

Space & Environment

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Rebuilding International Cooperation Strategies in the Urban Sector for Implementing the SDGs

Se Hoon Park

1. UN Sustainable Development Goals and Urban Policy

The United Nations (UN) adopted the Sustainable Development Goals (SDGs) in 2015 as core goals to be reached by the international community by 2030. The SDGs consist of 17 goals and 169 targets that stress the integration and balance between each goal. The SDGs adhere to the principle of “Leaving no one behind”. This principle reflects the limitation of the Millennium Development Goals (MDGs) in overcoming poverty and the current situation of deepening wealth inequality worldwide.

The 2030 Agenda declared the responsibility of each nation and of the international community for implementing the SDGs. It confirmed the need for an increase in the developed

countries' official development assistance (ODA) (raising the share of ODA out of GNI of developed countries and the least developed countries up to 0.7% and 0.15-0.2%, respectively). Besides the existing ODA sources, the agenda suggested the necessity of seeking diverse private and public financing.

The urban sector has a significant meaning in implementing the SDGs. The SDGs include sustainable urbanization as one of the core goals, presented in Goal 11, “Make cities and human settlements inclusive, safe, resilient and sustainable”. Goal 11 contains major indicators in the urban sector, such as housing, public transport, urban planning, natural and cultural heritage, disaster prevention, environment, and public space. As sub-strategies, the goal includes seven action plans and three implementation tools.

UN-Habitat adopted the New Urban Agenda (NUA), which

Table 1. International organizations' strategies for implementing the SDGs in the urban sector

Organization	Core Goal	Major Strategies
UN-Habitat	Propose action plans and organizational innovation plans for the implementation of the SDGs by establishing Strategic Plan 2020-25 (UN-Habitat 2019)	<ul style="list-style-type: none"> • (Project goal) “Sustainable urbanization as a driver of development and peace”: Sustainable urbanization is a driver of development and peace to improve living conditions for all • (Planning strategy) Proposal of four domains of change: ① Reduce poverty and space inequality between urban and rural regions; ② Strengthen joint prosperity in urban and rural region; ③ Reinforce response to climate change and improve urban environment; ④ Effectively respond to and prevent urban risk • Support partner countries in establishing national urban policy by implementing National Urban Policy Programme, together with OECD and Cities Alliance
World Bank	Select three prioritized strategies and six project domains to achieve SDG 11 and the NUA	<ul style="list-style-type: none"> • Three strategies: Financial supports for the NUA; stimulation of developing countries' land development; improvement of the city's resilience against climate change and disaster risk • Six project domains: Urban economic growth, urban poverty and inclusion, urban infrastructure and service, affordable housing and land, urban management/finance and governance, urban environment
Asian Development Bank	Establish Strategy 2030 and propose “making cities livable” as one of its seven core fields	<ul style="list-style-type: none"> • Provision of comprehensive solutions: Explore and promote comprehensive projects aimed at enhancing health, mobility, gender equality, and the environment • Financial supports: Discover new sources (receivables, PPP, etc.), in addition to the existing sources (property tax, usage fee, etc.) for effective financial support • Inclusive and participatory urban planning: Comprehensive urban planning and investment support based on regional demand; Consider participation from every entity of the city and its demand • Improve resilience against climate change and reinforce disaster management: Integrate the consideration of climate change and disaster management in the urban planning process; Reinforce disaster-predicting responsiveness and capacity

Source

Data from UN-Habitat (2019), World Bank Group (2019), and Asian Development Bank (2018), compiled by the author.

specifies SDG 11 (sustainable cities and human settlements) in the Habitat III conference that took place in Quito, Ecuador, in October 2016 (UN-Habitat 2016). The NUA emphasizes three core values: inclusion of diversity and provision of safe spaces (inclusiveness); innovation by combining idiosyncratic factors (innovativeness); and compromise and collaboration between central government and local government for urban development (integration) (Park Sehoon et al. 2016).

Responding to the SDGs’ emphasis on sustainable urbanization, international organizations have adopted strategies involving cities and regions in their organizational strategies. UN-Habitat established its Strategic Plan 2020–25 containing action plans and organizational innovation plans for the implementation of the SDGs and proposed project goals and planning strategies. The World Bank selected three prioritized strategies and six project domains to achieve SDG 11. The Asian Development Bank established Strategy 2030 and proposed “making cities livable” as one of the seven core fields. The table 1 summarizes each international organization’s core goal and major strategies in the urban sector. **Table 1**

2. Development Cooperation in the Urban Sector in Korea

Development cooperation programs in the urban sector in Korea can be classified as follows: Economic Development Cooperation Fund (EDCF) and Knowledge Sharing Program (KSP) by the Ministry of Economy and Finance; Korea International Cooperation Agency (KOICA) by the Ministry of Foreign Affairs; and ODA projects by the Ministry of Land, Infrastructure and Transport (MOLIT). The table 2 summarizes the total number and investment of cooperation projects of each organization between 2010 and 2017. **Table 2**

The development cooperation projects in the urban sector in Korea have several characteristics. The urban sector occupies 30–40% out of the total contribution of Korea, which is exceptionally high compared to the average of the Organisation for Economic Co-operation and Development (OECD) countries. While the average share of the urban sector among the OECD countries shows a relatively stable trend at approximately 10%, the share in Korea has continued to rise since 2010 to recently reach 37%.

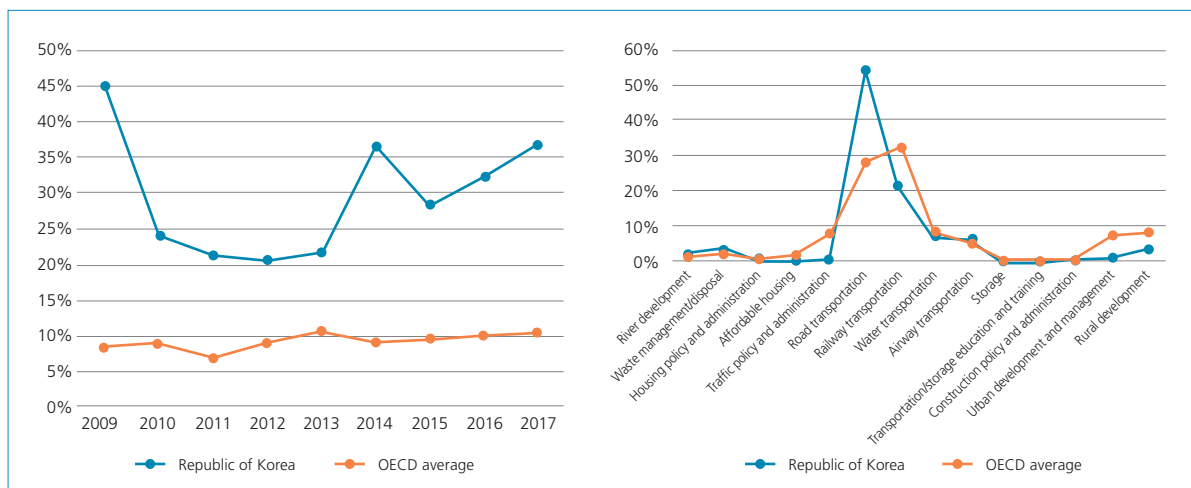
Table 2. Total number and investment of projects (2010–2017)

Organization	Number of projects		Investment	
	Number of projects	Percentage (%)	Investment (million USD)	Percentage (%)
EDCF	58	23.5	3,575.3	92.5
KSP	95	38.5	30.9	0.8
KOICA	71	28.7	244.1	6.3
ODA by MOLIT	23	9.3	15.5	0.4
Total	247	100.0	3,865.8	100.0

Source
Website of each organization.

Note Data covers 2013–2017 in the case of MOLIT.

Figure 1. Proportion of projects in the urban sector in OECD and Korea (left) & Share by specific fields (right)



Source
The author’s own work, using data from the OECD Creditor Reporting System.

Examining specific fields in the urban sector, road transportation and railway transportation are remarkably high in Korea, in terms of both absolute amount and proportion. On the contrary, policy sharing, such as housing policy, affordable housing, traffic policy and urban development, comprises a smaller share than the OECD average. This implies that development cooperation projects in Korea are weighted toward physical construction projects while the areas of policy sharing are relatively weak. [Figure 1](#)

Examining the regions of recipient countries, Asian countries showed the largest proportion (50–60%), followed by Africa and Latin America. As for the types of projects, construction of facilities occupied the majority in terms of project investment, and policy advisory showed the largest share in terms of the number of projects. This finding can be attributed to the fact that Korean development cooperation invests large portions of its budget into Asian countries where economic collaboration is politically easy. [Figure 2](#)

In sum, the urban sector in Korea occupies the largest share of the total development cooperation projects (over 60% in terms of investment), and the proportion of infrastructure is particularly high. The projects are focused on the Asian region, and construction of facilities comprises the majority of the projects. The focus on infrastructure can be attributed to the fact that ODA is strategically used as a tool for helping domestic companies enter foreign markets. Furthermore, Korea has a short history of development cooperation, resulting in insufficient knowledge and networks for promoting projects related to

capacity building and institutional improvement. The association with the SDGs, which is the central issue of the international community, is weak, and efforts to share the Korean development experience with the world are also insufficient.

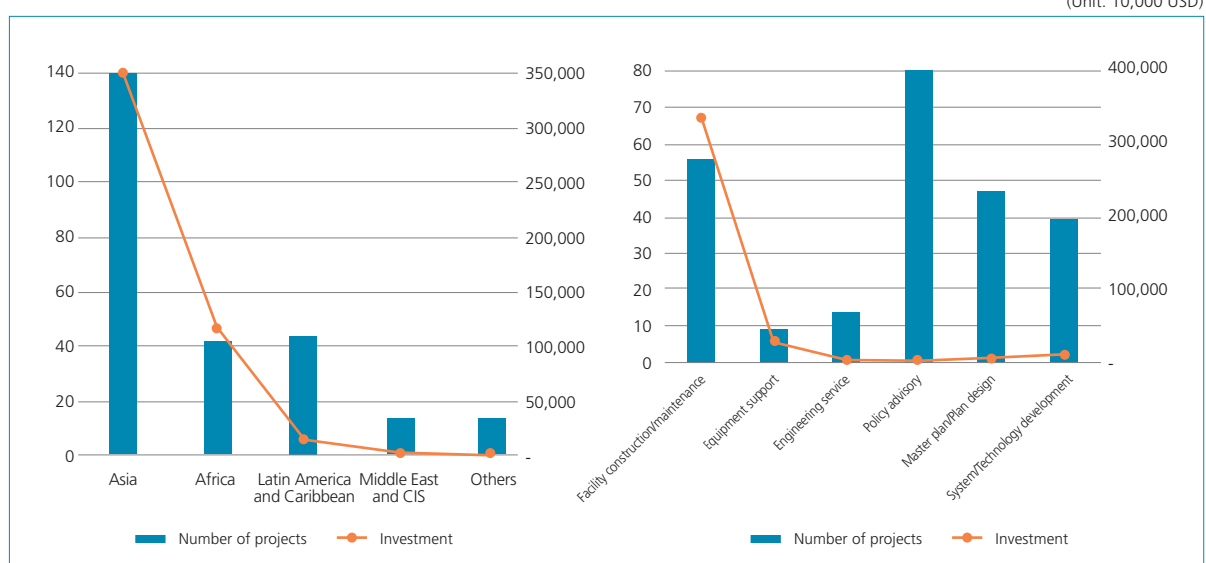
3. Recommendations for International Development Cooperation in the Urban Sector in Korea

Korea must establish a new policy guideline of development cooperation in the urban sector in accordance with the value of the SDGs and the trend of the international community. Presenting a direction for international development cooperation in the urban sector in Korea, this paper proposes the following policy guideline and policy tasks.

■ Establishment of policy guideline

- Balancing between national interests and contribution to the international community
 - Establish a long-term “value-oriented” cooperation strategies so that national interests and contributions to the international community do not contradict each other and a virtuous cycle can be built
 - Reinforce global leadership by actively participating in the agenda-setting of the international community and multilateral cooperation projects and sharing the policy experience of Korea with the world

Figure 2. Number and investment of projects in the urban sector by recipient region (left) & Number and investment by project type (right)



Source
Website of each organization.

Note Data covers 2013–2017 in the case of the Ministry of Land, Infrastructure and Transport.

- Balancing between hardware and software projects
 - By growing out of a supporting strategy centered on infrastructure projects, promote a software projects approach, including institutional improvement and capacity building, so that infrastructure construction can be harmonized with the policy development
 - Reorganize the Korean urban development experience that conforms to the SDGs and share it with the world, contributing to the global agenda in the relevant field
- From single project-oriented support to “comprehensive and systematic support”
 - Organize the supporting strategy to maximize the effectiveness of aid by systematically linking each phase of “planning → institutional improvement (capacity building) → development projects → domestic private companies’ expansion into overseas ”

■ Policy tasks

- ① Preparation of development cooperation strategy in the urban sector based on global standards
 - Establish strategic plans for development cooperation in the urban sector for the international development cooperation and the sectoral plan of the KOICA
 - Incorporate the value of the SDGs into the strategic plans and actively participate in the global agenda in the urban sector
- ② Preparation of country-by-country development cooperation strategy in the urban sector for major partner countries
 - Build basic information by designing development cooperation strategies in the urban sector by each country. Understand demands for development, candidate projects, and project priorities and develop an associated strategy among the projects conforming to the specific goals of the SDGs
- ③ Planning and promotion of research on the Korean urban development experience
 - Promote research planning that reinterprets the Korean urban development experience from the perspective of international cooperation: Most urban policies in Korea were developed in response to urbanization during the rapid growth period from the 1960s to the 1990s; therefore, reinterpretation from global perspectives is necessary to apply it to developing countries today [Table 3](#)
- ④ Planning and promotion of flagship projects using the experience of urban development in Korea
 - Focus on areas in which Korea has comparative advantage, such as planning, system design, and capacity building, which also conform to the keynote of development cooperation in the international community
 - Group several projects in a package and successively apply it to one country to strengthen the collaboration among the projects and improve the effects: For example, establish national territorial planning → enhance city-related law/regulations → design urban planning (disaster prevention plan, smart city, etc.) → support capacity building
- ⑤ Participation in the international organizations’ agenda-setting in the urban sector
 - Apply the concept of public diplomacy in various international events hosted by the Ministry of Land, Infrastructure and Transport, and participation in a direction that can reinforce the soft power of Korea
 - Participate in the follow-up works of SDGs and the NUA of the international community in the urban sector: Participate in the ongoing projects regarding the preparation of follow-up works and guideline-setting of the SDGs in the urban sector that are led by UN-Habitat, UNESCO, and UNESCAP

Table 3. Main characteristics of the Korean urban development experience

Characteristics	Examples
Organic linkage among policies related to economic growth	Establishment of Comprehensive National Territorial Plan and Five-Year Economic Development Plan
Use of market force to overcome the government’s financial constraints	New town development, Housing renewal policy
Choice of an area of concentration for efficient distribution of limited resources	Establishment of Comprehensive National Territorial Plan, Creation of manufacturing town / industrial complex
Prompt policy response to changing conditions	Urban redevelopment → New town development → Urban renewal → Smart city

Source
The author’s own work.

- ⑥ Enhancing cooperation with international organizations
- Reinforce the global leadership and knowledge competency of Korea by expanding projects through triangular collaboration among the “domestic expert organization – international organizations – recipient country”
 - Activate joint research and joint seminars with international organizations regarding the experience of urban development in Korea and use the international organization as a platform for sharing the Korean experience

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Korea must establish a new policy guideline of development cooperation in the urban sector in accordance with the value of the SDGs and the trend of the international community.
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Eco-Smart City Initiatives in Korea

Sang Keon Lee

1. Background and Purpose

Countries around the world are presently experiencing two megatrends: eco-friendly energy transformation following the new climate regime and the Fourth Industrial Revolution. An estimated 3.5 billion people, one half of the world's population, currently live in urban areas, and that figure is expected to reach 5 billion by 2030. Unfortunately, the origin of environmental pollution lies in cities. While cities occupy 3% of the Earth's area, they are responsible for 60 to 80% of its energy consumption and over 75% of its carbon emissions. Efforts to reduce energy consumption and carbon emissions should focus on urban regions.

In 2020, the Korean government announced a Korean version of the New Deal as an engine for new growth, which is composed of two axes: the Digital New Deal and the Green New Deal. The Eco-Smart City Initiatives were designed specifically for the implementation of the Korean New Deal. The initiatives enabled the construction of two projects, the Eco City and the Smart City, which have been separately promoted thus far in a comprehensive fashion.

Using technology of the Fourth Industrial Revolution, this project aims to provide cities with solutions to respond to the global affliction of climate change. This paper proposes project designs and effective promotion plans for constructing a Smart

City using technologies that consider nature in relation to cities, buildings, transportation, and human life.

2. Fundamental Concepts and Goals

The Eco-Smart City was developed to actively respond to the serious threat of climate change and structural change to a post-fossil fuel society. The activation of the project is expected to stimulate the economy and create jobs. The Eco-Smart City proposes a new vision of an urban future by combining the concepts and core values of an "Eco City" and a "Smart City." The fundamental goal of the Eco-Smart City is to remain a competitive environment that is capable of efficiently responding to the new climate regime as well as the Fourth Industrial Revolution. Eco-friendliness, innovation, and sustainability are its core values. [Table 1](#)

In line with the UN's 11th Sustainable Development Goal to "Make cities and human settlements inclusive, safe, resilient and sustainable", the Eco-Smart City suggested the slogan of "From 6C-Free to 6S-Full" to reiterate the conditions of a sustainable city in which citizens are happy. The 6C are uncomfortable and negative components of cities that should be eliminated: congestion, contagion, CO₂ (carbon dioxide), crime, casualties, and complaints. The 6S denote healthy factors in cities, such as

Table 1. Breakdown of the concept of the Eco-Smart City

	Concept	Core values	Global megatrend
Eco City	Sustainable city that minimizes greenhouse gas emission and environmental pollution by renewing urban space structures and using renewable energy, etc.	Eco-friendliness, environmental sustainability	New climate regime (post-carbon economy)
Smart City	Competitive and sustainable city that improves citizens' quality of life using information and communications technology (ICT)	Innovation, growth, economic sustainability	The Fourth Industrial Revolution (data economy)
Eco-Smart City	The most efficient, competitive and sustainable city in the era of the new climate regime and the Fourth Industrial Revolution	Eco-friendliness, innovation, sustainability	New climate regime + the Fourth Industrial Revolution (+ Green New Deal)

Source
KRIHS et al. 2021.

smartness, santé, sustainability, safety, solidity, and satisfaction. By diminishing 6C factors and improving 6S factors, the Eco-Smart City remains safe and resilient through state-of-the-art information communications technology (ICT) and green technology. **Figure 1**

To eliminate the 6C and achieve the 6S, the Eco-Smart City Initiatives set the following six goals: 1) a sustainable city with minimal CO₂ emissions; 2) a strong city with few casualties; 3) a healthy city without concerns about contagious diseases; 4) a smart city without congestion; 5) a safe city without crime; and 6) a satisfactory city without citizen complaints.

The six goals aim at achieving a 'Net zero'⁰¹ society (i.e. by forming a carbon-neutral settlement with a 100-year healthy life span) through the realization of the ultimate values of 'environment' and 'community'.

3. Promoting the Eco-Smart City Initiatives

This part presents the direction of developing specific projects

to build Eco-Smart Cities by showing how and in which field the projects can be applied. A variety of Eco-Smart City unit projects can be applicable depending on the cities, zones, buildings, and platform at different scales. Each unit is composed of key performance indicators (KPIs), which can be used to manage the project based on data and evaluate whether the goal was achieved. The unit projects are comprehensively monitored and evaluated through governance systems and an integrated data platform, the results of which can be used to note areas of improvement for the legal system and regulations. **Figure 2**

4. Conclusion

The "one and only" Earth we are living on has been sick for a long time. People worldwide have been in an infinite competition to accumulate wealth as economic development is considered the greatest value on Earth. A tremendous amount of nature has been destroyed and pollutants emitted

Figure 1. Vision of the Eco-Smart City



Source
The research team's own work.

01. 'Net zero' is originated from 'Net zero emissions' which refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere. To meet the Net zero, new emissions of greenhouse gas must be as low as possible. It means to rapidly phase out fossil fuels – coal, oil and gas – and transition to renewable energy (Climate Council). <https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/> (accessed 11 March, 2021).

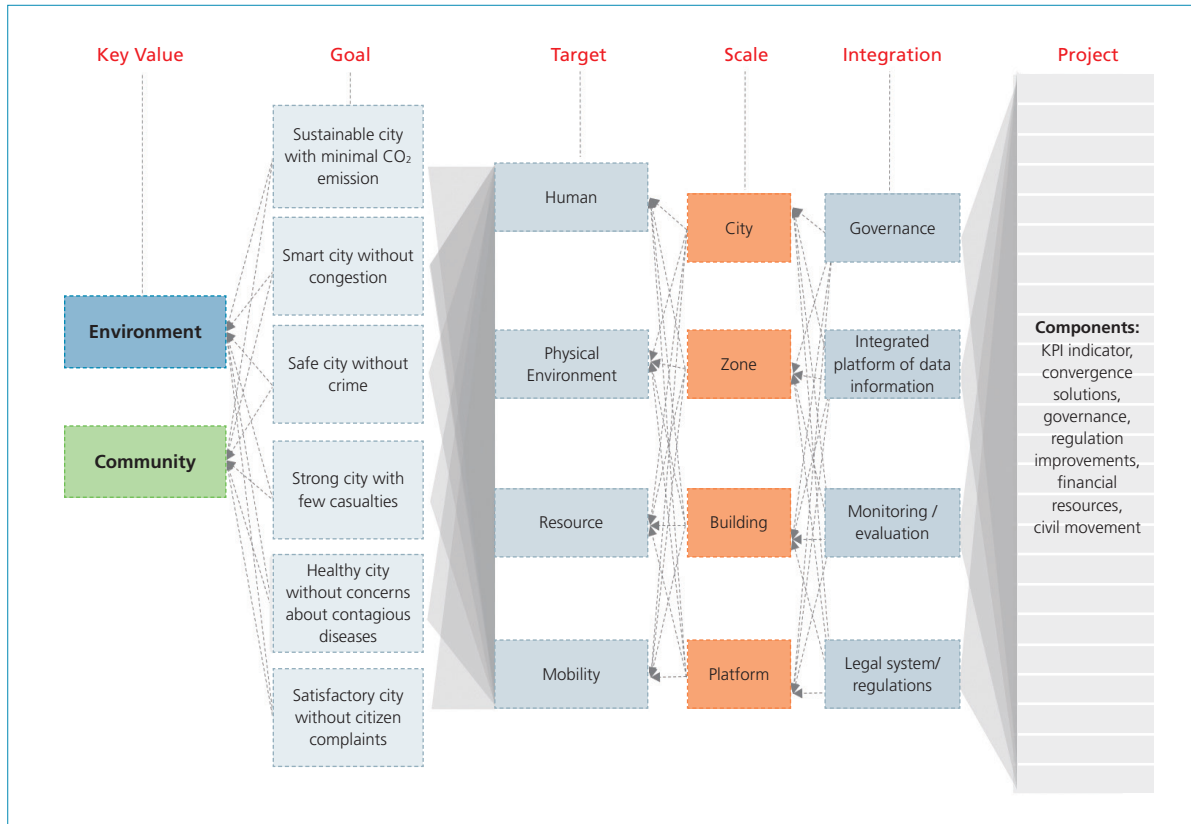
in the process. Experts in related sectors unanimously agree that human beings only have a few opportunities to revive the planet. Humans may be the sixth creature to become extinct. Despite the gravity of the situation, humans have not duly responded to the problem thus far. How long will our cities head towards catastrophe by carelessly using fossil fuels and emitting CO₂? We have to make earnest efforts to escape from this track and transform our cities into more eco-friendly and resilient places. For human survival, the Eco-Smart City Initiatives is a project that can no longer be postponed. However, if we

employ technologies of the Fourth Industrial Revolution (e.g. big data, AI, and IoT) to rid ourselves of 6Cs, gain 6S (From 6C Free to 6S Full), and establish a system of governance that supports citizens' active participation, we will be able to successfully overcome the climate crisis.

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Figure 2. Process of promoting the Eco-Smart City Initiatives



Source
The research team's own work.

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Web Documents

- Climate Council. <https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/> (accessed March 11, 2021).

Vietnam Disaster Risk Prevention Aid System for Urban Flooding

Byoung Jae Lee

1. Introduction

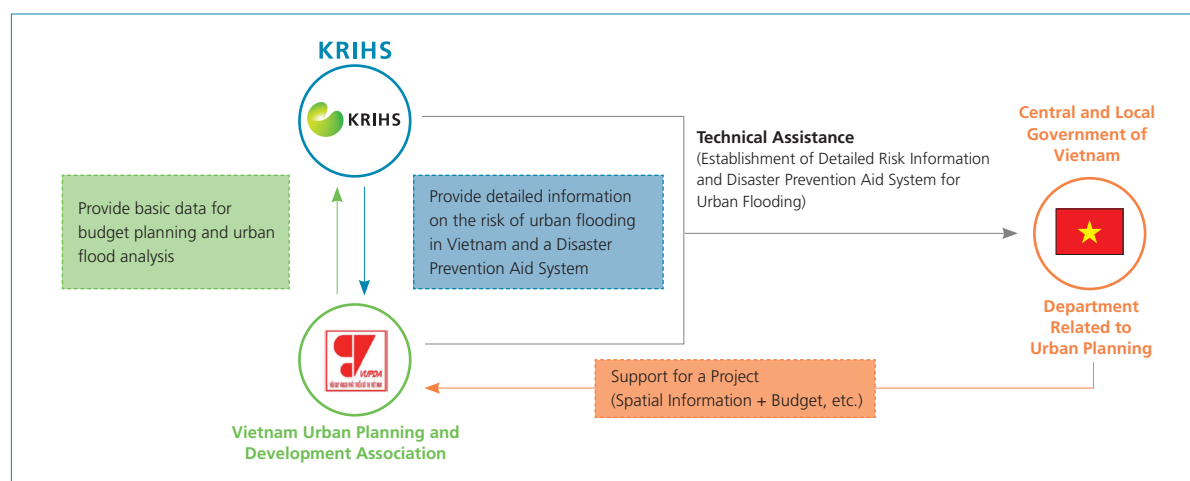
Vietnam is one of the countries that is most significantly damaged by flooding caused by climate change. Therefore, the country promotes active responses to climate change and sustainable development as a national vision and urgently requires technologies to support this vision. Although Vietnam has agreed to introduce a new climate change regime since 2016, it does not have concrete policy directions for new industries in the national land and urban sectors. In recent years, Vietnam’s disasters have gradually grown in scale and diversification, and various urban disasters are becoming a norm. In order to effectively respond to climate change, there is a growing need to use the data from the urban vulnerability analysis to disasters, and to establish disaster-preventive urban plans through land utilization and infrastructure.

Korea Research Institute for Human Settlements (KRIHS) conducted a project titled Urban Design Technique Development Adapting to Climate Change Driven Heavy Rainfall Disaster between 2011 and 2016 about the prevention of urban flooding resulting from climate change. This project was part of

the research and development (R&D) initiatives of Korea Agency for Infrastructure Technology Advancement (KAIA). As a result, the registration of a patent named “(Heavy Rainfall-Induced Disasters) Ways to Provide Urban Planning Support Systems and Information” was completed. In addition, the KRIHS completed the development of the Disaster Risk Prevention Aid System for Urban Flooding through the Development of the Urban Flooding Risk Prevention System project performed with the organization’s own research budget between 2016 and 2018. This system was applied to the pilot projects of local governments such as Busan and Jeju.

KRIHS has continued to promote international cooperation to meet Vietnam’s demand for urban disaster prevention by applying the results of research on climate change adaptation and urban disaster prevention including urban flooding. Since the conclusion of a memorandum of understanding (MoU) between KRIHS and Vietnam Urban Planning and Development Association (VUPDA) in 2012, the two parties have actively shared the results of urban disaster prevention-related research and facilitated international cooperation between Vietnam and Korea. In July 2017, the Korea International Cooperation

Figure 1. Application and utilization plans of the Vietnam Disaster Risk Prevention Aid System for Urban Flooding



Source
The author's own work.

Agency (KOICA) Training on Climate Change Responses program, which targeted developing countries, was held by Global Development Partnership Center (GDPC) at KRIHS. Vietnam’s public officials and professors (from Hanoi University of Architecture and Ho Chi Minh City University of Architecture) engaged in the related areas participated in the program. Later in December 2017, the “Preliminary Study for Vietnamese Local Governments’ Establishment of Climate Change Response Strategies” was conducted under the leadership of the professors who had attended KOICA’s training program with financial support from KRIHS budget for strengthening the capacity for global development and cooperation. This helped build a consensus between the two countries on technological development for supporting Vietnam’s practical urban flood prevention measures.

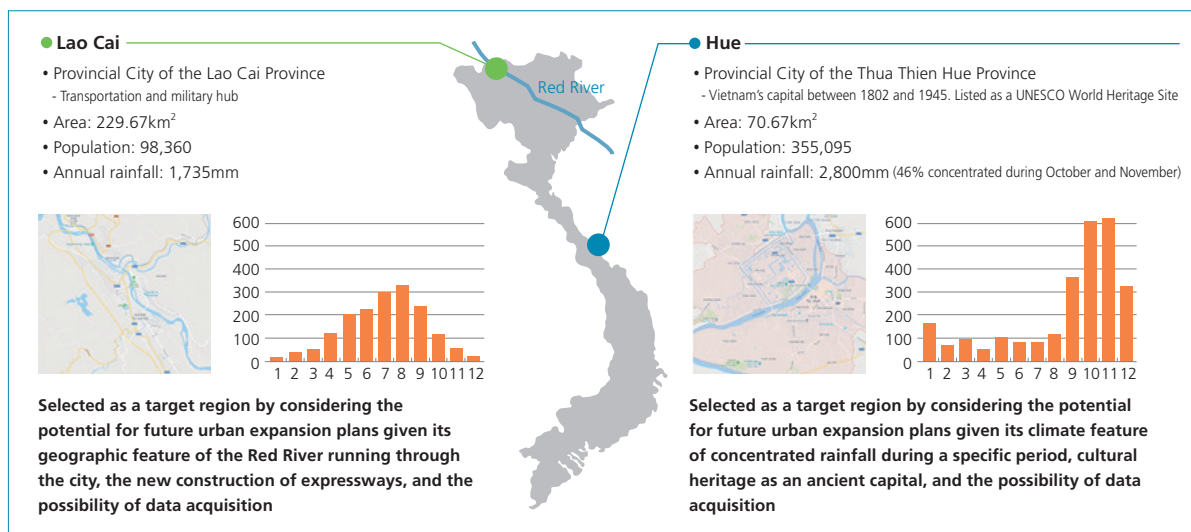
The two parties continued to cooperate and worked on the development of a support system for Vietnam’s urban flood prevention measures (a total estimated budget of KRW 600 million) from April 2018 to the end of December 2020 as a KAIA research project for the facilitation of national transportation technology. The purpose of this project was to develop and distribute appropriate technologies for a decision-making support system for urban flood prevention measures. This system would aid people who lack the basic knowledge of urban flood prevention, such as Vietnamese public officials, urban planning personnel, and residents, and create a market for technological improvement in disaster information management in the related areas of Vietnam. **Figure 1**

2. Development of Support Tools for Urban Planning-Oriented Measures for Vietnam’s Urban Flood Prevention

This project drove the implementation of system functions suitable for Vietnam’s national situations through continuous consultation with and in-depth demand surveys of a major consumer base for which the outcome of this R&D project will be applied in Vietnam. The project also successfully obtained and reflected high-quality data necessary for the development of a consumer-centric system in terms of analysis results for urban vulnerabilities to flooding and other related information. Moreover, both Korea and Vietnam agreed on mid- and long-term research and cooperation associated with climate change response management systems in urban spaces, including the linkage of disaster-related information and disaster vulnerability information services. This was accomplished through business consultation with not only Vietnam’s local governments, but also the concerned central government’s agencies (e.g. Ministry of Construction, Ministry of Resources and Environment).

This study proposed and promoted the systematic analysis of vulnerabilities and an information storage system for the continuous and efficient management of urban flood risks with a focus on the rapidly growing urban regions in Vietnam, including the current project’s target regions. In the project, Lao Cai and Hue were selected as the target regions after successful discussions with their local governments by considering factors such as the frequency of damage, possibility of data acquisition, and expansion of urban regions. **Figure 2**

Figure 2. Target regions for the application of the Vietnam Disaster Risk Prevention Aid System for Urban Flooding (Lao Cai and Hue)



Source
The author’s own work.

To develop this system, spatial data on danger areas that were necessary to support Vietnam’s urban flood prevention measures were acquired, and then a specific set of information was generated based on the data. Furthermore, the mapping of analysis information on the project’s target regions was completed. The results of field surveys and other detailed data on the areas for which disaster preventive urban planning was more urgent were prepared. After databases and screens were designed in consideration of the demand and convenience of primary users of this system, the system was developed by demonstrating its performance toward actual users and collecting their opinions to ensure the system’s excellence. **Figure 3**

3. Vietnam’s Long-term Strategies for Urban Flood Prevention Measures and Implications for Other Developing Countries

After the end of this project, the provision of systematic support and the establishment of a management system will likely materialize into creating safe cities from disasters in Vietnam. The vulnerability information related to Vietnam’s urban floods and a user-friendly system provided through this project can be effectively employed to develop urban adaptation policies and measures that factor in the risks and characteristics of urban disasters. It is expected to create added values through the establishment of a technical support system aimed at building mid- and long-term disaster reduction

strategies and urban space management systems related to Vietnam’s urban floods. Moreover, the project is likely to improve technologies for supporting long-term monitoring and prevention planning on changes in disaster risks within Vietnamese cities.

In terms of how to utilize the developed support system to perform practical urban flood prevention tasks, this system can be used for disaster vulnerability analyses in Vietnam’s local governments. Moreover, based on the resulting accumulated data, the central government can establish wide-area and long-term strategies. In particular, it is necessary to establish a cyclic system in which the central Vietnamese government provides a platform for the local governments to use, and the local governments’ relevant data are accumulated for use on the central government’s platform.

This project is also likely to advance the commercialization of systems and information services on the industrial front. It is possible to use the systems developed by companies that perform the analysis of urban vulnerabilities to flooding in Vietnam, and to develop commercial products based on their analysis techniques and methodologies. Another potential is to cultivate an industry for systematic risk management by providing information on the country’s urban regions vulnerable to flooding and disaster prevention guidelines.

The Korean government currently facilitates development cooperation that can increase national interests through the execution of national projects and proposes primary projects to be implemented, such as climate change responses. In

Figure 3. User interface of the Vietnam Disaster Risk Prevention Aid System for Urban Flooding



Source
The author’s own work.

conjunction with these efforts, this project can be used as data to derive strategic projects from investigations on the current conditions and cases of climate change in Vietnam and conduct future consulting projects on urban disaster prevention policies of developing countries. In conclusion, this project is likely to expand technical support for developing countries such as Vietnam and secure a foothold in building an international cooperation platform for efficient national land management

in response to climate change in the long term. This will be accomplished through the analysis of urban vulnerabilities to flooding and the development of a support system for urban flood prevention measures.

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How Korean Redevelopment and Latin American Slum Upgrading Diverge and Converge: Critical Reflections on Policy Responses to Urban Informality

Soo Jin Kim

1. Research Background

Policies in Latin American and the Caribbean countries regarding informal settlements have failed to provide fundamental solutions as they lack proper responsive measures from an improvement perspective of urban areas (Magalhães 2016, 1–10). Many problems have resulted, such as increased urban risk inside slum areas, insufficient supply of basic infrastructures for living and public services, and worsening of residents' quality of life. Existing housing policies reveal limitations, including a bias toward the quantitative side of expanding housing supplies, ambiguity of the standard of selecting regions and districts, and failures of original residents' resettlement, which have raised social conflicts. Efforts should be made to comprehensively understand the problems at a city level and come up with solutions. Public financial resources necessary for solving the problem of informal settlements are also insufficient in this area at present. Therefore, alternatives should be found by diversifying governments' administrative and financial capacities and encouraging residents' participation.

A drastic change of policy regarding informal settlements located in urban areas of Latin America has been made at a central government level since the 1990s. At the same time, the role of the public sector has become more important (Abramo and Rodriguez 2018, 36–42). Transformation of policy from post-demolition migration to large-scale legalization and slum upgrading is the largest change that deserves attention in this period. Furthermore, the supply of social housing led by the state has been emphasized over the past 10 years (Simpson 2013, 17–18).

From this background, the Inter-American Development Bank (IDB) requested Korea Research Institute for Human Settlements (KRIHS) to conduct research in 2018 regarding

the best practice of Korean improvement policy of informal settlements and its potential application to Latin America to develop criteria for evaluating the policy change.

2. Research Purpose and Method

Research purpose

This study reviewed and assessed Korean maintenance policy of informal settlements over the past 30 years (1980s–2000s) centered on the Housing Redevelopment Project (hereinafter HRP) and suggested several improvement points to extract implications for applying the policy in Latin America and the Caribbean (hereinafter LAC).

Research method

This study consists of three parts. First, it examined how improvement policy and the role of the public sector in Korea have evolved over the past 30 years (1980s–2000s). It critically reviewed the HRPs and summarized policy tasks. Second, the paper investigated problems of the relevant policies in LAC countries and discovered policy tasks. Third, the study proposed direction for applying the Korean maintenance policy of informal settlements to Latin America.

As a research method, relevant policies and previous studies in Korea and LAC were examined first. Second, the researchers conducted site visits and interviews to investigate the current situation of informal settlements in Korea. For the joint research between KRIHS and IDB, the research team visited five informal settlements in Seoul, including Baeksa Village, Guryong Village, and Gaemi Village, and interviewed stakeholders (civic groups, residents, etc.) during the research period of three weeks, together with Professor Pedro Abramo from the Federal University of Rio de Janeiro in Brazil who visited Korea for

the joint research in June 2018. Finally, multiple consultation meetings were held with interested parties.

3. Critical Review of the Improvement Policy of Informal Settlements in Korea

The improvement policies in Korea can be classified into four phases according to the change of related legislation over time. In phase 1 and 2 (1962–1981), a policy of mass migration and resettlement after demolition was executed, which instead caused an expansion of squatter settlements (Yoon Hyejeong 2006, 225–238). At the same time, a policy of legalizing unlicensed buildings was implemented and approximately 0.5 million people were forced to move to a large complex in Gwangju, Gyeonggi Province in the south of Seoul, after their home in Seoul was demolished (*ibid.*). Then, self-help redevelopment and consigned demolition redevelopment were tried (*ibid.*). In phase 3 (1982–2001), The HRP (1983) and the Residential Environment Improvement Project (1989, hereinafter REIP) were introduced and complemented each other (Jang Sehoon 1987). Around that time, the private-driven method unveiled various limitations, such as unprofessionalism and undemocratic operation of the association of the HRPs, and collusion with private construction companies was revealed. To address these problems, a public management system was introduced in phase 4 (2002–2018) based on the revised Act on the Maintenance and Improvement of Urban Areas and Dwelling Conditions for Residents (2010) (Kim Jinsoo 2011).

The HRPs, the main improvement policy tool in phases 3-4, has pros and cons. First, the projects were initially activated by the Seoul Metropolitan Government ahead of its hosting of the 1988 Summer Olympics. The goal was to remove clusters of squatter settlements in the downtown area and improve the urban landscape. However, the local government had insufficient financial sources for executing redevelopment after large-scale total demolition. As an alternative, private construction companies were encouraged to participate in the project by guaranteeing the development profit coming from the property value rise of the building site. Although the association was the main agent of the project in principle, the role of the private construction companies was strengthened as a joint operator. By the private-driven development method, a total of 1,100 districts were redeveloped by 2002 (Ministry of Land, Infrastructure and Transport 2017). During the redevelopment process, state-owned land that had been

occupied without permission was legally disposed to individuals, which ultimately caused the land to enter the market as capital (Jang Sehoon 1987). As the proprietary relations of the land became clear, construction business was activated, creating an economic stimulus effect.

The HRPs have a problem in that they were not aimed at improving quality of life through the enhancement of the residential environment of low-income groups. Instead, the projects were rooted in the privatization of development profit following the property value rise. Due to this nature of the development projects, the private-driven development plans have limitations in that they are processed in a way that maximizes development profit by utilizing land as much as possible by means of the upward adjustment of the floor area ratio or building-to-land ratio (Lee Sochung 2006, 182). It has other negative effects as well, described as follows. From a social aspect, owner-centered association have caused community disintegration through tenant exclusion and reckless management. Economically, projects in some of the candidate areas with low profitability had a rare chance to be chosen for the redevelopment, despite their urgent need to improve the residential environment. In terms of space, the projects created a uniform urban landscape featuring high-rise and high-density apartment buildings and caused infrastructure overload in some locations.

The problem of HRPs boils down to how to address common good when promoting association-oriented projects. The HRPs have several policy tasks. First, the role of the public sector, such as local governments and public corporations, needs to be expanded. For example, the public sector may participate from the early project phase as a public administrator or manager by receiving a certain fee and selecting private construction companies or coming up with migration measures in place of the association, which lacks professionalism. Second, various efforts should be made, including provision of temporary migration housing complexes during the construction period by introducing a circular redevelopment scheme supporting the means of living by guaranteeing job–housing proximity, and preventing original residents from unwillingly leaving the region. Third, common good should be addressed by a district-by-district plan as mitigation of regulations, such as upward adjustment of floor area ratio and land type, are expected in the foreseeable future to be aimed at inducing investment of various private capital and preserving profitability. Finally, institutional strategies for controlling conflicts that can develop over the process of decision making inside and outside the association are required. Financial

support systems may be helpful for accurately diagnosing the capability of the association and receiving consultation from an expert group at an affordable price if necessary.

4. Mechanism of the Korean Improvement Policy of Informal Settlements

The following factors contributed to the HRPs in Korea in the 1980s and the 1990s. First, the project was harmonious with the government’s will for economic growth and beautification of the urban landscape in the 1980s (Lee Sochung 2006, 179–183). Second, there was idle capital and a demand for development. Furthermore, securing profitable land for housing was relatively easy and the structures’ values soared through efficient use of land (ibid.).

The HRPs stopped working correctly after the 2000s. There were several economic reasons, including profitability drop, construction business recession, lack of idle capital, restriction on raising building-to-land ratio/floor area ratio, and diminished demand for development. Socially, corruption and concealed management of the association and private construction companies were revealed. In terms of space, it became difficult to secure sites that had satisfactory infrastructure and profitability at the same time.

The HRPs in Korea cannot be directly applied to LAC. Due to the economic crisis that has affected most of the countries across LAC since the 2000s, there is no sufficient idle capital for upfront investment. Social mobility is structurally limited in these countries and real estate alone cannot let people climb up the social ladder. As a result, the motivation to pursue development profit through redevelopment projects is relatively weak. Due to geographic characteristics, efficient use of land (high-rise and high-density development) cannot be achieved easily. There are also socio-cultural factors. The residents perceive the informal settlements positively and they have psychological resistance against total demolition. It is also burdensome that the residents have to pay service fees, which have not been imposed so far, once the legalization takes place following the redevelopment. Finally, illegal expansion that violates building laws becomes impossible after the legalization, which may consequently decrease the supply of affordable housing.

5. Application to Latin American and the Caribbean Countries

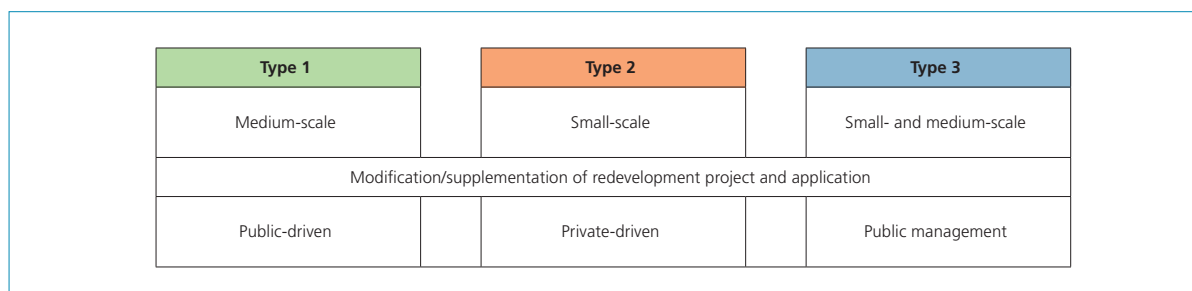
Informal settlements where the application of housing redevelopment can be considered were classified into the following three types according to the profitability,

Table 1. Characteristics of informal settlement types

Type	Profitability	Deterioration	Infrastructure supply	Existence of migration measures	Community activation	Project type	Main agent	Project scale	Demolition
Type 1	Low	Severe	Poor	Y	Deepening conflict	Public development	Public	-	Total Demolition
Type 2	Low	Severe	Poor	Y	Activated	Independent redevelopment	Residents' Committee or Association	Small-scale	Partial Demolition
Type 3	Low	Not severe	Poor	-	-	Housing redevelopment by public management	Community land trust	Small- and medium-scale	Partial Demolition

Source
The author's own work.

Figure 1. Application of housing redevelopment by informal settlement type



Source
The author's own work.

Table 2. Role and ways to address common good by main agent

		Application plan		
		Public-driven type	Private-driven type	Public management type
		Public-driven + Association	Public support + Association	Use of community land trust
Types of informal settlements		Type 1	Type 2	Type 3
Conditions of building site and Characteristics of residents		<ul style="list-style-type: none"> • Low profitability • Inevitable redevelopment after demolition • Deepening conflict within community 	<ul style="list-style-type: none"> • Low profitability • Inevitable redevelopment after demolition • Community activation 	<ul style="list-style-type: none"> • Low profitability • Inevitable redevelopment after demolition
Role of each agent	Local government	<ul style="list-style-type: none"> • Change of urban planning • Support of improvement fund • Support of prompt licensing 	<ul style="list-style-type: none"> • Preparation of migration measures • Conclusion of agreement with association regarding rental housing supply • Securing of rental housing by purchasing house for installment sale occasionally and preserving of profitability • Fund investment 	<ul style="list-style-type: none"> • Land purchase • Receipt of part of operating margin through investment • Preparation of migration measures
	Public	<ul style="list-style-type: none"> • Project implementation and management • Sales management • Preparation of migration measures • Support of purchasing unsold housing units • Fee charged 	<ul style="list-style-type: none"> • Housing finance (low interest rate) • Support of construction subsidy (government budget) support 	<ul style="list-style-type: none"> • Housing finance (low interest rate) • Support of construction subsidy (government budget) support
	Owner of land, etc.	<ul style="list-style-type: none"> • Land investment and association composition 	[Association member] <ul style="list-style-type: none"> • Receipt of share after investing land to association 	<ul style="list-style-type: none"> • Disposal of land to local government
	Private Construction firm	<ul style="list-style-type: none"> • Project cost procurement • Design and construction 	<ul style="list-style-type: none"> • Design and construction 	<ul style="list-style-type: none"> • Design and construction
	Others	[Association] <ul style="list-style-type: none"> • Joint implementation agent • Participation in establishing disposal plan • Constructor selection (inhabitant's poll) • Levy charged 	[Association] <ul style="list-style-type: none"> • Main implementation agent and owner • Profit creation through operation management of the housing with leasehold land [Association member other than owner of land, etc.] <ul style="list-style-type: none"> • When tenants and those who meet the standard become association member, they identically receive possessory right and right to receive share 	[Community land trust] <ul style="list-style-type: none"> • Direct development or consigned development [Non-profit entrepreneur] <ul style="list-style-type: none"> • Develops housing with leasehold land when consigned by the community land trust and raises rental profit by controlling rent
Ways to address common good by main agent	Public	<ul style="list-style-type: none"> • Induces participation from private construction companies by letting the public sector purchase a part of unsold quantity • Supports installation of infrastructure and public facilities 	<ul style="list-style-type: none"> • Construction of rental housing at lower price than market • Financial supports by means of finance, subsidy, etc. for redevelopment in regions with low profitability 	<ul style="list-style-type: none"> • Construction of rental housing at lower price than market • Reduction of financial burden on the public sector by receiving profit through land purchase and investment • Redevelopment project can be executed in regions with low profitability and near-zero possibility of independent redevelopment
	Private	-	<ul style="list-style-type: none"> • Reduction of the burden of housing expenses and increase of resettlement ratio through housing with leasehold land 	<ul style="list-style-type: none"> • Community-based job creation and increase of community spirit • Realization of residents' meaningful participation

Source

Referred to Kim Jieun (2015), Maeng Dami et al. (2017), and Lee Youngeun et al. (2018).

deterioration, existence of migration measures, infrastructure supply, and the level of community activation. [Table 1 and Figure 1](#)

Type 1 (public-driven type) has characteristics of low profitability, severe deterioration, poor infrastructure, support of migration measures, and deepening community conflict. Hence, a public development business model with a premise of total demolition can be used. Type 2 (private-driven type) has low profitability, severe deterioration, poor infrastructure, support of migration measures, and community activation. Hence, the use of small-scale improvement or a self-help redevelopment business model with a premise of partial demolition may be appropriate. Type 3 (public management type) has low profitability and poor infrastructure, but deterioration is not severe. Because a housing redevelopment business model centered on community land trust can be considered, a circular redevelopment method accompanied by small- and medium-scale partial demolition is recommended.

The proposal of this paper can be summarized as follows: (1) public intervention is necessary when applying the HRPs in LAC countries; (2) application plans are divided into three types according to the kinds of public intervention; and (3) both private and public sectors are responsible for addressing common good surrounding the HRP. The application plans according to the types of informal settlements were divided into Type 1: public-driven type (public-driven combined with

association); Type 2: private-driven type (public support combined with association); and Type 3: public management type (use of community land trust). [Table 2](#)

The way of defining improvement projects changes depending on how the social value of a city is understood. If urban space is both a product and a process that urban residents socially produce together (Lefebvre 1996, 26), then everyone has to be able to participate in the major decision-making process that may bring changes to the urban space (Purcell 2002). In this context, the improvement project lies on the boundary between the purpose defined by the public, which is recovery of city function, and the requirements of rights, which means that every person living in a city has the right to claim the city they desire. The improvement project needs to be revised and supplemented in a direction that reinforces common good in the future. The stress should be put on spatial welfare in the urban dimension, rather than improvement of the residential environment of individual housing itself.

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KRIHS

KRIHS (Korea Research Institute for Human Settlements) was established in 1978 in order to contribute to the balanced development of national territory and the improvement of the quality of life of people by conducting comprehensive policy-oriented research in the efficient use, development, and conservation of territorial resources.

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