Introduction

Land Readjustment:

Making Cities Inclusive, Safe, Resilient and Sustainable

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On September 25, 2015, the United Nations passed a resolution adopting "Transforming Our World: The 2030 Agenda for Sustainable Development" as its post-2015 development agenda. This outcome document set out the "Sustainable Development Goals" (SDGs) and targets as integrated and indivisible, global in nature, and universally applicable (UNGA 2015). Among the 17 Global Goals and 169 targets, Goal 11 calls on member states to "[m]ake cities and human settlements inclusive, safe, resilient and sustainable." A specific target of this Goal is to, "by 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries." In short, inclusiveness, safety, resilience and sustainability are attributes of urbanization that need to be achieved, and we therefore need to find effective ways and means to realize Goal 11.

Context

According to the High Level Panel for the post-2015 Agenda (henceforth, HLP), by 2030, there will be over one billion more urban residents in the world and, for the first time, the number of rural residents will start to shrink (HLP 2013). However, in many developing countries, urban conditions continue to be diffuse and disorganized. The lack of proper planning generates unsafe and dangerous conditions for everyday life, and blocks access to jobs, educational, and cultural opportunities (see Chapter 1 of this volume; Rolnik 2000). It is in this context that the United Nations resolution on SDGs was adopted. As stated by the HLP, "We recognize that sustainable urban development and management are crucial to the quality of life of our people. We will work with local authorities and communities to renew and plan our cities and human settlements so as to foster community cohesion and personal security and to stimulate innovation and employment" (HLP 2013, article 34). Indeed, urbanization is closely related to jobs and inclusive growth "because inclusive growth emanates from vibrant and sustainable cities, the only locale where it is possible to generate the number of good jobs that young people are seeking" (article 29).

Purpose of this volume

One method or practice that could provide an effective approach to achieving Goal 11 of the SDGs is "land readjustment." This approach could help to address the challenges of improving urban conditions, in order to achieve urbanization with more desirable attributes. This volume aims to provide insights into the main features of the land readjustment approach, focusing on its effectiveness, advantages and challenges. Based on experiences in Japan as well as those of other countries, this volume explores how these experiences have been applied and further improved in developing countries through Japan's international cooperation programs, as well as those of other organizations.

Land readjustment: characteristics and relevance for urbanization in developing countries

There are two main known tools that can be used to address the demand to reorganize urban structures and land patterns. The first of these is eminent domain, or expropriation, by which private property is compulsorily purchased for public usage or reallocated to third parties who will devote it to public or civic uses. The other is land readjustment. This has been promoted as an innovative land assembly method to overcome reorganization problems faced especially by developing countries (see Chapter 1; Sorensen 2009).

Japan is one of several countries over the past few decades that has managed to implement solutions to urban problems faced by all developing countries: migration from rural areas to urban centers, urban expansion and uncontrolled growth, and countless environmental problems. Throughout this entire process – which took place over more than a century – methods for territorial planning were developed and institutionalized. This included negotiation processes to control urban growth, and implementation of infrastructure and land pattern changes – especially through land readjustment practices – without the widespread use of expropriation (see Chapter 1). Therefore, Japan might be considered a pioneering country in mainstreaming the land readjustment approach in its urban development policy.

The usage of land readjustment in Japan is broad in scope and purpose. It can be divided into five categories: control of urban sprawl, development of new towns, urban rehabilitation, development of complex urban infrastructure, and disaster reconstruction (see Chapter 1). Indeed, the scale of its application in Japan is outstanding: "Widely applied throughout the country, land readjustment is known as the 'mother of urban planning' in Japan. Several project modalities have been introduced and improved over the past century, transforming 10,909 areas, or 329,249 hectares (as of March 2013), which represents approximately 1/3 of the whole country's urban area" (see Chapter

1). Land readjustment has been a driving force behind post-disaster reconstruction, in particular (see Chapter 2).

Definitions of land readjustment are diverse and differ according to country contexts as shown in the case studies of Chapter 3. However, the essential concepts can be found in the general provisions of the Japanese *Land Readjustment Law* enacted in 1954. According to this law, land readjustment means to alter the shape and land conditions of lots and install or improve public facilities in a city planning area in order to provide better public facilities and increase the usage of each lot.

The following explanation, from Chapter 1, describes land readjustment in terms of its goals and process: "through land readjustment projects, the main contribution is in the form of land that will simultaneously improve the public realm – roads, parks, sidewalks, sites for public schools and hospital sites – and, consequently, increase private land values. As purchasing land for public facilities can be prohibitively expensive, through the win-win potential of land readjustment it can be possible to finance and promote projects that would not be possible by any other means. Landowners' property rights, in this sense, still prevail, with a smaller land size and a possible higher total asset value, but aiming for a fair distribution of costs and benefits in urban development" (Chapter 1).

Main issues and analytical perspective

Based on the above-mentioned characteristics, we might ask how land readjustment can facilitate the attainment of the desired attributes of urban development: inclusiveness, safety, resilience, and sustainability. The following sections will discuss some general aspects of land adjustment first, and then consider its contribution to developing countries' urban development, by drawing from one concrete case.

Land readjustment and inclusiveness

In recent years, "inclusive development" has attracted increasing attention from the international community. A decade ago, before the term "inclusive growth" or "inclusive development" started to be used widely, related or similar concepts such as "equity" and "pro-poor growth" were used. For example, the "World Development Report 2006" featured "equity and development." Later, several pioneering studies on inclusive development were published. In these studies, inclusive development is understood to include concepts of full, productive and decent employment to maximize economic opportunities, social protection, and equal access to economic opportunities (Hosono 2016).

The "Framework of Inclusive Growth Indicators" (FIGI), published by the Asian Development Bank (ADB 2013), asserts that the outcomes of inclusive growth are achieved through three policy pillars: sustained economic growth and development of productive jobs and economic opportunities; social inclusion to ensure equal access to economic opportunities by expanding human capacities; and social safety nets to protect the chronically poor and to address the risks and vulnerabilities of the population.

Land readjustment may bring two significant social benefits in comparison to eminent domain, or expropriation. "The first benefit relies on the preservation of social, cultural and economic networks that are closely tied to a physical location, and the routines and interactions of everyday life in that place, through original community maintenance" (Chapter 1). This is because, in the case of land readjustment, all dwellers (landowners and tenants) remain after project implementation. Community cohesion is maintained or fostered in this approach. The second benefit is the realization of equitable distribution of costs and benefits in urbanization processes. All property owners (the original residents) contribute by providing a portion of their property to establish public spaces, or by providing land to sell to pay for improved infrastructure. Thus, "land readjustment projects can go a considerable distance towards a more equitable distribution of both costs and benefits of urbanization" (Chapter 1; Sorensen 2009, xi).

From the perspective of inclusive development, the inclusiveness of land readjustment is clear in indicators such as FIGI, as mentioned previously. On the one hand, land readjustment could potentially facilitate opportunities for residents to participate more actively in the economic and social development process through better access to opportunities. For example, in cases where new infrastructure constructed in a land readjustment area improves connectivity to public transport (new bus stops and so on) and to urban centers, access to higher education and specialized health care, as well as diversified job opportunities, could be enhanced. Moreover, land readjustment can secure necessary public space for basic education and primary healthcare through the landowners' land contribution mechanism.

Furthermore, land readjustment contributes to addressing increasing inequalities that may occur in the process of urbanization. It ensures fair distribution of the costs and benefits of urban development and avoids the problem of increases in land values (capital gain, or *plusvalía*) being monopolized by large landowners, developers or governments. With the costs of land readjustment mostly borne by beneficiaries, the need to use public funds for urban development can be minimized. Finally, social safety nets to protect the chronically poor and address the risks and vulnerabilities of the population can be enhanced directly or indirectly by land readjustment. In short, land readjustment may help to make urban development inclusive and equitable[1].

Land readjustment and safety, resilience, and sustainability

One driving force behind post-disaster reconstruction in Japan is land readjustment. After a disaster occurs, people aim to build back more resiliently and stronger than before, rather than simply trying to rehabilitate the disaster-stricken communities (see Chapter 2). In post-disaster reconstruction, both preservation/cohesion and stronger resilience of communities are essential and, as such, land readjustment has been the activity to revitalize and rebuild a better livelihood and living environment than they were before.

The improvement of sewage, waste treatment and drainage systems, construction of green belts and parks, and other facilities necessary for environment sustainability of community requires public space for which land readjustment approach may be effective. Without this approach, the cost of securing land for these investments in public expenditure could be enormous. Cities without facilities for environmental sustainability are likely to suffer from serious air and water pollution and its consequences. Public space and better connectivity, as well as community coherence, are important for the safety of residents and the city as a whole. As discussed below, there have been cases of re-urbanization through land readjustment that have contributed remarkably to improving public safety.

In summary, land readjustment is an approach that can contribute to making cities more inclusive, safe, resilient, and sustainable, as established by the SDGs, especially Goal 11.

Land readjustment in developing countries

Urbanization is accelerating in developing countries, where urban sprawl, slums, inadequate urban infrastructure, human insecurity, air and water pollution, and vulnerability to disasters are common. Urban slums continue to expand in high-risk areas. In this context, participation by the urban poor in the development process is constrained by inadequate access to jobs and economic opportunities and by limited access to education and healthcare undermining the capacity to take advantage of such opportunities. "Once urbanization happens, whether legally or illegally, and land is subdivided and settled, it is extremely difficult to reorganize or rearrange property ownership boundaries, especially to secure land for basic public needs" (Chapter 1). In these circumstances, land readjustment, or re-urbanization programs which include land readjustment, could provide an effective approach to addressing the above-mentioned urban poverty and slums and making cities of developing countries inclusive, safe, resilient, and sustainable (see Chapters 1 and 4).

Additional insights into these aspects can be drawn from an examination of one concrete case from a developing country. In Colombia, *Law Nº 9* was enacted in 1989 in order to introduce urban reform instruments for management and land use planning, conferring on the State the primary role as city builder. During the law's development process, the involvement of the Japan International Cooperation Agency (JICA) was reflected in the incorporation of instruments such as land readjustment and urban redevelopment in particular (see Chapter 3).

Later, in 1997, a new law (*Law Nº 388*) was enacted, which prompted all Colombian city councils to prepare an urban planning master plan. Japan's 10-year history of cooperation contributed greatly to efforts to establish this new urban planning framework. Former trainees from the JICA's country-specific training courses provided a driving force in Colombia's urban planning. In 2003, the Colombian government proposed new urban development projects and asked for the participation of the former trainees. This meant that JICA's support for capacity building in the areas of urban planning and land readjustment were relevant to the Colombian government and its development policies, and the high level of the capacity building was recognized (see Chapter 4).

The former JICA trainees worked in administrative institutions of important Colombian cities including Medellín, Cartagena and Chia and applied the urban planning and the land readjustment methods they learned. By 2013, land readjustment projects that included urban redevelopment projects had been conducted in five districts, including Medellín, and there were about 50 projects using methods similar to land readjustment that had been undertaken all over the country (see Chapter 4).

Integral improvement of communities (*mejoramiento integral de barrios*, MIB) in the Juan Bobo area of Comuna Nº 2 in the northeastern zone of Medellín was designed, coordinated, and implemented by the Company of Urban Development (*Empresa de Dessarollo Urbano*, EDU) between 2004 and 2008. The project targeted the dwellings that had been constructed along the banks of the Juan Bobo stream, with a population of 1,353 people (300 families) and a land area of 1.75 hectares. MIB is a part of the "Integral Slum Improvement Program," a city program that attempted integral slum redevelopment between 2004 and 2007. The project goals were (i) applying an efficient and flexible planning procedure based on technical criteria adjusted for each micro-territory, (ii) fostering community consensus and participation in generating secure co-living conditions, (iii) improving the whole neighborhood by securing proper financial resources, (iv) improving and legalizing residences on the basis of an analysis of demographic dynamics, and (v) improving degenerated land and the environment to help on-site resettlement (Sato 2013, 5; Alcaldia de Medellín 2011)[2].

In 2002, a public gondola-lift transport system called Metro Cable K Line was

inaugurated in areas called Comuna Nº 1 and Comuna Nº 2, providing a 7-minute service connecting the hillside neighborhoods of northeastern Medellín with the Medellín metro system, benefitting approximately 170,000 residents. This provided services to Comuna Nº 1 and Comuna Nº 2, areas where living conditions were the lowest in the city, and constituted a much-needed public intervention. Thus, the blueprint for MIB came to be included in the draft of the city development plan.

Through this project, the following infrastructure works were completed in the public space secured by land readjustment in Juan Bobo area: sewage pipes (2.7 kilometers), cleaning of the stream basin (200 meters), stream-edge improvement for pedestrians (1,500 square meters), public space and pedestrian mobility improvement and construction (4,500 square meters), restoration of environment (2,500 square meters), construction of a bridge to connect parts of the community, and construction of a library and two community salons. At the same time eight new apartment blocks were constructed and property rights were registered for 118 families. Along with this, 115 houses were improved (Sato 2013, 34).

This re-urbanization project utilizing a land readjustment approach was inclusive: coherence of the community was maintained and fostered through the whole project process and by the construction of two community salons. The conversion of property rights was made not only from land to land (i.e. moving to a new smaller property of approximately the same value) as practiced in Japan, but also from land to building floor in this case (i.e. moving to an apartment of similar value to the land). In addition, all apartment floors were legally registered. With improvement of roads in the district, together with the construction of the Metro Cable, access to jobs and other economic opportunities substantially improved.

The project contributed to the environmental sustainability of the district with construction of sewage pipes, cleaning of the Juan Bobo stream basin, and restoration of environment. Resilience of the community was enhanced, because the high-risk areas where houses were located (for example, where there was a possibility of landslides occurring) were converted into green areas. Furthermore, new apartments were constructed in areas where there was a low risk at a safe distance from the valley through which the Juan Bobo stream runs. Regarding public safety, the only available statistics are for the whole of Medellín city. While considered one of the most dangerous cities in the world at the beginning of the 1990s, the number of homicides per 100,000 persons decreased from 381 in 1991 to 184 in 2002, and just 26 in 2007. Although this decrease cannot be attributed exclusively to urban redevelopment programs, the completion of Metro Cable K Line and the implementation of these programs in the 2000s coincided with the rapid decrease in the homicide rate. In 2007, the homicide rate in Medellín was lower than the average for Colombia, yet still remains higher than the capital, Bogotá[3].

The improvement in inclusiveness (better housing, better access to jobs, and education and health facilities), safety, resilience, and sustainability through urban redevelopment with the land readjustment approach may have contributed at least partly to the improvement of Comuna Nº 1 from 73 in 2004 and 2006 to 79 in 2009 on the Human Development Index. At the same time, the status of Medellín also improved from 79 in 2004 to 80 in 2006, and 85 in 2009[4].

In short, experiences in Colombia and many other developing countries confirm that the land readjustment approach may provide a fundamental tool for improving poor areas, and in securing land for the poor, together with public spaces for inclusive development. In Japan, land adjustment is not usually regarded as a means of addressing issues of poverty (see Chapter 4). As such, the above finding regarding the relevance of land readjustment for improvement of poor areas is a result of mutual learning achieved through international cooperation. In Colombia, the establishment of a land readjustment framework contributed to the country's efforts in urban planning, in which the need to address issues related to urban poverty remains a major concern.

International cooperation for land readjustment

Japanese cooperation for land readjustment has been provided mainly through three schemes or programs: (1) active participation in international conferences and seminar, (2) structured training courses for developing countries' practitioners held continuously in Japan over the past three decades, and (3) technical cooperation with some developing countries carried out together with above-mentioned international seminars or training courses.

Land readjustment became internationally known in the late 1970s. The "First International Conference on Land Consolidation" was held in 1979, where the term "land readjustment" was used for the first time. The conference decided to switch away from the term "land consolidation" to "land readjustment" after considering the variety of land readjustment projects presented at the conference (see Chapter 4). The "Second International Conference" was held in 1982 in Japan as a commemorative event to celebrate the completion of the postwar reconstruction land readjustment projects in Nagoya city. This conference highlighted the active implementation of land readjustment projects in Japan. After the conference, several international seminars were held in the "Association of the Southeast Asian Nations" (ASEAN) region and in other countries, resulting in significant impacts on urban development in Southeast Asian countries. These international seminars came to an end in the year 2000 (see Chapter 4).

Japan started to provide technical cooperation related to land readjustment during the

1980s, in which the former Ministry of Construction and JICA played a central role. There have been two types of technical cooperation programs in this regard: (1) a full set-type technical cooperation program which includes dispatch of experts and feasibility studies on land readjustment, and (2) training courses and follow-up type support for developing countries to establish their own land readjustment frameworks.

JICA and the former Ministry of Construction began to provide training courses on land readjustment in 1983, aiming to disseminate Japan's urban development techniques to developing countries. JICA has continued to provide these training courses until today, with a total of 363 participants from 68 countries attending these courses from 1986 to 2014 (see Chapter 4).

Based on the experiences of international cooperation over the past three decades, JICA has introduced changes in the training courses, taking a more specific approach, such as the establishment of an institutional land readjustment framework and problem-solving, thus going well beyond a general introductory program of land readjustment. To this end, JICA decided to accept trainees from countries where land readjustment projects are being conducted, and from countries where a government organization is trying to introduce the land readjustment method at home. The training program contents do not focus solely on Japanese experiences of land readjustment but are based on mutual learning with countries that have been successful in applying their own land readjustment policies (see Chapter 4). Triangular cooperation approaches – in which pivotal countries, beneficiary countries and Japan all participate – appear to be a promising area (Hosono 2013). Colombia is now acting as the leader (or pivotal country) in land readjustment experiences for Latin American countries and Thailand is expected to be a leader in Asia.

Recently, some international organizations have become increasingly engaged in international cooperation in land readjustment. For example, the United Nations Human Settlements Programme (UN-Habitat) incorporates this approach into its cooperation program by paying attention to the participatory and inclusive attributes of land readjustment. This organization also considers land readjustment as a viable tool to enable public and private partnerships for land development. In 2016, the World Bank started to offer online courses on land readjustment (see Chapter 4). The "Development Cooperation Charter of Japan" was also released in 2015, the same year that the SDGs were adopted. The charter states that one of the most important challenges for development is "'quality growth' and poverty reduction through such growth," in which inclusiveness, sustainability, and resilience are stressed (Cabinet Office of Japan 2015, 5-6).

In these ways, land readjustment has increased its relevance in international cooperation for urbanization, urban redevelopment, and in particular for the achievement of the

SDGs, especially of Goal 11. In terms of its future perspective, the land readjustment method should be applied comprehensively and strategically while considering the issues that face developing countries. These issues include infrastructure development, slum upgrading and the guarantee of property rights, urban management, urban governance, inclusiveness, value capture finance, sustainable urban development, and climate change mitigation/adaptation. This vision coincides precisely with that of SDG Goal 11 to make cities inclusive, safe, resilient and sustainable, as mentioned at the beginning of this Introduction.

Endnotes

[1] On the one hand, land readjustment alone cannot assure inclusive development. In order to address urban poverty in slums, several policy measures need to be introduced, together with land readjustment, in slum areas. As such, a comprehensive scheme with a whole range of policies and tools is essential. On the other hand, traditional pro-poor approaches may be more effective when they are implemented with land readjustment.

[2] This and next four paragraphs are based on Sato (2013) and the author's field survey in Juan Bobo area in 2010.

[3] These figures are from Sato (2013, 7) based on the data from the Company of Urban Development (EDU).

[4] These figures are from Sato (2013, 7), based on Rivas (2011, 45).

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