

The new ministry faces several challenges. A brief summary follows. The first challenge is the need to reform legislation; for instance, FONAVIS does not allow for the provision of investment in infrastructure related to housing, such as sanitary networks, pavements, the improvement of public spaces and so forth. FONAVIS was a big breakthrough, but is legislation created with housing as the focus. With the laudable objective to secure funding that is only used in housing, housing infrastructure has been neglected. Another example of the need to improve existing legislation is related to funding from FONACIDE. This fund, fostered by resources from the hydroelectric sector, is destined to promote development at the municipal scale. One key aspect is the promotion of high-quality school projects. However, again, with the laudable objective to ensure that resources are properly used, FONACIDE rules only allow for spending on buildings and not on essential previous investments, such as the proper development of executive projects that will be used as the basis of the bids processes and so forth. As a result, the quality of the investments has been extremely poor.

[Figure 3-4] Organization Chart of MUVH



Source: MUVH website, visited on March 13, 2019.

4.1.2. STP and MOPC

The STP is the institution responsible for coordinating and promoting the design, implementation, monitoring and evaluation of the National Development Plan. Among its strategic objectives are to contribute to the reduction of extreme poverty, encourage investment in and the development of infrastructure and services, and coordinate international cooperation. The STP has played a relevant role throughout its institutional history. For instance, this institution was a key actor in planning the process of urban development that took place in the 1960s and 1970s in the Alto Paraná department, including the foundation of Ciudad del Este, the establishment of agricultural colonies, such as Minga Guasú, and the deployment of large-scale infrastructure projects, such as Itaipú. More recently, in the 2013 to 2018 period, the STP fostered an important process to promote planning at the municipal level. Following the leadership of the STP, almost 70% of the municipalities of Paraguay produced a first version of their Sustainable Development Plans (Planes de Desarrollo Sustentable).

The STP is responsible for national planning and other related work areas that specific ministries do not control, and also coordinates the roles among ministries. To be specific,

the STP provides national economic analysis, comprehensive assessment and guidelines, establishes national development goals, coordinates national and international projects, and so forth. the STP has been supervising all of the national planning, while SENAVITAT has only dealt with the housing area of national planning. The functions of territorial and city planning have been decided to be transferred from the STP to the MUVH, but the functions of the MUVH have still not been clearly organized. For example, diagnosing and establishing a plan for the current context of land use in metropolitan areas has been performed by the STP, and this work began before the establishment of the MUVH.⁷

The MOPC aims to plan, manage and promote public works, such as roads, public water system, sanitation, and other infrastructure and communication related policies. For example, the MOPC supports the management of public works and construction related to contracts and their management, the use of transport, and financial support for new road construction. Additional coordination will be necessary in the future since the MUVH is in charge of the areas within the city and the MOPC is in charge of the areas outside the city. Currently, the work of managing historical assets in the current city and urban regeneration fall under the jurisdiction of the MOPC, but there is a possibility that this work may be transferred to the MUVH in the future.

<Table 3-10> Missions and Roles of the Ministries in Urban and Housing Sector

	MUVH	MOPC	STP
Mission	<ul style="list-style-type: none"> To establish urban and housing policy within the framework of macro-economic policies and the national development plan 	<ul style="list-style-type: none"> To plan, regulate and promote the policies of public works and communications, such as road safety, public water system and sanitation for sustainable development 	<ul style="list-style-type: none"> To promote civic participation to build citizenship and to contribute to the socio-cultural, economic and environmental development of the community
Roles	<ul style="list-style-type: none"> To represent exclusive authority on policies of urban planning, housing, habitat and its infrastructure, both in urban and rural areas To manage national and international contracts or agreement 	<ul style="list-style-type: none"> To contracts on the construction and maintenance of the public works, such as roads To promote and finance new road projects and supervise the construction work To carry out distribution, control and maintenance of vehicles, etc. 	<ul style="list-style-type: none"> To analyze the economic situations, identify problems, evaluate the results and formulate recommendations to report to the executive power To expand the general development goals, coordinate domestic/ international projects and programs in the public sector

Source: Each Laws on the establishment of organization.

As a result of interviews conducted with the STP and MOPC, although there is duplication of work with the MUVH, it was possible to confirm that adjustment is currently underway. It

7 Interview with the STP (March 12, 2019).

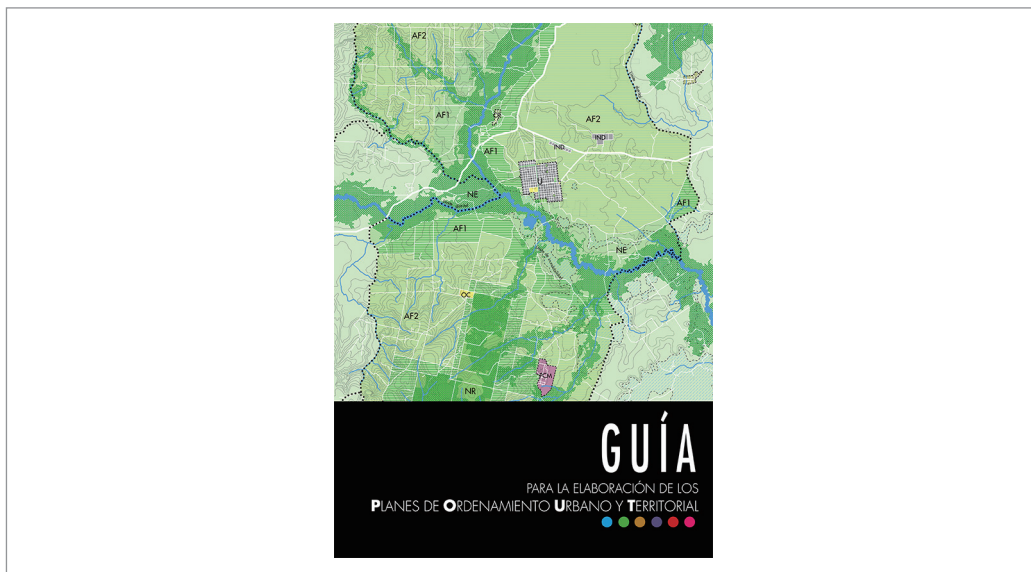
is generally understood that works within the city are the jurisdiction of the MUVH. The STP and MOPC expressed positive opinions on the establishment of the new research institute initiated by the MUVH, and also expressed that there wouldn't be any problem. Even if part of the works of the MOPC and STP were included in the roles of the research institute. The MOPC and STP see that it will be helpful if the research institute can support setting the priority of the research projects, the specification of the implementation method, and the strengthening of the local government capabilities.

4.2. Legal System in the Urban and Housing Sector in Paraguay

The regulations on urban and housing in Paraguay are stipulated in the Constitution, local government laws, the Housing and Urban Promotion Law and so forth, but lack specific guidelines, which suggests that, on the whole, they only present abstract principles. The Constitution clearly states that the state must secure the quality of life and residential rights for the people. The Housing Urban Promotion Law specifies the role of housing-related organizations (MUVH, STP, local government, etc.), the housing program, and the management of housing-related information. The local government law defines the role of the local government, including in urban planning and the management of transportation facilities.

Land use generally falls under the jurisdiction of the local government, but there is a lack of specific provisions concerning urban planning. The capability of the local government's urban planning is also extremely weak. The "National Development Plan 2030" and "National City Planning Guidelines" of the central government exist, but lack of related laws on specified urban planning and land use that the local government must comply with. Asunción city has developed the "Asunción Metropolitan Area Plan" with the help of an international organization (The Strategic Metropolitan Plan of the Metropolitan Area of the City Area of Asunción-PEMA (2014), The Master Plan of the Historical Center of the Asunción-Plan CHA), though most of the local government have virtually no plans.

[Figure 3-5] Cover Page of Guidelines for National and Urban Planning



Source: GUIA Para La Elaboracion de los Planes de Ordenamiento Urbano y Territorial (2018).

At the central government level, “Guidelines for National and Urban Planning (Guia para POUT)” have been established for central ministries and local governments. The guidelines present the concept of an internationally accepted plan for land use, and establish the methodology, appropriate stakeholders and required activities of the local government at each stage of the plan. However, the guidelines do not function practically due to the lack of interest and ability of the local government.

<Table 3-11> Current Status of Legal System in Urban and Housing Sector in Paraguay

Title	Main Contents
Constitution	<ul style="list-style-type: none"> Article 6, the Quality of Life: The state should promote the quality of life of the citizens through plans and public policies, considering the vulnerable social groups. Article 100, the Right to Housing: All inhabitants of the country have the right to decent housing and the state should promote housing plans of social interest.
Law 2329/2003: Establishment of FONCOOP	<ul style="list-style-type: none"> Purpose of Housing Cooperatives: to perform the housing, savings, lending for purchase, construction or expansion of housing of the members Financial Resources: Part of the budget for affordable housing to the Housing Cooperatives and other types of cooperatives
Law 3966/2010: Municipal Organic Law	<ul style="list-style-type: none"> Competencies of the Municipalities: 1) Service delivery such as urban planning, environment, education, culture, sport, tourism, and social assistance, etc.; 2) The regulation and control of transit and public transportation and other matters related to vehicular traffic
Law 5638/2016: Promotion of Housing and Urban Development	<ul style="list-style-type: none"> Main Actors of National Housing System: SENAVITAT (MUVH), STP, AFD, BCP, AFD, MOPC, SEAM, MF, municipal governments, etc. Type of Housing Solutions: Housing construction, acquisition of finished houses, and urbanized land for housing, expansion or improvements of existing houses, etc. Management of Information: The enforcement authorities should collect and generate the information related to housing, including housing deficit, housing type, income level of the households, etc.

<Table 3-11> Continued

Title	Main Contents
Law 6452/2019 Creation of MUVH	<ul style="list-style-type: none"> • Objective: Design, develop, manage, implement and supervise the national urbanism, housing and habitat policies • Competencies: Design, regulate, execute, implement and supervise the strategy, programs, projects and technical assistance related to urban and housing sector • Organic Structure: Missionary organs, support bodies and execution bodies

Source: Each Laws on the establishment of organizations.

4.3. Government-Experts Relation in Paraguay

The research institutes in Paraguay mainly exist at a small scale inside universities or in the private sector, and there are not many public research institutes that are sponsored by the government of Paraguay.⁸ The representative research institutes in the economic area and urban and housing area, respectively, are CADEP (Centro de Analisis y Difusion de la Economia Paraguaya) and CIDI (Centro de Investigacion Desarrollo e Innovacion). The analysis found that inefficient government-experts cooperation is one of the major challenges in the development of a research institute in Paraguay. For example, the weak government initiation of research activities, the government working with experts only on a short-term contract basis, and difficulties in effective technical support, knowledge accumulation and capacity building should be addressed.

<Table 3-12> Major Research Institutes in Paraguay

Name	Year Founded	No. of Employees	Organization / Finance	Functions
CIDI FADA UNA	2013	11 (7 research/ 4 admin. level)	<ul style="list-style-type: none"> • Non-profit organization under UNA, funded from a government organization, such as CONACYT 	<ul style="list-style-type: none"> • Research on urban studies, including the National Policy on Housing and Habitat and other related CONACYT projects
Environmental Engineering Course at UNA	2006	NA	<ul style="list-style-type: none"> • Course at UNA 	<ul style="list-style-type: none"> • Studies on Environment Impact Assessment on infrastructure, housing and agriculture along with the relevant role in the analysis of urban and territorial challenges
CADEP	1990	31 (9 Ph.D.s)	<ul style="list-style-type: none"> • Non-profit organization, but funded from a government organization, such as CONACYT 	<ul style="list-style-type: none"> • Research on economy and public policy, such as macroeconomics, employment and poverty, business, and regional development

Source: CADEP (2019); CIDI FADA UNA (2019); National University of Asunción (2019).

⁸ It has been confirmed that there are several agencies that receive financial support from the government. Analysis of this component is currently under way.

4.4. SWOT Analysis on Environment for Establishment of a Research Institute in Paraguay

Although there are several strengths and opportunities to establish research institutes in Paraguay, there also are major challenges to be addressed. First, due to the lack of research institutes in the government and private sector in Paraguay, experts lack an environment where they can work in a stable manner. To be specific, although there are some experts who have received master's degrees at home and abroad, they face difficulties in continuing their research because they lack an environment in which a large number of researchers can perform stable research. Existing research institutes are unable to provide sufficient incentives to researchers due to their weak financial situation.

Second, the Paraguay government temporarily utilizes experts by contract when it requires specialized knowledge, such as the establishment of plans. Usually, the work is carried out in the form of cooperation among government policy makers, international organizations and Paraguay experts by utilizing the fund of an international organization (representatively, in the case of the National Housing Plan (PNVH), the draft of the plan was established with the cooperation of related parties in CIDI through financial support from the Cities Alliance). Therefore, the market for research human resources is mainly comprised of consultants who collaborate with international organizations, rather than regular researchers.

Third, a feature of such a human resource research market is that there are problems in qualitative improvement at the research level, in the management of research data, the consistency of policy and so forth. It is difficult to carry out the mid- to long-term research facilitated by a stable environment for employment cannot be guaranteed. In addition, it is difficult to accumulate research materials and to gradually improve them because there is no entity that continuously maintains and manages the research data.

<Table 3-13> SWOT Analysis on Establishment of a Research Institute

Categories	Main Contents
Strengths	<ul style="list-style-type: none"> • Expanding Economy • National Development Plan 2014–2030 agreed by the different social agents • Higher education in growing expansion • Science, Technology and Innovation (CTI based on its initials in Spanish) policy on instruments to push the expansion of the national research and innovation system
Opportunities	<ul style="list-style-type: none"> • Increasing demand for urban and regional plans • Strengthening of qualified human capital for the productive sector through education and technical and vocational training. • Development of doctorate programs in natural sciences, engineering and agricultural sciences • Improvement of the governance of the National System of Science, Technology and Innovation
Weaknesses	<ul style="list-style-type: none"> • Small number of undergraduate and graduate students in the urban sector • Small number of full-time researchers • Research activities dependent on international cooperation • Lack of reliable data and information in the urban and housing sector
Threats	<ul style="list-style-type: none"> • A society that does not acknowledge the value of policy research • Absence of intellectual protection mechanisms for knowledge production • Lack of coordination between the different policies and instruments of the CTI policy

Source: Each Laws on Establishment.

5. Recommendations for Establishment of a Policy Research Institute in Urban and Housing Sector in Paraguay

5.1. Missions and Roles

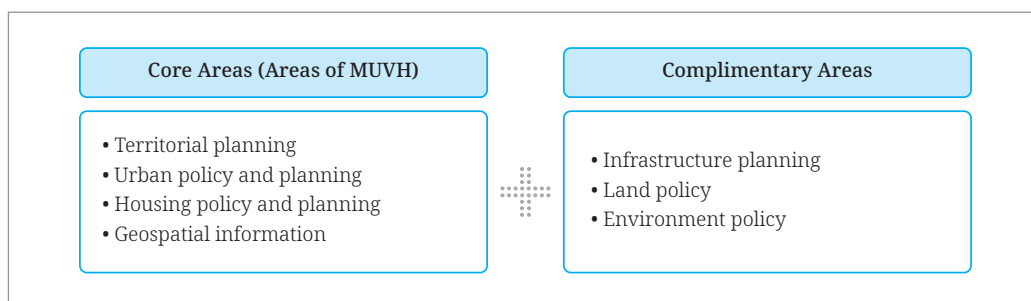
The purpose of the establishment of the research institute is to efficiently resolve the immediate problems in the territorial, urban and housing sector in Paraguay by conducting specialized research and analysis of major policy issues. The establishment of the research institute is also intended to contribute to the sustainable development of Paraguay through the execution of research and academic activities on major issues.

The functions of the research institute are as follows: first, comprehensive and systematic research for the efficient use and conservation of territory; second, development and research regarding theories on territory, urban housing policy and related areas; third, the establishment of a plan on territory, urban housing policy and related fields; fourth, the collection and management of territory, urban housing policies and related fields; fifth, human resources development in territory, urban housing policy and related fields; and

sixth, information exchange and academic exchange with specialized organizations at home and abroad.

The research field of the research institutes is ideally structured as follows. First, the field should comprise territorial planning, urban and housing plans, and policy, which are currently the functions of the MUVH, as its main areas. At the same time, it should include the areas of infrastructure, land, environment and so forth that are currently handled by other ministries. Second, the research field should establish the department that deals with geospatial information in the initial stage in consideration of its necessity. Third, the field should expand its areas to other fields in the long term after setting up the prioritized functions of the MUVH in the short term.

[Figure 3-6] Setting the Research Scope of the Research Institute



Source: Author.

5.2. Governance

There are three alternatives for the governance of research institutes: (A) Establishment as an organization of the MUVH bodies, (B) Establishment as an independent organization, but under the umbrella of the MUVH; and (C) Independence from the MUVH, which is jointly established from multiple ministries.

<Table 3-14> Governance Alternatives for Establishment of Research Institute

Type	Characteristic
Organization as a part of MUVH (A)	<ul style="list-style-type: none"> • Funded by MUVH and established as an organic part of MUVH • Staff are under direct control of minister of MUVH
Organization as a separate body from MUVH (B)	<ul style="list-style-type: none"> • Funded by MUVH, but separated from MUVH • President of PRIHS has the right to autonomous management to some extent
Organization for supporting multifold ministries (C)	<ul style="list-style-type: none"> • Established and funded jointly by related ministries, such as MOPC, STP and MUVH. • Supervised by national government, but separated from individual ministries (similar to KRIHS model)

Source: Author.

There are advantages and disadvantages of each alternative governance structure. After examining the pros and cons of each alternative (refer to Table 3-15), the alternative (B) emerges as the realistic alternative that can be promoted in a short period. When the surrounding environment matures after the establishment, it will be possible to discuss ways to develop the research institute into alternative (C). In fact, this process would align with the development process of KRIHS since its establishment (in the case of Paraguay, however, there is a characteristic that should be considered as a factor, namely that no other national research institute currently exists in Paraguay).

<Table 3-15> Pros and Cons of Governance Alternatives

Alternative	Pros	Cons
(A)	<ul style="list-style-type: none"> • Can be easily established as soon as possible since there aren't many stakeholders. 	<ul style="list-style-type: none"> • Insufficient research autonomy and independence due to positioning within the organization of the ministry. • Insufficient stability in the status of research personnel (it doesn't have a specialized system of public officials in Paraguay). • The research field is likely to be limited to MUVH jurisdictions.
(B)	<ul style="list-style-type: none"> • It is possible to guarantee a certain level of autonomy and independence even though it is under MUVH (initial model of KRIHS). • Can be established only by the will of MUVH. 	<ul style="list-style-type: none"> • Limitation on independence and autonomy to a certain degree. • The research field is likely to be limited to MUVH jurisdictions. • Separate legal system for guaranteeing status of research personnel is required.
(C)	<ul style="list-style-type: none"> • High degree of autonomy and independence since it is independent from specific ministries. • The status of the research institute can be increased because of the simultaneous support to multiple ministries and agencies (the current model of KRIHS). 	<ul style="list-style-type: none"> • It is difficult to establish in a short time because it needs cooperation from several ministries and agencies. • It may be difficult to receive effective policy support in the case of MUVH.

Source: Author.

The MUVH is currently in the process of setting up a budget for establishing a research institute in 2020, and has set up a task force team for the establishment. Given the current progress, alternative (C) is not possible in the short term and may be considered as an alternative in the long term.

In the case of selecting alternative (B), a legal basis is necessary to ensure the independence of research institutes and the stability of the status of the researcher. The enactment of the law on the establishment of the Paraguay Research Institute for Human Settlement, PRIHS (provisional name) is necessary to specify financial support for the research institute, guarantee independence and autonomy for the management of the research institute, the working conditions of the research personnel, and the approval of business plans and budget plans.

5.3. Organization and Human Resource

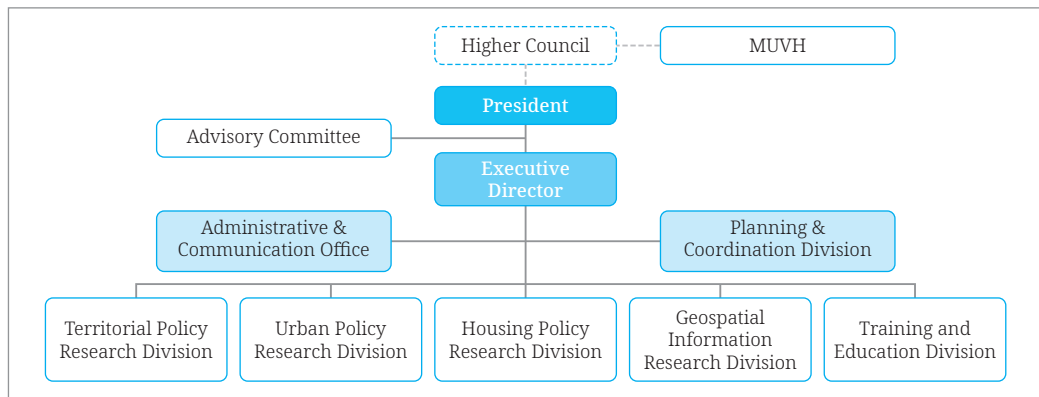
5.3.1. Organization

The organization of a research institute consists of the board of directors, president, vice president, research divisions, administrative office, and consultation committee.

The board of directors plays a role in establishing and changing the business plans, budget settlement, appointment and dismissal of executive members, and changes in the articles of association. Members of the board of directors should be appointed by considering the capabilities of a wealth of knowledge and experience in relevant ministries, academia and civil society to provide a foundation that enables the independent operation of the research institute. The chairperson of the board should be appointed by the MUVH, and convenes the board. The president should be appointed by the board of directors after the prescribed procedures, and will be in charge of managing the research institute on behalf of the researchers.

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[Figure 3-7] Organization Chart of the Research Institute



Source: Author.

The research headquarters are comprised of four divisions, which are the division of Planning and Coordination, Territorial Planning, Urban Policy, and Housing Policy, and will add functions when necessary. The Planning and Coordination division is in charge of the establishment of mid- and long-term goals for the research institute, the formulation of an operation plan, the selection and evaluation of research projects, and other matters related to the management of the research institute. The Territorial Planning division conducts research on territorial planning, regional planning (metropolitan planning), balanced development policies, planning systems and other related systems. The Urban Policy division

conducts research on the urban planning system, support for strengthening the urban planning capacity of local governments, urban regeneration and historical preservation, and the management of surrounding areas. The Housing Policy division is in charge of the management of slums, the development of housing funds, and research on various housing programs. The Geospatial Information division deals with the construction and management of spatial data.

The administrative office is responsible for budget management, human resource management, public relations and publication, and data management. The detailed functions can be described as follows. First, budget management is about the execution of the research budget and its closure. Second, human resources management concerns the recruitment of research personnel, human resources, promotion, and education. Third, the public relations and publication division is about external relations, public relations and the publication of research results. Fourth, data management concerns the purchase of books, documentary management and the operation of the library.

The Advisory Committee is mainly composed of outside experts and offers advice on the operation of the research institute, the selection of research projects, and the evaluation of research results.

<Table 3-16> Divisions and their Roles in the Research Institute

Division	Role
Higher Council	<ul style="list-style-type: none"> Responsible for research project planning and approval of changes, budget settlement, appointment and dismissal of president, change of articles of incorporation Board of directors should be harmoniously selected from sectors of related ministries, academia and civil society, where there is a wealth of knowledge and experience on the aforementioned areas, and should provide a foundation for the independent operation of the research institute. The board president is appointed by MUVH to convene a board of directors and should become the chairman.
President	<ul style="list-style-type: none"> The president is appointed by the board of directors following the prescribed procedures. Externally represents and is in charge of the research institute and holds the director's right of research staff
Executive Director	<ul style="list-style-type: none"> The executive director assists the president and fulfills the president's duty when the president is unable to perform.
Planning and Coordination Division	<ul style="list-style-type: none"> Making the management and development plans of the institute, setting the research agenda, etc.
Coordination Division	<ul style="list-style-type: none"> Consists of outside experts offering advice on the operation of the research institute, the selection of research projects and evaluation advice, and gathering the opinions of civil society and academia

<Table 3-16> Continued

Division		Role
Research Division	Territorial Policy	• Territorial and regional planning, balanced development policies, planning system development, etc.
	Urban Policy	• Urban planning regulations, urban regeneration, urban growth management, support to municipalities
	Housing Policy	• Slum upgrading, housing finance, housing programs
	Geospatial information	• Development and management of spatial data nationwide
	Training and Education	• Training of specialized personnel in the territory, management of training programs for local government officials
Administrative and Communication Office		• Budget Management: Budget plan and implementation • Human Resource Management: Recruiting, promotion, capacity building, etc. • Public Relations and Communication: Public relations, publication of research • Information Center: Collecting books, library management

Source: Author.

5.3.2. Human Resources

The initial composition of the number of researchers was around 40. Although the number can change according to the budget condition of the MUVH and the research areas, it is desirable to start on a small scale and expand gradually, considering that the research function has not existed in the ministry before. The KRIHS started with 70 people initially, but this is due to the fact that the KRIHS was a succession of existing organizations, and the research field had been set at a wider scale than the MUVH. As shown in the following table, the research institute consists of research positions (22 people) and administrative positions (8 people).⁹

<Table 3-17> Composition of Research Personnel

Category	President	Vice President	Research Fellow	Associate Research Fellow	Assistant Research Fellow	Administrative Works	Total
No. of people	1	1	5	10	15	10	42

Source: Author.

The three-tier system for researchers' positions is suggested: "Research Fellow—Associate Research Fellow—Assistant Research Fellow". Higher-ranked positions can be added when necessary in the future. The qualifications for each research position are as follows. For a

9 MUVH plans to secure some space in the government office building to establish the research institute, therefore no separate personnel is required for facility management.

research fellow, a person with a doctoral or master's degree, who has at least five years of related work experience, is preferred. For an associate research fellow, a person who has five or more years of related work experience after obtaining a master's or bachelor's degree is preferred. For an assistant research fellow, a person who has obtained a bachelor's degree in a related field is preferred.

It is necessary to focus on recruiting people with doctoral and master's degrees at home and abroad in the beginning, and the following incentives should be considered so as to attract qualified human resources. First, guarantee the provision of the highest wages in the related field, such as the university. Second, ensure the stability of the position (guaranteeing an environment where one can work regardless of the change of government). Third, provide a research and work environment that is distinguished from that of public servants (a different evaluation system, guarantee of free research, provision of a work environment suitable for research, etc.). Fourth, provide opportunities for capacity building, such as overseas research training.

<Table 3-18> Requirements and Incentives for Research Staff

Category		Content
Position	Research Fellow	• Ph.D. degree holder or person with more than 5 years of experience after earning master's degree
	Associate Researcher	• Master's degree holder or person with more than 5 years of experience after earning bachelor's degree
	Assistant Researcher	• Bachelor's degree holder in related area
Incentives	Wage Level	• Wage on par with or above that of a university professor and other professionals in a related area in Paraguay (Research Fellow: above 2,000 USD a month; Assistant Researcher: above 1,000 USD a month)
	Job Stability	• Stipulation of job stability, particularly regardless of a change in government
	Work Environment	• Apply flexible work rules and provide a decent office space to offer a creative research environment that is differentiated from that of public officials
	Housing Environment	• Provide a housing subsidy to attract researchers staying overseas
	Capacity Building Opportunities	• Capacity-building opportunities, including international joint researches and sabbatical

Source: Author.

5.4. Finance and Budget

The financing for the operation of the research institute can be categorized into the contribution of the MUVH, income from the commissioned research project, sales income from publication, income from the research fund and other types of income. It is inevitable

that the research institute will be dependent on the contribution of the MUVH for the establishment and stable operation of the research institute in the initial stage. The MUVH should review the operation plans of the research institute every fiscal year and support the necessary budget for its operation.

If the research capacity of the institute is strengthened and research records are accumulated, then it is also possible to secure income through external research projects. Securing CONACYT funds will enable the research institute to earn operating income more stably and also conduct other commissioned research projects from ministries other than the MUVH and international organizations.

In order to secure a reliable source of income, raising funds or considering other ways to procure sources of funding is required. It is desirable to have various financial resources, rather than to depend entirely on the MUVH. In addition, it is necessary to establish a system that can receive support, such as from the Itaipu fund (Paraguay Electric Power Corporation), or raise funds for the operation of the research institute in cooperation with government ministries and international organizations.

It is possible to consider ways to receive grants from the ministry of finance and set up another organization for management, as in the case of the KRIHS, if the relevant condition matures in the long term.

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04

CHAPTER

Recommendations for the Operation and Development of a Research Institute in the Urban and Housing Sector of Paraguay

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Chanyong You (Korea Research Institute for Human Settlements)

Juan Carlos Cristaldo (National University of Asunción)

1. Background
2. Operation and Development Experience of the Korea Research Institute for Human Settlements
3. Research Organizations in Paraguay: Their Role and Activities
4. Suggestions for Development of the Policy Research Institute in Paraguay
5. Strategies for Long-Term Cooperation with KRIHS

Keywords

Policy Research Institute, Operation of a Research Institute, Organization of a Research Institute, Research Cooperation, Paraguay

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Summary

Paraguay is currently experiencing urban problems such as disproportionate regional development, housing shortages, and urban sprawl due to rapid urbanization. An effective policy for national territorial development should be developed to resolve these issues. The Paraguayan government established the National Secretariat of Housing and Habitat (SENAVITAT) in 2009 to effectively address urban and housing problems, although some observers have called for a national research institute to be established in the territorial area to promote sustainable and effective urban and housing policies.

In the case of South Korea, the Korea Research Institute for Human Settlements was established in 1978 in response to territorial problems of the urban and housing sectors during a period of rapid economic growth and to develop sustainable and long-term territorial development policies. Since its establishment, KRIHS has led the research of territorial development in the urban, housing, environmental, and infrastructure sectors and has played an important role in supporting government policies.

This paper presents guidelines for the operation and development of a national research institute in charge of central urban and housing policy in Paraguay, as well as the experience of establishing KRIHS in South Korea. By presenting ways to increase the capacity to analyze major problem areas in the urban and housing sectors, this paper will contribute to the development of territorial research in Paraguay and will provide a basis for long-term cooperation between South Korea and Paraguay.

1. Background

Chapter 3 utilized the experiences of the Korea Research Institution for Human Settlements (KRIHS) to propose roles, functions, budget, and governance and organizational structures for the establishment of a Paraguayan urban and housing sector policy-research institution to be called the Paraguay Research Institution for Human Settlements (PRIHS). This chapter presents guidelines for the operation and development of PRIHS based on KRIHS's experience of organization development and role change in response to the socioeconomic development of South Korea (henceforth simply Korea). The chapter will also set forth measures to improve the analysis and policy-support capabilities of the urban and housing sector policy-research institution regarding the main issues Paraguay faces in the urban and housing sectors, thereby assisting in the development of Paraguay's national land policy research sector and ultimately establishing a basis for long-term cooperation between Korea and Paraguay.

To do so, this paper will examine the organizational structure and developmental history of Korea's economics, humanities, and social-science research institutes and KRIHS, in addition to examining Korea's territorial development and the role and research of KRIHS. These examinations will form the basis of the proposed operation and future development of the Paraguayan urban and housing sector policy research institute.

On the basis of the KRIHS model, various strategies for attracting outstanding researchers from home and abroad as well as capacity-building strategies for long-term development will also be presented prior to the establishment of PRIHS. These strategies are based on having an understanding of the level of expertise that exists in the urban and housing sector in Paraguay prior to the establishment of PRIHS. Finally, the chapter presents several cooperation strategies between KRIHS and PRIHS, including regular workshops and seminars that can provide visiting research opportunities at KRIHS.

2. Operation and Development Experience of the Korea Research Institute for Human Settlements

2.1. History of KRIHS's Organization and Workforce

At the time of its founding in 1978, KRIHS had a board of directors as its decision-making body; a director, a deputy director, three research laboratories, and the administrative office

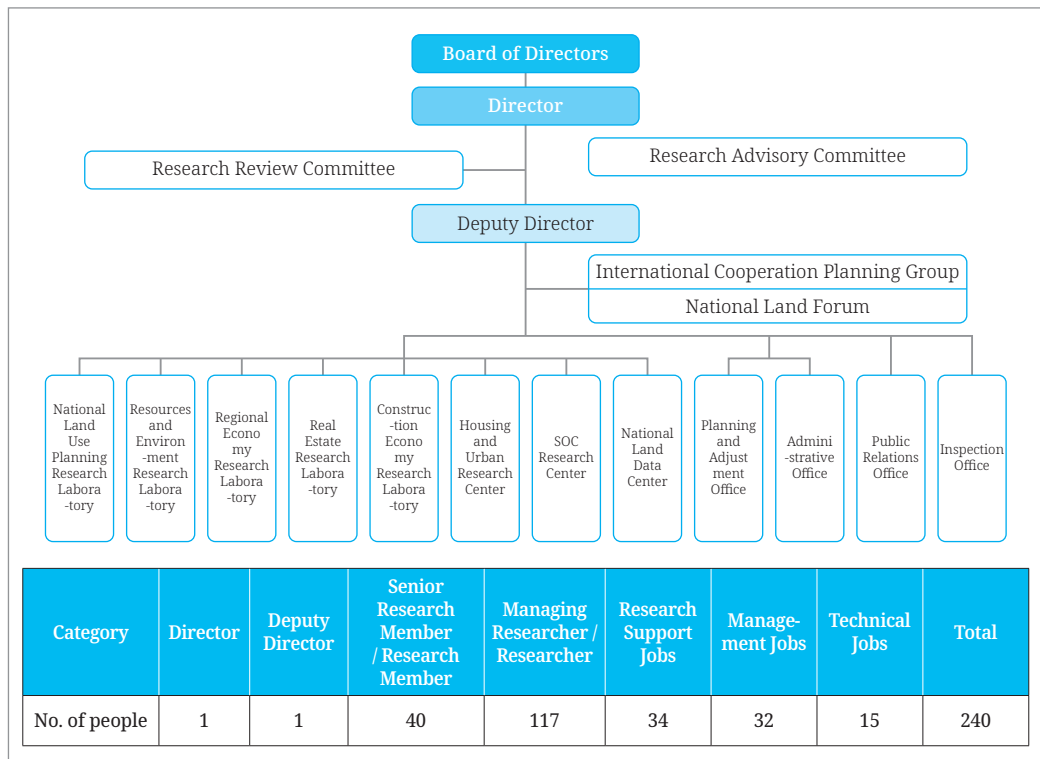
as its executive body; and the Research Advisory Committee, the Research Council, and the Research Review Committee as its advisory body. Later, the number of professional research personnel was increased to expand the institute's policy-advisory functions, the organization was restructured to expand its scope of research, and the Publication and Data Processing Support Department was newly established as a research system.

In the 1980s, in accordance with a government-funded institutional reorganization plan, the Regional Development Research Lab (part of the Korea Advanced Institute of Science and Technology [KAIST]) was absorbed and integrated into KRIHS, thus reinforcing the existing urban and regional planning functions of KRIHS and forming the Urban Development Planning Department. The research group was restructured to have a focus on national territorial planning and regional analysis, as well as urban, real estate, housing, transportation, and construction economy research laboratories; a new Promotional Material Publication Office was also established to improve research expertise and operational efficiency. The number of research personnel was greatly increased, from 70 people at the institute's founding to 229 people in 1988.¹

In 1999, KRIHS changed its name from the Korea National Land Development Research Institution to the Korea Research Institute for Human Settlements, and the institute expanded its geographic information system (GIS) research projects to reflect the government's need to establish a national-level information infrastructure. [Figure 4-1] shows the institute's organizational structure in 1998, twenty years after opening its doors. Within the Research Department, the housing, urban policy, and urban planning research laboratories were consolidated into the Housing and Urban Research Center; the transportation research laboratory was expanded and restructured to become the Social Overhead Capital (SOC) Research Center; and, in reflection of the government's policy demands, the Geospatial Information Center was expanded to conduct not only GIS research but also to carry out general information functions such as information technology, materials, and data and publication. Furthermore, an International Cooperation Planning Group and a National Land Forum were newly created to establish a network for domestic and international research cooperation. The research personnel increased only slightly in the 1990s, from 229 people in 1988 to 240 people in 1999, and the institute continuously maintained this staffing level throughout the 1990s.

1 20 Years of the Korea Research Institute for Human Settlements (1978-1998), Korea Research Institute for Human Settlements (1998)

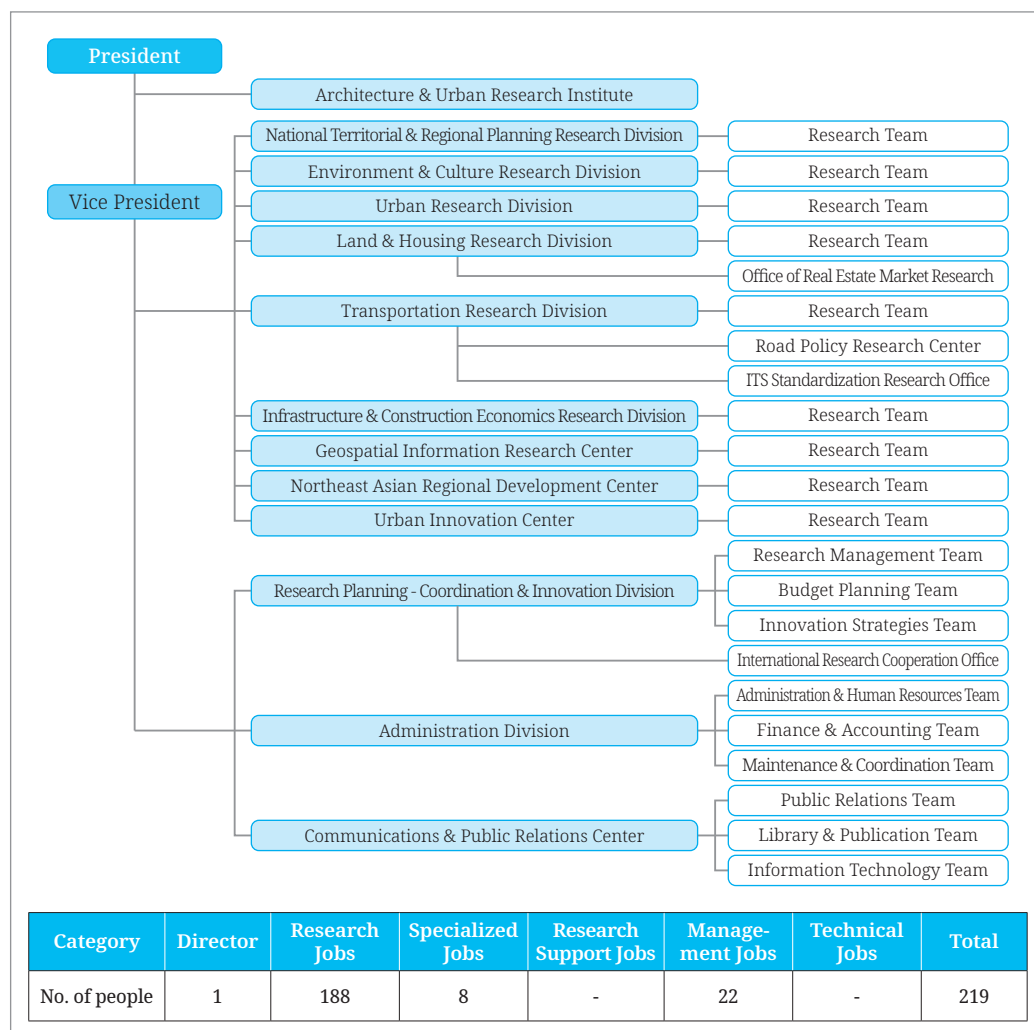
[Figure 4-1] KRIHS Organization Chart and Personnel Figures in 1998



Source: KRIHS (2018).

[Figure 4-2] shows the organizational structure and personnel figures for KRIHS in 2008, thirty years after its founding. The Research Department was reorganized into (1) the National Territorial Planning/Regional Research Headquarters, (2) the Green National Land/Urban Research Headquarters, (3) the Housing and Real Estate/Construction Economy Research Headquarters, and (4) the National Infrastructure/GIS Research Headquarters, with subsidiary centers and teams as shown below. The Inspection Office of the Administrative Department was retained, and the headquarters, office, and center that were previously responsible for administrative support were integrated into the Planning and Management Headquarters and divided into separate centers and teams. The results of these changes included more efficient research and administration. While the personnel figures declined slightly compared to the figures from the 1990s, the number of research personnel increased for improved research capacity.

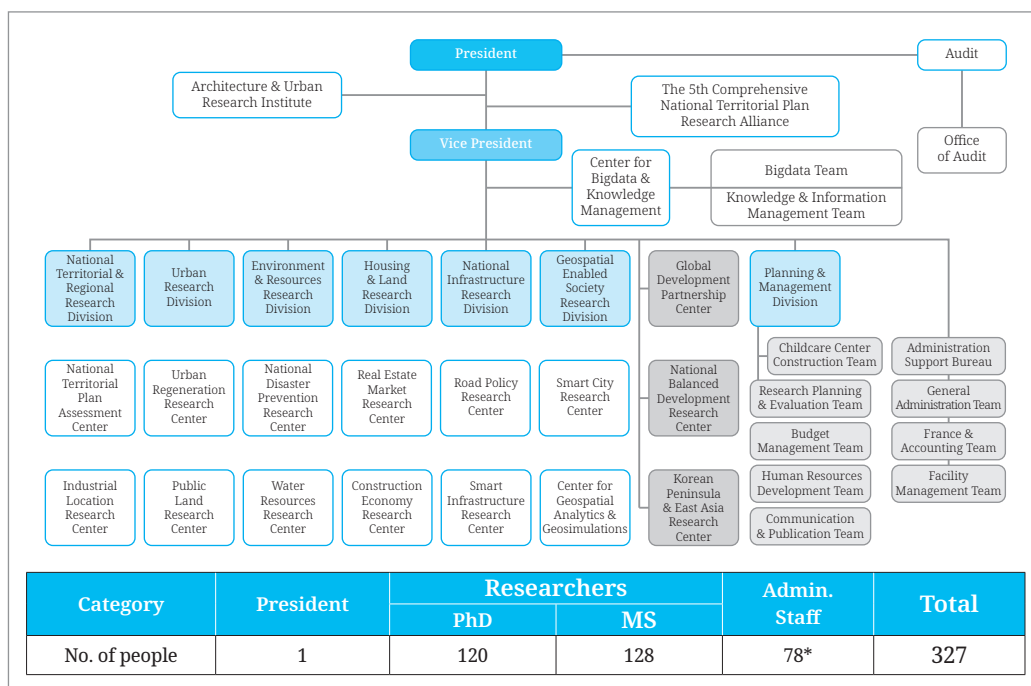
[Figure 4-2] KRIHS Organization Chart and Personnel Figures in 2008



Source: KRIHS (2018).

The current organizational structure of KRIHS is shown in [Figure 4-3]. Research efficiency was improved by restructuring into six research divisions—(1) National Territorial Planning & Regional Research, (2) Urban Research, (3) Environment & Resources Research, (4) Housing & Land Research, (5) National Infrastructure Research, and (6) Geospatially Enabled Society Research—and by creating centers focused on the main research areas of each research division. The centers and teams within each division were also organically restructured so that the Planning and Management divisions could carry out their tasks more effectively. Since the 2000s, the number of research personnel has remained steady.

[Figure 4-3] KRIHS Organization Chart and Personnel Figures in 2019



Note: *Including facility management personnel.
 Source: KRIHS website, accessed 13 April 2019 (www.krihs.re.kr).

The job types and positions of KRIHS personnel are shown in <Table 4-1>. The job types are categorized into research jobs, specialized jobs, and management jobs. The research jobs are made up of senior research members, research members, managing researchers, and researchers. The specialized jobs are managing specialists and specialists, and the management jobs are senior managers, rank 1 managers, rank 2 managers, and rank 3 managers.

<Table 4-1> Job Classifications and Titles at KRIHS

Type	Position
Research jobs	Senior research fellow
	Research fellow
	Associate researcher
	Researcher
Specialized jobs (archives and information data processing, publishing, secretarial)	Managing specialist
	Specialist
Management jobs	Senior manager
	Rank 1 manager
	Rank 2 manager
	Rank 3 manager

Source: KRIHS Rule Book (Regulation appendix 1).

Among the research jobs, senior research fellows must have either (1) four years of experience as a full college professor or have a doctorate in the relevant field and at least five years of relevant research experience; (2) at least three years of experience as a research member with the institute, with outstanding results; or (3) be someone acknowledged by the director as having qualifications or abilities that are equivalent to the above.

Research fellows must have either (1) four years of experience as an associate college professor or have a doctorate in the relevant field and at least three years of relevant research experience; (2) at least three years of experience as a managing researcher with the institute, with outstanding results; or (3) be someone acknowledged by the director as having qualifications or abilities that are equivalent to the above.

Associate researchers must have either (1) a doctorate or a master's degree and at least three years of relevant research experience after acquiring the masters' degree; (2) at least four years of experience as a researcher with the institute, with outstanding results; or (3) be someone acknowledged by the director as having qualifications or abilities that are equivalent to the above. Researchers must have the ability to conduct research in the relevant field, and they generally have master's degrees.

2.2. Research Areas of KRIHS²

KRIHS was established for the purpose of creating national territorial plan policies and conducting the attendant multidisciplinary research. Since its establishment, KRIHS has comprehensively and systematically conducted the research and investigations required to create and implement national territorial plan policies that are responsive to the changes of each era. In terms of national territorial plan policies, the institution was responsible for the Second Comprehensive National Land Development Plan (1982–1991), the Third Comprehensive National Land Development Plan (1992–2001), the Fourth Comprehensive National Territorial Plan (2000–2020), and the Fourth Comprehensive National Territorial Modification Plan (2006–2020 and 2011–2020).

2 40 Years of Korea Research Institute for Human Settlements (1978–2018) (KRIHS, 2018), 30 Years of Korea Research Institute for Human Settlements (1978–2008) (KRIHS, 2008).

<Table 4-2> KRIHS's Role in Territorial Development

	Economic and Territorial Development	Major Role of KRIHS
1960s	<ul style="list-style-type: none"> National Territorial Development Initiated Designated development of promising area 	<ul style="list-style-type: none"> Regional survey on industrial belt in Southeast sea Establishment of comprehensive development plan in Tabaek region
	<ul style="list-style-type: none"> Resolving territorial problems on Industrialization and Urbanization Concentrated Investment on prosperous city 	<ul style="list-style-type: none"> Establishment of 2nd National Territorial Plan Development plan for capital and metropolitan area Establishment of industrial policy
	<ul style="list-style-type: none"> Systematic and Effective development management Establishment of Policy for decentralization 	<ul style="list-style-type: none"> Establishment of 3rd National Territorial plan Establishment of metropolitan, urban and regional plan Establishment of 1st New town Plan
	<ul style="list-style-type: none"> Strengthening territorial competitiveness through balanced development Focusing on decentralization, income redistribution and environmental issue 	<ul style="list-style-type: none"> Establishment of 4th National Territorial Plan Establishment of development plan for Sejong administrative city Establishment of entrepreneur city
	<ul style="list-style-type: none"> Establishment of national strategy in accordance with global economy Territorial development in accordance with local autonomous government 	<ul style="list-style-type: none"> Establishment of national strategy in accordance with global economy Territorial development in accordance with local autonomous government
Present	<ul style="list-style-type: none"> Harmonization of development and environment Enhancing national happiness through responding to ageing society, low growth, etc. Inclusive and balanced regional development 	<ul style="list-style-type: none"> Research for establishing 5th National Territorial Plan Researching balanced development and urban generation and responding to climate change

Source : Authors.

The institution has also conducted research to meet the policy demands of various regional development projects. For example, the institution's primary research efforts have included a southeastern coast industrial belt regional investigation and a comprehensive development plan for the Taebaek area in the 1970s, a capital-area policy, a metropolitan-development plan and underdeveloped-region support policy, and an industry-location policy in the 1980s and 1990s; other initiatives in the 2000s and beyond have included the regional relocation of public services and an innovative city-development policy, an industrial complex reorganization policy, an underdeveloped-region development policy, a coastal and border area development policy, and a regional living and city area development policy.

2.2.1. National Territorial Planning and Regional Research

The national territorial planning and regional development research that has been conducted may be broadly classified into four groups. The first is national territorial planning and policy, which includes resolving regional disparities and producing measures

to improve the balance between regions, establishing a national land settlement system and measures to develop underdeveloped regions, establishing and adjusting comprehensive national territorial plans, conducting basic investigations into national territorial plans, examining the results of national territorial plans, and evaluating such plans. The second is regional economy and regional development, which includes the establishment of theories and models for the analysis of regional economies, capital-region policy, and related planning research and the establishment of development plans for regional development. The third is industry location and regional innovation, which includes supplying locations for industry and establishing an informational system, setting up a regional innovation system and measures to develop innovation clusters, and creating innovative cities and growth strategies for such cities. The fourth group is Northeast Asia and the Korean Peninsula, which includes Northeast Asian transborder regional development and cooperation strategy research, in addition to research on both North Korea and preparations for the unification of the South and North Korean economies.

KRIHS currently conducts comprehensive policy research for the balanced and sustainable development of the nation, along with regional-level planning and related policy research to maximize the competitiveness of each region. The institute's main research areas are divided into research on (1) the establishment of a national territorial plan and national territorial/regional development policies, (2) the evaluation of various national territorial plans, (3) the analysis of regional economies and capital-area policies, (4) the exploration of locations for industrial and regional industrial development policies, and (5) the proposal of national territorial strategies in the context of the Korean Peninsula and Northeastern Asia.

2.2.2. Urban Research

KRIHS comprehensively evaluates the various issues South Korea's cities face, in addition to studying the impact that socioeconomic changes such as low population growth or an aging population have on the nation's cities. The institute's goal is to set forth a direction for development and policies that will support the creation of city environments that will allow for a better quality of life. The institute also conducts research to prepare measures to improve or adjust the relevant laws and systems so that these proposed city policies can be concretely implemented. The following section includes some of the urban-sector research that has been conducted to date.

First, a national city-development policy was established, and research was conducted to create a reasonable plan to improve the related systems and laws to support this policy. Second, guidelines and standards for planning and engineering new cities were created,

the economic suitability of construction was investigated, and academic research related to demand analysis was conducted; basic plans were also established for the new city of Pangyo and for new first-wave capital-area cities such as Bundang, Ilsan, and Pyeongchon. KRIHS also held an international competition for a multifunctional administrative city and established a basic plan and development-plan proposal for the multifunctional administrative city. Third, issues with institutional urban revitalization measures such as redevelopment, reconstruction, and new-town projects were analyzed, and policy directions and support measures are now being researched to promote urban revitalization in terms of managing existing urban areas. Fourth, urban design and urban engineering work was carried out primarily for new cities, including the establishment of a direction for restructuring planning systems, the conducting of research on standards for establishment, and the creation of concrete plan proposals. Fifth, policy proposals to realize the creation of cities and towns with a high quality of life were created, in addition to research on support systems to promote business and plans to operate pilot projects. Finally, research on urban economies and administration is now being conducted. By linking urban revitalization projects that focus on provincial cities with the revitalization of the urban economy instead of simply making physical improvements, urban revitalization projects can be successfully carried out. To allow for increased administrative efficiency, KRIHS is also conducting research on support systems and policies that take into account each city's characteristics.

2.2.3. Housing Research

Korea's housing and real estate policies are continually changing and evolving in accordance with the conditions of each era. During this process, the most important policy goal prior to the enactment of the Framework Act on Residence in 2015 and the conversion of housing benefits to individual benefits in 2016 was the expansion of housing supply to resolve the issue of insufficient housing, thereby ensuring housing stability for the citizens of Korea.

While each era has variations in housing policy, these policies generally emphasize central government control rather than market forces. The main examples of this position include the establishment of housing-supply plans, the expanded supply of public housing lots, various regulations on housing prices, the disclosure of housing-unit costs, the use of mortgage regulations, and the use of greater taxation. Such direct government intervention in the housing market is largely the result of instability in that market. As a result, various assessments have found that the housing market is extremely sensitive to economic conditions and that the housing market has a significant impact on the Korean economy and civilian life. When the housing market was unstable due to a lack of homes and an opaque

market, some government intervention in the market was indeed necessary. Recently, however, housing penetration has greatly increased, the housing market has become much more transparent with the disclosure of actual transaction prices and the establishment of a real estate information system, and citizen interest in housing and real estate issues has become both diverse and complicated. As a result, current housing-policy goals have also become quite different from past goals.

The need to expand policy research to reflect the changes of each era now plays a crucial role. Accordingly, the Housing Market Research Center, which mainly carries out real estate market predictions and analyses as well as conducting research on policy effects, and the Housing Welfare Strategy Center, which focuses on improving housing welfare, were established in 2008, with the Housing Welfare Strategy Center undergoing a name change to the Housing Policy Research Center. The Housing Policy Research Center and the Housing Market Research Center conduct a great deal of research into ensuring that housing policy moves toward focusing on consumers' daily lives, as opposed to focusing on suppliers, in addition to moving toward region- and resident-focused policies (as opposed to government- and central-authority-focused policies) to support the government's policy responses and leadership so that they will be carried out smoothly. KRIHS has conducted a diverse range of research in the housing and real estate sector since the late 1970s, most of which has directly or indirectly supported related government policies.

2.2.4. Land Use and Construction Economy Research

Land use is the foundation of national development and planning, while construction is the work of physically implementing such development and planning. As such, policies related to land use and construction have changed in a variety of different ways, in accordance with the national land development and operational demands of each era. These are just some of the various aspects of land use, which is why the Land Use Policy Research Center of KRIHS conducts research in numerous areas, using a diverse range of approaches. The center has not only analyzed and provided predictions on the diverse and complicated movements of the real estate market but has also researched and developed systems and policies to resolve the various issues and conflicts that arise in the real estate and housing markets. Using such past experiences as a basis, the Land Use Policy Research Center is now developing Korea-specific theories that can be used to analyze the real estate market and land use policies and to diagnose related issues.

Construction-economy research began in earnest in 1989, when KRIHS created the Construction Economy Office, which conducts research on the construction industry and

economy. Since that time, the office has conducted a variety of different types of research, including research in the social overhead capital (SOC) sector, the construction economy, the construction industry, and overseas construction, thereby supporting government policies.

The results of KRIHS's research on the construction industry have mainly been reflected in efforts to adjust and improve industrial policies and their related systems; such research has also been credited with greatly supporting academic development. In terms of research on construction demand, numerous studies across the entire construction industry have been conducted, including research on:

- 1) SOC investments as demand for public construction;
- 2) Trends and predictions for the construction economy, including civilian investment;
- 3) The appropriateness of the scale of government SOC investment, in addition to investment evaluations and financing;
- 4) Construction-industry organization policies, including market analyses of construction companies, the qualifications to become such a company, and regulations on entering the market;
- 5) Major policy issues that affect the entire construction industry and the opening up of the construction industry, such as strengthening the foundations of the construction industry through policies on the structure of the industry, construction workers, construction materials, and the digitization of construction;
- 6) Modernization through restructuring the construction-production system and the construction-ordering system (such as the bidding and contract system); and
- 7) Going forward, foreign construction markets and strategies to enter said foreign construction markets.

2.2.5. National Infrastructure Research

The goal of national infrastructure research is to establish common policies and plans that can support balanced land development and improve the lives of citizens. To do so, first, a national transportation infrastructure must be easily accessible and must allow for free movement so that all citizens across the entire country can maintain their daily lives; second, a variety of strategies that combine cutting-edge science and transportation technologies must be prepared so that citizens can use transportation infrastructure facilities safely, quickly, and without interruptions. A diverse range of future strategies on the regional and global levels are also being planned to improve the nation's competitiveness.

The main research topics in the national infrastructure sector are the timely

establishment of (and the continuous operation/maintenance of) national infrastructure as a measure to realize the goals and strategies of the comprehensive national territorial plan. To do so, hardware policies on actual national infrastructure facilities and software policies on the promotion of the systems required to realize such facilities have been developed in parallel. Research results also set forth timely policy alternatives that can be used to achieve national goals.

To advance national infrastructure goals, various research areas have been systematically subdivided into specialized groups. Infrastructure policy research mainly addresses national infrastructure policies, transportation planning that is integrated with land use, public and green transport, and rail and distribution networks. Road policy research addresses national road policies and includes establishing primary official plans, as set forth in the Road Act; planning and analyzing road policies; examining and consulting on metropolitan area road construction/maintenance plans (formerly called road maintenance basic plans); and conducting research related to the evaluation of investments and improving legislation related to roads. Cutting-edge infrastructure research involves research related to the establishment and operation of state-of-the-art infrastructure, such as research on public transportation, intelligent traffic systems (ITSs), traffic-related big data, and the development of methods to utilize traffic data.

2.2.6. Geospatial Information Research

Over the past thirty years, KRIHS researchers have carried out a variety of studies and pilot projects to lead the way in creating a national land-information digitization policy. In the early 1980s, KRIHS conducted research on a geospatial information management system, with the aim of systematizing statistical data on national land; in the late 1980s, the institute conducted research experiments to introduce the concept of GIS within the national land sector. In 1995, KRIHS led a project to establish a national GIS, resulting in KRIHS being named the general administrative institution of the National GIS Adoption Committee. Afterward, KRIHS led the development of various trial systems that utilized GIS by conducting research to support national GIS projects. In 1998, the year of the foreign-exchange crisis, the institute carried out a digitization project that aimed to push forward the national GIS project. From 1998 until today, KRIHS has led the national spatial data effort by creating a basic plan for the national spatial data policy every five years, in addition to collating and revising national spatial data every year.

Thanks to the proliferation of digital devices, since the mid- to late-1980s, KRIHS has focused on creating a geospatial information database by digitizing analog maps, in addition

to computerizing this geospatial information by using programs to display the current spatial state of national land in graphical form. With the creation of the National GIS (NGIS) team within the Ministry of Construction and Transportation in 1995, the national GIS establishment project truly got underway; since that time, KRIHS has actively supported and led the NGIS project.

2.3. Selection of Research Topics and Evaluation of Research Projects

The research conducted by KRIHS can be classified into (1) basic research (basic tasks and irregular tasks), (2) contracted research (contracted tasks), and (3) cooperative research (cooperative tasks). Basic research refers to the basic and irregular tasks conducted by government-funded research institutions; depending on the goals, such tasks can be categorized into basic tasks³ and policy tasks.⁴ Basic tasks include research tasks that can be used to form a theoretical/academic foundation and can lead to national policy; they can also include research tasks conducted as part of the institute's basic work. Irregular tasks are research tasks that are undertaken in response to any policy demands or changes to the policy environment that may occur throughout the year.

Cooperative research tasks or cooperative tasks are types of research that are conducted by the institution and another research institute or by two or more foreign or domestic professional organizations or professionals, including other industrial/academic/research/governmental institutions; these tasks can be categorized into cooperative research between research institutions, cooperative research led by the institution, cooperative research planned by the National Research Council, and cooperative research initiated at the institute's own discretion.

The process of selecting research tasks is as follows: (1) initiating a regular contest to discover tasks, (2) submitting a preliminary research plan, (3) forming a task-proposal evaluation committee and reviewing preliminary research plans, (4) evaluating and selecting a researcher to be in charge, and (5) creating an implementable research plan and forming a working budget.

Research tasks are generally considered to be tasks that (1) are suitable for establishing institutions and their unique purpose projects, (2) correspond to the direction of

3 Basic tasks include research tasks that form the basis of theoretical/academic/policy utilization, including developing theories/models and collecting and organizing investigative/statistical materials and foreign trend data.

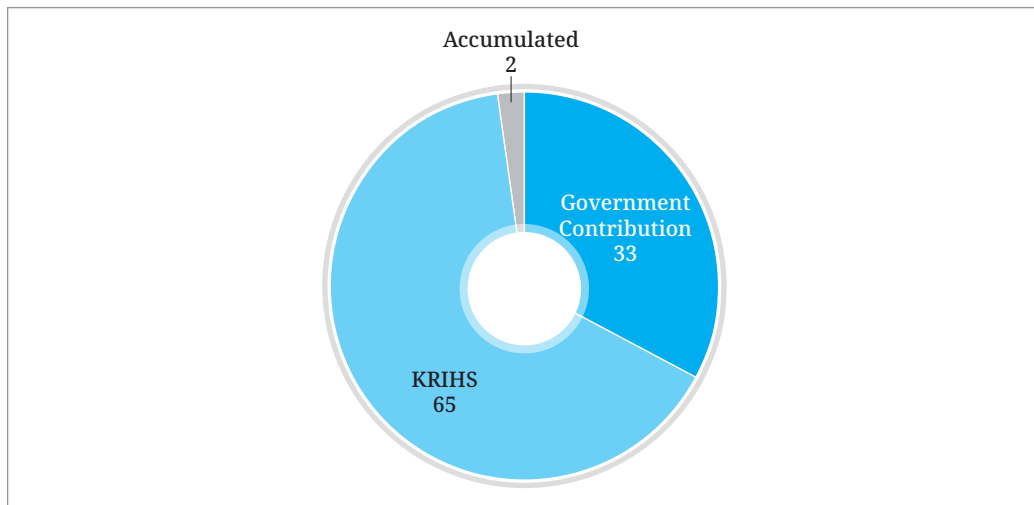
4 Policy research tasks are meant for policy implementation, such as setting forth or evaluating policy alternatives that are linked to a central department or two or more metropolitan areas.

researchers' management goals and mid- to long-term development, (3) are deemed to be high in timeliness and utilization for national policy development, policy establishment, and decisions; and (4) are requested and utilized by the Policy Research Council and the Research Council to carry out research-needs surveys on central government agencies to maximize research.

<Table 4-3> shows the number of research tasks undertaken by KRIHS over the past ten years. While there are variations between years, generally about 180 research tasks are undertaken every year. The self-tasks (basic, irregular, and standard tasks) that must be conducted by KRIHS in order for the institute to lead national policy and to systematically manage national lands per the foundational purpose of KRIHS make up roughly one-third of the overall tasks that are undertaken, while contracted research tasks given by the central government to resolve issues with current proposals make up another third; contracted tasks given by local governments and other miscellaneous tasks make up the remaining third.

[Figure 4-4] 2017 Funding (Total: \$48.6m)

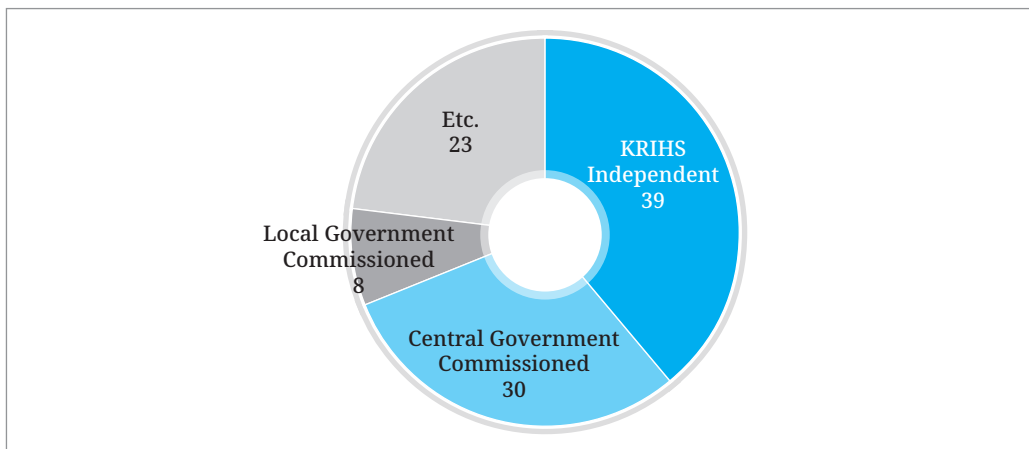
(Unit: %)



Source: Korea Research Institute for Human Settlements(2019), Internal statistic data.

[Figure 4-5] Number of Research Projects by Type (2009–2018)

(Unit: %)



Source: Korea Research Institute for Human Settlements(2019), Internal statistic data.

<Table 4-3> The Number of Research Projects by KRIHS over the Past Ten Years (2009–2018)

Year	Self-task (basic+irregular+standard)	Contracted Task				Total
		Central Government	Local Government	Misc.	Total	
2009	89	62	11	44	117	206
2010	82	57	12	39	108	190
2011	75	55	11	34	100	175
2012	66	55	14	41	110	176
2013	54	49	14	48	111	165
2014	59	58	9	39	106	165
2015	59	57	20	40	117	176
2016	91	44	12	41	97	188
2017	81	54	23	38	115	196
2018	62	49	28	47	124	186
Total	718	540	154	411	1,105	1,823

Source: Korea Research Institute for Human Settlements(2019), Internal statistic data.

To improve the quality of the research tasks that are performed, research committees are formed, and research review meetings are held. The research committees include (1) the Research Advisory Committee, (2) the Research Operation Committee, (3) the Task Proposal Evaluation Committee, (4) the Research Review Committee, (5) the Research Council, and (6) the Policy Research Council.

The Research Advisory Committee was established for the efficient operation of the institute and for efficient research; the Research Operation Committee was established to create plans for research tasks and to review matters related to the management and adjustment of research tasks. The Task Proposal Evaluation Committee was formed to select which research tasks (basic, irregular, and support tasks) should be undertaken by the institute.

The Research Review Committee was formed and now operates to (1) review research methods and details while research tasks are undertaken, (2) review research details, and (3) evaluate research results to promote qualitative improvements in research tasks. Similarly, the Head of Research forms and operates the Research Council by selecting policy managers, professors, and related experts to conduct research more effectively. Finally, the Policy Research Council was established to discover policy-research tasks through organic links with the central government and to improve the degree to which policy research supports policies.

<Table 4-4> Research-related Committees in KRIHS

Committee	Main Task
Research Advisory Committee	<ul style="list-style-type: none"> • Examining items on the direction of development of long- and short-term researchers • Examining matters concerning the establishment of project goals and business plans • Examining items related to the discovery and execution of unique research tasks • Examining items on policy direction, such as pending issues and national affairs
Research Operation Committee	<ul style="list-style-type: none"> • Reviewing matters concerning the establishment of long- and short-term research projects • Reviewing research periods and selecting research managers • Reviewing the performance of research tasks • Reviewing and coordinating the workloads related to research tasks • Reviewing special cases when hiring contract workers • Differentiating between types of research • Determining mileage on policy development data, etc.
Task Proposal Evaluation Committee	<ul style="list-style-type: none"> • Examining the necessity of research and the clarity of purpose for research • Examining the appropriateness of research methods • Promoting excellence in research • Carrying out cooperative and composite studies • Differentiating from prior research and reducing research redundancy
Research Review Committee	<ul style="list-style-type: none"> • Discussing research methods, details, personnel, results, etc. • Reviewing and evaluating research results • Reviewing the publication of research findings • Deciding or requesting supplementation from start-up and middle-stage research-review meetings • Reviewing the need to utilize external experts and evaluating the results of using external experts • Discussing changes in research plans (research period, research subjects, subheadings, etc.)
Research Council	<ul style="list-style-type: none"> • Researching the direction and methods used in research • Examining items related to the adjustment and modification of research contents
Policy Research Council	<ul style="list-style-type: none"> • Conducting policy consultations on key issues of national territory policy • Exploring research tasks related to policy issues

Source: Korea Research Institute for Human Settlements, KRIHS Rule Book (Regulation).

2.4. Publication and Public Relations

Along with the implementation of research tasks, the institute contributes to enhancing the utilization and national policy contribution of policy users through the promotion and distribution of research achievements, which are the results of research tasks. KRIHS strives to enhance and communicate its external image through the promotion of major projects and activities of its researchers. In addition, various ways are being developed to enhance the diverse utilization of research results.

The institute regularly publishes works to promote and spread the research results of its researchers. A monthly publication, *National Territory*, presents the latest national and international information on national territory policies, timely issues, and various issues on national territory policies. The *Journal of National Territory Research* is a specialized academic journal that presents new approaches and interpretations of national territory-related policy research. *National Policy Brief*, issued each week, presents improvement and response measures for national territory policy and the introduction of relevant data at home and abroad for policy establishment.

The institute also periodically publishes publications on professional content in various fields, including *Construction Economy*, *Road Policy Brief*, and *Real Estate Market Survey Analysis*. *Construction Economy* provides information on topics such as the Korean construction industry, overseas construction trends, and public-sector activities. *Road Policy Brief* introduces trends in road policies at home and abroad, explains the background and key contents of road policies, and introduces the latest news on roads. *Real Estate Market Survey Analysis* provides real estate market psychology, market diagnoses, and in-depth analyses of the real estate market.

[Figure 4-6] KRIHS Publications

			
National Territory (monthly)	Construction Economy (quarterly)	National Territory Policy Brief (weekly)	Journal of National Territory Research
			
Space and Environment	Special Report	Road Policy Brief	National Territory Issue Report

Source: Korea Research Institute for Human Settlements, Internal data.

2.5. Implications of KRIHS's Development Experience

The above material was an examination of the operation of KRIHS and its development experience. Through this information, efforts the institute has made to improve its research capabilities after its founding can be examined, in addition to the degree to which the institute has supported the development of Korean lands. Taken as a whole, the following implications regarding the establishment and development direction of a Paraguayan research institute can be extrapolated.

The first area includes previous efforts the institute has made to enhance research expertise. Because the main purpose of the research institute is to create policy information and to provide policy advice based on expertise and ideas, the institute helps policy-makers during the process of deciding on policies. Since its founding, KRIHS has performed research that is responsive to the policy needs of the central government, based on KRIHS's expertise in the national territorial sector, thereby supporting the formation and enforcement of public policy. The institute has made a variety of efforts to support this work, such as hiring outstanding personnel and creating research-related committees to improve the quality of research.

The second area includes research that can lead to policies that must be conducted. Not only does KRIHS perform short-term research in response to current proposals, but it also conducts research that suggests long-term policy directions. While research to support the central government's current policy proposals makes up two-thirds of the total research conducted by the institute, KRIHS is also careful to ensure that self-tasks meant to lead to national policies make up the other one-third. This setup is a major implication for the future Paraguayan research institute. If the focus is solely on short-term and immediate policy proposals the central government has made, then the direction of such policies can change whenever a change in government administrations occurs; as such, research to establish long-term policy directions must be continuously conducted so that these efforts can lead the central government's policies.

The third area is the diversification of research areas. KRIHS has conducted a diverse range of research to respond to domestic and foreign changes in the conditions of national lands and has changed both its research personnel and organization as a result. Since KRIHS's founding, the research areas of national territory, local land use, the housing and urban sectors, and real estate have been continuously addressed, while areas such as national land development, transportation, infrastructure, the construction economy, resources and environment, and geospatial information (i.e., GIS) have been added in response to changes in conditions. The future Paraguayan research institute will most likely have to diversify its research areas and carry out changes to its personnel makeup and organization so that it can respond to the primary issues that are anticipated at each stage of development by linking itself to Paraguay's mid- to long-term vision of national development.

The fourth area is research cooperation with similar research institutions. KRIHS has conducted cooperative research with domestic and foreign research institutes. The institute continues to conduct cooperative research with the nation's think tanks and also meets local policy needs through cooperation with municipal and provincial research institutes. KRIHS holds seminars to support Korean institutions and corporations, thus strengthening their international cooperation capacity. The seminar topics cover laws, regulations, and finance, the knowledge of which is a requisite for Korean institutions and businesses wishing to advance into overseas projects. To accelerate the exchange of information between domestic and external experts, KRIHS has hosted forums with the objectives of encouraging professionals to build strong networks, facilitating exchanges and cooperation between the public and private sectors, and assisting public agencies and businesses in making inroads into global markets, among other activities.

3. Research Organizations in Paraguay: Their Role and Activities

In this section we look at the status of major research institutes in Paraguay for the establishment of PRIHS. To understand in a more detailed and profound way how Paraguay's research institutes conform through their structure and way of interacting with the key entities for the fulfillment of Paraguay's objectives and mission, it is necessary to analyze more representative and influential research institutes in order to identify key success factors that can be replicated in future initiatives.

This chapter presents brief profiles of public university and research organizations that foster research in Paraguay's urban and housing sectors. The intention is to highlight some of the key players in Paraguay by explaining their roles and the significance of their work regarding national urban and housing policies. This chapter also reviews Paraguay's leading policy research institutes and courses, including the Centro de Investigación Desarrollo e Innovación (CIDi) and the Centro de Análisis y Difusión de la Economía Paraguaya (CADEP). We also review several key research institutes, including (in the academic sector) the environmental engineering and environmental geographic science courses at the Universidad Nacional de Asunción (UNA) as well as Universidad Católica's Faculty of Science and Technology (FCyT); in the private sector, we review the Itaipu Technological Park, ISTHME (an architecture group), Cámara Paraguaya de Desarrolladores Inmobiliarios, TECHO, and Habitat para la Humanidad (Habitat for Humanity), Paraguay.

3.1. Centro de Investigación, Desarrollo e Innovación (CIDi)⁵

The Center for Research, Development and Innovation is part of the Architecture, Design and Art School of UNA. (The center is called CIDi FADA UNA from its Spanish acronym; we will henceforth refer to the center as "CIDi") CIDi was founded in 2013 with the support of a grant from the National Council on Science and Technology (CONACYT, from its Spanish acronym).

CIDi's role and significance in national urban and housing policies are as follows. Since its inception, CIDi has been an active and relevant actor regarding urban studies and research, as well as training for human resources (HR). Some of the most relevant urban research projects undertaken recently by CIDi include the following:

5 CIDi's official webpage: <https://cidifadauna.com/>.

- 1) Technical assessment and coordination of the process to develop the National Policy on Housing and Habitat. This project was developed in partnership with the Cities Alliance, MUVH (then SENAVITAT), and the National Council of Habitat, a network of public institutions and organizations of civil society;
- 2) Mapping and characterization of the Chacarita Alta Neighborhood in Asunción, Paraguay, with Habitat for Humanity Paraguay as the client, with funding from the IADB LAB (formerly FOMIN);
- 3) The CONACYT PROCIENCIA research project, including infrastructure and territorial transformations in Paraguay (1960/2014), the CONACYT PROCIENCIA research project “City and Water / Asunción Metropolitan Area”, and the “Patiño Aquifer MAP Py OSM” (OpenStreetMap) participatory cartography project for all the cities of Paraguay as a way to overcome the lack of multipurpose geospatial databases.

CIDi’s achievements are as follows. CIDi has built a reputation of excellence by developing projects that have no precedent in the national context, such as the National Policy on Housing and Habitat, the mapping of Chacarita, and the MAP Py OSM project. It has contributed to the formation of high-level HR and has contributed continued education on postgraduate courses in master’s and PhD programs at prestigious institutions such as the University of California at Berkeley, Harvard University, and the Universitat Politècnica de Catalunya. In a context of very limited resources, CIDi has combined the efforts of a small kernel team (approximately ten people) by using their work and efforts to obtain additional resources through consultancy and research projects. With this approach, CIDi has been able to sustain on average a network of thirty to forty collaborators who work as professionals linked to projects, various experts, and both remunerated and nonremunerated interns and research assistants. Another achievement of FADA’s (not specifically of CIDi) was to strengthen and foster a project-management culture, mainly around the PMI model, which allows for productive and positive interactions between the technical teams and the administrative directorate of FADA.

CIDi’s challenges are as follows. CIDi and its umbrella office, the research and services directorate at FADA, face a limited budget, small numbers of permanent personnel, and low wages. These are problems that affect the entire university. In the specific case of CIDi, the low wages have resulted in losing personnel who went on to find other, better-paying positions. CIDi is a hybrid of academic, research, and consultancy space, and thus a high turnover of personnel is to be expected. But the impact of these low wages, as well as of administrative constraints to hiring in the public sector, have resulted in the impossibility of sustaining working relationships with highly talented, trained, and motivated people. These are all relevant challenges that must be addressed. Finally, it is worth mentioning that CIDi

does not yet have normalized and systematized processes in place, which is only natural in a relatively recent institution, but this situation has now formed a bottleneck for future growth. As a result, with the support of the dean's office and the administrative directorate, CIDI is now beginning a process to implement ISO 9001 standards within its procedures.

The wage and incentives level for experts and professionals working at CIDI are as follows. CIDI presently has eleven permanent staff members. Of this staff, seven members are academics/researchers, and four work in administrative and technical support. For six out of seven researchers, monthly wages fall in the range between 4,230,500 guaraní (Gs), or US\$687.89, and 3,198,800 Gs (US\$520.13). For these six researchers, the hourly weekly commitment is twenty hours. Only one researcher position is better paid (the CIDI coordination), with wages of 13,860,000 Gs per month (US\$2,253.66). We must highlight, however, that the latter is not inherently a budget line of CIDI's but is a competitive position that must be renewed every five years. The hourly weekly commitment for this position is forty hours. Thus, monthly wages costs for CIDI are estimated to be US\$8,028.53. Yearly wages costs are estimated to be US\$104,731. The most relevant among the various benefits and incentives is likely the policy to give paid leave permits to teachers and researchers while they are developing postgraduate courses.

3.2. The Centro de Análisis y Difusión de la Economía Paraguaya (CADEP)⁶

The conception of CADEP in Paraguay began during the country's dictatorship, one of the longest in the Latin America and the Caribbean (LAC) region. After this period, which ended in 1989, Paraguay started a process of transition toward democratization; the authoritarian regime in the country then emptied the nation of educational and critical thinking. In 1990, a group of professionals who wanted to contribute to the economic development of Paraguay became associated to create an entity that would produce key knowledge in support of public policies oriented toward sustainable growth, welfare, and quality of life among the Paraguayan population.

CADEP hopes to strengthen the relationship with national and international actors through research projects and publications, studies, and training in relevant national social and economics fields. After nearly three decades, CADEP is widely considered to be a national referent for civil society and for academic, private, and public institutions both at the national and international levels; CADEP also includes important cooperation agencies.

6 CADEP's official webpage: <http://www.cadep.org.py/el-cadep/quienes-somos/>.

CADEP is especially dedicated to research and teaching in the areas of economics and public policy. With an independent character, the center works to produce knowledge of academic excellence, with the aim of influencing policy decisions. CADEP's main areas of work are macroeconomics, international economics, employment and poverty, business development, and microenterprises and regional development.

To achieve its objectives and mission, especially regarding decision-making and the formulation of public policies, CADEP has partnered with various universities for the establishment of a master's degree in public policy and management, which is directed mainly to the training of public servants who seek to maintain high levels of quality and demand within the Paraguayan government. Paraguay has a particular context in which academic and scientific research in key fields has not been encouraged; as the CADEP think tank has expressed before:

“Unfortunately, scientific research has not been part of the activities of the universities in Paraguay. Few centers of thought have been created that have lasted in this country. Thus the task of founding and sustaining CADEP has demanded patience and will. In the absence of national support (private or public), we have welcomed the help of foundations from abroad and international organizations that bet on the center at the beginning of a period of democratic transition. However, the sustainability of this aid has always been linked to the constant generation of new ideas and the exercise of creativity, which is exactly the task of a think tank. (CADEP; authors’ translation).”

In considering a vision of knowledge for development and equity in Paraguay, CADEP states the following as its mission: “CADEP will work with national and international research centers, civil society organizations and CONACYT to make knowledge have weight in public policy decisions in Paraguay”.⁷

Currently, CADEP has thirty-one positions to develop its projects. With two founder researchers as representatives of the think tank and general directors, the group has a strategic structure with a group of nine permanent full-time research staff on the payroll of the institution as well as ten associate researchers; the latter collaborate on specific projects and studies according to their experience, but they are not permanent members of the institution. In total, CADEP has sixteen associate researchers (ten in Paraguay and six elsewhere); the latter are international associate researchers. Some of the international associate researchers previously worked in CADEP but now study abroad but are still

7 CADEP's mission statement, as appears on its webpage.

supported by the institution. CADEP also has four administrative workers who develop administrative, management, and communication tasks.

<Table 4-5> Number of Staff and Level of Education at CADEP

Position	No.	Educational Level
Founding researchers	2	• PhD
Main researchers	9	• Two have PhD degrees, six have master's degrees, and one is a college graduate
Associate researchers	10	• One has a PhD degree, and nine have master's degrees
International associate researchers	6	• Four have PhD degrees, and two have master's degrees
Projects manager	2	• Not specified
Administrative manager	1	• Not specified
Communication manager	1	• Not specified

Source: Authors' own elaboration, based on CADEP webpage information.

Because it is a private nonprofit organization, CADEP has implemented a process of internal self-evaluation in which the institution's objectives and its action plan are evaluated through strategic planning and by redefining (if necessary) the vision and mission of the institution in order to keep them up-to-date with the national reality. In this process, CADEP analyzes various actors and their roles through their influence on national public policies.

According to CADEP, this measure arose from its participation in the Think Tank Initiative (TTI), which twelve Latin American research institutions participate in. The aim of the program is to improve the various centers' research quality levels for a greater and better impact on public policies (CADEP, 2012). An example of this strategic planning is the creation of the CADEP Department of Communication to start exercising, in a systematic and orderly manner, the task of advocating on public policies, implementing webpage improvements, and considering new media trends to facilitate interactions with different actors and to promote the information that is generated.

Before the 2000s, think tanks in Paraguay were funded by external funds because there were no public or private institutions that financed or demanded research in the social and economic-sciences fields. During that period, think tanks had difficulty promoting social and economic topics to be studied among international nongovernmental organizations (NGOs). After the year 2000, relationships with international cooperation agencies began to grow closer, which provided more experience to CADEP in the field of international cooperation and provided resources to finance its functioning and research. Examples include working

with Japan as well as with other national institutions such as the Paraguayan Ministry of International Affairs, which funded research on asymmetries in the Southern Common Market. In 2018, CADEP developed a study titled “Strengthening Labor Participation and Economic Opportunities for Women in Paraguay”, financed by the competitive TTI Opportunity Fund from the Think Tank Initiative of the International Development Research Center (IDRC) of Canada.

We should mention the most important program in this country, which promotes research and think tanks from national public policy. In 1996, the National Council for Science and Technology (CONACYT) was created. CONACYT belongs to the presidency of Paraguay and is responsible for the coordination of the National System of Science and Technology. The group, which promotes scientific education and research through investments in capacity development within Paraguayan society, looks forward to having a competitive labor force and employing high-quality workers.

The program’s resources are drawn from the general budget of the nation, funds for international cooperation, and banking entities that lend financial resources for science and technology. These resources are then used to promote plans, programs, and projects that will encourage researchers’ careers and will support companies for the development of research and, in general, generate competences in research departments between the various think tanks involved.

The program has competitive funds designated to be granted to projects in different areas of science and development, such as the agricultural, natural, and botanical sciences; engineering and technology; mathematics, information technology (IT), and physics; health sciences; animal biology and chemistry; and the social sciences and humanities. The projects in the different areas are presented through periodic calls by CONACYT that are evaluated according to their quality and relevance. For example, in 2018 CONACYT published the last announcement to finance 90 percent of the total project cost with a maximum of USD82,500 in a period of up to eighteen months. According to CONACYT, “Universities, faculties of the same or different universities with independent administration, academic centers, institutes or research centers, governmental or non-governmental organizations, public or private, organizations with or without profit, respectively, may apply for funding and in accordance with its statutes or charter, carry out Research and Development (R&D) activities”.⁸

In 2014, CADEP developed the study “Relationship between Think Tanks and Universities

8 <http://www.conacyt.gov.py/node/23261>. The page includes frequent questions about the program of competitive funds designated to R&D. National System of Science and Technology of Paraguay.

in Paraguay”, which was financed by CONACYT. Other research projects awarded to this think tank by the CONACYT program Pro-Science include:

- 1) The strategy and policy of inclusive economic growth in Paraguay;
- 2) Social protection from a rights perspective and within the Sustainable Development Goals (SDGs);
- 3) The effects of sovereignty and the nutritional food security of Paraguay through a system of indicators;
- 4) The design and application of a survey methodology for analyzing the demand of university professionals in Paraguay’s agro-industrial sector;
- 5) The risks of family farming, including discussions of vulnerability, poverty, and social protection;
- 6) Regionalization and policies for the development of the Department of Caaguazúan; and
- 7) The effect of social aid in the population of older adults on poverty rates; this was a comparative analysis of socioeconomic situations at the individual and household levels.

As a private institution, CONACYT lacks a direct relationship with the government, other than following Paraguay’s national laws for private and nonprofit organizations. In cases where these kinds of institutions obtain resources through government programs, as in the case of Pro-Science, the think tank must fulfil certain instructions in order to guarantee the correct execution of resources, such as the fulfillment of deadlines to submit documentation and research, activity-surrender forms, and expense and cost reports, among others, all of which are published in the web portal of the public entity, according to the Paraguayan Law of Transparency. The law states that “the agencies and public entities that receive and manage resources from the National Fund for Public Investment and Development (FONACIDE) must also publish on an Internet portal information about the programs and projects financed with said funds, describing the goals, the degree of execution of them and the budget applied”.⁹ The obligations are previously established by the agreement; the public institution is responsible for the publication of the activities developed within the think tank.

3.3. The Academic Sector

The main institutes in the academic sector related to urban and housing policies are the environmental engineering and environmental geographic science courses at UNA, and

⁹ Law 5581/16, art. 8.

Universidad Católica's Faculty of Science and Technology (FCyT).

The role and significance of the environmental engineering course at UNA in national urban and housing policies are as follows. A relatively recent addition in the context of UNA and of the Faculty of Agricultural Sciences, the course of environmental engineering could potentially have a relevant role in the analysis of urban and territorial challenges. The environmental engineering course is a key center of GIS training in Paraguay. In the context of Paraguay, environmental engineers are the most relevant professional group to develop studies in environmental impact assessments (EIAs) for all types of projects, including infrastructure and housing, as well as endeavors in the primary sector, such as livestock breeding and agriculture.

We must note that, in general terms, environmental engineers do not specifically focus on urban or housing challenges, nor do these consultants perceive themselves as potential key players in the discussion of urban and housing policies in Paraguay. Based on our experience, however, good environmental engineers have solid scientific training (i.e., their thinking is fact based), and they inherently possess multidisciplinary training that focuses on the consequences of anthropic activities upon a given territory. Those professionals who work with GIS tools can also read and understand the spatial characteristics of a given territory. Thus, the course of environmental engineering is a potential place to recruit talent—among both young teachers and students—for the future Paraguayan Research Institute for Human Settlements. Fostering postgraduate studies (master's degree and PhD courses) that could help environmental engineers to focus their capacities and multidisciplinary training into urban and housing problems could be particularly helpful.

UNA's environmental geographic science course is one of the main academic research courses related to urban and housing research. Professionals in the geographic sciences have only been practicing for two decades in Paraguay. The background and tradition of the course is mostly related to technical capacities for surveyors. In the last few years, UNA has attempted to incorporate the dimension of urban and territorial planning. In the Paraguayan context, we must stress that the lack of proper geographic databases and accurate cartography are among the most relevant bottlenecks for developing urban research and planning based on facts and evidence. In this context, the course of engineering in the geographic sciences may be a source of talent and skills for future members of the Paraguayan research institute.

The Universidad Católica's FCyT is also an important educator of experts. The faculty is responsible for training students in the following careers: environmental, civil, industrial,

electronic, and computer engineering; systems analysis; and graphic and industrial design and architecture. Each of these career paths is divided into departments headed by their own deans. Although the focus is not predominantly centered on urban or housing studies, the faculty provides HR on related areas. This faculty is Paraguay's second training force of professionals in architecture and engineering at the national level, after UNA.

3.4. The Private Sector

The main institutes of the private sector related to urban and housing policy are the Technological Park of Itaipu Paraguay (PTI-PY, Parque Tecnológico Itaipú-Paraguay), the architecture group ISTHME, Camara Paraguaya de Desarrolladores Inmobiliarios, TECHO, and Habitat para la Humanidad, Paraguay.

PTI-PY began in October of 2009. The institution is supported with funds from the Itaipu Binacional Hydroelectric company to promote regional development through specific programs and projects developed at the institution. Located on the right bank of the Paraná River, PTI-PY was conceived as a space for innovation in which technology is put at the service of development for the transformation of science into improved quality of life. PTI-PY is one of the larger sources of income for the national budget, and it also provides resources to local governments through royalties and development projects. The technological park could potentially become a key actor for the discussion of urban and territorial projects in Paraguay, although the work and activities of other centers at PTI-PY are significantly less relevant for the discussion of urban and territorial research and projects (Technological Park of Itaipu, 2019).

ISTHME is the name of a group of French-Paraguayan architects and geographers who formed a studio in 2016. The group members study land-use planning, urbanism, and architecture using a transdisciplinary approach in which they develop public and private projects in Asunción, Chaco, and the Eastern region of the country (ISTHME, 2019). ISTHME collaborates in consultancies and prepares research work for NGOs and the Paraguayan government. ISTHME's work has contributed to the nation's progress because of the quality of its analytical cartography and the consistency and quality of its diagnostics and research. Some of its contributions include studies such as "Diagnosis and Vision of Sustainability for the City of Philadelphia (Department of Boquerón-Paraguay)", "Pre-Diagnosis of the Territory of Bahía Negra", and others (ISTHME, 2019).

CAPADEI is a significant actor in the housing industry and is involved in construction and real estate. The group's objectives include fostering the development of the country through

improvements in the real estate industry and by linking all the main actors associated with real estate development. CAPADEI also seeks to train and promote best practices to achieve better quality standards. The group organized the first Real Estate Forum of Paraguay in 2018. One of the group's achievements was to foster new leadership within the housing industry. Traditionally, the major players of real estate businesses were companies that sold land parcels in monthly payments, such as Loteadoras, Inmobiliaria del Este, and Atalaya de Inmuebles. In the Paraguayan context, having a private-sector chamber of industries that works to incorporate capital and to develop more complex real estate endeavors is a new phenomenon (CAPADEI, 2019).

TECHO works in parts of Paraguay characterized by precarious settlements. TECHO originally conducted fundraising and advocacy but has also fostered research efforts such as leading a survey of precarious settlements as a research project. TECHO has also participated in the development of public policies for housing and was an active participant in the elaboration of the recently approved Política Nacional de la Vivienda y el Hábitat (PNVH). TECHO is now working with other actors in planning a new and expanded survey of precarious settlements in Paraguay (TECHO, 2019).

Habitat for Humanity has done a great deal of work to improve access to housing among many communities in Paraguay. The organization has also collaborated with two large projects of the Paraguayan government and the MUVH: the San Francisco Neighborhood Social Development Plan and the Integral Improvement of the Chacarita Alta Neighborhood project (Habitat for Humanity, 2019).

4. Suggestions for Development of the Policy Research Institute in Paraguay

The key suggestions for the operation and development of PRIHS are as follows. First, by accumulating objective and fair levels of research without succumbing to external pressure (from the government or other origins), the government emphasizes the importance of enhancing the quality of research, continuously managing research materials, and carrying out mid- and long-term research projects based on securing relevant professionals. The government particularly hopes to enhance the quality of its research institutions through active cooperation with domestic and international research institutes. A power-generation system should be established through close exchanges between current researchers using mutual feedback.

4.1. Roadmap of Development

In the early stages of the institute, establishing a research organization system and securing excellent HR will be the most pressing issues. The initial organization of researchers consists of four departments (of national territory planning, cities, housing, and information) and about forty personnel, as suggested in the preceding chapter. Initially, principles on the performance of research staff must be established, such as by (1) establishing research project goals and business plans, (2) selecting research tasks and evaluating research plans, (3) appointing and forming research managers, (4) reviewing and evaluating research activities and research results, and (5) organizing and operating research-related committees. Issues such as determining hiring procedures and establishing a wage system for securing excellent HR should be established at the beginning. Research topics that can be supported by related government departments and policy alternatives should be a key focus, in addition to collaborating smoothly with relevant government departments.

In the middle stage, after the research institute has an organizational system in place and the research staff has been secured, the research workforce will need to be expanded accordingly, such as in environmental and infrastructure research. In addition, various programs such as sabbatical years, education training, and joint research should become operational to enhance the competence of the research personnel and for the quantitative and qualitative improvement of their research. A proper compensation system for excellent researchers and a promotion system should also be established through objective evaluations. The scope of research topics should be expanded to include research related to relevant government departments' policy needs and research subjects that can respond to the needs of the academic community and the citizens involved. PRIHS has also secured research personnel from other areas such as economics, finance, administration, and policy studies to balance HR.

In the long run, securing excellent HR, strengthening research capabilities, and expanding the functions of researchers are all important. In response to changing times, the government should continuously secure and expand its stable of experts in new areas by flexibly operating research fields and research organizations, thereby steadily cultivating capabilities to lead policies based on important issues or problems through future predictions.

<Table 4-6> Development Plan of the Research Institute at Each Stage

At the Establishment Stage	
Organization	Establishing four divisions: Territorial Division, Urban Division, Housing Division, and Geospatial Division
HR management	Establishing employment process and wage system for securing outstanding researchers
Research management & evaluation	Establishing a system for conducting research work; establishing a policy demand response from relevant ministries
Mid-term Development	
Organization	Expanding research areas (Environment Division and Infrastructure Division)
HR management	Strengthening capacity building through sabbatical years, training, etc.; building an evaluation/compensation system
Research management & evaluation	Responding to the demands of relevant ministries, academia, and the general public
Long-term Development	
Organization	Flexibly responding to each research organization according to changing conditions
HR management	Continually managing HR and attracting excellent researchers
Research management & evaluation	Exploring a variety of research topics in response to changing conditions; leading urban and housing policy through future predictions

Source: Authors.

4.2. Organization

The organization of PRIHS should be done by taking into account the purpose and role of the agency. The organization of PRIHS may consist of an executive branch consisting of the director, the assistant director, and various internal committees, research departments, and the administration office.

The executive branch should consist of the director and the deputy director. The personnel composition of the researchers will largely be comprised of executives and staff. The director will be appointed by the chair at the research council after the board of directors has voted, and the vice director will be appointed by the director. “Staff” refers to a person other than an executive who works for a research institute and is appointed by the director. The director represents the researchers, has authority over the overall management of the institute, oversees the researchers’ work, and directs and supervises the staff. The deputy director assists the director and, in the case of the director being absent, takes over the director’s duties.

To support the director's work, a Research Advisory Committee, a Research Operation Committee, and a Personnel Committee should be formed within the institute. The Research Advisory Committee will efficiently carry out research and research activities, pursue any matters concerning the development of long- and short-term institutional directions, establish business goals and business plans, implement unique research tasks, and discuss pending issues and national-level tasks.

The Research and Operation Committee is responsible for deliberating on matters concerning the development of research project plans and for the management and coordination of research work, including the establishment of long- and short-term research project plans, the selection of research periods and research managers, the performance of research tasks, and the review and coordination of research-task workloads.

The Personnel Committee advise on personnel matters to the director. They discuss the personnel-management system in the research institute as well as the appointment, compensation, and punishment of employees; they also report the results to the director.

We believe that medium- and large-size divisions will be most suitable for the PRIHS research department. Given the difficulties in recruiting the total number of employees and staffing at the beginning of the establishment stage, the focus on researchers must be maximized while minimizing the organization's management work, which we consider to be a more appropriate organizational form.

For the purpose of the policy research institute for the long-term development of a Paraguayan territorial plan, and for urban and housing policy to be achieved effectively, comprehensive and cooperative research in various fields is needed rather than fragmented and subdivided research areas. For this reason, we deem it appropriate to have a medium- or large-size division system that will maximize the synergistic effects of research rather than having subcomponents that can cause partitioning to occur.

4.2.1. The Establishment Stage

The research division should be comprised of the Territory Planning Division, the Urban Policy Division, and the Housing Policy Division. The Geospatial Information Division and the main areas of research by each division are shown in <Table 4-7>.

<Table 4-7> Research Departments and Major Areas of Research

Department	Major Areas of Research
Planning and Coordination Division	<ul style="list-style-type: none"> • Planning and coordinating research tasks • Evaluating and managing research tasks • Managing research personnel and performance • Establishing and managing the management goals and action plans of the head of each agency • Conducting work related to evaluating research institutions
Territory Planning Division	<ul style="list-style-type: none"> • Conducting national and regional planning and policies • Implementing policies and plans for metropolitan areas • Analyzing regional economic and spatial measures • Conducting economic analyses of national territory development projects • Implementing balanced development policies • Implementing planning systems
Urban Policy Division	<ul style="list-style-type: none"> • Implementing a national urban policy • Implementing urban planning, design, and development • Implementing urban policies and plans • Implementing urban regeneration and the preservation of speakers • Managing urban areas • Helping local governments strengthen their capacity for urban planning
Housing Policy Division	<ul style="list-style-type: none"> • Implementing a national housing policy • Analyzing housing supply and conditions • Readjusting housing funds • Implementing various housing programs • Implementing a national land policy • Implementing a land development, utilization, and planning system
Geospatial Information Division	<ul style="list-style-type: none"> • Implementing a national spatial information policy • Using spatial big data • Implementing smart urban policies, plans, and operations • Analyzing spatial information

Source: Authors.

To support PRIHS’s research departments, the administration needs to be set up. The tasks of the supporting research departments require a wide variety of fields, such as personnel, general affairs, accounting, finance, facility management, procurement, contracts, research management, evaluation compensation, book computerization, promotion, and publication. A budget management team, an HR management team, a public relations and communications team, and an information center should be formed, as shown in <Table 4-8>.

<Table 4-8> Major Tasks by Administration Team

Administration Team	Major Task
Budget management	<ul style="list-style-type: none"> • Planning, organizing, and operating the budget • Managing government-funded funds • Planning and operating funds, such as private pensions and subsidies • Tending to various budget-related government affairs
HR management	<ul style="list-style-type: none"> • Conducting personnel planning and career management • Establishing an HR supply and demand plan and recruiting staff • Comprehensively evaluating performance management and service performance • Managing a salary and compensation system • Conducting job training and training-related tasks • Implementing service management
Public relations and communication	<ul style="list-style-type: none"> • Planning for external cooperation and related work • Pursuing research results and publicity • Conducting press planning and media-related work • Establishing and operating a network of national territory-related experts • Operating and managing a homepage • Planning, editing and publishing research publications
Information center	<ul style="list-style-type: none"> • Purchasing various books • Managing researchers' records • Operating a library

Source: Authors.

4.2.2. Mid-and Long-Term Development

The field of research must be expanded to properly respond to changes in Paraguay's future conditions and to become a policy research institute that will lead comprehensive and long-term national and urban policies. In the future, research departments will need to be added in the fields of environment, infrastructure, and spatial information, the main tasks of which are shown in <Table 4-9>.

In the long run, flexible organizational structures and research personnel will be needed to cope with the research needs of Paraguay's particular conditions. In particular, the number of researchers must be expanded in the areas of smart cities, big data, and smart infrastructure, all of which are expected to be major areas of research in the future.

<Table 4-9> Expanded Research Departments and Major Areas of Research

Department	Major Areas of Research
Environment Department	<ul style="list-style-type: none"> • Land environment • Resource policy • National disaster prevention policy • Safety territory and disaster prediction in response to climate change • National water resources policy • River policy
Infrastructure Department	<ul style="list-style-type: none"> • National infrastructure policy • Land-use convergence transportation plan • Public and green transportation • Railway networks and logistics • National road policy • Smart infrastructure

Source: Authors.

4.3. Human Resource Management

PRIHS's staff consists largely of research positions in the research department and non-research positions in the administration. The researcher job consists of a research fellow who ideally has a PhD, an assistant researcher who holds a master's degree, and a researcher who holds a bachelor's degree.

4.3.1. The Establishment Stage

Because of the nature of policy-research institutions, recruiting high-quality HR to conduct research is crucial. In particular, given Paraguay's internal and external conditions, the country can expect considerable difficulties in securing quality research personnel, so various methods must be devised to do so. At the same time, various efforts will also have to be undertaken to maintain, assess, and cultivate the workforce that is secured. For this purpose, fair and transparent HR procedures must be implemented.

The most important and expected challenge in the founding process of PRIHS will be attracting talented PhDs who will lead the research projects. Currently, most of Paraguay's universities do not offer PhDs in urban- and housing-related fields, which will make recruiting more PhD researchers from educational institutions in Paraguay difficult. Therefore, to secure talented personnel, PRIHS needs to operate a strong performance-based pay system and an objective and fair personnel system to provide high pay levels and additional benefits for attracting talented people. A good research environment must be created by ensuring research independence and autonomy. The number of researchers must be expanded by introducing a variety of adjunct or guest researcher systems with full-time

researchers. In the case of adjunct researchers, professors should be recruited in relevant fields within Paraguay; in the case of invited researchers, the recruitment target should be expanded to include foreign institutions.

<Table 4-10> shows the wage levels for various Paraguayan research institutes. High levels of wages will be needed to attract talented people in the early days of the institute's establishment. In the case of senior professionals, the wage level of the public and private sector is the highest, at about US\$2,400 per month, while the wage level of the academic sector is the lowest. Professionals and junior professionals show the highest wages in the private sector. The wage level for researchers should be at least higher than the current wage level for Paraguayan research institutes by rank.

<Table 4-10> Remuneration Levels of Paraguayan Institutions

(Unit: USD)

Institution	Monthly Remuneration			
	Junior Professional (Entry Level)	Professional (Mid-level)	Senior Professional (Director Level)	
Public Sector	MUVH	344–1,031	1,031–1,718	1,718–2,405
	STP	344–1,031	1,031–1,718	1,718–2,405
	DGEEC	749	910	2,435
Academic sector	CIDi	590	585	2,254
	Environmental engineering course at UNA	232	282	1386
	Environmental geographic sciences course at UNA	192	282	2,838
	Universidad Catolica's FCyT	344	344–1,031	344–1,031
Private sector	Itaipu Technological Park	1,031–1,718	1,718–2,405	1,718–2,405
	ISTHME	344–1,031	1,031–1,718	N/A
	CAPADEI	344	1,031–1,718	1,718–2,405
	TECHO	344	344–1,031	344–1,031
	MAP Py OSM	344–1,031	1,031–1,718	1,031–1,718

Notes: (1) The authors have classified the various positions of each institution into three categories.

(2) The weekly working hours of each position are different.

Source: Data was gathered from survey or each websites by local consultant.

When someone in a lower position meets the requirements for appointment to a higher position, promotion should be considered by comprehensively evaluating the performance of the service, the contribution of the researcher, and the person's work experience.

In order to appoint employees for promotion, the head of the HR-development team should conduct a work-performance review in which the reasons for promotion are considered, including the person's work experience and any points for deduction. The Personnel Committee should then submit the review data for up to four times the number of people scheduled for promotion (as defined by the director); the Personnel Committee should then review and recommend candidates for promotion for up to twice the number of those scheduled for promotion by also reflecting the contributions of researchers. Any promotions will then be decided by the president, who will choose from among the candidates recommended by the Personnel Committee.

4.3.2. Mid- and Long-Term Development

To strengthen the research institute's strategies, research capabilities must be cultivated through the dispatching of advanced domestic and international research institutes and to accumulate institutions' knowledge assets through joint research conferences with foreign countries. In addition, researchers should be fostered who can carry out the responsibilities of their research tasks through training and training opportunities for internal employees.

Sabbatical years and the dispatch of other agencies to the research workforce may be used as a means of employee training. Sabbatical years and dispatches will be carried out in such a way that employees will continue to learn skills while working at related agencies at home and abroad. Another option is to introduce an employee-training system. Education can be entrusted to educational institutions (such as university schools) or overseas research institutes for those who have exhibited excellent performance. In these cases, the education of the internal staff member should be pursued in the form of subsidizing his or her tuition and living expenses and should be paid for on the basis of the employee returning after he or she has obtained the relevant degree. To attract talented people in the future, the government can also consider providing scholarships to students who major in related fields at home and abroad.

For the researchers' continued HR management, a plan should be put in place to implement mid- and long-term capacity-building programs by career stage. A system for fostering HR should be established by developing mentoring systems by brand for new employees and by enhancing the capabilities of midcareer researchers, such as by expanding opportunities for research and education training. The implementation of short-term education programs for strengthening the expertise of both administrative and research personnel should be carried out at the same time.

To maintain high-quality research personnel, an appropriate compensation system should be established, along with various recruitment efforts. Wages and benefits should be substantial. Excellent researchers should be selected as a support measure for the promotion of talented researchers and to implement a performance-compensation system by expanding opportunities to promote their work to the media, such as newspapers and broadcasting, and to strengthen the link between performance and compensation.

One factor that is important, along with the level of wages and benefits, is that these benefits should be closely linked to compensation standards. A high level of compensation that is not linked to performance will be dangerous to internal morale, which will then have a negative impact on efficient HR management. Performance and linked compensation standards are among the most important measures for potentially improving the quality of the staff, thereby improving the overall level of HR.

The government should also strive to strengthen the overall research capabilities of researchers by operating programs to support the enhancement of the capabilities of low-performing researchers. For this purpose, a separate task should be assigned after the selection of those people for capacity enhancement and follow-up measures based on the results of performance evaluations (and the evaluations linked to them).

The ease of research can be maintained through the process of familiarizing people with the latest findings and acquiring a method of continuous development, starting with the recruitment of highly specialized researchers. An important factor in this process is to support an excellent workforce so that they will be able to achieve unparalleled expertise through education and training. Providing training and training opportunities for employees can lead to positive effects for increasing PRIHS's research productivity and, by extension, for driving employee loyalty and commitment to organizations that provide opportunities for self-development.

4.4. Research Management and Evaluation

PRIHS's role is to strengthen its position as a comprehensive research institute by actively coping with the problems Paraguay faces by providing opinions on long- and short-term policy issues as well as requests for policy advice from the government. A variety of research tasks must be carried out to do this.

The types of studies that PRIHS will undertake can be largely divided into basic research tasks and trusteeship research projects. Basic research tasks refer to research tasks carried

out by the government's contribution budget; they are conducted to be used as basic data for policy-making and decision-making related to Paraguayan urban and housing policies, including policy development and evaluation and the presentation of alternatives. Collaborative research tasks are among the basic research tasks carried out by a number of experts from within and outside the institute for comprehensive and in-depth analyses of mid- and long-term policy tasks.

A trusteeship research project refers to a task that is performed only when the subject of the research meets the purpose of establishing the research institute. Unlike basic research tasks performed by contributors, the funding is determined by contracts between research-project-request departments and institutions.

One important factor in the management of research tasks is the description of task characteristics and functions. For example, the basic task is to collect and systemize basic data while enhancing the competence of researchers; one frequent task should be to understand and analyze policy issues so that the institute can make recommendations to the government whenever necessary.

In selecting basic research tasks and cooperative research projects, the intention of the proposed research project must be respected as much as possible; the necessity and feasibility of the research by the various government departments and external expert groups must also be respected prior to selection. While the purpose of presenting solutions to current policy issues is important in selecting research subjects, it is even more important to predict the future and to create measures to proactively respond to important issues or problems ahead of time.

PRIHS is a policy-research institution that should focus on the tasks that require policy research in selecting research subjects; the institute should fully consider the opinions of government ministries or policy-demanding groups and experts in selecting research subjects. For this purpose, the institute should organize a pool of related government-policy personnel and external experts for each proposed project so that their opinions may be collected.

Research projects form the basis of the government's demand for contributions and should be carried out in clear forms and procedures once a given subject has been selected. Research managers should prepare and submit preliminary research plans for each proposed research project; the preliminary research plans should state the title of the research project, the necessity and purpose of the study, any prior studies that have been

conducted and what differentiates this study, the main research method that will be used, the main research period, any policy implications, and the budget.

The importance of research advice and having an evaluation system in place should also be emphasized, including the selection of research topics, the use of research assessments, the periodic monitoring of research processes, and the evaluation of research results. Criteria for the evaluation of research results should include policy implications, timeliness, effectiveness, and efficiency. The experiences of the national territory should also be referred to in the formation of HR by the advisory group.

Any preliminary research plans prepared after the selection of research subjects should be submitted to the Task Proposal Evaluation Committee, which will then comprehensively review the relevance of the researchers' objectives, the need for the research, the adequacy of the study's research methods, the excellence of the research contents, and the appropriateness of the research. The tasks selected by the Task Proposal Evaluation Committee should be finalized by preparing a research-execution plan, and the study-implementation plan will help in conducting the research by finalizing the research subjects, the research managers, the research staff, the research period, and the required budget.

To improve the quality of research tasks, the institute should organize and operate a Research Review Committee to review research methods and research contents in the course of carrying out research tasks. In principle, all tasks that researchers carry out should be examined during the starting, middle, and final research-review meetings, although different types and durations of tasks, such as basic research tasks and entrusted research tasks, can be established at different types of research meetings. The Start-Up Research Review Board should review and evaluate the research purpose, the research methods, the study's scope and contents, any policy implications and expected effects of the research results, and the research personnel and budgets. The Interim Research Review Committee should review and evaluate the review results of the Start-Up Research Review Board, the theoretical and logical feasibility of the analysis, the depth of the analysis, the study's creativity and appropriateness, and the degree of research progress. The Final Research Review Board will then deliberate on and evaluate the research necessity and purpose, the appropriateness of the research methods, the study's academic excellence and policy contributions, the accuracy and professionalism of the study, and the degree of achievement of the research purposes; the board will then decide whether or not to publish a research report.

The institute will conduct an assessment on the final report proposal by focusing on the final review outcome of the annual meeting and on the overall completion of the report. To this end, an Evaluation Committee should be formed that will select candidates using a pool of internal and external experts from each field within the research field; the vice president will then finalize the list of candidates. The Evaluation Committee should consist of around eight experts from both inside and outside the researchers' field. The assessor will review and evaluate the final report proposal to comprehensively determine the excellence of (1) the research project, (2) the research methods and results, and (3) the research results. In particular, the criteria related to excellent research achievements to meet the purpose of establishing a policy-research institution should focus on the differentiation of policy measures, the creativity and specificity of implementing policy measures, and the feasibility of policy measures.

5. Strategies for Long-Term Cooperation with KRIHS

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To faithfully carry out PRIHS's role as a policy-research institution in Paraguay's urban and housing sectors, the know-how of advanced research institutions must be actively embraced by strengthening international cooperation from the outset of the institute's establishment. Because the research institute is to be established based on the model of KRIHS, it will also be necessary to cooperate in various aspects with KRIHS at the initial stage of its establishment.

At the earlier stage of establishment, obtaining advice on the establishment and operation of the research institute by requesting the dispatches of research fellows from KRIHS can be considered. In the initial stage, practical advice such as the choice of research institute, the selection and management of research projects, the operation of internal rules, and the management of research staff are essential. Advisory board members with experience in KRIHS will be very helpful if they provide advice on the process of establishing and operating a research institute in Paraguay. On the other hand, research projects at the beginning stages need to be jointly conducted by KRIHS and PRIHS. The core research projects are crucial for setting the social roles and functions of a research institute in the early stage of establishment. KRIHS, in collaboration with the Korea International Cooperation Agency (KOICA) or other international organizations, will help to set up of the roles of the research institute and will strengthen the capacity of the research staff. In addition, KRIHS must also support the capacity building of research staff in Paraguay. KRIHS must regularly operate capacity-development programs to share knowledge and experience

on core policies of territorial planning, the urban and housing sectors, and on the institute's operational experience.

In the long term, cooperation between KRIHS and PRIHS should be activated and institutionalized. If inter-institutional cooperation is stabilized, then concrete cooperation in each sector (such as territorial planning and studies in the urban and housing sector, among others) is needed. KRIHS can accumulate international experience by sharing its knowledge with PRIHS, and PRIHS can have the opportunity to learn advanced theory and techniques from KRIHS. Seminars, joint research, the exchange of HR, and other activities must be established in each sector; a system to enable Paraguayan researchers to receive long-term training or sabbaticals in Korea must also be implemented. In cooperation with KRIHS, Paraguayan researchers can pursue education in Korea's universities and can participate in joint research within the KRIHS system. These HR exchanges will help the growth of both institutions in the long term.

Experts should also be dispatched to international organizations to (1) strengthen the experts' global research capabilities, (2) pursue practical joint research, and (3) expand human networks through the mutual exchange of experts. Efforts should also be made to strengthen research capabilities by conducting verifications of the direction, method, and outcome of research through a network of internationally renowned and relevant field experts or scholars.

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