

# The Characteristics of Land Readjustment Systems in Japan, Thailand, and Mongolia and an Evaluation of the Applicability to Developing Countries

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## ***Abstract:***

The LRS is an urban development measure having two fundamental functions: 1) land value increasing through development and 2) the sharing of development profits with land rights holders and stakeholders. For the analysis of LRS, LRS is divided into eight sub-systems: 1) coordination sub-system with urban plan, 2) organization sub-system of implementer, 3) approval sub-system, 4) supervising sub-system, 5) support sub-system, 6) financial sub-system, 7) land re-plotting sub-system, and 8) construction sub-system. This paper aims to analyze the characteristics of Land Readjustment Systems (LRS) in Japan, Thailand, and Mongolia and evaluates the applicability of those systems to cities in developing countries. The analysis focuses on the objective and scope of LRS as well as three sub-systems; the organization sub-system of implementer, support sub-system, and land re-plotting sub-system.

As the results of the analysis of these four, LRS will be useful as an urban development measure in cities in developing countries that are facing rapid growth in socio-economic and population terms, because it can reduce public expenses and promote the involvement of land rights holders. The followings are key points for applying LRS to developing countries;

- Introducing LRS basically for land development and infrastructure development, and adding building construction in response to individual issues within a developing country
- Adopting private enterprises or developers with capability of fund-raising and LR project management as private implementers
- Rule to restrict the development benefit that the land rights holders and LR implementers gain in order to keep the balance with the subsidies.
- Technical supports and expert detachments for the implementation of LR projects
- Rule for small lands to move out of LR project areas in order to make consensus building easier
- Land re-plotting sub-system to exchange of land right into not only land rights but and building rights for divers objective of urban development with multiple objectives
- Adequate land protection measure in urbanized areas

## ***Keywords:***

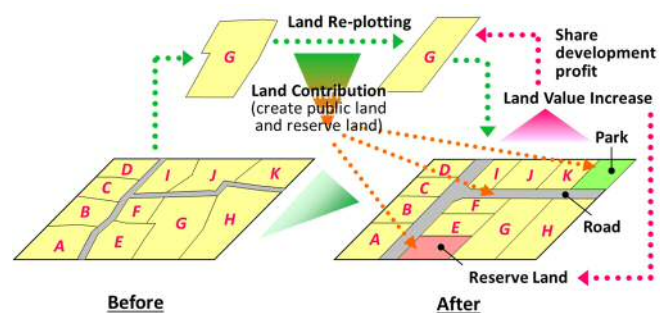
Land Readjustment, Land Re-plotting, Land Rights Exchange, Private Implementer

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## 1. Introduction

A land readjustment system (LRS) is an urban development measure that reorganizes land plots and develops public infrastructure like roads, parks, and urban utilities. The first LRS in the world was established for urban expansion in Frankfurt, Germany, in 1902.<sup>1)</sup> The LRS has two fundamental functions: 1) land value increasing through development and 2) the sharing of development profits with land rights holders and stakeholders. **Figure 1** illustrates the basic concept of LRS. These functions generate advantages by reducing the initial development cost and promoting consensus building among land rights holders compared to a general urban development method through land acquisition. In LRS, public land for infrastructure development and reserve land (financial land) are acquired by the land contributed from the private land. Therefore, the project implementer does not need a budget for land acquisition in the initial stage of the project. In addition, original land rights holders do not need to abandon their land rights and are promised to receive the developed land with a higher utility value, improved through the project. It makes the land right holder's acceptable to the LR project. This paper analyzes the characteristics of LRS in Japan, Thailand, and Mongolia and discusses the applicability of those systems to cities in developing countries.



**Figure 1** The Basic Concept of LRS

## 2. Structure of Land Readjustment System (LRS)

**Figure 2** illustrates the overall structure of LRS. The LRS consists of eight sub-systems as shown in the middle of the figure: 1) coordination sub-system with urban plan, 2) organization sub-system of implementer, 3) approval sub-system, 4) supervising sub-system, 5) support sub-system, 6) financial sub-system, 7) land re-plotting sub-system, and 8) construction sub-system.

The objective and scope of LRS are important items because these represent the solution of the urban problem and direct the framework of the LR law and regulations.

The organization sub-system of the implementer is regulated by the LR Law and defines the LR project implementer. The implementer is the most important player among the stakeholders in a LR project because the implementer plays a role in the operations of LRS. Although other stakeholders, such as local government and land rights holders, depend upon the location and boundary of the LR project, an adequate implementer should be defined in terms of successful project implementation. In particular, this paper focuses on the definition and constitution of private implementers from the viewpoint of the utilization of the private sector's vitality. The implementer's implementation ability is examined in the approval sub-system.

The support sub-system provides financial and technical support for the promotion of the LR project. Different supports will be introduced in each country.

The land re-plotting sub-system reorganizes land rights and creates public land and reserve land. In addition, this sub-system coordinates the sharing of development profit among the land right holders. This sub-system is the core of LRS and characterizes LRS.

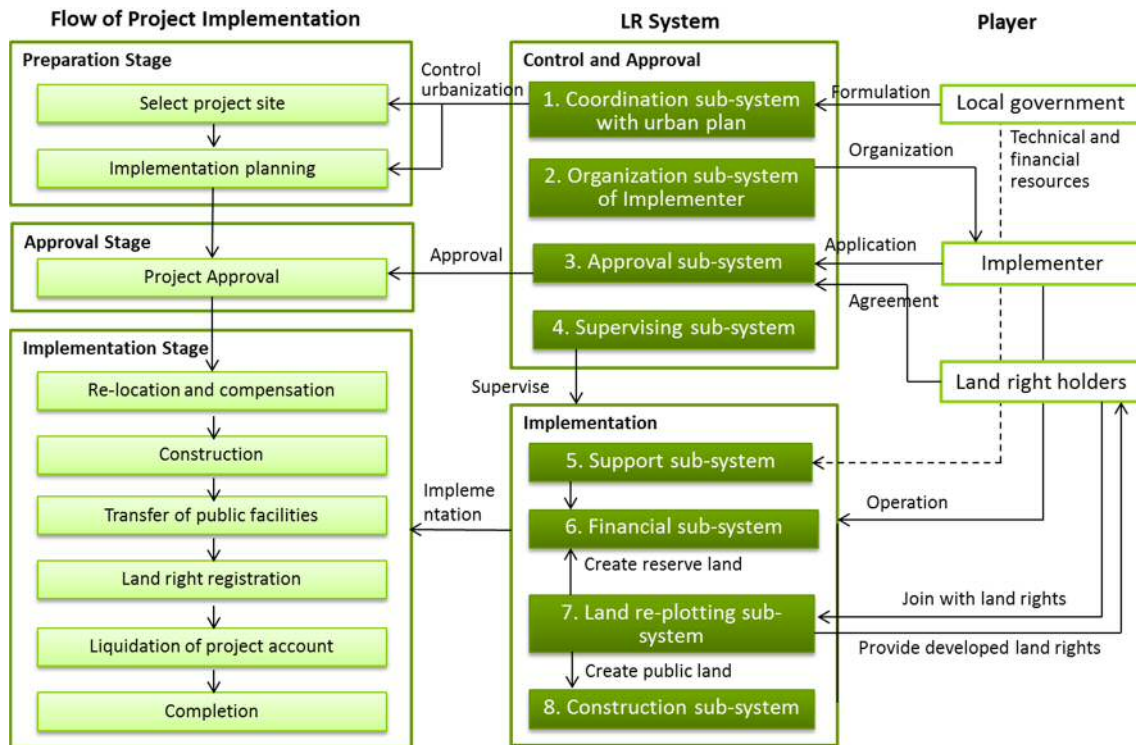


Figure 2 Overall Structure of LRS

### 3. Analysis of LRS in Japan, Thailand, and Mongolia

LRS has been applied in more than 10 countries in Asia, Europe, and South America. Although the LRS in these regions is structured by applying the basic concept of LRS, it has different characteristics. This paper targets the LRS in three countries—namely, Japan, Thailand, and Mongolia. Japan has experienced LRS for 100 years whereas Thailand and Mongolia have established LRS in recent years with the technical assistance of Japan. This analysis focuses on the objective and scope of LRS as well as three sub-systems—the organization sub-system of implementer, support sub-system, and land re-plotting sub-system—as these are important schemes of the LRS when applying LRS in developing countries.

These LRS can be characterized as follows:

#### a) LRS of Thailand

**Objective and Scope of LRS:** In Thailand, LRS was introduced by the government to implement appropriate land and infrastructure development for urban management with the technical assistance of the Japan International Cooperation Agency (JICA) in 1987.<sup>2)</sup> In urbanizing areas in Thailand, residential areas have been haphazardly developed in agricultural land and caused urban sprawl due to the economic growth and population increases as well as traffic congestion due to the shortage of urban road networks. To improve inefficient economic activities and traffic congestion, Thailand’s LR law (*Land Readjustment Act, B.E. 2547*, established in 2005) was established in December 2004 with JICA’s technical assistance. After that, LR project feasibility studies were carried out. The projects in Bangkok and other provinces were nominated as the pilot LR projects, and some have already been implemented.<sup>3)</sup> Currently, the LRS in Thailand focus on the urban development in farmland and vacant land in

urbanizing area. The scope of the LR project is limited to develop land and construct infrastructure, but building activity is not included in the scope.<sup>4)</sup>

**Organization Sub-system of Implementer:** Thailand's LR Law stipulates four kinds of implementers: 1) LR association, 2) national and local authority (Department of Public Works and Town & Country Planning, National Housing Authority, local administrative organizations), 3) government agencies, and 4) other government agencies as provided by ministerial regulation.<sup>4)</sup> Among them, the LR association is a private implementer organized by land rights holders and is given juridical personality. All land owners and condominium owners at the project site have membership in the association. The LR project is operated by the Board of Directors, consisting of representatives of the land rights holders.<sup>4)</sup> Only the LR association is defined as a private implementer. Thus far, one LR association project has been implemented in Bangkok, and its financing has been supported by the local government.<sup>3)</sup> The LR Law does not stipulate private companies as LR implementers, but private companies can participate as members of the LR association. Thus, the private sector is not a major implementer of LR projects. In addition, private companies currently have no opportunity to operate LR projects in Thailand.

**Support Sub-system:** In Thailand, national subsidy and land readjustment funds are stipulated as the public financial support system of LRS in Thailand's LR Law.<sup>4)</sup> Current pilot LR projects have received funds from the national subsidy.<sup>3)</sup> Meanwhile, the land readjustment fund is in preparation and is not yet being used for LR projects. There is no provision for public technical support in Thailand's LR Law. In support of consensus building among land rights holders, relocation with compensation or apartment units on small-scale land to out of the LR project site is stipulated in Thailand's LR Law.<sup>4)</sup> Thus, the national subsidy and relocation system are utilized for financial support for LR projects in Thailand. However, neither financial support nor technical support are enough to strengthen the implementation of LR projects. This shortage of the support systems is one of the obstacles to the private sector promoting LR projects.

**Land Re-plotting Sub-system:** According to Thailand's LR Law, LR is defined as an implementation measure for land development by way of land re-plotting and the construction of infrastructure.<sup>4)</sup> The land re-plotting sub-system is limited to exchanges from land to land.<sup>4)</sup> Exchanging land rights for buildings is not applicable. Current LRS in Thailand aims to develop vacant lands and farmlands. All building activities on the project site are implemented outside the scope of the LRS. Thus, the LRS is simplified to meet the two project objectives. This land re-plotting sub-system, without exchanging land rights from land to apartment units, is a disadvantage for the renovation of existing urbanized areas. In land re-plotting, land rights holders contribute a part of their own land to produce public land and reserve land needed for the revenues of the LR project.<sup>4)</sup> The reserve land is sold to generate revenues for the LR project after completion of the construction stage. Regarding land rights protection, original land rights registration must be changed to new land rights before the LR construction stage according to the land re-plotting plan.<sup>5)</sup> Namely, land rights can be protected during the LR project's implementation. However, land use has to be suspended until the completion of the construction stage. This land right protection measure does not cause problems for LR projects on farmland and vacant land, which are the major target areas of LR projects in Thailand. However, this land rights protection measure is not applicable to LR projects in existing urbanized areas with existing buildings. Namely, it is difficult to suspend existing land use with buildings during the long period of the project implementation.

## **b) LRS of Japan**

**Objective and Scope of LRS:** In Japan, LRS was introduced to implement the urban expansion of Tokyo in 1919 with reference to the German LRS.<sup>1)</sup> At the beginning, LRS was stipulated in the Urban Planning Law, and the legal procedure was carried out by applying to the Law on Agricultural Land Consolidation. The Land Readjustment Act was established in 1954 and has been revised often. LRS was applied to the urban rehabilitation of the disaster-affected area of the Great Kanto earthquake of 1923 and war-damaged areas in major local cities after World War II. During the period of high economic growth and population increase since the 1950s, LRS was applied exclusively to new town development countrywide. Recently, LRS has been applied in station area development and urban renovation.<sup>6)</sup> Thus, Japanese LRS have been applied to various areas and development purposes and have been modified and diversified the systems to meet economic and social situations and urbanization policy requirements. Given the considerable performance outcomes, LRS has been known as an urban development method for implementing urban plans among not only administrative bodies, but also general citizens.

**Organization Sub-system of Implementer:** Japan's LR Law stipulates three kinds of public implementers—1) local government (prefecture and city), 2) central government, and 3) government corporations—as well as three kinds of private implementers: 4) individuals, 5) LR cooperatives, and 6) LR companies. In addition, the outsourcing agent for LR cooperatives, one of private companies' venues for participation, is stipulated in the law.<sup>7)</sup> LR cooperative is organized by land rights holders within the LR project site, the same as the LR association in Thailand. LR cooperatives have implemented most LR projects in Japan's private sector.<sup>6)</sup> The budget of LR projects consists of central government subsidies and local government subsidies, LR funds, and reserve lands produced by the land re-plotting system. However, reserve lands can be sold after the construction stage, so the private LR implementer must obtain a loan from banking institutions prior to the completion of the sale of the reserve lands. In the case of LR cooperatives, directors borrow money for the project revenues from banks on the security of their own property as collateral. In Japan, Japan Agricultural Cooperatives (JA), with its membership comprising farmers, have a financial business as well as a supportive business for agricultural activities. In many cases, the LR cooperative borrows money for LR project budgets from JA. This financial viability has allowed for LR projects to grow thanks to LR cooperatives in Japan. The LR Law stipulates two kinds of participation measures for private companies: 1) outsourcing agents for LR cooperatives and 2) LR companies.<sup>7)</sup> In terms of the outsourcing agent for LR cooperation, the legalized implementation power as LR implementer belongs to the LR cooperative while a private developer implements funding and construction; the private developer then obtains reserve lands under the contract between them. The private developer receives the profits from the housing business by selling the reserve lands outside the scope of the LR project.

On the other hand, the LR company is a kind of special purpose company organized by land rights holders and private developers. This provision was added to the LR Law in 2005.<sup>6)</sup> To establish the LR company, land rights holders must invest more than 51% of the capital of the LR company.<sup>7)</sup> This restriction condition secures the priority of the decision making of land rights holders rather than private developers given their conflict of interest in the project. Only one project has been implemented by an LR company.<sup>6)</sup> LR companies have not grown in Japan for two main reasons. The first reason is the real-estate market recession since the 1990s. The

second is the investment condition—namely, that land rights holders must own 51% or more of the stock. From the perspective of the reduction of the investment risk, land rights holders seem to select LR cooperatives and outsource LR operations to private developers.

**Support Sub-system:** Financial support for LR projects can be acquired from a central government subsidy, which can be used for budgets for developing city planning roads in the LR project area. The budget includes land acquisition costs, compensation costs, construction costs, and management costs. The LR project implementer can be subsidized by the central government securing public land for city planning roads through land re-plotting and their construction. The LR project implementer has to contribute more than 50% of the increased land values for the LR project as reserve lands in order to get the subsidies. In other words, the development profits that land rights holders obtain are limited to less than half of total development profits in a LR project supported by a central governmental subsidy. This restriction condition coordinates the balance between public investments and land rights holders' profits. In the case of LR cooperatives, the LR project can get other public financial support, such as local government subsidies and LR funds, tax exemption from corporate tax, and land rights registration fees.

Regarding the public technical support, LR cooperatives can get technical advice from relevant departments in the local government and the dispatch of experts and consultants.<sup>7)</sup> Unlike LRS in Thailand, the LR Law does not stipulate the relocation of land rights to out of LR project site. Land rights holders who require to relocate out of the project can only do so via private trades. As previously stated, the support sub-system of LRS in Japan offers adequate financial and technical support for private sector LR projects under the appropriate requirement condition and has promoted numerous private sector LR projects in Japan.

**Land Re-plotting Sub-system:** According to Japan's LR Law, the land re-plotting sub-system is institutionalized so as to use not only land re-plotting, but also land rights exchanges from land to building floor rights.<sup>7)</sup> Although most LR projects in Japan use limited land re-plotting in the same manner as in Thailand, LR project for urban renovation is implemented using the land rights exchange for the development of apartments and commercial buildings in designated blocks. Specifically, there are two legal bases for the land rights exchange for LR project: i) an exchange based on the LR Law and ii) an urban redevelopment project based on Urban Redevelopment Law coming from the LR project.

As previously described, the LRS in Japan has multiple objectives, such as i) new town development in suburbs and ii) urban renovation in built-up areas. Similar to the land re-plotting sub-system in Thailand, land rights holders contribute part of their own land for public and reserve lands needed for the LR project revenues.<sup>7)</sup> Apart from the required condition for getting the central government subsidy, as previously described, the total area of reserve lands is regulated to less than 100% of the increased land value.<sup>7)</sup> This condition secures that land value on the project site does not theoretically decrease after the LR project. In land rights exchanges from land to building floor rights, reserve floors can be produced in the developed building.

Regarding land rights protection, the land re-plotting sub-system in Japan has different protection measures than in Thailand. The land re-plotting plan, indicating the location, figure, and area of new land rights, is officially designated before the LR construction stage; the land rights registration is then changed after the LR construction.<sup>7)</sup> Namely, land rights are protected by the existing land rights registration and the re-plotting plan during the implementation of the LR project. The relocation and suspension of existing land use can be implemented in a one

-by-one manner. Even in the case of complicated land re-plotting in and LR project in urbanized areas, this protection measure can smoothly relocate original land rights to new land rights.

### **c) LRS of Mongolia**

**Objective and Scope of LRS:** In Ulaanbaatar, the capital city of Mongolia, huge settled areas called the Ger area hold approximately 60% of the city's population in the surroundings of the urban area. The Ger area faces urban issues related to deteriorating living environments, such as a lack of access to urban utilities and air pollution caused by using coal heaters. To make improvements, a new urban development measure utilizing a land rights exchange was proposed by the JICA in its 2007 study entitled "The Study on City Master Plan and Urban Development Program of Ulaanbaatar City". After that, the legal basis of the new urban development measure was established and the capacity development carried out between 2010 and 2013, with support from the JICA's technical cooperation project, "The Project on Capacity Development in Urban Development Sector in Mongolia".<sup>8)</sup> At present, the Urban Redevelopment Law (Mongolia's UR Law) as the legal basis of LRS is in the process of being approved. In January 2013, the Ulaanbaatar municipality issued a tentative bylaw according to the draft of the Urban Redevelopment Law and designated 12 pilot project areas. These pilot projects are currently being implemented by private implementers.<sup>8)</sup> Currently, the LRS in Mongolia aims to improve the Ger area's living environment. The scope of the LR project includes land development, infrastructure development, and apartment development.

**Organization Sub-system of Implementer:** The draft of Mongolia's UR Law stipulates two kinds of LR implementers: 1) prefecture governor and city mayor as the public sector and 2) private companies as the private sector. The prefecture governor and city mayor can be LR implementers, but only for special cases.<sup>9)</sup> Currently, private companies are the major implementers for LR projects in Mongolia because public budgets are facing shortages and the vitality of private companies is required for utilization in LR projects in Mongolia.<sup>8)</sup> A private company must pass an examination by the local government to participate in LR projects and be nominated through the voting of land rights holders of the project site. In the examination and voting, the project experiences and enterprise scale are examined in terms of the private companies' ability.<sup>8)</sup> At present, private companies are implementing 12 pilot projects in the Ulaanbaatar capital, with technical support given by the local government. However, no LR project has reached completion in the implementation.

**Support Sub-system:** As a public financial support for private implementers, the urban redevelopment fund is being prepared. All funding for LR projects depends on private companies—namely, the project implementers. Regarding public technical support, local government supports the nomination of the implementers in the LR preparation stage.<sup>8)</sup> However, private companies must formulate the implementation plan and collect agreement from land rights holders themselves after the nomination. To support consensus building of land rights holders, relocation with compensation outside of LR project sites is stipulated in the draft of Mongolia's UR Law.<sup>9)</sup> As previously stated, although LR projects are implemented by private companies, the support sub-system is still under development.

**Land Re-plotting Sub-system:** Mongolia's LRS adopts multiple land rights exchanges to land, apartment units, and compensation in accordance with the legal basis of the Urban Redevelopment Law.<sup>9)</sup> Mongolia LRS targets improvements in housing and infrastructure in inhabited areas without adequate urban utilities (i.e., the Ger area). According to the draft of

Mongolia's UR Law, original land rights holders in a project can obtain developed land or apartment units on the project site or compensation in accordance with a request from the original land rights holders.<sup>9)</sup> This flexibility is helpful for consensus building among land rights holders.

In the same way as the land re-plotting sub-systems in Thailand and Japan, land rights holders contribute a part of their own land for public land and reserve land needed for the revenue of LR projects. When the LR project is developing apartment buildings, the LR project implementers can secure reserve floors in the apartments. The reserve lands and reserve floors are sold for project revenues after completion of the construction.<sup>8)</sup>

Regarding land rights protection, the land re-plotting sub-system in Mongolia has different protection measures than in Thailand and Japan. The tripartite agreement in the land re-plotting plan is signed by local government, project implementers, and land rights holders before the LR approval stage. The land right registration is changed after the LR construction.<sup>9)</sup> Thus, the land rights for the LR project site are protected by existing land rights registration and tripartite agreement with the land re-plotting plan during the implementation of the LR project. In the case of complicated land re-plotting including apartment floor exchanges, this protection measure does not suspend land rights during the project implementation and can smoothly relocate original land rights to new land rights and apartment floor rights without overlapping.

A comparison of the characteristics of sub-systems of LRS of the three countries discussed is provided in **Table 1**.

**Table 1 Comparison of Land Readjustment Systems of Thailand, Japan, and Mongolia**

Categories	Thailand	Japan	Mongolia
Objective and Scope of LRS			
Purpose of applying LRS and measures of the application	<ul style="list-style-type: none"> <li>Control of urban sprawl</li> <li>Supported by technical assistance from JICA</li> </ul>	<ul style="list-style-type: none"> <li>Urban expansion in Tokyo</li> <li>Refer to German LRS</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of living environment in Ger area</li> <li>Supported by technical assistance from JICA</li> </ul>
Legal Basis	Land Readjustment Act, B.E. 2547 (2005)	Land Readjustment Act (1954)	Urban Redevelopment Law (in the process of being enacted)
Objectives of LRS	Urban development of farmland and vacant land in urbanizing area	Diverse objectives (urban redevelopment, residential area development, disaster restoration etc.)	Infrastructure development and apartment building
Scope of LR Project	Land development, infrastructure development	Land development, infrastructure development, building development by the LR law or the Urban Redevelopment Law	Land development, infrastructure development, building development
Organization Sub-system of Implementer			
Public sector	National and local authority, government agencies, other government agencies as provided by ministerial regulation	Local government (prefecture, city), central government, government corporation	Prefecture governor, city mayor (limited as special case)



Categories	Thailand	Japan	Mongolia
Private sector	Land readjustment association	Individual, LR cooperative (including outsourcing agent), special purpose company	Private company
Private company participation	Impossible (possible when land rights holder can participate in LR project as a member of the LR association)	Possible as an outsourcing agent or a special purpose company	Possible (private company will become a main implementer)
Support Sub-system			
Public financial support	Central government subsidy, land readjustment fund (under preparation)	Central government subsidy, city government subsidy, land readjustment fund, tax exemption from corporate tax, and land rights registration fee	Urban redevelopment fund (under preparation)
Public technical support	No regulation	Technical advice from the local government office, consultant dispatch	Executor selection
Support for consensus building of land rights holder	Provision for small-scale land to move out with compensation money or apartment unit	No regulation (possible to sell a site)	Possible to move out with compensation money
Land Re-plotting Sub-system			
Right conversion method	Land to land	Land to land, building rights (based on the LR Law or the Urban Redevelopment Law)	Land to land, apartment unit
Creation of public land and financial resource	Public land, reserve land	Public land, reserve land (reserve building floor)	Public land, reserve land, reserve apartment unit
Land rights protection	Change land rights registration before LR construction stage	Original land rights registration and designation of land re-plotting plan before LR construction stage and change land rights registration after LR construction	Original land rights registration and tripartite agreement with land re-plotting plan before LR approval stage and change land rights registration after LR construction

#### 4. Summary

In cities in developing countries that are facing rapid growth in socio-economic and population terms, LRS will be useful as an urban development measure because it can reduce public expenses and promote the involvement of land rights holders. An analysis of the characteristics of land readjustment systems in Japan, Thailand, and Mongolia and the applicability to developing countries are summarized in the following paragraphs.

- 1) In Japan, LRS has been applied for various purposes, developing not only infrastructures such land, roads, parks, and sewage systems, but also the construction of buildings through urban redevelopment schemes. Meanwhile, in Thailand, LRS was introduced exclusively to

develop land and infrastructure for improving urban sprawl and the shortage of road networks; it cannot be applied to construct buildings. In Mongolia, LRS was introduced to improve the living environment of the Ger area in Ulaanbaatar; apartment buildings can also be constructed. Based on these facts, it can be considered that the government will introduce LRS basically for land development and infrastructure development, adding building construction in response to individual issues within a developing country.

- 2) In Japan, LR law and regulations stipulate that the national government, local government (prefecture, city), and government cooperatives can participate in LR projects as LR implementers in the public sector while individuals, LR cooperatives, and private companies can participate as private sectors. However, the majority of private implementers are LR cooperatives. In Thailand, implementers are almost the same as in Japan except that private companies cannot be implementers. In Mongolia, the prefecture and city can only be implementers in the public sector in rare and special cases. In the private sector, only private enterprises can become implementers. As it might be difficult for land rights holders or LR cooperatives to come up with the necessary money, especially in developing countries, private enterprises or developers with fund-raising capabilities and LR project management must become implementers.
- 3) LR projects need national government subsidies as infrastructure development is one objective of LR projects. While rules should be required to restrict the development benefit that the land rights holders and LR implementers gain in order to keep the balance with the subsidies. As there are fewer LR projects and experts in developing countries, technical supports and expert detachments are needed for the implementation of LR projects. It is effective to enable the land rights holders to have small lands to move out of LR project areas in order to make consensus building easier.
- 4) In Thailand, it is difficult to conduct LR projects in urbanized areas because LR law does not stipulate the exchange of land rights into building rights. LR projects exclusively aim to improve the urban sprawl in suburban areas in Thailand. LR can create public lands and reserve lands through land re-plotting in the three countries. In Japan, land rights can be kept by registering the new re-plotted land before the LR construction stage and relating the designation of the re-plotting plan in transition. In Mongolia, land rights can be kept in agreement in LR projects including the land re-plotting by the government, land rights holders, and LR implementers. These two LR systems enable the LR to be applied to urbanized areas with complex land rights. Based on these results, land re-plotting sub-system should include exchange of land right into not only land rights but also building rights for multiple objectives of urban development in developing countries. In addition, adequate land protection measure to use LRS in urbanized areas should be applied.

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