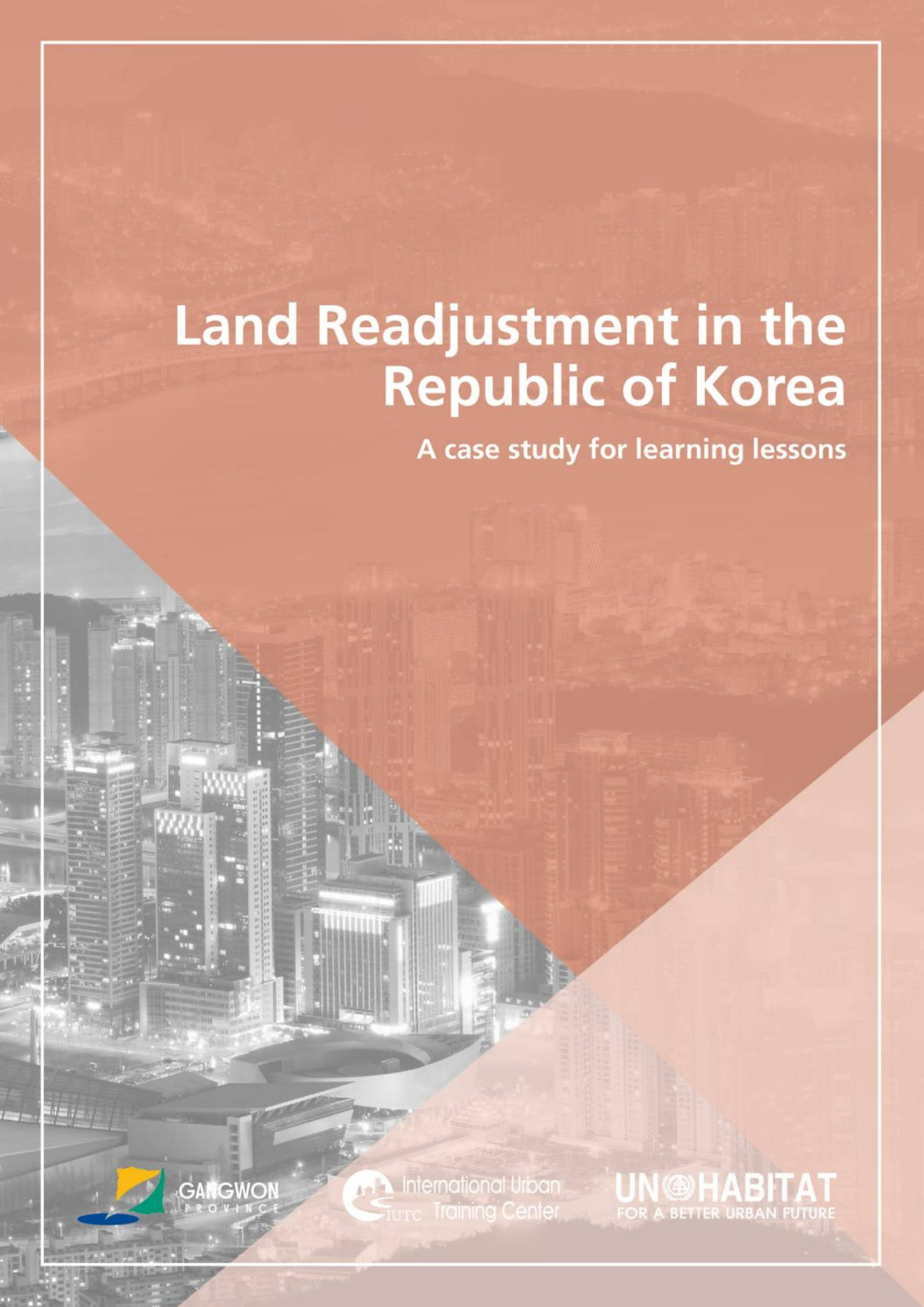
Land Readjustment in the Republic of Korea

A case study for learning lessons



GANGWON PROVINCE

International Urban Training Center
IUTC

UN HABITAT
FOR A BETTER URBAN FUTURE

LAND READJUSTMENT IN THE REPUBLIC OF KOREA: A CASE STUDY FOR LEARNING LESSONS

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DISCLAIMER

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Maimunah Mohd Sharif
United Nations Under-Secretary-General
and Executive Director, UN-Habitat

FOREWORD

I am delighted to introduce this report, which documents the land readjustment experiences of the Republic of Korea. Together with a wider public of urban practitioners, policy makers and decision makers, we present this study, which contains a number of key lessons learned as part and parcel of the training programmes offered by the International Urban Training Center to the Asian public, in cooperation with UN-Habitat. This report aims to contribute to the enhancement of skills and knowledge required to address the shortage of serviced land to support sustainable urbanization.

In the UN-Habitat World Cities Report 2016, we confirmed that the world is urbanizing at an extremely rapid pace, with the land cover of cities expanding significantly more rapidly than population growth. This results in the high consumption of land and low density urbanization. In some parts of the world, informal urbanization remains a prevailing pattern, leading to growing urban poverty, informal settlements, inequality, spatial segregation and environmental pollution. These challenges adversely and signifcantly affect the resilience of cities and their ability to cope with such stresses.

Land, particularly serviced land, is a critical pre-condition for planned and sustainable urban development. The lack of serviced land at scale is a challenge that many cities face, affecting the availability of affordable housing for a growing urban population. We see this in cities across Africa and Asia. It is in this context that the report provides opportunities for socially acceptable and financially effective ways of: (i) developing land for sustainable urbanization; (ii) creating conditions for successful provision of affordable housing; and (iii) adopting urban regeneration programmes. Land readjustment has been applied successfully in Europe (Germany and the Netherlands) and Asia (China, Japan, Nepal, the Republic of Korea, and Vietnam).

The report highlights nearly a century-long experience of land readjustment in the Republic of Korea, where land readjustment has been prominent since the 1930s. I believe that learning from practice, and through training, their experience offers much-needed support to local and national governments as well as urban practitioners and policy makers. Through their experience, we may understand the physical, social, economic and cultural parameters of land reajustment in similar contexts. This understanding is a pre-condition to designing and implementing successful urban development projects which can use land readjustment as a basic tool for urban development in rapidly growing cities of Asia and Africa.

I am confident that this report will contribute to enhancing existing knowledge and the development of training courses on land readjustment offered at the International Urban Training Center. I further hope that these endeavours will strengthen the capacity of a new generation of urban pracitioners for successful land readjusment projects, including contributing to bridging the gap between the available knowledge and good practices generated in the Republic of Korea and elsewhere.

ACKNOWLEDGEMENTS

Hands-on Land Readjustment. How did we get here?

This publication on *Land Readjustment in the Republic of Korea - A case study for learning lessons* is the result of international training courses on land readjustment in 2015 organized by UN-Habitat and the International Urban Training Centre (IUTC). Through this training courses, UN-Habitat and IUTC tested land-based finance instruments and land readjustment tools with a group of experts, city leaders and decision makers from different Asian countries. It became clear that the vast and rich experience on land readjustment in Korea would provide important lessons for other places in Asia and elsewhere in the world and potentially could become part and parcel of a training companion on the subject. This triggered the decision of IUTC and UN-Habitat to make a comprehensive compilation of the land readjustment experience of Korea and make it available to a wider public in the urban development sector.

This report is largely drawn from *The Best Practice Catalogue on Korea's Land Readjustment* prepared in 2015 by Dr Jo Jincheol of Korea Research Institute for Human Settlements under coordination of UN-Habitat and IUTC and funded through the Support Fund from Gangwon Province, Republic of Korea. Dr. Jo delivered a number of training sessions and was responsible for the first compilation of content for the full land readjustment programme. In addition to the original texts, many cutting-edge publications and desktop reseach, especially those published recently in Korea and elsewhere have been added. The insights on urban development in Korea shared by Dr Young Hoon Son, Director of the Office of Korea Land & Housing Corporation (Ministry of Land Infrastructure and Transport, Republic of Korea) are gratefully acknowledged. The publication is technically edited and revised by Banashree Banerjee with the support by Trang Nguyen and Claudio Acioly from UN-Habitat

The final draft was shared with experts from UN-Habitat and partners and was peer-reviewed by Barrie Needham, Professor, Radboud University, Nijmegen, The Netherlands; Paul Rabé, Senior Land Expert, IHS/Erasmus University Rotterdam, the Netherlands; Felipe Francisco De Souza (Ph.D.), The University of Tokyo, Japan; Jihwan Kim, Senior Technical Advisor seconded from Ministry of Land, Infastructure and Transport to UN-Habitat; Kibong Lee, Senior Technical Advisor seconded from Seoul Metropolitan Government to UN-Habitat, Jonghyun Yoon, Land Expert, Seconded from Ministry of Land, Infrastructure and Transport to UN-Habitat, and Kim Yeonghoon, Coordinator, IUTC. The peer-review process provided excellent and insighful expert knowledge which improved the final product that is presented herein. Their inputs and commitment to improving the publication is greatly appreciated.

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ACRONYMS AND ABBREVIATIONS

CNTP	Comprehensive National Territorial Plan
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KAB	Korea Appraiser Board
KAPA	Korea Association of Property Appraisers
KLHC	Korea Land and Housing Corporation
KLIS	Korea Land Information System
KRIHS	Korea Research Institute for Human Settlements
LR	Land Readjustment
MLTM	Ministry of Land, Transport and Maritime Affairs
MOC	Ministry of Construction
MOLIT	Ministry of Land Infrastructure and Transport
NHC	National Housing Corporation
PASLP	Public Announcement System of Land Price
PNV	Publicly Noticed Value
SCG	Seoul City Government
SDGs	Sustainable Development Goals

TERMS

Liquidation money	Money provided to adjust the gap between the price of the original land and the price of the replotted land
Korea or South Korea	Used in the text for Republic of Korea
Recompense land	The portion of the land contribution made by a landowner to the LR Project for sale in the market to finance the infrastructure construction costs
Reduction	Landowner gives up a portion of his land in proportion to the increase in the value of land
Reserved land	The portion of the land contribution made by a landowner to the LR Project for provision of public infrastructure and sites for public facilities
Parastatal organization	A company or agency owned or controlled wholly or partly by the government
pyeong	Korean measure of area (1 *pyeong* equals 3.3 m^2)


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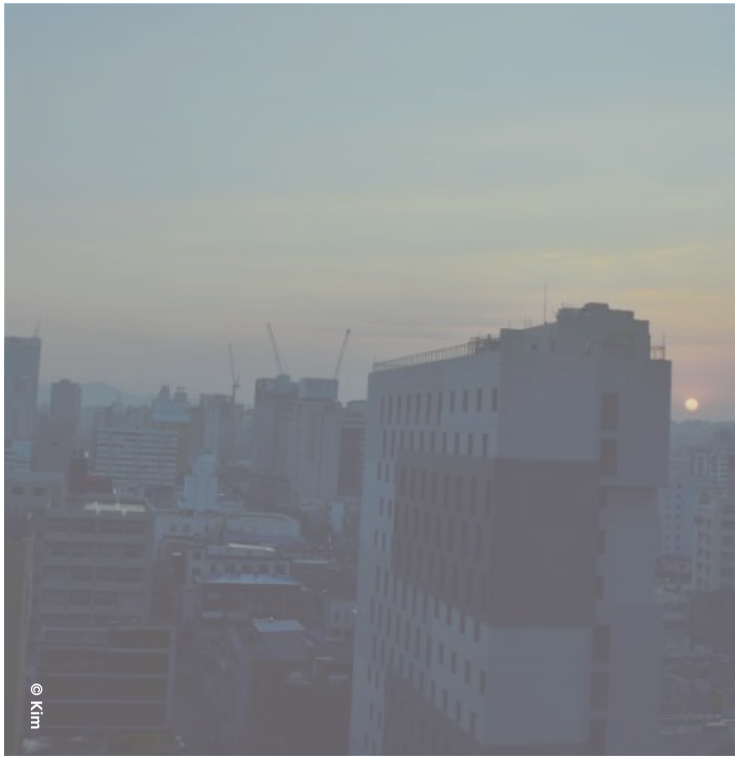


EXECUTIVE SUMMARY

BACKGROUND

Land readjustment (LR) as a technique for planned development of cities through negotiation with property owners is relevant in all countries with private land holdings. It has been used in a wide range of countries and has enabled governments to get access to land for infrastructure and for social uses without costly and time-consuming expropriation processes. At the same time, original property owners stand to benefit from enhanced opportunities of improved infrastructure and buildable plots. land readjustment is a method which is based on the prospects of gains from property, not only for private plot holders but also for project implementers, who seek sufficiently high returns in order to finance infrastructure or undertake low-income housing. Land Readjustment is not a new approach and has been implemented in several countries around the world.

The experience of the Republic of Korea in using the land readjustment (*tojiguhoegjeongli*) technique through eight decades spanning different political regimes and economic conditions stands out as an example that can provide valuable knowledge and lessons. This report documents the history, concepts, applications, methodologies and procedures adopted and institutional and legal frameworks developed over the years. Using secondary source material, the objective of this work is to understand the strengths and limitations of the approach and conditions under which it achieved success, so that lessons can be drawn for application in contemporary urban settings in developing countries.

HISTORIC OVERVIEW OF LAND READJUSTMENT IN KOREA

Land readjustment is closely linked to the national history of Korea and the political economy of land in the country. The technique was introduced in 1928, but successfully realised for the first time in 1934 during the Japanese colonial regime and most effectively used for two decades starting in the 1960's, when the Korean government did not have sufficient financial capacity to buy land or install public facilities as a starting point for its ambitious economic development programme. the Land Readjustment method was adopted as a main source of modern land development.

In Korea two methods are used for procuring land for projects: the substitute land method, which consists of land readjustment and replotting; and the whole purchase method or expropriation for housing projects managed by public authorities. Between 1934 and 1973 the substitute land method was used for all projects. From 1973 both methods were used until 1984, by when Land Readjustment projects had been implemented in approximately 436 km^2 in 397 districts in 23 cities. In Seoul alone Land Readjustment projects covered about 139 square kilometres amounting to 35% of the city area. The practice was discontinued in the 1984 in favour of the expropriation method, supported by the country's growing prosperity that created the ability of

Source: Author

Fig. 1. Republic of Korea (ROK)

its public institutions to mobilise funding for land acquisition and infrastructure provision. At the same the limitations of Land Readjustment were becoming apparent for quickly overcoming the housing shortage for low income families, and for realising the new development ideologies of world class, eco-friendly and compact cities. However, land readjustment was revived as the land replotting method in 2000 under the Urban Development Act as one of the methods of urban development in cases where land prices are too high or where landowners are unwilling for compulsory acquisition. This points to the context-specific circumstances under which Land Readjustment works, the main driver being the lack of financial ability of the government to buy land and provide infrastructure for planned urban development.

PERFORMANCE OF LAND READJUSTMENT IN KOREAN CITIES

The uniqueness of the Korean case can also be attributed to the large scale of application and strategic use of the Land Readjustment technique for diverse and different purposes such as post-war recovery, improving existing city areas, developing new urban areas and constructing regional infrastructure.

The purpose of land readjustment was 1) to set a spatial framework for sustainable development, 2) to secure urban land with public space including roads, school sites, parks etc., and 3) provide public services including water, sewage, energy. Thus, it has created a substantial long-term impact on the spatial order of Korean cities. The review of the practice of Land Readjustment helped to understand the tremendous achievements made as well as the shortcomings.

ACHIEVEMENTS

The achievements of land readjustment in can be broadly summarised as:

- Land readjustment enabled the large-scale supply of housing sites through planned development at a time when the urban population was growing very rapidly. Approximately 40% of the area of 1201.3 km^2 designated as residential area according to urban plans was developed through land readjustment.
- Construction of public facilities needed for large scale urban development was implemented mainly with landowners' investments, with very little financial burden on the government. This approach contributed to improvement in urban living environments by planning, developing, and supplying sites for schools, health centres, parks and other public facilities. This was particularly important because the government did not have the financial means at that time to invest in creating public infrastructure.
- The Korean case stands out for the progressively increasing areas of public land contributed by private land owners. Prior to the Land Readjustment Act of 1966 landowners contributed 25 to 30% of their land. According to the Land Readjustment Act, 50% of the readjusted land is retained after replotting by the original land owners, 30% is for infrastructure and the remaining 20% for development cost recovery. In practice the rate of decrease of private land went up to 68% in high value districts of Seoul.
- Land Readjustment helped to improve the effectiveness of urban land use and determine the physical shape of the cities through large projects. It provided the means for expansion of cities in a planned way, thus limiting unplanned peripheral growth, haphazard conversion of agriculture land for urban use and land speculation. Land Readjustment projects enabled redevelopment of built-up city districts and war-damaged parts of cities. Land Readjustment was also used extensively for industrial townships and for highways and railways.
- Finally, private capital participated in installation of public facilities. Land readjustment projects implemented by the public sector developed the city on private lands. Therefore, it can be said that private capital participated in provision and maintenance of public facilities through land contributions. In projects implemented by landowners' associations financial investments were also made by private property holders, in addition to land contributions.

SHORTCOMINGS

The shortcomings of land readjustment can be said to be:

- One of the biggest disadvantages of land readjustment was that it actually did not contribute effectively to supplying land to respond to the housing demand. Projects ended with the reallocation of plots and development of infrastructure. The process of building construction was left to landowners, many of whom waited to gain from land price increase after completion of the project, rather than building on their plots. This phenomenon was especially serious in the Gangnam area of Seoul. Despite

various measures taken by the government, property prices escalated on land readjustment projects and were not affordable to low and middle income citizens.

- Project duration was excessively long for several reasons. Projects made slow progress because land information had to be verified, the layout and land value assessment had to satisfy land owners. Resolution of disputes also held up projects. The starting of many projects simultaneously meant slow progress because of shortage of government staff to facilitate the process. Getting sufficient returns from sale of recompense land was not possible during market downturns and the wait for higher prices contributed to delays in infrastructure construction. The phenomenon was nationwide and locked up large areas of land in Land Readjustment projects, where development could not take place until the project was completed.
- There was an imbalance in lot area. Land was substituted based on the area of the existing lot, regardless of how it could be developed later. Owners of large plots recovered much less salable area than smaller lots because they had to subdivide their lots and provide infrastructure such as roads to make them usable, creating a double burden. This was overcome by the Urban Development Act, which considered future value as a basis for decrease.
- Delineating the project district according to cadastral boundaries regardless of urban networks, resulted in many irregular shaped plots, not ideally suited for building and creating difficulties for laying out infrastructure lines.

STRENGTHS OF THE KOREAN SYSTEM

A number of overarching conditions have contributed to the successful introduction and continuance of the land readjustment technique in Korea.

Policy, political and institutional support

The Korean government formed after national independence believed that planning is of little use without implementation mechanisms. Land readjustment, already introduced during Japanese rule, was adopted as the major implementation tool with unequivocal support at the highest level of government. The method was promoted by Ministry of Construction, which not only formulated the policy, but acted as the approving authority at key stages of the implementation process and directly implemented important land readjustment projects. These actions gave Land Readjustment a high profile for three decades leading up to the 1980's, and facilitated local and regional governments and public sector corporations like Korea Land and Housing Development Corporation to implement projects. Institutions established in government ministries have aggressively participated in the process as important players. Experts from Korea Research Institute for Human Settlements has served as

Land readjustment enabled the large-scale supply of housing scheme at a time when the urban population was growing very rapidly.

the think tank for government has contributed substantially to reducing the negative side effects and developing and adopting new policies through field study, data analysis, and simulation.

Strong private property rights and government control on land

Protecting private property rights is a corner stone of the political economy of land in Korea and its market driven economy. Private land ownership is guaranteed by the national Constitution adopted in 1948 and robust systems and procedures have been built up in support of that. This may be one of the factors that has given land owners confidence to participate in Land Readjustment projects. On the other hand, the Korean government has maintained a strong and powerful macro-control in land management, especially for realising national goals for economic, environmental and social development. Adopting various measures to check land speculation and improve land market functioning and providing land for affordable housing and industry has found an important place in state action.

Robust legal framework

The case of Korea gives ample evidence that it has been possible to undertake land readjustment at a large scale because projects always had a legal basis. Even though Land Readjustment could be carried out within the framework of the Japanese era Urban Planning Ordinance of 1934 as well as the Urban Planning Act of 1962, the Land Readjustment Act of 1966 was specifically tailored to land readjustment projects in Korean cities. The Act contained the mandatory guidelines for projects, leaving very little to the discretion of implementers. It laid down the standards and step-by-step legal procedures for planning, property value assessment, implementation, financing, roles of landowners and government, participation of landowners and resolution of disputes. It is also important to note that in Korea the Land Readjustment Act was amended from time to time to improve practice and to bring in clauses to fulfil social objectives, for instance the inclusion of low income housing in projects and later, with the enactment of the Urban Development Act of 2000, greater importance to landowners' participation.

Measures for improving land management and market operations

The government has given a thrust to improving land information systems as a way of improving land market operations; setting up specialised institutions for verification and digitisation of records and decentralisation of property registration, its simplification and cost reduction. Entrusting land value assessment to professional valuators and putting in place a system of annual public announcement of land values based on reference lots, and other improvements, have made land valuation more objective and transparent. These measures have produced tremendous benefits by reducing the time taken for verification of records and resolution of disputes in Land Readjustment projects. Clarity in land information and tenure contributes to marketability of readjusted plots and results in considerable private gain. But these gains and prospect of gains are very much related to the overall functioning of the land market. In Korean cities the persistently high demand for land and housing has kept land prices high, contributing to the popularity of land readjustment projects. Measures such as selecting districts that are well located already or improving overall marketability by measures such as improving connectivity and creating public facilities and job opportunities have also contributed to self-financing and marketability of projects.

Going beyond business as usual

In practice, policy makers have introduced special provisions, regulations and incentives from time to time to fulfil specific objectives, which would otherwise not have been addressed by Land Readjustment projects. For example, the Korean government expanded the horizon of Land Readjustment by using regulations and incentives to accommodate high density development and housing for low income families within projects. gain larger proportions of public land and make projects self-financing.

LESSONS FROM LAND READJUSTMENT IN THE REPUBLIC OF KOREA

The lessons from the experience of the Republic of Korea in implementing Land Readjustment in its cities can be viewed from three linked and interrelated perspectives:

- The first, is the context of urban problems to respond to which the practice of land readjustment was adopted and sustained, virtually given up, and again revived as the replotting method.
- The second consists of overarching conditions that have contributed to the long-term application and success of land readjustment.
- The third relates to the Land Readjustment methodology and its application for urban development.

By all standards the Korean experience of land readjustment is impressive and provides several lessons for countries facing challenges of making infrastructure available to rapidly growing urban populations with limited public financial resources. However, like all methods related to planning and development of urban land, land readjustment cannot be said to be the only solution. It should be viewed in its specific context. The problems for which the Korean government applied land readjustment as a way ahead are often mirrored in the urban context of rapidly growing cities of Asia and Africa, and even to some extent, cities in OECD countries, providing enough reason to consider Land Readjustment as one of the options.

INTRODUCTION

RELEVANCE OF LAND READJUSTMENT

Governments from all parts of the worlds seek socially acceptable and financially effective ways of developing urban land. Land readjustment (LR) is a technique which finds favour on both these counts and has been implemented in diverse situations all over the world. Land readjustment consists of bringing together a group of contiguous land parcels as a unit for planned development. The original land owners agree to give up part of their land for public infrastructure such as roads, utilities, parks and community buildings, while they get to retain the remaining part as building plots in the same location or elsewhere within the Land Readjustment project. Although the landholders get back a smaller amount of land, they are benefited by planned layouts and infrastructure provision, which lead to increased value and improved liveability. The city gets access to land for infrastructure development without incurring the cost of buying out all existing property owners or using eminent domain. Further, the practice of reserving some land for sale by the public authorities enables the cost of readjustment and infrastructure provision to be met without mobilizing additional resources (UN-Habitat, 2016).

This report documents the South Korean experience of land readjustment (*tojiguhoegjeongli*) with the objective of understanding the strengths, limitations and conditions for success of the approach so that lessons can be drawn for application in contemporary urban settings in developing countries.

Land readjustment is not a new approach. It was initially used in countries like Germany and Japan in the nineteenth century for agriculture land and later adapted for urban expansion and infrastructure provision. The first legislation for urban land readjustment was enacted in Germany as early as 1902. Some of the countries around the world that have implemented Land Readjustment are Germany, Spain, Netherlands and Scandinavian countries in Europe; Israel and Turkey in West Asia; Japan, Korea, India, Nepal, Thailand, Indonesia, Taiwan and Viet Nam in Asia; Colombia in Latin America and Australia. As can be expected with a technique that covers such a wide spectrum of developed and developing countries, there are local variations in practice and nomenclature. Thus, the technique of land readjustment described in this report is very similar to land pooling, land consolidation, plot reconstitution, land replotting, land compartmentalization and rearrangement, *baulandumlegung* (Germany), *kukakuseiri* (Japan) and other techniques being used in different cities. Indeed, what is called land readjustment itself shows differences in practice in different places. While these experiences provide a rich collection of context-specific practical insights, they also point out that whatever may be the local adaptations, the

The Korean example may show a way forward to cities that are struggling with urbanization challenges today.

concerns that drive governments to select and apply these techniques remain the same across geographies. The main purpose is to enable planned development and provision of public infrastructure in cities without costly, time-consuming and unpopular expropriation of privately owned land (UN-Habitat, 2016).

Land readjustment (LR) has been used mostly for urban fringe development to consolidate agriculture land as buildable urban plots. It has also been applied to a lesser extent to redevelop inner city areas and old neighbourhoods. A specific application is rebuilding of cities affected by natural disasters or war. Land Readjustment is often practiced along the alignment of infrastructure projects such as railways or roads.

More recently, land readjustment is considered as a promising way of undertaking planned urban expansion in cities of developing countries, where high land values, low financial capacity and the unpopularity of land expropriation make it extremely difficult for governments to get access to land for urban infrastructure. Most of the growth of Asian cities, for instance, takes place by their outward expansion through the conversion of urban fringe lands from rural to urban use. This land conversion usually takes place by the separate subdivision of private land parcels and is usually subject to the problems of land withholding, scattered land and building development, backlogs in provision of public roads and public utility works, unused farmland, excessive land speculation and high land prices (Archer, 1992). Large sections of cities are growing without proper streets, parks and spaces for schools and health centres (UN-Habitat, 2016). Once areas get built up it is much more difficult and expensive to retro-fit them with services (UN-Habitat, 2012). "*Thus, apart from the immediate needs of the populations of the growing cities, and the desire to ensure the efficient use of current resources, there are concerns that the patterns built into cities in the next 20-50 years will constrain the social and economic possibilities of those cities well into the future*" (Sorensen, 2000: 55). A technique such as Land Readjustment can be used to reduce such problems and has the potential to lay the foundations for planned development through negotiation with land owners, who also stand to gain substantially. There is also a view that land readjustment could provide an effective approach to achieving targets of Goal 11 of the SDGs related to participatory, integrated and sustainable human settlement planning and management. This approach could help to address the challenges of improving urban conditions, in order to achieve urbanization with more desirable attributes (De Souza *et al.* 2018).

At the international level, there has been significant effort in understanding and promoting Land Readjustment practice through seminars and publications since 1979, when the World bank, the Lincoln Institute of Land Policy and the Land Reform Training Institute sponsored the *First International Conference on Land Consolidation* in Taiwan. Since then the Lincoln Institute of Land Policy has undertaken research and published extensively on the subject. The Global Land Tools Network (GLTN) of UN-Habitat has hosted many experience-sharing events and brought out several publications, including a manual on Participatory and Inclusive Land Readjustment (Un-Habitat, 2016). The Japanese government has been providing technical assistance to a number of developing countries in Asia to implement land readjustment projects.

While such initiatives validate the usefulness of Land Readjustment for developing countries, experience also cautions that the urban land readjustment procedure is not a trouble-free instrument. The processes needed are demanding and complicated and require those involved to display considerable expertise (Viitanen, 2000) in negotiation, land valuation, conflict resolution, infrastructure financing, in addition to urban planning and administration. Land readjustment can be contentious and time consuming, being based on negotiated agreements. Like all other techniques, this technique too is not a panacea for all land assembly problems. It is valued as an additional option when preconditions are present (Hong & Needham, 2007). This report on LR in cities of South Korea will add to the growing resources for the transfer of knowledge about land readjustment policy and practice.

LEARNING FROM THE KOREAN EXPERIENCE OF LAND READJUSTMENT

It is worth noting that Korea relied on LR most during the phase when it was a developing country with very low financial capacity of the government to provide infrastructure in cities grappling with the problems of rapid growth, rural to urban migration, urban expansion and uncontrolled growth. Thus, the Korean example may show a way forward to cities that are struggling with similar challenges today.

The Korean experience of using the land readjustment technique spans eight decades and has been implemented in 23 cities. The technique was introduced in 1928 with an unconcluded project, successfully realised for the first time in 1934 during the Japanese colonial regime, and most effectively used during the 1960's and 70's, when the Korean government did not have sufficient financial capacity to buy land or install public facilities as a starting point for its ambitious economic development programme. The only possibility was to find a way for the government to cooperate with land owners to fulfill its development objectives. Under

these circumstances, the LR method of mobilizing land and building public facilities was adopted as a main source of modern land development. It facilitated the creation of an environment for investment in cities by organising urban infrastructure and enabling development by land owners. It also contributed to the prevention of unplanned fringe development, especially in Seoul, the national capital, and Busan, which grew rapidly during the two decades that followed the thrust on industrialization in the 1960's.

In Korea two approaches are used for securing available land for land-related/urban development projects have been used/ considered: the substitute land method, which consists of land readjustment and replotting; and the whole purchase method or expropriation for housing projects managed by public authorities. Until 1973 the substitute land method was used for all projects. From 1973 both methods were used until 1984, when land readjustment projects were stopped and development was exclusively based on whole purchase. By 1984 Land Readjustment projects had been implemented in approximately 436 km^2 in 397 districts in 23 cities. In Seoul alone Land Readjustment projects covered about 139 km^2 amounting to 35% of the city area in 1984 and were primarily used for urban expansion into agricultural areas, and also for post-war redevelopment, new town building, public housing projects and railway and expressway projects. In 2000 the substitute land method was brought back along with the whole purchase method and still continues to operate. The large scale of LR operations in Korean cities was made possible because of policy backing, legal instruments and clear procedures, which evolved over the years and became progressively more robust and more embedded in urban planning legislation.

The experience of Korea provides valuable lessons on the concept of LR, its various applications, methodologies used, procedures adopted and institutional and legal frameworks. The practice was discontinued in the 1980's in favour of the expropriation method, supported by the country's growing prosperity that created the ability of its public institutions to mobilize funding for land acquisition and infrastructure provision. At the same time the negative aspects of LR projects, such as low density, dependence on individual property owners' willingness and ability to invest or to speculate, private appropriation of land value increments etc., were becoming apparent. However, land readjustment was revived as the land replotting method in 2000, under the Urban Development Act as one of the methods of urban development in cases where land prices are too high or where landowners are unwilling for compulsory acquisition. This points to the context-specific circumstances under which LR works, the main driver being the lack of financial ability of the government to buy land and provide infrastructure for planned urban development.

THIS PUBLICATION

This publication is based on research carried out in 2015 at the Korean Research Institute for Human Settlements under coordination of IUTC and UN-Habitat, funded through the support fund from Gangwon Province, Republic of Korea. This has been extensively supplemented by publications and internet resources as well as discussions with officials of the Korea Land and housing Corporation. The purpose of this report is to share the experience of the Republic of Korea so that it may inform cities faced with a resource crunch to seek a solution to planned city development through land readjustment. It is expected that the critical analysis presented here will be of use in adopting the technique elsewhere.

The report is presented in five chapters and supporting annexes of case study projects from Seoul.[1]

The first chapter sets the context by outlining the chronological development of LR to understand the contribution of the technique in bringing about planned development and contributing to the larger purpose of socio-economic development during different periods in Korea's national history.

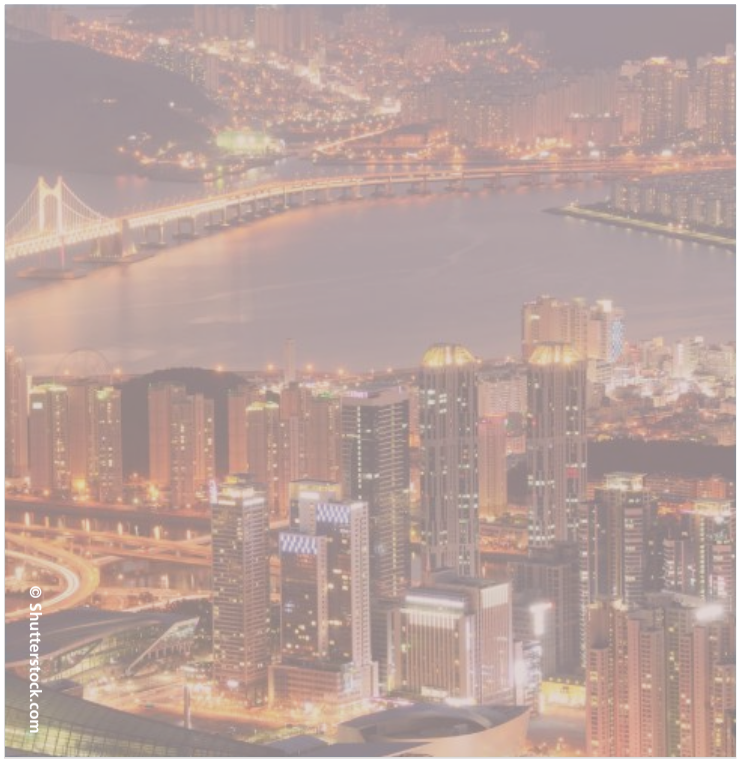
The second chapter reviews urban land and planning legislation in general and specific laws enacted for the purpose of planning and implementing Land Readjustment projects. These define the scope, purpose and procedures for undertaking Land Readjustment projects. It also reviews the Korean system of planning governance roles assigned to and played by different institutions.

The third chapter describes the concept and methodology of land readjustment projects in Korea. It outlines the different stages in planning and implementing of land readjustment and land replotting projects, the procedures adopted and the responsibilities of different stakeholders.

The fourth chapter goes on to examine how the technique has been used in practice in different circumstances to contribute to planned urban development. Critical issues such as time taken for project implementation, trends in accumulation of public land, infrastructure financing, appraisal and valuation are looked at. The measures adopted for overcoming the shortcomings of Land Readjustment projects such as checking land speculation, encouraging high density development and providing housing for low income households, comparison with other methods of land development are also reviewed.

The final chapter attempts to capture the lessons learnt from the Korean example in order to see what are the elements that are particular to Korea, what can be replicated elsewhere and what are the essential conditions that are required for LR to be implemented successfully.

The large scale of land readjustment operations in Korean cities was made possible because of effective policy backing, legal instruments and clear procedures



HISTORY OF LAND READJUSTMENT IN KOREA

1.1 LAND READJUSTMENT AS AN INTEGRAL PART OF NATIONAL DEVELOPMENT

Land Readjustment is closely linked to the national history of Korea and the political economy of land in the country. Since its inception, South Korea has seen substantial development in economy, education and culture. The country has gone through dramatic economic growth since the end of the Korean War in 1953. From one of the poorest countries in the world (GDP per capita of US$67 in 1953), Korea became a G20 and OECD member country with the 33rd highest GDP per capita in the world (US$25,977 in 2013) (Kim Eun Mee, 2017). This rapid economic growth was accompanied by rapid urbanization and now more than 90% of the population in Korea resides in urban areas (Lee *et al.*, 2015). Land reforms and land policies have played a major part in the transformation of Korea. For seven decades land readjustment (LR) has almost been synonymous with urban development.

The evidence of the chronological development of Land Readjustment being closely connected with time lines in national history emerges from a variety of sources such as national archives, Seoul Museum of History, Korean Cultural Encyclopaedia and more recently, the Korea Research Institute for Human Settlements (KRIHS). A study of LR shows that it has faced ups and downs and changes over time and has been used for various purposes, starting with developing townships for Japanese colonial rulers, going on to reconstruction after the Korean War, to enabling planned expansion of cities, to building massive housing projects for the low and middle income population and for national infrastructure construction (La Grange & Jung, 2004). These developments are captured in five periods, which help to understand the position of LR in bringing about planned development and contributing to the larger purpose of socio-economic development. The analysis also shows the conditions under which LR became the favoured option for land development during the decades of 1940s to 1980s and later became less relevant.

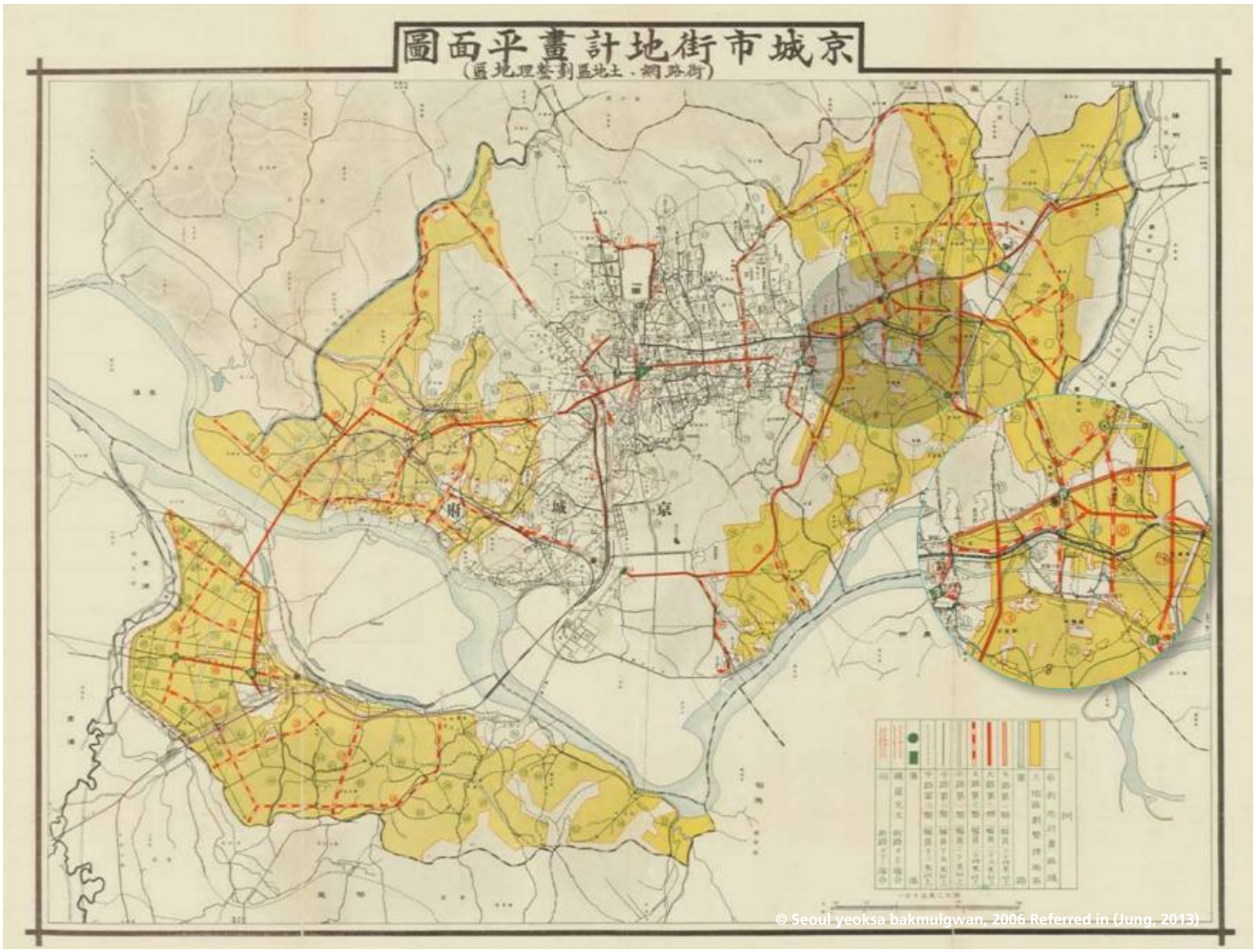


Fig. 2. Seoul City Plan- 1936 (yellow indicates land for proposed LR projects)

1.2 THE JAPANESE COLONIAL ERA (1910-1945)

Modern urban planning had its origins in Korea with the promulgation of the Korean Urban Planning Enforcement Ordinance (also known as Joseon Planning Ordinance for Urban Areas) by the Japanese Governor General of Korea in 1934. Prior to that, a land readjustment project was planned in 1928 for five districts in the central urban area of Seoul (Keijyo at that time) and two suburban districts. However, it could not be implemented for the lack of legal support, difficulties in financial procurement and lack of interest from the authorities (Kim Ui-won, 1983).

The Ordinance created the legal basis for planned urban expansion and for land readjustment. The Land Readjustment method of developing land according to plan without purchasing land, already being used in Japan, was first applied in Najin, the frontline Japanese military base, where skyrocketing land prices made land purchase impossible. Next, in 1936 the urban area of Seoul was planned for expansion from 36.18 km^2 to 136 km^2. Later in the same year approximately 16 million *pyeong* (52.26 km^2) of the new urban area was announced as the district reserved for land readjustment north and south of Han River[2] (City of Seoul, 1990: 36). During the expansion, some parts of the adjacent Gyeonggi Province were incorporated into Keijyo. This formed part of the strategy to both expand the city into the outer areas based on the Korean Urban Planning Enforcement Ordinance and to develop these areas through land readjustment, which would make planned expansion possible with very little government expenditure since landowners were made to pay the project costs. As a result, the pattern of development changed from scattered plot development to large-scale developments through land readjustment.

Land readjustment was planned on a nationwide scale and commenced in 1937. In some districts where the projects made rapid progress, the process was completed by 1941, but in many other districts the plan was not even executed until 1945.

The colonial government established Korea Housing Authority in 1941 to enable large-scale, collective developments as well as land readjustments. The Authority drew up a four-year plan to resolve the immediate housing shortage and to improve and develop the living environment. In the first year 2700 houses were built in ten land readjustment districts on land reserved for sale to finance the project, and sold to the Housing Authority at low prices. These complexes had the effect of fast-tracking the culture of suburban living.

The Housing Authority continued to purchase and plan public housing sites in Land Readjustment projects for the next three years until the activity came to a stop with the defeat of Japan in World War II. These sites became available for housing construction after Korean liberation in 1945.

District	Period	Area (km2)	Commencement Date	Completion	Purpose
Donam	1937-1940	2.28	October 28, 1937	1940	Residential area
Yeongdeungpo	1937-1940	5.15	November 12, 1937	1940	Industrial area
Daehyeon	1938-1941	1.55	November 18, 1938	1941	Residential area
Hannam	1939-1942	0.4	November 24, 1939	1942	Luxury housing area
Yongdu	1939-1943	1.92	January 10, 1940	1943	Light industry area
Sageun	1939-1942	1.7	January 12, 1940	1942	Light industry area
Daebang	1939-1942	1.2	January 15, 1940	1942	Housing area for Yeongdeungpo Industrial area
Cheongnyang	1940-1944	1.08	October 21, 1940	1944	Residential and industrial areas
Shindang	1940-1944	1.49	October 21, 1940	1944	Linked to Hannam District
Gongdeok	1940-1944	1.47	October 24, 1940	1944	Residential and light industry areas

Source: The Seoul Institute (2001)

Table 1. Details of the land readjustment projects (1936-1944)

BOX 1: HOUSING PROJECTS IN LAND READJUSTMENT DISTRICTS

The Korea Housing Authority implemented the first three public housing construction projects by purchasing the land donated by landowners for recompense in the land readjustment districts of Dorim-dong, Sangdo-dong, and Daebang-dong. The Dorim Complex consisted of low-rise housing development with 500 row houses in blocks between grid patterned roads created through land readjustment. Most of the blocks had a green tract of land. The Sangdo Complex also had 500 houses which were placed according to the natural topography. It was the largest planned complex at that time - with a hospital, a bathhouse, shops, etc. in each block. The layout plans of these complexes with grid-iron streets and rotary junctions were replicated in other residential areas developed by Korea Housing Authority. Only Japanese nationals were eligible for houses that were larger than 10 *pyeong*, while houses smaller than that were allotted to Koreans. The residents of these suburban complexes either commuted long distances to work in Keijo by tram or worked in nearby factories.

The Authority also constructed houses and bunk houses for workers in war industry areas, mining areas and workshops thereby contributing to Japan's war preparedness. For example, 200 bunk houses were constructed for the workers of Yongsan Railway Shop in Yeongdeungpo industrial Land Readjustment district; and approximately 200 houses (6 *pyeong* or smaller) for factory workers and 700 bunk houses for mining labour in Sageun light industries Readjustment District.

Source: The Seoul Institute (2001)

Box 1: Housing projects in land readjustment districts

Fig. 3. Status of colonial era Land readjustment projects in the 1950s

1.3 LIBERATION, POST-WAR RECOVERY AND RAPID URBANIZATION (1945-1962)

The post liberation period is marked by major upheavals, which had significant effects on economic and social systems. Liberation from Japanese rule in 1945 was followed by the establishment of Rhee Syng-man's Government of Korea, the Korean War (June 25, 1950 – July 27, 1953), the April Revolution of 1960 which led to the collapse of the government and setting up of the Second Republic of Korea and the military coup in 1961.

During this period land policy became the cornerstone for establishing the nation state (Jung, 2014). The first Constitution of the independent Republic of Korea adopted in

1948, drastically altered agrarian land relations by dismantling the landlord system, prevalent during the Japanese colonial period, in favor of the land-to-the tiller principle. Under the Land Reform Act of 1949 Koreans with large landholdings were obliged to divest most of their land, this together with confiscated Japanese properties enabled an additional 40% of farm households to become small landowners[3] through land redistribution. There were three important achievements of the land reforms. First, they guaranteed property rights but also set limits; second, the land to the tiller principle created land owning farmers but land was not distributed free of cost; and third, private land ownership was established as the way forward instead of the historically deeply ingrained perception that land should be nationalized to benefit citizens (Lee Tae Gyo, 2006). This clarity may also have facilitated the implementation of Land Readjustment projects in urban expansion areas.

Land readjustment continued to be used not only for urban expansion but also for recovery from the effects of the Korean War. There was an urgency to redevelop damaged infrastructure and bombed out areas of cities and also to accommodate the huge influx of migrants to cities. Overseas Korean returnees, refugees from North Korean and rural migrants, all went to cities. In 1949, only 1.3% of the national population was living in cities with a population of 50,000 or more; but this figure went up to 25.5% in 1955; 28.5% in 1960 and 32.3% in 1965 (Lim Seo Hwan, 2005). Cities were characterised by rapid growth and unplanned expansion. According to data from the Korea National Statistical Office, Seoul the capital city bore the brunt of population increase from 1.45 million in 1949 to 2.45 million in 1960. Substantial proportion of the working class lived in substandard housing and rural migrants and refugees built shanty houses on illegally occupied hillsides and riversides. Almost 20% of all housing stock in Seoul was in squatter settlements in early 1960s, rising to 32% in 1970s (Park *et al.*, 2012).

Land readjustment seemed to be the only appropriate method for city redevelopment and expansion as it was difficult for the government to undertake construction or infrastructure provision because of its poor financial situation and dependence on foreign aid at that time. Land Readjustment would ensure that development takes place in a planned way with costs shared between the land owners (Kim Eui-won, 1983). There is also a view that LR was selected at that time as the government was not aware of any other method by which the objectives of post-war recovery and new built-up area creation could be achieved without spending substantially from its budget (Son Jeong Mok, 2003).

Between 1952 and 59, 16.5 km^2 (5 million *pyeong*) was

Land readjustment continued to be used not only for urban expansion but also for recovery from the effects of the Korean War.

Fig. 4. Areas designated for land readjustment projects in the 1950s

reserved for land readjustment projects by the Ministry of Construction in 23 cities nationwide (e.g. Seoul, Busan, Daegu, Incheon) and designated for post-war recovery and construction of roads within built-up urban districts (KRIHS, 2008).

In the case of Seoul, the main thrust of land readjustment projects consisted of new urban area development, but readjustment within the existing urban areas also played a significant role in the postwar period. Around 1.64 km^2 of the only commercial district in Seoul city and 12,326 houses were completely destroyed in the June 1950 attack by North Korea. This had been an organically built area which had narrow streets, poor sanitation and insufficient public space. The destruction of this and other city areas was recognized as an opportunity to redevelop them with planned street networks, services and public spaces provided action could be taken before people started rebuilding on the old city fabric. So the Ministry of Home Affairs designated the districts for urgent post war recovery. 0.71 km^2 in five locations[4] were given priority and designated in 1952 as Central Land Readjustment Project Districts No.1 (see Annex 1) to redevelop and enhance the commercial area. This was followed by designation of 0.49 km^2 in four locations[5] in 1953 as Central Land Readjustment Project Districts No.2 mainly for residential use. In addition to these nine districts, work continued in nine of the ten districts that were designated during the Japanese occupation but not completed.[6]

Land readjustment projects were initiated in the city expansion districts of Seogyo and Dongdaemun in 1957 and 1960, respectively. The readjustment of these new development districts was implemented under provisions of the Korean Urban Planning Enforcement Ordinance, but some of the procedures for consultation with landowners were cut short for hastening development. The thrust was on quick results and achieving higher standards for roads and public facilities spaces compared with the existing city. The earlier value assessment system based only on plot area was supplemented with a negotiation based method to satisfy landowners.

1.4 THE TURBULENT SOCIO-ECONOMIC PERIOD (1962-1980)

Two years of political and social unrest were followed by President Park Jong-hee's Military regime from 1962. The main concerns of the new government were modernization of the country, economic development and poverty reduction through industrialization. Financial and spatial planning also assumed importance. The First Five-Year Economic Development Plan (1962-1966) aimed to strengthen the foundation for export focusing on light industry that takes advantage of low wages. Another initiative was much needed financial reforms to check illegal wealth accumulation and money laundering through real estate. The primary focus of the land policy shifted from fair distribution of ownership rights to supporting economic development, with an emphasis on setting up industries and quick and efficient development of Korea's fast-growing cities (Lee Tae Gyo, 2006).

This period is characterized by the strengthening of the system of private property rights and improvements in systems of property assessment and cadastre management. These

actions also facilitated urban initiatives, which depended on either expropriating or readjusting private property. A number of institutions were set up and a several legal measures were initiated to manage and undertake urban development, including the Land Readjustment Project Act of 1966 (also known as the Land Compartmentalization and Rearrangement Projects Act) (Lee Jeong Jeon, 2006).

Urban plans were prepared for 123 cities by the Ministry of Construction (MOC). However, the government could not afford to implement these plans through large scale land expropriation[7] as it did not have the required finances for paying compensation. This was especially because of the steep land price inflation during this time. Therefore, during the period of the first and the second Five-Year Economic Development Plans, land readjustment became the favored method of implementing planned development. In the process, the group of people who owned lands and houses in or near readjustment projects benefited from the development and gained from dramatic increase in value. In addition, companies engaged in light and heavy industries benefitted from allocation of reserved lands at very reasonable prices; and pro-government construction companies benefitted substantially from construction of public facilities (Kim Sun-wung, 2017).

From the early to mid-1960s, the land readjustment projects in Seoul were mostly implemented in the north of the Han River in districts around the downtown area and were small in size. Even though vast areas were developed through land readjustment they supplied sites for detached housing, which did not do enough to alleviate the housing shortage caused by rapid urbanization (Kim Sun-wung, 2017). In the late 1960s, Seoul City Government promoted large-scale land readjustment projects in the agricultural area south of the Han River to implement the South Seoul Plan which was announced in 1966 with the objective of dispersing population and urban functions south of the Han River to Gangnam (Seoul Solution, 2017). A string of ten large scale Land Readjustment project districts[8] were designated to carry out this plan and a number of strategies were used to fast track development in these, such as improving transport linkages, relocating public offices and educational institutions, and developing new economic activities and housing to attract people to Gangnam (see Annex 2).

Land Readjustment projects were initiated in 17 districts in the 1960s [9] (including Seogyo and Dongdaemun, started during the previous regime) and covered an area of 58,55 km^2. There was an attempt to link Land Readjustment projects with the proposals of Basic Urban Plan[10]. This was different from the stand-alone project approach of the earlier period. Apart from projects implemented either by the national government or local governments, land readjustment unions implemented projects in four districts[11] while the Korea Housing Corporation implemented projects in three districts[12] between 1967 and 1981.

The trend of large scale Land Readjustment projects continued into the 1970s with the addition of 11 more districts[13], but with significant changes from the previous years. Housing the rapidly growing population of Seoul was one of the priorities of the third and fourth Five-Year Economic Development Plans implemented in the 1970's. Several measures were taken in this regard in LR districts. In 1975 the Land Readjustment Act was amended to allow use of recompense land for building high density low income housing[14] Korea National Housing Corporation and Industrial Sites Development Corporation and Water Resources Estate Development Corporation was given the status of project executor, a position earlier reserved for national and local administration (Kim Sun-wung, 2017). In addition, government directives were issued to allow multi-family dwellings and apartment buildings in Land Readjustment projects and private developers were given incentives to accelerate the construction of apartment complexes. In January 1976, the *Apartment District System* was introduced to make it compulsory for developers to build apartment complexes in specific Land Readjustment districts.

Another amendment to the Act in 1980 empowered the project executor to increase or reduce the replotting area and to divide or merge project districts and added three more para-statal organizations as executors.

Although the Land Readjustment Act was enacted mainly with the intention of improving the supply of land for housing and public facilities, the same method was used for large industrial and infrastructure projects. The most remarkable examples are the Gyeong-Bu (Seoul to Busan) Expressway and the Gyeong-In (Seoul to Incheon) Expressway that opened in 1968 (Son Jeong Mok, 2003). Moreover, whole satellite new towns were being planned to rationalize national urban development and to relieve pressures on core cities.

1.5 THE LATE INDUSTRIALISATION PERIOD (1980-2000)

In this period, as the economy grew rapidly thanks to industrialization, the influx of population into large cities and new industrial complexes was accelerated, resulting in even more serious housing shortages. Speculation and high land price drove housing beyond the affordability of a large majority. With more finances in government coffers, a plan to supply five million houses was prepared as part of the fifth Five-Year Economic Development Plan. A new military government highlighted the limitations of the Land Readjustment method in delivering housing at the scale and price that was required.[15] The Housing Site Development Promotion Act was enacted in December 1980 to ensure that sufficient land was available for the construction of satellite townships and apartment complexes, particularly for the low

BOX 2: THE HOUSING SITE DEVELOPMENT PROJECT

A housing site development project is a comprehensive land development scheme implemented by the public sector, including land acquisition, development, supply, and management. This scheme is effective to prevent the privatization of development gains as well as to construct urban infrastructure and convenience facilities. The establishment of this Act enabled a government or public sector project entity to purchase large amounts of land in the outskirts of major cities at affordable prices and rapidly promote projects (public and private) within a short period of time. The Act enabled the pre-designation and eventual large-scale takeover of affordable green zones or farmland. It also allowed for the conversion of those areas to residential areas in the development project-planning phase; and further allowed the acquisition of land at reasonable prices, thereby accelerating development. The Act expand public development to local governments so that they could earn from development gains and expand local finance. The SMG and local governments began to participate in large-scale public housing site development projects, which hitherto had been led primarily by the housing corporation and land corporation.

Box 2: The Housing Site Development Project

and middle income families. The Housing Site Development approach (see Box 2) depended on land expropriation and enabled compact development and profits from projects to cross-subsidize portions of such projects for the poor. The government designated approximately 33 km^2 of land in 30 cities as the first housing sites under the Act. Henceforth public development projects under the Housing Site Development Promotion Act became the main method of supplying new housing sites. However, small scale development projects continued to be implemented in Land Readjustment districts and in other locations under the Housing Construction Promotion Act of 1972 (Kim Sun-wung, 2015) and by private developers.

A large number of Land Readjustment projects continued to be taken up during this period in different cities but the programme in Seoul was restricted to four districts[16] with a total area of 14.5 km^2 and implemented by Seoul City Government. In 1986, the government banned the designation of new readjustment projects in the Seoul Metropolitan Area and six major cities. The last land readjustment project in Seoul approved by the government was the project in Gaepo District 1981. Altogether 58 districts with a cumulative area of 146 km^2 were developed through the land readjustment project in Seoul (The City of Seoul, 1990: 37).[17]

By 1984, approximately 436 km^2 were developed in 197 districts nationwide for land readjustment projects. By 1995 , another 402 districts had been added in the non-metropolitan cities, but their size was small, restricted by progressively lowered ceiling on area (see Table 2).

The Asian Games of 1986 and the Olympics of 1988 followed by the World Cup in 2002, provided a turning point for the transformation of Seoul into a world class metropolis with massive investment in sports facilities, cultural and recreation centres and transport infrastructure. During the 1990s local government administrations were brought back to life. City administration and urban planning, which had thus far been top-down, now appeared with a new face – public participation and new administrative procedures. For instance, in 1991 the top-down planning structure of the existing Basic Plan was amalgamated with a new bottom-up planning system to include local characteristics and input from the local communities (Seoul Solution, 2017). These measures had major impacts on the process and practice adopted for Land Readjustment projects. However, by then the Land Readjustment projects were held responsible for urban sprawl and speculative land market operations and finally the Land Readjustment Project Act of 1966 was superseded by the Urban Development Act of 2000. While this put a stop to all Land Readjustment projects, the new Act retained all the features of land readjustment in the form of the substitute land method or the replotting method as one of the options for implementing projects.

1.6 NATIONAL TERRITORIAL PLANNING AND CITY RENEWAL PERIOD (2000 ONWARDS)

This period represents a paradigm shift in development priorities of Korea: the emphasize shifted from industrialization and managing rapid growth with low levels of public expenditure to environment and sustainability, taking advantage of national prosperity. Great emphasis was placed on making Korea an international player in the global information technology arena. Korea also sought to reclaim its

City/Province	Total		Public Implementation		Cooperative Implementation		Not Yet Started	
	District	Area	District	Area	District	Area	District	Area
Grand Total	599	495,962	374	397,872	194	89,317	31	8,773
Seoul	58	146,038	54	134,239	4	11,799	0	0
Busan	36	43,103	21	28,969	15	14,134	0	0
Daegu	32	38,876	19	31,670	10	6,752	3	454
Inchon	33	41,362	33	41,362	0	0	0	0
Gwangju	13	12,873	12	12,385	0	0	1	488
Daejon	31	27,417	22	23,602	5	2,684	4	1,131
Gyeonggi	59	51,956	55	51,196	0	0	4	760
Gangwon	26	8,970	25	8,721	1	249	0	0
Chungbuk	18	8,951	16	7,814	1	610	1	527
Chungnam	25	10,988	24	10,864	1	124	0	0
Jeonbuk	22	12,754	18	11,495	3	913	1	346
Jeonnam	23	6,559	15	4,977	5	903	3	679
Gyeongbuk	66	28,918	21	9,681	38	16,790	7	2,447
Gyeongnam	118	46,606	22	11,181	111	34,359	5	1,066
Jeju	19	10,591	27	9,716	0	0	2	875

Source: Urban Management Department of Ministry of Construction and Transportation (1995)

Table 2. The status of implementation of land readjustment projects by city and province in the 1995 (Unit, 1,000 m²)

identity as a timeless historic yet modern nation by restoring its historical and cultural heritage. The democratization and decentralization of governance and the importance given to public participation for social consensus started in the 1990's, was codified in legislation and applied at different levels in the preparation of the Seoul Plan 2030 (Seoul Solution, 2017). With the restoration of democratic processes, public institutions faced increasing dissatisfaction from citizens and complaints against assessment of compensation. This led to the systematization of procedures and standards for compensation to ensure the protection of citizens' property rights and effective promotion of public services.

In the early 2000s, the Korean government adopted balanced national development as a key focus of its national territorial plan and regional development policy. Major areas of concern were environmental sustainability, revival of Korean culture, competitiveness, and greater integration of employment centres and urban and rural areas through different levels of planning (national, regional, local). This period is important for rationalising urban and regional plans and planning and land development laws. *Plan first, develop later* became the dictum for all development. The Framework Act on National Territory was enacted in 2002 as an overarching legislation on land. It became instrumental for implementing satellite towns and development projects for regional balance through means such as relocation of functions from metropolitan areas to smaller urban centres and encouragement to the private sector to implement special city projects.

Complete development of new towns and large projects by public or private developers on land expropriated by a public institution became the preferred option. Although the financial impact of this preference was that land compensation costs dramatically increased from about KRW eight trillion in 2000 to KRW 30 trillion in 2008 (Doebele, 1982), the new

Fig. 5. Seoul in the 1980s when LR was applied widely and successfully

concerns for high-density urbanization and eco-friendly and sustainable development could be realized. Public land expropriation was also seen as a method of capturing the benefits of development for public use and controlling private land speculation. However, the Urban Development Act of 2000, under which projects using land expropriation are implemented, also provides for implementing projects using the land substitution/ replotting method (similar to Land Readjustment projects) and the combined method.[18]

By the early 2000s most Land Readjustment project districts of earlier years were ripe for restoration and redevelopment as services, street widths and parking lots became inadequate for the growing population[19]; increasing mixed commercial-residential use in some districts and low rise, low density deteriorated areas in others. By then all Land Readjustment Program districts, including the Yangjae district (the last program, designated in 1983) were 20 years or older and demands for reconstruction were steadily rising. The Ministry of Construction and Transportation issued guidelines for reconstruction of detached housing sites to rationalize redevelopment processes (Ministry of Construction and Transportation, 2004). This was followed by the enactment of Special Act on Activation & Support of Urban Restoration (2013), which allowed the Seoul City Government to revitalize and renew the city as it witnessed a decrease in population, changes in the industrial structure, unregulated expansion, and dilapidated residential areas (Kim Sun-wung, 2017).

A vibrant street in Gangnam district

LEGAL AND INSTITUTIONAL SYSTEMS FOR LAND MANAGEMENT, URBAN PLANNING

2

2.1 CONTEXT OF LEGAL AND INSTITUTIONAL SYSTEMS

Legislation with respect to land in the Republic of Korea and the institutions put in place to implement them reflect the changes in the political economy of development in the country. The thrust on land to the tiller and post-war recovery gave way to making land available for rapid economic growth through industrialization and finally for balanced national development and democratic decentralization. Land policies of South Korea have played a principal role in supporting economic development during its industrialization period by supplying urban land, while providing remedies for relieving various urban problems such as land price hikes, land speculation, housing shortages, and urban sprawl (Chae et al., 2018). The biggest challenge for the government was to enable large scale land and infrastructure supply required by the exceptionally rapid pace of urbanization and industrialization (from 37% urbanization rate to 90% in 2010). The Korean government has maintained a strong and powerful macro-control in land management and played a key role in urban development by drawing up development plans and policies and formulating and enforcing regulations for their implementation; promoting and undertaking urban expansion and investing in infrastructure and housing. Robust laws and land information systems were found to be necessary to enhance the credibility of provisions and to minimize the discretionary powers of officials while implementing land policies (Jung Hee-Nam, 2014). This becomes even more important in a country like Korea, where most of the land is privately owned and there is a regime of strong property rights.

Land-related affairs include a wide range of areas such as policy, possession, transaction, use control, development, and management. Broadly speaking, the legal and regulatory system for urban land in Korea, as elsewhere, is framed with the idea of enabling planned development and ensuring availability of land for public uses. The two methods used for accessing land for urban development in Korea are land readjustment or replotting and expropriation. The systems and procedures set up for land readjustment were codified in legislation, a necessary step especially because land had to be taken from private land owners for public services and financing the construction of those services. A similar observation can be made regarding land expropriation as well: taking over private property for public use can be contentious unless backed by legally valid definitions of public purpose and procedures for valuation and compensation. The context for using one or the other of these methods in Korea is provided by the goals for national social and economic development, land use and infrastructure development plans for cities and financial, cultural and institutional feasibility.

2.2 OVERVIEW OF LAWS RELATED TO URBAN LAND DEVELOPMENT

The roots of modern urban planning were sown during the Japanese colonial period and formalized as the Joseon (Korea) Urban Planning Enforcement Ordinance of 1934. This law borrowed heavily from Japanese legislation and was extensively used to plan Japanese military bases in Korea. The process of undertaking planned expansions of cities using the land readjustment technique also began under the Ordinance and was continued during the post-independence period for expansion of cities to accommodate rapid population growth as well as undertake redevelopment and reconstruction of city areas damaged by war.

The 1960's saw the start of the Five-Year Economic Development Plans and the creation of the legal foundation for land development. The urban planning function of the Ministry of Construction was strengthened and the Urban Planning Act of 1962 paved the way for preparation of Basic Urban Development Plans for cities and for procuring land for their implementation. The Land Expropriation Law of 1962[20] could, however, not be extensively used at that time for lack of public funds. Land readjustment projects were the fall-back option and continued to dominate city development, especially with the enactment of the Land Compartmentalization and Rearrangement Projects Act (Land Readjustment) Act in 1966.[21]

A related stream of legislation and institution building is about increasing the supply of land for affordable housing. The Korea Housing Authority established under a colonial decree in 1941 had the objective of acquiring land and constructing public housing and facilities on it. The Authority was then converted to a Corporation in 1962. The Housing Construction Promotion Act was enacted in 1973 to enable development of projects for apartments. However, the operations of the Corporation picked up only in the 1980's with improvement in the national economy and the decision of the national government to construct public housing by expropriating land, rather than leaving it to private land owners to develop their plots in land readjustment projects. The state-owned enterprise, Korea Land Development Corporation, was set up in 1978 with sufficient finances to acquire large areas of land. Then in 1980, the government initiated a plan to construct five million housing units in ten years and established the Housing Site Development Promotion Act, which enabled a project entity to purchase large amounts of green zones or farmlands in the outskirts of major cities at affordable prices from the Land Corporation and rapidly promote projects within a short period. The Act also stipulated the urban planning functions of the Urban Planning Bureau for pre-

The biggest challenge for the Korean government was to enable large scale land and infrastructure supply required by the rapid pace of urbanization and industrialization.

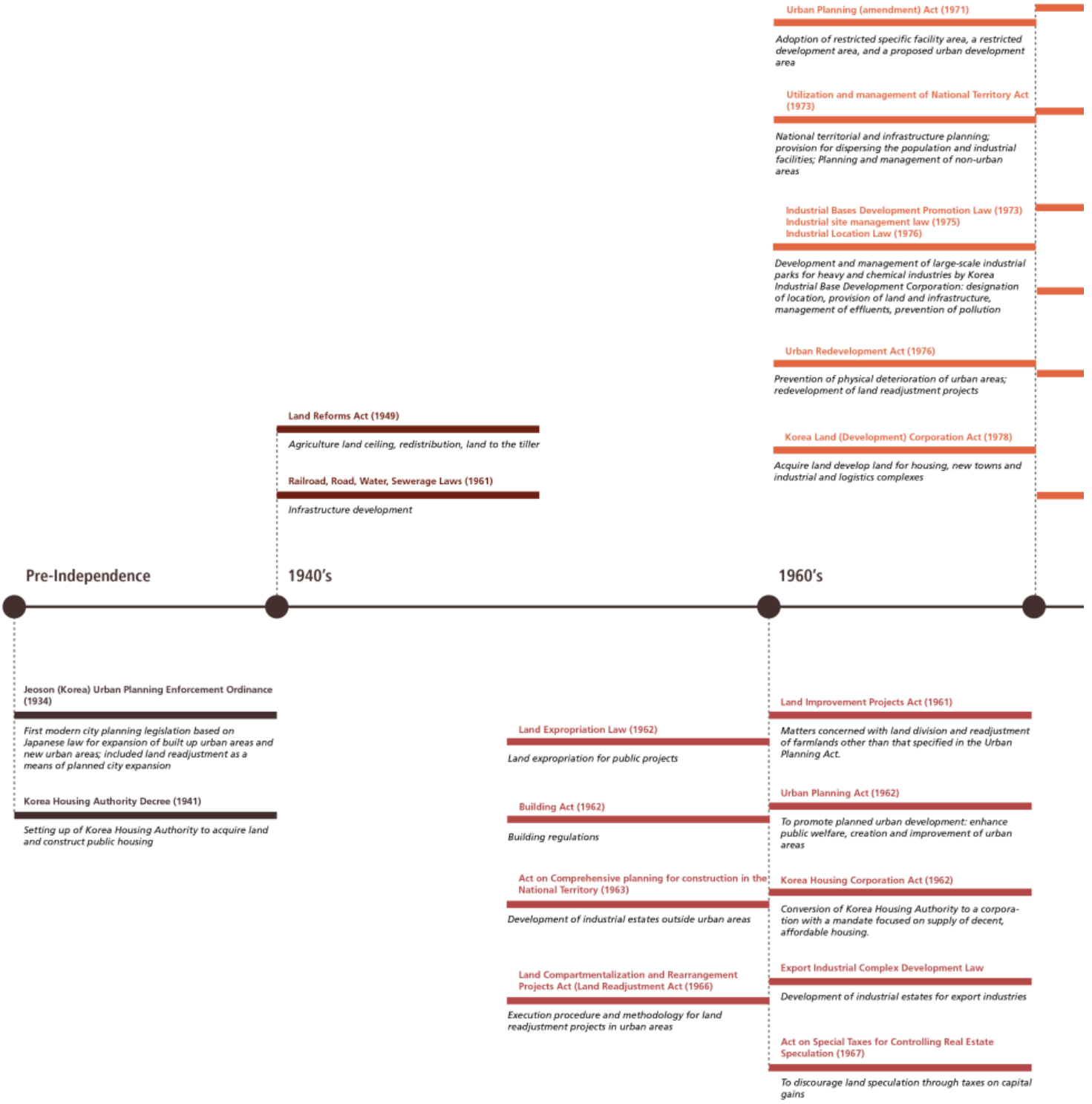
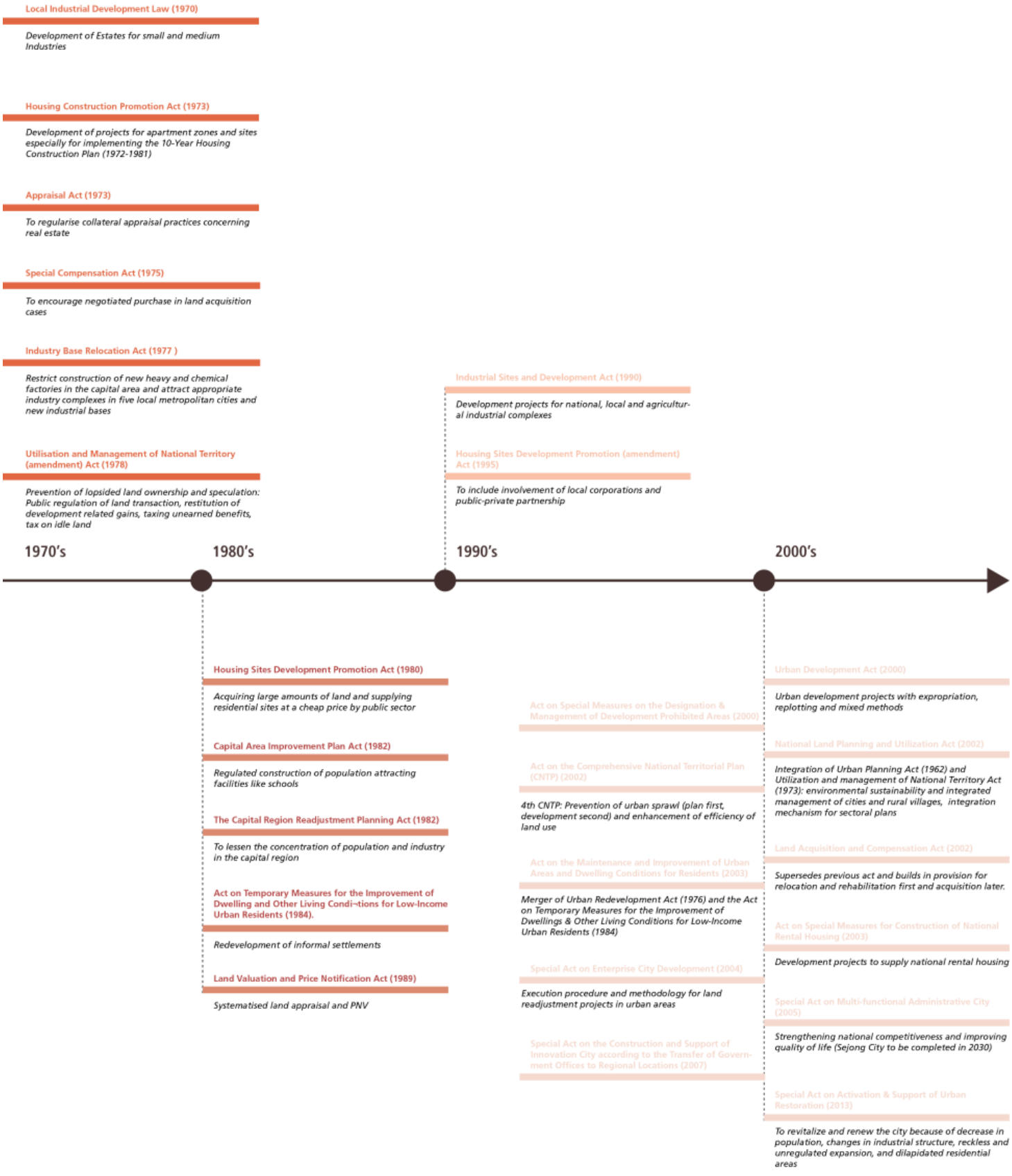


Fig. 6. Overview of laws related to urban land development



Source: based on Korea Planning Association (2012)

designation and conversion of those areas to residential lands. Development gains were reinvested in future housing site development. Later the Land and Housing Corporations were merged in 2009 as Korea Land and Housing Corporation, which works mainly in the public-private partnership mode to deliver affordable housing.

Redevelopment of city areas to improve housing conditions, streets and infrastructure was also considered important and began with the enactment of the Urban Redevelopment Act of 1976. Informally developed housing areas were taken up for improvement or redevelopment under the Act on Temporary Measures for the Improvement of Dwelling and Other Living Conditions for Low-Income Urban Residents (1984). In 2003 the two acts were amalgamated into the Act on the Maintenance and Improvement of Urban Areas and Dwelling Conditions for Residents to improve deteriorating housing stock supplied in large quantities during the stage of rapid urbanization. Many Land Readjustment project districts are included for redevelopment.

The Urban Development Act of 2000 was enacted for undertaking urban development projects. It evolved from Housing Site Development Promotion Act[22] and the Land Readjustment Act, with the intention of bringing diverse methods of urban development under a single legislation and encouraging the private sector to engage in land development projects. The land development methods stipulated by the act are the expropriation method, the replotting method and the mixed method. The Urban Development Act superseded the Land Readjustment Act but retained its methodology in the replotting method.

Since there was a great emphasis on industrial development in the Five-Year Plans from the 1960's to the 1980's, a number of laws were enacted for different types of industries to designate industrial location, and develop and manage industrial infrastructure, estates and townships. Finally, all these laws were consolidated into the Industrial Sites and Development Act of 1990.

In the early 2000s, the Korean government adopted balanced national development as the key focus of its national territorial plan and regional development policy. Different levels of planning (local, regional, national) were instituted as part of the Act on the Comprehensive National Territorial Plan (CNTP) 2002 with greater autonomy for local government, citizens' participation and links to plans for Balanced National Development. The Framework Act on National Territory was enacted in 2002 as an overarching legislation on land, spanning across urban and non-urban areas. Balanced National Development meant, among other things, better rural-urban linkages and relocation of public institutions and people to non-metropolitan areas. Another feature was the development of new towns and specialized urban centres such as corporate city, innovative city and multifunctional city. Special laws were enacted for each of these, especially to promote private sector participation in planning and building these cities. However, the public sector dominance in assembling land established in the 1980's remained.

With land expropriation becoming the main method of procuring land for development, the Special Compensation Act was enacted in 1975 to encourage negotiated purchase. Both this and the Land Acquisition Act of 1962 were merged into the Land Acquisition and Compensation Act of 2002. This Act incorporated features to facilitate public land acquisition with proper compensation, providing uniform evaluation criteria, methods, and processes to acquire lands for public works to overcome the unpopularity of the 1962 expropriation law. Land value appraisal systems form an important part of acquiring or replotting private property. The Appraisal Act of 1973 was followed by the Land Valuation and Price Notification Act of 1989, representing efforts to improve and make processes transparent and unbiased. Land cadastre registration is a legal requirement under the Civil Law to establish property rights.

An attempt was made to control the market, which underwent overheating and cooling cycles repeatedly in line with economic fluctuations. Measures to suppress speculation, such as the regulations on the land ownership, use, and transaction, the control on property secured loans, tax on development profits, and the development of real estate information system, were carried out. On the other hand, during depressions, the government relaxed land regulations to boost the economy. Such active government intervention has contributed to the resolution of urgent problems of the land market and the national economy. However, the policy effects did not continue for a long time because the policies more focused on short-term effects rather than long-term visions, which led to the lack of consistency in land policies and the lack of direction and values of the policies (MOLIT, 2014).

Figure 6 provides an overview of urban land related laws. In the early stages of urbanization, land management systems aimed to facilitate urban development projects. During the 1970's and 80's a wide range of urban planning and land management institutions were established, the urban regulatory system was strengthened, long term planning took root and land was acquired for development by complete purchase and land readjustment.

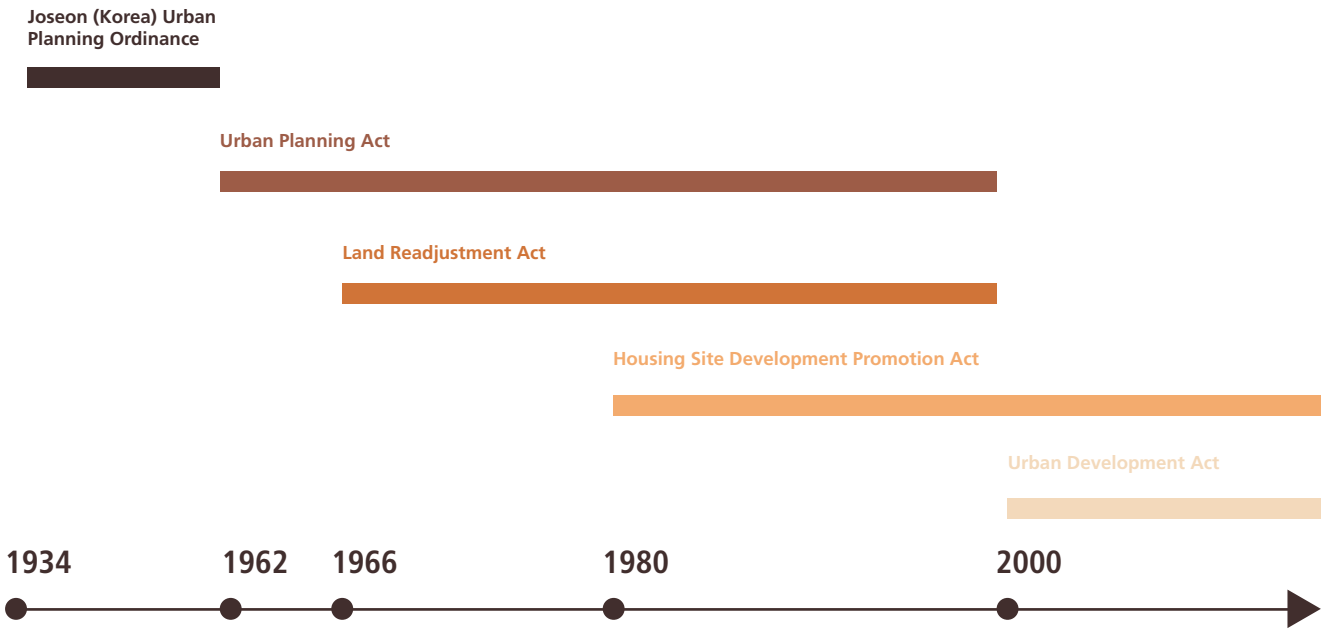
It is worth noting that many laws were enacted and institutions set up within a short span of time. There were often overlaps

in functions, jurisdiction and provisions, which were gradually sorted out. The period of legal and institutional reform began in earnest in the 1990's: urban development and housing institutions went through reform and integration, inter-jurisdictional coordination was emphasized and urban planning and land administration acts were integrated and reorganized to root out overlaps. It is remarkable that the Republic of Korea has backed every land and urban development policy change with an Act to give policy a legal basis.

2.3 LEGAL BASIS FOR LAND READJUSTMENT

Land Readjustment involves the change of the spatial structure of private properties to carve out space for public infrastructure and provide land for sale to realize the cost of development. The process is fully regulated in Korea and the legal framework forms its backbone. It plays the dual role of ensuring respect for the rights of property holders and at the same time ensuring that public infrastructure is enabled. The fine balance between these two interests is maintained through defined stakeholder roles and a step by step code of practice, which ensures due diligence and opportunities for negotiation, consensus building and dispute resolution. Chapter 3 provides the detailed planning and implementation process codified in the law.

It has been observed that Land Readjustment projects attempted before the Urban Planning Ordinance of 1934 failed to take off for lack of a legal framework. Therefore, the Ordinance can be considered as the key catalyst for initiating implementation of Land Readjustment projects in Korea. This was followed by the post-independence Urban Planning Act of1962, which also had provisions for taking up Land Readjustment projects. Parallel to that, the Land Improvement Projects Act of 1961 was often applied for urban extensions into rural areas, even though the Act pertained to readjustment of farmlands for higher productivity. The enactment of Land Readjustment Act of 1966 was enacted as the unified legislation applicable to Land Readjustment projects both in cities and city expansion areas indicated in the Basic Urban Development Plans prepared under the provision of the Urban Planning Act. The Land Readjustment Act was specifically tailored to land readjustment projects in Korean cities. It laid down the step-by-step legal procedures for planning, property value assessment, implementation, financing, roles of landowners and government, participation of landowners and resolution of disputes. This was a necessary step considering the large numbers of Land Readjustment projects at the time and proposal of the Basic Development Plans of major cities to utilize LR as a major means of plan implementation. Further, clarity was required throughout the process, especially since landowner would give up a part of



Source: Hee-nam Jung (2014)

Fig. 7. Legal basis for urban development projects

their land in lieu of benefits from public infrastructure to be built on that land.

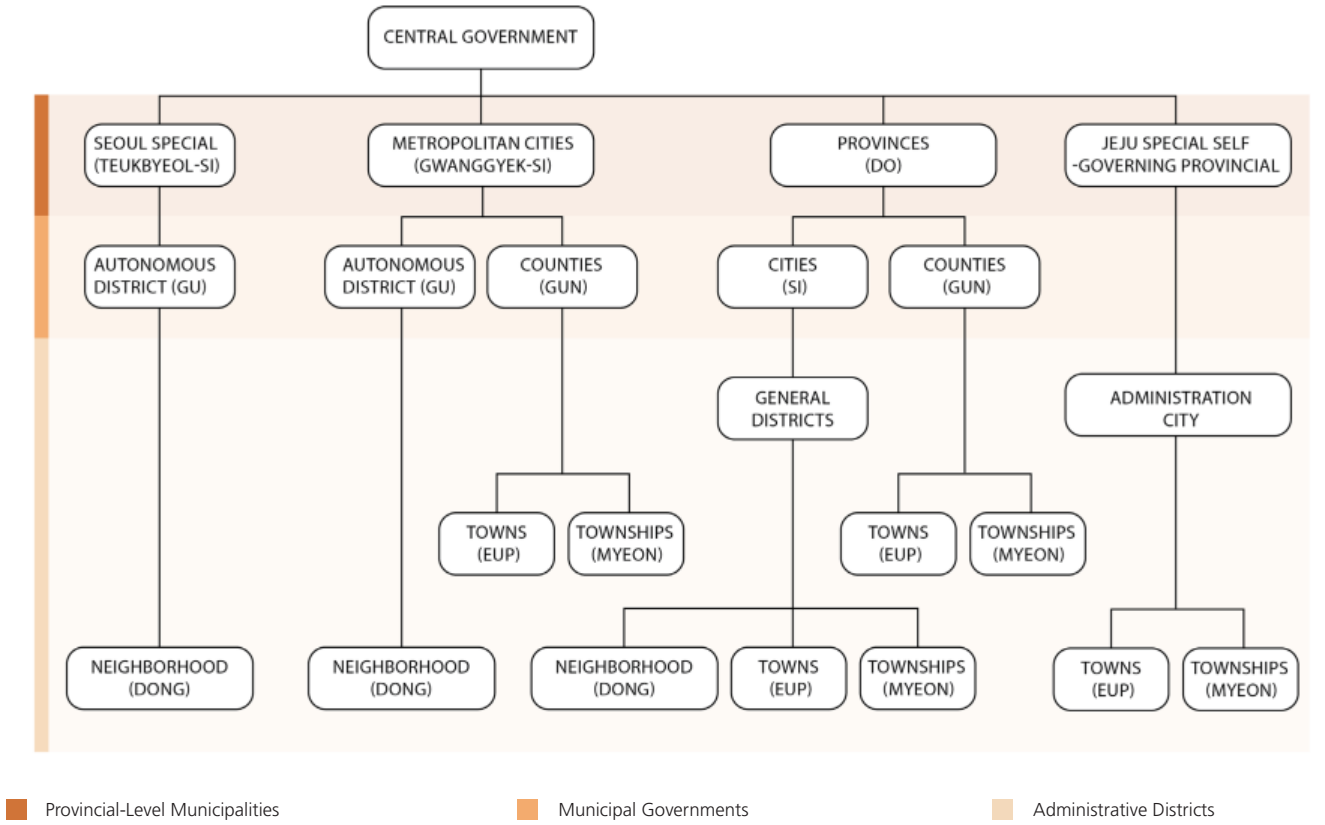
The Urban Development Act of 2000, like the Land Readjustment Act, gives detailed legal procedures to be followed for developing projects using the land expropriation method, the replotting method and the mixed method. Project development using the replotting method is similar to the earlier Land Readjustment projects, with two major differences. First, most of the decisions rest with local government, unlike with LR where the National Government came into the picture. Second, these projects are significantly more consultative and participatory, bringing in the landowners at all stages of project planning and implementation as a mandatory requirement.

Thus, the legal basis for land readjustment has existed throughout in Korean cities since 1934 under various acts. Even though the Government imposed restrictions on the use of the Land Readjustment Act in 1984 with the importance given to public-sector driven projects using the Housing Site Development Promotion Act, the Land Readjustment Act itself was not suspended until 2000, when it was superseded by the Urban Development Act, which retained Land Readjustment projects under the nomenclature of replotting.

The long-term continuity of LR has provided the opportunity for observing the results and bringing in laws to overcome shortcomings. For example, after development, plots in Land Readjustment projects were speculated upon and commanded high prices. The Act on Special Taxes for Controlling Real Estate Speculation was meant to check speculation and capture some of the gains for the public through taxes. Effective and non-controversial property appraisal forms one of the cornerstones of LR. Initially appraisal was carried out by National or Local Government but in 1973, appraisal became an activity carried out by private professional appraisers within the legal framework of the Appraisal Act. Transparency and thoroughness were further improved in 1989 through the enactment of the Land Valuation and Price Notification Act, which required the public notification of land value in all zones of cities. These improvements greatly benefited the implementation of projects under the Urban Development Act of 2000, which superseded the Land Readjustment Act.

Currently, all Land Readjustment Program districts, including the Yangjae district (the last program, designated in 1983), are 20 years old and older and largely low-rise and low-density. The provisions of the Urban Redevelopment Act (1976) followed by Act on the Maintenance and Improvement of Urban Areas and Dwelling Conditions for Residents (2003) and guidelines issued by MOLIT (Ministry of Construction and Transportation, 2004) are being used to redevelop districts to amalgamate properties for higher density development with the required level of facilities.

The long-term continuity of LR has provided the opportunity for observing the results.



Source: MLIT (2015)

Fig. 8. Governance structure in Korea

2.4 PLANNING GOVERNANCE: CHANGING ROLE OF NATIONAL AND LOCAL GOVERNMENT AND CITIZENS

Korea is a unitary state, where governmental power is delegated by the central government to sub-national governments. Korean sub-national governmental system is a two-tier system. The higher level (regional level) local governments consist of the province (*Do*) and the metropolitan city (*Kwangyeok-si*). The lower-level (municipal level) local governments consist of rural county (*Gun*), city (*Si*), and district (*Gu*). Each lower-level local government has administrative sub-levels: *Eup* and *Myeon* in rural areas and *Dong* in urban areas (MOLIT, 2015).

Sub-national or local government as they are called, have power and autonomy across a broad range of government functions, including planning, according to the Local Government Autonomy Act of 1949. However, this power and autonomy was severely restricted from 1961to1987, when Korea was *an authoritarian bureaucratic state* of which Presidents came out of military elites. During this period planning governance was dominated by the central government. Major city planning and project investment decisions were made by the Ministry of Construction, Ministry of Transportation and Economic Planning Board.

As the importance of urban planning was emphasized in the early 1960s, the Seoul municipality established a new urban planning bureau in 1961, and the urban planning law and building codes were enacted in 1962 (Seoul Solution, 2016). However, local planning authority was restricted by the Ministry of Construction, which had an Urban Planning Bureau for drafting policy and urban planning, and the Central Urban Planning Committee for decision making (Moon, 2013).

Autonomy of local government was weak and city mayors and provincial governors were appointed by the central government. Local finance was also weak and local governments were heavily dependent on the Economic Planning Board and the Ministry of Finance for funding. During this period the government established public corporations to implement major planning decisions, public building and infrastructure construction. These were Housing Corporation, Land Development Corporation, Water Resource Corporation, Highway Corporation, Industrial Complex Corporation etc. These corporations further undermined the role of local government. Provincial level municipalities (see Figure 8) were

delegated some planning implementation responsibility but with final decision making by the Ministry of Construction: This included land readjustment projects (Moon, 2013). On a day to day basis, Korea's local authorities supervise and coordinate the entire Land Readjustment process and help the participating landowners in resolving the various conflicts that may arise during implementation of the projects (Lee, 1998).

The movement for democracy in 1987 led to the restoration of the municipal system in the early 1990's and reapplication of the Local Autonomy Act, with suitable amendments. Local council elections were held in 1991 and full-fledged local autonomy with comprehensive local elections followed four years later. The mayor and governor are sources of executive leadership in local governments. As the official and practical head of executive branch, they are responsible for daily administrative activities, appointing top-level officials and budget preparation. The urban planning bureau at metropolitan/ provincial level functions under the mayor or governor. The local council as a legislative body representing residents' interests, theoretically, has the countervailing power to perform check and balance functions in running local self-government but the mayor has veto powers over the council (Choi Jin-Wook *et al.*, 2013).

The notion of the localization era resulted in the shift from state-led to region-led national development[23]. Korea emphasized the importance of local regions and the role of local governments in the national territory development. Horizontal networks replaced the earlier vertical system between central and local government and the private sector. Public corporations were still important, but acts were amended to include implementation of projects by local governments also. The restoration of the municipal system brought more autonomy to local planning agencies and public participation in planning was enhanced. The central government entrust local governments with most land-related matters except establishing land policies even though local planning capacity is still weak and local finance is heavily dependent on the central government (Moon, 2013).

Korean local governments adopted an array of measures to institutionalize and strengthen citizen engagement in local government operations. Local governments also form a variety of committees in which public or special interest groups can participate. Most of the committees are formed by local ordinances or executive rules (orders) of local governments. Committees on Urban Planning, however, are an exception and are formed by legal mandate of the central government (Choi Jin-Wook *et al.,* 2013). This goes to show the importance given in national policy to land management and urban planning.

With the enhancement in public participation in planning, land readjustment practice also became significantly more participatory with the Urban Development Act of 2000. Replotting, as land readjustment was called in the Act, requires consultation with landowners at every stage of the planning and implementation process (see Chapter 4).

2.5 SPECIALIZED INSTITUTIONS TO SUPPORT LAND READJUSTMENT

Training, research and technical advice

Korea Research Institute for Human Settlements (KRIHS) stepped in to provide much needed technical assistance to central as well as local government. Established in 1978, as a research and training institution, it has trained a cadre of public officials for land management and urban planning. KRIHS was diversified in the 1990's to develop long-term and short-term plans and policies to lead to more efficient use of land resources on behalf of local and central government. It carries out various research projects to support policy and implementation in the areas of national territorial development, environment, regional and urban development, infrastructure, land use, transportation and geographical information systems. The institute continues to support citizens participation processes for planning in Seoul and other cities (KRIHS, 2018).

Land assessment and valuation

The Korean government has taken several steps to establish institutions for land assessment and valuation. Land Bureau of MOLIT is responsible for the management and supervision of market appraisal while the Land Policy Division is responsible for compensation valuation issues and Real Estate Valuation Division for general appraisal issues. In the 1960's appraisal was carried out by local or national government, but with the introduction of the qualified appraiser system in 1972 (pursuant to the Act on the Utilization and Management of the National Territory) professional appraisers from outside government became responsible for appraisal.

The Korea Appraiser Board (KAB), founded in 1969, is a semi-public corporation, the most important tasks of which are to support the Publically Noticed Value of Real Estate system and to make survey and management for a variety of public statistics. The Korea Association of Property Appraisers (KAPA), established in 1989, is a non-profit private association composed of certified appraisers.

A number of valuation and appraisal related committees operate under the direction of MOLIT for ensuring proper appraisal and policy. They are established and operated at the KAPA and KAB. Of them, the Valuation Review Committee,

Valuation Feasibility Deliberation Committee, and Appraiser Recommendation Committee are the main ones.

Land Administration

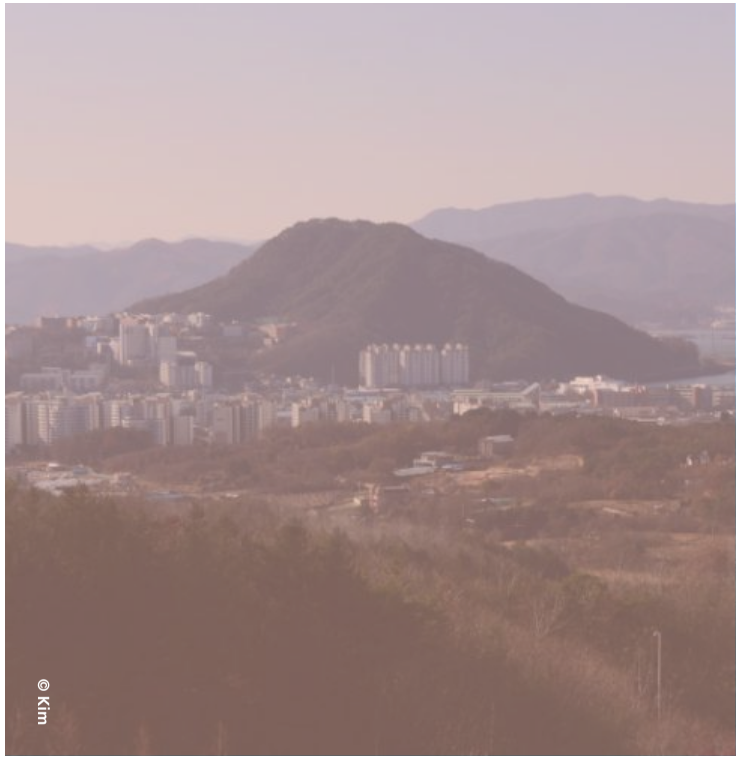
The existing land administration in South Korea was established as early as 1910, during the Japanese regime adopting the title registration system. Land registration is a hierarchical system in which the national level court is at the top, followed by local courts, branch courts and registration offices successively. Among them, registration offices are the main executors, who are responsible for land registrations in their own jurisdiction area. Korea has adopted an advanced digital management system for their land registration since the 1990's, which makes business operations quicker and more amenable to effective cooperation with other departments (Lian, 2016).

The land registration system is linked to the cadastral management system. Korea Cadastral Survey Corporation was established under MOLIT to secure the efficiency of national cadastral management, and to carry out research on cadastral surveying and cadastral systems, with the aim of protecting citizens' property rights and laying the foundation for land transaction orders. One of the major tasks of the Corporation has been to digitize the cadastre paper maps first produced during the Japanese era, to bring in accuracy and remove discrepancies. Since the country promulgated the Cadastral Law in 1950, millions of land parcels in Korea have been computerized and cadastral map sheets digitized (Korea Cadastre Corporation, 2016).

A modern land administration system in Korea, called the Korea Land Information System (KLIS) has been developed to protect the property rights of the public by efficiently managing cadastre and registry books, as well as to provide the government with statistics to deal with real estate markets and land use information. KLIS is under MOLIT and closely associated with the Cadastre Corporation and the land registry (Park, 2013).

The evolution of land administration system in South Korea has supported the changes in land policies from time to time, including policies on property taxation, land use planning and management, land subdivision and supply and real estate market controls and management. These changes had a direct bearing on the rapid economic development of the country (Lee, 2012).

The evolution of land administration system in the Republic of Korea has supported the changes in land policies from time to time.



LAND READJUSTMENT CONCEPT AND METHODOLOGY

3

3.1 CONCEPT AND DEFINITIONS

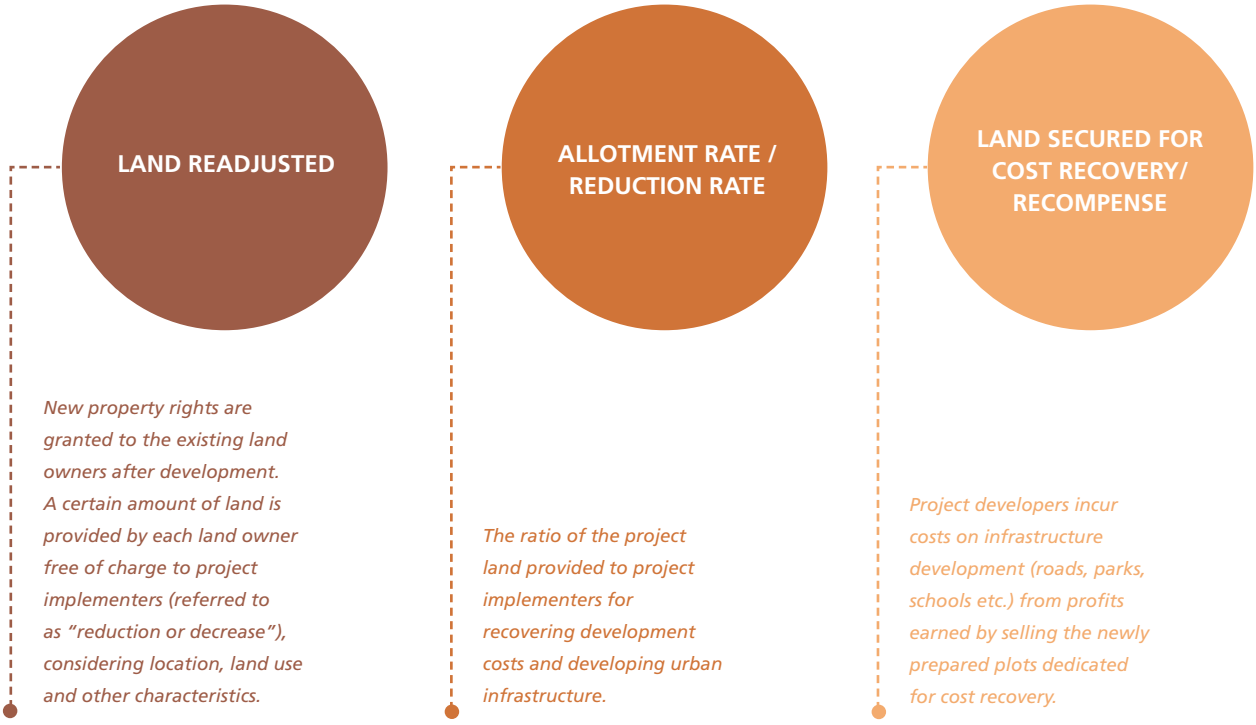
"The Land Readjustment Program of Korea is a replotting-based approach, exchanging and subdividing/combining the land without altering the relationship of rights in existence prior to the program. This method of securing land for public facilities and developing built-up areas was adopted as a way to prevent disorderly urban sprawl as the city grew in area without sufficient financing. It also sought to acquire public land in new built-up areas in advance" (Seoul Solution, 2017).

The Joseon Planning Ordinance for Urban Areas of 1934 provided the legal basis for land readjustment during Japanese rule. According to Article 42 of the Ordinance, "*land readjustment is defined as the transformation of land partitioning through an exchange, division, or annexation of plots and a change in the category of land, or as the creation, transformation, or abolishment of roads, squares, rivers, and parks in a bid to improve the use of land as plots*" (Jung, 2013). The provisions of this ordinance were incorporated into the Urban Planning Act of 1962.

The definition is further elaborated in Article 2 of the Land Readjustment Act of 1966 as, "*A project on exchange of land, subdivision or combination of land, block alteration; alteration to land category or its characteristic; or installation of and alteration to public facilities performed in a certain district for readjustment of the public facilities and enhancement of the efficient use of the site according to the regulation of the same law.*" In the Article, public facility is stipulated as "*a road, park, square, river, elementary school, middle school, high school premises; a marketplace, canal, boating site, waterway, embankment, levee, lighters wharf, standpipe, sewerage, reservoir, and green areas that are for public use*" (Government of Republic of Korea, 1966).

In 2000 the Land Readjustment Act was superseded by the Urban Development Act, which both retains as well as limits Land Readjustment in the form of the *Substitute Land Method* or the *Replotting Method*. This method is explained as follows: the land within the project boundary is developed first and then is redistributed to landowners, excluding the public facilities sites and other land used to pay for the project costs (Government of Republic of Korea, Article 11, 21, 28 , 2000).

The highlight of the Korean model is that it received little financial support and therefore it had to be mostly in the form of self-financing projects. According to the Land Readjustment Act, 50% of the readjusted land is retained after replotting by the original land owners, 30% is for infrastructure and the remaining 20% for development cost recovery. Minor deficits are met from the general municipal budget. Development



Source: KRIHS (2014)

Fig. 9. Concept of Land Readjustment projects

The highlight of the Korean model is that it received little financial support.

costs are recovered through the contributions landowners make as a result of the reduction in site or plot sizes. Every landowner gives up a portion of his land in proportion to the increase in the value of land. The rate of reduction varies from site/plot to site/plot according to the specifics of the site as well as the assigned land use. The contributions landowners make through the reduction in site or plot size are then divided into two portions: one for the provision of public utilities, and the other for sale in the market to finance the construction costs. This latter portion is known as the *recompense land* (Kim, 2013). The concept is illustrated in Figure 10.

3.2 CHARACTERISTICS OF LAND READJUSTMENT PROJECTS

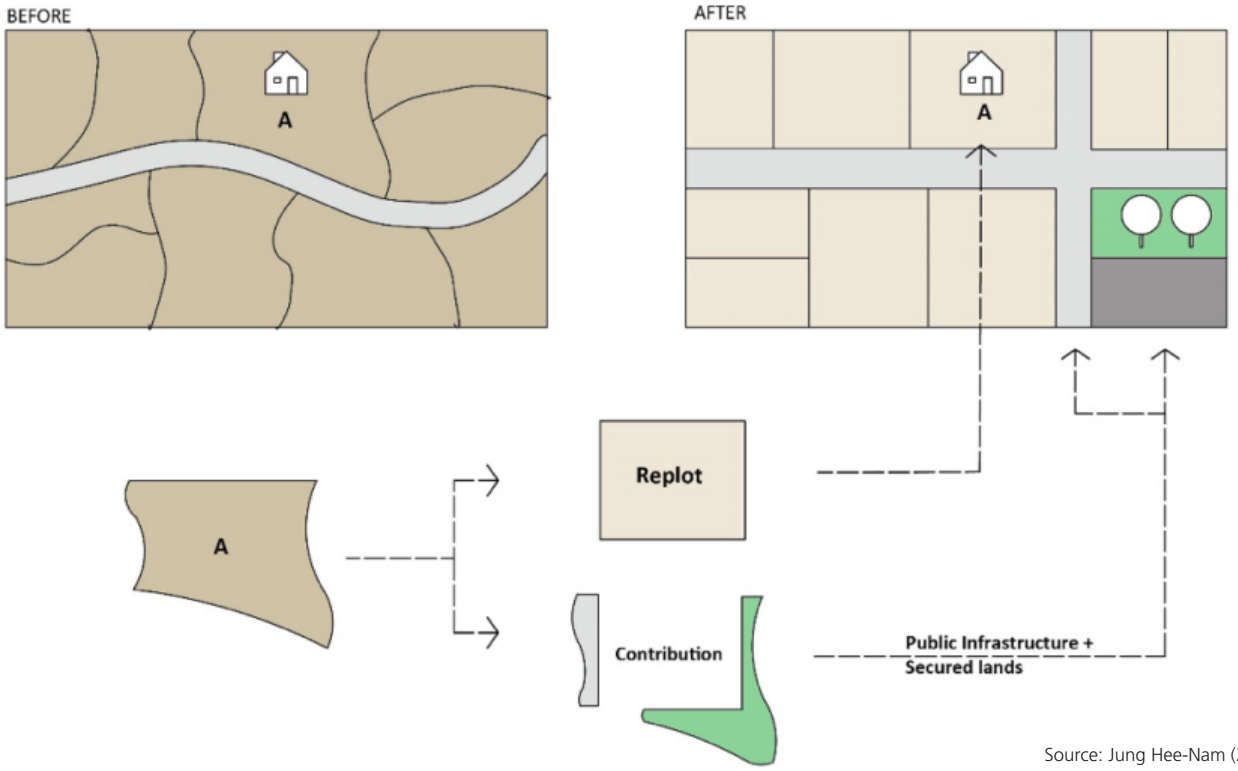
There are five main characteristics of a land readjustment project:

- As it is a project with land ownership adjustments, it can be performed in a built-up area as well as in a green field area;
- As it is a project that readjusts the urban infrastructure in a certain district through an aggregated and integrated way, sufficient number of public facilities needed for the district are established, and the shape, location, and arrangement of the housing sites are readjusted, resulting in an increase in the land use value. In addition, fair distribution of the benefits and costs can be realized;
- As the substitute land method is used, the project can be implemented with a small amount of financial resources regardless of the land price, unlike the land purchase method in which finances required are proportionate to the land price and investment must be made beforehand;
- As the existing buildings or facilities can most often be retained while preparing the detailed project proposal, demolition of construction and relocation of people is hardly required; and
- Buildable housing sites are produced. In addition, there is rise in property value and rents as a consequence of the development.

3.3 PROCESS AND METHODOLOGY OF LAND READJUSTMENT PROJECT IMPLEMENTATION UNDER THE 1966 LAND READJUSTMENT ACT

The process[24] basically worked from 1966 to 2000 as follows:

After an area was selected for a land readjustment project, a development plan was prepared based on the current and projected market conditions and taking into consideration environmental and aesthetic factors. The plan, however, disregarded existing lot ownership. An area's parcels of land were pooled into a single entity, and the parcels were then



Source: Jung Hee-Nam (2014)

Fig. 10. Concept of Land Readjustment (Land Readjustment) Project

Type of Implementer	Terms and conditions
Landowner	• Landowners owning 2/3 of the total land area, and 1/2 the number of total landowners must give consent for the Land Readjustment project • Landowners need authorization of the MOC.
Landowners' Cooperative	• A "*land compartmentalization and rearrangement project cooperative*" can be formed once 2/3 land owners are in agreement • The Cooperative needs approval by MOC and needs to be registered as a legal entity.
Government and Public Agencies: Central Government, Local Government (municipal and provincial), Public Corporations (Korea Housing Corporation, Korea Land Corporation, etc)	• They are entitled to implement the Land Readjustment project where landowners or their cooperatives do not apply for the project or their application is illegal or unacceptable. • They work as implementer where public facilities need to be developed in the project • They work as implementer where landowners owning 2/3 of the total land area, and 1/2 the number of total landowners give their consent to implementation by the government agency.

Table 3. Types of Project Implementers

replotted to fit the development plan. Land for public facilities and land that would be sold to help cover the project's costs were captured through a technique called land reduction. An individual, a private corporation, a landowners' cooperative, a public corporation, an administrative agency, or another public entity could all implement the development plan (Jung, 2013).

Project Implementer

The first two above are considered as private executors, while government and public agencies are considered as public executors.

Priority to become the programme entity (and implement the programme) is given to the land owner and the cooperative. If this does not occur, the national government, local governments, the Korea Housing Corporation, or the Korea Land Development Corporation can implement it (Seoul Solution, 2017).

Stages in Land Readjustment Project Implementation

The procedure for implementation of a land readjustment project is largely divided into 4 main stages (Figure 11).

Steps involved at each stage of the Land Readjustment process are summarized below.

Role of implementers during the planning and implementation of Land Readjustment projects

The specific roles and obligations of actors involved in the different stages of the planning and implementation process depend on who the implementer is. Irrespective of the implementer, public announcements and approvals are the tasks of local and national government. Substitute land allocation and registration also can only be carried out by government. The stakeholder roles are indicated in Figure 13.

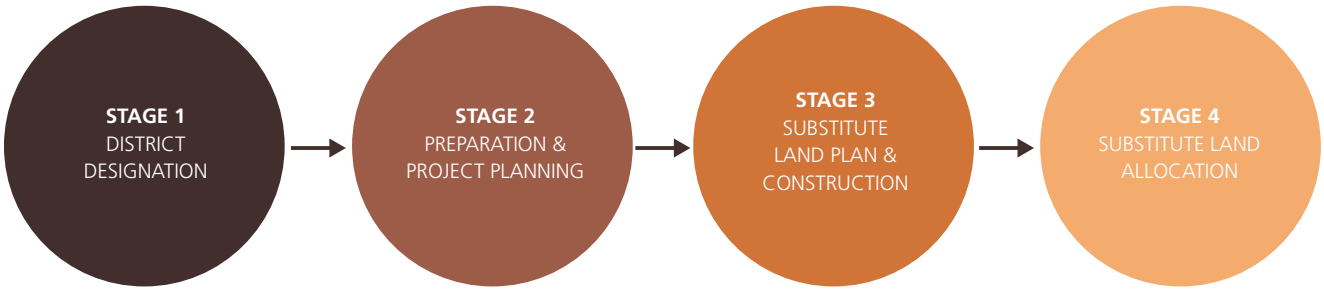


Fig. 11. Stages in implementing land readjustment projects

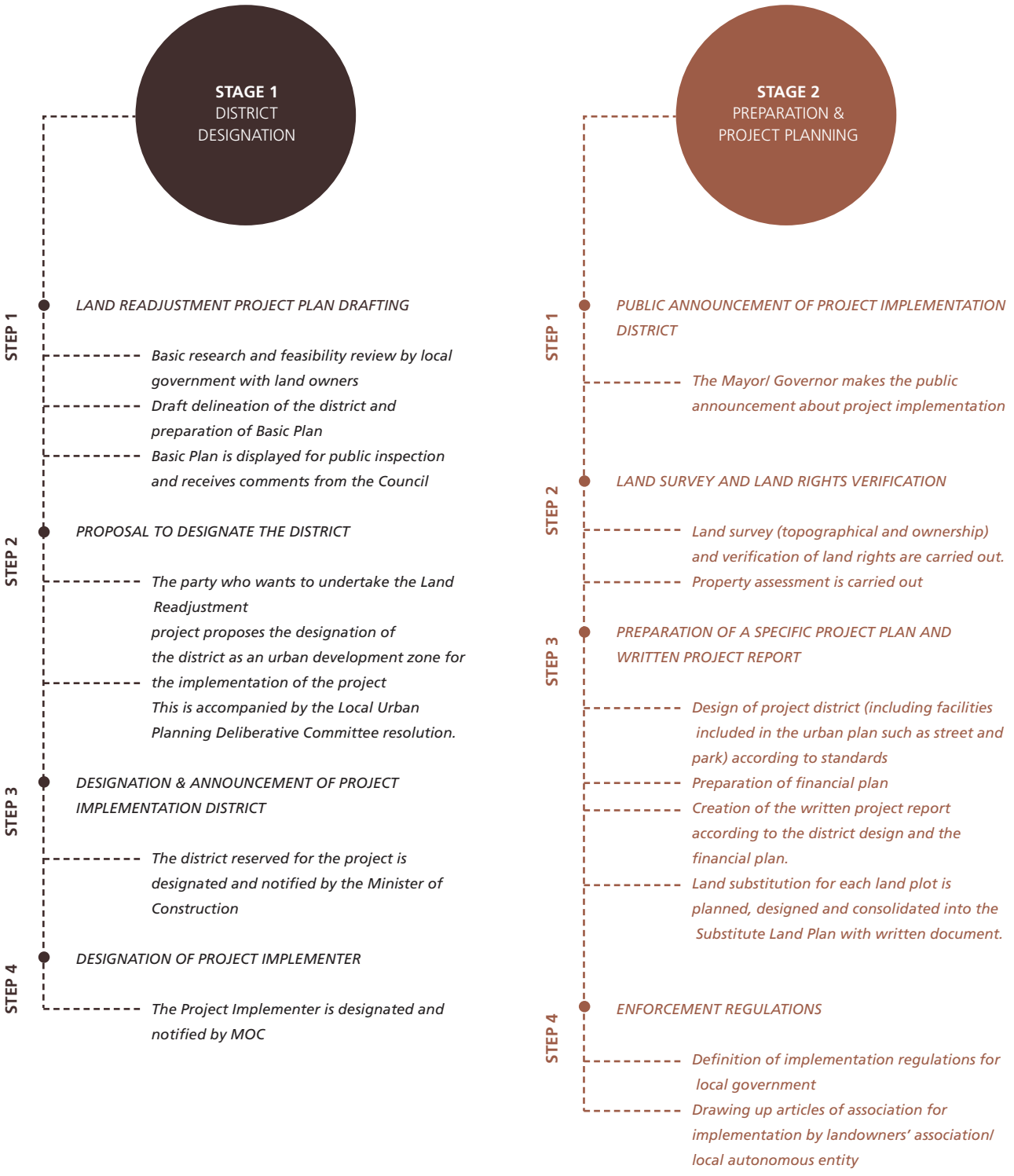


Fig. 12. Steps of Land Readjustment Projects

STAGE 3
SUBSTITUTE LAND PLAN & CONSTRUCTION

STEP 1

PUBLIC ANNOUNCEMENT AND DISPLAY OF PLAN AND REPORT

- *Announcement of the land substitution plan and report*
- *The plan is made available to the general public for 14 days for inspection and opinion*
- *A written opinion is submitted by Mayor/ governor,*
- *An approval application is made (with opinion attached) to MOC*

STEP 2

APPROVAL AND PUBLIC ANNOUNCEMENT AND IMPLEMENTATION

- *An announcement of the land substitution plan approval and designation of the reserved land for substitution is made*
- *The approval and designation are confirmed by MOC.*

STEP 3

DESIGNATION OF SECURED LAND FOR SALE

- *Designation of secured land for sale (an area of land secured by the authorities in recompense of development outlay) or reserved land for substitution, before performing the originally planned alteration of the land parcels and establishment of public facilities.*

STEP 4

REMOVAL OF CONSTRUCTION AND DEVELOPMENT OF PUBLIC INFRASTRUCTURE

- *Performance of grading work around the land substitution line.*
- *Removal of buildings if required by the plan*
- *Relocation of structures (e.g. gas supply facilities, water supply and drainage system, railway, telephone pole, and others on and below the roads) to the reserved land*
- *Construction of public facilities: road, park, waterway, ditch, etc. in the plan.*
- *Once the whole process of the development ends, substitute land allocation is performed.*

STAGE 4
SUBSTITUTE LAND ALLOCATION

STEP 1

SUBSTITUTE LAND ALLOCATION

- *Notification to landholders of the altered rights according to the substitute land plan.*
- *After notification, all the rights to the original land cease and the land rights are assigned for the substitute land.as on the date of notification.*
- *The readjustment of the township (dong) boundary, name of the township, and lot numbers is carried out, when the substitute land allocation is in effect.*

STEP 2

DELIVERY AND COLLECTION OF LIQUIDATION MONEY AND COMPENSATION FOR DEPRECIATION

- *The liquidation money and the compensation are equalized by cash, if there is an imbalance between each site after evaluation and comparison of the site before and after the readjustment.*
- *The landowner who has gained a relatively good substitute land as a result of the readjustment must pay the liquidation money, while the person who has received a relatively bad substitute land compared to the other can receive the liquidation money.*

STEP 3

REGISTRATION-RELATED WORK

- *Registration of the readjusted land (e.g. the subrogated registration of the land and building) is performed at the end of the project.*
- *The project is terminated by announcing the completion of the registration.*

Source: KRIHS (2014)

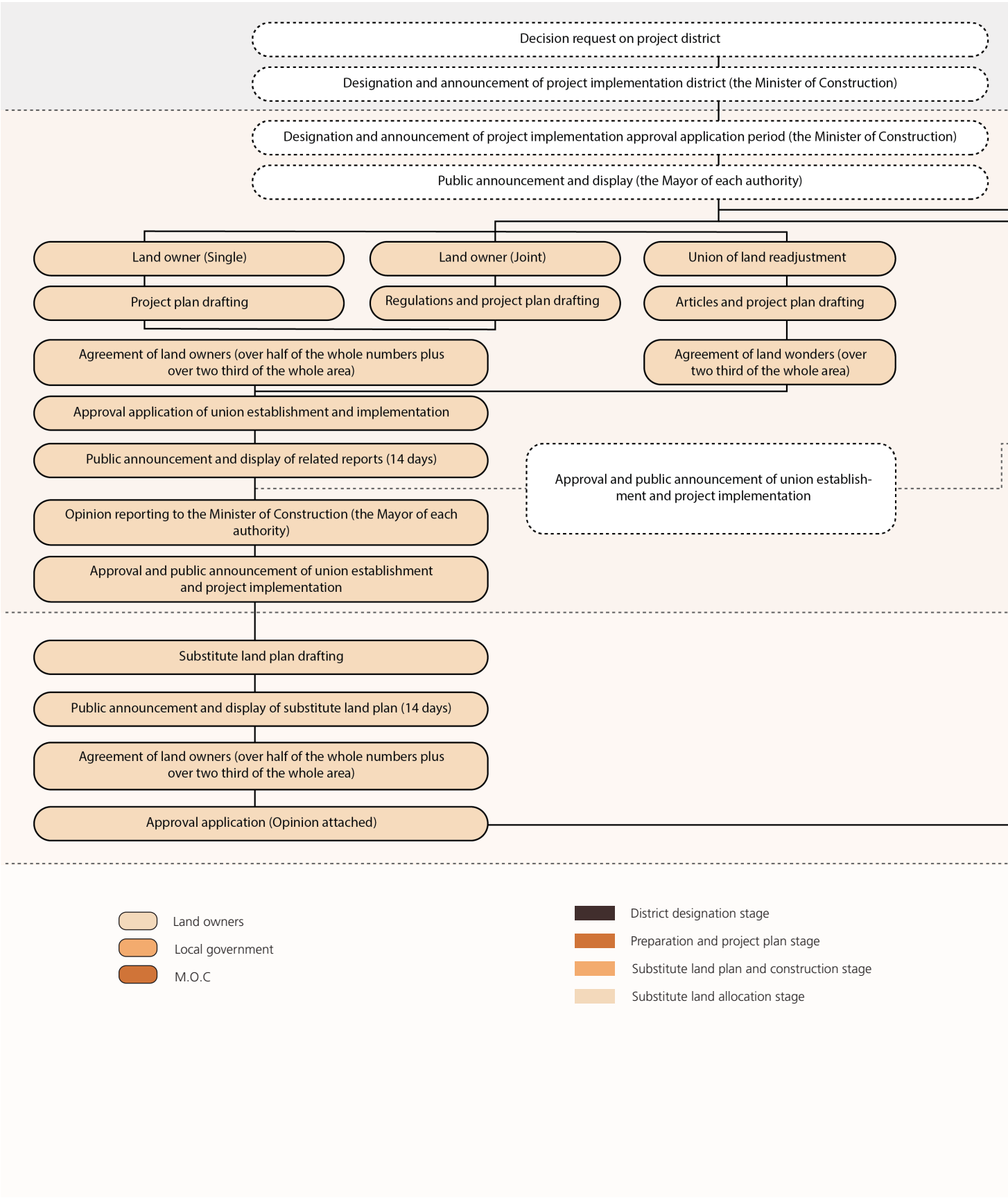
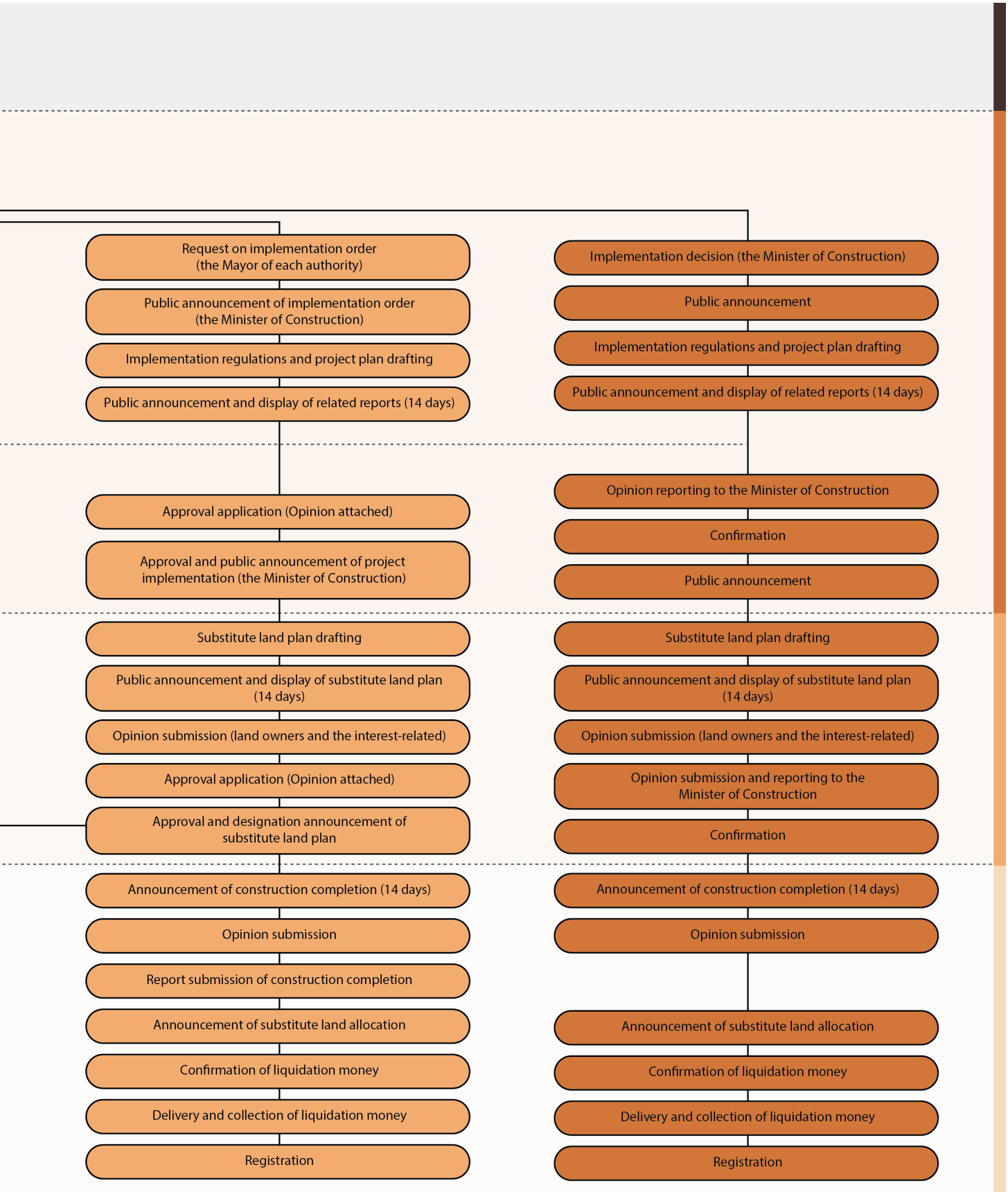


Fig. 13. The flowchart of implementation of land readjustment project



Source: Based on Homepage of Seoul City land readjustment (http://land.seoul.go.kr/)

Legal basis for the Land Readjustment project

The stages, steps and stakeholder roles are obligatory and defined by different articles of the Urban Planning Act of1962 and the Land Readjustment Act of 1966 (see Figure 14).

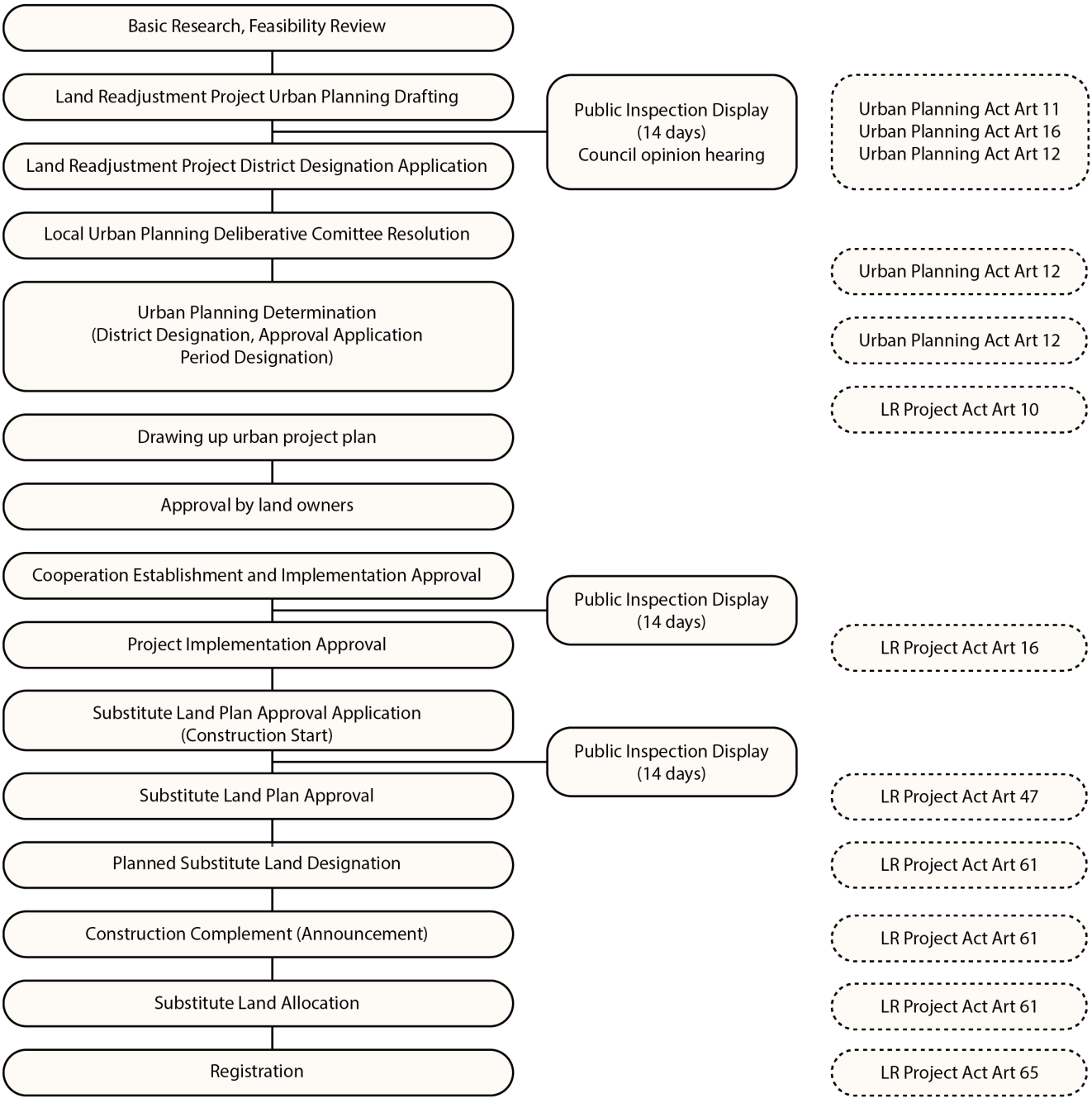


Fig. 14. The procedures of land readjustment project according to the Land Readjustment Act

The specific roles and obligations of actors involved in the different stages of land readjustment planning and implementation process are cleared defined.

Method	Application Basis (Conditions)
Expropriation	In case where creation or supply of the housing sites that are needed to build homes
Replotting/ Land substitute	Can be implemented in cases where it is difficult to expropriate land due to high price, where it is needed to amend or install public infrastructures, changing the characteristics of the land, exchange or divide the land etc. for the realignment of the public infrastructures or bring about efficient use of plots. Can be implemented as undeveloped area project, urban redevelopment project, and disaster area readjustment project. The voluntary substitute land method is implemented by the land owners (either individuals or groups) as the main agent. The compulsory substitute land method is implemented compulsorily by the MOC or the local authorities in case of urgency caused by natural disasters, land owners' plan is found to be inappropriate, there is little possibility of construction, or there is concern about a menace to public welfare.
Eclectic/ Combined	A mix of expropriation and substitute land method in the project district is used if part of the district has very high land prices, where landowners are opposed to expropriation or the area is aLand Readjustmenteady built up.

Source : Based on Urban Development Act, Article 32, Clause 1

Table 4. Urban development project methods

3.4 IMPLEMENTATION PROCESS OF REPLOTTING/ SUBSTITUTE LAND METHOD UNDER THE URBAN DEVELOPMENT ACT OF 2000

The Urban Development Act provides for three methods of land development for project implementation within the wider framework of the Urban Basic Plan. Depending on the characteristics of urban development projects, implementation methods can be: either expropriation method, substitute land method (also known as replotting method) or mixed method. Expropriation method is similar to the housing site development project, started in the 1980's, and substitute land method is similar to the land readjustment project. The substitute land method is used only for specific circumstances to improve the usefulness of sites and maintain public facilities; when exchange of land, a land subdivision or combination of land, alteration to blocks, alteration to land category or its characteristics, or installation and alteration to public facilities is needed; or when it is difficult to implement using the expropriation method, as the land prices in the district reserved for urban development are remarkably high compared to other districts, or when there is objection from land owners.

The Urban Development Act lays down the legal basis for each of the stages and steps involved in land management and project implementation for the two streams (see Figure 15).

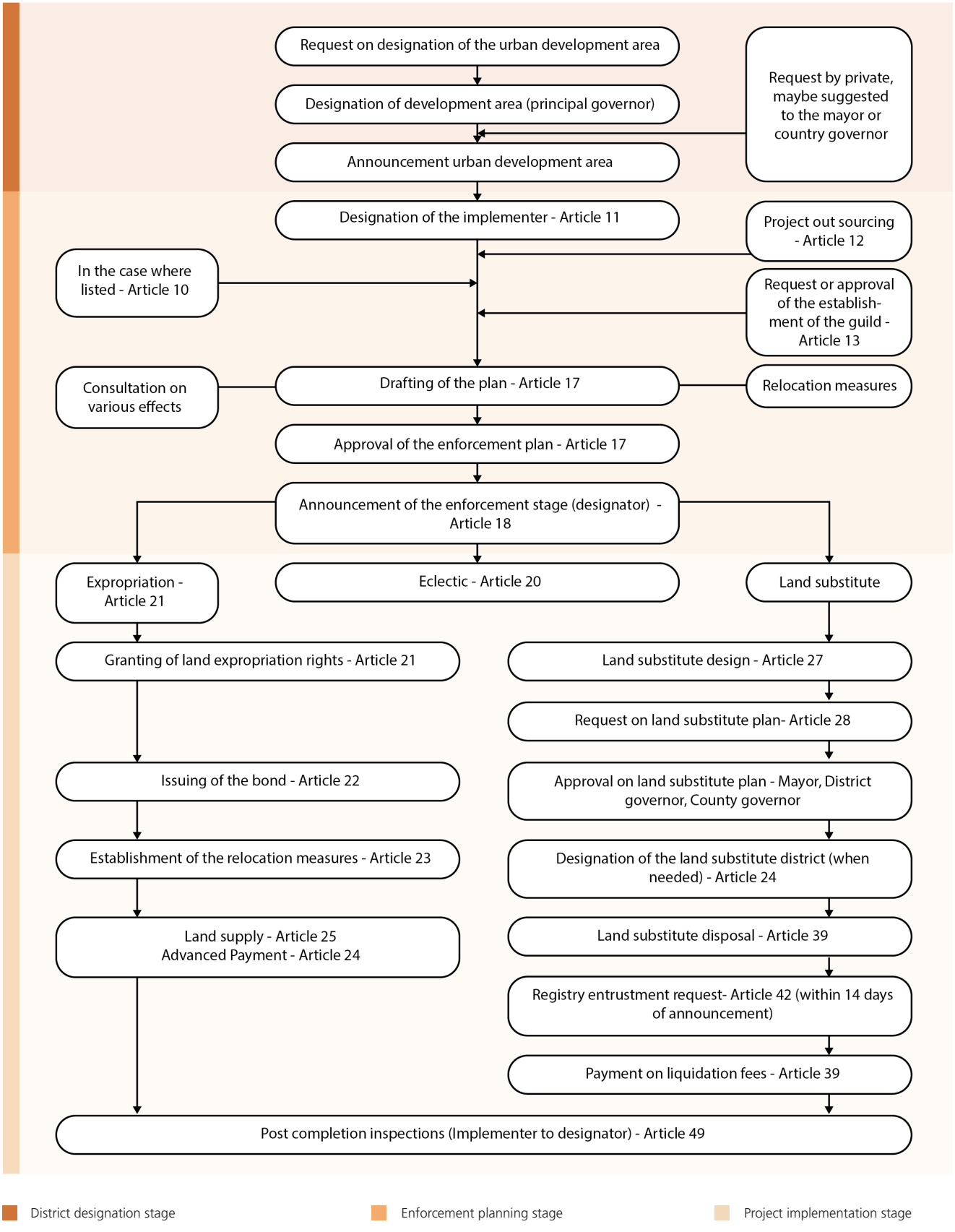


Fig. 15. The obligatory procedures of urban development project

Fig. 16. The steps to be gone through for implementing the replotting method are a requirement of the Urban Development Act.

Urban Development Project Implementers

As in the case of the earlier Land Readjustment projects, the Replotting Method can also be implemented by landowners and their organisations or government and public institutions. The main difference as compared to Land Readjustment projects is that the national government is not involved (see Table 5).

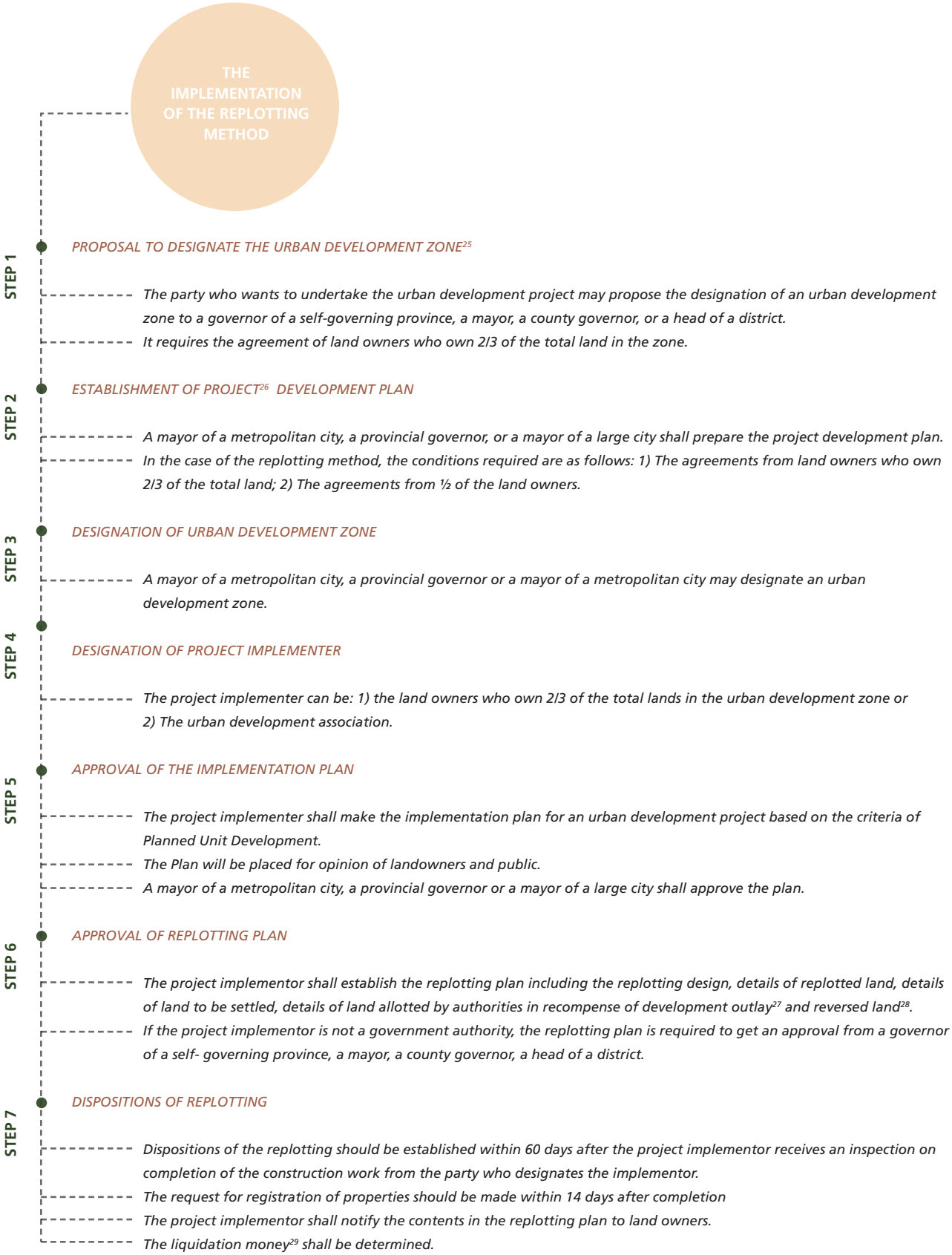
Steps in the implementation of the replotting method

The steps to be gone through for implementing the replotting method are a requirement of the Urban Development Act. The procedure is similar to the earlier land readjustment, except that in most cases landowners lead projects and the consultation process with landowners carries more weight. The number of steps is reduced because approvals are not required from the national government (see Figure 17).

Implementer	Expropriation and Mixed method	Replotting/ Substitute Land Method
Admin body	National or Local Govt. Entity	Local Govt. Entity
Public Sector	Government Investment Agency Local Public Enterprise	Korea Land and Housing Corporation Local Public Enterprise
3rd sector	Public Private Joint Investment Body	Not applicable
Private	Land Owner, Guild/Cooperative Corporations Relocated to Other Areas Other Business Corporations	Land Owner Registered association of landowners

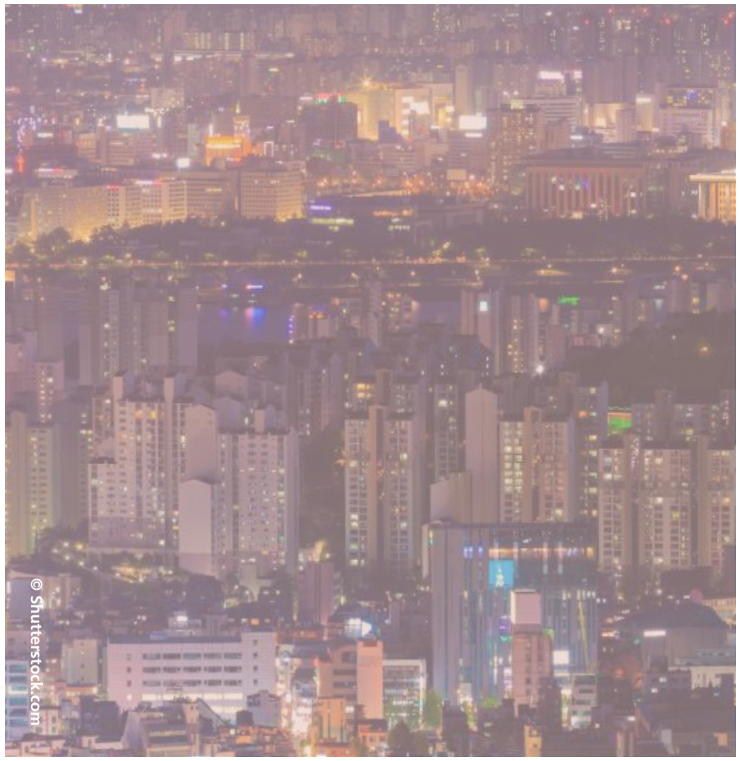
Source: Kim, Haeng-jong (2013) Land Development and Management: A Primer on Korean Planning and Policy, No. PKPP 2013-03, Seoul, KRIHS

Table 5. Project method and implementer



Source: Kim Haeng-jong (2013)

Fig. 17. Steps in the Implementation Procedure of the Replotting Method



LAND READJUSTMENT POLICY AND PRACTICE

4

Land readjustment has created a substantial long-term impact on the spatial order of Korean cities. During its eight decades of application there have not been any changes to the principles for planning and implementation of Land Readjustment projects although there have been shifts in policy focus and legal and institutional mechanisms. These principles have been codified in legislation, which gives detailed guidance on who can implement land readjustment projects and what methodology is to be followed. However, in practice, policy makers have introduced special provisions, regulations and incentives from time to time to fulfill specific objectives, which would otherwise not have been addressed by Land Readjustment projects. For example, the Korean government expanded the horizon of Land Readjustment by using regulations and incentives to accommodate high-density development and housing for low-income families within projects, gain larger proportions of public land and make projects self-financing. The uniqueness of the Korean case can also be attributed to the large scale of application and strategic use of the Land Readjustment technique for diverse and different purposes such as post-war recovery, improving existing city areas, developing new urban areas and constructing regional infrastructure.

This chapter reviews key policies and practices used for executing Land Readjustment in Korean cities with the intent of understanding the opportunities, challenges, results and success factors.

4.1 LARGE SCALE APPLICATION OF LAND READJUSTMENT TECHNIQUE

National level

After the 1960s, the urbanization resulting from the rapid economic growth created a side effect: the shortage of land for urban development (Kim Haeng-jong, 2013), resulting in overcrowding, informal settlements and unplanned urban extensions. As it has been mentioned earlier in the report, extensive use of the land readjustment technique was made across most of Korea's urban centres to increase the supply of planned and serviced urban land. In addition, Land Readjustment had been used to increase productivity of farmlands. Land development based on replotting method started in full scale when the Land Compartmentalization and Rearrangement Projects (Land Readjustment) Act was enacted in 1966.

Up to 1995 the total land developed by land readjustment projects was 496 km^2 in 599 districts (see Tables 6 and 7) or about 40% of the cumulative area under urban use in Korea at that time.

This scaling up could happen because of policy backing and uniform country-wide legislation. However, in spite of its large scale, the Land Readjustment Program could not alleviate the housing shortage caused by rapid urbanization. With its low density detached housing, uncertain construction outcomes dependent on private plot owners and private appropriation of development gains, it was not seen as the appropriate model for effective use of land, fast paced development and provision of low income housing. In response to these needs, the Housing Site Development Promotion Act was passed in 1980, under which the public sector could take a lead role throughout the stages of acquiring, developing, supplying and managing the housing sites. Thereby the government changed its policy towards land readjustment. First Seoul Metropolitan Area and the six largest cities were prohibited from taking up new Land Readjustment projects and the project area was limited to 0.1 million pyeong (0.33 km^2) in the smaller cities. This area was revised downwards twice till 1993, when land readjustment projects were dropped altogether, even though the 1966 Act continued to be in operation.

Period	1950's	1960's	1970's	1980's	1990's	Not yet started	Total
Number of projects	30	121	146	130	118	31	599
Area (Km2)	12.2	169.1	160.0	78.4	38.9	8.8	496.0

Source: Urban Management Department of Ministry of Construction and Transportation (1995)

Table 6. Number and area of Land Readjustment Projects in Korean cities

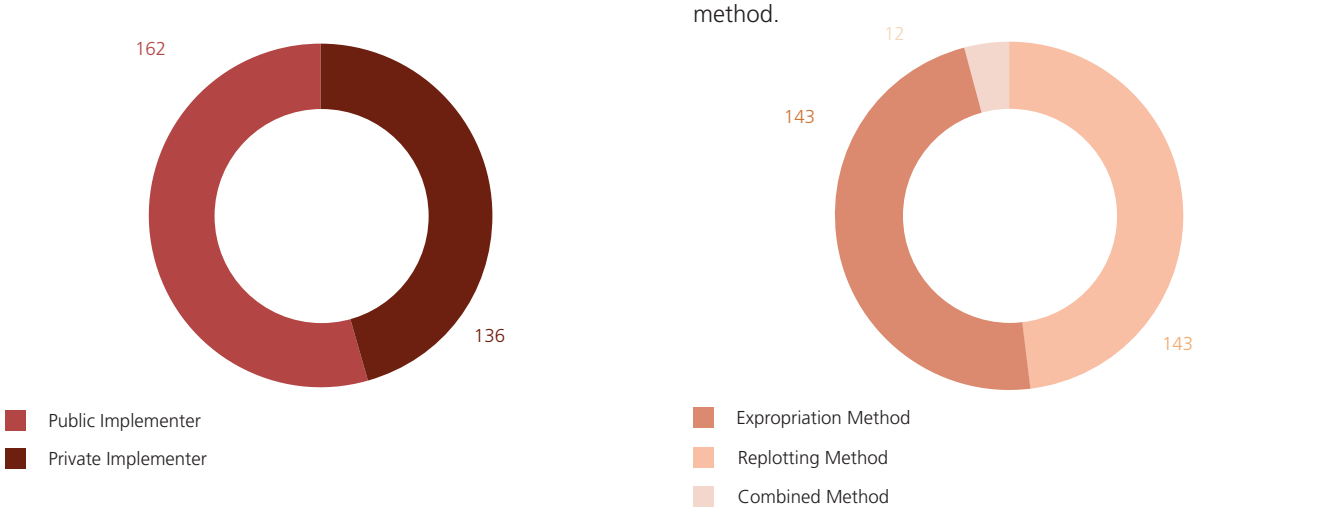
Classification	Total		Completion		Under construction	
	Zones	Area (km2)	Zones	Area (km2)	Zones	Area (km2)
Total	298	117.65	36	5.76	262	111.89

Source : Annual Report on Statistics of National Lands and Marine Areas (2012)

Table 7. Performance of Urban Development Projects (end of 2011)

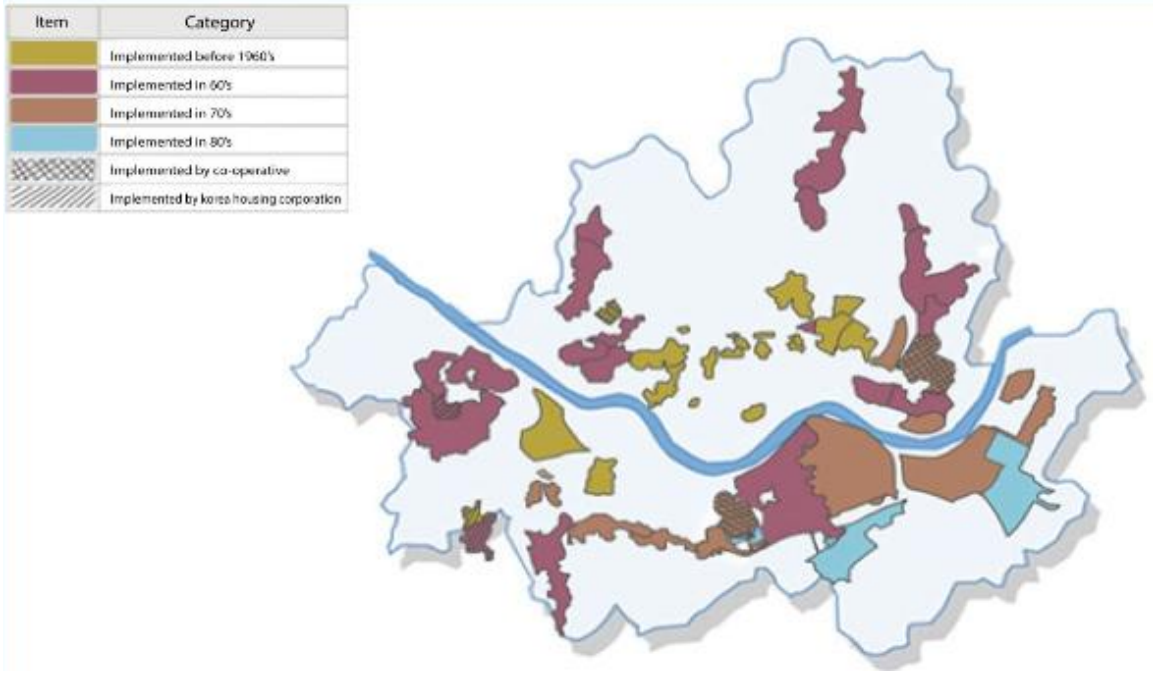
Land readjustment projects were converted to urban development projects when the Urban Development Act was enacted in 2000. By the end of 2011, the areas of 117.7 km^2 (total: 298 zones) were designated as urban development zones but only some development projects among them were completed on 5.8 km^2 (36 zones) (see Table 7). The reasons for the low figures of urban development projects are that there were few projects when the Urban Development Act was initially introduced and that urban development projects require at least five years to be completed due to a series of project procedures (Kim Haeng-jong, 2013).

More urban development projects have been promoted by private implementers (162 zones) than public implementers (136 zones). That stands to reason as only 143 zones were developed with the whole (expropriation or negotiated) purchase method, while another 143 were developed by the replotting method and 12 with the mixed method (see Figure 18) (Kim Haeng-jong, 2013). The unique situation of many development zones[30] did not allow the preferred expropriation method to be implemented. So, even after the Land Readjustment Act ceased to operate, the replotting method did not lose its importance, although replotting projects are smaller in size compared with the whole purchase method.



Source: Kim, Haengjong (2013) Land Development and Management: A Primer on Korean Planning and Policy

Fig. 18. Ratio of Types of Implementers and Project Method in Land Development Project



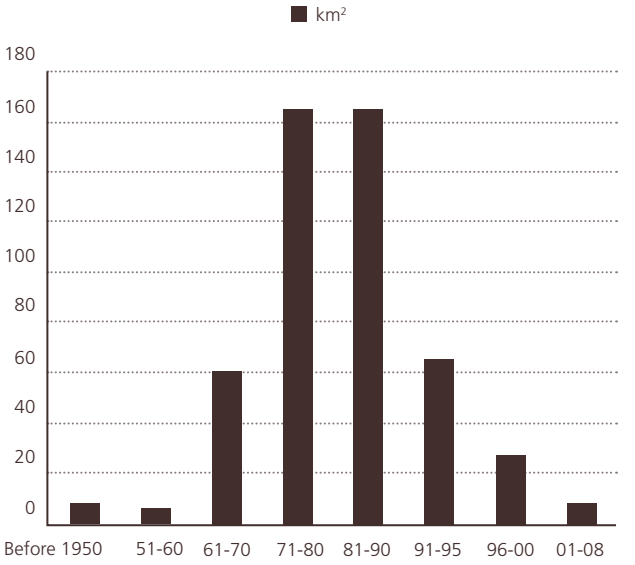
Source: Kim (2017) The land readjustment program

Fig. 19. Land readjustment districts in Seoul designated in different time periods

Capital City Seoul

The capital city of Seoul was by far the fastest growing urban and industrial centre for four decades (1950's to 90's). The share of Seoul's land area under readjustment projects at the end of that period amounted to 146 km^2, or 29.4% of the national figure, spread across 58 districts (Table 2). The developed area under Land Readjustment projects constituted 19.8% of the designated urban area of 708.3 km^2 of Seoul under the Urban Basic Development Plan and 39.9% of 350.5 km^2, the developed area of the city. Thus, LR had a significant contribution in quantitative terms in the development of Seoul. The spread of LR projects can be seen in Figure 19. While projects designated prior to the 1960's were small in size, the maximum number of districts and also districts having the largest areas were designated during the 1960's and 70's, petering off during the 1980's in response to government policy.

The completion results of projects also show a pattern similar to Land Readjustment district designation. However, the maximum land area of completed projects (see Figure 20) was in the two decades 1971 to 1990. This observation shows that even though most of the districts were designated during 1960's and 70's, they became available for construction with infrastructure and registered plots only a decade or two later. This may also have been a reason for their low level of effectiveness in solving the land and housing problem.



Source: Seoul City Hall (2009),
The White Paper of the Land Readjustment in Seoul

Fig. 20. The implementation results (completion) of land readjustment/ urban development projects (1950-2009)

4.2 CONTRIBUTION TO PLANNED URBAN DEVELOPMENT

In the initial stage of urbanization, land readjustment served as the major implementation tool for urban planning and development in Korean cities. It not only provided the physical grid for developing city districts, but also consisted of a sturdy implementation system which included financing of infrastructure and the process of working in partnership with citizens. The government of Korea made strategic use of the tool for realising the objectives of city expansion and redevelopment using several practical tactics and methods. The following sub-sections discuss the use of this tool for opening up new areas for urban population dispersal; restoration of areas damaged during war; creating an urban grid; delivering public services with no or little resources from outside projects; and over the years realising progressively higher quality of urban development.

Creating the urban grid

Land readjustment has been instrumental in creating the urban grid of street networks, public spaces and buildable plots by receiving land contributions from citizens. This action has both circumvented and remedied the problem of haphazard settlement with narrow streets and lack of services and public spaces, which accompanies rapid urban population growth in developing countries (also Korea in the 1950's and 60's). Once urban space boundaries were negotiated and fixed as private and public, they have not changed, providing a spatial framework for future urban development. Box 3 below illustrates this point with the help of the land readjustment project in Cheongnyangni district of Seoul.

The urban grid with all its merits, is now seen as the cause for contemporary urban problems. Since sites were subdivided to accommodate single-family dwelling units, the resulting urban space has proved incompatible with today's market needs and high density development. Moreover, the street systems are inappropriate for large-scale use of automobiles. Parking has remained the most troublesome issue for residents because it was not considered a factor at the design stage. Finally, especially up to the mid 1960's, each district was planned without reference to urban planning guidelines, so the entire urban space lacks consistency (Jung, 2013). The introduction of new types of housing in 1984 and 1990 – multi-household and multi-unit buildings – quickly multiplied the number of households in the land readjustment program areas, making the situation worse. The conversion of residential units to commercial establishments has only added to problems (Kim Eun Mee, 2017).

BOX 3: THE URBAN GRID IN THE CHEONGNYANGNI LAND READJUSTMENT DISTRICT

The whole district of Cheongnyangni was designated in 1940 and implemented as 3 land readjustment project districts. The Cheongnyangni district originally consisted of agricultural land, but because of its proximity to Cheongnyangni railway station it was planned for housing sites, a shopping district and major connecting roads to the city centre. At the time of Korean liberation it had made little progress and it took until 1986 to complete the project. The main reason for the prolonged time period is attributed to the neglect of this project by the Seoul City Authority during the period of liberation and war and the consequent occupation of the site by shanty dwellers, who needed to be relocated before implementation could progress further.

A comparison of the current street pattern (Figure 22) with the Cheongnyangni layout plan of 1939 (Figure 21), it is seen that the project was carried out as it had been planned during the Japanese colonial period without any significant changes. The street network remains intact and land reserved for recompense has been used for high density public housing.

Source: (The Seoul Institute, 2001)

Box 3: Housing projects in land readjustment districts

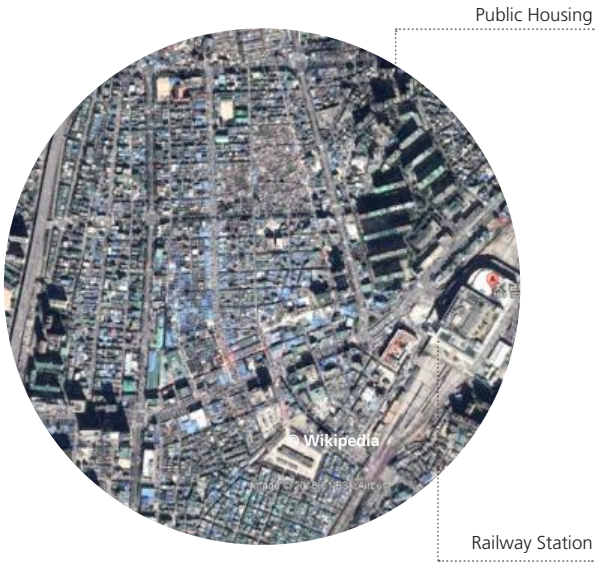


Fig. 21. The blueprint of the land readjustment project for Cheongnyangni district (1939) *Fig. 22. Satellite image of Cheongnyangni district (2017)*

Fig. 23. Land readjustment has been instrumental in creating the urban grid of street networks, public spaces and buildable plots.

Currently, all Land Readjustment Program districts, including the Yangjae district, (the last program, designated in 1983), are more than 20 years old and eligible for redevelopment. The demands for redevelopment and reconstruction are growing. Once the boundaries were fixed, they did not change with changed market situations and zoning. The land remains low-rise and low-density due to the program, and thus demands for reconstruction are steadily rising (Kim Eun Mee, 2017).

Land Readjustment for urban expansion and population dispersal

From 1960s onwards there was a remarkable population increase in large metropolitan areas. By early 1960's the urban plan area of Seoul situated to the north of Han River (Gangbuk) could not accommodate its rapidly growing population. The solution was to double the city's administrative area in 1963 by expanding to the south of Han River (Gangnam). This area had very little habitation and consisted of agriculture lands, part of the area was flood-prone and land prices were a fraction of the high prices in Seoul. The Basic Seoul Urban Plan announced in 1966, included development of Gangnam as part of Seoul's population dispersal policy, with an aim to eventually accommodate 40% of the population north of the Han River and 60% to the south.

The development of Gangnam proposed in the Basic Seoul Urban Plan was carried out as a land readjustment programme. Between 1968 and 1982, ten land readjustment projects with a total area of about 55 km^2 were initiated (see Figure 19). People would not have moved to the remote area had it not been for a number of strategies to quickly open up the new territory and make it attractive for habitation and business. The first step was to establish transport linkages. The next was to construct housing and relocate major city functions from Gangbuk to Gangnam to encourage migration. But Seoul Metropolitan Government lacked the budget to supply all the infrastructure upfront, and took the controversial step of providing new land and new housing which would be sold to raise the revenue to provide the infrastructure. There were initial hurdles as facilities and services were not adequate and many people chose to go back to Gangbuk. There were no funds for infrastructure development as property buyers were hesitant to spend, creating problems for sale of land set out for recompense to finance the development. The government then announced a number of incentives for developers in the form of tax benefits and exemption from regulations and encouraged businesses to move to Gangnam. At the same time it prohibited the construction of facilities, housing estates and commercial establishments in Gangbuk. Such strategies along with lower property rates in the beginning, finally encouraged people to start moving to Gangnam. Land Readjustment projects were accompanied by improvement in major transport linkages proposed in the Seoul Basic Plan[31].

Such strategies fast-tracked development and rapidly changed the urban structure of Seoul. They also led to the overheated land markets of the 1970s and resulted in intensely speculative transactions which prompted the government to and remedial measures in the form of taxation.

High density development became possible with designation of apartment districts to make it compulsory for developers to build apartment complexes in specific Land Readjustment districts. Further, land readjustment projects were designed in detail for compact urban planning with a mix of low, middle and high density developments in the city centre and sub-centres, which significantly contributed to qualitative improvements of the urban area (Seoul Solution, 2017).

Several strategies were used to raise public revenues for infrastructure and other public development. For instance, land reduction rate was higher than earlier Land Readjustment projects and land for recompense was also higher; second, the public lot development near arterial roads and metro stations was postponed until they became prime locations. Then business, cultural and other new functions were assigned to the area, gaining substantial public revenues. The construction of major sports facilities to host international events in the 1980's gave a further boost to development. Thus Gangnam, previously designed for residential purposes to disperse the population of Seoul, encountered a turning point in the late 1980s and gradually became a centre for international business, commerce, recreation, education and culture. A robust base of this development was provided by land readjustment implemented within a city-wide framework of roads and land uses (see Annex 2)

Post-war and post-disaster redevelopment

Land readjustment played a significant role in developing central city areas in Seoul that were completely destroyed during the Korean War. Land Readjustment projects were implemented on priority basis for urgent post-war recovery in two districts before haphazard building could start. These had been organically built area which had narrow streets, poor sanitation and insufficient public space. About 120 hectares of high value central city land could be reconstituted as planned commercial and residential areas with buildable plots street networks, services and public open spaces with the Land Readjustment methodology. The cost of development was met by the government as part of the post-war recovery effort, contrary to the usual practice of cost recovery in Korean Land Readjustment projects by sale of land reserved for recompense (see Annex 1).

The Urban Development Act of 2000 provides for the use of the substitute land method or the replotting method for reconstruction in areas destroyed by natural disasters. Such projects can be implemented compulsorily by MOLIT or local

government depending on urgency.

Constructing regional infrastructure and industrial townships

Urbanization in Korea, or the creation of urban areas, has a large relationship with the industrialization that took place largely between 1960s and 1980s. One of the most important single infrastructure that acted as a catalyst for Korea's economic development was the 416.04km Seoul-Busan (Gyongbu) Expressway, constructed from 1968 to 1970. Several industrial complexes were formed along this axis to exploit the ease of transportation. Land for the expressway was procured through expropriation as well as land readjustment projects. For example, a land readjustment project of 14 km^2 was implemented to secure the land for Gyeongbu Expressway's Seoul segment of 30 km. Several new townships were developed during the 1960's -70's for industrial workers along the expressway as land readjustment projects. The Gyongin (Seoul to Incheon) Expressway completed in 1968 also used the land readjustment method in several segments (Son Jeong Mok, 2003; Lee *et al.*, 2015).

4.3 OPERATIONALIZING LAND READJUSTMENT IN PROJECTS

District designation

Land readjustment project districts were designated on request to the authorities by the implementer. In the initial years, designation of districts could take place on a stand-alone basis, wherever the implementor (usually a public organization) saw the potential for new urban development or need for improvement of aLand Readjustmenteady built areas (see Annex 1). After the preparation of the Urban Basic Development Plans, areas which would support the implementation of plans were designated as project districts in an integrated manner, for example the development of Gangnam was a strategic aim of Seoul's Urban Basic Plan realized through a number of functionally and physically inter-connected Land Readjustment project districts (see Annex 2).

One of the limitations was that districts were delineated based on cadastral boundaries, rather than considering holistic development of the area. This was a limitation particularly in the case of small sized districts.

Using land contribution for for project financing and public infrastructure

The highlight of the Korean model is that it receives little financial support and therefore it had to be mostly in the form of self-financing projects. According to the Land Readjustment Act, 50% of the readjusted land is to be retained after replotting by the original land owners, 30% is for infrastructure

Before the project (m2)		After the project (m2)	
Total Area	1,130,674.1m2	Total Area	1,130.674.1
1. General	1,061,887.3	1. Residential	795,154.1
2. 33 Clause land	68,786.8	2. Public land use	270,345.8
Road	7,290.9	Road	245,876.9
Water way	61,576.9	Creek	5,488.7
		Park	6,273.2
		Public factory	12,707.0
		3. Land for sale	62,974.5
		General	27,767.4
		Market	2,308.4
		School	32,898.7
		Other	2,199.7

Decrease (donation) rate calculation
1.Decrease (donation) rate of public land use = 203,758 / 1,061,887.3 = 0.1918835
2.Decrease (donation) rate of land for sale = 62,974.5 / 1,061,887.3 = 0.0593043
Average decrease (donation) rate = 0.1918835 + 0.0593043 = 0.2511878 = 25.12%
Verification of calculation = 1 – (795,154.1 / 1,061,887.3) = 0.2511878 = 25.12%

Table 8. Contents of substitute land planning and decrease ratio estimation in Myeonmok district

and the remaining 20% for development cost recovery. By this arrangement, land owners are in effect paying for at least a portion of local services. Minor deficits are met from the general municipal budget. Under the Urban Development Act the area allocation in replotting projects is flexible but specifies that standards for infrastructure and facilities must be met and creates greater avenues for negotiation with land owners in both new projects and redevelopment to agree on making projects self-financing, or minimising public costs.

The practical example of Myeonmok district is presented in Table 8 to illustrate how the decrease ratio is estimated and how land is utilized after readjustment. The Land Readjustment

Area	Date approved Date completed	Area hectares	Land use (%)								Programme cost/ area (KRW)	Land reduction rate (%)
			Land set out for Recompens	Housing site	Land for general public facilities					Total Public Land		
					Markets	Schools	Roads	Parks	Others			
Yeongdong 1	1/1968 12 1990	1,273.78	5.5	52.7	0.9	5.5	23.1	1.4	10.5	41.8	371	39.1
Yeongdong 2	8/1971 1991	1,307.19	15.2	57.6	0.2	0.7	23.3	0.9	2.0	27.2	817	36.8
Jamsil	12/1974 12/1986	1,122.32	16.1	42.9	-	3.9	14.8	1.5	20.8	41.0	900	52.9
Yeongdong 1 Additional	12/1971 9/1984	99.17	7.3	60.9	0.3	6.3	22.5	0.6	2.0	31.8	991	39.8
Yeongdong 2 Additional	3/1974 9/1982	8.54	21.1	57.1	-	-	20.7	1.2	-	21.9	1,084	39.5
Gaepo 3	2/1982 12/1988	649.13	9.6	28.3	8.5	6.6	18.3	11.8	16.9	62.1	19754	57.4
Garak	3/1982 12/1988	745.51	21.3	18.0	1.8	5.5	20.7	6.3	26.4	60.7	15157	68.3
Yangjae	11/1983 12/1986	15.47	19.3	49.4	2.1	-	23.1	1.4	10.5	41.8	371	39.1
Isu	2/1972 12/1981	201.83	21.6	55.2	0.7	1.2	19.8	1.1	0.4	23.2	394	39.4
Isu Additional	4/1981 6/1985	7.66	23.8	33.6	-	-	38.2	4.4	-	42.7	23917	53.3
All Gangnam		5,431.59	13.5	44.4	1.5	4.0	20.4	3.3	12.9	42.1	5132	-
National*		1,4001.94	10.4	51.5	0.9	2.4	20.1	1.7	7.6	34.6	2448	-

Source: Urban Planning Bureau, Seoul Metropolitan Government in Lee Ok-hee (2006), Characteristics & Problems of Gangnam Development Process in Seoul, Journal of the Korean Urban Geographical Society.

* The total land readjustment area across the nation since 1960.

Table 9. Summary of the Land Readjustment Program in 10 districts of Gangnam

Land readjustment played a significant role in developing central city areas in Seoul after the war.

project in Myeonmok district in Seoul was implemented between 1962 and 1969 and had an average rate of decrease of 25.12% (see details in Annex 1).

In the immediate post-independence period, land readjustment projects tended to minimize public land to decrease the land contribution rate for fear of civil complaints. Consequently, in some cases public infrastructure such as road widths and areas of parks, schools etc. had to be compromised to the extent that the primary aim of Land Readjustment projects to improve urban environment while significantly reducing its financial burden could hardly be realized. With insufficient land available to cover the costs of public infrastructure, local government subsidies were required to cover costs (see Table 21 in Annex 1). To prevent such problems, the public sector began to take a long-term and aggressive position in its planning and development, especially in the case of Gangnam, where land values increased very rapidly and enabled land owners to make significant gains despite higher levels of decrease (Seoul Solution, 2016) (see Tables 9 and Table 26 in Annex 2).

In land readjustment programmes before the development of Gangnam, assistance from the national coffers and the city accounted for 30 – 50% of the total programme costs. In the case of Gangnam projects revenue from sale of recompense

	Revenue (Unit: KRW 1,000)		Expenses (Unit: KRW 1,000)	
Yeongdong District 1 Land Readjustment	Total	4,725,800	Total	4,725,800
	Municipal Bonds	-	Office Expenses	210,000
	National Assistance	-	Construction Expenses	10,510,000
	Sale of Land Set Out for Recompense	4,274,000	Maintainance	4,000
	Contribution	0.1	Municipal Bond Interest	-
	Liquidation Receivables	5,000	Liquidation Cashout	5,000
	Misc. Income	0.1	Reserve	20,000
Yeongdong District 2 Land Readjustment	Total	10,638,000	Total	10,638,000
	Municipal Bonds	-	Office Expenses	150,000
	National Assistance	-	Construction Expenses	10,510,000
	Sale of Land Set Out for Recompense	10,677,990	Maintainance	4,000
	Contribution	0.1	Municipal Bond Interest	-
	Liquidation Receivables	5,000	Liquidation Cashout	5,000
	Misc. Income	10	Reserve	14,000

Table 10. Yeongdong District 1 & 2 Programme Costs

Period	1960s	1970s	1980s
No. of Program Districts	20	14	5
Total District Area	6367.38 Ha	4965.01 Ha	1454.13
Average District Area	318.37 Ha	254.64 Ha	290.83 Ha
Average Percent of Public Land	28.4%	30.0%	47.5%
Average Reduction of Housing Lot size	31.6%	43.7%	55.0%

Source: Seoul Solution (2017) The Land Readjustment Program

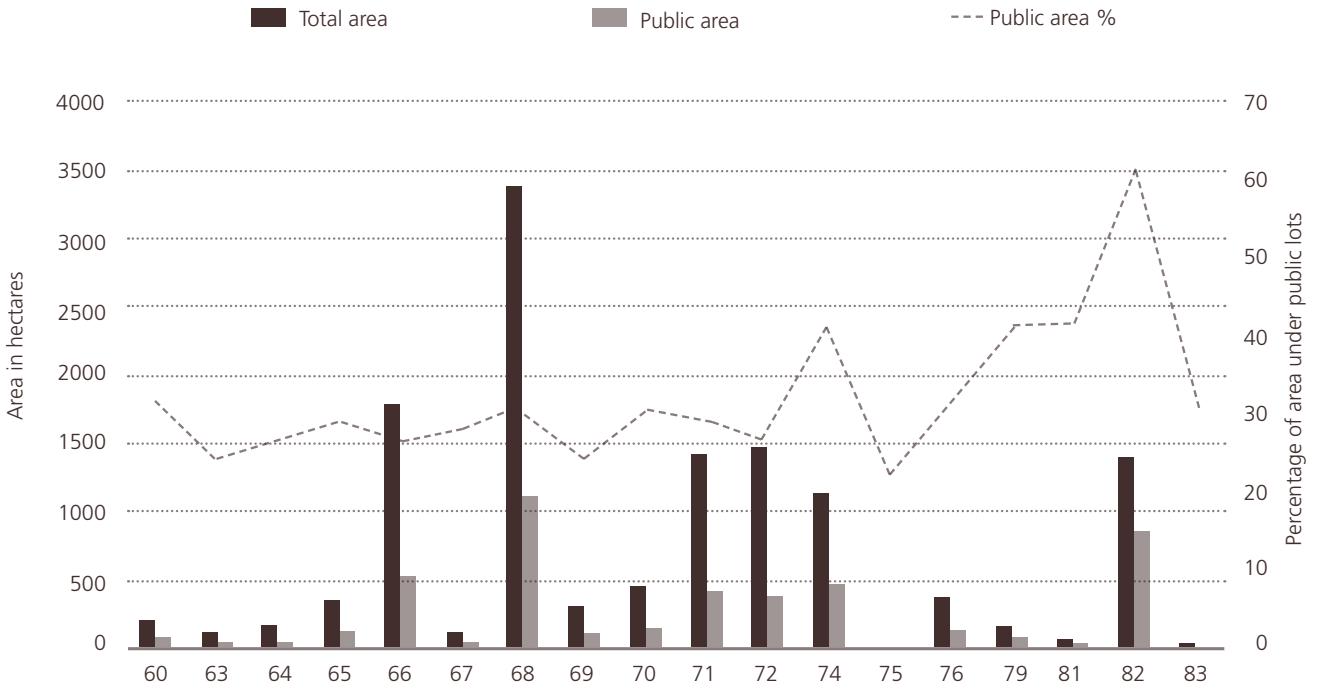
Table 11. Characteristics of Land Readjustment Program in Seoul by period

land accounted for more than 90% of the programme costs. This difference was even more pronounced in Yeongdong District 2, where 99.9% of its programme costs were met with revenue from land sales This established the practice of pursuing land readjustment programmes without public financing (see Table 10).

Overall, there was less resistance to land reduction as public confidence grew with better ways of value assessment and evidence of improved environments in completed projects. However, the buoyant real estate market and the prospect of speculative gains may have contributed significantly to land owners agreeing to higher levels of decrease. A steady increase of lot size reduction has taken place across decades (see Table 11). Evidence shows that the ratio of land decrease is higher when the project is implemented by a cooperative than when implemented by a public institution. This is because Land Readjustment projects have several logistical costs, which are absorbed by public institutions when they implement and not accounted for in the project costs. When cooperatives formed by private citizens are the implementers, their organizational costs are added to the project costs.

The number of districts (and total land area) where the programme was implemented was highest during the 1960s, but average district area was the largest in the 1970s. In the 1980s, the number of programmes was reduced, but the average percentage of public lots and the average land reduction rate were much higher than in previous decades (see Figure 20). Figure 24 shows the details of procurement of public lots in relation to total project area between 1960 and 1983. Among other factors the increasing size of public land over time can be explained by the fact that the programme entities allowed more land for infrastructure, such as roads, parks, waterworks and sewer lines as well as for recompense. This may have been acceptable to land owners partly because of the value increase from rapid infrastructure and urban development on low value land, but also because of the profit-making possibilities of up zoning to apartment districts and commercial use, for example. However, it is worth mentioning that downturns in property markets in the 1970's and again in the 1980's delayed infrastructure construction as investors were reluctant to buy land set out for recompense. Development of private plots was also stalled.

One of the advantages of land readjustment in Korean cities is that planned urban development has taken place, albeit incrementally through projects. Apart from buildable plots and streets, land was set aside for schools, recreation centres, health centres, shopping centres, offices and commercial areas at the required planning standards (see Tables 19 and Table 21 in Annex 1 and Table 26 in Annex 2). This created an urban land use structure and a new spatial order, which benefited local land owners as well as the city.



Source: based on Seoul Solution (2017) The Land Readjustment Program

Fig. 24. Area of public land procured in Land Readjustment projects in Seoul

Time taken for project implementation

Available records show the time taken for implementation Land Readjustment projects from approval of proposal to allocation and registration of reconstituted plots. There is a large variation in project duration across the spectrum of projects. The project duration is specified at the time of approval but most projects exceeded the time frame and resorted to requesting for extension.

From the detailed case studies it is seen that the reasons for delay can be very different. In Central District No.1, with an area of 0.71 km^2, designated for post-war reconstruction, project planning and approval were done in a very short time but it took 12 years to reach the substitute land allocation stage mainly because of insufficient manpower to implement the project (see Table 18 in Annex 1). Myeonmok district with an area of 1.10 km^2 took 14 years. The project was delayed because of the long time taken in carrying out surveys (see Table 20 in Annex 1). But Hwagok district with a similar area and implemented by the Korea Housing Corporation was completed in four years (see Table 22 in Annex 1). In the case of Gangnam, the first two projects of Yeongdong 1 and 2 took 22 and 20 years respectively. They were very large compared with earlier projects: Yeongdong 1 had a designated area of 12.74 km^2 and Yeongdong 2 covered 13.07 km^2. It can be assumed that the large size accommodated many more properties and took much longer to implement. They were green field projects in a completely undeveloped area across the river and initial reluctance of investors to buy property delayed infrastructure development. Subsequently Jamsil, also an equally large district, took only 14 years to complete, later projects such as Garek and Gaepo took only six years and smaller projects took four years (see Table 9). There is a view that Project duration decreased as citizen's preference for Land Readjustment increased with increased knowledge of the benefits and costs of the process. As their understanding grew, they began to agree with this kind of project (Kang Myunggu, 2017).

Even though it is shown that the ten projects initiated during the pre-independence period were completed in three to four years (see Table 1), this duration refers to land subdivision and construction of services and not to plot registration, except for one project in which land registration was also completed. The others were completed after the 1960's. In the case of Cheongnyangni district the project duration extended to 42 years, perhaps the longest, because of the intervening war and settling of refugees on the land.

The most common reasons for prolonged project periods seem to be the time taken for topographical and land ownership surveys and land value assessment. Later projects would have benefited from improvements in cadastres, land information and land valuation mechanisms. Manpower shortage is also indicated as one of the reasons, which is understandable considering the intensive that would have been required for negotiation and planning across the large number of projects.

The point to be noted is that in Korean cases, no record exists of the time taken for the process of social discourse that led to agreements among land owners and implementing institutions to implement projects, except a passing mention acknowledging difficulties in reaching consensus. It is assumed that this would not always have been a simple or easy process and would have needed both time and effort to get people to give up part of their land. If this essential preparatory phase of negotiation and collective decision making is added the time duration of projects would be much longer. Again, at project completion infrastructure is in place and private plots have been registered but it can take several years before plots get built up (Lee Tae-Il, 1998). This is considered as one of the shortcomings of land readjustment.

In the case of the replotting or substitute land method implemented since 2000, the procedures under the law take a long time to implement. Negotiations between individual land owners and project implementers take particularly long because of greater awareness of rights to property. Langer time periods result in cost escalation and added burden on the implementer.

Rationalizing land appraisal and value assessment

One of the critical issues of land readjustment projects is the assessment of land value, based on which reallocation and decrease is estimated. Initially exclusive use was made of the area-based system, in which original plot area was the basis for assessment, irrespective of differences in land value. This was quite unacceptable to land owners and in 1963 a compromise was made to consider land value as well through a negotiated process. This was incorporated into the Land Readjustment Act of 1966, which required that the layout of the area should be accompanied by a value allocation plan. However, the process of valuation was not acceptable to land owners. As civil petitions increasingly demanded to reflect the price difference of the lands in a transparent way, the street value evaluation method was adopted in 1977, in place of the earlier area-based and negotiation-based methods implemented by government institutions. This system considered the variation of land price according to accessibility from the roads and access to other facilities. In this system a land assessor, with a certified professional license, took charge of property valuation. Reallocation is based on value rather than size of land. Such adaptations paved the way for land readjustment to get full acceptance in the Korean local context (Kang, 2014).

BOX 4: WHY APARTMENT DISTRICTS?

" ...Even if Seoul were covered with detached houses, there was not enough land for 10 million people. Apartments were the only solution. With apartments, we'd have high-density housing and still have some land. The urban environment would be improved, and the energy supply would be more efficient. You use less energy because you don't have to move as much. According to plans to utilize national land, we needed apartments to have some land for landscaping. ….so we designated apartment districts. This wasn't in the law yet."

Source: Kim Byeong-lin (2012)

Box 4: Housing projects in land readjustment districts

The Publicly Noticed Value (PNV) of Land system was introduced in the 1970s with the aim of stabilising the over-heated land market through transparency, and enabling land substitution in Land Readjustment projects and land acquisition for large public projects without disputes (Jung Hee-nam et al., 2012). The next initiative was the Public Announcement System of Land Price (PASLP) in 1989, which requires only a small percentage of land (Reference Lots) among the entire land to be appraised by Certified Real Estate Appraisers annually, with the rest (Individual Lots) being subject to mass assessment by local government officials using the Land Price Index Table. Therefore, land price assessment is made less costly than the appraisal of each parcel of land being outsourced to Certified Real Estate Appraisers. The utilization of Information Communication Technology has brought major improvements in land assessment, by reducing subjective judgments of assessors while enhancing the accuracy of site surveys (Chae Mie Oak & Kwon Inhyuk, 2018). Replotting projects under the Urban Development Act benefit from these improvements.

Even so, with the restoration of democratic processes, public institutions faced increasing dissatisfaction and complaints against assessment of compensation. This led to the systematization of procedures and standards for

The utilization of Information Communication Technology has brought major improvements in land assessment.

compensation. In 2002 the divided legal compensation system consisting of three separate acts[32] was unified as the Land Compensation Act. Changes were made to ensure the protection of citizens' property rights and effective promotion of public services. Currently this Act is applied to development projects using both the expropriation method and the land substitute method.

Improving Land Utilization

Although Land Readjustment projects created a base for development, the criticism against them was that they did not promote efficient use of serviced land as they were mostly used for low density detached housing and therefore unable to accommodate increasing urban housing needs. Moreover, the timing of construction on plots was dependent on individual land owners.

To remedy this situation a number of measures were taken by the government. First, incentives were given to developers to accelerate the construction of apartment complexes in and around the new city centre in Gangnam. The Housing Construction Promotion Act and the Act on Temporary Measures for Development Promotion in Specific Areas were passed in 1972 for this purpose. Next, the Land Readjustment Act was modified to allow for development of apartment complexes in detached housing areas. In 1976, the Apartment District System was introduced to make it compulsory for developers to build apartment complexes in designated districts. By 1977, the Housing Construction Promotion Act was completely revised to provide a legal basis for housing site development. In 1979, rules on housing construction were set to regulate installation of facilities within the residential complex. This subordinate law was put in place to control the quality and level of facilities in complexes built by private developers.

With housing stability for the working classes becoming a policy issue in the late 1970s, the government began efforts to acquire residential land in land readjustment projects. But in 1978, the Ministry of Construction ordered local governments to zone all land developed under the Land Readjustment Project as apartment construction zones, with the exception of land intended for public use. With these changes, most residential areas began to see apartments rise (Kim Sun-wung, 2017).

Stakeholder Participation

Up to the 1990's public implementation projects accounted for 374 districts with a total area of about 398 km^2 country-wide, while landowners' cooperatives (or unions) implemented projects in 194 districts with a total area of 89.3 km^2 (see Table 2). According to legal provision, priority to become the program entity (and implement the program) is given to the land owners and the cooperative. If this does not occur, the national government, local governments, the Korea Housing Corporation, or the Korea Land Development Corporation can implement it. In the case of Seoul, only four districts[33] were implemented by the land readjustment union, three districts[34] the Korea National Housing Corporation and the remaining 48 districts by local government directly or under instructions from the national government.

Building cooperation and consensus among property owners is critical for land readjustment projects, irrespective of who implements. The land readjustment programme in Korea was popularized with the slogan *Build Together, Benefit Together* (Kang, 2014) The provisions of the Land Readjustment Projects Act facilitate consensus building between land owners and negotiations between different parties. By requiring a majority vote to approve district designation, the responsible agency is required to organize public meetings in which affected parties hear and discuss the pros and cons of the proposal, gather information and make collective decisions. Public hearings at different stages of the planning process, their meticulous record keeping and use for revision and finalisation of the proposal are all carried out according to the law. Finally, the land owners must agree on the new plan and the actual development before implementation can start.

The due process of participation was followed in all except emergency cases, typically in post war reconstruction projects. The participatory process became more rigorous with the replotting projects from year 2000 onwards with more explicit guidelines in the law and the general thrust on democratisation and people's participation in development.

As mentioned earlier in the report, the preparatory period prior to district declaration would have been extremely important for motivating land owners to join, building consensus among them and developing relationships of trust between stakeholders. It is expected that local government bureaus of planning would have played a major role. However, records on these processes were not available from the original research or from publications. It is also expected that a process in which land owners must give up a portion of their land cannot always be without conflicts. There are passing references to concerns about possible civil disputes if too much land is taken for recompense and landowners wanting to hold on to their land for speculation. Statistics about land readjustment pertain only to successful cases and all research and publications are based those. It is not known how many proposals had to be dropped before district declaration because of dissenting land owners.

In the case of Korea, the legal framework and large number of projects implemented over several decades nurtured and

At the beginning, land readjustment was criticized that it did not promote efficient use of serviced land and unable to accommodate increasing urban housing need.

reinforced a relationship of trust between local government, land owners and developers, improving the chances of cooperation over time (Kang Myunggu, 2017). In discussions, it was mentioned that once people are convinced of benefits to the community, consensus building in not difficult in Korea because cooperation is ingrained in the culture[35]. It is also mentioned in literature that all land owners cooperated for post war reconstruction. However, the well reported case of Guryong village in Gangnam shows that consensus building is not so easy and conflicting views of different levels of government and residents can hold up decision making for many years (see Annex 3).

4.4 INCLUDING LOW INCOME HOUSEHOLDS

Several steps were taken to make land available in readjustment projects for housing the poor. In 1975 Article 54(2) was inserted into the Land Readjustment Project Act of 1966 to allow use of recompense land for building low income housing. It reads as:

"*In a case where the Minister of Construction and Transportation finds it necessary for the promotion of the construction of the national low-class houses as prescribed in the Housing Construction Promotion Act, he may have part of the land secured by authorities in recompense of the development outlay to be collectively determined as the site for the national low-class houses*." (Newly Inserted by Act No. 2848, Dec. 31, 1975; Act No. 5454, Dec. 13, 1997)

This amendment followed after the practice of a fair amount of cross–subsidization was aLand Readjustmenteady in place since the 1960's. Plots or sites designated for local commercial sites and larger residential plots commanded higher values, were sold at market price; at the same time, land for low–income housing construction was provided to local or central housing authorities at subsidized rates. It was then for housing authorities to build multi–family dwelling units for needy households (Lee Tae-Il, 1998). The National Housing Corporation which was listed as a project implementer in the Land Readjustment Project Act of 1966, used this approach in its Land Readjustment projects in different cities. Hwagok was one of the three NHC districts in Seoul, where the area of 117,000 Pyeong reserved for recompense was developed for residential use. NHC built and sold 758 units for low income families, while the rest of the land was sold in parcels to the public at market value (see Annex 1, Hwagok case study). This approach has been only partially successful, as it has met with strong resistance from landowners who would receive a diminished amount of land after readjustment (Lee Tae-Il, 1998) as a larger land area would be required for recompense to make the cross-subsidisation work.

Housing stability for the working classes became a major policy issue in the late 1970s, but with escalating land values land owners preferred to retain their lands for speculation after readjustment and were reluctant to give up more than the minimum required for readjustment. A new approach was developed: the government began to purchase a portion of the land in the project area at an early stage and participate as landowner in the readjustment. This reduced the financial burden on the government while at the same time facilitating the development of public facilities and housing for the poor (Lee Tae-Il, 1998).

In February of 1978, when the Ministry of Construction ordered local governments to zone all land developed under the Land Readjustment Project as apartment construction zones, it also ordered Korea Land Development Corporation[36] to implement land readjustment projects on behalf of local governments, and to maintain 50% of developed land as residential land for low-income households.

The government also provided various incentives to induce large private construction companies to take part in housing construction as part of its economic stimulus programme to counter the slowing of economic growth in the early 1970s. The Special District Development Promotion Act announced in 1973 was an example. Public housing provided under the Housing Construction Promotion Act was categorized into Kookmin housing and Minyoung housing, depending on the source of funding[37]. Areas designated as priority Kookmin Housing Development Promotion Areas under this law were exempt of all taxes related to housing construction and land purchases. The act was intended to attract the active participation of large private construction companies in the newly developing Land Readjustment districts of Seoul. Thus the distribution of housing was controlled by regulation under the law in order to allocate housing to low-income households.

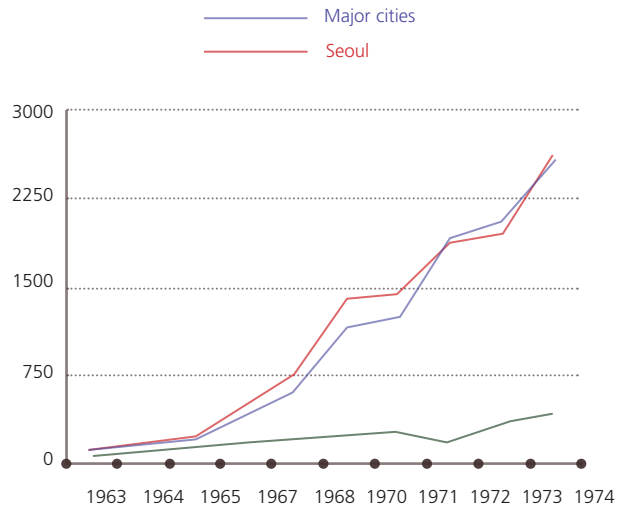
4.5 LAND MARKET IMPACTS OF LAND READJUSTMENT

Land readjustment is a tool that is closely related to the land market. The prospect of gaining from the better environment created in the land readjustment is the driving force for land owners to contribute as much as half of their property. In the case of Korea general price rise in urban areas has added to the advantage of owning serviced land in readjustment projects. Demand for urban land was much higher than its availability. Land prices in most cities rose sharply with the growth of the population and economy. The land price index rose 26 times during the decade 1964-74, while the consumer price index rose only four times (see Table 12 and Figure 25).

Year	Major citites in 1960's	Seoul	The consumer price index
1963	100	100	100
1964	151	168	127.9
1965	208	225	145.3
1967	412	495	179
1968	612	755	198.5
1970	1160	1390	223.3
1971	1233	1445	259.3
1972	1912	1880	194.3
1973	2065	1966	328.7
1974	2582	2610	421.3

Source: Korea Appraisal Board quoted in Kang (2017)

Table 12. Land Price Index 1963-74



Source: quoted in Kang (2017) - 1963-1968 Korea financial syndicate

Fig. 25. Rising prices of available urban land

In such a market situation, being able to hold on to urban land is a big advantage. An average landowner contributing half her land for public facilities got the advantage of a better living environment or benefited from selling the land with more than five times price increase. In case of Seoul, it increased about seven or ten times. However, the economic slump in the 1970's, slowed down real estate transactions, delaying completion of projects (see Annex 2).

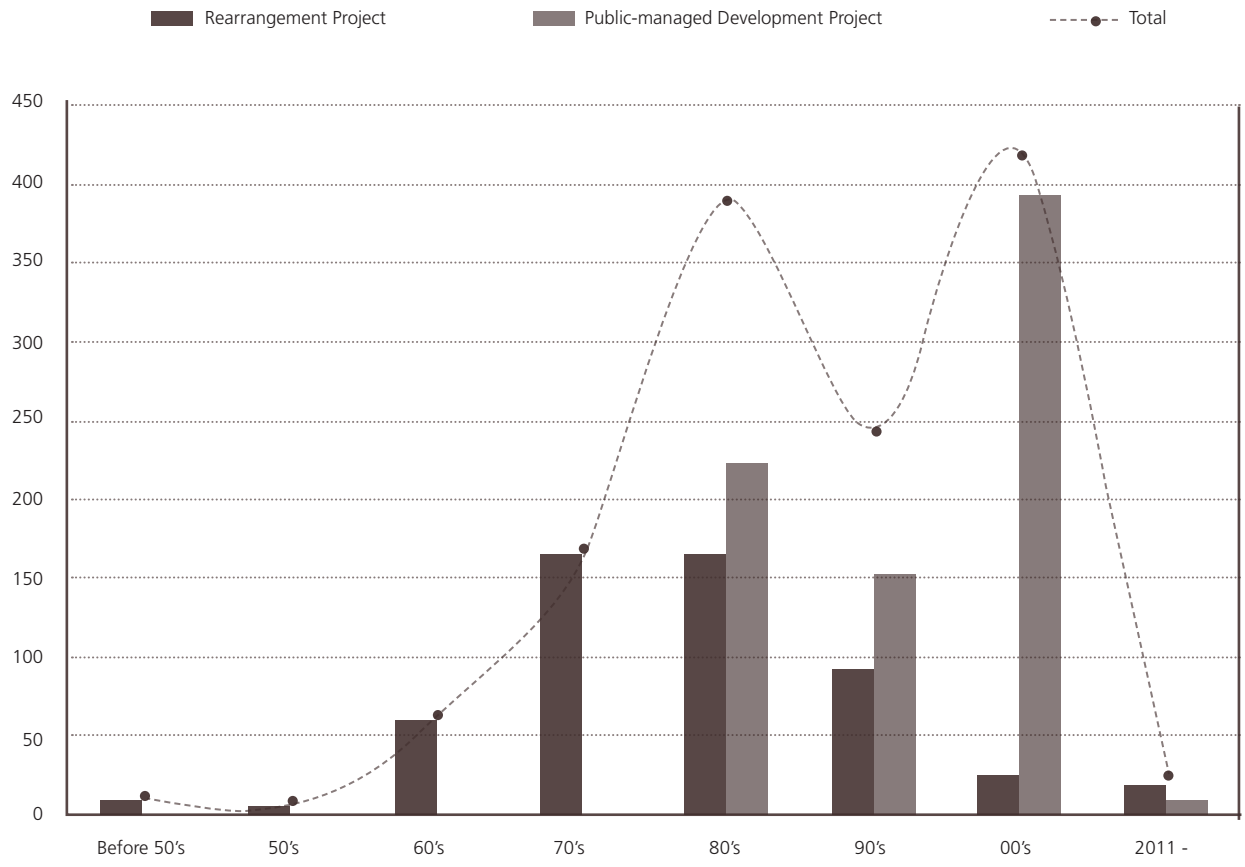
The main point held against land readjustment is the very reason why it has worked at such a large scale in Korea. Property owners enjoy the benefits of public infrastructure and planned development, which lead to increase in value of their property and create the potential for excessive private profits in a speculative land market, further raising land prices. In the initial years development gains were solely returned to private landowners, mostly due to the lack of relevant tools to collect capital gains.

From the 1970's the Korean Government took counter-measures to stabilize the price of real estate. Land transactions in readjustment projects were affected by these as well as the surges and slumps in the land market. When the land market was overheated, various measures in tax, finance, and development profit recovery were carried out, such as the increase of possession tax rate to restrict speculations and restrictions on lending against property. Land policies tried to regulate land possessions and uses and to increase land supply. When the land market was slow due to economic slump, regulations were eased or abolished to activate land transactions and new land finance techniques were introduced (see Annex 2).

As a side effect, land readjustment projects have helped the market to work better, as projects establish clarity in ownership and tenure and develop accurate land registration systems and records, clarifying who owns what and which piece of land is used to finance development (Kang Myunggu, 2017).

4.6 COMPARISON OF LAND READJUSTMENT WITH OTHER PROJECT DEVELOPMENT METHODS

In Korea two methods are used for procuring land for projects: the substitute land method, which consists of land readjustment and replotting; and the whole purchase method or expropriation for housing projects managed by public authorities. Until 1973 the substitute land method was used for all projects. From 1973 both methods were used until 1984, when land readjustment projects were stopped and development was exclusively based on whole purchase. In 2000 the substitute land method was brought back along with the whole purchase method and continues to operate. The whole purchase method was used for housing projects



Source: Jung (2014)

Fig. 26. Share of project types

managed by public institutions. Figure 26 gives the share of these and readjustment projects across time.

The two land procurement approaches have been incorporated into three project methodologies: land readjustment, housing site development and urban development. Table 13 summarizes the main features of the three project methods used for land and housing supply in Korean cities.

Each of these approaches has advantages and limitations, which are well-recognized by the Korean government. As mentioned earlier, the choice of a particular method rested on the ability of the government to respond effectively to the need for planned development and housing.

Pros and Cons of Land Readjustment

The achievements of land readjustment can be broadly summarized as:

- Land readjustment enabled the large-scale supply of housing sites through planned development at a time when the urban population was growing very rapidly. Approximately 40% of the area of 1201.3 km^2 designated as residential area according to urban plans was developed through land readjustment.
- Construction of public facilities needed for large scale urban development was implemented mainly with landowners' investments, with very little financial burden on the government. This approach contributed to improvement in urban living environments by planning, developing, and supplying sites for schools, health centres, parks and other public facilities. This was particularly important because the government did not have the financial means at that time to invest in creating public infrastructure.
- The Korean case stands out for the progressively increasing areas of public land contributed by private land owners. Prior to the Land Readjustment Act of 1966 landowners contributed 25 to 30% of their land. According to the Land Readjustment Act, 50% of the readjusted land is retained after replotting by the original land owners, 30% is for infrastructure and the remaining

Project method	Land Readjustment Projects	Housing Site Development Projects	Urban Development Projects
Purpose	• Improvement of land utility • Development of public infrastructure	Solve urgent housing shortage	Holistic urban development
Applicable legislation	Land Compartmentalization & Rearrangement Projects Act (1966) and earlier Acts	Housing Site Development Promotion Act (1980)	Urban Development Act (2000)
Project site	Land readjustment project district	Housing development site	Urban development district
Project operator	• Land owners' association • Central & local government • Korea National Housing Corporation • Korea Land Corporation	• Government, local government agency • Korea Land Corporation • Korea National Housing • Corporation • Regional corporations • Public-private ventures	• Government, local government agency • Joint-investment corporation • Individual landowners or association
Project method	Replotting	Whole land take over	Options: whole takeover, replotting, or a mix of both
Land supply	Replotting after reduction of lot size	Supply to construction companies at cost of construction or less	Depends on project methods
Funding	Recovered from land for recompense, local government	By project operator	By project operator with government support
Infrastructure	Entity responsible for construction not specified	Entity responsible for construction not specified	Entity responsible for construction specified
Development profits	Private land owners and developers gain	Returned to public	Returned to public
Development pattern	Low density, low rise buildings	High density, high rise buildings	High density, high rise or mixed
Advantages	• No public investment burden • Reduces civil complaints	• Supplied affordable housing sites • Returned development profits to society • Systematic development and efficient use of land	• Urban development of complex functions • Private-sector participation • Clarification of responsibility for infrastructure
Disadvantages	• Delayed project completion due to conflict between owners • Increased real estate prices and speculation	• Civil complaints by existing landowners • Increased financial burden of project operators • Expansion of local money supply due to excessive compensation for land • Increased real estate prices and speculation	• Project sites relatively limited • Private developers find it difficult to secure project sites

Source: Kim (2015)

Table 13. Summary of methods used for land and housing supply

20% for development cost recovery. In practice the rate of decrease of private land went up to 68% in high value districts of Seoul.

- Land Readjustment helped to improve the effectiveness of urban land use and determine the physical shape of the cities through large projects. It provided the means for expansion of cities in a planned way, thus limiting unplanned peripheral growth, haphazard conversion of agriculture land for urban use and land speculation. Land Readjustment projects enabled redevelopment of built-up city districts and war-damaged parts of cities. Land Readjustment was also used extensively for industrial townships and for highways and railways.
- Finally, private capital participated in installation of public facilities. Land readjustment projects implemented by the public sector developed the city on private lands. Therefore, it can be said that private capital participated in provision and maintenance of public facilities through land contributions. In projects implemented by landowners' associations financial investments were also made by private property holders, in addition to land contributions.

The shortcomings of land readjustment can be said to be:

- One of the biggest disadvantages of land readjustment was that it actually did not contribute effectively to supplying land to respond to the housing demand. Projects ended with the reallocation of plots and development of infrastructure. The process of building construction was left to landowners, many of whom waited to gain from land price increase after completion of the project, rather than building on their plots. This phenomenon was especially serious in the Gangnam area of Seoul. The *Act on Temporary Measures for Promotion of Development of Specific District* was enacted[38] as a solution, and until 1978 construction of buildings had to be promoted where land readjustment project had been implemented. But property prices escalated on land readjustment projects and were not affordable to low and middle income citizens.
- Project duration was excessively long for several reasons. Projects made slow progress because land information had to be verified, the layout and land value assessment had to satisfy land owners. Resolution of disputes also held up projects. The starting of a large number of projects simultaneously meant slow progress because of shortage of government staff to facilitate the process. Getting sufficient returns from sale of recompense land was not possible during market downturns and the wait for higher prices contributed to delays in infrastructure construction. The phenomenon was nationwide and locked up large areas of land in Land Readjustment projects, where development could not take place until the project was completed.
- There was an imbalance in lot area. Land was substituted based on the area of the existing lot, regardless of how it could be developed later. Owners of large plots recovered much less salable area than smaller lots because they had to subdivide their lots and provide infrastructure such as roads to make them usable, creating a double burden. This was overcome by the Urban Development Act, which considered future value as a basis for decrease.
- Delineating the project district according to cadastral boundaries regardless of urban networks, resulted in many irregular shaped plots, not ideally suited for building and creating difficulties for laying out infrastructure lines.

Housing site development projects as a remedy

A performance review of land readjustment projects in the 1970's made it clear that that for better utilization of limited land resources Land Readjustment projects, with low densities and uncertain plot level development outcomes were not the answer. High density apartment development and an inclusive approach were needed and could be achieved when the project implementer had access to land resources. Hence the land expropriation method and housing construction driven by public institutions was considered the best way forward for solving housing problems. This was possible because the national economy had improved tremendously as a result of industrialization policies. The Housing Site Development Projects Act of 1980 had the main purpose to accelerate the supply of housing, especially catering to the requirements of the low and middle income population. Public institutions developed comprehensive housing construction plans, chose developers from central/local governments and private enterprises and implemented projects financed by individual developer funds.

In the case of Land Readjustment projects development gains were returned solely to private land owners, primarily due to a lack of relevant tools to collect capital gains. Housing site development projects resold serviced land in the market and used the development gains to lower the sale prices of land for low-income groups (Jung Hee-Nam, 2014). But unlike Land Readjustment projects, original land owners were excluded from sharing the benefits.

After the 1980's most urban land used for housing was procured by the whole purchase method, reestablishing roles and responsibilities in urban development: land development became the responsibility of the public sector, and housing construction became the role of the private sector (Jung Hee-Nam, 2014). This ensured timely delivery of housing and its professional management.

Housing site development projects as a remedy

Based on the Housing Sites Development Projects Act, the government initially designated districts for housing site development in 30 cities nationwide and established a plan for construction of five million houses.

Based on the Housing Sites Development Projects Act, the government initially designated districts for housing site development (approximately ten million pyeong) in 30 cities nationwide and established a plan for construction of five million houses. However, the main hurdle was resistance in the form of civil complains to land acquisition, particularly with regard to assessment of compensation, delayed payments and inadequate resettlement of project affected people. Such problems are non-existent on Land Readjustment projects, where there is no displacement or need for compensation for land given up for public use. The Special Compensation Act of 1975 allowed negotiated purchase to overcome these problems. The situation improved with the Land Acquisition and Compensation Act of 2002, which incorporated features

Category	The whole purchase (expropriation) method	Land readjustment / replotting/ land substitute method
The pros	• Promotion of planned development and efficient land utilization following land purchasing • Housing site supply at a low price • Return of development profits to public	• No need of financial sources for compensation • Less civil complaints and possible public participation • No need of sales measures • Possible planned development in the area with high land price and many buildings
The cons	• Civil complaints regarding compensation and inadequate relocation measures • Need for massive compensation costs • Unfairness of profit distributions by supplying at a lower price than market price	• Inefficient land utilization due to uneven size of substitute land • Development profits go to land owner and unfair distribution between land owners • Civil complaints due to burdens of land owners in increasing decrease ratio • Long time period of project

Source: Ministry of Construction (2003)

Table 14. The pros and cons of the whole purchase and the substitute land methods

to facilitate public land acquisition with proper compensation, providing uniform evaluation criteria, methods, and processes to acquire lands for public works.

The Housing Site Development Projects Act continues to operate even after the coming of the Urban Development Act in 2000.

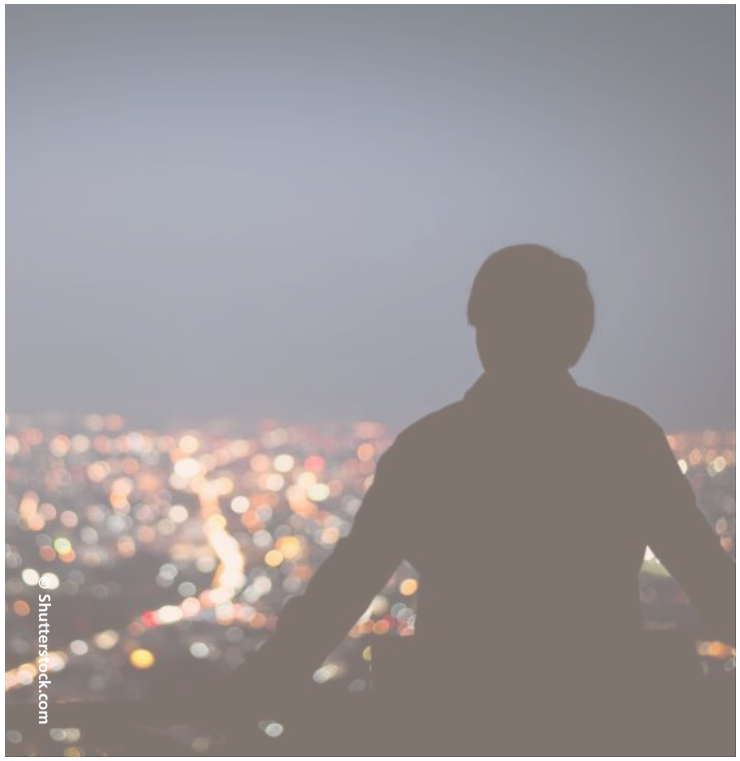
Urban Development Projects: a flexible approach

As compared with housing site development projects, urban development projects under the Urban Development Act are much larger. But in spite of improved and more acceptable systems of land acquisition, the expropriation process is not free from problems. That is where the Act allows for flexibility. There are situations where land prices are too high for public acquisition or land owners are unwilling for expropriation. In such situations, the substitute land method or replotting method can be used independently or in combination with the whole purchase method. The consideration here is not the inability of public institutions to finance infrastructure, as in the earlier Land Readjustment projects, but rather high land cost or unwillingness of land owners for expropriation.

Classification	Expropriation Method	Replotting Method	Combined Method
Concept	• Used in cases where land is required to be developed collectively and quickly	• Used in the case land prices are too high, with huge amounts of compensation required or landowners are unwilling to sell land	• Used in the case that both replotting and expropriation methods need to be used in parallel
Project Implementer	• Land owners, private organizations • Central government, local governments, KLHC, local corporations and other public agencies	• Land owners, land-owners associations • Central government, local governments, KLHC, local corporations and other public agencies	• Land owners, Private organizations • Central government, local governments, KLHC, local corporations and other public agencies
Advantage	• Fast project implementation • Restitution of development gains	• Dispensability of land compensation • Leading role of land owners	• Development considering the different situations of each area • Balanced disposition of development gains
Disadvantage	• Exclusion of land owners • Burden of huge compensation amounts	• Prolonged implementation of project • Privatisation of development gains	• Complicated procedures of the project • Discrimination issue created in project areas

Source: Kim Haeng-jong (2013)

Table 15. Comparison between Urban Development Project Types



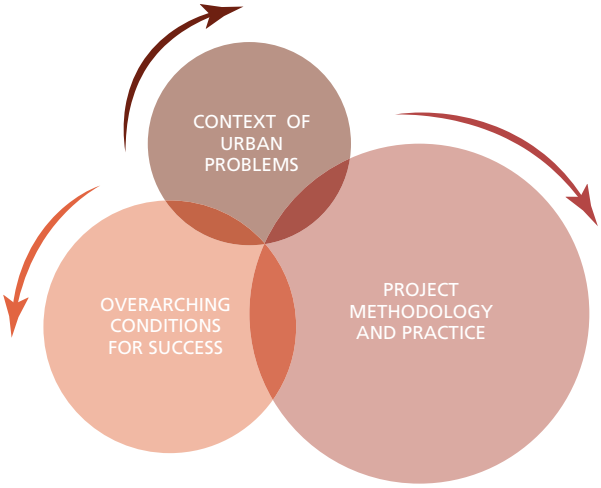
LESSONS FROM LAND READJUSTMENT IN KOREA

5

5.1 INTERLINKED FACTORS FOR SUCCESS

By all standards the Korean experience of land readjustment is impressive and provides several lessons for countries facing challenges of making infrastructure available to rapidly growing urban populations with limited public financial resources. Like all methods related to planning and development of urban land, Land Readjustment cannot be said to be the perfect solution. However, in countries like Germany, Japan and Republic of Korea it has provided a way forward for several decades.

The lessons from the experience of the Republic of Korea in implementing Land Readjustment in its cities can be viewed from three linked and interrelated perspectives: The first, is the context of urban problems to respond to which the practice of land readjustment was adopted and sustained, virtually given up, and again revived as the replotting method. The second consists of overarching conditions that have contributed to the long term application and success of land readjustment. The third relates to the Land Readjustment methodology and its application for urban development.



5.2 THE CONTEXT

Land readjustment has played a prominent part in the development of Korean cities. It was first applied in 1930's and is still in use. It is interesting that it has been found to be relevant across different phases of urbanisation and for different reasons. The very different problems for which the Korean government applied land readjustment as a way ahead are often mirrored in the urban context of rapidly growing cities of Asia and Africa, and even to some extent, cities in OECD countries.

Establishing planned city growth

The Japanese colonial rulers imported the practice from their own country and applied it to Korean cities, particularly Seoul. They also used the technique to establish and expand their military bases in Korea. Land Readjustment allowed them to forgo costly land expropriation processes by persuading local land owners to contribute and reconstitute their lands to bring in orderly development with buildable plots, regular streets, parks and schools according to a predetermined plan. This established the roots of modern city planning in Korea. Such an experience can be relevant for developing small and medium sized cities in Asia and Africa, albeit with consultation with and participation from land owners . Many of these cities have been experiencing rapid growth, infrastructure is deficient and unless planned development is put in place they could become large unplanned agglomerations.

Urban renewal and rebuilding

Rebuilding parts of cities damaged by natural disasters or war is not an uncommon requirement today. Cities also have to deal with emergent requirements of post disaster migration from other areas. The example of Korea has shown that land readjustment can be a useful tool to rebuild cities with the cooperation of land owners, resulting in considerable improvements to the living environment, with minimal public expenditure. The Korean War destroyed much of country's urban infrastructure and industrial facilities. More than half of the urban infrastructure, including roads, railways, bridges and power supply facilities, were damaged. An estimated 20% out of 3.28 million houses were destroyed. Large cities, including Seoul, Incheon and Daejeon, suffered severe damage. It is estimated that the number of those who were displaced came to more than two million. Most of them resettled in the cities (Jung, 1995). Land Readjustment was used as an immediate post-war recovery measure to redevelop city areas by reconstituting private plots to improve their buildability and get land for wider streets and public facilities. Land owners cooperated with these nation-building efforts, especially as they would gain from better infrastructure in down-town areas. The large-scale reconstruction would not have been possible without the co-operation of property owners. A number of new land readjustment districts were also announced to expand the city in a planned manner to accommodate the pressure of the additional population.

Urban expansion

Many cities in the developing world are grappling with the problem of providing land, housing and services to their rapidly growing populations, especially in the context of low financial and institutional capacity of governments. The results in the form of unplanned urban expansion, slums

With the growth of the economy and increase of governmental financial capacity after the 1980's, Korea has preferred the path of high-density housing and new town development

and poor infrastructure are all too visible. Land readjustment played a significant and very successful role in coping with the problems created by rapid urbanisation in Korea, and particularly in Seoul. It is recognized that Seoul's attempts to accommodate the increase in population, which used to exceed half a million per annum, and to deliver basic urban services for them would have been impossible without the help of the land readjustment programmes (Lee Tae-Il, 1998). Land readjustment was found to be most effective during the 1960's and 70's, when Korea was a developing country, the government had little financial resources for its ambitious economic development programme, and had to rely on land owners to give up part of their land for implementing planned urban development and infrastructure provision. The most spectacular example of land readjustment is the development of Gangnam, where the technique was accompanied by several development initiatives, not only to serve that basic purpose of land readjustment but also to effectively disperse population from the old city and create a high-quality global city.

Building large infrastructure
Acquiring land for large infrastructure such as highways often proves to be a hurdle. Here too the successful application of land readjustment in constructing expressways in Korea for example from Seoul to Incheon and Seoul to Busan, can provide a way forward for other countries.

Facilitating social inclusion
In contexts where land is taken over from land owners for developing cities, the original land owners have no stake in the development. By making land owners active partners in projects, land readjustment gives due consideration to distribution of development benefits to them. In the case of Korea, the social inclusion aspect has been taken further by making legal and institutional provisions in land readjustment for building housing for low income families through a system of intra-project cross subsidy, made possible by selling some of the recompense land for profit. This was a step taken to respond to part of the massive demand for affordable housing by low income migrants.

New relevance of Land Readjustment
With the growth of the economy and increase of governmental financial capacity after the 1980's, Korea has preferred the path of high-density housing and new town development, for which land is expropriated or purchased from private land owners. The main reasons for the switch were that land readjustment projects had not delivered land in the market fast enough and at prices low enough to accommodate the huge housing demand, and that development gains had been captured by the private sector. After giving up the practice of Land Readjustment for two decades, land readjustment in the form of the replotting or land substitute method was brought back. However, the context of low public financial capability for planned development and infrastructure provision is no longer the reason, but rather the inability of public institutions to acquire land. Reasons could be resistance from owners, unsuitability of land for high density development or prohibitively high property values.

Wide applicability
The Koean example shows that there can be a variety of situations where land readjustment can be a relevant tool to implement planned development and provide infrastructure in partnership with private land owners, thereby reducing resistance from property owners and reducing public costs. However, it cannot become a sustainable practice of choice unless policy, legal systems and market conditions exist or are created for its successful implementation.

5.3 OVERARCHING CONDITIONS FOR SUCCESS

It is important to look into the overarching conditions that existed for the introduction and continuance of the land readjustment technique in Korea because they provide the pointers to what actions and conditions might be needed when the technique is applied elsewhere.

Policy and political support
First, support at the highest level of government is required for Land Readjustment, a method which seeks to take private land as contribution for public development. When Korea became an independent nation, there was unequivocal support at the highest level of government for land readjustment as an implementation tool for urban development. Some sources mention that the Korean government chose to adopt Land Readjustment because of lack of other options to implement its ambitious economic development policy, and the fact that it was aLand Readjustmenteady tried and tested during Japanese colonial rule. The method was promoted by the national Ministry of Construction, now MOLIT, which not only formulated the policy, but acted as the approving authority at key stages of the implementation process. It also implemented important Land Readjustment projects directly. These actions gave Land Readjustment a high profile for three decades leading up to the 1980's, the main period of application of Land Readjustment.

Second, governments need to create commitment at all levels for policies to succeed and evidence- based learning mechanisms to improve policies and practice. This is particularly true about urban land, which has conflicting and complementary roles in social, economic and environmental development of

cities. The Korean government has evolved and applied its own policies and development methods, especially during its rapid economic development period. Institutions established in government ministries have aggressively participated in the process as important players. Experts have contributed a lot to reducing the negative side effects and developing and adopting new policies through field study, data analysis, and simulation. This goes for urban planning and development as well, where KRIHS provides expert development support to MOLIT as well as local and regional governments and Korea Land Development Corporation and Housing Development Corporation (later merged) carry out development along with local government.

Countries can learn from such governance processes to come up with the measures suitable for their own societies as economic, social and cultural backgrounds differ widely.

Third, land owners need to be sure that their property rights will not be compromised as a result of land readjustment. Ideological and legal protection of private property rights then becomes a critical condition for successful implementation of projects. In the case of Korea private land ownership is guaranteed by the national Constitution adopted in 1948. The constitution sows the seeds for a market driven economy. Radical agrarian reforms in the Republic of Korea were carried out through land redistribution with compensation paid to landowners. The guarantee of private farmland ownership created the conditions for the guarantee of private property rights in other forms of economic activities as well (Hee-nam Jung, 1995). This may be one of the factors that has given land owners confidence to participate in Land Readjustment projects.

Having a robust legal framework

The need for a legal framework is extremely important for land readjustment to succeed. In the absence of a legal framework it would be very difficult for the implementing organization to reconstitute private properties in projects. The case of Korea gives ample evidence that it has been possible to undertake land readjustment at a large scale because projects always had a legal basis. Even though Land Readjustment could be carried out within the framework of the Japanese era Joeson Urban Planning Ordinance of 1934 as well as the Urban Planning Act of 1962, the Land Readjustment Act of 1966 was specifically tailored to land readjustment projects in Korean cities. It laid down the step-by-step legal procedures for planning, property value assessment, implementation, financing, roles of landowners and government, participation of landowners and resolution of disputes. This Act helped to put in place a set of legally valid procedures and standards, which were uniformly applied. In that sense the Act contained

The largescale reconstruction would not have been possible without the co-operation of property owners.

the mandatory guidelines for projects, leaving very little to the discretion of implementers. This may be one of the reasons for making it possible to implement Land Readjustment throughout the country over the years. It is also important to note that in Korea the Land Readjustment Act was amended from time to time to improve practice and to bring in clauses to fulfil social objectives, for instance the inclusion of low income housing in projects. The Urban Development Act of 2000 strengthened the methodology by bringing in greater clarity regarding stakeholder roles and value assessment for the replotting method.

Improving land management and valuation

Robust systems of land management, particularly up to date and accurate land information such as cadastre maps and property registration can reduce project time and avoid disputes regarding property boundaries and property rights. In the Korean case, the earlier projects were at times prolonged because of delays in land surveying and reaching an agreement with land owners. However, later projects benefited from the government's thrust on improving land information systems as a way of improving land market operations. Specialized institutions have been set up, nation-wide verification and digitization of records has been carried out. Decentralization of property registration and its simplification and cost reduction has encouraged land owners to register land transactions. Land readjustment has both benefited from these initiatives and contributed to them by helping to establish land ownership and tenure records. By clarifying who owns which piece of land it provides a good base for land market to function well.

One of the critical issues of land readjustment projects is the assessment of land value, based on which reallocation and decrease is estimated. The Korean case shows that the land value-based system for calculating decrease is much more realistic and acceptable as compared with the area- based system used in earlier projects. The Korean initiative of entrusting land value assessment to professional valuators and putting in place a system of annual public announcement of land values based on reference lots, and other improvements, has made land valuation more objective and transparent. This has helped to reduce disputes in Land Readjustment projects.

Creating favourable land market conditions

Land readjustment works well when readjustment sites are marketable. The Korean case shows that improved public infrastructure and buildable plots are an inevitable output of land readjustment projects. So is clarity in land information and tenure. This contributes to marketability of readjusted plots and results in considerable private gain. But these gains and prospect of gains are very much related to the overall

Land readjustment works well when readjustment sites are marketable.

functioning of the land market. In Korean cities, the persistently high demand for land and housing has kept land prices high, contributing to the popularity of land readjustment projects. But this has also had the negative impact of encouraging speculation and withholding land from the market. On the other hand, during market down-turns projects have languished because recompense land could not be sold at high enough prices to finance infrastructure. The Korean government has used several incentives and regulatory and punitive measures to overcome the negative effects, but with limited success. What has worked are measures such as selecting districts that are well located aLand Readjustmenteady or improving overall marketability by measures such as improving connectivity and creating public facilities and job opportunities. It must be borne in mind that land readjustment is a method which is based on the prospects of gains from property, not only for private plot holders but also for project implementers, who seek sufficiently high returns in order to finance infrastructure or undertake low-income housing.

Giving importance to Implementing city plans

City plans in developing countries are seldom accompanied by sturdy implementation systems including financial considerations, and processes of working with citizens and relevant stakeholders. This makes Korea different from other developing countries. It was realized by the Korean government in the 1960's that planning itself is important, but what makes it substantive is the very act of realizing the plan: implementation is more crucial than a good plan. In the initial stage of urbanization, land readjustment served as the major implementation tool, which laid the foundation for the city's forthcoming smart and sustainable development. The purpose of land readjustment was 1) to set a spatial framework for sustainable development, 2) to secure urban land with public space including roads, school sites, parks etc., and 3) provide public services including water, sewage, energy. Land readjustment enabled Korean cities to develop an urban grid and secure much needed public space by receiving land contributions from citizens.

5.4 PROJECT METHODOLOGY AND PRACTICE

The case of Korea has shown that each land readjustment project is different because the characteristics and concerns of each district and its stakeholders are different. However, certain patterns can be observed and provide valuable lessons.

Participation of stakeholders

Korea's Land Readjustment Act provides for multiple forms of project implementation, making the process flexible. Building cooperation and consensus among property owners is critical for land readjustment projects, irrespective of who implements. The land readjustment programme in post-independence Korea was popularized with the slogan "Build Together, Benefit Together" and codified in the Act. The provisions of the Land Readjustment Projects Act facilitate consensus building between land owners and negotiations between different parties. By requiring a majority vote to approve district designation, the responsible agency is required to organize public meetings in which affected parties hear and discuss the pros and cons of the proposal, gather information and make collective decisions. Public hearings at different stages of the planning process, their meticulous record keeping and use for revision and finalization of the proposal are all carried out according to the law. Finally, the land owners have to agree on the new plan and the actual development before implementation can start. The strength of the participatory process in Korea has been that it strictly adhered to legal requirements, except for a few emergency cases of post-war reconstruction. This is perhaps one of the reasons for its long period of operation.

Time taken for implementation

One of the lessons from Korea is that land readjustment projects take longer to implement than projects using the whole land purchase method. Getting agreements from land owners at different stages of the project process, verifying land rights and boundaries, planning and calculating decrease are time-consuming processes. In addition, sale of recompense land can also cause delays. At the end of the project the result is reconstituted plots and services. Construction of buildings can take much longer. Even though land development could be realized without spending from the public exchequer, land was not available for use for several years while projects were being implemented. But it must be mentioned that with experience and public confidence in land readjustment, project period could actually be reduced to some extent later projects.

Project size

It can be assumed that smaller projects will work better but this is not supported by evidence from Korea. There does not seem any relationship between project size and ease of implementation, but rather, in the number of properties and the nature of properties. Projects in undeveloped areas are easier to implement as compared with those situated in built up areas inside cities.

Role of land contribution over time.

The self-financing principle of land readjustment works best when prospects of gain from development of public infrastructure are high for land owners. In Korea in projects up to the mid-60's, the standards of development of public

infrastructure were kept rather modest to reduce the burden of land reduction on landowners. This strategy later proved to be a problem as over time areas densified with the government allowing high density development on plots and roads and open spaces became insufficient. On the other hand, in later projects, especially in the Gangnam area land owners agreed to large proportions of decrease, to the extent that in 1982 60% of project land became available for public use and for sale to recover infrastructure costs. This enabled the creation of high quality infrastructure making the readjusted plots more marketable particularly in locations where land prices were initially low but were rising rapidly. High prices are also beneficial for implementing organisations to enable them to procure enough finance for infrastructure development through sale of recompense land. Thus, the Korean government, with its strong macro-control over land and resilient practices, could manage to make speculative land markets play a positive role in high quality infrastructure development. But dependence on market prices meant that down turns in property markets made it difficult to raise funds for ambitious infrastructure construction through sale of recompense lands, delaying projects. It may be relevant to consider some form of short term funding to tide over such problems.

So, the Korean case has shown that the self-financing principle can constrain the quality of development, but can also enable good quality public infrastructure. There is also an indication that it is easier to make projects to pay for themselves if they are in areas with rapidly rising land prices, but that should not be the only consideration for designating project districts.

Capturing gains of public infrastructure

Land owners contribute part of their land for construction of public infrastructure, which results in improved quality of life for them. They also benefit from land value increments, caused by the infrastructure. Substantial gains can occur from this in a buoyant property market. There is a strong case for capturing some of this gain for the public. However, in the case of Korea, no instruments were put in place for this purpose. Land owners and private developers benefited substantially and speculation in land became rampant. This was one of the shortcomings, which led to the discredit of land readjustment and its discontinuation in the 1980's.

Low density development

One of the criticisms against land readjustment is that it results in low density plot by plot development leading to inefficient land use. Also, that once the project is completed, the pace of on-plot development is up to individual land owners. These was also cited as reasons for the Korean government to discontinue land readjustment. At the same time, the Korean government took steps such as designating apartment districts and encouraging higher floor area ratio in projects to overcome the shortcoming of low density.

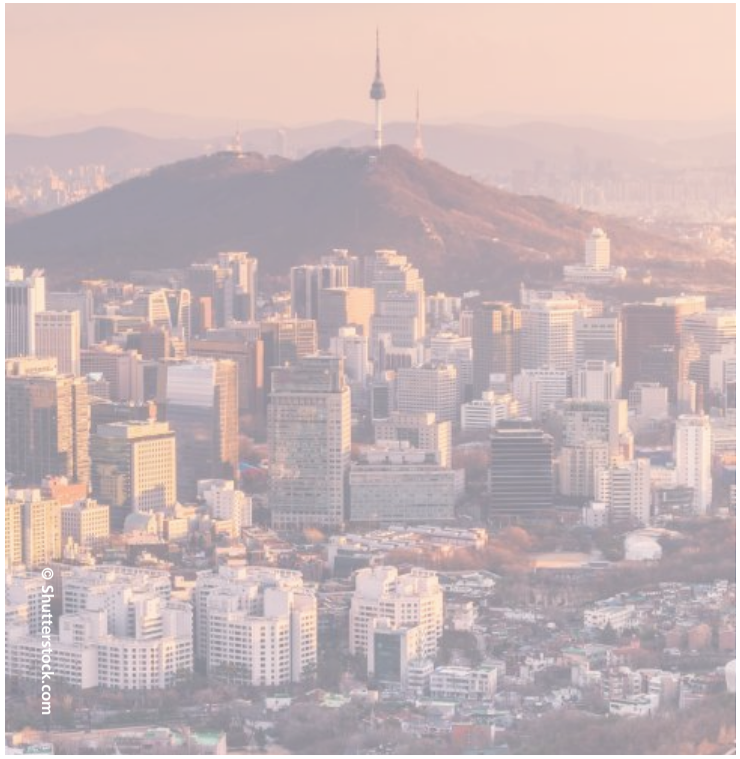
Existence of a planning and integration framework

When Land Readjustment projects are being implemented on a large-scale uniform standards of development and methods to integrate projects with surrounding areas and city development are important. Korea developed standards for infrastructure within projects but except for the case of Gangnam, not much attempt was made to assess the impact on surrounding areas or their need for development. These often enjoyed the benefits and gains from projects without contributing anything for public infrastructure.

Project management

While the Korean example validates the usefulness of Land Readjustment for developing countries, experience shows that the urban land readjustment procedure is not a simple instrument to implement. The processes needed are demanding and complicated and require significant expertise within implementing institutions. Given the large scale of operations in Korea, both the number and the quality of project management and technical personnel would be important for the success of Land Readjustment projects. Project management personnel need to be skilled in public relations, planning, land valuation, infrastructure financing, negotiation and conflict resolution, and working with land owners to arrive at a consensus. The Korean government created and built up government institutions at national and local levels, empowered independent committees and accredited private property valuators and others to engage in the process. Their expected roles are codified in legislation, but details of institutional structures and skills available need to be ascertained for greater analysis. Also, literature is silent on how tasks have been carried out in practice in projects and by whom, except for a passing reference to project delays caused by shortage of implementing staff. These issues can form a relevant area of research particularly to inform countries and cities aLand Readjustmenteady implementing land readjustment or considering it as an option.

The dependence on market prices meant that down turns in property markets made it difficult to raise funds for ambitious infrastructure construction.



ANNEX 1: EXAMPLES OF LAND READJUSTMENT PROJECTS IN SEOUL IN THE 1950'S AND 60'S

EXAMPLES OF LAND READJUSTMENT PROJECTS IN SEOUL IN THE 1950'S AND 60'S

Period and purpose	Examples
1950's Post War Recovery in Seoul	The land readjustment project of Central District No. 1 (1952-64)
1960's Expansion of Residential Districts of Seoul	The land readjustment project of Myeonmok district (1963-68)
	Land readjustment project of Hwagok District (1967-70)

Table 16. Examples of Land Readjustment Projects in Seoul in the 1950's and 60's

1950'S POST WAR RECOVERY

The land readjustment project of Central District No. 1

Locations	Jongro-gu, Eulsam-gu, Chungmuro-gu, and Mukjeong-gu
Implementation area	71.2898 Hectares
Implementer	The Mayor of Seoul Special City
Implementation period	October 27, 1952 –June 11, 1964

Table 17. Outline of the project

The project district

This was a flourishing central commercial area of Seoul. It also had residential areas with poor conditions of health and sanitation caused by poor urban infrastructure and narrow winding streets. The area was completely burnt down in 1950 during the Korean War.

Activity	Date	Time taken
Outline of approval application period designation	May 17, 1952	5 months 10 days from application to approval
Implementation announcement, Public announcement No. 8 of Seoul special city	June 13, 1952	
Approval application period designation, Announcement No. 38 of the Ministry of Home Affairs	June 14, 1952	
Request on implementation order	July 9, 1952	
Implementation order; Area: 720,320.60m2	August 5, 1952	
Public announcement of project plan, Announcement No. 15 of Seoul special city	August 6, 1952	
Approval application of implementation plan	August 18, 1952	
Implementation plan approval	October 27, 1952	
Substitute land allocation (Eulsam district), Announcement No. 728 of Seoul special city	December 14, 1962	10 years after approval
Substitute land allocation (Mukjeong district), Announcement No. 354 of Seoul special city	June 11, 1964	12 years after approval

Table 18. The details of project promotion

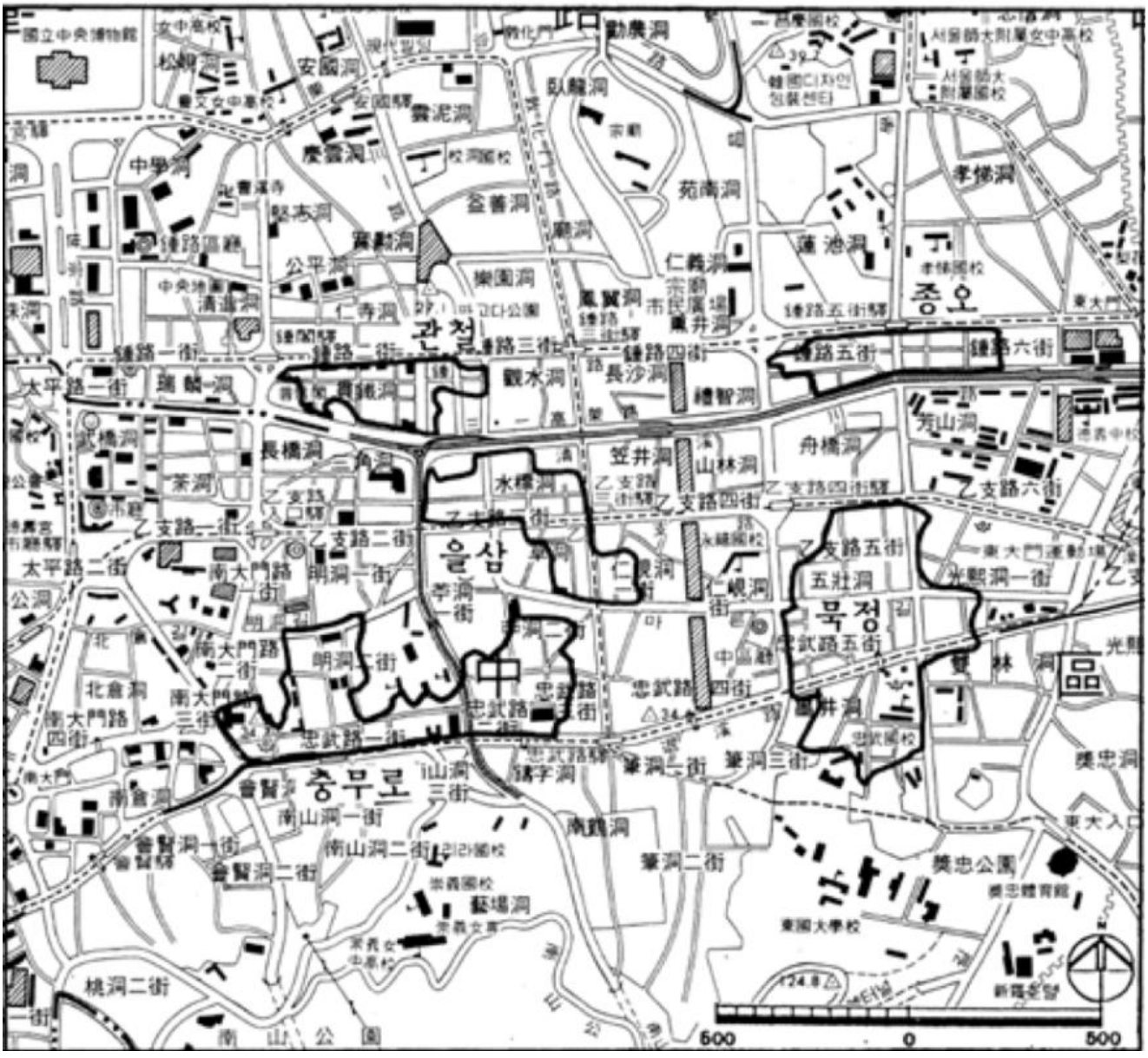


Fig. 27. The land readjustment project of Central District No. 1

Urgency of implementing the Land Readjustment project

The government recognized that unless urgent steps are taken for planned rebuilding, residents would return and rapidly rebuild on their earlier plots, exacerbating the earlier problems with the increased demand for housing in central city areas. Hence the Ministry of Home Affairs designated this district for urgent post war recovery under Sub-clause No.23 and directed the Government of Seoul Special City to implement a land readjustment project as soon as possible. The main concern was to lay the foundations of a modern capital city by improving land use and infrastructure, while at the same time retain the features of the historic city centre.

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Project implementation

The project planning and approval was done in a very short time but it took 10 to 12 years to reach the substitute land allocation stage mainly because of the insufficient manpower to implement the project. The originally designated area was 721,898 m^2 but after detailed survey it was brought down to 720,320 m^2. The average decrease (donation) rate was 23.896%. As can be seen from Table 19, the land given up by private land owners was used for roads and alleys, park, market and school. In this and other post war reconstruction projects, public infrastructure was funded by the government[39] and no land was planned for recompense.

Description	Before the project			After the project		
	Land Use	Area (m^2)	# of Parcel	Land Use	Area (m^2)	# of Parcel
Private Land	Residential	570,220.20	2,939	Residential	435,791.50	-
	Farm field	2,490.90	11			
	Alleys	445.30	13			
	Roads	2,642.00	80			
	Total	575,717.40	3,043	Total	435,791.50	
City Owned Land	Residential	14,766.90	8		11,238.20	-
	Residential	8,955.30	20		8,955.40	
	Alleys	201.30	14	Park	13,712	
	Roads	1,134.50	37	Market	1,322.3	
				School	16,528.90	
	Total	25,058.20	79	Total	51,756.80	
State Owned Land	Residential	132.20	1	Residential	100.60	-
	Residential	1,524.00	2	Residential	1,524.00	
	Alleys	4,543.50	65			
	Roads	5,526.50	79			
	Unregistered Road	103,607.10		Road	228,048.40	
	Unregistered	4,215.00			3,102.60	
	Waterway	119,548.30	147	Total	232,775.60	
	Total					
Total	-	720,323.90	3,269	Total	720,323.90	-

Table 19. Area comparison by land classification before and after readjustment

1960'S EXPANSION OF RESIDENTIAL DISTRICTS OF SEOUL

The land readjustment project of Myeonmok district

Locations	Complete area of Myeonmok-dong and Junggok-dong; and Seongdong-gu of Seoul special city
Implementation area	1,1015 km^2
Implementer	The Mayor of Seoul Special City
Implementation period	February 5, 1963 - December 17, 1968

Table 20. Outline of the Project

The project district

This district is located 14km to the north-east of the city centre. Before the Land Readjustment project it mainly comprised of farmlands in the foot hills of Mt. Yongma. It was well connected to Seoul, Chuncheon, Wonju and Gwangju through a road in the north-south direction, passing through the centre area of the district. This made the district idea for residential development. Implementing the land readjustment project would create suburban housing sites for the modern urbanization and help to alleviate housing shortage in the city.

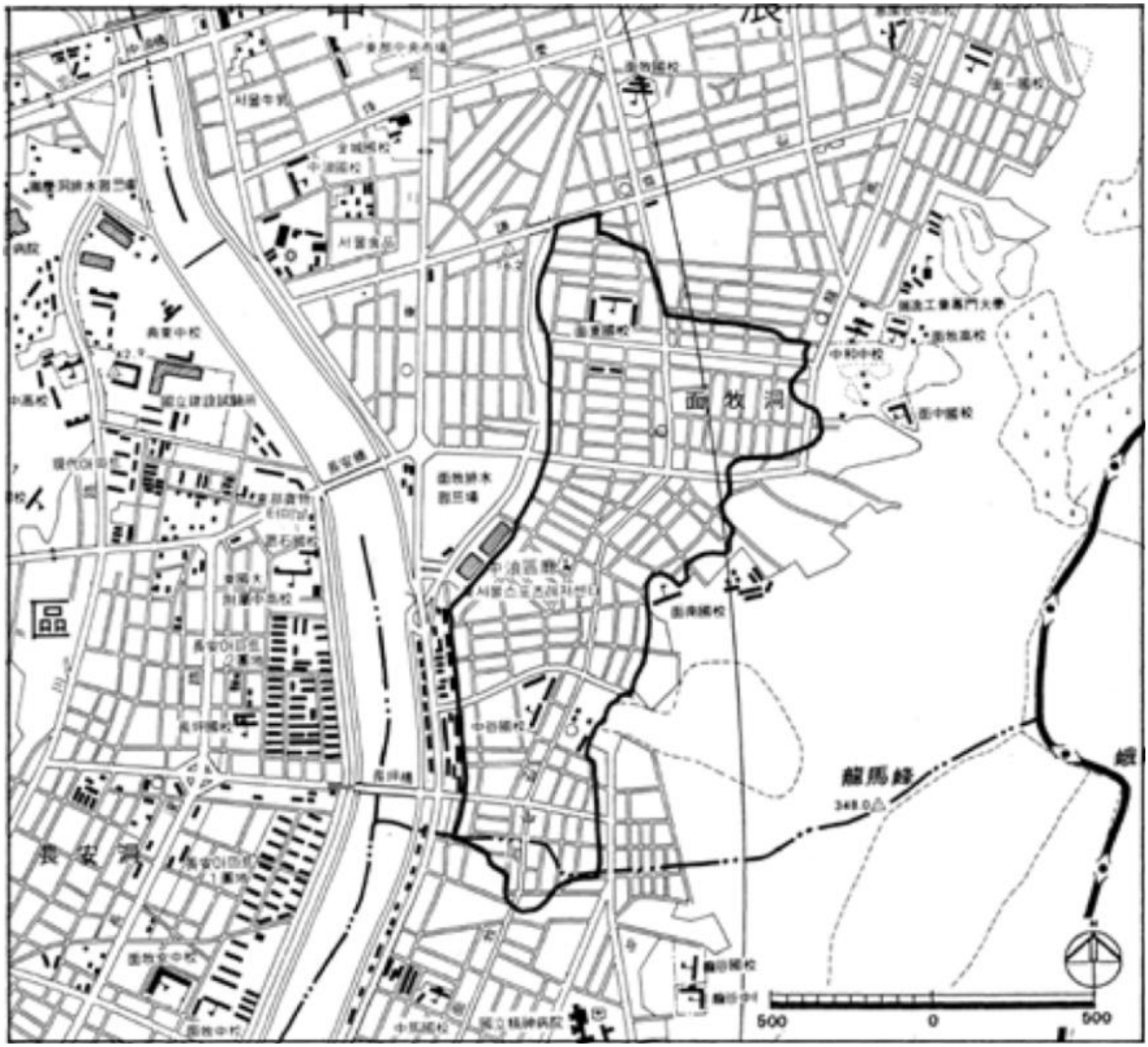


Fig. 28. The land readjustment project of Myeonmok district

At the same time, it would promote the interest of the land owners, who would contribute to creation of public facilities.

Project implementation

Since this district consisted of rural areas as well as part of Seoul city, landowners requested the Minister of National Territory as well as Seoul Special City to designate the district and approve the application. While the approval came from the Minister of National Territory on July 7, 1962, there was no approval order from Seoul city to the implementer. Then the Minister of National Territory requested the implementation order of the land readjustment project for the total area of 1,123,967m^2 to the Minister of Construction MOC).

On July 16, 1962 the MOC ordered Seoul city to complete the construction works regarding the land readjustment project by December 31, 1966. Thereafter the city submitted the methods on cost burden and land allocation etc. to the public for 10 days, and then, applied for the approval of implementation plan. On February 5, 1963, the MOC approved the implementation plan of the land readjustment project with the following conditions:

Land readjustment projects in Seoul

Activity	Date	Time taken
Plan decision, Announcement No. 7 of the Ministry of Home Affairs	December 27, 1955	
Request on project approval application period designation	July 7, 1962	5 months 10 days from application to approval
Request on implementation order, Announcement No. 94 of the Ministry of National Territory	July 7, 1962	
Implementation order, Public announcement No. 19 of the Ministry of Construction	July 16, 1962	
Approval application of implementation plan, Public announcement No. 726 of Seoul special city	January 5, 1963	
Supplement order of Implementation plan approval application	January 15, 1963	
Approval re-application of implementation plan	January 19, 1963	
Approval implementation plan, Announcement No. 230 of the Ministry of Construction	February 5, 1963	
Public announcement of project implementation, Public announcement No. 23 of Seoul special city	February 26, 1963	12 years after approval
Designation of reserved land for substitute, Public announcement No. 756 of Seoul special city	April 25, 1963	
Request on period delay	December 6, 1967	
Substitute land allocation, Public announcement No. 268 of Seoul special city	December 17, 1968	
Report of project completion	February 1, 1969	
Registration of land allocation, 1,983 lots	February 27, 1969	

Table 21. Myeonmok district: The details of the project promotion

- The site for parks should have a total area of 16,529 m^2 and be located in 4 places.
- There should by two markets with a total area of 4,628 m^2.
- The status of construction works should be reported every six months in detail to MOC.

Seoul city implemented the project by designating the project implementation period from February 5, 1963 to December 31, 1966, with an estimated total cost of 170 million won and the average rate of decrease as 25.12%.

The project was delayed because of the long time taken in carrying out surveys. The first confirmation survey was completed for 631,063.5m^2 by December 31, 1966, which was the originally estimated period of construction completion. The second confirmation survey was completed for the remaining 470,409.9 on December 9, 1967. Finally, a total of 1,983 lots were allotted to the original landowners in December, 1968. The programme cost was KRW 170.00.

Before the project (m^2)		After the project (m^2)	
Total Area	1,130,674.1	Total Area	1,130.674.1
1. General	1,061,887.3	1. Residential	795,154.1
2. 33 Clause land	68,786.8	2. Public land use	270,345.8
Road	7,290.9	Road	245,876.9
Water way	61,576.9	Creek	5,488.7
		Park	6,273.2
		Public factory	12,707.0
		3. Land for sale	62,974.5
		General	27,767.4
		Market	2,308.4
		School	32,898.7
		Other	2,199.7

Decrease (donation) rate calculation
1.Decrease (donation) rate of public land use = 203,758 / 1,061,887.3 = 0.1918835
2.Decrease (donation) rate of land for sale = 62,974.5 / 1,061,887.3 = 0.0593043
Average decrease (donation) rate = 0.1918835 + 0.0593043 = 0.2511878 = 25.12%
Verification of calculation = 1 – (795,154.1 / 1,061,887.3) = 0.2511878 = 25.12%

Table 22. Myeonmok District: The decrease ratio estimation and the contents of substitute land planning

LAND READJUSTMENT PROJECT OF HWAGOK DISTRICT

The project district

This district, located 8km away from the center of Yeongdeungpo area, is comprised of a hilly area with a gentle slope in the North-east and a district of fields and paddies in the South-west. The development prospect of the district was considered highly promising for modern residential use because of its proximity to the Yeongdeungpo industrial region, the double railway of Seoul-Incheon and the plan of expressway among other features.

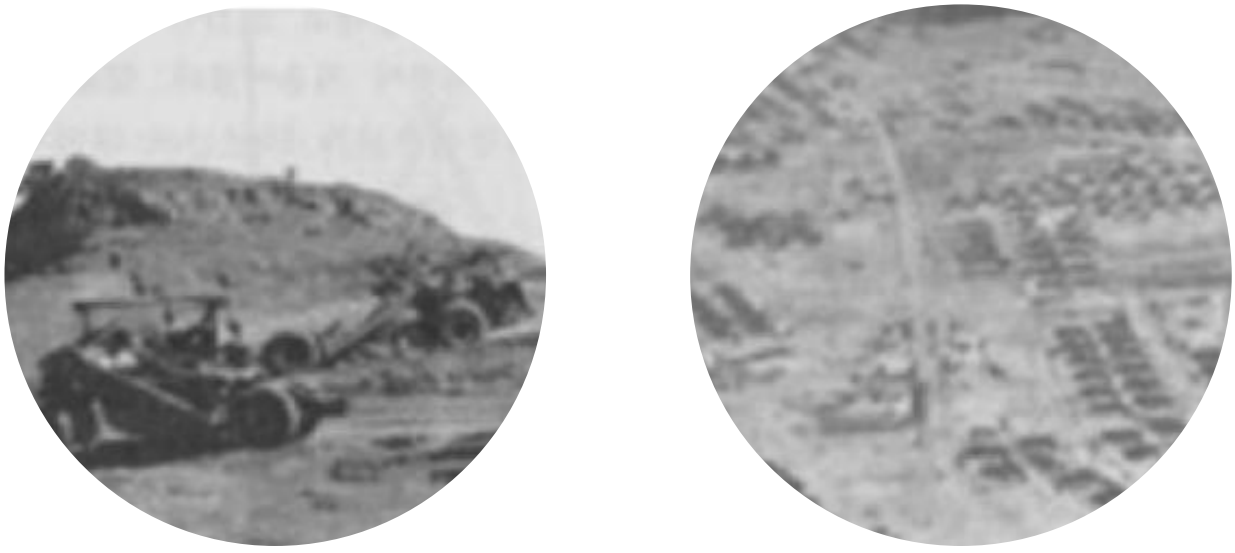
The details of project implementation

With its public announcement No. 226 of November 24, 1966 the Minister of Construction ordered the project implementation of Hwagok district to the Chairman of the Korea Housing Corporation (KHC). The project implementation was approved for the area of 1,032,892.6m^2 on March 10, 1967. The Minister of Construction approved the substitute land plan on December 31, 1968 the substitute land allocation for the area of 1,025,142.2m^2 was completed. The Land Reduction Rate of the project was 32.2%, meaning that the original land owners got back 67.8% of their original land area. About 28% of the area was for public lots, on which the Korea Housing Corporation constructed public housing, from the sale of which the programme cost of KRW 858.7 million was recovered.

Locations	Areas of Hwagok-dong, Yeongdeungpo-gu, Seoul city
Implementation area	102.5142 hectares
Implementer	Chairman of Korea Housing Corporation
Implementation period	Mach 10, 1967~December 31, 1970

Table 23. Outline of the Project

The NHC developed the 100,000 and 300,000 capacity Hwagok complexes, according to the living sphere concept. As for the 100,000 Hwagok Complex, the project was executed by the NHC in 1965. Development of 117,000 *pyeong* of residential land in Hwagok-dong along the Gimpo Road was followed by the construction and sale of 758 national housing units ranging from 12 to 17 *pyeong*. The rest of the land was sold in parcels to the public (Park Chungyu et. al., 2012).



Source: Park et al., 2012, Policy for the construction and supply of affordable housing in Korea

Fig. 29. Hwagok 100 Thousand Council Estate Complex of Korea National Housing Corporation: land formation (left) and completion (right)

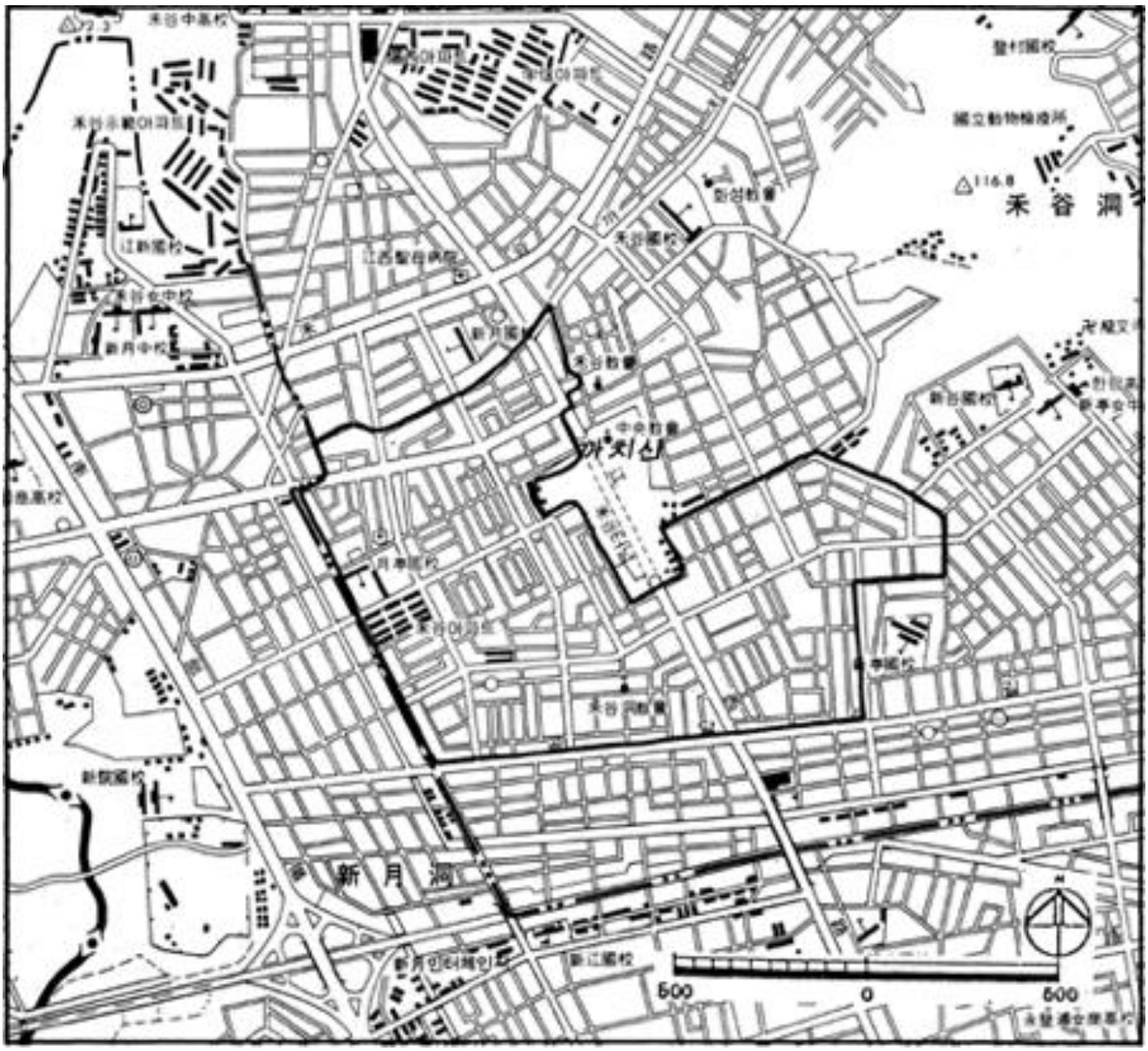


Fig. 30. The land readjustment project of Hwagok district

Activity	Date	Time taken
District designation, Public announcement No. 22 of the Ministry of Construction	November 24, 1966	3.5 months for approval
Announcement and notification of the project implementation plan	November 28, 1966	
Approval application of implementation plan	February 3, 1967	
Approval of implementation	March 10, 1967	Approvals of details
Approval of the land substitute plans	January 22, 1968	
Approval of confirmation allocation of substitute land plan	December 13, 1968	
Completion of construction and transfer of documents	February 2, 1971	4 yrs after first approval

Table 24. Hwagok district: The details of the project promotion

ANNEX 2: DEVELOPMENT OF GANGNAM

1970's and 80's: Use of Land Readjustment for large-scale expansion and population dispersal in Seoul

Development of Gangnam[40]

Background

By early 1960's the urban plan area of Seoul situated to the north of Han River (Gangbuk) could not accommodate its rapidly growing population in spite of policies to increase density of existing built up areas and systematically develop adjacent areas through land readjustment projects. The solution was to double the city's administrative area in 1963 by expanding to the south of Han River (Gangnam). This area had very little habitation and consisted of agriculture lands supplying vegetables and rice to Seoul across the river by boat. Part of the land was flood-prone and land prices were a fraction of the high prices in Seoul. After much deliberation, the Basic Seoul Urban Plan was announced in 1966, in which Development of Gangnam[41] was part of Seoul's population dispersal policy, with an aim to have 40% of the population north of the Han River and 60% to the South.

Starting with Land Readjustment projects in Yeongdong District

The development of Gangnam proposed in the Basic Seoul Urban Plan was carried out as the land readjustment plan. Between 1968 and 1982, ten land readjustment projects with a total area of about 55 km^2 were initiated[42] (see Table 25). The development started in Yeongdong district, on both sides of the Gyeongbu Expressway, under construction since 1967. A New Built-up Area Plan for Yeongdong District was announced, which would focus on developing Gangnam as a built-up area, and creating residences for 600,000 people. The City of Seoul asked the Ministry of Construction to designate the Yeongdong Districts for land readjustment in September 1966; a decision was made to install the facilities as part of the readjustment plan in December of the same year. The enforcement decree for Yeongdong District 1 – the first project in the development of Gangnam – was issued on December 15, 1967. The process from request to approval was accelerated, taking no longer than two years.

The plan to develop Gangnam as the third centre[43] in the 'three-nuclii plan' of Seoul began in earnest in the 1970's with the completion of Hannam Bridge and the Gyeongbu Expressway[44] connecting Gangnam with the existing city[45]. These opened up a new territory for the growing population and businesses. The land readjustment programs in Yeongdong District 1 and Yeongdong 2 were launched in 1968 and 1971 respectively and were both completed in 1985. These were clearly set apart from other land readjustment programs in Seoul by their objective of providing for a new town designed to disperse urban functions and population to undeveloped areas.

Land use and lots secured for public use

The ratio of housing sites to total land in Gangnam was lower than the national average, while the ratio of the land for public use (such as roads and green belts) was much higher. Even though Gangnam was designed mainly as a residential area, it had a higher ratio of land for public use compared to the built up city of Gangbuk.

In Yeongdong District 1, the land reduction rate was 39.1%. Public land in Land Readjustment projects is usually secured through program execution, and roads (road ratio: 23.1% in Yeongdong 1) account for the largest percentage in all projects. But the overall ratio of public land – schools (5.5%), parks (1.74%), and other public land (10.52%) – was higher than in previous projects. As the land reduction rate increased, public land increased, but this also included utility infrastructure leaving little room for green spaces.

Source: Development of Gangnam (2015)

Fig. 31. The expansion of administrative districts of Seoul

Area	Date approved Date completed	Area hectares	Land use (%)								Programme cost/ area (KRW)	Land reduction rate (%)
			Land set out for Recompens	Housing site	Land for general public facilities					Total Public Land		
					Markets	Schools	Roads	Parks	Others			
Yeongdong 1	1/1968 12 1990	1,273.78	5.5	52.7	0.9	5.5	23.1	1.4	10.5	41.8	371	39.1
Yeongdong 2	8/1971 1991	1,307.19	15.2	57.6	0.2	0.7	23.3	0.9	2.0	27.2	817	36.8
Jamsil	12/1974 12/1986	1,122.32	16.1	42.9	-	3.9	14.8	1.5	20.8	41.0	900	52.9
Yeongdong 1 Additional	12/1971 9/1984	99.17	7.3	60.9	0.3	6.3	22.5	0.6	2.0	31.8	991	39.8
Yeongdong 2 Additional	3/1974 9/1982	8.54	21.1	57.1	-	-	20.7	1.2	-	21.9	1,084	39.5
Gaepo 3	2/1982 12/1988	649.13	9.6	28.3	8.5	6.6	18.3	11.8	16.9	62.1	19754	57.4
Garak	3/1982 12/1988	745.51	21.3	18.0	1.8	5.5	20.7	6.3	26.4	60.7	15157	68.3
Yangjae	11/1983 12/1986	15.47	19.3	49.4	2.1	-	23.1	1.4	10.5	41.8	371	39.1
Isu	2/1972 12/1981	201.83	21.6	55.2	0.7	1.2	19.8	1.1	0.4	23.2	394	39.4
Isu Additional	4/1981 6/1985	7.66	23.8	33.6	-	-	38.2	4.4	-	42.7	23917	53.3
All Gangnam		5,431.59	13.5	44.4	1.5	4.0	20.4	3.3	12.9	42.1	5132	-
National*		1,4001.94	10.4	51.5	0.9	2.4	20.1	1.7	7.6	34.6	2448	-

Source: Urban Planning Bureau, Seoul Metropolitan Government in Lee Ok-hee (2006)

* The total land readjustment area across the nation since 1960.

Table 25. Summary of the Land Readjustment Program in 10 districts of Gangnam

Yeongdong District 2 was similar to Yeongdong District 1 in regard to land reduction rate and land use. Land reduction rate was slightly lower at 35.1% because District 2 had more national/public land but the percentage of parks and green areas was higher (4.8%). District 2 also had much more general land set out for recompense (15%), largely due to part of the Gyeongbu Expressway being located in District 1. The land reduction rate continued to increase on subsequent projects.

Area	Before the Program		After the Program		Land Reduction Rate
Yeongdong District 1	Private land National public land	94% 6%	Housing site Land for Recompense* Public land	53% 5% 42%	39.1%
Yeongdong District 2	Private land National public land	83% 17%	Housing site Land for Recompense* Public land	58% 15% 27%	35.1%

Table 26. Public Land Secured in Yeongdong Districts 1 & 2

Key measures to overcome limitations of Land Readjustment

Lots and housing

To prevent the issues of small land subdivisions that had occurred in existing land readjustment districts, sub- division was prohibited on land 165m² or smaller in area while building-to-land ratio was restricted to 40%, contributing to a pleasant physical environment in Gangnam.[46]

In 1973, the City of Seoul introduced the Yeongdong/Jamsil New Built-up Area Plan and the Yeongdong Development Promotion Plan, which restricted building size, color, and arrangement to make plans and control the elements that replotting by itself could not have done[47]. In 1975, a decision was made to group the land secured for recompense at least up to 50% of the area so that it could be sold to public corporations such as the Housing Corporation or to national housing builders that were capable of high-density development. That same year, apartment districts were designated in accordance with the urban plan, where the construction of apartments was compulsory. Yeongdong 1 & 2 and Jamshil Land Readjustment districts of Gangnam were designated as high-density apartment districts. These two measures provided the groundwork for and promoted high-density development in Gangnam. Further, land readjustment projects were designed in detail for compact urban planning with a mix of low, middle and high density developments in the city centre and sub-centres, which significantly contributed to qualitative improvement of the urban area (Seoul Solution, 2017).

Infrastructure for Public Services

As land readjustment was being planned, plans for a road network and underground utility tunnels[48] were also being developed for Yeongdong Districts, and made up the key infrastructure for Seoul, significantly helping Gangnam to perform its intended functions. The plans for Yeongdong Districts included arterial roads that were 50 m or wider; arterial road networks inside the Districts[49], and the riverside roads that constitute today's Olympic Expressway. The road ratio was 24.6% and arranged in a grid network, similar to road networks of major cities in advanced nations. There was strong criticism of such a high road ratio, which was required because of planning standards specified in the Basic Urban Plan. Later it was justified when automobile use increased in the late 1980s.

Underground utility tunnels were put in place for water and sewer lines, communication and gas lines at a substantial cost, especially because Gangnam was flood-prone. These ran under green spaces and streets.

Seoul also revised its city Metro plan in 1975 to convert Line 2 to a circle line connecting Yeongdong Districts to Yeongdeungpo and Seoul's city center. This not only helped to disperse the population of Gangbuk to Gangnam but also to promote the three-nuclei plan that would emerge a year later, giving a multi-nuclei structure to today's Seoul (Son Jeong-mok, 2003).

Financing for Land Readjustment in Yeongdong Districts

Because the City of Seoul could not finance the development of a new, large built-up area, it had to rely solely on the sale of land set out for recompense from the land readjustment programs. The program cost from Yeongdong District 1 and 2 can be seen in Table 27. In Yeongdong District 1, the sale of the land set out for recompense played a decisive role in financing the program. Revenue from land sales accounted

Source: Urban Planning Bureau, Seoul Metropolitan Government in Lee Ok-hee (2006), Characteristics & Problems of Gangnam Development Process in Seoul, Journal of the Korean Urban Geographical Society.

Fig. 32. Land use in 1957 and during the development of Gangnam in 1974

for more than 90% of the program costs - markedly different from the previous land readjustment programs[50]. This difference was even more pronounced in Yeongdong District 2, where 99.9% of its program costs were met with revenue from land sales.

Challenges and strategies for fast tracking development

Development of Gangnam began in the early 1970s, but the population was still concentrated in Gangbuk, and growing rapidly[51]. The urgency to disperse people to the south led to two major responses. One was to construct housing to encourage migration and the other was to relocate major city functions from Gangbuk to Gangnam.

	Revenue (Unit: KRW 1,000)		Expenses (Unit: KRW 1,000)	
Yeongdong District 1 Land Readjustment	Total	4,725,800	Total	4,725,800
	Municipal Bonds	-	Office Expenses	210,000
	National Assistance	-	Construction Expenses	10,510,000
	Sale of Land Set Out for Recompense	4,274,000	Maintainance	4,000
	Contribution	0.1	Municipal Bond Interest	-
	Liquidation Receivables	5,000	Liquidation Cashout	5,000
	Misc. Income	0.1	Reserve	20,000
Yeongdong District 2 Land Readjustment	Total	10,638,000	Total	10,638,000
	Municipal Bonds	-	Office Expenses	150,000
	National Assistance	-	Construction Expenses	10,510,000
	Sale of Land Set Out for Recompense	10,677,990	Maintainance	4,000
	Contribution	0.1	Municipal Bond Interest	-
	Liquidation Receivables	5,000	Liquidation Cashout	5,000
	Misc. Income	10	Reserve	14,000

Table 27. Yeongdong District 1 & 2 Program Costs

Housing construction for population dispersal

Public servant apartments and city apartments were built in early 1970's to encourage public servants and other citizens to move to Gangnam, but it did not work as intended. The program was still in its early days, and facilities or public transport were not adequate to support those living in the area. Infrastructure was so poor that despite many attempts to encourage public servants to move to these dedicated apartments, many returned to Gangbuk.

To make matters worse, external economic conditions were deteriorating. Global markets were sluggish, holding the South Korean economy back as well. Consumers were hesitant to spend and so were property buyers, creating problems for sale of land set out for recompense to finance the development. The government then introduced the Act on Temporary Measures for Development Promotion in Specific Areas in 1972, easing the tax regulations that had been put in place to prevent real estate speculation and removing almost all taxes on land transactions and use. The real estate speculation tax[52], business tax, registration tax, acquisition tax, property tax, urban planning tax[53], and licensing tax were removed until the Act was abolished in 1978. This temporary measure proved effective: land transactions became more active, and prices rose again.

However, this Act once again attracted speculators who were not interested in the normal process of urban development, causing serious delays or even cancellation. Then the first oil crisis in 1973 froze the economy, stunting urban development again.

The Yeongdong/Jamsil New Built-up Area Plan of 1973 was drafted to promote the development of Gangnam by enabling an approach where the target area was divided into several zones with a central location that was given priority. In 1974, the government introduced a tax on vacant lots to curtail property speculation and promote urban development. The tax, which was quite heavy, was imposed on owners of vacant lots where there were no development activity two years after replotting. However, the development of Gangnam picked up speed only after the sale of land set out for recompense became effective in 1975 and provided much needed finace for construction of roads.

By 1975, the population of Seoul was nearing 7 million. The central and Seoul governments strongly encouraged development and construction of major facilities in Gangnam through very attractive assistance programs and policies to encourage people to move out from Gangbuk to Gangnam.

Land readjustment projects were designed in detail for compact urban planning, contributing to qualitative improvement of the urban area

Source: Korean National Archives

Fig. 33. Public Servant Apartments Completed (left) and City Apartments Completed in 1974 in Cheongdam-dong (right) in 1971 in Nonhyeon-dong (left)

Discouraging concentration in Gangbuk & promoting construction of major facilities in Gangnam

In 1972 the government prohibited the development of housing sites north of the Han River. Construction or expansion of department stores, markets, universities, and other facilities that attract people to an area were forbidden in Gangbuk to check the flow of people to the city.

In 1975, Seoul City Government announced its plans to build the social infrastructure to develop urban functions in Gangnam. Its first targets were secondary government offices[54] and headquarters of 8 financial institutions[55]. However, this resulted in fierce opposition as the city government had not sufficiently discussed the move with the relevant institutions. The only public offices that moved to Gangnam were the Supreme Court and the Public Prosecutor's Office, but only after a decade.

In 1976, the next targets were the prestigious high schools in the old city centre. A total of 15 high schools were moved and provided with better facilities than before in Gangnam, given the value of good education in Korean society, they were instrumental in stimulating continued migration to Gangnam ever since. These high schools were also the start of the 8 education districts, in which education institutes and related facilities are concentrated.

The improvement of transport connections significantly vitalized the area and catalysed the move of urban functions to Gangnam. Besides the Hannam Bridge, eight other bridges were built[56]. The moving of the Express Bus Terminal to Gangnam and completion of Jamsu Bridge in 1976 further promoted the development of Yeongdong District 1. Apart from providing enhanced connections between Gangnam and the city centre, they also provided a link between the city centre and satellite cities, expanding the extent of the city.

Improved Development of Gangnam

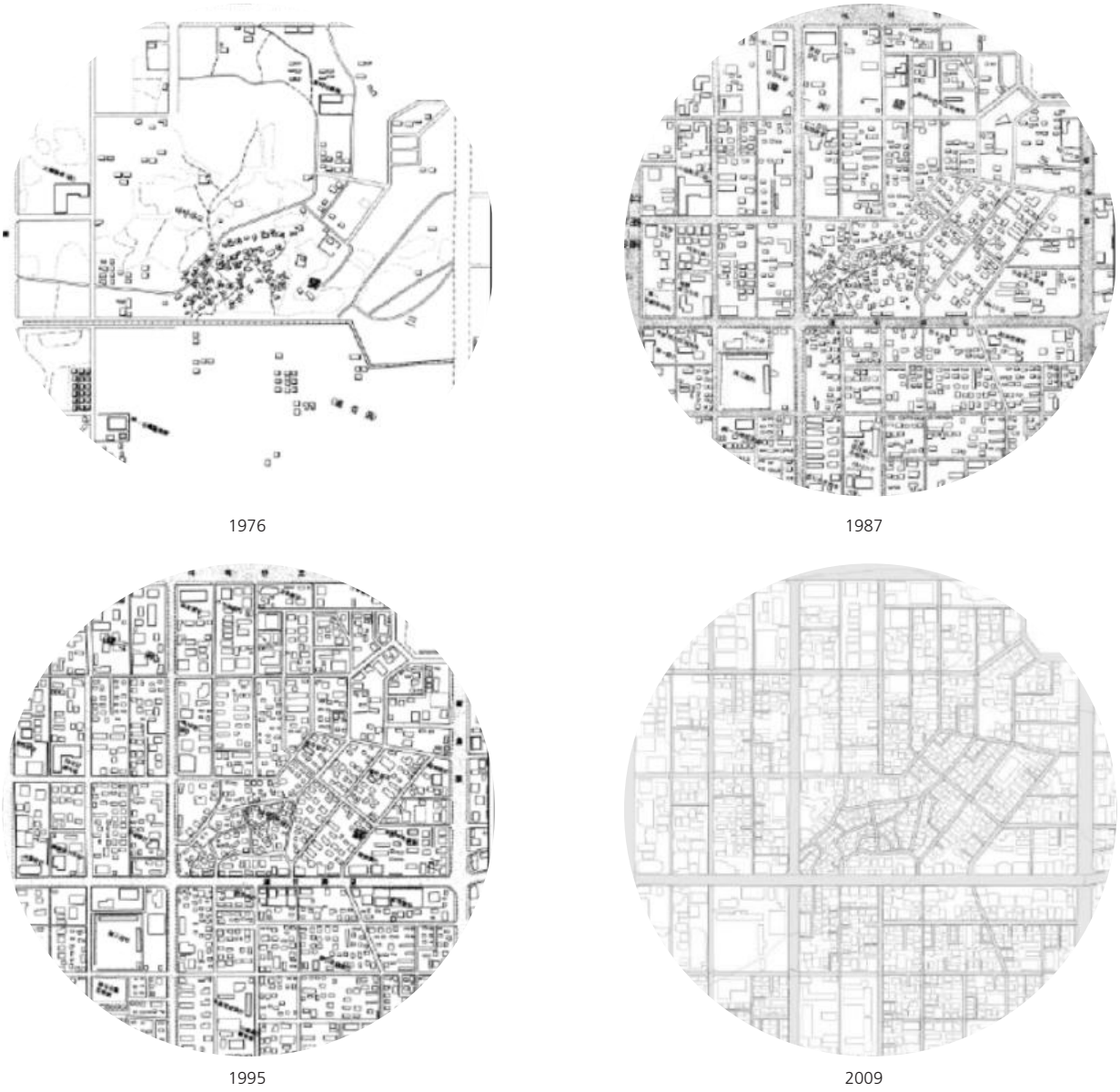
Rapid development of residential plots

The trunk infrastructure provided a planning framework for guiding private development. It was also a blue print for planned expansion of the city. Until the beginning of the 1980s, the new Gangnam area was confined to Yeongdong and Jamsil. Soon, the boundaries were expanded to the south and the east; Vacant lots were developed and additional metro lines and bridges built.

The blocks created by the road networks were slowly filled. Initially blocks were scattered with sporadic building work but by the mid 80's row houses, small apartments villas and other low-density houses were actively developed to cover most of the plots.

Urban design for improved environment

By the 1980s, when the Land Readjustment programmes were ending, no sizeable housing sites were available in Gangnam. Nevertheless, housing demand remained high. The attempt to solve this problem and at the same time achieve better quality development is represented by the housing



Source: The Seoul Institute (2009)

Fig. 34. The transformation of Yeongdong New Town development project

site development program in Gaepo District to develop large apartment complexes spanning an area of 8.5 km^2. The public corporations utilized the housing sites under the Housing Site Development Promotion Act, unlike with other apartment complexes, and applied the urban design concept to the area. Because of this approach, the area had much higher percentages of roads, public squares, parks, green spaces, schools, and other public infrastructure over other apartment areas. The construction of large apartment complexes helped the area's population to grow and also significantly contributed to realising and demonstrating a better residential environment.

Transformation into "New Seoul"

The population growth in Gangnam increased the demand for commercial facilities and amenities added to this was the shifting of establishments from the old city. Major stations on metro lines and arterial roads attracted commercial buildings, offices, shopping centres and cultural centres. Rents were lower and facilities, such as parking, were far better as compared with the congested Gangbuk city centre. These demands could be accommodated because the public lot development near arterial roads had been postponed. Once they became prime locations business, cultural and other new functions were assigned to the area, gaining substantial public revenues.

Source: 40 Years of Gangnam, Seoul Museum of History

Fig. 35. Urban Design in Gaepo District 3

Category	Residential						Commercial	School	Park Green Space	Other	Total
	Detached Housing	Multi-Unit Housing	Multi-Household housing	Town houses	Apart-ments	Residential-cum-commercial					
As in Urban Design 1985 (%)	15.9	-	-	2.8	14.7	-	7.1	5.9	12.7	41	100
	33.4										
As developed 2008 (%)*	0.2	3.3	2.2	1.1	13.4	1.6	13.7	6.5	11.2	46.8	100
	21.8										

*Percentages in 2008 are based on investigation and GIS analysis

Source: The Seoul Institute (2009)

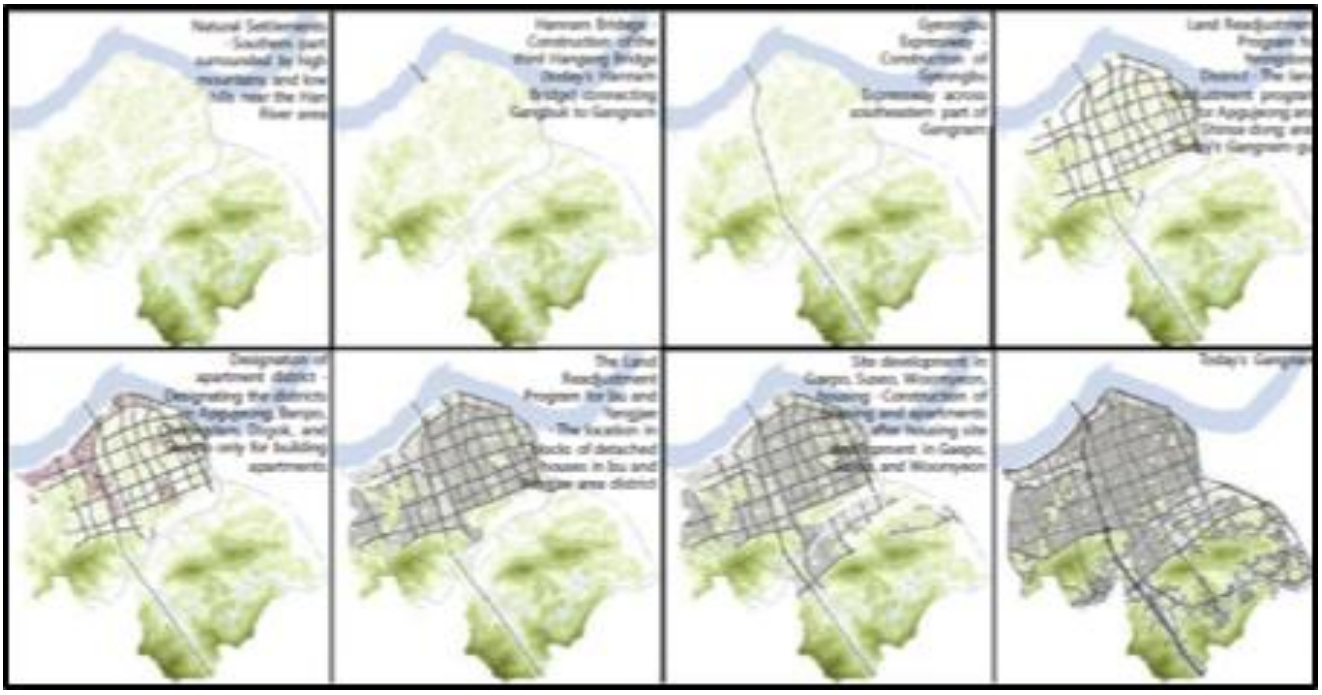
Table 28. Landuse in Gaepo District 3

The construction of major sports facilities to host international events in the 1980's gave a further boost to development. Thus, Gangnam, previously designed for residential purposes to disperse the population of Seoul, encountered a turning point in the late 1980s and gradually became a centre for international business, commerce, recreation, education and culture. A robust base of this development was provided by land readjustment implemented within a city-wide framework of roads and land uses.

Summary of the development history of Gangnam

Figure 34 shows the progressive development of transport connections and urban fabric of Gangnam from before its urban development till now.

Population dispersal to Gangnam has been triggered by key inputs for its development as a global city (see Table 29).



Source: 40 years of Gangnam

Fig. 36. Changes in Gangnam's Spatial Structure

View of Gangnam in 2017

Year	Description	Population Gangbuk / Gangnam
1963	• Gangnam absorbed by Seoul during expansion of the city's administrative districts	-
1965	• Seoul 10-Year Plan established • Seoul Urban Plan established	3.47 million (total)
1966	• Basic Seoul Urban Plan announced • Development of Yeongdong decided • Construction of Hannam Bridge begun	-
1968	• Yeongdong District 1 program launched	-
1969	• Hannam Bridge opened for service • Gyeongbu Expressway opened	-
1970	-	Gangbuk 4,115,133 (75.6%); Gangnam 1,328,165 (24.4%)
1971	• Yeongdong District 2 program launched	-
1974	• Pilot housing complex started in Yeongdong	-
1975	• Development of housing sites prohibited to the north of the Han River • Plans to move City Hall, the court, Public Prosecutor's Office, Korea Forest Service, • Public Procurement Service, the Bank of Korea, Korea Development Bank, and Korea Exchange Bank (headquarters of 8 financial institutions) • Plans for city Metro Line 2 changed to make it a circle line • Gangnam-gu becomes a new administrative district of Seoul	-
1976	• Gyeonggi High School relocated • Gangnam Express Bus Terminal (Phase 1) completed • (Gangbuk bus terminal taken down) • 'Apartment district' concept introduced (Enforcement Decree of the Urban Planning Act)	-
1978	• Construction of Metro Line 2 (Circle Line) begins	-
1980	• Metro Line 2 starts operating in sections	Gangbuk 4,981,687 (56.6%); Gangnam 3,382,692 (40.4%)
1984	• Metro Line 2 completed	-
1985	• Yeongdong Districts 1 and 2 programs completed	Gangbuk 5,214,760 (54.1%); Gangnam 4,424,350 (45.9%)
1986	• Asian Games: Sports facilities, infrastructure, housing developed in Gangnam	-
1988	• Olympic Games: sports facilities	-
1989	• Lotte World opens: major recreation centre	-
1990	• Comprehensive plan for balanced development of Gangnam and Gangbuk – regulations eased for Gangbuk	Gangbuk 5,481,243 (51.6%); Gangnam 5,131,334 (48.4%)

Table 29. Key events in the development of Gangnam

Source: Development of Gangnam (2015)

ANNEX 3: STORY OF GURYONG VILLAGE, AN URBAN DEVELOPMENT ZONE

Guryong Village was formed in the '80s when poor residents of Gangnam Ward, which has the country's most expensive real estate, were forced to move out of their homes during a swirl of city development projects ahead of the 1986 Asian Games and the 1988 Seoul Olympics. Being pushed out to the fringe of the ward, many were reduced to building makeshift houses illegally on private lands at the foot of Mount Guryong. Since the '90s, rumours have persisted that the shanty village was going to be turned into a glamorous apartment complex. Some people have intentionally moved into the village, accepting inconvenience that they believed was to be temporary and hoping to make a big return when the development started not expecting the wait to be long.

In November 2016, the Seoul City Planning Committee endorsed a plan to designate the village as an urban development zone in accordance with the Urban Development Act 2000. According to the plan, there will be 2,692 units of apartments -- some of them earmarked for the Guryong villagers -- to be constructed in the area by 2020. The city

(Source: "Gangnam Shanty Town Development Gathering Momentum" by Korea Economic Daily (January 17, 2013)

Fig. 37. Guryong Village, the Shanty Town in the Gangnam Area

The City said it will put priority on using the profits from the mega development project to cross-subsidize housing for the poor residents.

said it will put priority on using the profits from the mega development project to cross-subsidize housing for the poor residents.

The decision came after 16 years of fierce disagreement among the interested parties – Seoul City Hall, the Gangnam-gu (Gangnam ward) Office, land owners and residents - over how to develop the 266,304-square-meter land. The Seoul city government, which has the rights to approve the project, preferred a development plan that included taking over undeveloped land from land owners and returning the same size of land after the development is over. For the city, it is less costly as it doesn't have to buy the land in the first place. But the ward office, which has the rights to permit the land substitute plan, strongly opposed the idea, saying that only a handful of land owners, who possessed two-thirds of the total area, would benefit from the plan, as the prices undoubtedly will skyrocket after the development is over. And poor residents, in the process, would be marginalized again, it argued.

The wrangling continued for years. In the meantime, 1,900 residents suffered from extreme heat and cold, and frequent floods and fires. The residents have mixed feelings about the final decision. While there is hope, for low-income residents, the biggest concern is the monthly rent they will have to pay once they move into temporary houses to allow site development. The long delay has also created mistrust of government institutions and the fear that the residents may not be allowed to come back after the construction is done (Woo Jae-yeon, 2017).

ENDNOTES AND REFERENCES

6

ENDNOTES

1. All the project examples are from Seoul as no documentation in English is available on experience in other cities/ provinces. It would be useful to examine some smaller centres, where the experience is likely to be different from the capital city.
2. The implementation of land readjustment was ordered in ten districts in the outskirts of old downtown district - Yeongdeungpo, Donam, Daehyeon, Daebang, Hannam, Sageun, Yongdu, Cheongryangri, Shindang, Gong Deok - and the total area was as large as 15,880,226 m2. But development was actually completed during the period in only three districts - Donam, Yeongdeungpo, and Daehyeon.
3. Land reforms were initiated during the presence of the United States Army Military Government in Korea (USAMGIK) by promulgating the distribution of land formerly owned by the Japanese to tenant farmers at a predetermined price. This was considered as an important step towards laying the foundations for a democratic government by USAMGIK, which was the official ruling body from 1945 to 1948. This was followed by the redistribution of Korean-owned farmlands under the Land Reform Act of 1949. The entire process was concluded in 1970 with interruptions during the Korean War (Kim Inhan, 2016)
4. Euljiro 3-ga, Chungmuro, Gwancheol, Jongro 5-ga, and Mukjeong-dong located in 4 gu (wards)
5. Namdaemun, Wonhyoro, Hangchon, and Wangshimni
6. As of October 15, 1960, construction work was complete for all 10 projects, but land allocation and registration were completed only in Yeongdeungpo district.
7. The plans did indicate areas for expropriation for apartments, industrial complexes and public buildings and facilities.
8. The area of each of the districts such as Yeongdong 1 (1968), Yeongdong 2 (1971), and Gyeongin (1968) was five to six times larger than those implemented in the early to mid-1960s.
9. Suyu, Bulgwang, Seongsan, Ttukseom, Yeonheui, Changdong, Yeokchon, Hwayang, Mangu, Gyeongin, Yeongdong-1, Gimpo, Shiheung, and Dobong
10. For example, the implementation of LR projects in Yeongdong No.1 and Gyeongin districts located between the Gyeong-In and Gyeong-Bu Expressways was integrated with the expressway projects.
11. Junggok, Heungnam, Isu and Isu-A
12. Hwagok, Gaebong-1 & 2
13. Sillim, Yeongdong-2, Jamsil. Yeongdong-1 (expanded), Hwayang (expanded), Cheonho, Sillim (expanded), Yeongdong-2 (expanded), Amsa, Janghanpyeong, and Guro
14. Article 42 (2)
15. Land readjustment projects had been used to secure land lots for housing, but the lots were said to be too small for construction of high-density apartment complexes. Not only was such development low density, but also encouraged land speculation and resulted in over-heated land markets. Housing costs went up because of higher land prices in these projects. Moreover, the gains of land price increases of public infrastructure provision benefited only the private sector, in spite of laws and regulations on taxing land value increments. A large section of the population was priced out of housing and were forced to live in substandard and cramped dwellings without adequate services (Kim, 2015).
16. Gang dong, Gaepo, Garak and Yangjae
17. The developed area under LR projects constituted 23.1% of the urban area of Seoul (approximately 605 km2) and 35% of the developed area of the city.
18. Combination of expropriation and substitution methods.
19. Caused by multi-unit and multi-household dwellings, higher FAR and larger plot coverage permitted 1984 onwards.
20. The Land Expropriation Act was used to purchase sites for public facilities and industrial complexes. The concept of minimum compensation was included in the Act to protect citizens' property rights.
21. The Land Readjustment Project Act was separated from the Urban Planning Act to create new large-scale housing sites and to reinforce urban planning facilities. The scope of the land readjustment project was widened to include land for recompense to finance infrastructure construction. The rights and interests of land owners were protected by rationalization of loss compensation (the loss caused by implementation of the project).

22. The Housing Site Promotion Act continues to operate parallel to the Urban Development Act, providing an alternate method of land expropriation and development.
23. The changes in the name of the central ministry signifies its expanding role and the shift from undertaking urban development to national territorial planning and management. Ministry of Construction (1948); Ministry of Construction and Transport (1994); Ministry of Land, Transport and Maritime Affairs (2008); MOLIT or Ministry of Land, Infrastructure and Transport (2013)
24. The process is similar under both the Joesen Ordinance and the LR Act.
25. The term "urban development zone" means a zone, designated and publicly announced, within which to implement an urban development project (Article 2 of UD Act)
26. The term "urban development project" means a project implemented to build a complex or town having functions, such as residence, commerce, industries, distribution, information and communications, ecology, culture, health and welfare in an urban development zone (Article 2 of Urban Development Act)
27. Land Allotted by Authorities in Recompense of Development Outlay: Land bought and sold by the project implementor in order to pay for the cost of the project implementation.
28. Reserved Land: Land Reserved, not designated for replotting, for public facilities sites for urban areas.
29. Liquidation Money: Money provided to adjust the gap between the price of the former land and the price of the replotted land
30. Either land prices were too high, land owners resisted expropriation, or many of the notified zones already had subdivided and built-up areas within them. The last was a legacy from 1994, when development regulations for peri-urban areas were relaxed for small scale private development.
31. These included the building of Hannam Bridge across Han River at a cost of 1.1 billion KRW, building of the new subway service and opening of the Seoul-Suwon segment of the Gyong-Bu expressway followed by a number of other bridges and subway lines.
32. The Land Expropriation Act and the Act on Special Cases Concerning Acquisition of Land for Public Use and Compensation for Loss
33. Junggok, Heungnam, Isu and Isu-A
34. Hwagok, Gaebong-1 & 2
35. Traditional communalism called "Hyangyak" and "Doorae" provided rules for self-governance and cooperation among communities. President Park Chung Hee initiated the Saemaul Undong, or village development movement in 1970 based on this.
36. Korea Land Development Corporation was renamed Korea Land Corporation in 1996 and merged with NHC in 2009
37. Housing funded by National Housing Fund was called Kookmin housing, and private housing fund-supported housing was called Minyoung housing, but they both fell within the scope of the Policy for Construction and Supply of Affordable Housing in Korea.
38. Act No. 2436; enactment on December 30, 1972
39. Partly with assistance from the United States for post-war recovery.
40. Most of the material in this annex is drawn from "Development of Gangnam" by Prof. Myung-Gu Kang in Seoul Solution for Urban Development: Part 1 Urban Planning (2015) pp 37-56
41. The Gangnam area refers to present Gangnam, Seocho, and Songpa districts.
42. This was twice the size of the old city at that time.
43. The old city centre and Yeouido are the other two nuclii.
44. A land readjustment project of 14 square-km was implemented to secure the land for Gyeongbu Expressway's Seoul segment of 30 Km
45. Hannam Bridge was completed in December 1969 and the Expressway in July 1970. Before that there were only two pedestrian brides across Han River.
46. This measure may have triggered conflict with land owners at that time.
47. One of the limitations of land readjustment was that the program ends with securing space for roads, infrastructure and plotting. Construction and plot subdivision and sale of houses after that could not be controlled. Plot owners tended to undertake self-managed, low-density development due to the lack of private capital and adequate technical support, resulting in inefficient use of the land.
48. The decision to install underground utility tunnels for Yeongdong Districts was made in 1971

49. such as Samneung-ro (50 m, today's Tehran Avenue), Yeongdong Avenue (70 m), and Gangnam Avenue (50 m)
50. In land readjustment programs before the development of Gangnam, assistance from the national coffers and the city ac- counted for 30 – 50% of the total program costs. The underlying concept was that urban improvement was to be financed by the public. This was possible because the scale of those previous programs was rather small. The large size of the Gangnam projects made the costs prohibitive for public financing. This established the practice of pursuing land readjustment programs without public financing.
51. The population growth was even more drastic than in the 1960s. The population of Seoul reached 5.43 million, with the addition of 630,000 in one year: 1969 to 1970.
52. When real estate speculation became rampant, the government passed the Special Tax on Real Estate Speculation Act in 1968, which imposed a tax on gains on transfer in excess of 50%. The tax increased to 80% until the relevant laws were revised in 1970.
53. This was passed by the Seoul Metropolitan Council in 1968. It was targeted at all properties in Seoul and imposed at 1/1,000 of the official rate (registration tax base).
54. These included the City Hall, court, Public Prosecutor's Office, Korea Forest Service, and Public Procurement Service
55. These included the Bank of Korea, Korea Development Bank, and Korea Exchange Bank
56. Jamsil Bridge, Yeongdong Bridge, Jamsu Bridge, Jamsil Rail Bridge, Seongsu Bridge, Banpo Bridge, and Dongho Bridge were built in the 1970's.

Aerial view of Seoul

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