

Japan International Cooperation Agency (JICA)

Department of Town and Country Planning
Ministry of Interior
The Kingdom of Thailand

The Study on Application Scheme of Land Readjustment in National Urban Development Thrust

Final Report : Summary

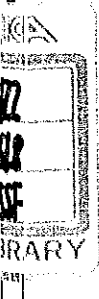
June 1993

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Yachiyo Engineering Co., Ltd.

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PREFACE

In response to a request from the Government of the Kingdom of Thailand, the Government of Japan agreed to conduct a study on the Application Scheme of Land Readjustment in National Urban Development Thrust, and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Thailand a study team headed by Mr. Koomi NODA, Advisor, YACHIYO ENGINEERING CO., LTD. five times between February 1992 and March 1993.

The team held discussions with officials concerned of the Government of Thailand, and conducted field surveys at the study area. After returning to Japan, further studies were accomplished and the present report was prepared.

I hope that this report will contribute to the project's promotion and to the enhancement of friendly relations between the two countries.

I wish to express my sincere appreciation to the concerned officials of the Government of the Kingdom of Thailand for the close cooperation extended to the Study Team.

JUNE 1993



Kensuke YANAGIYA

PRESIDENT

JAPAN INTERNATIONAL COOPERATION AGENCY

Mr. Kensuke YANAGIYA
President
Japan International Cooperation Agency

Dear Mr. Yanagiya:

We have the honor to submit to you the Final Report for the Study on Application Scheme of Land Readjustment in National Urban Development Thrust. It is with great pleasure that this Study was completed under the close cooperation of the two governments of Japan and Thailand.

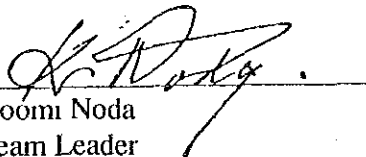
The final report was prepared during the past 17 months by the Study Team organized by Yachiyo Engineering Co., Ltd. members, and directed by Mr. Koomi NODA. It comprises a Summary and a Main report.

In preparing this Report, the Study Team benefited a great deal from the cooperation of officials and experts of the Japan International Cooperation Agency and other concerned authorities of the Government of Japan.

On behalf of the Study Team, I would like to express my deepest appreciation to the officials and to other related agencies of the Government of the Kingdom of Thailand for the significant cooperation, assistance, and warm hospitality extended during the Study.

We sincerely hope that this Report will contribute to the further development of the Government of the Kingdom of Thailand and citizens.

Sincerely yours


Koomi Noda
Team Leader
Study Team of the Study on
Application Scheme of Land
Readjustment in National Urban Development
Thrust

THAILAND
The Study on Application Scheme of Land Readjustment
in National Urban Development Thrust

EXECUTIVE SUMMARY

1. GENERAL

In this study, a land readjustment legal system in Thailand was proposed in order that an L/R system should be applied to the development of the New Bangkok Urban Center (CBD) for alleviating current urban problems. The L/R implementation plan was set forth for the implementation of the L/R in the project area of 85ha. In addition, the replotting design for the replotting enforcement in the project's implementation was made with the knowledge and skills transferred to the Thai Government.

2. LAND READJUSTMENT LEGAL SYSTEM

With a purpose to broadly and generally apply an L/R system in Thai society, a legal system of land readjustment was proposed. The system is geared to expanding urban development in Thailand based on the following three important social concepts.

- 1) Concept of Public and Social Welfare (Public project)
- 2) Concept of preservation of private rights and properties (enforcement of replotting)
- 3) Concept of social justice (cost sharing by funding from development profits - land contribution).

The legal system was designed to primarily stipulate the power of project enforcement and legal items and procedures based on the above listed concepts. It also included proposed supporting systems such as taxation, financial assistance, and land registration.

In response to the proposals made in the study, the land readjustment committee established in the Ministry of Interior of the Thai Government, proceeded with the drafting of the Thai Land Readjustment Act.

3. L/R IMPLEMENTATION PLAN

At present, Bangkok is plagued with serious traffic congestion, environmental deterioration, and other serious urban problems due to overcrowding in the existing urban center (CBD). For resolving these urban problems, it is suggested that decentralizing the urban center and reorganizing the Bangkok urban structure are needed. Accordingly, the development concept of the new Bangkok CBD in the study area of 800ha will provide a dispersing of the urban central functions and activities. In the study area, 300ha of land was selected as the core of the CBD which should be developed through the application of the L/R system.

Finally, the L/R priority project that consists of 85ha of the project area was proposed with the following implementation plan.

Project area	:	Huai-Khwang district, Bangkok
Implementing body	:	Either DTCP or BMA (undecided)
Project cost	:	8,440 million Baht (exchange rate : \$1=25Baht)
Project period	:	5 years (on the condition that all the preparatory work shall be completed in the first year)
Contribution	:	29.5~30.7%

4. SOCIO-ECONOMIC ANALYSIS

< Development effects and project economies >

The L/R project proposes to improve urban development and management, through which a great deal of development effects are materialized (land resources and infrastructure management), and makes contributions that improve the financial conditions of the government through increased tax revenues.

An L/R system's development cost is the cost of land contributions (for public land and for reserve land) with development profits comprised of the increased land values of the replots (B/C ratio shows as high as 3.26).

< Social acceptance of project >

Judging from the results of the opinion poll survey, it was concluded that social acceptability of the project is substantial and favorable.

The survey demonstrated that a majority of the landowner respondents are in favor of the project implementation. In this regard, the project will be accepted by landowners with a positive and enthusiastic governmental approach.

However, there are some landowners with negative opinions. Therefore, careful attention must be paid to the minority opinions in the course of the project's implementation.

5. REPLOTTING DESIGN

Even though substantial attention was paid to Thai conditions, the evaluation replotting method seemed more legitimate to this L/R system, and was proposed. This method's application calls for the replot area to be calculated in proportion to the increase of land utility value through the L/R project, and which is measured utilizing the street value evaluation method. The study also presented the indices and coefficients to be applied to the calculation method. However, these must be refined in the actual process of the L/R project implementation in Thailand.

6. PROJECT IMPLEMENTATION

The implementation process of an L/R project is more important than those of other public works because implementation of an L/R relies on the cooperation of landowners and the consensus achieving activities that must be made through all the stages of preparation, implementation, and termination of the project. Accordingly, the organizational capability, human resources, and coordination capability for coping with these tasks, are prerequisites for successful implementation.

7. NEXT STEPS TO BE TAKEN

The study proposed an L/R legal system and an L/R project, and were focused to be feasible. The following measures must be taken for the project implementation.

- 1) Legislation of an L/R Act.
- 2) Establishment of organization and manpower development.
- 3) Secure funding resources
- 4) Final adjustment of Implementation Plan in accordance with consensus among the landowners.

ABBREVIATION

BMA	Bangkok Metropolitan Administration
BMR	Bangkok Metropolitan Region
CBD	Central Business District
CVA	Central Value Agency
DDS	Department of Drainage and Sewerage, BMA
DTCP	Department of Town and Country Planning, Ministry of Interior
ETA	Expressway and Rapid Transit Authority
IEAT	Industrial Estate Authority of Thailand
JICA	Japan International Cooperation Agency
L/R	Land Readjustment
MDRA	Medium Density Residential Area
MOI	Ministry of Interior
MRT	Mass Rapid Transit
MWA	Metropolitan Waterworks Authority
NHA	National Housing Authority
PWD	Public Works Department, MOI
SRT	State Railway of Thailand
TOT	Telephone Organization of Thailand

THAI MEASUREMENT UNITS

$$1 \text{ Wa} = 4 \text{ m}^2$$

$$1 \text{ Ngang} = 400 \text{ m}^2 = 100 \text{ Wa}$$

$$1 \text{ Rai} = 1600 \text{ m}^2 = 4 \text{ Ngang}$$

The Study on
Application Scheme of Land Readjustment in National Urban Development Thrust

Final Report: Summary

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Next to be taken for Implementation

Chapter I. Introduction

CHAPTER 1 INTRODUCTION

1. Background

Asian countries are experiencing rapid urbanization mainly due to economic development and expansion.

However, as urbanization proceeded without an effective city planning system and/or urban development system, serious urban problems in the form of traffic congestion, environmental deterioration, poor public services, etc., have emerged. Because of this, many Asian countries are seeking effective urban development systems to cope with such problems.

In this situation, the Land Readjustment (L/R) system was highlighted in many countries considering its advantage to overcome current problems related to land acquisition and the financial constraints of governments, which have been barriers to extensive urban developments including public facility improvements.

In fact, many Asian countries are trying to apply L/R systems in the territories of the country's land areas.

Thailand is a front runner among the Asian countries examining the full-scale application of L/R systems with the technical cooperation of Japan.

In Thailand, especially in/around Bangkok, urbanization triggered by rapid economic and industrial development has expanded faster than expected, resulting in serious urban problems. Typically, the worst urban problem is manifested as traffic congestion.

It appears that as the Thai people have daily suffered the urban problems stated above, they are beginning to recognise the necessity of improving city planning and accepting effective urban development systems like L/R systems to solve urban problems.

This is the social background on which the Thai Government launched the application scheme of the L/R.

Accordingly, it must be stressed that this study was carried out in conjunction with the enthusiastic preparatory works of the Thai Government for establishing the L/R system, including creation of an L/R committee in the government where the administrative arrangements are made, legislative preparation (draft of law), establishment of organizations, campaigns through the mass-media, et cetera.

2. Purpose of the Study

This study aims at the implementation of an L/R project in Thailand. To this end, the purposes of the study are set as follows:

- To formulate a land readjustment plan for the first implementation project in Thailand.
- To propose a land readjustment system in Thailand.

3. The Study Area

The study area for the land readjustment plan is set in Huai-Kwang, Bank-Kapi district (apprx. 800ha) as shown in **Figure 1.1** and **Figure 1.2**.

4. Methodology of the Study

To apply a new system into a society, the following usual procedures are necessary: 1) establishment of a new implementation system; 2) formation of an implementation project; and 3) implementation practice, in this order as shown in **Figure 1.3**.

Figure 1.3-Approach of Application Scheme

Procedure	Study Item	Major Out-put
Establishment of Implementation System	→ L/R System	→ L/R Act and System
Formation of Implementation Project	→ L/R Plan	→ L/R Implementation Plan
Implementation Practice	→ L/R Practice	→ L/R Practical System/Techniques

The primary concepts of this study are summarized below:

(1) L/R System

1) Level of Application of an L/R System

It is apparent that the application of an L/R system will vary depending on the social/economic and cultural system and more importantly, the sophisticated development of city planning.

Some countries have started applications of an L/R within the existing framework of laws, without any new L/R laws being established, others with corresponding applications of existing laws similar to the L/R law. In fact, Japan began an L/R project implementation via corresponding applications of an agricultural land consolidation law.

As a matter of fact, at the beginning of this study there were discussions whether an L/R system could be applied in Thailand, with or without a new L/R law's enactment. However, the seriousness of current urban problems and the urgency of urban improvement altered the social situation in favor of the full-scale application of an L/R system through legislative measures.

Figure 1.1 - Location of the Study Area

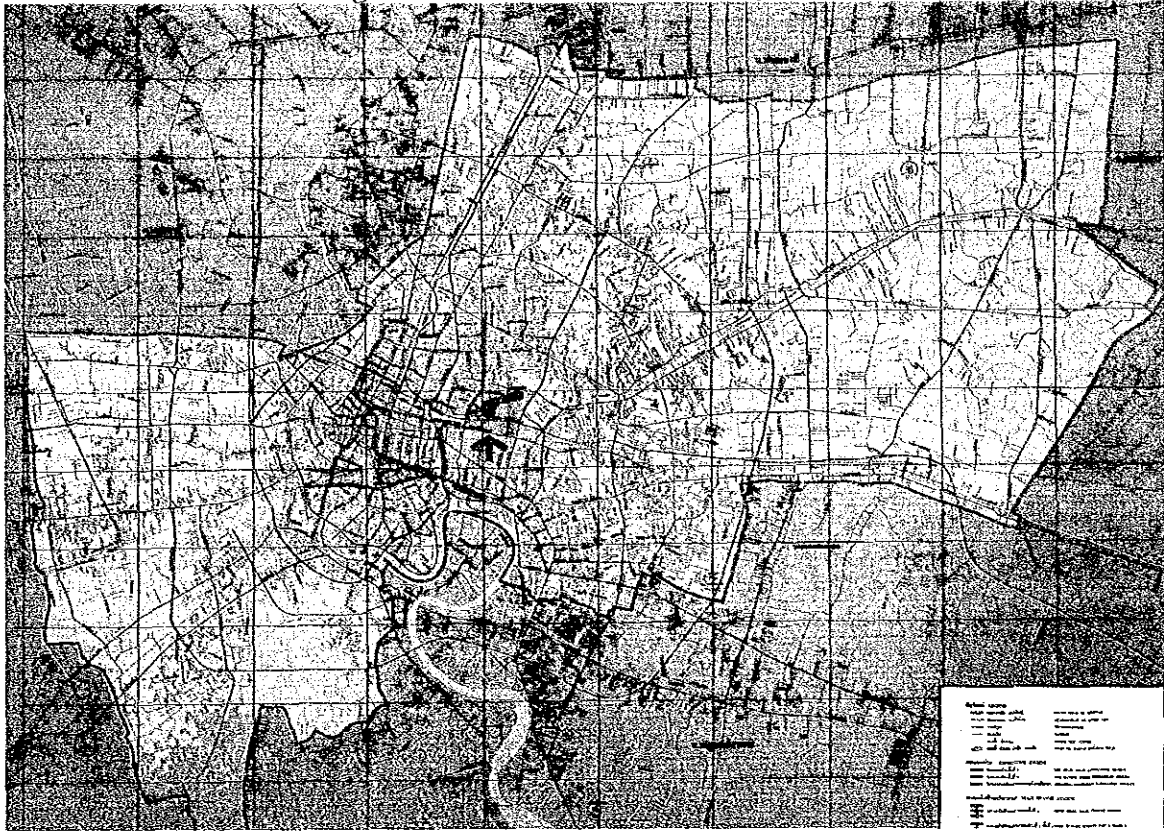
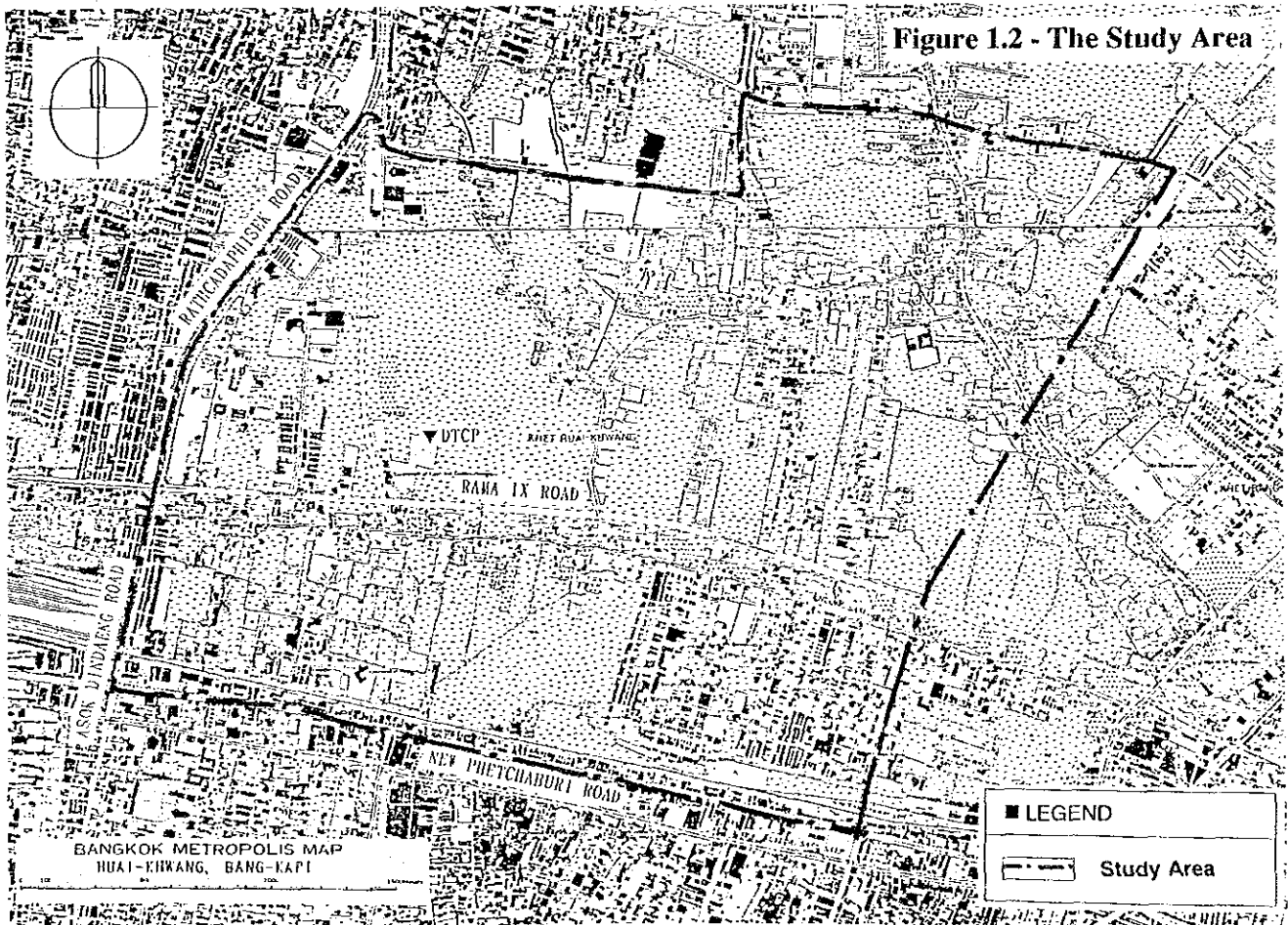


Figure 1.2 - The Study Area



In this study, L/R systems are based on newly enacted laws proposed in response to growing enthusiasm in Thai society and the government's response to urban development.

2) City Planning Approach

L/R techniques are considered one of the only techniques for readjusting existing lots through such tools as replotting and contribution.

Without a systematic scheme, land readjustment can be observed, on a small scale, among the landowners in Thailand (for instance the exchange of parts of lots among land owners and contributions of parts of land to road construction, etc.), though similar practices are also found among existing agricultural land consolidation schemes and systems.

Given that an objective of an L/R application is to expedite urban development in Thailand, the question is not whether an L/R technique is applicable, rather, the question is how to generalize the use of L/R techniques, or the general systematic application of these to urban development.

Although L/R systems simply change the shapes and areas of private lands, the application of the system in Thailand depends on the social acceptance of the following innovative concepts regarding public and private interests, and includes social equity in urban and environmental development circumstances, which are all vital to Thai society.

a) Public concept of urban development

To some extent, replotting and land contributions are socially perceived as public interference into the private rights and properties of citizens. However, this interference should be socially justified through L/R projects because the projects are designed to achieve the public's interest and welfare.

b) Preservation of private rights

Private rights must be safeguarded or preserved in pursuit of increasing public welfare through enforcement of an L/R for improvement of the urban environment. In the replotting system of the L/R, all the existing rights of lands are transferred to the new lots (replot) with the physical changes of the lands (shape, area and the like). Protecting private rights and properties through replotting system in spite of the physical changes of lands can be achieved and accepted by the public.

c) Cost-recovery by refund from development profits

Construction of public facilities such as roads and others yields a great amount of development profits to the landowners in terms of increased land value. This can result in social inequities in the society and

promote additional financial burdens of the government. In the contribution system of an L/R, development cost is to be equitably shared by the beneficiaries. Accordingly, the concept of social fairness as it relates to urban development must be accepted and established so that the contribution system works for the L/R project.

Consequently, innovative concepts as previously stated must be socially accepted so that the L/R system can be broadly applied in the Thai community.

3) Combination of Legal Power and Consensus Achieving

A unique characteristic of L/R systems is that the L/R project is to be enforced by legal authority along with consensus reached through dialogs among the people concerned. This uniqueness can be also found in the Japanese L/R law which, on one hand empowers the implementation body to take compulsory measures against the landowners (ex. compulsory participation in the project implementation), and on the other hand, obliges it to have dialogs and consultation with them for their cooperation.

Moreover, in all the stages of real project implementation activities, consensus building among landowners is to be extensively executed whether or not they are obliged in the L/R law.

The community meetings and dialogs with landowners regarding the agenda of the development concepts, land use, public facility plans, implementation plans, and other issues are to be repeatedly held to achieve consensus on the project's implementation. It may be true that consensus is likely to be reached with less difficulty if it is justifiably based on the law and the law is likely to be enforced with less difficulty if it is duly based on the consensus of the people concerned.

4) Reciprocal Approach

Based on the Japan's long-term experience, the JICA members first proposed an L/R system in Thailand. The Thai representatives responded based on the knowledge of social/cultural and economic conditions of Thailand to localize the system.

Also, the Thai representatives drafted the L/R law in Thailand and it was examined by JICA representatives for possible amendments or revisions.

In this study, the reciprocal approach was employed to meet the Thai L/R legal system requirements.

(2) L/R Planning

Special attention must be paid to the following points in the course of the study.

1) **City Planning Approach**

As stated before, the L/R project is to be implemented as a public project for the public's benefit and the private benefit of landowners.

In this regard, the L/R plan must be formulated from the view point of Bangkok's city planning.

Urban development in the project area is proposed to help resolve urban problems and provide substantial contributions to the future prosperity of Bangkok. To this end, the new CBD of Bangkok was proposed in the study area in belief that it will be instrumental for improving the urban condition of the BMA.

2) **Social Coordination Process**

The L/R study and planning process is not only a technical engineering process, but is also a social coordination process where L/R plans are elaborated on the basis of consensus among the landowners and the consensus reached on the basis of the L/R plans.

This implies that L/R planning should go hand-in-hand with social coordination.

The results of this study are to be utilized for social coordination in the actual project implementation.

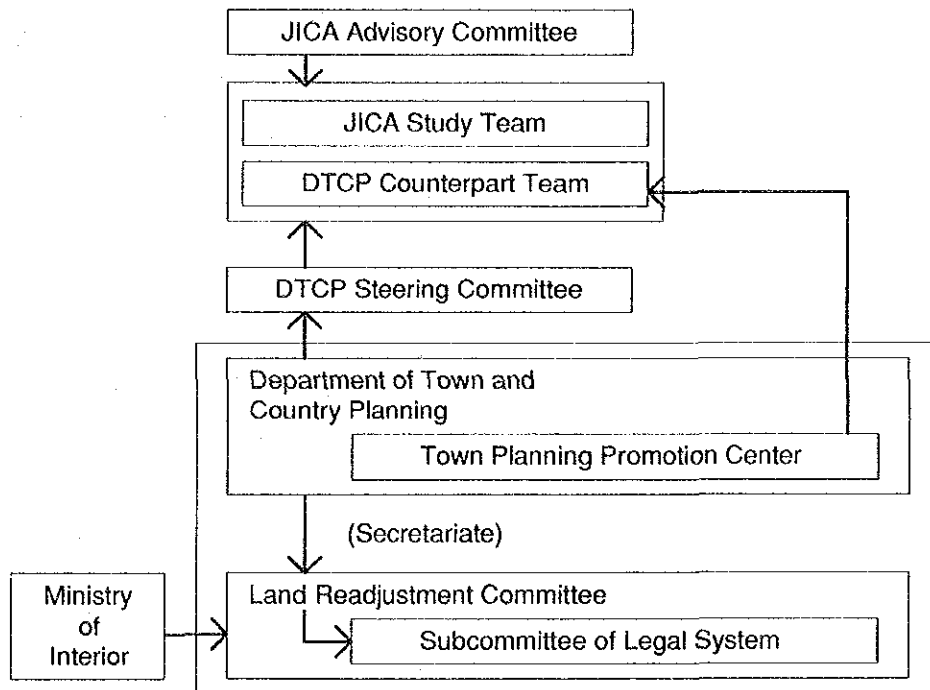
5. Study Organization

As shown in **Figure 1.4**, the study is a collaborative effort of the JICA study team and the DTCP counterpart team. The Steering Committee for the study was organized by DTCP to coordinate the study activities.

The following features of the study organization are noted in light of the L/R project implementation.

1. The town planning promotion center, where the DTCP counterpart team was established is permanent section of the DTCP organization. This center has worked and will be working as a task force for the L/R project implementation.
2. The L/R committee was established in the Ministry of Interior of the Thai government in order to make the administrative arrangements and research necessary for promoting the L/R project's implementations. The committee prepared a draft of the L/R law based on the recommendation and suggestions of the JICA study.

Figure 1.3-Study Organization



Chapter II. Thai Land Readjustment System

CHAPTER 2 THAILAND READJUSTMENT SYSTEM

1. Land Readjustment Legal System

In this section, the basic characteristics of Thai city planning and development were analyzed and a skeletal draft of an L/R legal system in Thailand were proposed based on innovative city planning concepts (such as public concepts, preservation of private rights, properties, and concepts of social fairness in development cost sharing).

1.1 Basic Features of Thai City Planning and Development

(1) Urban Problems and Measures to Be Taken

Rapid urbanization triggered by Thailand's economic growth has also brought serious urban problems, especially in/around Bangkok. City planning and development systems however, are not so effective in the managing of rapid urbanization problems (such as poorly planned land use, inadequate infrastructure, unstructured development areas). Measures for arresting urban problems are:

- 1) Prevention of urban sprawl,
- 2) Infrastructure development coordinated with land use plans, and
- 3) Systematic improvement of infrastructure.

Application of an L/R system is necessitated and justified considering the conditions observed in Thailand.

(2) National Urban Policies -- The Seventh National Economic and Social Development Policy

The National Development Policy of Thailand shifted toward stable growth after rapid economic and industrial development in the late 1980s. And, emphasis was placed on urban development management to create urban areas with adequate environmental quality, and sufficient public services to prevent urban problems.

An L/R system which promotes integrated urban development is an extension of the national development policies of the Thai government, and is manifested in the captioned national plan that an L/R system should be applied in Thailand.

(3) Administrative and Legal System of Thailand

It is apparent that an L/R system must be designed in the existing administrative and legal system of Thailand. For this end, the basic characteristics of the administrative and legal structure were analyzed.

Administrative system:

Centralization is a characteristic of the Thai government in spite of policies and efforts to decentralize governmental administration. Local administration is quite weak in terms of administrative capability and authority. The implementing system and

organization of an L/R project would be subject to the existing administrative systems as previously described.

Legal system:

The three (3) laws which are to be issued in the name of the King with the agreement of the Parliament and/or the Prime Minister are classified as: conceptual and detailed in Royal decrees, ministerial regulations, and provincial ordinances.

(4) City Planning Legal System

The Thai Town Plan Act which is based on the British Town Plan Act, is in force. However, the following problems in city planning practices were observed:

- 1) Various laws and ordinances regarding lands, which are all associated with city planning practices, are in force and the responsibility of many agencies.
- 2) The planning agency is not empowered with implementation measures. Thus, plan implementation is precariously dependent upon the cooperation of other agencies, and produces ineffective integrated urban development
- 3) Because land use controls seem to be elusive and less concrete, effectiveness is questionable.

(4) Land and Other Related Laws

Examination of existing laws such as the Land Act, the Subdivision Control Act, the Property Expropriation Act, and the Agricultural Land Consolidation Act, was accomplished and the following basic Thai features are described.

- 1) As stated before, the Acts are conceptual, Royal Decrees, Ministerial Regulations, and outline each's legal effectiveness.
- 2) Upon promulgation of a Royal Decree or Ministerial Regulation determining the project areas, the implementing agencies are empowered to conduct the survey.
- 3) The Thai laws are likely to include articles of detailed organization such as those project offices to be established in the government organization. It is not unusual that the government organization is established in the enacted law.
- 4) Compulsory power for project implementation in Thailand is characterized as follows.
 - Generally speaking, compulsory power is provided to projects in response to national economic/social priorities. In this connection, power of expropriation is duly mentioned in the laws for public works, agricultural land reform, agricultural land consolidation, industrial estate development, et cetera.

- Landowners are forced to participate in an L/R project implementation, their lands are only expropriated if/when they do not participate in the agricultural land consolidation project.

1.2 Basic Concepts and System of L/R

1.2.1 L/R in the Context of Thai City Planning and Development System

As measures of Thai city planning and developments have been limited to the regulations (building code, subdivision control, and the like) and public facility construction, the government or public sector has seldom been involved in urban and environmental development projects except for those with the specific public purposes as follows: Low-cost housing for low income groups and slum up-grading as a public welfare policy, industrial estate development as one of national economic development policies.

The "specific plan" included in Thai town planning is a kind of urban development system, and is limited in terms of project purpose and area for implementation through the procedures of parliamentary approval. This is probably because it threatens to significantly affect the property rights of individuals.

However, serious urban problems and the sprawling deteriorated development areas require that measures for improving the urban environment be taken, and not limited to specific purposes and areas by the public sector. In other words, it is necessary for the government to promote urban development projects that are included in city planning systems with a purpose of increasing public interest and public welfare.

In order to categorize L/R projects as urban development for the public's interest, either of the following legal measures are needed.

1. L/R project is included in the existing town plan act.
2. L/R project is associated with a specific plan in the act.

1.2.2 Concepts of an L/R System

An L/R is a system through which the topography of lands are physically changed in terms of location, area, and shape with the construction of public facilities. The following innovative urban development concepts must be introduced so that the L/R system becomes integrated into the social system of Thailand.

(1) Concept of City Planning

An L/R project implementation is for the public's welfare, and to create a quality urban environment based on city planning concepts.

Exercise of civil authority (ex. replotting) should be permissible, but limited to the welfare of the public.

(2) Preservation of Private Rights and Properties

The importance of preserving the rights of individuals and the rights of property ownership are essential to the stability of civil order.

In the course of public works, the rights of individuals and property owners should be secured through monetary compensation for land acquisitions.

However, land purchases for public works have produced problems. For example, landowners have had their lands seized and the landowners displaced.

Consequently, their occupations and economic well-being are at stake, and amounts of compensation become questionable, forcing public works to a standstill.

An L/R system does not propose to disturb the existing land rights. In other words, private property rights are to be secured in a manner that they are all transferred to the developed lands (replots).

The preserving of existing rights in an L/R system has many advantages, particularly, lands are not seized and landowners are not displaced. Landowners can maintain their businesses and social existences in the project area. Thanks to these advantages, urban development projects can be more smoothly implemented.

Public works through land acquisition can not start before all the property rights are liquidated, and an L/R project begins by leaving property rights alone. This is because property rights are transferred to the replots with no changes only the physical changes of the lands.

(3) Cost Recovery by Refunding from Development Project.

Public capitals invest in arterial roads construction since these serve most urban dwellers. However, unfair road construction is claimed as follows.

- 1) The landowners along the road enjoy substantial development profits from the road construction in terms of land value increases compared to landowners who are not located along the road.
- 2) The landowners located at the road construction site are paid compensation, the amounts of which are calculated on the basis of existing land prices, the landowners who are abutting the road also can enjoy increased land prices.

Accordingly, establishing concepts of social fairness that development profits must be duly returned for the public welfare, and that the beneficiaries of landowners must also share in the costs of such public facilities and infrastructure in proportion to the amount of their benefits.

1.2.3 Basic Systems of L/R

An L/R system consists of the following basic tenets and provides structure to the concepts as stated above.

(1) Power System

In order to develop a broad urban system that can prevent serious urban problems and the spread of deteriorated developments as stated before, the following measures by responsible governments and the community must be taken.

1) Government initiative

The responsible government authorities should take initiatives to develop public facilities and urban areas to promote the national interest, city planning, and development.

2) Community initiative

Citizen participation should be encouraged and promote urban development of communities through the actions and responsibilities of a community's residents.

To promote community participation, the authority and capabilities for project implementation must strengthen the integration of government and community participation.

With emphasis on the public's interest and welfare, the power of project enforcement by the government's initiative should be established based on social rules of the public's interest superceding private interest.

Authority of enforcement for community development should also be established based on democratic principles of the majority representing the wishes of the public and help create a good environment in their communities.

(2) Replotting System

There are at least two ways to preserve lands before and after project implementation.

1) Pooling system

The existing lands are conceptually pooled into one tract of land and are redistributed to the landowners after completion of the project.

2) Continuation System (Replotting System)

The existing land rights continue onto the new lots after project completion.

It is difficult to apply a pooling system to a project covering large land tracts due to the difficulties associated with disposing of all landowner rights, including debts before land pooling can be implemented.

Replotting systems physically change lands in terms of location, area, and shape without the existing land rights transferred. This allows landowners of land before replotting to legally claim that the replot is their property.

(3) Land Contribution System for Cost Recovery

There are several cost recovery methods for urban development projects. There are taxation systems, cost sharing systems, and land contribution systems. L/R projects are characterized as a land contribution system.

An L/R project's development profits are the yield from land value increases, and development expenses are in the form of land contributed by landowners.

This is the principle of land contribution by which cost recovery is accomplished from land contributions for public facilities and for lands held in reserve that are for financing construction.

This system is advantageous for the following reasons.

- 1) Increased public acceptance because it is a simple method of cost-sharing of public lands for their own use.
- 2) Complex and argumentative tasks of converting development profits and costs into monetary terms are not needed.
- 3) Money burdens are not placed on landowners.

In principle, all the costs (public lands and construction costs) are covered by in kind land contributions.

It is not unusual for such public facilities as those that serve the serving area outside the project area are constructed in the project area (for instance a section of urban arterial road). It is however, unfair if all the lands for such public facilities as stated above are provided by land contributions from landowners in the project area.

Accordingly, in addition to the replotting rule that land contributions should be limited within the range of development profits received, land contributions should also be limited to costs recovery of public facilities the community is directly served by and in need of. It may be a more appropriate cost sharing option that costs beyond the limitation previously mentioned, be the responsibility of the authority in charge of the public facilities.

1.3 Proposed Skeleton and Draft of Thai L/R Legal System

1.3.1 Skeleton of Legal System

There are three (3) alternatives for setting up an L/R legal system.

- 1) Legal precedents for implementing an L/R project shall be founded in an existing Act. (revision and addition of the existing Act)
- 2) Minimum conditions necessary for an L/R project implementation can be established in an Act, but ministerial ordinances, procedures, and other means are to be detailed in the government notices for the time being.
- 3) Referring to L/R legal systems in L/R advanced countries, and in consideration of other existing legal systems in Thailand, items and procedures necessary for an L/R project implementation are to be included in an L/R Act, ministerial ordinances, and others.

A second alternative is deemed more practical and recommended considering the observations below.

- a. It is not an appropriate time for revising existing laws such as the Town Plan Act in Thailand.
- b. Early implementation of an L/R project is a priority and must cope with currently serious urban problems.

The progressive development of an L/R system in Thailand is more strategic so that L/R system project experiences shall be gained through the legal system discussed above, and is progressively improved to reach the city planning system of Thailand as stated in "1.1".

There are two kinds of articles included in an L/R law, those necessary for implementing an L/R project, and laws for effective and efficient L/R project implementation. The skeleton of Thai L/R law consisting of the two kinds of articles is proposed as shown in the **Figure 2.1**.

The law must basically stipulate the following three (3) important items.

- a. Authority for project enforcement from the viewpoint of the public's interest and welfare.
- b. Legalization of L/R systems, such as replotting and contribution systems.
- c. Items and procedures of examination

An L/R project is to be implemented based on the enforcement authority and legal structures of L/R systems as stated above. Because

an L/R project is to be implemented for the public's benefit and welfare, it must be officially examined for propriety, fairness, justice, lawfulness, et cetera.

(1) Enforcement Authority

An L/R law empowers the implementing bodies to change the location, shape, and area of lands (public interference of private properties) and develop public facilities (which are usually under the responsibility of the government agencies).

The organizations which should be empowered to implement L/R projects must be strictly limited to the following two (2) types of projects and implementing bodies.

- 1) Public agencies are supposed to be implementing bodies of the projects with a purpose to develop urban areas and public facilities which are important for the national interest and city planning and development.
- 2) Semi-public agencies (community groups) are supposed to be the implementing bodies of L/R projects which citizens (landowners) want to be implemented for the purpose of improving their living environment.

By the virtue of power of enforcement, the landowners are obliged and coerced to be involved in the project implementation. It was shown before that the existing legal system of project implementation in Thailand, it is not the compulsory participation but land expropriation, that makes this possible to complete the project in the face of opposition, if any.

As stated above, compulsory power is based on the social rule of the precedence of the public's interest over private interests in the case of government initiatives and the democratic rule of the majority among the landowners, in that case of community initiatives.

However, application of authority should be strictly limited to such L/R projects of significant public interest and welfare.

Obligatory participants shall be either some or all of the landowners, lease holders, mortgagees. Among the landowners, there shall also be the land right holder included as participant in an L/R project.

(2) Items and Procedures of Examination

L/R projects are so crucial that L/R implementing bodies are to administer individual properties and develop public facilities in lieu of the public agencies.

From this viewpoint, it is necessary to oblige the implementing bodies to set up the following plans and articles and gain the consent of the government and the community to ensure that fairness and appropriateness of the project can be examined. The implementation plan and articles and replotting plan are due to be formulated and forwarded to the authorities in charge of supervising and granting approval of the projects.

The L/R law stipulates the procedures and organizations tasked with the supervision and granting of approvals.

Specifically, it is necessary to establish an L/R council that can examine the fairness in the replotting of private concerns.

(3) Legalization

An L/R project implementation is composed of many operations. Among others, enforcement of replotting is important and as such, an L/R system becomes a system of replotting enforcement.

All the land titles remain the same as before the L/R project, even after the construction works are completed and the sites and public facilities are newly developed.

Enforcement of replotting is to legally establish the land titles of replotting after the project (to make the replotting legally effective). In other words, enforcement of replotting is designed to legalize the rights of individual lots (replots), public facility sites, and reserve lands after the project.

As shown before, upon the enforcement of replotting all the existing rights of the original lands are to be transferred to the replots, thus preserving individual property rights.

The enforcement of replotting can not be legalized under existing laws. Therefore, it is a most important item to be included in the L/R law.

It may be safely said that an L/R project is implementable only if and when the new land titles can be legally established through the replotting enforcement.

Moreover the following measures shall be legally established in order to smooth the L/R project implementation.

- Collection/delivery of equity payment
- Transfer of public facilities to management authorities
- Disposition of reserve land
- Registration of land

It is a uniqueness of an L/R to establish a system of continuation of the rights from the original lots onto the replots.

However, the following practical questions may be raised during actual implementation.

- a. What happens to the lands sold during the implementation period?
- b. What happens to those who have the right to use the land?
- c. What happens on the land attached with debts and pawns?
- d. What happens to the buildings to be relocated?

There seems to be several practical devices to pass on the problems. However it is recommendable to establish the system of provisional replotting as follows.




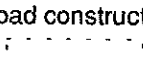





Categorically, land rights are divided into land ownership land use.

During the implementation period (especially the construction period), land use rights all to be transferred to and established on the provisional replot which will be the final replot after the implementation, while the right to own the land remains with the original title. (See Figure 2.1) The land ownership rights are to be transferred to the replot after the project completion.

Thus, all existing activities and land use are continuously kept the same as the provisional replot.

In the provisional replotting system, all the land practices including using and buying/selling the land are to take place on the provisional replot while the title of the original land remains valid until the enforcement of replotting. All registrations of the practices are to be made on the original land title.

Figure 2.1-Continuation of Land Title by Designation of Provisional Replotting System

		Original lot	Replot	
Existing Rights	Right to own			
	Right to use			
Provisional Replotting	Right to own			
	Right to use	Road construction  → abolished	Relocation of Building  transferred	
Enforcement of Replotting	Right to own	 →		
	Right to use		transferred 	

Upon the enforcement of replotting, all the rights registered on the original land title are due to be transferred to the replot, thus restoring all existing rights of the original land on the replot.

1.3.2 Draft of Thai Land Readjustment Act

Based on the discussion as described above, the basic composition (**Figure 2.2**) and draft of the Thai Land Readjustment legal system (**Table 2.1**) are presented.

These intend to show the overall framework of the L/R law. Accordingly, it must be noted that all items are not necessarily included for completion of the L/R project at this moment. It is reasonable to substantiate the L/R legal system through ministerial ordinances and others.

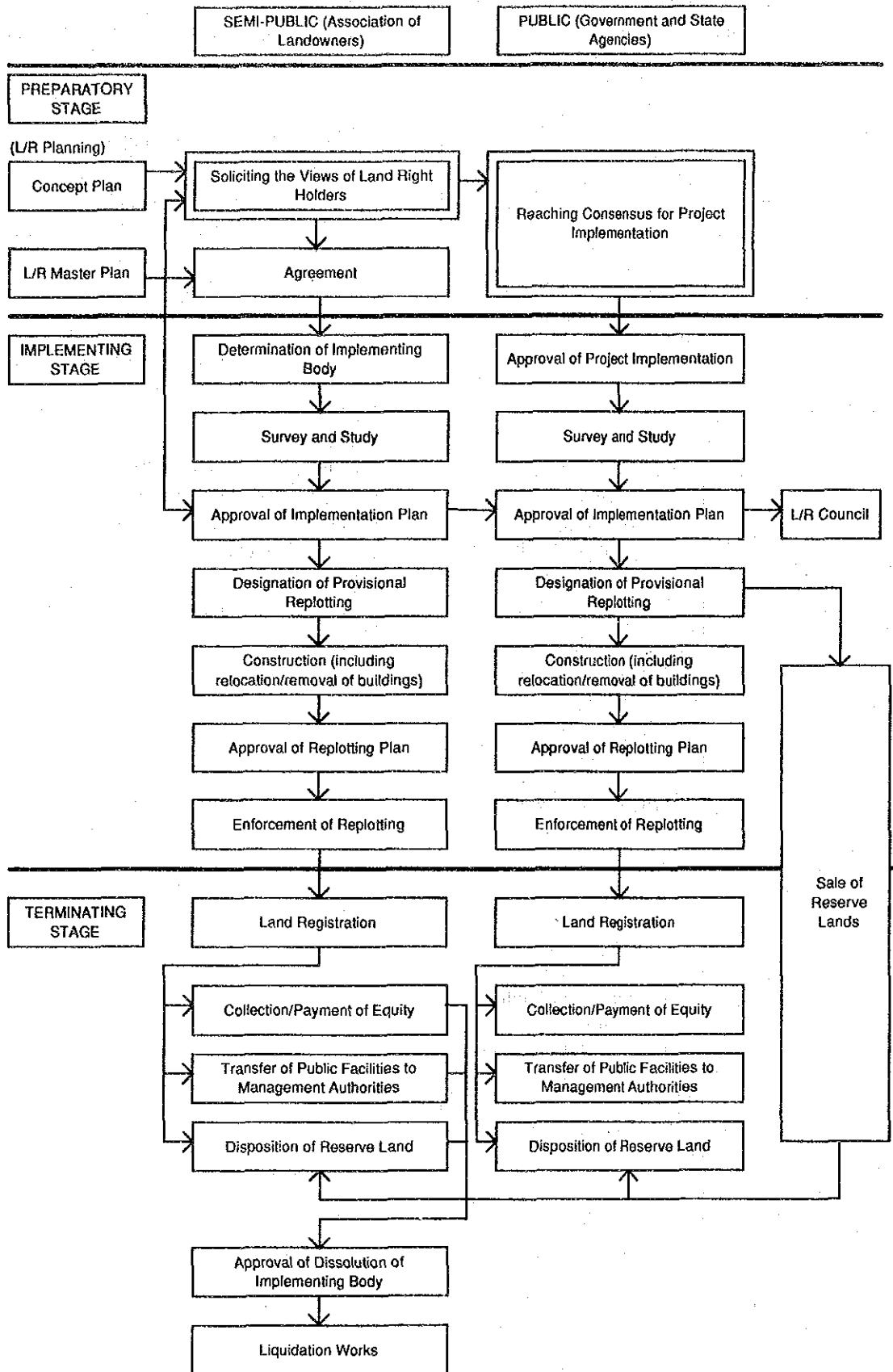
Table 2.1 Thai L/R Law: Minimum Structure

Items to Establish the L/R Legal System		Remarks
1. Project and Organization	(1) Purpose and definition of project (2) Organization capable of implementing project (3) Organization approving project	<ul style="list-style-type: none"> Public and semi-public (association) organization
2. Items and procedure to be stipulated	1. Public organization implementation (1) Implementation body (2) Implementation plan (3) Implementation articles (Provincial ordinance) (4) L/R council (5) Replotting plan (2) Procedure (1) Approval and notification of project (2) Public inspection of implementation plan (3) Application approval and notification of implementation plan	<ul style="list-style-type: none"> To determine implementing body To show the overall outline of the project including project area, outline of L/R design, financial plan and others To set up basic rules for project implementation To check the replotting plan so that views of person and consensus are properly reflected and fair judgments are made To determine the individual replots and equity payment To determine implementing body so that it can start survey for formulating implementation plan To reflect the opinions of land right holders in the implementation plan (design and financing) so that their rights are protected To empower the implementation body to implement the project

Items to Establish the L/R Legal System		Remarks
	<p>(4) Designation of provisional replotting (administrative measures)</p> <p>(5) Relocation/removal of buildings and construction works</p> <p>(6) Public inspection of replotting plan</p> <p>(7) Application approval notification</p> <p>(8) Enforcement of replotting (administrative measures)</p> <p>(9) Collection/payment of equity</p> <p>(10) Land Registration</p> <p>(11) Disposition (sale) of reserve land</p> <p>(12) Transfer of public facilities</p>	<ul style="list-style-type: none"> • To locate lands which can be provisionally used • To locate the lands which shall be designated as the replot in the future • To be decided at the general meeting of the association • To empower to relocate or remove buildings for construction works • To develop public facilities and sites • To seek views of persons concerned with the individual replots and equity payment • To confirm the fairness of the replotting and equity payment • To transfer the land rights from the original lot to the replot • Finalization of equity • To legalize the acquisition of reserve land and transfer of public land • To preserve properties and correct replotting imbalances • To register lands designated as the replots • To sell newly created lands through L/R for financing the project • To transfer the public facilities developed through L/R to each management authority
<p>3. Items and Procedure to be Stipulated</p> <p>(1) Items</p>	<p>2. Semi-public (association)</p> <p>(1) Organization (association)</p> <ul style="list-style-type: none"> • Legal status corporate • Participation of person other than the member into the association <p>(2) Implementation plan</p> <p>(3) Implementation articles</p> <p>(4) Replotting plan</p>	<ul style="list-style-type: none"> • To set up organization of implementing body for operation, decision and inspection for implementing project. • To show the overall outline of the project including project area, outline of L/R design financial plan and others. • To set up basic rules for implementing project under the association • To determine the individual replots and equity

Items to Establish the L/R Legal System		Remarks
(2) Procedures	(1) Agreement of landowners on project implementation	<ul style="list-style-type: none"> To make judgment on possibility of project implementation
	(2) Application approval notification of setting up association	<ul style="list-style-type: none"> To make it possible to carry out survey for formulating implementation plan
	(3) Public inspection of implementation plan and articles	<ul style="list-style-type: none"> To reflect the opinions of land right holders in the implementation plan and articles
	(4) Application approval and notification of implementation plan	<ul style="list-style-type: none"> To empower the implementing body to implement the project
	(5) Designation of provisional replotting (administrative measures)	<ul style="list-style-type: none"> To locate lands which can be provisionally used To locate lands which shall be designated as the replots in future To be decided at the general meeting
	(6) Relocation/removal of buildings	<ul style="list-style-type: none"> To empower to relocate/remove the existing building for construction works
	(7) Public inspection of replotting plan	<ul style="list-style-type: none"> To seek views of people concerned on the individual replots and equity payment
	(8) Application approval and notification of replotting	<ul style="list-style-type: none"> To confirm the fairness in the replotting and calculation of equity
	(9) Enforcement of replotting (administration measures)	<ul style="list-style-type: none"> To transfer the land rights from the original lands to the replots To finalize the calculation of equity To officialize the acquisition of reserve land and transfer of public facilities
	(10) Collection/payment of equity	<ul style="list-style-type: none"> To preserve properties and correct imbalance of replotting
	(11) Land Registration	<ul style="list-style-type: none"> To register lands designated as the replots
	(12) Disposition (sale) of reserve land	<ul style="list-style-type: none"> To sell newly created land through L/R for financing the project
	(13) Transfer of public facilities	<ul style="list-style-type: none"> To transfer the public facilities developed through L/R to each management authority
	(14) Approve notification of dissolution of association	<ul style="list-style-type: none"> To dissolve the association upon the completion of project
	(15) Liquidation work	<ul style="list-style-type: none"> To do liquidation work for dissolution of association under the other laws related to corporations
	(16) Account report	

Figure 2.2 Basic Composition of L/R Legal System



2. Supporting System for L/R Implementation

In addition to the L/R law as proposed in the preceding section, supporting systems must be established for the L/R project implementation. Namely, new taxation systems (specifically tax exemptions for the L/R project), financial support systems (loans with low cost financing the study and shared defrayment), and a land registration system are needed for the successful implementation of the L/R project.

2.1 Taxation System

2.1.1 Thai Taxation System

The Thai taxation system based on the Revenue Code, consists of national taxes (Income tax, Value added tax, business tax, Stamp duty, Commodity tax, Export/Import tax) and local taxes (Immovable tax, Land development tax and Advertisement tax).

Real Estate taxes are:

1. Income tax (tax on income accrued from property leasing and tax on property transfer),
2. Building and land tax,
3. Development tax.

In addition there is a system of administrative fees (registration of landownership, transfer of rights due to inheritance, and land lease).

2.1.2 Tax in L/R Project

In connection with the proposal for a Thai L/R system attention must be paid to possible conflicting elements with the Thai taxation system. If any, necessary arrangement must be prepared.

(1) Tax on Replots

The replots are likely to be categorized under traditional transactions of land -- buying and selling or exchange. In this regard, it threatens that taxes may be imposed on the replots.

It is true that landowners are unwilling to participate in the project due to financial burdens that increase due to taxation on the replots, thus halting the L/R project for the public's benefit.

Consequently, tax exemptions on the replots should be sought for the following justifiable reasons.

- 1) L/R project is oriented for the public's benefit with remarkable social and economic effects yielded as discussed in the following Chapter. In this regard, participants in the L/R project should be free from taxation under the justification of their contributions to the social development and promotion of the public's welfare.

In addition, the L/R project will increase land values after the project is completed. The increased land value boosts tax revenues through property tax, special business tax on the real estate business, et cetera. It is expected that the increased revenue of government is large enough to offset the losses caused by the tax exemptions.

- 2) Their lands are to be transferred not by the individual, but based on legal authority of the implementing body.
- 3) The replot is to be identified with the original lot upon the enforcement of replotting. Accordingly, it is legally interpreted that there is no change in land rights.

(2) Taxes on Equity Payment

Equity payment is made to the landowners who are given the replots which are worth less than the duly-calculated land value of the replots. It appears that the equity payment is considered taxable by the authority in charge since it may be categorized as personal income through selling a part of their lands.

Although it is important to design the replotting so that the equity payment is minimized, special arrangements for tax exemptions or reductions should be sought in coordination with the authorities concerned for the same reasons as stated in the preceding section.

(3) Taxes on Compensation for Building Relocation and Removal

It is recommended that the compensation standards similar to those in the property expropriation law be applied to the compensation for building relocation and removal.

(4) Administrative Fee for Issuance of Certificate of Title

The L/R project necessitates the change or renew of the old Certificate of Land Titles upon the enforcement of replotting.

For the same reasons as stated above, the administrative fee should be exempted for the registration needed for the L/R project implementation.

As a matter of fact, administrative fees for issuance of modified or renewed certificates for land title in implementing the agriculture land consolidation project, and land reform project is exempted in Thailand.

2.1.3 Necessary Arrangement

1) Special Measures of Tax Exemption

As stated in the preceding section, the L/R law (draft) defines that the L/R project is a "public project" for the public's interest and public welfare. Accordingly, in principle,

the same measures of tax exemption for public works should be applied to the L/R project.

It is a principle of the L/R system that there is a change in the land by location, area, shape, but no change in land rights before and after the project implementation.

Based on this principle, there is not a transaction of land leading to the conclusion that the replot is not taxable.

Descriptions in the certificate of Land Title are to be revised in accordance with the land's physical changes through the replotting.

There is not an existing taxation system in Thailand, which imposes taxes on the physical change of the land.

(2) **Review of Land valuation**

As the land price in/around the project area will increase through the L/R project implementation, a review of land valuations on which building/land taxes and local development taxes are calculated, must be made. There are two points in time to accomplish this -- at the start of using land upon designation of provisional replotting, and at the end of the project implementation.

The latter is recommended because it is more effective to review land values of all the lots correlatively so that complicated works on the way of project implementation can be evaded.

2.2 Financial Support System

2.2.1 Financial System of Public Works in Thailand

The central government is responsible for the construction and management of public works and all the public works of municipalities except for major metropolitan areas under the national budgetary framework, and where there is not a financial support or subsidy system established.

2.2.2 Proposed financial Supporting System

Recognizing the importance and effects of an L/R system in regards to city planning and development in Japan, there are a variety of financial assistance measures such as national government subsidy, shared defrayment of public facilities by the management authority, loans et cetera.

It is understood that Thailand's governmental financial assistance will be limited due to financial constraints. However, with a view to promoting an L/R project in Thailand, as a minimum the following financial support system will be necessary.

(1) Loan and Subsidy

1) L/R Loan System

The main fund resource of an L/R is the sales of reserve lands. However, as the reserve lands can be sold out only after the completion of construction, loans will be needed to meet expenses of construction works and the others until the sales of reserve land.

Although the sales of reserve land is to cover all the development costs, it is imperative to secure loans for the project implementation. Commercial bank loans will impose an additional burden on landowners because of high interest rates. This threatens to hinder positive participation of the landowners, resulting in a halting of the project implementation.

In order to promote an L/R project in Thailand, it is recommendable to establish a financial supporting system that can provide loans with no interest charge to cover the project cost until the sales of the reserve lands.

2) Subsidy for L/R study

The proposed Thai L/R law dictates the formulation of the implementation plan and the replotting plan. The development concept plan and the L/R Master Plan also have to be elaborated before the formulation of the implementation plan.

The concept and L/R master plans are instrumental not only technically for making the implementation plan but also for encouraging the landowners to reach consensus for the urban and environmental development in their community.

Especially, an L/R is not so familiar in Thailand and so, initiatives and desires of the landowners to developing their communities seems to be minimal. Therefore, it is important for the government to motivate the landowners towards urban development.

At the stage of the L/R studies for the concept plan and L/R master plan, the implementing body and area and conditions are not yet established. In this situation the capital investment for the study and planning is at risk. If the originators in the communities have to take this risk, it is certainly a possibility that this could be an impediment to the enthusiasm of the landowners. It is disputable who should bear the cost required for setting-up an L/R project, (including the studies) before government approval of the project.

Based on the considerations as shown above, government financial assistance for the studies and planning (or national subsidy to the local government) is significant for expanding the L/R project scheme.

(2) **Shared Defrayment of Public Facilities by the Management Authority**

The purposes of an L/R project is to develop basic urban infrastructures such as railroads, express ways, and arterial roads and others.

It is not unusual that the infrastructure development is programmed and budgeted by the authorities in charge of construction and management.

It is apparent that land contribution becomes excessive if/when all the lands required for the construction of such infrastructures as stated above are to be provided through the land contribution of the landowners.

This leads to unfair cost sharing for the infrastructure as the benefits are passed along to the rest of the urban dwellers outside the project area.

In this regard it is reasonable that the government is to finance all or a part of the cost of the infrastructure development. (The government is to share the cost not more than the amount of money which is equivalent to the cost of land acquisition in Japan).

2.3 Land Registration System

2.3.1 Thai Land Registration System

(1) **Land Act**

All the matters regarding land registration in Thailand are defined in the Land Act. The Department of Land under the Ministry of Interior is responsible for land registration.

The land registration system in Thailand is outlined as follows.

- 1) The certificates of land title are to be issued to private lands.
Lands for roads, rivers, national forests, lands of the country's legal family, and ordinary properties, are lands without certificate of land title.
- 2) The first registration of land ownership is made with the issuance of the Certificate of Land Title.
- 3) The Certificate of Land Title is produced based on the cadastral survey and cadastral map attached to it.
- 4) Two copies of the Certificate of Land Title are produced, one of which is kept in the office.

(2) Land Registration in the Development Project

1) Agricultural land consolidation project

This project is quite similar to an L/R project, especially in the implementing of the land exchange division and combination of land in spite of the differences in purpose and development items.

The conditions regarding the rights of lands in this project are defined as follows.

- Prohibition of land selling during a five year period after the declaration of the project area in principle
- Prohibition of transferring landownership through mortgage
- Disposition of buy back rights
- Issuance of new certificates of land title by the Department of Land upon official authorization of the replotting plan (The old certificate is voided.)

Consequently, the procedure regarding land rights in this project is summarized as follows.

Any rights other than landownership are cleared upon the start of the project's implementation, and land buying/selling is prohibited.

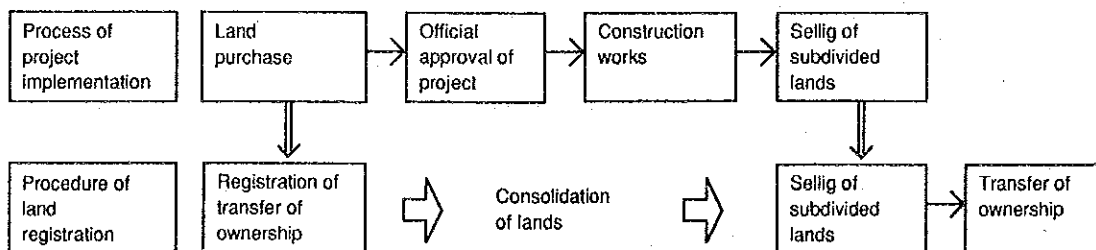
Upon the completion of the project, a new Certificate of Land Title is issued by Department of Land, following official authorization of the replotting plans, and simultaneously, the original Certificate of Land Title is closed.

2) Land subdivision project

The land subdivision project is due to be implemented under the land subdivision control law.

The procedure of land registration in this project is illustrated as follows.

Figure 2.3 - Procedure of Land Registration



As soon as the subdivided land is sold upon the completion of the project, new certificates are issued. (One unique characteristic is that one of the subdivided

lots of which landownership is lastly registered is registered on the original certificate of land title.

2.3.2 Proposed L/R Land Registration System

Upon the enforcement of replotting, all the existing rights of the original lands are to be legally transferred to the replots. And, all the rights transferred to the replot have to be registered.

As repeatedly stated before, "Replotting" is to change the original lands physically (in terms of location, area, and shape) but keeps the existing rights of the original lands on the replots.

Taking this rule into consideration, the replots are registered in a manner that the description of the Certificate of Land Title of the original land should be revised in accordance with the physical change through the replotting. (change in address, area, shape, and others) In the proposed L/R Act in the preceding section, it was suggested to establish a method for efficiently promoting the project implementation.

Provided that the replots are to be registered under the existing registration system, the new title of replots are to be registered as a result of the exchange of the original lands to which the replots are given and on which the replots are physically placed.

Because the exchanges are to include many pieces of lands, the works are quite difficult and complicated. But, an L/R registration system of replots can be simply made in a manner that the replots are identified with the original lots. Once identified, the certificate of the original land title is to be kept valid with the revision of the description of the title in accordance with the replotting.

(1) Procedure of Registration

As shown in section 1.2, there are two ways of land right continuation through a replotting system termed a continuation system and a pooling system.

However, it is apparent that different land registration systems must be prepared respective of registration purposes.

1) Continuation system

The existing certificate of land title continues to be valid with only a change in the location, shape, and area of land in the description of the title.

2) Pooling system

Issuance of new certificates of land title along with invalidating the old certificate.

In either case, a new registration system must be created because legal deeds as listed above are not permissible under the existing registration system.

- (2) As shown above, the land rights of replots are to be defined as those of the original lands. Accordingly, relationships between the original land and the replot must be identified.

There are three (3) variations of replotting, an original lot to one replot, one to many, and many to one. This variation of replotting must be stipulated in the L/R registration system.

(3) Outline of Proposed L/R Registration System

1) Purpose

Special arrangements for land registration in the L/R project and procedures shall be defined.

2) Registration of land

a. Application

- Items to be described, documents and maps to be attached
- Description of land to be registered
- Description of reserve land and public land

b. Lands to be registered

- Replot
- Reserve land, public land

c. Others (If necessary in relation with establishment of L/R legal system in Thailand)

- Registration method for the variation of replotting
- Registrative measures for the existing lot for which no replot is designated

3) Registration of buildings

application of change of building address in registration

- Applicant - the implementing body
- Collective application

Chapter III. Land Readjustment Planning

CHAPTER 3 LAND READJUSTMENT PLANNING

1. Study Purpose and Methodology

1.1 Study Purpose

An L/R project implementation requires establishment of an L/R implementation system as shown in the preceding volume, and an implementation plan for the L/R project.

The purpose of the study in this volume is to formulate the L/R implementation plan as well as show the methodology of the L/R study for it.

1.2 Methodology

It must be stressed that an L/R study process is a technical planning and engineering process as well as a social coordination process.

In the course of the L/R study, coordination for achieving consensus among concerned persons (especially landowners) is made and the consensus is reflected in the L/R implementation plan.

1.2.1 Technical Process of Planning

(1) Categories of planning

The L/R studies are categorized into three study groups depending on the

1) Master plan study

Urban development plan covering a relatively wider range of area is to be drawn with the L/R planning area being specified in the urban development area.

And a general L/R master plan in the planning area is established and the priority project for the L/R is selected.

2) Project Study

Feasibility study on the L/R in the priority project area is to be made.

3) Implementation Plan

Based on the results of the studies as stated above, an implementation plan is finally compiled.

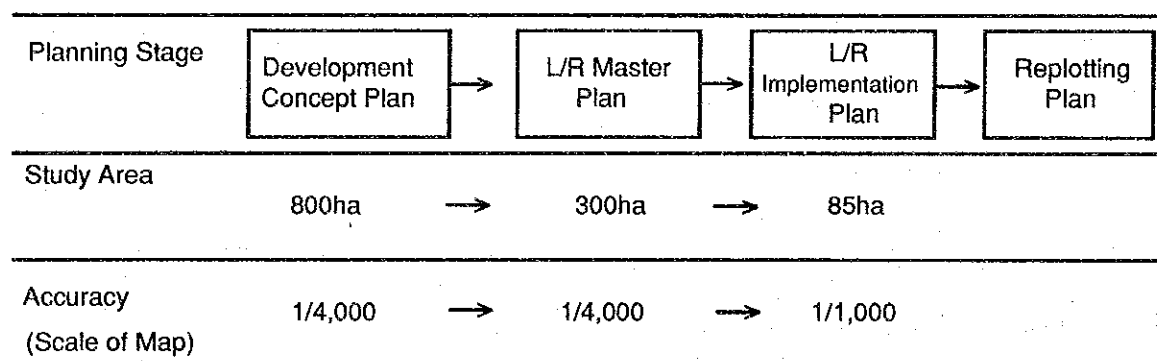
At this stage of the L/R planning, all the conditions for project implementation, including those of agreement with the agencies concerned, budgetary arrangement, and agreement with the concerned landowners, must be resolved.

(2) Technical Stage of Planning

Planning is to follow hierarchical stages such as those from the wider planning area to the smaller area, general and conceptual planning to specific and actual, and low degree of accuracy to high degree of accuracy (scale 1/400 to 1/1,000).

The following technical stages of planning must be accomplished in the L/R study.

Figure 3.1-Technical Stages of Planning



The study items for each stage of planning are listed in the **Figure 3.1**, and demonstrates that through the stages of planning, the development concept is to be embodied into the physical development plan and eventually the site plan of individual lots.

Table 3.1-Technical Items at Planning Stages

Development Concept Plan	Development vision and ideas General development structure Basic system of land use and public services
Master Plan	Design of land development and public facilities on the basis of the development concept plan (This is called L/R design.) Feasibility analysis (Financial plan - optimal contribution ratio)
Implementation Plan	Finalization of implementation conditions for L/R project (Project area, scale, cost sharing)
Replotting Design and Plan	Allocation of individual lots

1.2.2 Social Coordination Process of Planning (Process for reaching consensus)

Unlike the land subdivision project which is developed in the area of a single landowner, an L/R project development plan is subject to consensus among concerned persons (landowners) and government agencies.

The results of the agreements made are to be incorporated into the development plan. Thus, an L/R plan is formulated so that the L/R planning process is viewed as a social coordination process.

(1) Phased process for reaching consensus

Another important aspect of an L/R system is that agreements among concerned persons regarding the L/R project are made by phases, that is, phases related to the development concept plan, master plan, implementation plan, and replotting plan.

The L/R plan is to be elaborated during the course of consultations and negotiations for promoting agreement on the project's implementation.

In other words, consultations with landowners must remain throughout all the stages of L/R planning and implementation. The main issues of consultations to be agreed to at each stage are summarized in the **Figure 3.2**.

Primary consultation issues to be agreed upon among concerned persons regarding the L/R project.

(2) Consensus and Authorization by the Government

L/R plans based on the consensus of concerned persons are to be authorized by the government agency responsible in order to legalize and sustain the established consensus during the period of the project implementation.

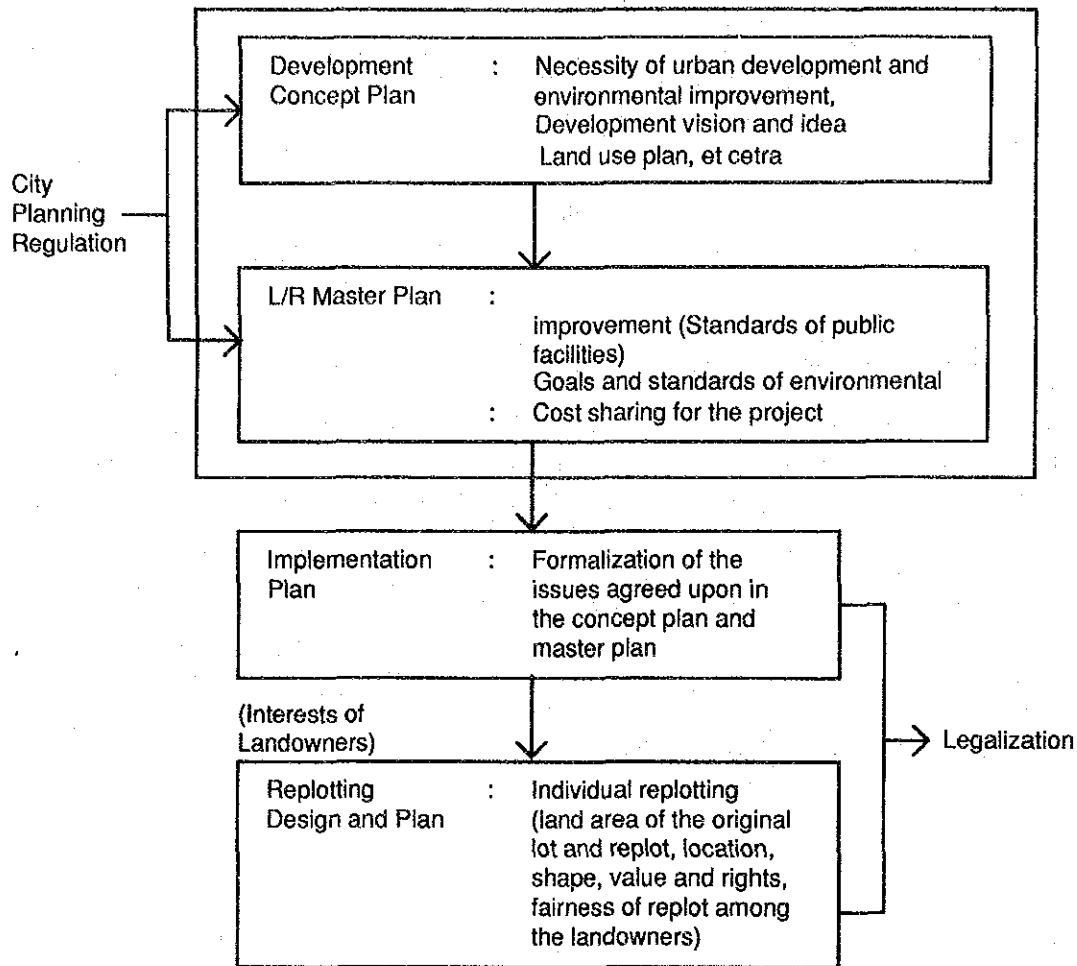
In the process of L/R project preparation, the concept plan and master plan are to be adaptable to responses from consultations with landowners, government agencies, and others. The L/R system and planning are flexible enough to reflect the opinions of people concerned in the course of implementation.

However, it is not a good idea to fix the concept and master plan only through their authorization.

Consultations with concerned parties through plan formulation of the concept plan and L/R master plan shall be finalized, and all the items agreed upon through consultations are to be incorporated into the implementation plan.

Consequently, the implementation plan alone must be fixed through government authorization before the start of the L/R project implementation.

Figure 3.2-Consultation Issues



(3) Review and Revision of L/R Plan

As stated before, the preparatory works for L/R implementation, including consultations are to keep pace with the step-by-step formulation of the concept plan, master plan, and implementation plan.

It requires substantial time to arrive at the planning stage due to prolonged consultations with the landowners.

Accordingly, the concept plan must be reviewed and revised during the formulation of the master plan, and if necessary, to update the data and incorporate the results of consultation into the master plan.

Eventually, review and revision of the preceding plans shall be finalized during the formulation of the implementation plan.

1.3 Study Procedure

Following the L/R study method as described above, this study was carried out as shown in **Figure 3.4** of the study flow chart and **Figure 3.5** of the study survey and plan formulation.

- This L/R study followed a technical engineering process, and did not follow the social coordination process. The out-put of this study may be instrumental to the Thai government for social coordination process activities that also include consultations with landowners and others regarding actual implementation of the L/R project.
- The above mentioned Three plans are to be separately compiled because of different times required when each is formulated during the course of the L/R project preparation and implementation. However, in this report, the plans are collectively compiled with a view to demonstrating the global picture of this L/R study.

(1) Master Plan Study

The main purpose of this study is to identify the areas which should be developed by an L/R system, and more specifically, the L/R priority projects which should be urgently implemented.

The general concept plan study was carried out to established an urban development plan in the the broader study area, and also the planning area which is to be developed through L/R system.

Also the general L/R master plan study in the planning area was executed with the L/R priority project and area selected.

1) General Concept Plan Study in the Study Area

The site survey was carried out to identify the existing conditions of the 800ha of the study area. The urban development concept plan was mapped out indicating the general L/R master plan area (Planning area).

2) General L/R Master Plan Study in the Planning Area

The general L/R master plan was set forth, indicating the L/R priority project and area on the map with a scale of 1/4,000

(2) Project Study

The following three plans covering the project area of 85ha were elaborated in the planning frame work established in the Master Plan.

1) Concept plan of the project are (85ha)

The Master Plan of the study and planning area was detailed in the project area.

2) L/R Master Plan of the project area (85ha)

The urban development project through the L/R system was formulated. The project analysis was executed leading to the conclusion that the L/R project is feasible.

3) L/R Implementation Plan

According to the proposed the L/R law, L/R Implementation Plan is an official document to be submitted for the approval of the government. Items and descriptions of the plan are subject to government decisions in consideration of the Thai social/political and administrative conditions.

In this regard this study presented a model of an L/R implementation plan.

Figure 3.3-Study Flow Chart

STUDY FLOW CHART

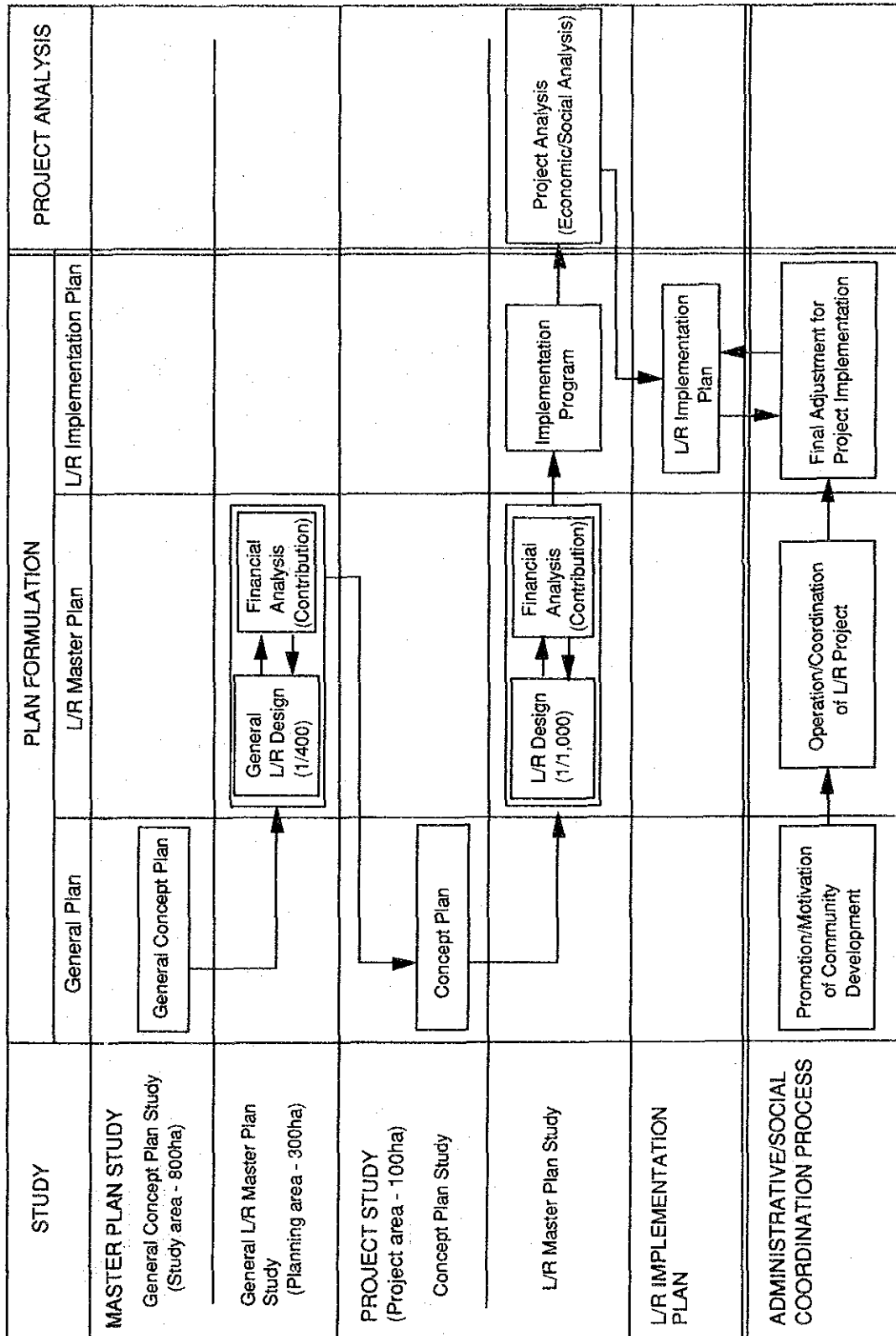


Figure 3.4-Study Survey and Plan Formulation

STUDY SURVEY AND PLAN FORMULATION

		Study Area	Survey	Scale	Plan Formulation	Remarks
MASTER PLAN STUDY	General Concept Plan Study	Study area (800ha)	- 1st site survey	1/4,000	General concept plan	
	General L/R Master Plan Study	Planning area (300ha)	- 2nd site survey - Opinion poll survey	1/4,000	General L/R master plan	
PROJECT STUDY	Concept Plan Study	Project area (100ha)	- 3rd site survey - Topo survey	1/1,000	Project concept plan	Study reports to be separately compiled due to time difference in the course of real project implementation
	L/R Master Plan Study	Project area (100ha)			L/R master plan	
IMPLEMENTATION PLAN STUDY		Project area (100ha)			L/R implementation plan	

2. Land Readjustment Study

2.1 Basic Features of the Study Area

The existing conditions of the study area (800ha), the planning area (300ha), and the project area (85ha) were analyzed prior to the formulation of the concept plan, L/R master plan, and implementation plan. The first, second and third surveys related to the existing conditions were carried out for this purpose.

The basic features of the study area located about 6km away from the center of Bangkok and in the Huai-Kwang, Bank-Kapi districts are summarized as follows.

(1) Pocket Land

As the Bangkok developed area has largely expanded outward, the project area has some land area that remains open (o called pocket lands in the developed area). (See Figure - Existing Land use) This presents the following physical characteristics of the project area.

- 1) The farm lands were converted into unused and/or waste lands and have resulted in the collective open lands.
- 2) Public service levels are quite low, represented by poor access roads, which is a primary reason why the project area has remained open. From the opinion survey it was demonstrated that none or poor access roads and flooding are major development problems for the project area.

(2) Rapid Urbanization

In coincidence with the construction boom in Bangkok in the late 1980's and early 1990's, the construction provided rapid urbanization in the project area.

1) Large scale/High rise buildings

One of the characteristics of urbanization is the existence of large scale/high rise buildings including offices, hotels, and condominiums which developed quickly in the project area due to the area's strategic location and high development potential.

- 2) A variety of urban activities and functions. Another characteristic of urbanization can be found in the variety of urban activities in the project area, such as television broadcasting stations, restaurants, hospitals, and schools in addition to the buildings mentioned above.

3) Land subdivision

The lands in the project area used to consist of large farm lands. However the land has been subdivided into smaller lots in parallel with urbanization.

(3) Large Scale Projects

Large scale transportation projects such as the Skytrain, Hopewell System, Expressway and Royal City Avenue have been planned and implemented to traverse the project area. (Figure 3.7)

These projects are expected to substantially improve transportation services and make possible further development of the urban center with the mass transportation system. On the other hand, the following problems cannot be ignored.

1) Division and confusion of urban space

Large scale facilities tend to divide and dislocate the urban space so that it becomes difficult to develop the project area in an integrated manner.

2) Traffic congestion in/around the project area

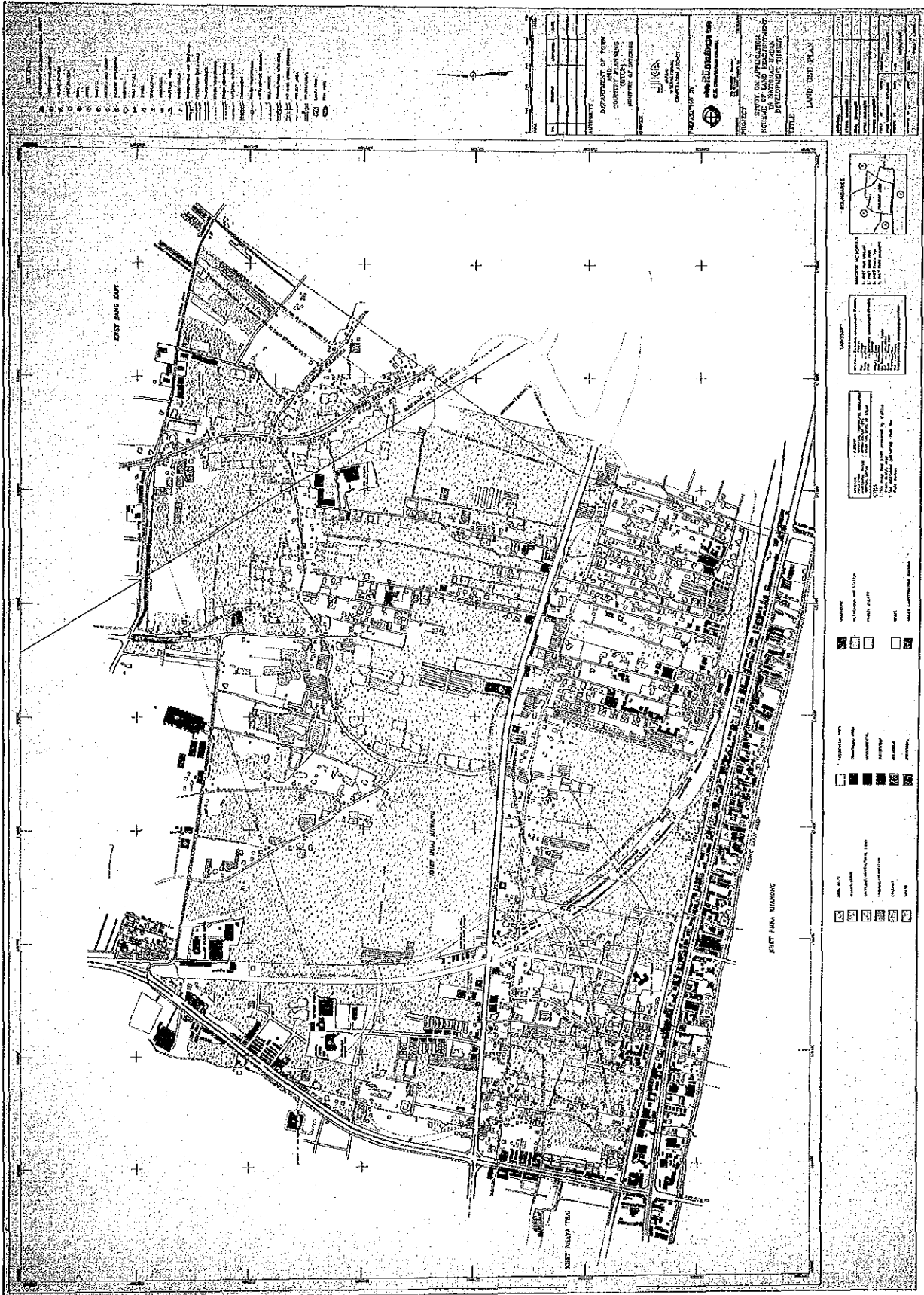
The great amount of traffic converging in/around the project area because of the large scale transportation systems threatens to cause serious traffic congestion due to the poor conditions of the district-level road network (feeder roads).

2.2 Land Readjustment Planning

A series of the L/R plans worked out in view of the existing conditions of the project areas shown in the preceding section are summarized as follows. (See Figure 3.8).

[New Bangkok CBD should be developed in the study area of 800ha (concept plan). In the study area 300ha of the planning area should be developed through the application of land readjustment system in order to create a core part of the new CBD. The priority project area selected, consists 85ha in the study area. For the purpose of the project implementation, land readjustment implementation plan was set forth, (Project cost: 844 million Baht, Contribution ratio: 29.75 ~ 30.75%)]

Figure 3.5-Existing Land Use



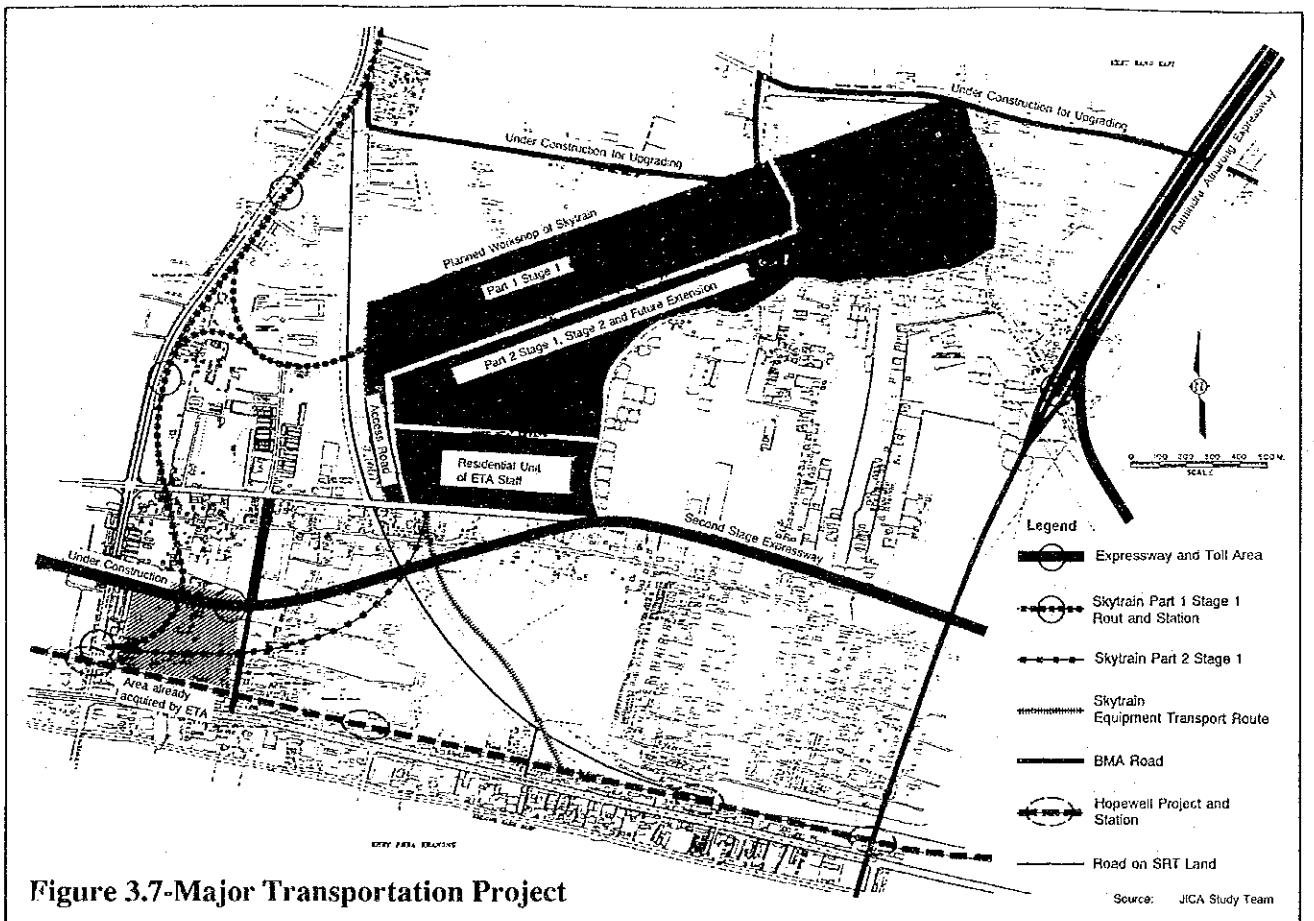
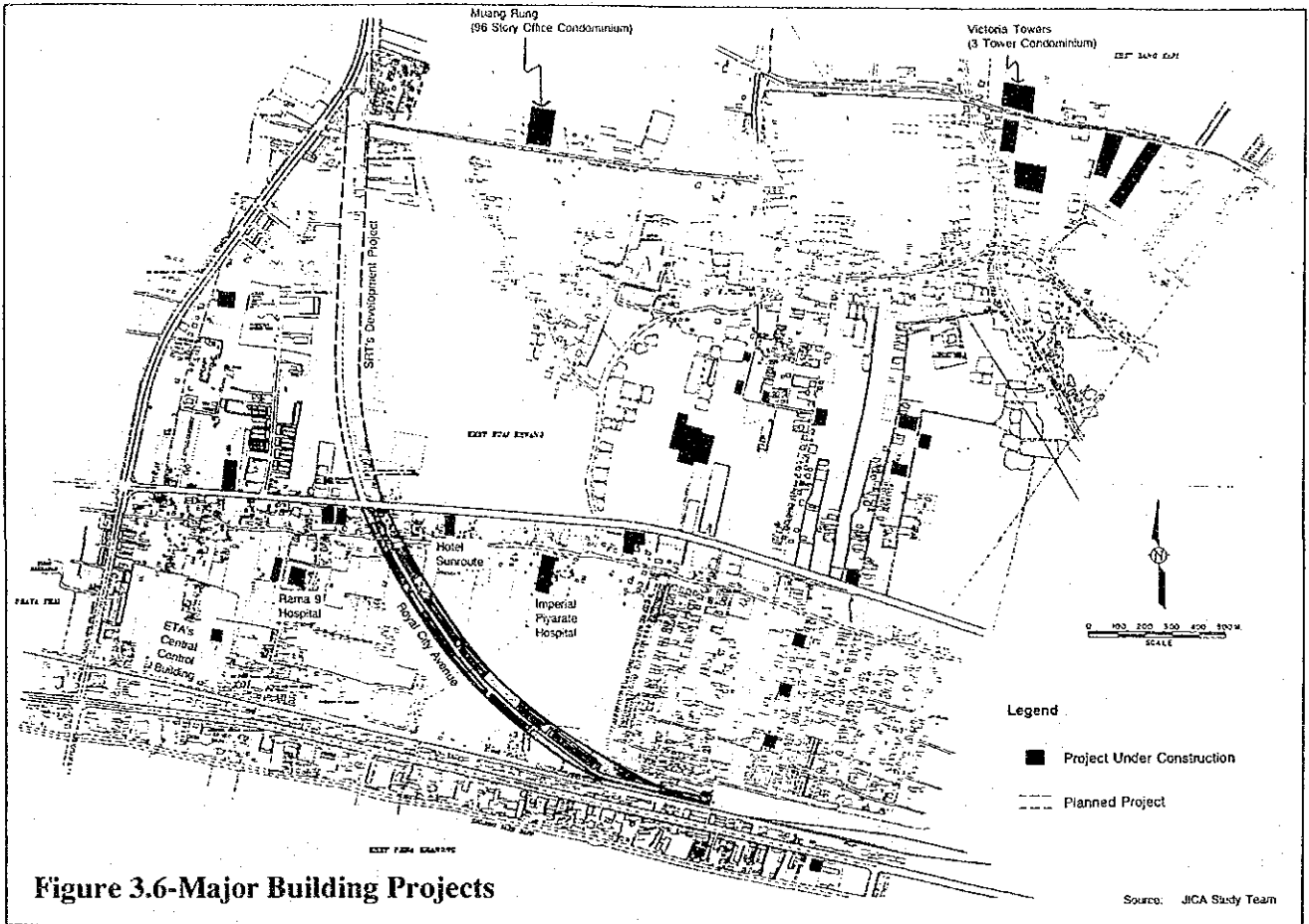
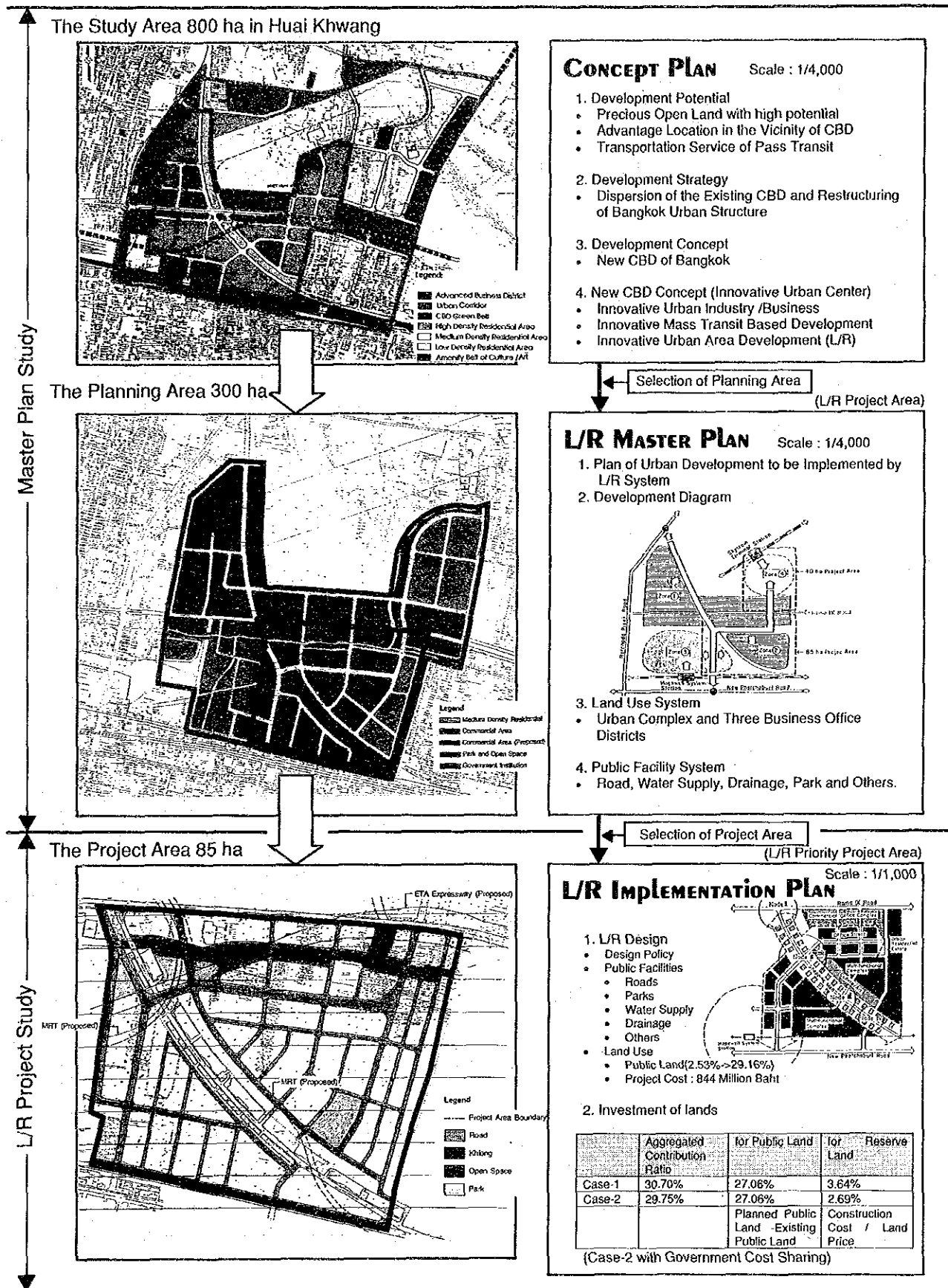


Figure 3.8-Land Readjustment Planning



2.2.1 Concept Plan (Study area 800ha)

The study area is endowed with high development potential considering the proximity to the center of Bangkok, and its strategic location on the network. Urban sprawl and a deteriorated area without an appropriate development methodology taken in the study area will result in waste of the land resources left in Bangkok.

In this respect, integrated urban development is necessary to prevent urban problems as well as to make best use of the open land.

Bangkok itself has been plagued with serious traffic problems, air pollution, and others. It is discussed that Bangkok needs to disperse the existing CBD and to reorganize the Bangkok urban structure.

From the view point of Bangkok city planning and development, it is recommended to develop a new CBD aiming at the dispersion of the existing Bangkok CBD in the study area with high development potential and good locational conditions.

(1) Development Concept of New Bangkok CBD

The new CBD is supposed to be innovative in the following three (3) areas.

1) Advanced business center

The new CBD is designed to collectively accommodate the advanced and highly up-graded business activities (International Trade, Finance Culture, and hi-tech, telecommunication industries) which are all expected to be fostered in parallel with internationalization and the economic advancement of Bangkok Thailand.

2) Mass Rapid Transit Based Urban Development

Bangkok has relied on land transportation, which is a major factor in the current traffic problems. The new CBD is designed to make contributions to the alleviation of the traffic problems in a manner that urban center development incorporated with the rapid mass transit system enhance a desirable shift in transport mode from land transport to rail transport.

3) Integrated Urban Area Development

It is true that it is almost impossible to develop an urban center in the study area with the traditional development measures.

Integrated urban area development through application of an L/R system is a possible approach for realizing CBD development in the study area.

(2) Planning Framework of New CBD

The planning framework of the New CBD was set at 200,000 employees and 90,000 of the evening population taking the size and centrality of the existing urban centers and

Bangkok urban structure (polarized polycentric and urban corridor patterns) into consideration. The planning period was set at 20 years.

2.2.2 L/R Master Plan (Planning area 300h)

300ha of the study area was selected as the core of the new CBD, which is to be developed through the application of an L/R system in consideration of the development importance/strategy and the relative difficulties of the L/R project implementation.

The L/R master plan of the planning area was worked out in compliance with the concept plan set above.

(1) Development Diagram

In line with the concept plan development diagram (shown in the **Figure 3.8** of L/R planning), four core districts were mapped out after further analysis of existing conditions at the planning area. Special attention was paid to the development conditions as follows.

- a. Current urban trends and potential.
- b. Urban development united with the rapid transport system and stations.
- c. Physical development capacity of the area.

The four core districts are to be collectively and integratedly developed so as to make one new CBD.

(2) Land use plan

In adjustment with the existing developed area and land use, the commercial complex and the three business districts were proposed in consideration of the land use control in force in Bangkok (Bangkok general plan - commercial development is permissible as far as the accumulated land area is less than 10% medium density residential area).

(3) Public facility plan

Major planning points of the public facility development plan area are enumerated as follows.

1) Road System

With the structural standards of roads in the Bangkok general plan being applied, the network of roads with wide right of way and higher density was proposed to serve the massive amount of traffic generated in the CBD. The road network is to center on the CBD urban arterial road giving direct access to the existing Bangkok arterial roads (Ratchada Phisek Road and Phetchaburi Road), and connecting the above mentioned core districts.

This arterial road is designed to substantially improve traffic conditions in the planning area which were closed and work as the development center of the new CBD.

2) Water Supply

Water supply system in the planning area is to be connected to the main line of the Metropolitan Waterworks Authority that traverses the planning area. However, it should be noted that the water recycling system must be installed because it is estimated that future water demand will exceed the capacity of the water supply.

3) Drainage and Flood Protection

Flood protection measures are comprised of the water retention area as much as 5% of the planning area with the improvement of the existing Khlong and canals, and the landfill of 1.0m height.

4) Sewerage

Sewerage system development includes the construction of sewer pipelines and waste water treatment plant. However, only the former and the land acquisition for the latter, are programmed in the L/R project.

5) Parks and green

One urban park is planned to locate in each development district, totaling four (4) urban parks. In addition the green network is to be established on the improved and landscaped Khlongs.

(4) Project Analysis

1) Land use comparison before and after the project

The public facilities are to be greatly improved as shown in the increase of the ratio of public land to the project area; from 4.1% before the project to 28.4% after the project.

2) Project Cost

The total project cost is estimated at 2,997 million Baht.

3) Contribution ratio

The contribution ratio for the reserve land which is the funding source for the project cost is calculated at 4.26%, for public land at 25.30%, and for the combined at 29.56%.

2.3.3. L/R Implementation Plan of the Project Area (85ha)

The 125ha in the planning area was designated for the implementation of the pilot L/R project in Thailand.

The implementation plan covering 85ha was accomplished, leaving the remaining 40ha for the DTCP counter part.

The project area was identified taking the following into consideration.

- 1) Coordination and adjusting works (for instance those with the sky trains) should be as least as possible so that smooth implementation of the first L/P project in Thailand is realized.
- 2) The smooth urbanization or development is expected after the project completion.
- 3) The appropriate project size (neither too small to lose the effect of project nor too large to be beyond the implementing capacity).
- 4) Relative difficulties of project implementation (neither too much urbanized nor too much land-subdivided)

Upon the determination of the project area, the preparatory works start and proceed from there to completion. Most importantly, explanation of the development schemes and L/R implementation plan must be given to the community (the land title holders and others) for the purpose of building consensus.

In this manner after the determination of the project area development concept plan, the L/R master plan and implementation plan exclusively covering the project area must be formulated. And then the plans are revealed to the community of the project area for seeking consensus.

It is natural that the Master Plan set forth in the preceding section is subject to modification in response to community negotiations.

In this study, any social coordination activities were not used so that the opinions and suggestions from the community were not utilized in the plans because the project area is not yet determined and lacks the official notification of the government.

However, the output of the opinion poll survey to the landowners executed in this study was properly incorporated into the plans as shown in the following sections.

(1) Concept plan of the project area

In compliance with the L/R master plan of the planning area set forth in the preceding sections, the development concept plan of the project area was worked out in more detail.

Special attention was given to the following items.

- 1) The large scale shopping mall of the Royal City Avenue under construction traverses the middle of the project area, and is proposed to be integrated with the urban development so as to create a vital and affluent urban center.
- 2) The new CBD arterial roads along which modern office streets (high rise buildings) are to emerge.

(2) L/R Master Plan of the project area

1) L/R Design

Based on the above mentioned concept plan, the L/R design which is equivalent to the physical development plan for real estate development was made (see **Figure 3.8** of L/R Planning).

As the public facility plan/design is a part of the planning area as shown before, a thorough detailed plan was accomplished through the scrutinization of the development concepts as stated above, and the existing conditions (physical conditions landowners ships and others).

2) Project Analysis

- Land use comparison
Public land is to expand from 2.53% to 29.16% in terms of the ratio of public lands to land areas of the project area.
- Project cost
The total project cost is 840 million Baht. The breakdown is shown in the **Table 3.2**.

Table 3.2-Summary of Project Cost

Item	Amount (x1,000 Bt)	Remark
1. Compensation cost	98,270	Refer to Table 2.8.2
2. Infrastructure development cost	575,210	Refer to Table 2.8.1
3. Survey and design fee	94,280	14% of item (1. + 2.)
4. Operation cost	76,770	10% of item (1. + 2. + 3.)
Subtotal	844,530	
5. Repayment of interest		To be estimated by financial plan
Total Project Cost		

Table 3.3-Infrastructure Development Cost

Work Item	Unit	Unit Price	Quantity	Amount (Baht)
1. Land filling work	m ³	340	560,000	190,400,000
2. Road work				153,152,000
2.1 Arterial road W = 30 m	m	19,500	780	15,210,000
2.2 District road W = 20 m	m	11,800	1,750	20,650,000
2.3 Major dis. road W = 18 m	m	10,300	440	4,532,000
2.4 Major dis. road W = 16 m	m	9,900	1,560	15,444,000
2.5 Minor dis. road W = 12 m	m	6,900	3,340	23,046,000
2.6 Access road W = 10 m	m	5,900	4,300	25,370,000
2.7 Bridge works (7 places)	m ²	20,000	2,220	44,400,000
2.8 Temporary bridge	Ls		1	4,500,000
3. Park & Green Work				20,340,000
3.1 Gardening of public park	m ²	500	30,000	15,000,000
3.2 Planting on open space along khlongs	m ²	200	26,700	5,340,000
4. Drainage work				132,570,000
4.1 Khlong improvement	m	30,000	2,340	70,200,000
4.2 Dredging	m ³	100	23,500	2,350,000
4.3 Open space excavation	m ³	50	9,800	490,000
4.4 Aeration facilities	Ls		1	15,000,000
4.5 Drainage pipe				
1) dia. 400-600	m	2,300	13,300	30,590,000
2) dia. 800-1000	m	4,200	1,800	7,560,000
3) dia. bigger than 1,200	m	5,800	1,100	6,380,000
5. Water supply work				26,460,000
5.1 Pipeline dia. 100-150	m	1,500	11,900	17,850,000
5.2 Pipeline dia. 200	m	3,500	300	1,050,000
5.3 Valves & fire-hydrant	Ls		1	7,560,000
TOTAL				522,922,000
Physical contingency (10% of TOTAL)				52,292,000
GRAND TOTAL				575,214,200 (670 Bt/m ²)

- Project revenue - Contribution

As shown in **Table 3.4** the project revenue and contribution ratio were calculated for Case I of the self financing system with no government financial assistance, and Case II of the introduction of shared defrayment of public facilities by the management authority, respectively.

Table 3.4-Project Revenue and Contribution Ratio

	Revenue (x2,000 Bt)		Contribution ratio (%)	
	Scale of Reserve land	Shared Defrayment	Contribution for reserve land	Combined contribution
Case I	909,000	0	3.64	30.70
Case II	672,000	215,000	2.69	29.75

(3) Implementation Program

1) Implementation Schedule

Upon examination of the construction method phases (3 phases) and the construction schedule, the Five (5) year implementation schedule as shown in **Figure 3.9** was derived based on the condition that all the preparatory works including the enactment of the L/R law, coordination with the landowners and agencies concerned, the L/R study/planning and others will be completed in the first year.

2) Annual Financial Plan

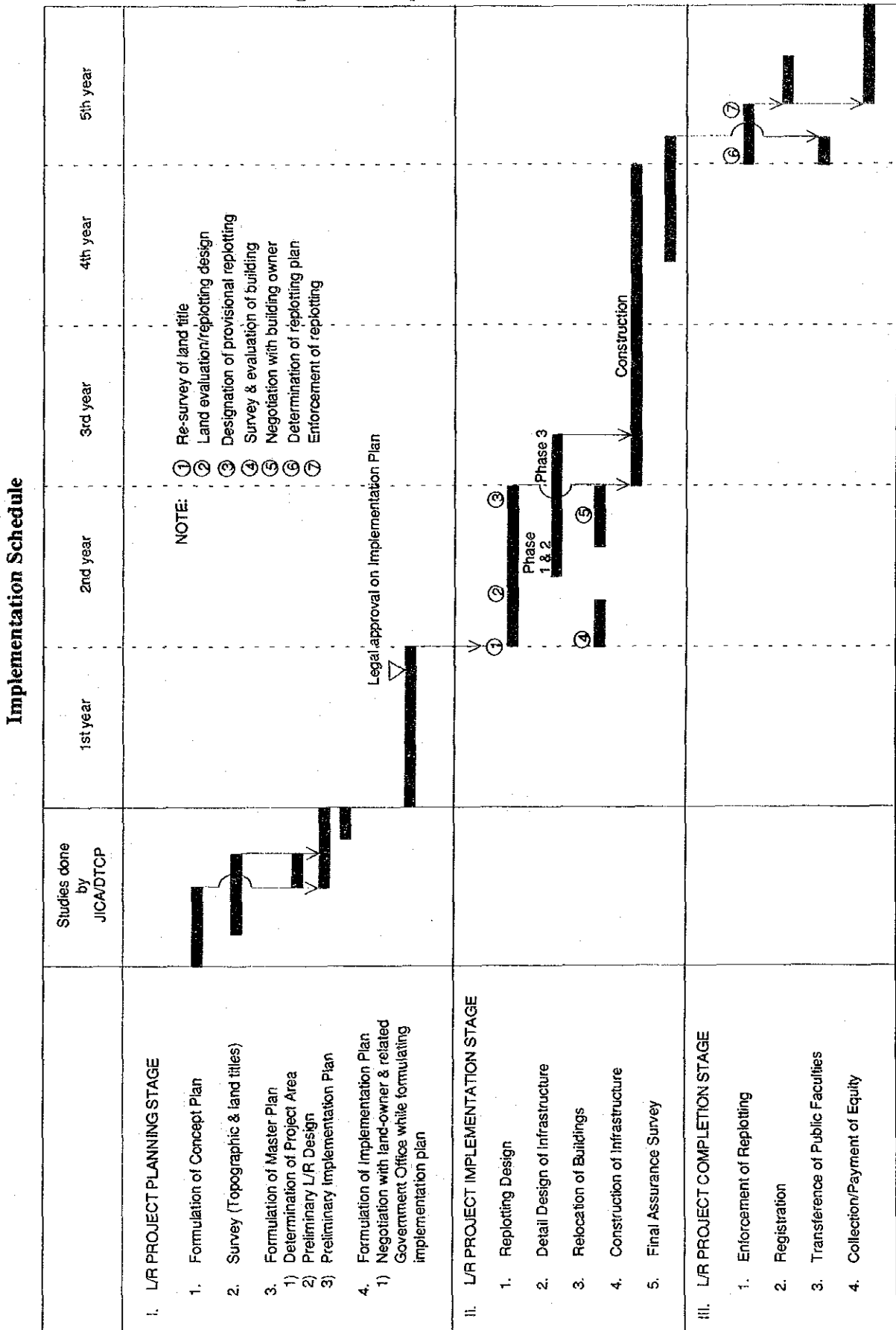
Following the implementing schedule set above the annual financial plan as shown in **Table 3.5** and **Table 3.6** was proposed on the following conditions.

- Part of due reserve lands where the construction works are completed are due to be sold in the 4th and 5th year. (Case 1 & 2)
- Shared defrayment of public facilities is due to be provided by the management authority in the second year.

(4) Formulation of an L/R Implementation Plan

Upon the approval of the L/R Implementation Plan of the government, the L/R project covering the project area is to become official. However, it is conditional as the implementation plan needs the approval of more than a certain percentage of the land right holders in the project area in the case of semi-public implementation L/R project (the association), and public inspection in the case of public implementation L/R project (government).

Figure 3.9-Implementation Schedule



Tables 3.5-Case-1 Annual Financial Plan

Unit: Thousand Baht

Year	1	2	3	4	5		Total
Expenses							
Construction	0	0	293,920	281,290	0		575,210
Compensation	0	0	19,450	78,820	0		98,270
Survey & Design	18,800	23,600	14,000	14,000	23,880		94,280
Interest	2,028	6,615	30,267	25,560	0		64,470
Administration	15,000	15,000	15,000	15,000	16,770		76,770
Total	35,828	45,215	372,637	414,670	40,650		909,000
Income							
National & local government's Subsidies							
Shared defrayment of public facilities by the management authority							
Sales of reserve land	0	0	0	454,550	454,550		909,000
Total	0	0	0	454,550	454,550		909,000
Balance	-35,828	-45,215	-372,637	39,830	413,850		± 0
Loan	35,828	45,215	372,637	0	0		453,680

Table 3.6-Case-2 Annual Financial Plan

Unit: Thousand Baht

Year	1	2	3	4	5		Total
Expenses							
Construction	0	0	293,920	281,290	0		575,210
Compensation	0	0	19,450	78,820	0		98,270
Survey & Design	18,800	23,600	14,000	14,000	23,880		94,280
Interest	2,028	2,559	21,059	16,791	0		42,470
Administration	15,000	15,000	15,000	15,000	16,770		76,770
Total	35,828	41,159	363,462	405,901	40,650		909,000
Income							
National & local government's Subsidies	0	0	0	0	0		0
Shared defrayment of public facilities by the management authority	0	33,800	38,600	142,600	0		215,000
Sales of reserve land	0	0	0	336,000	336,000		672,000
Total	0	33,800	38,600	478,600	336,000		887,000
Balance	-35,828	-7,359	-324,862	72,699	295,350		± 0
Loan	35,828	7,359	324,862	0	0		368,049

In either case, it is of great importance to achieve consensus among concerned land right holders and the government agencies prior to application for the approval of the implementation plan for the project's implementation.

Therefore, the implementation plan must become final based on complete agreement among the concerned parties on the implementing conditions of the L/R project.

In the actual process of implementation of this L/R project, the concept plan and L/R master plan (as set above) are to be presented in order and discussed in the community, through which a consensus on the implementation conditions must be reached.

Finally, the implementation plan is to be formulated on the basis of the implementing conditions agreed upon.

< Items and Description of the L/R implementation plan >

The implementation plan is designed to present the basic items of the L/R project, which are to be legally effective upon the approval of the implementation..

What items should be included in the plan and how far the L/R project is described in the plan are dependent upon government decisions in consideration of Thai traditional customs of administrative procedure, social/political conditions, and others.

At least for purposes of providing concerned landowners and persons understanding the L/R project implementation plan, the Japanese L/R system can be a model, which is listed in **Figure 3.5**.

Items listed in the proposed Thai L/R law include the project area, outline of the L/R design, project schedule and financial plan.

2.2.4 Project Evaluation

It is suggested that with the substantial development effects and the scale of these effects expected, the L/R project becomes economically feasible and socially acceptable.

(1) Development effects

The development effects of the L/R project are expected as follows.

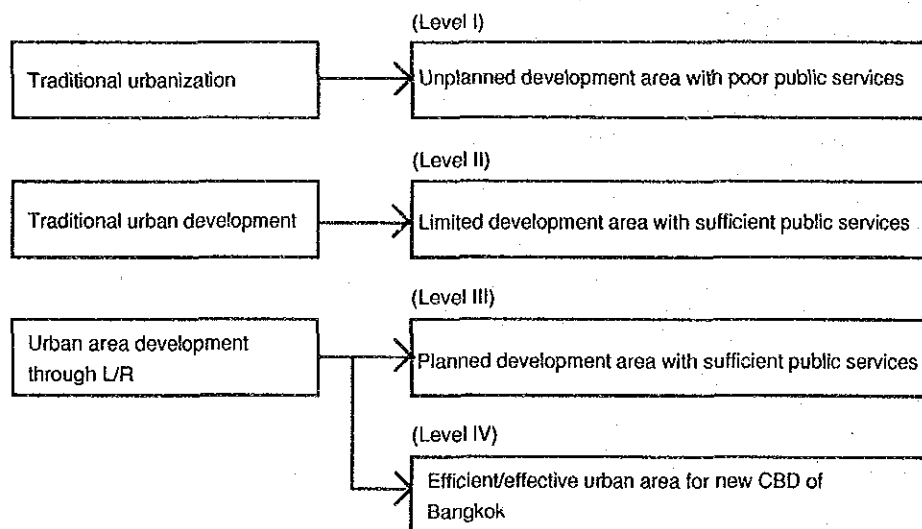
1) Targeted levels of urban development.

There are supposed to be four (4) possible levels of urban development in the project area as shown in **Figure 3.10**.

Table 3.5-Items to be included in L/R Implementation Plan

1.	Project and Implementation Body
1.1	Project Name
1.2	Implementation Body
1.3	Project Area
	1.3.1 Location of Project Area
	1.3.2 Map of project Area Boundary
2.	Outline of L/R Design
2.1	Purpose of the Project
2.2	Current Condition of the Project Area
2.3	Concept Plan
2.4	Comparison of Land use before the Project and after the Project
2.5	Calculation of Reserve Land
2.6	Development Plan for Public Facilities
2.7	L/R Design Map
3.	Project Schedule
4.	Financial Program
4.1	Revenue
4.2	Expenditure
4.3	Annual Financial Plan
5.	Others

Figure 3.10-The Four Levels of Improvement Estimated in the Project Area



As the development effects brought about in the society vary depending upon the development level from I to IV, the development effects of this L/R project are measured at level IV.

As stated before, the target of this project is the development of an advanced business center which is qualitatively better than those of level III where the target is an ordinary development area. In this respect, the better development effects can be expected in this project.

It is certain that fragmented and environmentally deteriorated development areas (level I) will emerge as shown in **Figure 3.10**, based on traditional urban sprawl without any development measures taken in the project area.

In contrast to this, the efficient and effective urban center (level IV) is created in the project area.

As compared to the development without the L/R project, planned development will bring about improved efficiency in the urban management and social/economic activities, which will further expand urban industries, leading to increased tax revenues. This will also justify public investments in the L/R project.

2) Expected socio-economic effects

Development from Level I to Level 4 improvements as shown above, provide efficiencies and improvements in the following urban management. The socio-economic effects expected will also provide qualitative and quantitative improvements.

< Socio-economic effects in urban management >

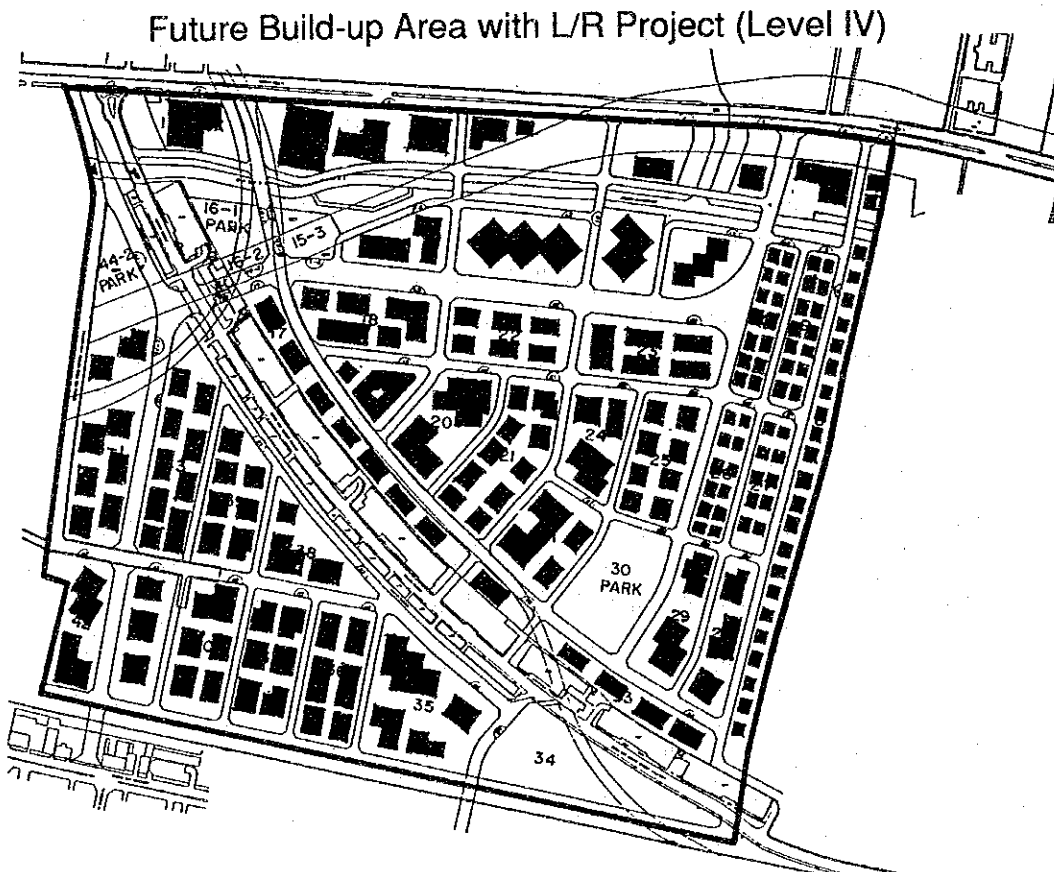
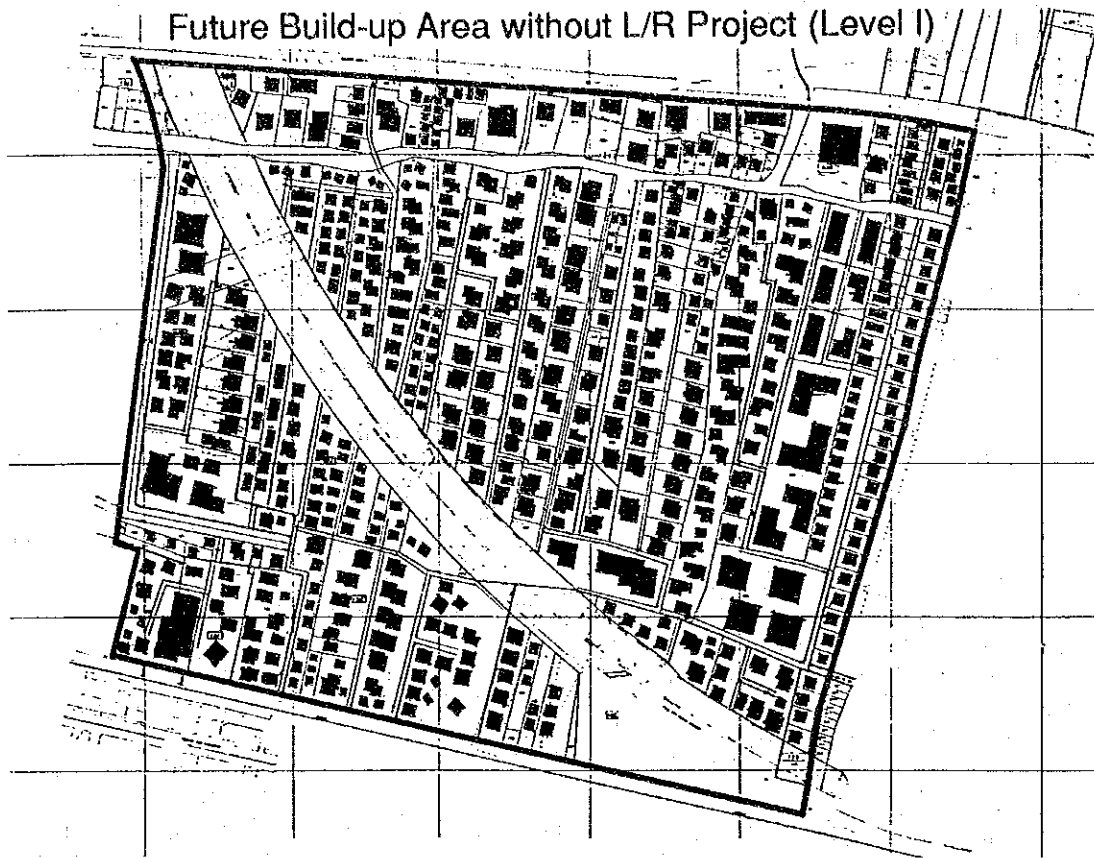
- Land resource management

Economic benefit is expected to be achieved through the improved efficiency of land utilization. In the project area, the L/R project shall create highly intensive urban area within the appropriate environment and public services, thus increasing the productivity of lands. On the contrary, urban sprawl is the ineffective use of lands (Level 1). Accordingly, economic benefit are due to accrue from avoiding the waste of land resources in Bangkok.

If the urbanization at Level 1 in the project area takes place, additional lands will be wastefully used to accommodate the same amount of urban activities at Levels 3 or 4. The losses caused by poor utilization of land resources are defined as the economic benefits of the L/R project (Level 3 and 4).

For instance, the economic benefits are equivalent to agricultural production of the farm land which might have been destroyed because of the need for additional land without the L/R project's implementation.

Figure 3.11-Comparison of Development with and without L/R Project



- Public service management

- i. Improved efficiency of public investments

Intensive urban development of the L/R in the project area will improve efficiency of public investments for infrastructure development. It is commonly known that infrastructure development is more economically efficient in the high density urban area than in low density urban areas spread over a broad area. In this regard, intensive urban development is of great help to economize the infrastructure development in Bangkok.

- ii. Economic benefit in transport services

Economic benefit is expected in the following transportation service areas.

- Alleviation of traffic congestion in/around the existing CBD by means of dispersing the urban center.
- Reduction of access time and distance to the working places in the new CBD instead of the old CBD (people do not need to commute to and from work through a congested CBD).
- Reduction of traffic accidents in the project area.

- iii. Socio-economic effect in provision of housing and business site

It is one of the government's responsibilities and policies to encourage provision of housing and business sites from socio-economic development.

It is predicted that the L/R project will provide lands effective to implement government policy for the social and economic development of Bangkok.

- iv. Socio-economic effects through the improvement of environmental/sanitary conditions

It is apparent that compared to Level 1, substantial improvements in environmental/sanitary conditions can be achieved through Level 3 and 4 development. Socio-economic benefits can be found from the prevention of diseases and the reduction in mortality. And also, improvement in fire prevention in the project area will yield economic benefits.

< Urban industrial development and management >

The following effects are expected in the industrial development and management.

It is certain that productivity and efficiency of urban activities will be increased in the orderly built up area with sufficient public services (Level 3) and the CBD (Level 4) than in the disorderly congested area with poor public services (Level 1). It is expected that the improvement of productivity and efficiency of urban activities will advance the urban industries and economy of Bangkok.

- Direct and indirect economic effects of construction work for the real estate businesses.
- Economic effects, through improved efficiency of urban and business activities, over the improvement of Bangkok industrial/economic structure.
- Economic effects of the provision of effective business sites for advanced urban industries such as international finance and trade, and others which otherwise would have failed to be located in Thailand and Bangkok without the new CBD.

< Financial effect on government revenues >

As a result of the economic effects stated above, Bangkok industrial and economic activities shall be expanded, thus leading to increased government revenues from taxation.

The taxes which are expected to increase are classified as follows.

- Property tax/land development tax

It is supposed that land values shall increase at Level 3 and 4 more than at Level 1.

Revenue from property taxes and land development tax collection is due to increase in accordance with the amount of increased land value.

- Income tax (personal and corporate) and selected business tax

Transaction of lands and building in the project area will be more active and will increase the number and the total amount of property values.

Accordingly, revenues from taxes imposed on transactions such as income tax (on land transfer) and selected business tax (on real estate business), shall be raised in proportion to the increased amounts of value for property transactions.

(2) Economic analysis

The L/R project is an urban development project which is to be implemented at a cost to the landowners' lands in the form of contributions. It is interpreted that landowners invest a part of their lands in the L/R project in return for development profits realized in the increased value of their remaining lands.

1) Development Cost

The combined contribution land (30.7% 255,826 m²) calculated in the L/R planning can be defined to be the development cost of the project. Accordingly the landowners invest their land of 255,826 m², which is equivalent to 3,890 million Baht.

2) Development Profit

The total value of lands, the increased values and share of profits between the private and public sectors were calculated as shown in the **Table 3.7** on the following conditions set in the L/R project.

- While private lands will decrease from 97.1% to 67.3%, public lands will increase from 2.5% to 29.2% through the L/R project in terms of percentages to the total area of land in the project area.
- Unit land value is to increase from 15,200 Bt/m² to 30,000 Bt/m² through the project.

Table 3.7-Development Profits

	(100 million Bt)		
	Before the project	After the project	Increase (profit)
Total land value	130.4	257.4	127.0
Private	126.7	173.3	46.6
Public	3.3	84.2	80.9
(Reserve land)	0.0	9.1	9.1

3) Conclusion

- The amount of 3,890 MBt invested will return a development profit of 12.670 Mbt. Accordingly, the B/C ratio and economic rate of return are set at 3.26 and 26.7%, respectively. These figures indicate the economic feasibility of the project.
- Distribution of the development profit is calculated at private sector 1 against public sector 1.74. Judging from this figure it can be stated that the project is to make a substantial contribution to the development of public (government) assets.

The maximum land for use as reserve land is calculated at 55,700 million Baht (for this case, all development profits are refunded to the project).

However, actual reserve lands account for only about 16.32% of the development profits. This indicates that the development profits are to be distributed to the landowners and lead to the conclusion that the proper distribution of development profits over the public and the private sectors is attainable in this project.

(3) Social analysis

One of the key issues for the L/R project is whether the implementation plan is accepted by the landowners (social acceptability).

This is also dependent on the efforts of the implementing body to convince the landowners.

In this section the social acceptability of the L/R project was examined, based on the output of the opinion poll survey.

1) Outline of the survey

a. The characteristics of the landowners

The characteristics of the landowners responding to the survey are summarized as follows.

- Although existing land uses appear to be agricultural, the majority of landowners are urban dwellers (business operators, office workers, etc.) followed by housewives (18.6%).
- Most landowners (79.2%) acquired their lands by purchases, inheritance comprised 12.8%.
- In spite of the fact that the project area was exposed to the construction/land speculation boom in the late 1980's and early 1990's, a large number of landowners obtained their lands before this period. But, 15.7% of the landowners purchased their lands in the past 5 years.
- As for future land use, 46.2% of the landowners said they want to keep their land as is, and 17.9%, reported development for either commercial use or housing.

It is interesting to note that 11.3% of the landowners indicated transfer or will donate to the next generation.

b. Major Findings of the Survey

Percentage of the landowners who gave the affirmative answers to the questions regarding the L/R project are shown in Figure -.

Judging from the output of the survey it can be safely said that the L/R project will be generally acceptable to the community.

However, careful attention must be paid to the opinions expressed by opponents, and issues resolved in the project implementation.

The survey was conducted with the introductory materials of an L/R system and development concept of the project area attached.

< Responses to L/R System >

While general questions on such items as necessity of an L/R in Thailand are likely to solicit positive answers (74%) from landowners, questions regarding landowners' intention to cooperate in the project and participate in meetings for the project preparation, dropped (69.5%, 58.3% respectively).

< Responses to urban development >

About 100% of the landowners perceive the existence of problems in the project area (85.2% regarding transport and flood). However this figure drops to 69.5% and 58.3% respectively in regard to more concrete questions such as the necessity of solving problems or development (urban center) of the area.

< Responses to land contribution >

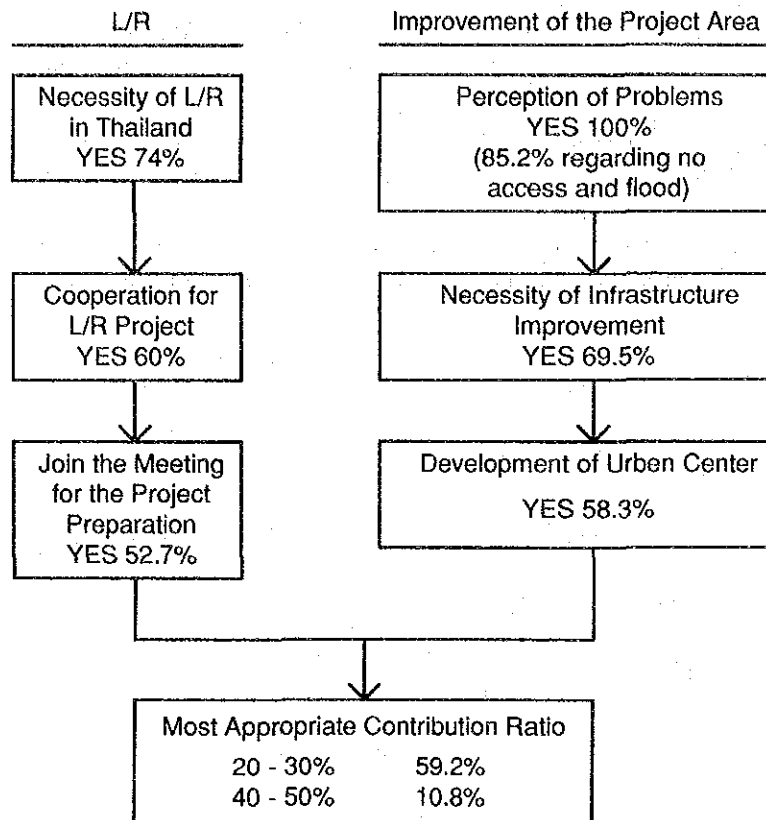
It was supposed that in the survey landowners would select the ranges of the land contribution ratio which they believed most appropriate in consideration of the environmental improvements which are attainable at a particular land contribution ratio.

Two thirds of the landowners believed that 20 to 30% is an appropriate contribution ratio, while few believed a 40% to 50% ratio was appropriate.

2) Conclusion: social acceptance

- Problems in the area, the necessity of improvements and the L/R are conceptually understood by most landowners in the project area. This suggests that the L/R project will be accepted through positive/enthusiastic government activities for persuading and convincing landowners.

Figure 3.2-Percentage of Affirmative Answers to the Questions Regarding L/R



- Judging from the results of the opinion poll, the concept plan, master plan, and L/R project were agreed to by more than half (a majority) of the landowners. This suggests that landowner consensus is in favor of the project implementation.
- On the other hand, due attention must be paid to minority opinions. However, it may be necessary to establish a system so that the project implementation would not be put at an impasse due to a few dissidents.
- Although the contribution ratio of 40 to 50% is supported by some of the landowners in the survey, the percentage is small (10%).

Accordingly, it may be recommendable that contribution ratios should be limited to not more than 30% for the purpose of gaining the support and cooperation of more landowners.

Chapter IV. Replotting System and Design/Plan

CHAPTER 4 REPLOTTING SYSTEM AND DESIGN/PLAN

1. The Study Purpose and Method

By virtue of the Thai L/R law proposed in Chapter 2, and in compliance with the implementation plan set forth in Chapter 3, the L/R project will be implemented. The pivotal work in the project implementation is, replotting design/planning work.

The purpose of the study to propose were a replotting method and system in Thailand, and examine applicability, refine the methods through the practice of replotting, and propose replotting for the L/R project implementation in the project area.

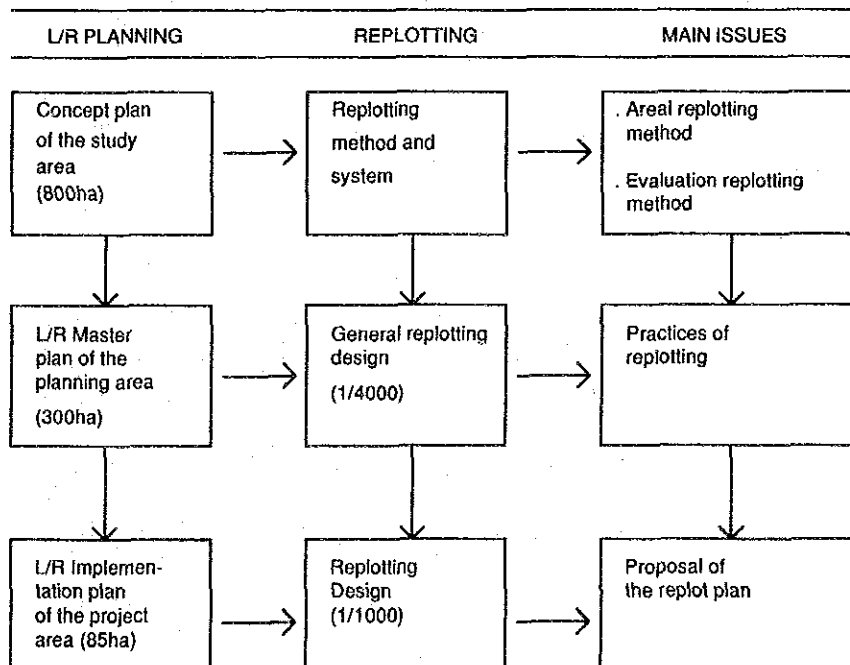
Replotting will be finalized based on contacts with concerned landowners and other persons as previously described.

It this regard, the proposed replotting is expected to be helpful during the negotiations with landowners for the actual implementation of the project.

In order to achieve the above mentioned purpose the study was accomplished in a step-by-step, methodology in conjunction with the progress of the L/R planning as shown in Chapter 3.

As illustrated in **Figure 4.1**, the method and system were discussed for an L/R project in the study area (800ha), and general replotting design was practiced based on the L/R master plan of the planning area (300ha). Finally the replots was designed in compliance with the implementation plan in the project area (85ha).

Figure 4.1-The Steps of Study for Replotting Design



2. Replotting Method and System

2.1 Existing Replotting in Thailand

Replottings has occurred in the agricultural land consolidation projects of Thailand.

Because the primary aim of this kind of project is to increase the utility value of lands (farm lands), a single contribution ratio is to be applied evenly to all the lands, regardless of location and the value changes of those lands caused from replotting.

In other words, the existing lands are to be replotted near the original locations as well as along either roads or canals with land areas being evenly reduced based on a certain percentage of the contribution ratio (usually not more than 7%)

2.2 Replotting Method

2.2.1 Basic Policy of Replotting

Simply, replotting is the technique with which to determine how much land area should be replotted for which location and in what shape. As stressed in Chapter 2, replotting must follow concepts of the preservation of private and property rights and the concept of cost-recovery from development profits.

(1) Land utility

An L/R system changes the physical conditions of existing lands (shape, area, location) in a manner such that all existing rights are transferred to the replot. Thus, without any changes in the original land rights. In this manner, private property rights are preserved.

In order for this to occur, the replots must be physically correspond to the original lands so that the replot matches the original land in terms of land utility values, and protects land rights.

(2) Contribution

An L/R system provides for landowners to bear development costs (lands) in proportion to development profits. The amount of the total development cost (average contribution ratio) will be decided during the implementation plan as presented in Chapter 3. The other task of replotting is to decide how the total cost is shared among landowners (that is, land contribution of the individual lots).

In line with those concepts, the calculation rule of the replot area is established.

The calculation method of a replot area is generally applied according to the degree of variation in the development profits of the individual replots as shown in the Figure -.

If/when it is recognized that the development profits (ex. increase of land value) of the individual lots are more or less the same through out the project area, not any questions

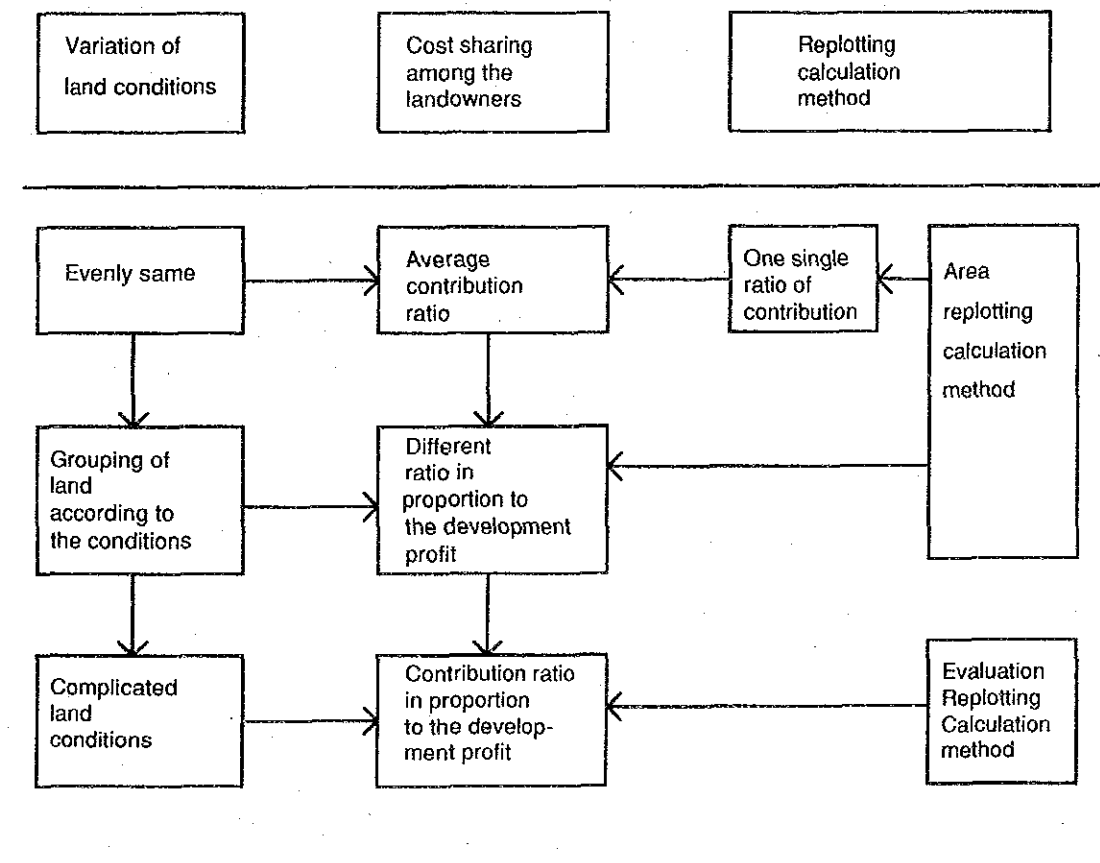
regarding the fairness of cost sharing based on a single contribution ratio (that is average contribution ratio of the project area).

If/when it seems that the development profits significantly vary depending on the conditions of individual lots and can be classified into groups according to conditions, a different contribution ratio may be applied to each group. Lands with no access roads, or those located on private roads before the project and locational conditions such as corner lots, etc., and land use after the project, are examples of changing conditions of individual lots.

And, if/when the conditions of lands are so complicated that the grouping of lands according to the conditions is difficult and less persuasive to landowners, the development profits of individual lands must be calculated and this proportion is applied to the replotting area and is individually calculated, otherwise the fairness of cost sharing among the landowners will not be confirmed.

This is called "Evaluation replotting calculation method."

Figure 4.2-Replotting Method



The advantage of the area replotting calculation method is among others, simplicity and transparency of the calculations, and it is favorably applied to the project area where there is a scarcity of existing public roads, and not a substantial difference in the land values before the project and in the land use after the project among the individual lands.