การบริหารจัดการบ้านราคาถูกในภาครัฐของกลุ่มประเทศอาเซียนตะวันออกเฉียงใต้

นางสาว ปีปอง พิมพ์พระจันทร์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิศวกรรมศาสตรมหาบัณฑิต
สาขาวิชาวิศวกรรมโยธา ภาควิชาวิศวกรรมโยธา
คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2548
ISBN 974-53-2103-6

PUBLIC LOW COST HOUSING ADMINISTRATION IN SOUTHEAST ASIAN COUNTRIES

Miss Pipong Phimphachanh

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Engineering in Civil Engineering
Department of Civil Engineering
Faculty of Engineering
Chulalongkorn University
Academic Year 2004

ISBN 974-53-2103-6

Thesis Title	PUBLIC LOW COST HOUSING ADMINISTRATION IN SOUTHEAST ASIAN COUNTRIES
By	Miss Pipong Phimphachanh
Field of study	Civil Engineering
Thesis Advisor	Associate Professor Visuth Chovichien, Ph. D.
Thesis Co-advisors	Veerasak Likhitruangsilp, Ph. D.

Accepted by the Faculty of Engineering, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree

.....Dean of the Faculty of Engineering
(Professor Direk Lavansiri, Ph.D.)

THESIS COMMITTEE

..... Chairman
(Associate Professor Tanit Tongthong, Ph. D.)

..... Thesis Advisor
(Associate Professor Visuth Chovichien, Ph. D.)

..... Thesis Co-advisors
(Veerasak Likhitruangsilp, Ph. D.)

..... Member
(Associate Professor Wisanu Subsompon, Ph. D.)

นางสาว ปีปอง พิมพ์พระจันทร์: การบริหารจัดการบ้านราคาถูกในภาครัฐของกลุ่มประเทศอาเซียตะวันออกเฉียงใต้. (PUBLIC LOW COST HOUSING ADMINISTRATION IN SOUTHEAST ASIAN COUNTRIES) อ. ที่ปรึกษา : รองศาสตราจารย์ ดร.วิสุทธิ์ ช่อวิเชียร, 175 หน้า. ISBN 974-532-103-6.

งานวิจัยนี้ทำการศึกษาการบริหารจัดการโครงการบ้านราคาประหยัดใน 4 ประเทศในกลุ่มประเทศเอเชียอาคเนย์ ได้แก่ ประเทศอินโดนีเซีย ลาว มาเลเซีย และไทย ปัญหาที่ก่อให้เกิดความล้มเหลวของโครงการประกอบด้วย ความล่าช้าของโครงการ ต้นทุนที่สูงขึ้น ปัญหาในการจัดการโครงการ เป็นต้น วัตถุประสงค์ของงานวิจัยได้แก่ เพื่อ สำรวจ และตรวจสอบการบริหารจัดการโครงการบ้านราคาประหยัดในกลุ่มประเทศเอเชียอาคเนย์โดยการเลือกกรณีศึกษาจากประเทศอินโดนีเซีย ลาว มาเลเซีย และไทย การศึกษาอธิบายถึงกระบวนการบริหารจัดการโครงการบ้านราคาประหยัดตั้งแต่ในอดีตจนถึงปัจจุบัน ประเทศที่กำลังพัฒนาอื่นๆ สามารถนำผลที่ได้ไปใช้เป็นแนวทางในการศึกษาและพัฒนาการดำเนินงานโครงการของตนได้.

ขั้นตอนการศึกษาประกอบด้วยการรวบรวมข้อมูลโดยการสำรวจ การสัมภาษณ์ และการเยี่ยมชมสถานที่ การสำรวจด้วยแบบสอบถาม การถ่ายภาพ และการสังเกตการณ์ กระบวนการบริหารจัดการโครงการบ้านราคาประหยัดสามารถแบ่งได้เป็น 9 ขั้นตอน ได้แก่ การกำหนดนโยบาย การศึกษาความเป็นไปได้ของโครงการ การจัดหาที่ดิน การหาแหล่งเงิน การออกแบบและวางแผน การประกวดราคา การก่อสร้าง การส่งมอบ และการบำรุงรักษา วิทยานิพนธ์ฉบับนี้แบ่งการนำเสนอการศึกษาเป็น 2 ส่วน ส่วนแรกได้แก่การศึกษาจากเอกสารและจากการสัมภาษณ์ผู้จัดการโครงการ ผู้มีอำนาจตัดสินใจ หรือบุคคลผู้ซึ่งรับผิดชอบโครงการบ้านราคาประหยัดเพื่อระบุถึงกระบวนการ ปัญหาและข้อจำกัดของโครงการบ้านราคาประหยัดรวมถึงปัจจัยความสำเร็จในมุมมองของเจ้าของโครงการในแต่ละขั้นตอนของโครงการ ผลการวิเคราะห์ปัจจัยความสำเร็จที่สำคัญ (CSF) ได้มาจากการใช้ดัชนีต่างๆ เช่น (1) ความสามารถในการซื้อ (2) ความสามารถของทรัพยากรที่มี (3) ความต้องการบ้าน (4) งบประมาณของรัฐบาล (5) แหล่งเงินทุนที่หาได้ ได้แก่ ธนาคารเพื่อที่อยู่อาศัย ความสามารถหาได้ การช่วยเหลือจากภาครัฐ (การค้ำประกัน) อัตราดอกเบี้ย และเงินกู้ เป็นต้น.

งานวิจัยนี้ช่วยให้มุมมองในเรื่องการบริหารจัดการ กระบวนการ องค์กรและโครงสร้าง ปัจจัยสำคัญในการดำเนินการโครงการบ้านราคาประหยัด การศึกษานี้ให้ประโยชน์กับการดำเนินงานโครงการบ้านราคาประหยัดในหลายประเทศในกลุ่มประเทศเอเชียอาคเนย์.

ภาควิชา วิศวกรรมโยธา ลายมือชื่อนิสิต.....

สาขาวิชา วิศวกรรมโยธา ลายมือชื่ออาจารย์ที่ปรึกษา.....

ปีการศึกษา 2548

4670635721 : MAJOR CIVIL ENGINEERING
KEY WORD: PUBLIC HOUSING/ ADMINISTRATION/ LOW COST HOUSING PROCESS/ PROBLEMS/ CONSTRAINTS/ CRITICAL SUCCESS FACTORS.
PIPONG PHIMPHACHANH : PUBLIC LOW COST HOUSING ADMINISTRATION IN SOUTHEAST ASIAN COUNTRIES. THESIS ADVISOR : ASSOC. PROF. VISUTH CHOVICHIEN, Ph.D., 175 pp. ISBN 974-53-2103-6.

This research studied public low cost housing administration in Southeast Asia. Four countries were selected: Indonesia, Laos, Malaysia and Thailand. The existing problems have led to project failures comprising project delay, higher project cost, housing management and maintenance problems, etc.. The objectives of this research were to explore and to investigate the low cost housing administration in Southeast Asian countries by selecting case studies from Indonesia, Laos, Malaysia and Thailand. The study explained administration process from the past to the present of low cost housing process. Other developing countries can use it as a guideline to study and improve their project implementation.

The research methodology consisted of collection by survey, interview and field visit distributing questionnaire, taking photographs and observation. Low cost housing can be divided into 9 stages: policy, feasibility study, land acquisition, finance, design and planning, bidding, construction, delivery and maintenance. This thesis presents two parts of the study, the first part was to study from literatures and to interview project managers, decision makers and others who are responsible for low cost housing project in order to define low cost housing process, problems and constraints, success factors in each stage of government projects from the point of view of the owner. The second part was to determine critical success factors in each stage. The result of analyzing critical success factors in each stage of low cost housing process are from using Significant Indexes, for example, Policy: (1) Affordability, (2) Resource capacity, (3) Housing need, (4) Government budget, and (5) Infrastructure support. Feasibility study: (1) Finance, (2) Housing needs, (3) Resource, (4) Infrastructure support, and (5) affordability Finance: (1) Housing bank, (2) Affordability, (3) Government support (Guarantee), (4) Interest rate, and (5) Loan, etc.

This research will give an insight toward the administrative works, processes, organization and framework, key factors for successful implementation of low cost housing projects. The study benefits to the future implementation of low cost housing projects in several countries in Southeast Asia.

Department Civil Engineering Student's signature.....
Field of study Civil Engineering Advisor's signature.....
Academic year 2005

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my advisor, Assoc. Prof. Visuth Chovichien who has inspired, encouraged, guided, and supported me by all means throughout my research duration. I would like to thank my co-advisors Dr. Veerasak Likhitruangsilp from Chulalongkorn University and Dr. Shin-Ei Takano from Hokkaido University for the consultation provided to me. I also would like to express my appreciation to AUN/SEED-Net for their financial support throughout this research.

My thankfulness goes to all my thesis committee members. The chairman, Assoc. Prof. Tanit Tongthong, and the other committee members, Assoc. Prof. Dr. Ping, and Assoc. Prof. Wisanu Subsompon, have given me valuable comments regarding my research.

I would like to thank Mr. Suraporn Channoi, Mr. Aran Karukose, Asst. Prof. Koontontip Panichapak, and individuals from four countries whom I have visited for their helpful assistance, advice, patient guidance, friendship and knowledge throughout my research duration. I also thank all Civil Engineering's staff and students, who made this enjoyable experience. In addition, I would like to thank all my fellow students in the Construction Engineering and Management division for their kindness and friendship.

Finally, I would like to thank all Lao undergraduate students and staff at Department of Civil Engineering, Engineering Faculty, at Chulalongkorn University and National University of Laos, and also my Lao's friends, for their kindness and support for this matter.

TABLE OF CONTENTS

Page

Page

List of Tables

List of Features

CHAPTER I
INTRODUCTION

1.1 Introduction

In several developing countries, it is generally accepted that housing is a significant factor in providing people with a good quality of life and health. The need for housing is increasing every year because of a high population growth rate, leading to social, environmental, and economic problems. Housing shortage became a problem while low-and-middle-income people can not afford a house. The government had policies and supports for a lot of housing development programs in order to solve this problem.

Low cost housing is one of the programs which aims at providing houses to low-and-middle-income people. From studies of several low cost housing projects, there were many problems in each step that have effect on the project success. For example, unclear housing policy, poor priority of housing policy, poor financial subsidized policy, poor feasibility study in the policy planning state will cause various problems that will affect the success of project such as delay, higher cost. Moreover, there are other problems in each stage that should be considered and research should be done to identify the process's critical success factors as well.

This thesis presents the result of a study done in developing countries in Southeast Asia on the low cost housing administration process, which consists of feasibility study, financing, planning, design, bidding, construction, and maintenance. In each stage, the study focused on administration work, identifying problems and constraints, defining factors and conditions attributable to the successful low cost housing project. Several important factors and the critical success factors to consider in applying the future low cost housing projects should be considered.

1.2 Objectives

The objectives of this research are:

1. To study low cost housing process in Southeast Asia countries.

2. To identify the critical success factors in each stage of low cost housing process.

1.3 Scope

The scope of the study is the public low cost housing projects (from the point of view of the owner) within Southeast Asia countries, particularly in Indonesia, Laos, Malaysia and Thailand. This research was aimed at a comparative study among those countries for further low cost house development in the future.

1.4 Research methodology

The basic objective of this research is to study the low cost housing process and define Critical Success Factors of the low cost housing administration in Southeast Asian countries. Case studies were selected from the capitals of four countries including Indonesia, Laos, Malaysia, and Thailand. Low cost housing administration is defined as the management of low cost housing project, from the point of view of the owner. In this research, only government projects were considered. Critical Success Factors in low cost housing administration are measured by the government's ability to provide low cost housing within limited budget and duration together with the quality of minimum housing standard.

With the above definition, data collection was carried on two types of data, non field data and field data. Non field data comprise information from papers, journal, websites, books and other sources, i.e. population, economic growth rate, general and low cost housing project information in those countries. Field data consist of the data collected by visiting and distributing questionnaires to the project staff: managers, decision makers, project managers, project engineers, designers and other persons who are involved in low cost housing projects at ministries, government offices, institutes and agencies, as shown in Figure 1.1. This research was done in the following steps:

1.4.1 Reviewing related literatures.

The literature from journals, text-books, reports and other documents were used as a qualitative data in identifying the problems and constraints of low cost housing administration processes in developing countries. Case studies in the countries of the research scope were reviewed in order to identify factors affecting the success of low cost housing projects.

1.4.2 Preliminary investigation.

The preliminary survey was conducted in Thailand and Laos by visiting and interview. The information collected from literature review and in terviews was used for questionnaire design. The first pilot questionnaire survey was done in Thailand. From the pilot survey result, the questionnaires were modified to be more suitable for the low cost housing process in Thailand, Indonesia, Malaysia and Laos. Moreover, all information related to population, country condition, housing need, resources, low cost housing projects, income and ability, financing system, housing policy and investment were collected.

1.4.3 Data collection

1. Visit and interview project staffs who are responsible for the low cost housing projects (decision makers, project directors, developers, and others);
2. Distribute questionnaires to the project directors, project managers, project engineers, contractors and others;
3. Pay site visit to low cost housing projects;

The data were collected by using quantitative data:

1) Study problems and constraint in low cost housing process
   Study, visit and interview the staff of the National Housing Authority and Institutes who are responsible for the low cost housing project
2) Problems and constraints
   Identify problems and constraints and prepare cause and effect diagram.
3) Factors affecting low cost housing process
4) Determine the Critical Success Factors.

1.4.4 Analysis.

Based on the literature review and the results of interview conducted in four countries, it used the same form and questionnaires. The success factors, in each stage and success factors of low cost housing project were in a list and questionnaire form. The questionnaires were distributed to the group of people as mentioned above for scoring. The score depends on the level of influence of each factor based on the least to the most low cost housing project determined by the respondents.

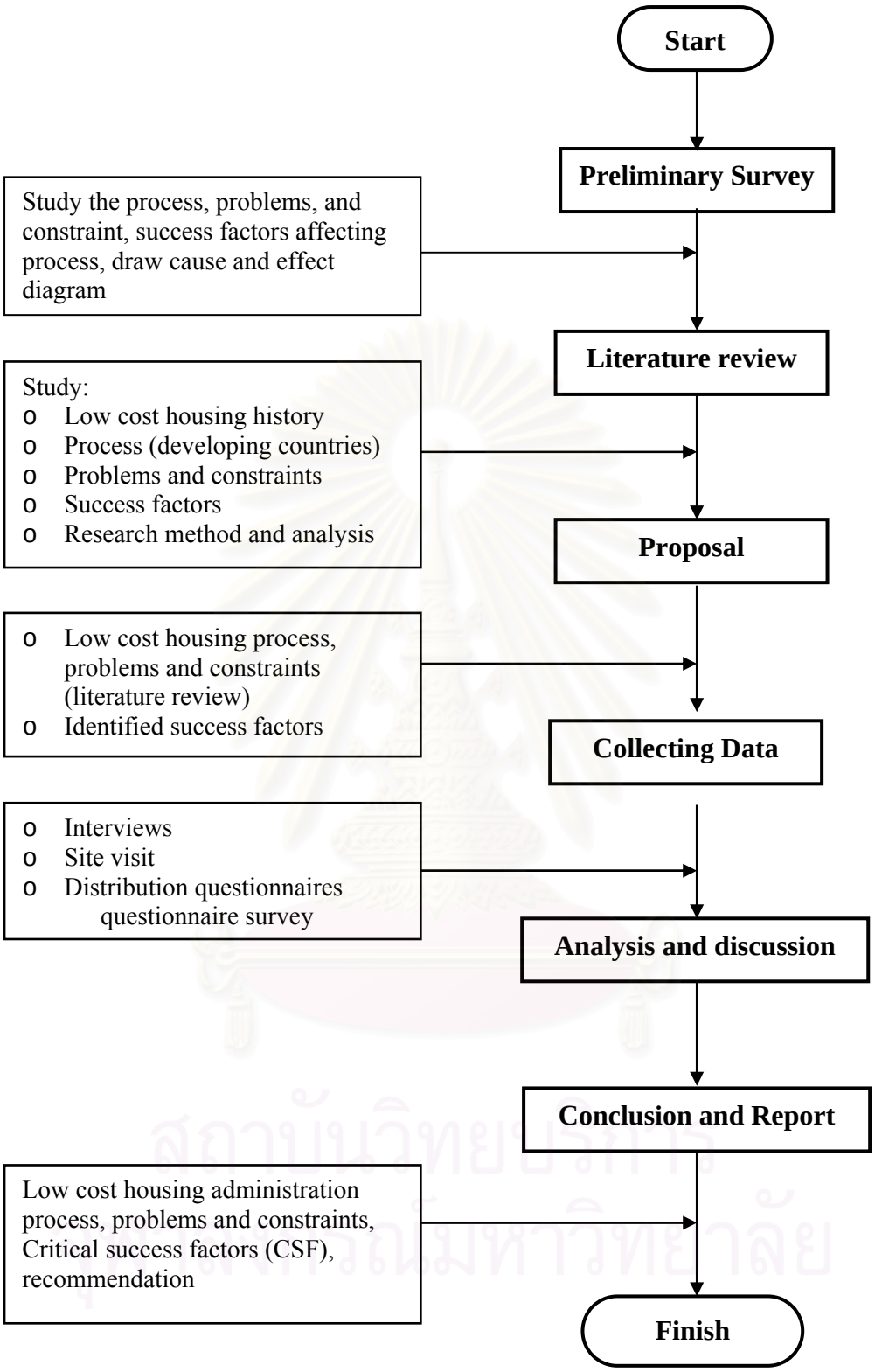


Figure 1.1: Flow chart of Research Methodology

This study identifies, analyzes, and categorizes various cr itical success factors (CSFs) in each stage of low cost housing project of governm ent project. It is a systematic resear ch that inc ludes case studies, lite rature review, and interviews/correspondence, and identifying critical succ ess factors and relative significant indexes for critical success fact ors based on the results of a questionnaire survey with project m anagers, designers, construction supervisors and other people who are involved in low co st housing projects. The data analysis was done by using Microsoft Excel to calculate significant indexes and identify critical success factors in each stage of low cost housing process.

CHAPTER II
LITERATURE REVIEW

2.1 Introduction

The basic human needs are food, clothing, health and shelter. The last item has traditionally been ranked in the lowest priority of most developing countries. The settlement is classified into rural and urban areas. In rural areas, people usually have no problem in building their houses using local materials and traditional skills. From literature review, several research works have not been considered and clarified in low cost housing process. They have done research on low cost housing design, building material, construction and appropriate technology, etc.. However, there are a lot of constraints in low cost housing process and project implementing that needs to be emphasized for study, improving for the further low cost housing projects success.

Definitions of low cost housing:

There are a number of definitions of low cost housing. Ramaswamy (1978) defined that it is a complex multi-dimensional problem. Low cost housing is often confused with low quality housing. Similarly Oladapo (2003) explained that the term "low cost housing" might mean different things to different people. On the other hand, Salleh and Choong (2002) defined low cost housing as the housing units for which the price is limited by government's guideline to be afforded by low income people.

2.2 Low cost housing study in developing countries

The International Development Research Center (1973) and Dhahran, Saudi Arabia (1978) carried out research on the low cost housing problem in many Asian countries including Thailand, Malaysia, Indonesia, Philippines, Laos and others. Their research was intended to share and assist each other in implementing useful low cost housing projects. Their discussions about low cost housing consist of the housing conditions and need, housing problems and constraints in each country, housing

finance, social and economic impact, housing administration, physical planning and design, the location aspect, land policies, etc.

East-West Center (1976) reported that low cost housing technology had the objective of providing better housing at the low cost. The study included cost housing and housing technology which provided funds to 5 Institutions and were associated with some of University of Thailand, Singapore, the Philippines, Korea and Indonesia. The research and development focused on building materials, design and evaluation criteria, prefabrication, local building material uses, building elements, timber construction (Kukreti, 1974; Lo, 1976).

Dhahran (1978) also carried out a study on low cost housing problems in developing countries. This research topic included building science, low cost housing project, energy, environment study, economic and management, innovative design and construction, new material of construction, performance criteria in developing countries, specification and disaster housing project, system approach, urban development and policies, etc.

A group of eight countries in Southeast Asia i.e. Indonesia, Hong Kong, Laos, Malaysia, the Philippines, Singapore, Sri Lanka, and Thailand, have done a research work by performing comparative study on review of housing conditions, squatter and slum improvements, housing administration, housing policy, housing finance, land policy, planning and design of housing, trend of housing, problems and constraints in housing sector of each countries (Stephen, Yeh, and Laquian, 1979).

As to housing delivery system, Fashridjal (1977) did a research on the low income housing delivery system in Jakarta, Indonesia. There are a lot of subsystems in Indonesia such as the squatter housing, the private housing, the commuter or rural housing, the employee housing, and the public housing as illustrated in Appendix.1. Vitaliano (1977) also did research on the low income housing delivery system in Manila, the Philippines. Similarly, Tanphiphat (1982) carried out a study on housing delivery system in Bangkok, Thailand. In summary, housing delivery systems of Indonesia, the Philippines, and Thailand, particularly in the low cost housing delivery, have several subsystems. For example, the squatter housing for people who do not have right on the land, live in temporary huts, without forming a community.

Private housing is divided in two groups: rental housing and owned housing. These housing types are good for environment and facility services but expensive. They are for middle to high income people who have enough income to buy or rent

such houses. The community or rural communities housing project locating in suburban or rural area have bigger houses which the residents can feed livestock on their land like in the countryside. As for the employee or government worker housing, there are two types: for rental and for owned housing. The employment policies are providing several types of housing units for rental to their employees. Also, the public housing units were provided by the government to improve the quality of life of low income people and employees.

Housing project components

In housing development programs, there are several parties involved in the process of implementing the housing policy. They all have to play their roles effectively and efficiently to meet the objective to provide houses for the target group (Chan, 2002). The roles of major players are as follows:

a. The government

The various government departments at both central and local levels have a big duty in the approval procedures for the various stages of the development process.

b. The developers

The developer is basically an entrepreneur whose role is to oversee the whole housing production process to ensure that the housing projects undertaken have good quality, and successful marketing and selling. The developer is responsible to harness the financial resources and land, apply permission and approval to obtain certificates of fitness for occupation. The developers would require the services of professional consultants, architects, engineers, surveyors in applying application to the various authorities and he would also engage builders or contractors to undertake the physical construction of the housing project.

c. The professionals/consultants

The professional involved in the housing process include architects, town planners, quality surveyors, consultant engineers, land surveyors, landscape designers, electrical and mechanical engineers, etc.

d. The financial institutions (Banks and financial companies)

Financing for housing development covers two aspects generally-bridging finance for developers in order to boost their initial or interm ediate capitalization for their projects and financing for purchasers in buying and owning housing units.

e. The contractors

The role played by the main contractors and other nominated sub-contractors, is very specific to the contract between them. They have to complete the building works according to the terms of contract and within the scheduled time frame.

Low cost housing project in developing countries

Indonesia Low cost housing project was started in the 1960's. The government constructed more houses for civil servants as a first low cost housing project and low cost housing for low income people, who could not afford houses by their own savings (Fashridjal, 1997; Ministry of Settlement and Regional Infrastructure (IV), 2004). In 1974, the Indonesian government established a state owned enterprise, namely National Urban Development Corporation (Perum Perumnas) and gave authority to develop houses as developer and State-Owned Saving bank (BTN) to provide housing finance (KPR), authorized by the Ministry of Finance. Housing development was stopped during the economic crisis in 1997 (Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003). In 2003, Indonesia was undertaking a housing development program - "One million housing development". It is the national policy for movement and acceleration of water supply and sanitation provision for the low income group during 2004 -2020 (Ministry of Settlement and Regional Infrastructure (II), 2003).

Laos In the past, there were two projects for low cost housing in Laos. In 1988, the first project was the low cost housing demonstration (Aphaylat, Iterbeke, Thielens, and Plyplu, 1988). The project was a coorperation between Ministry of Communication, Transport, Post and Construction, Institute of Technical, University from Thailand, supported by UNDP. The objective was performed as an experiment linking research on building materials and technical with the realization of constructions and housing solutions particularly those using a rational design, locally available materials and techniques, with emphasis on training and transfer of knowledge and skills. The second project is "Housing Welfare for Pensioned Government Officials in Vientiane" (United Nations, 2001; Patoumxay, 2003). The development of welfare housing for pension government officials was launched during 1994-1996 aiming to provide 170 housing units for pension government officials who served the country during the national revolution in 1975. The two low cost housing projects were not successful in continuity, project sustainability and economic viability for all target groups (United Nations, 2001; Patoumxay, 2003).

However, in the first low cost housing project, there were a lot of problems and constraints including lack of finance resources, lack of human resources, lack of experience, lack of standards, laws and legislation for housing construction, resource capacity, etc (United Nations, 2001; Patoumxay, 2003).

Malaysia Building of low-cost houses for lower-income groups started during the first five-year plan from 1956 to 1960 to promote welfare of the Malaysians, especially the lower-income groups, by providing improved housing, social and community services. During the Seventh Malaysian Plan (7MP, 1996 - 2000), the government targeted to build low cost housing to provide quality and affordable houses to all Malaysians and to improve quality of life for low-income groups, especially the poor people (Ministry of Housing and Local Government of Malaysia, 2002; Chan, 2002). In Malaysia, house provision is undertaken by both the public and private sectors. While private sector focuses more on the market demand for their profits, the government concerns are to provide adequate, affordable and quality housing for all, particularly for low income groups. In 1982, the Malaysian government issued "the 30 percent low cost housing policy in Malaysia", in order to increase the supply. This policy requires at least 30 per cent of low cost housing in each of developers' housing development program (Ler, 1989; Ministry of Housing and Local Government of Malaysia, 2002; Chan, 2002). Besides, there are several low cost housing projects implemented to provide housing for low income groups, but the implementation was different depending on the conditions of support and affordability of low income people (Ministry of Housing and Local Government of Malaysia, 2002). The housing programs which have been implemented are:

1. Public Low Cost Housing (PLCH) – a direct government effort to provide houses for the low-income group. Detached/semi-detached houses (mostly wooden houses) were built in rural areas. This project comprises single and double storey terraced houses in the suburb, and multi level unit flats in the urban areas. In this program, projects are financed by Federal Government in the form of loans to the state governments
2. Integrated Public Low Cost Housing (IPLCH) – a new program introduced by the Government in 1998 to build low-cost flats for rental in an effort to overcome in squatter problem in the city of Kuala Lumpur and other major towns, especially, state capitals

3. Site and Services Schemes (SSS) – a program to provide houses to the low-income group, especially those who cannot own a house under the PLCH program. Housing options under this scheme are to provide a serviced plot plus a core house which is designed and constructed with the view to accommodate future extension by the owner, and to provide a vacant plot including basic services.
4. Housing Loan Schemes (HLS) – to provide housing loans to the low-income groups who could not get finance from other sources. The target groups are divided into four categories: workers living in the vicinity of industrial land and rural areas with land ownership, new villagers having their own land, estate and mining workers owning land near their work place, and displaced squatters who cannot get house unit from housing development program and they required financing to build houses in the newly allotted land.
5. Housing under Land & Regional Development Agencies – under this program, the land and regional development agencies such as FELDA, FELCRA, KEJORA, KETENGAH provide housing for land settlers.
6. Housing under Economic Development Agencies – agencies actively involved in provision of housing are the State Economic Development Agencies (SEDCs) and the Urban Development Authority (UDA). These agencies build all types of houses to meet the need of all levels of society. Housing developments under this program are financed by private financial institutions or own funding.
7. Institutional Quarters and Accommodations for Staff – this program is an ongoing effort by the government to provide housing for public sector employees especially the essential and uniformed staff. Teachers, health personnel, the army forces & police men come under this category.
8. Housing for Estate and Industrial Workers – under the Minimum Standards of Housing and Amenities Act, 1990, it is the responsibility of estate owners to provide free housing as well as and social amenities of a certain standard for their workers.

Thailand, International Development Research Center (1973) and Nathalang (1974), performed a research study in Asian countries including Thailand, Malaysia, Indonesia, the Philippines, Laos, Sri Lanka, etc. The objective is to study and evaluate low cost housing program in Thailand including overview of housing condition and

housing need, administration of public housing of National Housing Authority (NHA), land policy, housing finance, housing problems, housing estate management, housing standards, development of infrastructure, rural housing and so on. The Thai government established National housing Authority (NHA) of Thailand in 1973 as a state enterprise under the supervision of the Ministry of the Interior. The NHA carried out housing development both in the capital and in the provinces (National Housing Authority of Thailand, 2003; The Japan International Cooperation Agency, 1997). The NHA has played important role, guided by government policy, in developing and providing houses for people in low and middle income group.

2.3 Low cost housing process

From literature review, some literature attempt to define the low cost housing process and its stages as follows:

In Indonesia housing policy was implemented by Ministry of Public Work (1981). Various policies have been developing according to the situation and the condition. The first low cost housing is for civil servants in Jakarta and other cities. Their experiences are related to the housing policy implementation in each five year development plan period. Since 1966, the Indonesian government prepared a housing policy and issued the first five year development plan before 1969 called “Pre REPELITA” and, them continued as “REPELITA I”. They have done research work and experiments in building materials and construction systems. “REPELITA II” (1974-1979) was done by established agencies as National Housing Development including National Housing Board Policy, the National Urban Development Corporation (Perum Perumnas), National Saving Bank (BTN). “REPELITA III” (1979-1974) have done several low cost housing projects and had experience in housing development (Ministry of Public work, 1981).

Rao (1977) discussed technological concept and policy framework for housing in developing countries. He found the policy parameters which were necessary for achieving low cost benefit ratio in the housing sector and also performed the comparative studies of housing policies in difference countries in order to isolate criteria issues. He also provided a framework for formulating low cost housing policies as a crucial factor.

Mohd (1997) studied the urban development and housing policy in Malaysia. His finding was beneficial for the planning and implementation of public housing for

low income people. Ler (1989) studied "The 30 percent low cost housing policy" in Malaysia. This project and feasibility study was implemented by the developer. However, the feasibility study did not cover of the environment impact assessment. Lo (1976) found that the weak point of low cost housing project planning and design is the lack of consideration for feasibility study. Low cost housing is the strategy, supportive government policy, but it is always found that only the urgent housing project can solve the housing problem. Lack of consideration in policy, planning, and economic analysis has affected success. During that time there was no concern about environment impact assessment. On the other hand, National Housing Authority of Thailand (2003) has carried out the feasibility study and EIA approval before starting the Baan Eua Arthorn Project.

Rodell (1979) proposed that location of houses has to be near the job. His research works have tried to analyze the feasibilities of different methods of improving low cost housing physical condition and defined the employment structure where the income come from.

The housing finance concept considers the limitation of possible finances from the target group, government, and fund from life and social assurance of people, bank and investors, and so on (Ministry of Public work, 1981). Asiwatham (1977) discussed low cost housing finance in Thailand and described the method that Thai government subsidies low income households.

Land and location planning is a major part and has significant impact on housing problem. Land is a critical factor of the housing construction that increases the cost of the low cost housing. The owners have to pay more if the developer or the government is buying land for the land for housing project (Rodell, 1979).

Yeung (1975) presented that the land location in the city is expensive and is limited, while it is convenient to find public utilities such as electricity, water supply, road, public transportation, and hospital service in the city. However, this preference will lead to the problem of high population density or crowding. Land location outside the city or in the suburb is not expensive but lacks public facilities, and transportation difficulty will affect people's employment and incomes. This means that relocation itself contributes to the inability to pay for housing and make it hard to maintain expenditures on other necessities. The new approach is to find suitable locations, providing infrastructure from the government investment or subsidies that would make low cost housing project feasible. Some programs appear to have no perception

of housing and employment relationship. People have to work and prefer housing location near their work place and do not want to pay more money for transportation, while some people did not work and cannot afford housing. Employment is one of the factors to be considered by the designers and planners.

Meeks (1989) carried out research on improving the quality of low cost housing by the use of National Standards. His work reviewed the roles of building codes and emphasis on manufactured home which must meet a National Code. On the other hand Lo (1976) studied the performance evaluation and design process of a low cost housing system in Malaysia.

Oladapo (2002) researched on the procurement systems and project organization model for low cost housing. He discussed the bidding process, criteria and propose framework for low cost housing project that includes bidding process, the steps of implementation and documentation the bidding process. The government office is responsible for implementation of housing projects such as project management including preparing housing implementation guidelines, laws and regulations for housing and land development, design, planning, bidding and selection of developers, construction supervision, housing delivery, and community management, etc.

Oladapo (2001) published a paper about a framework for cost management of low cost housing. He discussed the project organization and environment, procurement system and cost management and also provided the framework of the cost management of low cost housing. Moreover, he published one paper on procurement systems and project organization model for low cost housing. This paper researched the procurement system, the establishment of appropriate and sustainable procurement system and the project organization model for low cost housing based on implementation and development of low cost housing projects.

Appropriate technology will reduce project cost by using local materials and traditional skills in construction under construction supervision and standard guidelines of the housing government office. Appropriate technology would be based on requirement such as real cost including capital cost, minimizing project cost by construction supervision, maximum utilization of local resources, minimum utilization of priority materials, quality, etc. (East-West Center, 1976).

2.4 Problems and constraints in low cost housing process

From long experience in low cost housi ng project in developing countries, there are several research work that stud ied the successes and failures of low cost housing projects, the problem s and constraints of improving and achieving their objective to provide housing to low income group.

Housing condition in each country is not the same, it is different from country to country depending on the government, housing policy, cond itions, population growth rate, density, and resource capacity. Housing need is a m ain factor to design housing development program (Stephen, Yeh, a nd Laquian, 1979). Salleh and Choong (2002) discussed lo w incom e people's af fordability f or low cos t h ouse units. Intern ational Development Research Cent er (1973), Dhahran (1978) , Ram aswamy (1978), Rodell (1979), Erguden (2001) performed works on low cost housing in developing countries as mention in low cost housing study.

Housing finance is the most im portant stage that m akes the low cost housing possible for low income groups. Stephen, Yeh, and Laquian (1979) made comparative study in housing finance between eight countri es in Southeast Asia - Indonesia, Hong Kong, Laos, Malaysia, the Philippines, Singapore, Sri Lanka, and Thailand - and concluded that the housing finance are weak in institutional framework, low domestic savings, inf lation, and in som e countries their governm ent lacked the budget for housing developm ent program . Moreover, at that tim e they just started low cost housing, and they lack of experience in low cost housing project.

Block (1970) analyzed an economic m odel for low cost housing projects by program and policy evaluation. He found the importance of policy and adm inistration for housing needs at each level o f governm ent and proposed new approaches to develop and assist housing policy m akers to analyze and docum ent the facto rs influencing housing by using m athematical equations and com puter program s for formulating public housing policy.

RAO. (1977) discussed technological concept and policy framework for housing in developing countries. His research proposed a table showing range of technological options for different cost effectiveness levels of various housing components.

Wahab (1978) carried out a study on th e National housing polic y and its effects on reduction of the housing cost. His paper ga ve suggestions on a se t of rules for the reduction of costs. He defined the five m ajor factors of increasing cost, the f irst that

the designer is producing of very expensive building that is acceptable in the average income countries. The second is the annual price escalation of building materials. The third, relative price escalation. The fourth, the contractor's profit and the fifth, the professional fees. On the other hand, Ramaswamy (1978) performed a study to reduce housing costs by the government's housing policy.

Mohd (1997) identified problems faced by the housing sectors and the need for research development on housing in Malaysia.

Erguden (2001) carried out research on low cost housing policies and constraints in developing countries and gave significant progress in formulation and implementation of housing policies and to some past extent strategies. There are many constraints still hindering progress in housing development in developing countries, particularly low income countries, including, the lack of effective implementation strategies, poor promotion of security of tenure, inadequately supply of affordable land, improvement in infrastructures and services, promotion of housing finance mechanisms, utilization of local building materials and technologies, support to small-scale construction activities, adjusting standards for building and land subdivision, promotion of community participation and self-help, initiation of experimental pilot projects.

Housing is both an expensive investment and long term loan which low income people can not afford. Financing of housing mostly comes through informal sources of credit. This was a result of national policies that were not successful in encouraging domestic savings and development of domestic financial institutions and instruments. Lacking of collateral, the guarantee of regular and recorded income, low income groups depend completely on informal credit sources, which are expensive and mostly short-term.

Asiwatham (1977) discussed the low cost housing finance in Thailand, he defined problems of the poor in financial recourse and the restrictive nature of their economies. Also, he performed research studies on the experiences in housing finance in four countries, e.g. Indonesia, Philippines, Sri Lanka, and Malaysia, that the research examined the dimensions of the housing problems and identified the key factors influencing housing finance.

Hassan (1990) defined housing finance problem and the government's attempt to solve the problem in developing countries. Firstly, it is necessary to improve the general economic situation, and to increase the flow of capital in the housing sector,

and employment. Secondly, the measure also includes the effective management and utilization of available resources, and subsidies system, etc.

Stephen, Yeh, and Laquian (1979) studied land policies of eight countries including land use policies, land acquisition, land laws and regulations, taxation, land administration and management. It showed the differences among land policies and land laws existing in of Indonesia, Hong Kong, Laos, Malaysia, the Philippines, Singapore, Sri Lanka, and Thailand. Moreover, they studied the problems and constraints in land use and land acquisition for housing development program.

Lo (1976) defined the weak point of low cost housing projects. The feasibility study is important and influences the success of low cost housing project. The feasibility problems were poor location planning, housing design and estimating, construction technology, financial analysis, research on resources capacity and so on.

Several research works focused on land policy, land system, land acquisition, land law and regulation, etc in developing counties. The new approach is to find suitable locations, providing infrastructures from the government investment or subsidies, which make the low cost housing project feasible.

Stephen, Yeh, and Laquian (1979) studied location planning in Southeast Asia countries as mentioned before. Location planning is the most critical factors for the project success. Location planning is influenced by the physical and financial availability of land. Land availability and price of the land in the cities would be impossible for low cost housing project. From the comparative study, many low cost housing projects were not successful because of poor location planning. Moreover, low cost housing designs are usually simple housing, with the minimum standard design controlled by the budget or affordable income of target group. Housing designs, conditions, habit, traditional, culture, economic, etc vary from country to country. Moreover, their target groups are different.

Lo (1976) carried out a performance evaluation and design of a low cost housing system in Malaysia. The objective was to improve housing design and standard of low cost housing taking account of the user's need. Kukreti (1974) studied the design and evaluation criteria for low cost housing in developing countries. The research objective was to formulate the design and evaluation criteria for low cost housing. He studied and used several basic minimum standards and suggestions for various countries.

Meeks (1989) carried out research on improving the quality of low cost housing by the use of National Standards. This research examined the housing problem and post construction servicing.

In the paper proposed by Ajibola and Olubodun (1990), the objectives of housing design were to examine the housing problems of low income people in developing countries, and to evaluate the existing physical facilities in term of space utilization, and economic construction by using the typical project of the federal government.

Djabbar (1990) researched basic factors for determining housing standard, which consider different geographic climates, and propose appropriate design and planning standard for public housing of USSR. On the other hand, Saychandy (2000) studied on climatic design of low-cost housing in the case study of Luang Phrabang City, Laos. She reported that the architect should consider various climate factors for achieving human comfort in his design. The study was carried by computer simulation program and compared the surface temperatures of the wall and roof in different cases. Salleh and Choong (2002) discussed minimum design and housing standards of low cost housing in Malaysia.

Stephen, Yeh, and Laquian (1979) did a research on housing administration in those countries. They can determine the organization chart, their terms of reference, method of implementation low cost housing project, etc. If countries lack human resource, experience, they need to learn more and the governments have to provide training and workshop on housing development program. Therefore, institution is a pre-condition of implementing a very large housing development program systematically and continuously. National housing policy needs to be set for short term or long term project implementation. They also established the committee for housing development at the National and regional level and were corporative to achieve their objective of the project success (Ministry of Public work, 1981).

Salleh and Choong (2002) did a study on land approval. Land was owned by the state government. Developers applied for approval on the right to converse and implement lands into low cost housing project, but the government office always delay in issuing approval. Land approval could take 3 to 5 years, which affected the developers by increasing their holding cost and project risk (Ong and Lenard, 2002).

Developer is a main supplier for housing development program. It was found that only public low cost housing project can not be successful. The government

would concern and support developer in implementation of low cost housing project by reducing time for give approval, issuing guideline, reducing tax, and so on (Ministry of Housing and Local Government of Malaysia, 2002).

In developing countries, housing cost consist of land cost and construction cost. In the construction cost, material cost is higher than manpower cost. The material cost will have high influence on the project cost when there are high material demands, lack of supply in the market or necessity to import material from abroad, etc. Many research works have done on trying to reduce the material cost, and creating new building material or using local material to reduce the cost of house. Sabarudin and Argyantoro (2004) researched economic view of utilization of local building materials. They tried to determine all local materials in each province to replace expensive materials. The objective was to reduce construction cost because it is very important factor in the development of new model of low cost housing, they conclude that it is necessary to develop housing material using local resources.

Salleh and Choong (2002) considered mismatch between the low cost housing supply and the housing. The main reason is that while housing need is increasing every year, housing completed in this year only matched the demand in the last few years. The demand condition may change the time and market.

Ong and Lenard (2002) studied the successful implementation of low-cost housing by developers. They are concerned with the development cost, which includes land cost, construction cost, professional fees, and fees and contributions of the government agencies. The most important cost component is the construction cost, which is up to 60 – 80% of the total development cost (Salleh, and Choong, 2002). Housing cost sets the ceiling price. The authors felt that the selling price should not be arbitrarily fixed and the developers must be allowed to make a reasonable profit from their low-cost housing development projects. The price should be revised accordingly, taking into account of different locations. It should be distributed and shared between all the parties who have benefit from the housing industry including the banking sector, building material manufacturers, and professionals by assisting the government in its social role in providing affordable and sustainable housing for low income groups.

2.5 Success factors of low cost housing administration

From literature review, some success factors for the whole process can be summarized as follows:

a. Housing need including housing condition, population growth rate, density, migration, affordable income, social, economic, physical, traditional, culture, and customer's satisfaction (Stephen, Yeh, and Laquian, 1979; Djabbar, 1990; Salleh and Choong, 2002; Sabarudin and Argyantoro, 2004).
b. Housing policy consists of policy, strategy, and subsidies (Nathalang, 1974; RAO, 1977; Mohd, 1997; Ler, 1989).
c. Government offices and multiplicity of authorities, there are administration, organization, standard and regulation, and guideline (Stephen, Yeh, and Laquian, 1979; Ministry of Settlement and Regional Infrastructure (III), 2003; Lao Development Bank, 2003; Salleh and Choong, 2002; Ministry of Housing and Local Government of Malaysia , 2002; Ong, and Lenard, 2002; National housing Authority of Thailand, 2003).
d. Housing finance composes of financial system , loan and interest rate, subsidies, and long term or sort term (duration) (Asiwatham, 1977; Asiwatham, 1977; Hassan; 1990; Ong and Lenard, 2002).
e. Land availability and location planning including land acquisition, land price, land law and regulation, and land used for housing (Stephen, Yeh, and Laquian, 1979; Rodell, 1979; Ministry of Housing and Local Government of Malaysia, 2002).
f. Resources capacity consists of building materials, labors intensive, construction methods, and professional services (Kukreti, 1974; Stephen, Yeh, and Laquian, 1979; Djabbar; 1990; Sabarudin and Argyantoro, 2004).
g. Infrastructure, public utility and facility support such as road, bridge, drainage, water supply, sewerage, waste water, electricity, and community service and facilities (Stephen, Yeh, and Laquian, 1979 ; Ministry of Settlement and Regional Infrastructure (III), 2003; Salleh and Choong, 2002; Ministry of Housing and Local Government of Malaysia, 2002; United Nations, 2001; Patoumxay, 2003; National housing Authority of Thailand, 2003).
h. Housing delivery system including the functions of housing, land subdivision, urban local government and town planning and social welfare have been brought together under one Ministry of cabinet status (Kukreti, 1974; Lo,

1976; Fashridjal; 1977; Vitaliano, 1977; Dhahran, 1978; Tanphiphat; 1982; Patoumxay, 2003).

i. Community management, there are housing management, maintenance, and community participation (Ong, and Lenard, 2002; Ministry of Housing and Local Government of Malaysia, 2002; Ministry of Settlement and Regional Infrastructure (III), 2003; National housing Authority of Thailand, 2003).

CHAPTER III
LOW COST HOUSING ADMINISTRATION

3.1 Housing need

The four countries; Indonesia, Laos, Malaysia and Thailand, are different in physical, social and economic characteristics, but are alike in several aspects (rainy and hot season), their shared geography in Southeast Asia, and their linked economies. Indonesia comprises thousands of islands, whereas Laos is landlocked. Malaysia is surrounded by sea and rich with natural resources while Thailand is a wide hinterland. There are many factors that influence housing condition and housing needs such as physical characteristics, population growth, density, urbanization trends, and economic growth as shown in Table 3.1.

Table 3.1 General information of the target countries

Description	Indonesia	Laos	Malaysia	Thailand
Area (sq .km)	1,904,443	236,800	329,758	513,115
Provinces/States	30	18	13	76
Population (million)	203	6	23	63
Population growth rate (%)	1.2	2.2	1.8	0.8
GDP per capital (US$)	695	326	3,699	1,874
Economic Growth rate (%)	1	2.2	2.3	2
Low cost housing needs	750,000 (Annual)	*	615,000 (2001-2005)	600,000 (2003-2007)

* Not available

(Source: Human development report UNDP, 2001, Thailand Economic monitor, World Bank Thailand Office, 2003, Thailand's Economic Outlook 2004 and 2005, Fiscal Policy Office Ministry of Finance, 2004).

All countries have one similar problem, housing problems. Housing need is especially a problem in cities, where the population growth rate is high, and low income individuals cannot afford houses. People try to build house by use of their own savings, incomes, pensions, etc. They also make use of traditional skills, local materials and indigenous technology. Moreover, the community and government lack resources and budgets to be allocated in response to housing need, and they seem to

adopt poor housing development policies. Annual housing requirement in Indonesia, Malaysia and Thailand are shown in the Table 3.1. The governments are usually concerned with the number of housing need in preparing the policy, budget, planning and implementation projects (Ministry of Settlement and Regional Infrastructure (IV), 2004; Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003). In this research, the projects in the capital cities, Jakarta, Vientiane, Kuala Lumpur and Bangkok, were selected.

3.1.1 Low income group

One of the key factors of the housing problems in developing countries is house affordability of the people. The income is the most important in put to determine affordability to buy house, low income people cannot afford to get the house otherwise low cost. Moreover, the housing price increases rapidly. Government efforts have been concentrated on the expansion of housing production and provision of low cost housing for the low income people. The limitation of target group was specified by the government by classifying their income into low, middle and high income level. Table 3.2. presents the limitation of low income level.

Table 3.2: Low income level and low cost house price

Description	Indonesia	Thailand	Malaysia	Laos
Low income level (US$)	I: 90<X<150 II: 50<X<90 III: 35<X<50	0<X<400	200<X<400	–
Low cost housing needs	750,000 (Annual)	600,000 (2003-2007)	615,000 (2001-2005)	–
Low cost housing price(US$)	5,000-10,000	6250-10,300	6,600-11,100	16,399-25,00

(Sources: Ministry of Settlement and Regional Infrastructure, 2003, National Housing Authority of Thailand, 2003, Ministry of Housing and Local Government, Malaysia, 2002, and Patoumxay, 2003).

Information shown in Table 3.2 is from the low cost housing projects sampled from the targeted countries such as low cost housing project (KPR) in Jakarta of Indonesia, housing welfare for pensioned government officials' project in Vientiane

of Laos, public low cost housing project in Kuala Lumpur of Malaysia, and Baan Eua-Atorn project in Bangkok of Thailand; those projects are supported by their governments.

From relatively low income level in four countries, the low income levels were related to their condition, socio-economics, resources capacity, population, employment, government policy, etc. With the big population in Indonesia, the number of low income people was estimated to be about 80% of the total population, and they are classified into 3 levels of low income (Ministry of Settlement and Regional Infrastructure (I), 2003). The government will subsidy each level with the different interest loan. Laos government does not classify targeted people by the low income. It has information only about the lowest monthly income of Lao people as shown in Table 3.3 (Patoumxay, 2003). In Malaysia, the government has divided income levels for the low income group more clearly. In Thailand, the government specified the income level, below which people can be eligible to buy house unit (National housing Authority of Thailand, 2003). The advantage of setting up the classification of income levels is that it enables classification of the targeted groups by their affordability to pay for housing.

Table 3.3: The average monthly income and housing price in Laos

Description	**Year 1994**	**1998**
Household income (US$/year)	900	1,077
Household income (US$/month)	75	90
House (100 sq.m) Price/Unit	20,000	25,000
Rental (US$/month)	8.3	9.0

(Source: Patoumxay, 2003)

(1 US$=38.8 Baht and 1 Baht=265 Kip, January 2004)

On the other hand, the disadvantage of low income level in Thailand was not clarified and it affects target group and their affordability. Moreover, there are some middle and high income people who can afford and need the housing for their profit. Those problems would influence the success of projects in providing housing for low income group and project budget. In Indonesia, the very low income people, who have income less than the set income level, cannot buy house. Indonesian government is always concernsed by taking account of this problem and issued the housing rental

policy. The first policy of Laos was for the pensioners. From that project, the government cannot collect money back and the project was discontinued. In Malaysia, otherwise, in income level is clear but not the target group.

In Thailand, because the government policy allows people who have income from zero to the level of low income limit to buy the low cost house units, and the price of low cost housing is not so high and is affordable. However, there are a lot of low income people who have no income or not fixed income. After three months, if they cannot pay the loan in time, NHA has to buy back their houses from the bank and sell them to other persons. It is better to set the base income level (floor level, minimum income level) to solve this kind of problem.

In housing policy, housing price is one key factor helping targeted group to buy a housing unit. On the other hand, price is also a challenge for producers and suppliers in both public and private sectors. The government set a price ceiling for a house unit and named it as a house unit price. This price controlled all low cost housing projects, which will be constructed by public or private sectors. House unit price controll over all housing process in such as design, project budgeting, housing selling, etc. Both investments by the Public and private sectors are affected. However, the private sector seems to be most suffered. Small scale projects usually let their investors bear the investment risk until their projects are sold as they fear financial deficit.

Actually, housing prices are related to housing types and locations. In Indonesia, Laos and Thailand, the housing prices are almost related to the housing types and physical location only. It failed to consider other features linked to the location. There are some low cost housing projects where the locations are far from the city with poor infrastructure and lack of the employment opportunity. Obviously, it would be hard to sell, and the government would have problem with their budget to start another new project. In Malaysia, pricing formulation takes account of housing types, area and location. The location features is the most critical factor to decide on whether the house would be sold at an acceptable price. Malaysian people have wider choices offered by several developers. At the same time, they also have a lot of criteria to select and to buy house.

3.1.2 Low cost housing delivery system

Four countries in this research: Indonesia, Laos, Malaysia and Thailand, select a low cost housing that are supported by the government. The governments provide the housing policies and support land, finance, infrastructure, public utilities and

facilities, community participation for sustainable project, and provide more employment for increasing the income of the low income group, thereby improving their quality of life.

The provision of housing units is cooperated by both the public and private sectors. Their objective is clear, while the private sector focuses more on market demand for their profit, the government is concerned about providing adequate, affordable and quality housing units for all.

There are two types of low cost housing projects: public low cost housing by the public sector and the turnkey system by developers (Ministry of Settlement and Regional Infrastructure (IV), 2004, Ministry of Housing and Local Government, Malaysia, 2002, National Housing Authority of Thailand, 2003). In the public system, the government assigns the Ministries, institutions and agencies to be responsible for carrying out the housing development programs, setting the target group (low income group), and selecting the developers/contractors to implement the construction projects. The turnkey system is implemented by developers that have funds and experience in housing development programs. Developers have to sell housing projects to the government or directly sell to buyers, depending on the conditions and negotiations. However, their implementation and sale prices were controlled and have to be completed with the rules required by the public sector. In Laos, the housing project was implemented by the public sector for pensioners (Patoumxay, 2003). The turnkey system in Laos involves expensive houses, therefore it is not appropriate to the low income group.

Indonesia case study - Low cost housing project (KPR).

As regard the housing situation in Indonesia, the total population and household growth are so high. The urban growth rate was estimated to be 3.5 percent (Ministry of Settlement and Regional Infrastructure, 2003), of which approximately two-thirds is due to migration from rural areas. The high migration component of urban growth leads to major implications of the local government housing strategies in fulfilling the need for decent housing units for all households, which still faces a number of problems. These include some households having low potential to afford decent houses, especially the low income group, lack of financial support. In addition, there are some problems from other resources such as the weak capacity of housing institutions, the delay of infrastructure and public facilities service such as road access, electricity, water supply, lack of urban planning, price of the land, location,

and so on. The requirement for new urban housing in the next few years is estimated, based on statistics, to be 750,000 units annually and in the year 2002 there were 14.5 million housing units for the poor and slum dwellers in the urban areas (Ministry of Settlement and Regional Infrastructure, 2003).

Housing policy of Indonesia is limited by the possibility of financing and it is necessary to carefully determine stages and priorities. (Ministry of Settlement and Regional Infrastructure (II), 2003). Indonesia started low cost housing projects since 1960s. In 1974, to support low cost housing program, National Housing Authority (National Urban Development Corporation or Perum Perumnas) was established by a government regulation and assigned State-Owner Saving Bank (BTN) to provide home ownership credit facilities (KPR) by the Ministry of finance. Housing development was stopped because of economic crisis in 1997. Until the end of 20th century, housing and settlement development in Indonesia successfully accomplished through its mass housing policy (Ministry of Settlement and Regional Infrastructure, 2003).

In Indonesia, low income people could apply directly to National Urban Development Corporation or developers for a house unit. Alternatively, they can apply to BTN for a long term loan with low interest rates, called KPR rate. Indonesia government supported the buyers by granting down payment and guarantee for low interest rate for the first five years of housing payment. Also, developers or contractors, who are the project suppliers applied to BTN for construction credit, called KC rate, as shown in figure 3.1. (Amri, **interview**, 4 September 2004; Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003). However, there are two levels of low cost housing projects, as national and local. The local level projects are not complicated and have to follow the steps mentioned above. As to the national level, project will be implemented by the National Urban Development Corporation to solve the housing problem in the capital city where a large amount of housing units locate (Murbintoro, **interview**, 4 September 2004; Ministry of Settlement and Regional Infrastructure (III)).

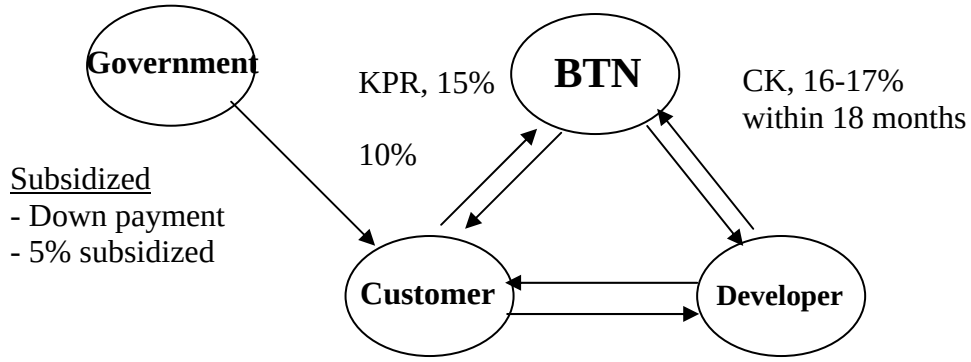


Figure 3.1 Low cost housing project (KPR)

Laos case study – Welfare housing for pensioned government officials in Vientiane

In the past, there were two low cost housing projects in Laos. The first project was “Low Cost Housing Demonstration”. The project was a collaboration between Ministry of Communication, Transport, Post and Construction, Institute of Technical, King’s Mongkut Lakabang University and supported by United Nation Development People (UNDP) (Aphaylat, Iterbeke, Thielens, and Plyplu, 1988). The objective was to be an experiment linking building materials and the technical research works with the realization of construction and housing solutions particularly using a rational design, locally available materials and techniques, emphasis on training and transfer of knowledge and skills. The second project was welfare housing for pensioned government officials in Vientiane which was launched during 1994-1996 aiming to provide 170 welfare housing units for pension government officials who served the country during the National Revolution in 1975 (United Nations, 2001; Patoumxay, 2003).

Malaysia case study - Low cost public housing projects

Malaysia started building low-cost houses for lower-income groups during the first five year plan in Kuala Lumpur from 1956 to 1960 to promote the welfare of the Malaysians, especially the lower-income groups, by providing improved housing, and social and community services. During the Seventh Malaysian Plan (7MP, 1996 - 2000), the government set a target of building 235,000 low cost housing units to provide quality and affordable houses to all Malaysians and to improve the quality of life for low-income groups, especially the poor.

In Malaysia, the provision of housing is undertaken by both the public and private sectors. While the private sector focuses more on market demand for their profits, the government is concerned about providing adequate, affordable and quality housing for all, particularly the low income group. In Malaysia, there are various projects which share the same goal of providing low cost housing for low income groups. However, these projects are different informs of the support and also the affordability of the low income group. The example are Public Low Cost Housing (PLCH), Integrated Public Low Cost Housing (IPLCH), Site and Services Schemes,

Housing Loan Schemes (HLS), Housing under Land & Regional Development Agencies, Institutional Quarters and Accommodation for Staff, Housing for Estate and Industrial Workers, etc.

Thailand case study - Baan Eua Arthorn Project

It is more than 30 years since the NHA was first set up in 1973 as a state enterprise under the supervision of the Ministry of Interior. The NHA has carried out housing development both in the capital and in other provinces (National housing Authority of Thailand, 2003). The NHA has played an important role, guided by government policy, in developing and providing house for people in the low and middle income groups. The NHA originally had broad objectives to be specialized in housing and urban development in housing policy, planning, slum improvement, construction, new town development, urban renewal, housing community management, research and studies on housing development (National Housing Authority of Thailand; The Japan International Cooperation Agency, 1997). By the end of 1995, the NHA has completed total of 124,000 housing units and 95,000 slum improvements and the housing projects covering 43 provinces.

The Office of the Board of Investment provides the incentive of income tax exemption for developers who develop low cost housing projects with a project consisting of more than 150 housing units in the Bangkok region and 75 units in other regions. Since 1993, about 150,000 of the low cost housing units, with the price of a house less than 600,000 bath, have been promoted, (National Housing Authority of Thailand; The Japan International Cooperation Agency, 1997).

Also, the Government Housing Bank (GHB) offered loan for home-mortgages with the interest rate per year 12.75% in 1996, lower than that of the city bank's at 13.75% in cases of loans less than 750,000 baht. This program has been increasing at a rate of more than 30% each year since 1991 (National Housing Authority of Thailand; The Japan International Cooperation Agency, 1997).

In 2003, Thai Government had a policy to provide housing for the disadvantaged and low-income group including low-level civil servants and other state staffs who can afford hire-purchasing housing units by themselves. The objective of this project is to ensure housing security for the targeted group by providing the standard housing units with the necessary infrastructure system. The target group is the low-income group in urban areas, who have never owned the house including low-level civil servants and state enterprise personnel, laborers, and individuals or small

group whose household salary levels do not exceed more than 15,000 baht/month (400US$/month). The total of house units is 600,000 for 5 year 2003 - 2007 (National Housing Authority of Thailand, 2003, http://www.nhanet.oh.th).

3.1.3 Low cost housing process

According to research works on low cost houses programs, the process is divided into 9 stages including policy determination, land acquisition, feasibility study, financing, design and planning, bidding, construction, delivery and maintenance. The low cost housing processes in four countries are complicated and require cooperation between the Ministries, offices, institutions and agencies. The implementation may be different but the basic processes have same stages.

Table 3.4: Low cost housing processes and responsibilities.

Phase	Process	Responsibility
Pre-Construction	Policy Financing Land acquisition	– Decision makers/ Planner – Public sector – Finance Institute
Construction	Feasibility study Design and planning Bidding Construction	– Construction Supervisor (owner) – Developer/Contractor – Professional service
Post-Construction	Delivery Maintenance	– Buyers/Customers – Finance Institute – Community participation

Former research works show that the most important stages in the process are policy, land acquisition, financing, and maintenance (Karukose, **interview**, 14 May 2004; Vangkeomany, **interview**, 24 March 2004; Murbintoro, **interview**, 4 September 2004; Bin Mat Seek, **interview**, 21 February 2005). Those four stages are the core of the whole process. However, this does not mean that the other stages are not important. All stages are important and influence the project's success. The low cost housing processes in Indonesia, Laos, Malaysia, and Thailand, are similar because all processes are under government control and support, with implementation

by ministries, offices and institutes. The process comparison among these countries will be described in Chapter IV.

3.2 Housing policy

High population and density in the urban areas force government to pay more attention to housing development and consideration, especially as a priority in national policies. Housing policy is significant for all developing countries to develop the country economically, socially, etc. Housing policy usually covers other policies, such as credit and public finance, land policy, law and regulations, mortgages, urban planning and zoning and other aspects of housing. The crucial priority of the policy is to financially support housing development programs.

The objective of the housing development programs is to increase the accessibility to adequate, affordable and quality houses for all income groups. Moreover, it is expected to solve the housing problem, to create jobs, income, utilize land, generate capital, increase the social welfare of the people in the religion, and be a powerful tool in redistributing income or wealth.

Priority continues to be given to the development of low- and low medium-cost houses. In this regard, both public and private sectors should intensify their efforts in the implementation of the housing programs to meet increasing demands. The provision of other social services should continue and expand with a view towards improving the quality of live. Besides the strategies, supplementary measures should include the provision of subsidized housing loans, research and development on the use of cheaper but suitable building materials and construction technology (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005).

Initially, most governments established agencies or departments in the ministries to deal with housing development, financing schemes, basic services, and providing houses for low income people. The agencies and organizations that administer housing in Asia translate their policies into programs and activities in various ways, but they all proceed through several steps: policy determination, identifying need, setting priorities, design of housing programs, maintenance and evaluation programs.

In some developing countries, the housing policies depend on the condition that the housing policy is always in the low priority of the development policies. Housing is an expensive investment, but it is beneficial to the public, society economy, and environment. The national housing policy provides an opportunity for government not only to solve housing problems in the city but also to declare its population

distribution strategy and others' employment opportunities within industry. For example, Laos is housing development policy was in the low priority because other development programs are more urgent and need for social than housing development program.

Housing development programs implemented in the above countries seems to be successful because of clear policy, clear prioritization, and correct understanding of the policy and objective program presetting. Likewise, appropriate strategies, good financial support, acquisition of land with good infrastructure, human resources, technical support, guidelines, and coordination with concerned offices and institutions have extensively contributed to the success as well (Karukose, **interview**, 14 May 2004; Vangkeomany, **interview**, 24 March 2004; Bin Mat Seek, **interview**, 21 February 2005).

To implement a low cost housing project, governments (through their ministries, offices, institutes and agencies) prepare and set up organization, planning, and operation guidelines. The guidelines help all participants to understand the project's objective, strategy, planning, to be clear about responsibility, tasks, to avoid misunderstandings, to follow the steps in implementing project, and to detail the kind of government support, etc.

Indonesia, Malaysia, and Thailand issued project development guidelines and also held workshops on how to implement projects. Only Laos has issued no guidelines yet, because they had only one project and it has now been discontinued. (Ministry of Settlement and Regional Infrastructure (III), 2003; Sabaruddin and Argyantoro, 2004; Ministry of Housing and Local Government of Malaysia, 2002; National Housing Authority of Thailand, 2003)

Indonesia case study - Housing policy and project implementation

As a pre-condition of implementing, very large housing development program is systematically and continuously set up and run as well as the overall policy in housing at the national level and the short-term and long-term implementation program. Low and uncertain incomes are the important factors of the limited role housing plays in the economy. The weakness and inefficiency of the financial sector further hinder expansion could lead to strongly housing delivery system in Indonesia (Ministry of Settlement and Regional Infrastructure (III, IV), 2003).

However, housing policies and programs hinder the efficiency and expansion of the sector. Under the current housing policy, the subsidized or non-subsidized housing

units for low- and moderate-income groups have declined (although the slowness in economy has also been a factor) (Ministry of Settlement and Regional Infrastructure (I), 2003)

The basic housing policy of Indonesia gives priority to the development of the housing development, especially those for the low income group. The policy considers the sustainable development principle and requires mutual responsibilities between the public and private sectors. Indonesia's national housing policy is undertaken in terms of seven key strategies such as stabilizing the housing environment, mobilizing housing credit, facilitating speedy release and servicing of land, providing subsidy assistance, supporting participation processes, rationalizing institutional capacity and housing investment, and coordinating government investment in development.

The housing and settlement vision for 2020 is: "Every household in Indonesia is able to fulfill the housing need that are decent and affordable in a healthy, secure, harmonious, and sustainable environment with the view to realize a society with self-identity, self-reliance (autonomous) and which is productive" (Ministry of Settlement and Regional Infrastructure, 2003).

The government of Indonesia through the Ministry of Settlement and Regional Infrastructure (Kimpraswil), Directorate General Housing and Human Settlement, decided to develop a new housing policy framework in line with the new development objectives of the country. The vision and mission of housing and settlement development are based on a condition which is ideal yet realistic, by taking into consideration the existing condition, the potential capacity of development, and the value system to serve as foundation for housing and settlements for the better people's welfare and economic growth, in the view of sustainable development.

Recently, they implemented the action plan "One million housing development", which cause the national movement in provision of water supply and sanitation to the low income group from 2004 - 2020 (Ministry of Settlement and Regional Infrastructure (II), 2003). The national development objective is to resolve the existing housing backlog, and to improve the welfare of the slum dwellers, and to carry out the poor empowerment in stages fulfilling the Global Agenda 2015 on poverty reduction, and agenda 2020 on the empowerment of the quality of slum areas (Ministry of Settlement and Regional Infrastructure (II), 2003).

The national movement in the one million housing development program includes 200,000 units of low cost housing (Ministry of Settlement and Regional Infrastructure (II), 2003), which will be implemented from 2004 to 2020. The program need to have concrete support from the three main parts of housing and settlements development, namely the community, private sector and the government in accordance with their respective role and capacity.

From research (Ministry of Settlement and Regional Infrastructure (II), 2003), the advantage of low cost housing policy and implementation in Indonesia is that they were achieved on their objective to provide houses to targeted group, and to improve housing standard and healthy residential quarters with good environment to the healthy people. This can save the government budget from taking care of people health. However, they have some disadvantages because of their constraints such as affordability of the targeted group, and financial support system by KPR credit, which is expensive for low income people. Moreover, there was delay in financial support from government for infrastructure, public utilities and facilities, and community facilities. On the other hand, the big country with big population and big amount of housing needs as Indonesia lack resources such as labors and skills, materials. Because importing materials from other countries increase the housing construction cost, Indonesia government try to use of local materials. However, Material is not enough compare with annual housing unit construction.

Laos case study - Housing policy and project implementation

Laos is much further behind Indonesia, Malaysia and Thailand in size, population, economy, technology, condition etc. Laos also has a housing policy for housing development with a small population, low density, but the main problem in housing development is the lack of financial support. To solve this problem, it needs a policy on financial support, housing investment, long term loans with low interest rates from the bank and financial institutes for the targeted group (Vangkeomany, **interview**, 24 March 2004).

According to the strategic goal for the government and all Lao people, the aim is to boost the country from its status as one of the least developing countries to status of developing countries by the year 2020. Housing development needs to be considered for improving the quality of life, economy and developing the country to achieve this strategy (United Nations, 200; Vangkeomany, **interview**, 24 March 2004).

Regarding the housing condition in Laos, 90% of houses are traditionally self-built and owner-occupied (United Nations, 200). The housing problems in Vientiane capital are lack of land available for housing development program and lands are more expensive. Housing shortage becomes a critical issue among the poor people. There is a shortage of funds to renovate both government and private conserved houses, and the financial institutions could not provide long term financial support systems for housing projects, etc.. Foreign investment in housing mainly focuses on hotels, resorts, shopping centers, office buildings, colleges, and so on (Vangkeomany, **interview**, 24 March 2004).

The project housing welfare for the pensioned government officials' project in Vientiane is the first housing policy in Laos for the pensioned government officers. They are all pensioned government officers and due to their monthly income, cannot pay back the government so far. The project is not a sustainable housing project because of the affordability of the targeted group who occupy the houses (United Nations, 2001; Patoumxay, 2003)

This project was not the same as that in Thailand and other countries. It was a small project of 170 housing units which took over 5 years. The project started when the Prime-Minister issued Decree 194/PM promulgating a housing policy for government staff. Under this policy, public housing was transferred to concerned government staffs who were provided with long-term credits for house construction and new house construction by receiving co-financing from the government.

From this project, there are the advantage and disadvantage of low cost housing project in Laos. Their advantage is to provide houses for pension government officials, improve quality of life and environment. It's the first low cost housing project, they were on the job training. Their experience in implementing mass housing project will be useful for further project.

On the other hand, the low cost housing project encountered with many problems because of the new mass construction project and lack of experience. They also faced with delay in financial support for implementing construction project, infrastructure, public utilities and facilities, and community facilities. The price of construction was so high because of the price of import materials from neighbor countries. Their projects are lacking in feasibility study, experience, financial analysis. They were concerned with benefit to the society. This project was an unsustainable project because there were no interest rate and the pensioned people did

not pay back the 5% per year of their salary that it would take a longer time than 60 years. With no returned money, the government cannot continue such kind of project again.

There are many problems occurred because the government did not have experience in housing development programs before, and also lack of human resources (Vangkeomany, **interview**, 24 March 2004). They have learned by the job training program. Laos is full of materials. However, they lack consideration and research on the use of local materials to reduce cost of housing. On the other hand, they are lacking in resources such as labors skill, equipment and poor in construction technology. Some still use the traditional technique in housing construction.

In Laos, there are housing standards, technical specifications and regulations in building construction but they do not effectively use of those standards yet and they are also poor in quality control and safety (Urban Research Institute of Laos; 2000, Vangkeomany, **interview**, 24 March 2004). Further, contractors were lacking in fund and experience in housing construction. They got a project by giving the lowest price but they cannot complete the project. This project consumed 5 years. The holding cost was very high and the government also delayed in giving approval and payment to the contractors.

Malaysia case study - Housing policy and project implementation

Malaysia has the highest income per capital among Southeast Asia countries, as shown in Table 3.1. It is the land of many races and has a long history in housing development programs. Malaysia started building low-cost houses for lower income groups during the first five-year plan from 1956 to 1960. Currently, the Malaysian government's objective is to increase the supply, improve the quality of low cost housing and to achieve the objective of a zero squatter by the year 2005 (Ministry of Housing and Local Government, 2002).

The main objective of the Malaysia housing policy is to ensure that all low income groups have decent, affordable and adequate house units. In order to achieve the policy objective, several housing development strategies have been implemented under this national plan. The major housing strategies adopted are summarized as follows:

a. Emphasizing and encouraging the construction of more low cost and low medium cost houses, especially in the urban areas, in order to reflect more realistically the housing requirements of the majority of the people. Such

houses should be built according to the requirements of the people who live in them.

b. Encouraging the provision of more rental housing with the attempt of meeting more immediate need of shelter especially for the low income workers in the major urban centers, and relocating all squatters.

c. Greater emphasis on the human settlement concept in planning and development of housing projects.

d. Greater role of the private sector in housing development especially, the provision of low and medium cost housing units.

There are two levels of government involvement in Malaysia:

– The federal government issued the policies, laws and regulations for housing development, financial support, provided necessary funds with low interest rates (subsidy rates), technical support, the professional and technical services of the housing trust with free of charge.

– The state government will provide state land, infrastructure such as access roads, drainages, water supply, electricity, public facilities. In addition, they will support the work regarding land, detail with the developers.

The public and private sectors were involved in providing housing for low-income groups. The government's main concern was to prepare and issue housing policy, housing law and regulations, standards, developers' licenses, technical support, while the private sector or developers implemented housing development programs by carrying out the design, construction, and delivery of the project to the targeted group. The private sector focuses more on the market for their profits.

In Malaysia, there are several projects having the same objective: to provide low cost housing for low-income groups. However, their implementations are different. They depend on the conditions of support and affordability of low-income people. The special low cost housing project in Malaysia, "30 percent housing policy project", contributes 70% of the annual total low cost housing requirements. A developer's project should have 30% low cost housing. Housing developers complained that it is not profitable to build low cost housing. As a result, developers looked for the cheapest land and simplest design in order to reduce the overall cost. This caused a situation where there is high shortage of low cost housing in the city area. The implementation have done by developers under the 30% housing policy and the rules

and regulations of Ministry of Housing and Local Government, National Housing Department.

The Malaysia government provided decent homes for rent to those who are not eligible for low-cost houses but for the moment cannot afford higher price houses. They will provide rental homes until those people are financially able to buy them. This project is called “Rent to Buy” for 5 years (Eighth Malaysia Plan, 2001; Ministry of Housing and Local government of Malaysia, 2003).

In Malaysia, the advantages in low cost housing project is in term of providing housing to low income people with minimum standard, and the customer’s satisfaction and low income people affordability to buy the house unit. Most important, the Malaysia government has objective to achieve a zero squatter target by the year 2005. However, they also have some constraints form financial system, affordability of low income group who do not have a fixed source of income, mismatching between housing demand and housing supply, economic recession, and unsold properties (developers) related to location as well. There is no uniformity in housing policy and inconsistency between federal policy and local implementation.

Moreover, price of land and land location in the city is so high that would make the project unfeasibility. On the other hand, developers have problems with long process of the state government’s in land conversion and planning approval, which takes 5 years. In addition, they faced with building materials shortage and lack of experience and higher cost in using new construction methods such as prefabrication to save time and cost. The frequently found disadvantage is the buyer or customers are not the targeted group (Low income people) because the low income group cannot pass the banks’ salary statement checking processes and there are too many regulations that low income people cannot afford. People who got house units tend to be the middle income people who can pass the bank checking. There are question about the transparency in selection eligible buyers.

Thailand case study - Housing policy and project implementation

As the Thai Government acknowledged the importance and the urgent necessity of solving the housing insecurity aims to increase the living quality for the targeted group, the government entrusted the Ministry of Social Development and Human Security and the Ministry of Finance as the main bodies to be responsible for resolving the above problem and assigned the National Housing Authority (NHA) to

be authority to implement housing development programs. The government policies (National housing Authority of Thailand, 2003) are as follows:

a. To provide housing for the disadvantaged and the low-income group, including low-level civil servants and other state staff, by enabling them to afford hire purchasing housing units. The project was named “Baan Eua-Atron project in Bangkok, Thailand” with 600,000 total units and 5 years duration (2003 - 2007).
b. Regarding government policy of “Bureaucratic Reform”, NHA set its policy emphasizing the facilitation and coordination in bringing about efficient future social development.
c. NHA has a vision consistent with the Ministry’s policy.

NHA is the main government agency responsible for developing housing securities and urban development to improve living quality as well as to create a balanced, strong, livable and sustainable society. NHA was assigned as the key agency responsible for providing residential units for the low-income individuals of every sector, as well as, low-level civil servants, state enterprise personnel, laborers, and individuals or small enterprises (National Housing Authority of Thailand, 2003).

“Baan Eua-Atron project in Bangkok, Thailand” (National housing Authority of Thailand (NHA), 2003 is the first project which Thai government supported the urban utilities development costs for the targeted group, the construction cost of the collective facility buildings, provided the budget sources for the project construction with the interest rate less than 5% per year, provided financial credit to the targeted group with the constantly low interest rate of 5-7%, adjusted every 3-5 years with the progressive rate payment for 30 years.

Government sets Government Housing Bank (GHB) policy to set up the revolving fund used for re-purchasing and reselling units in cases of non-continuing payments of more than 3 months and set the policy for the government agencies and local administrative authorities in charge of providing infrastructure services (National housing Authority of Thailand (NHA), 2003, www.nhanet.co.th).

In the Baan Eur Ah-torn Project, there are the two characteristics of the communities (National Housing Authority of Thailand, 2003):

a. Baan Eur Ah-torn Projects in urban areas are located in the urban centre or the sub-centres, job sources and service areas. These areas are small to medium

communities comprising of residential condominiums suitable for single residents or new and small families with only 2-4 members.

b. Baan Eur Ah-torn Projects in sub-urban areas are located in the areas away from the urban centre and scattered in the residential areas of sub-urban areas linked to the urban centre by transportation networks. Sub-urban communities are medium to large communities comprising of various types of housing suitable for the targeted group with medium to big families.

There are four activities of the Baan Eur Ah-Torn project: (1) project management, (2) sale management, (3) financial management, and (4) collective infrastructure management and community management. The implementation of the five year plan was divided into many phases as follows:

- Phases 1-2 (Pilot project) including preparation of project details, submission to the Ministry of Social Development and Human Security and the Cabinet, design details , project pre-sale, tendering, construction, occupation by residents, and appraisal of Phase 1.
- Phase 3 (mid term project) there are some differences experienced after Phase 1-2. The implementation is in order of the preparation of project details, submission to the NHA board, submission to the Ministry of Social Development and Human Security and the Cabinet, coordination about land/acquiring co-developers, survey of housing units in stock, preparation of project details/analysis, project pre-sale, tendering/selecting co-developers, construction, occupation by residents, community management (5 years), appraisal of Phase 3, Phase 4,5,6 (future plan) project analysis.
- Phases 1, 2 and 3 are the pilot projects used for monitoring and evaluation, considering operation guidelines. Experience acquired will be used in Phases 4, 5 and 6. Thai government has just started the first low cost housing projects in terms of government support in finance, land, and infrastructure. It is good for developing countries to carry out such projects.

With reference to their expectation and success, there are a lot of advantages which help achieve the objective, for instance, to provide houses for low income group, and the better living condition. People can own the residential quarters for their residential security in the standard community with appropriate environment and necessary infrastructure. For social aspect, Baan Eur Ahtorn Project can promote the good relationship among members in the families, communities, and society to

strengthen the strong balance and cooperation in the community development leading to the sustainable and livable community and at last the country development as a whole. NHA housing development projects have been operated by utilizing mostly domestic raw materials and local labors among the construction industry and related industries. Suitable community planning and design can create beautiful physical landscape, neat and ordered communities. The experiences from the residential project operation for the disadvantaged people, the disabled and the low-income earners in the urban area are very useful for NHA to formulate efficient guidelines of the same or similar projects in the housing required area, which are scattering all over the country.

On the other hand, there are some problems and constraints such as: higher housing need or housing demands than capacity and ability of NHA to provide housing, shortage in land, the project location, land price, project feasibility study, ground condition, delay in support of infrastructure, public utilities and facilities, and community facilities, affordability of low income group, unemployment, problems in monitoring and quality control cause by lack of human resources such as technical staffs, developers and contractors, and lack of experience in housing construction, problem from labors skill, labor shortage, short project duration, selection inefficient of buyer or customers. There are the main problems for the NHA in implementing housing projects to provide 600,000 house units within 5 years.

Comparison between Indonesia, Laos, Malaysia and Thailand.

Regarding housing policy and implemented projects, Indonesia, Malaysia, and Thailand, they are relatively big countries, strong in economy with a good condition and more than 30 years experience in carrying out housing development programs. Their experience is huge and they can share their knowledge and experience to other developing countries. On the other hand, Laos is a small country with a small population and only one low cost housing project, which was not successful in term of the project continuity.

As to the policy, their objective is to solve housing problem by providing low cost housing units to low income group. However, the weak points came from unclear housing policy, lacks of financial support, land available, expensive land quotation where many of them are without infrastructure.

A good example on housing policy can be taken from the Malaysian and Indonesia government cases. Malaysia has clear housing policy and financial support.

They have strong economic condition, law, and regulation. They delegate authority to state and local government to control and manage. Their housing policy, “the 30% low cost housing in developer project” boosts the developers incentive for more supply in low cost housing projects. Although developers are bound by laws and regulations, they are obliged to this enforcement. Moreover, developers are highly competent and have long experience in low cost housing. They can make profit only from middle and high cost housing projects.

3.3 Housing administration.

The success of any housing program depends on an organized system of housing administration, effective legislation, and a firm housing policy. There should be a central body capable to identify need, target groups, strategic program, and to coordinate agencies’ functions, research applicable resources, policies implementing, project evaluation. Several ministries, offices, institutes and agencies are involved in housing development programs to provide housing to low income individuals.

Of the four countries, both Indonesia and Thailand have National Housing Authority which is a state enterprise responsible for providing housing units to the people of various income levels. In Laos and Malaysia, the housing sector is under the control of ministry and government offices. Moreover, the projects selected in this study receive support from their governments.

Indonesia case study – Housing administration.

The government assigned responsibility to several ministries, institutes and agencies to support and implement the development of national housing such as the Ministry of Public which controls all the development programs in Indonesia including low cost housing programs, the Ministry of Settlement and Regional Infrastructure which is responsible for housing design, regulations, housing standards, specifications, low cost housing project guidelines, research studies on low cost housing and building materials, and so on (Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003)

The National Housing Policy Board (BKPN) (Ministry of Settlement and Regional Infrastructure (II), 2003) is responsible for the formulation of national housing development policy and strategies. The National Saving Bank (Bank Tabungan Negara, BTN) acts as a mortgage bank and will perform function in the facilitation of subsidized home ownership loans and housing construction loans

(Amri, **interview**, 4 September 2004). The National Urban Development Corporation (Perum Perumnas), together with other developers, will be responsible for the implementation of housing development policies and programs (Ministry of Settlement and Regional Infrastructure (IV), 2003).

Therefore, they cooperate with other offices and institutions related to low cost housing programs such as central government, local municipalities, banks, state institutions, investors and others.

Laos case study – Housing administration.

The low cost housing project in Laos is the housing welfare for pensioned government officials which provide welfare for such officials who served the country during the national revolution. There are many ministries and offices such as the Ministry of Social Welfare which is responsible for the policy for pensioned government officials, the Ministry of Communication, Transportation, Post and Construction which is responsible for design standards, planning, bidding, construction supervision, the Ministry of Finance which support the budget, and other institutes related to this project. (Ministry of Communication, Transportation, Post and Construction, 2002; Patoumxay, 2003)

Malaysia Case study – Housing administration.

Malaysia's housing administration has two levels: federal government and state government. The federal government prepares and issues policy for housing development while the state government implements policy state and have their own policies depending on the resources, condition, and status. Some states can achieve the objective of their policy to provide low cost housing units to low income individuals, but some states cannot achieve the objective. The failures come from inappropriate framework, poor coordination, lack of human resources, lack of experience and knowledge in mass housing project, etc.

The Ministry of Housing and local government are responsible for creating on formulation, implementation a comprehensive housing policy and development plan for the whole country. The National Housing Department, under the Ministry, is responsible for providing adequate, affordable and good quality housing for all, particularly the low income group.

Thailand case study – Housing administration.

The government issued the policy and entrusted the Ministry of Social Development and Human Security and the Ministry of Finance as the main bodies

responsible for solving housing problems in the cities and assigned the National Housing Authority (NHA) to provide housing units for the low income group.

NHA has to perform its responsibility by using the urban development approach along with the focus group survey before the project site selection to serve the targeted group's demands. Furthermore, NHA has to consider the guidance for the cooperation with the private sector to provide residential units in mass scale.

3.3.1 Housing organization and management.

Institutional concept is stated from being able to implement this housing program effectively and efficiently in accordance with national housing policy, a stable institution must be set up at implementation level. The type of organization may be differentiated in the four countries, according to their levels in the government state, their authorities and powers and the specific functions that they perform. These housing organizations are established to follow housing policy and to achieve the objective of housing development in their region.

In most countries, housing organizations are found for performing quality control the housing development project is transferred to the private sector as the main supplier of housing units, for example Malaysia (Ministry of Housing and Local Government of Malaysia, 2003). As to policy, they often promote long term finance for the buyers of housing, encourage banks to offer mortgages, support, set up saving and loan associations, subsidize infrastructure and land development, set housing needs and priorities, formulate housing programs (Ministry of Settlement and Regional Infrastructure (III), 2003; Ministry of Housing and Local Government of Malaysia, 2002, National housing Authority of Thailand, 2003).

Priorities are often set on the base of the personal commitment of the top decision makers. After housing policies and priorities are set, the coordinative body normally directs the housing agencies to design a housing program and implement it. In those countries, their programs may breakdown due to specific targets such as the number of housing units, the number of 5 years planning, and etc. The target is often justified on the base of expected housing need and the housing demand. The more important tasks of housing development are research and planning, finance, land acquisition, development, resettlement, construction, estate management and program evaluation (Karukose, **interview**, 14 May 2004; Vangkeomany, **interview**, 24 March 2004; Bin Mat Seek, **interview**, 21 February 2005).

Indonesia case study – Ministry of Settlement and Regional Infrastructure, National urban development corporation and other agencies.

At the national level, decision-making mainly concerns on long-term policies. At the regional and local levels, decision-making on human settlement development is made for location and site selection in relation with regional and urban development. Decision-making at the community level is undertaken for choosing housing standards and mobilizing resources. In small town, over 90% of human settlement development is unplanned and unorganized, while the organized housing development mostly exists in metropolitan areas (Ministry of Settlement and Regional Infrastructure (III), 2003).

Housing policy implementation is the responsibility of the Ministry of Public Works. They are in charge of setting the committee at the national and local levels, providing and developing housing program. The committee members are from government (Ministry of Public Works), and public enterprise/private sectors (National Urban Development Corporation) (Ministry of Settlement and Regional Infrastructure (III), 2003).

Several institutions were established at the provinces and municipality level such as the National Policy and Strategy for Housing and Settlement (KSNPP), National Board for Housing Policy (BKPN), Provincial Board for Housing and Settlement Policy and Supervision (BKP4N), Department of Settlement and Regional Infrastructure (Kimpraswil), (REI), Indonesian Association of Low Cost Housing Developer (APERRSI) and etc (Ministry of Settlement and Regional Infrastructure (II), 2003).

National Urban Development Corporation (Perum Perumnas), which provides low cost housing and accelerates the fulfillment of housing needs, formed the National Housing Policy Board as a coordinative body (inter ministerial committee) in the housing and settlement sector development. National Urban Development Corporation's task is to choose project location, to acquire land to provide necessary land and management, to develop the program and project planning and environment improvement, to develop infrastructure, community facilities and housing construction, to carry out the allocations of houses and the communities' facilities.

The Minister of Settlements and Regional Infrastructure (MSRI) launched the National Housing and Settlement Policy and Strategy (KSNPP). The KSNPP cover three fundamental policies: (a) institutionalizing community based and people-

centered housing and human settlement governance, (b) achieving shelter as basic need for all, (c) creating healthy, save, harmonious and sustainable human settlements for support human, self reliance and productivity. The organization chart of Ministry of Settlement and Regional Infrastructure (Kimplawel) is shown in Figure 3.2. There are various departments involved in low cost housing projects such as construction investment, research and development, human resource, spatial planning, regional infrastructure, rural and urban development, housing and settlement, water resource management, secretarial general, and etc.

The Ministry of Settlement and Regional Infrastructure has carried out a lot of research works on materials used and construction technologies. The original regulation for construction of low cost housing was Ministerial Decree No. 20/86, the "Technical Manual to Construct the Simple House", which did not include using local resources. The regulation set the uniformity of housing design among provinces with the different local potency, although, in fact, the housing prices among the Indonesian provinces are not the same with different incomes per capital among the Indonesian provinces.

The Indonesian government reviewed that regulation and amended it with the new Decree of Ministry of Housing and Regional Infrastructure No. 403/2002 on the "Technical Manual of Recent Simple House" This Decree accommodates the utilization of local resources, for instance, building materials, local architectures and traditional skill, which could reduce the housing price. The new regulation essentially recommends the use of local building materials in constructing low cost housing for the low income group. Also, the other concept involves the steps of construction from core house to the recent simple houses with the minimum standard. The minimum standard comprises the minimum space and minimum specifications of building construction, as can be seen in Appendix.2.

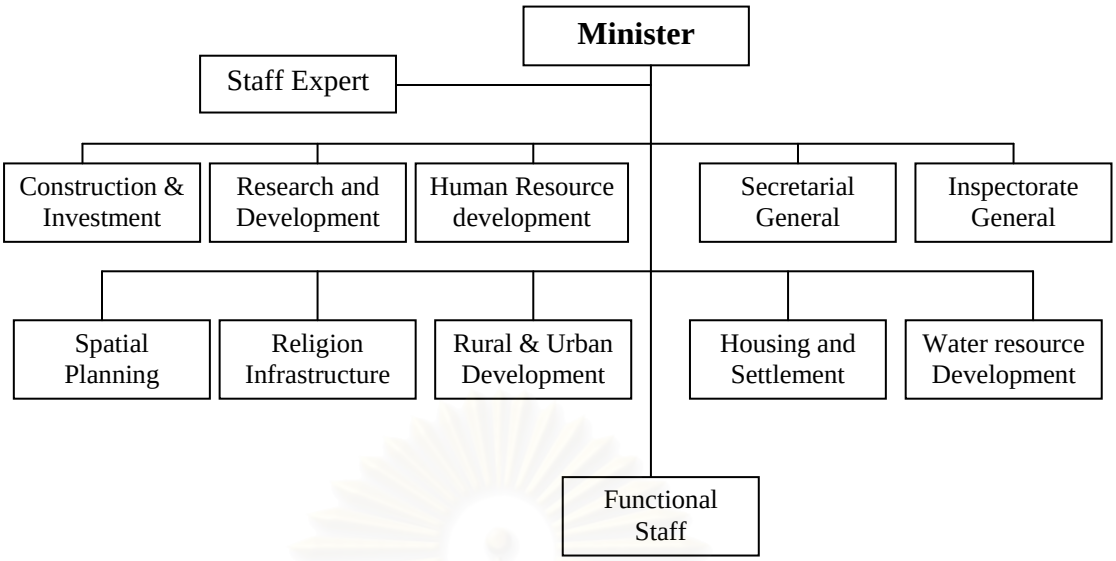


Figure 3.2 : The organization of Ministry of Settlement and Regional Infrastructure (Kimplawel)

Laos case study – Ministry of Communication, Transport, Post and Construction, Housing and Urban Planning Department

The Ministry of Communication, Transportation, Post and Construction is responsible for administration and implementation including planning, construction management and technical support, standards, laws and regulations of communication, transportation, post, and construction works in Laos from the central to the provincial level, as shown in Figure 3.3 (Ministry of Communication, Transportation, Post and Construction, 2001).

Housing and Urban Planning Department (DHUP) is responsible for macro-management and project implementation including housing, urban planning, urban development, and water supply. In a low cost housing projects, the major part is design, planning, estimating, bidding, supervising construction of the project. Laos had only one time experience in mass housing projects, which encountered many problems, such as limited budget, poor quality control because of lack of technical staff, poor standards and specifications, lack of contractor's experience, lack of funds poor labor skills, delayed project duration. Figure3.4 shows the organization of the Housing Welfare for pensioned government officials in the Vientiane project.

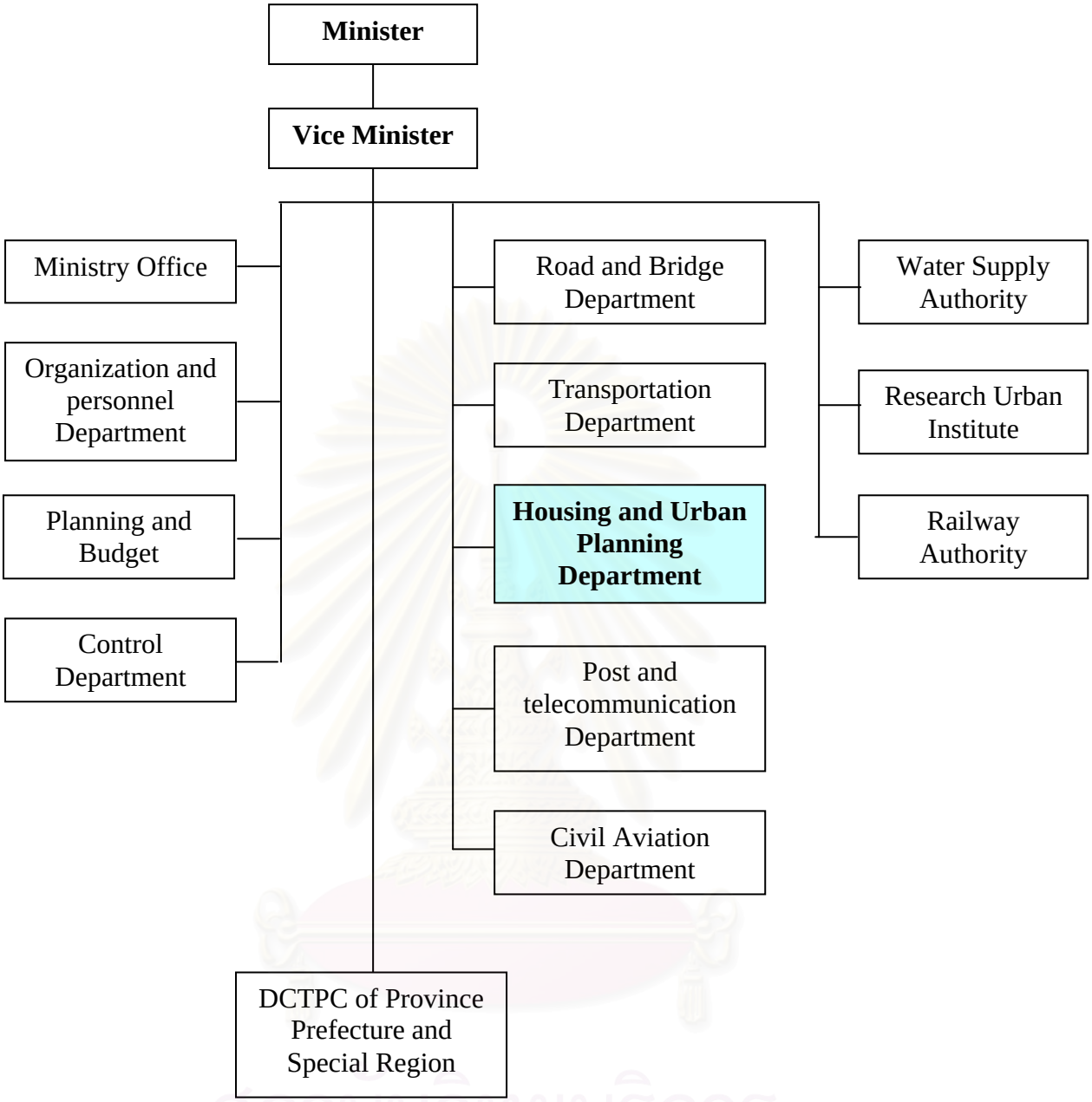


Figure3.3: The organization of Ministry of Communication, Transportation, Post and Construction.

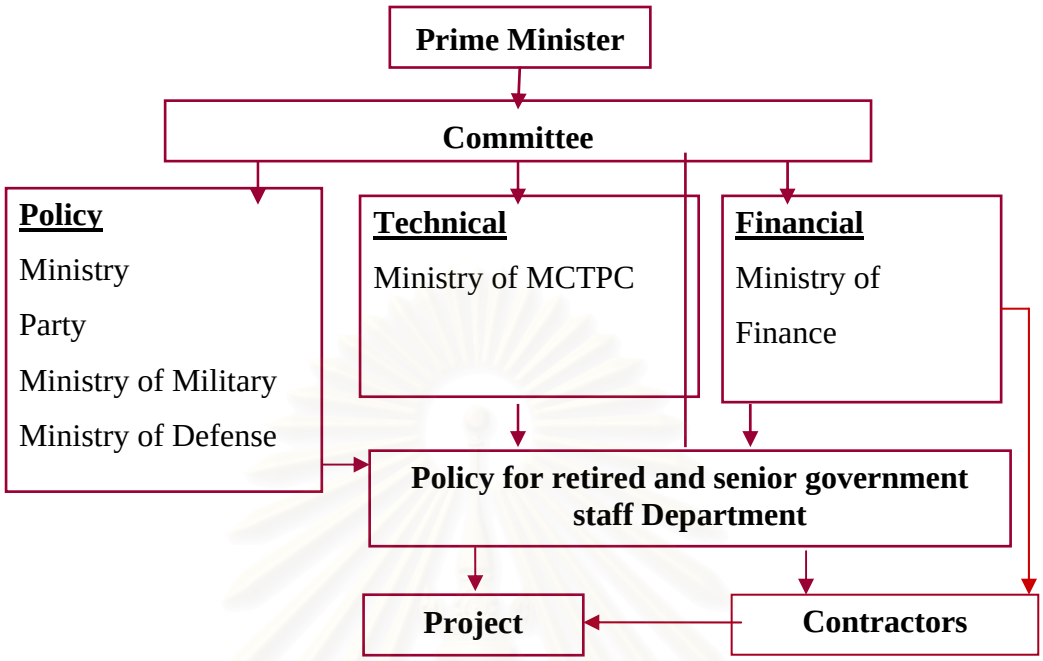


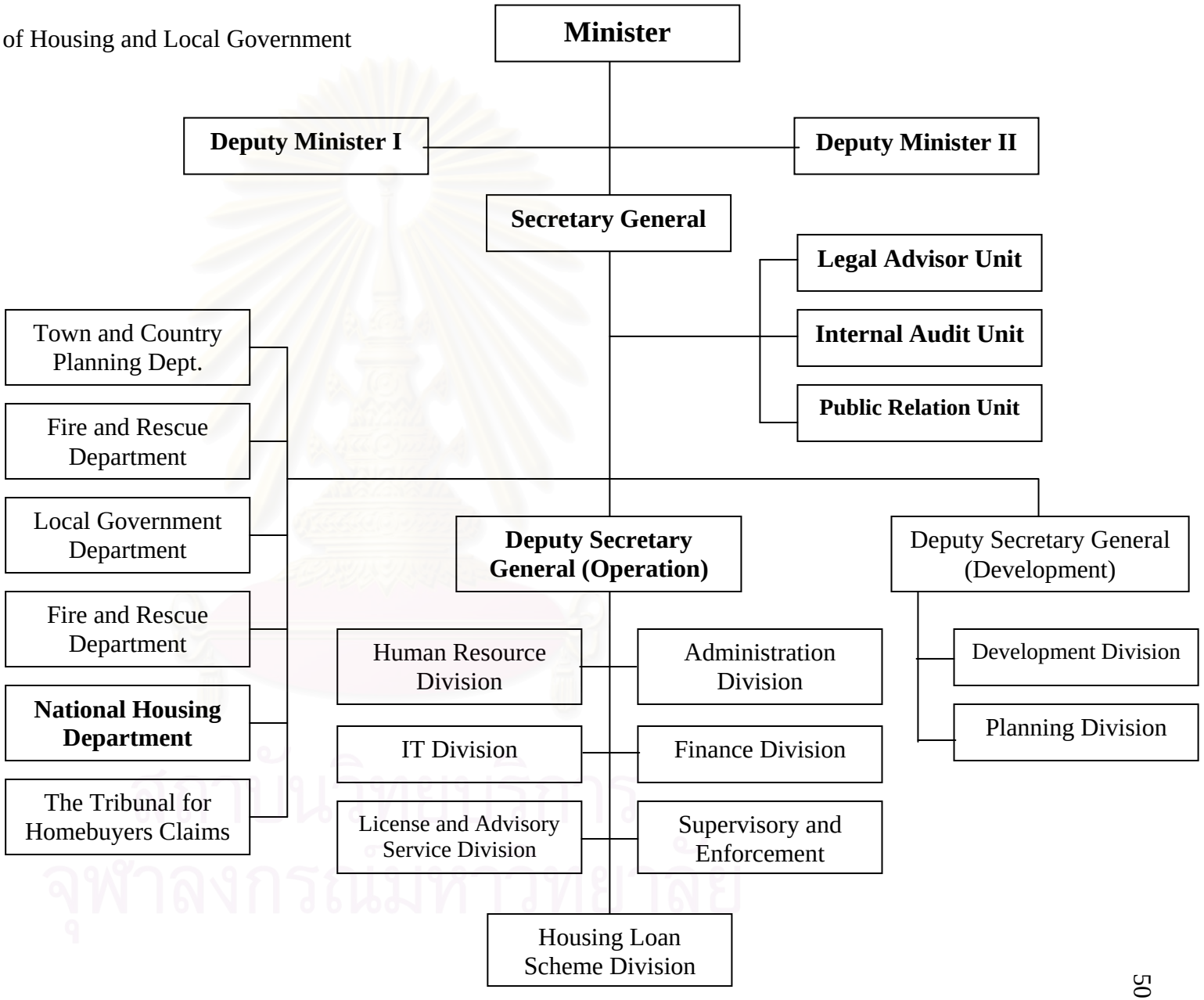
Figure3.4 : Organization of the Housing Welfare for Pensioned Government Officials in Vientiane project.

Malaysia case study – Ministry of Housing and Local Government and Administration.

The organization chart of Ministry of Housing and Local Government is illustrated in Figure 3.5 (Ministry of Housing and Local Government of Malaysia, 2002). Their responsibilities are to create and to implement a comprehensive plan for the whole country by strengthening the physical, social, economic and environmental systems both in urban and rural areas. They try to encourage, upgrade and assist local authorities in improving quality urban services and provision of social amenities, recreational facilities and economic opportunities.

The structure of the National Housing Department is shown in Figure 3.6 (Ministry of Housing and Local government of Malaysia, 2002). The National Housing Department task is to provide adequate, affordable and good quality housing for all, particularly the low income group. The National Housing Department comprises three levels as shown in Figure 3.7. Moreover, they assist the state government, private sectors and government agencies in planning and coordination of housing projects, monitoring the implementation of all housing and building projects,

Figure 3.5 : The Ministry of Housing and Local Government Organization Chart



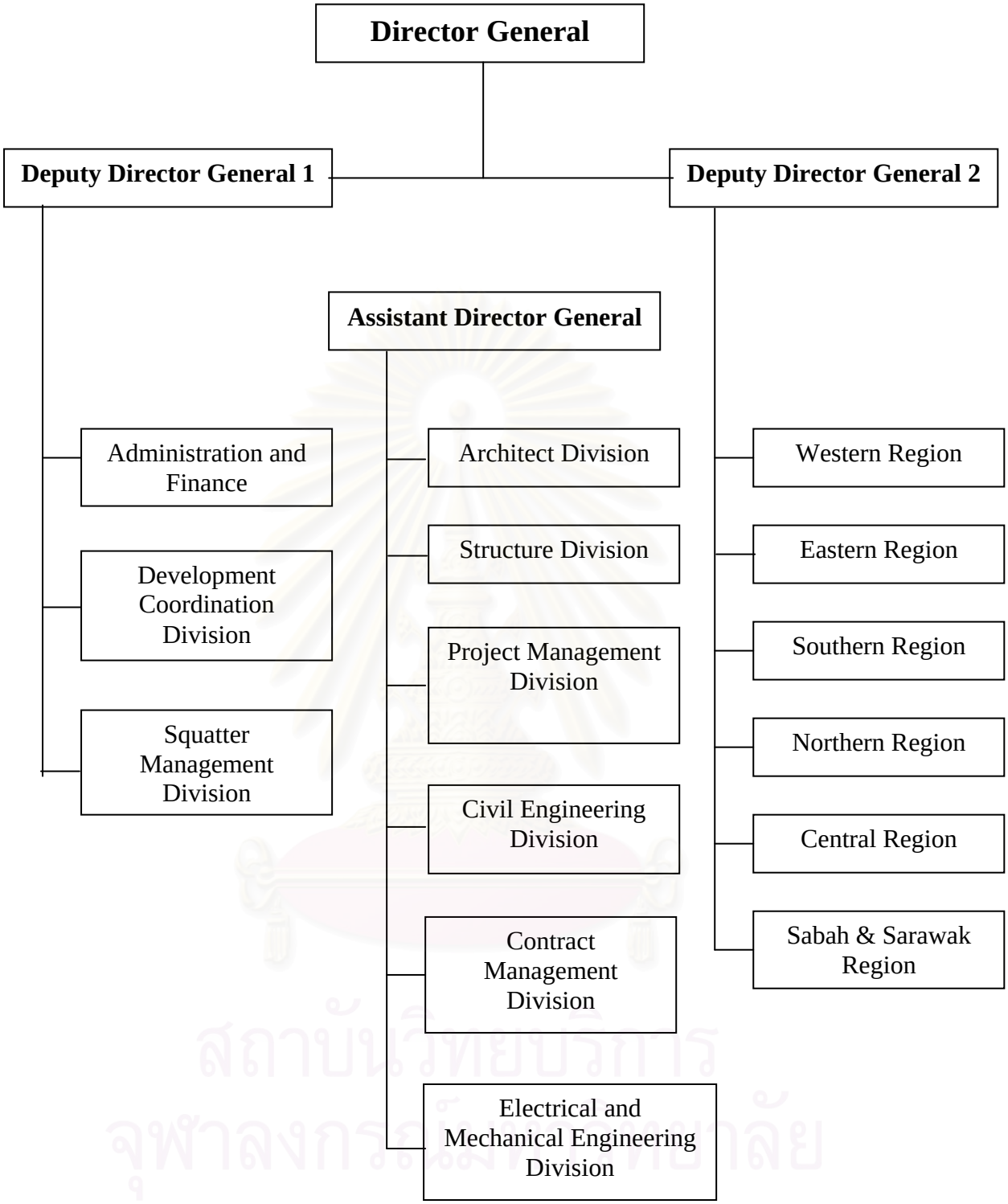


Figure3.6.: National Housing Department Organization Chart

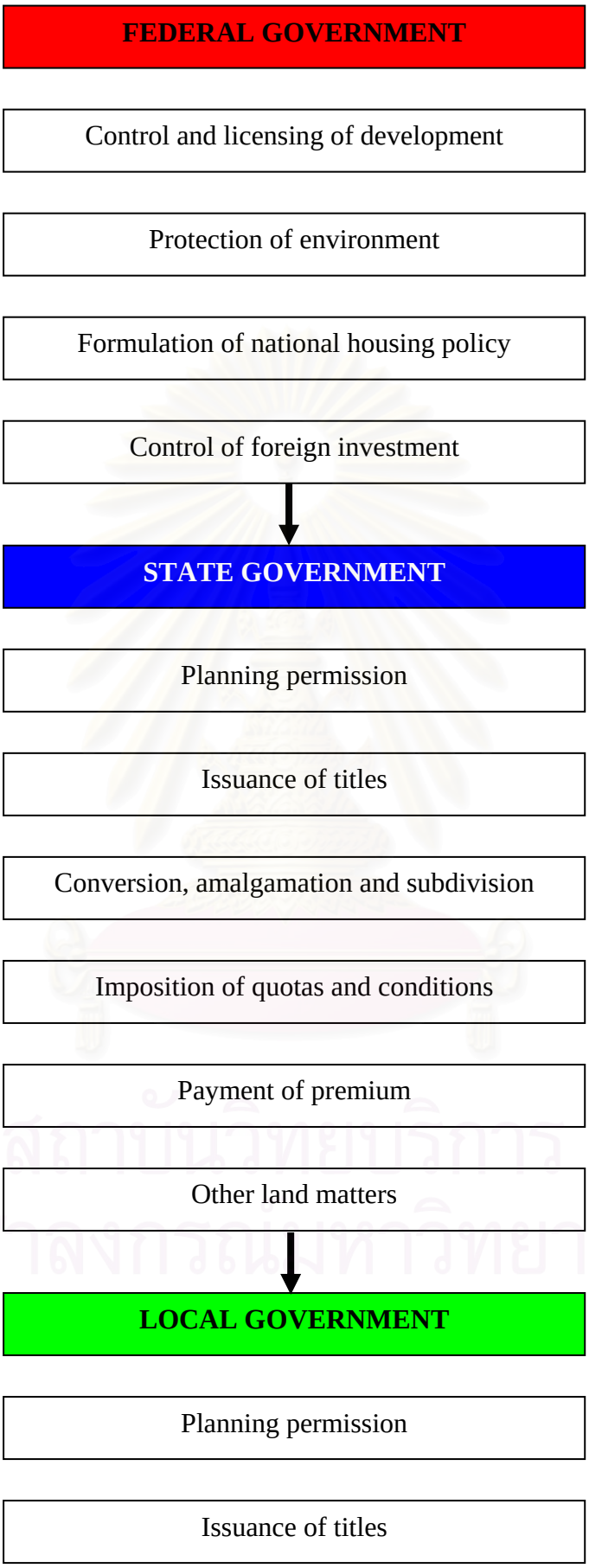

FEDERAL GOVERNMENT
Control and licensing of development
Protection of environment
Formulation of national housing policy
Control of foreign investment
STATE GOVERNMENT
Planning permission
Issuance of titles
Conversion, amalgamation and subdivision
Imposition of quotas and conditions
Payment of premium
Other land matters
LOCAL GOVERNMENT
Planning permission
Issuance of titles

Figure3.7.: Administration Framework of National Housing Department

providing technical consultancy services such as surveying, architectural, engineering and management services to public or private housing projects and providing loans to the low income groups to build their own houses, etc.. (Ministry of Housing and Local government of Malaysia, 2002).

Thailand case study – NHA organization chart.

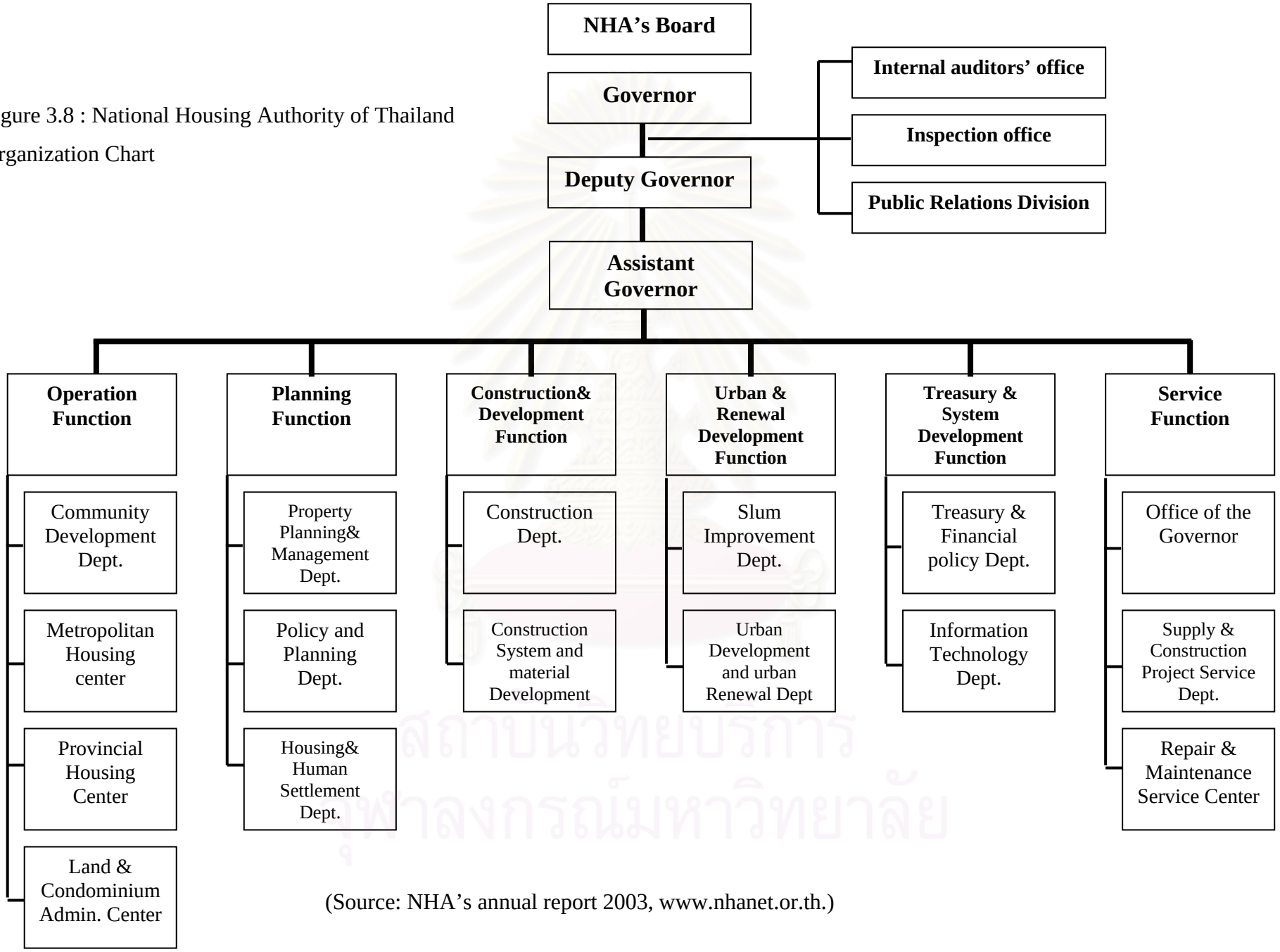
In Thailand, National Housing Authority (NHA) was set up 30 years ago as a state enterprise under the supervision of the Ministry of Interior. The NHA has played an important role, guided by government policy, in developing and providing housing for people in the low and the middle income groups.

The original role of the NHA, as the sole public housing agency, was to develop housing for the low and the middle income earners and the congested slum communities. Other objectives were added in order to enable the NHA to carry out housing development and solve housing problems more extensively. The National Housing Authority is empowered to act as a mortgager in order to have more flexibility in housing management: to grant loans, to acquire financing sources, or to guarantee loans for the people who would like to own their residential quarters, and so on.

NHA of Thailand is a center for housing studies, improving knowledge, innovation, new technologies to the public and private sectors in order to make housing development continue with quality, technical standards and to solve housing problems in accordance with the national development strategy. The development of housing information system supports the work process, using an electronic system for more rapid and efficiency work, as well as for optimizing the available resources.

As shown in Figure 3.8, in the former organization of NHA there were several departments acting and implementing low cost housing projects. After the new policy of achieving 600,000 house units (2003-2007), which is a big project in Bangkok and the countryside, was issued, NHA modified and developed their organization as shown in Appendix.5. Their organization was separated into 8 departments including 18 divisions, 7 centers and 85 subdivisions; every unit is managed by the assistants of the governor. The departments are clear in their responsibilities and tasks to ensure success in their objectives.

Figure 3.8 : National Housing Authority of Thailand Organization Chart



(Source: NHA's annual report 2003, www.nhanet.or.th.)

3.4 Housing finance.

Lack of finance is the major reason why the low income group cannot afford houses, and why housing finance remains tied to the mortgage. Usually, for the low income individual to afford housing, they have to be given long-term mortgages, preferably at low or subsidized interest rates. It is recognized that 80% of the urban population of developing countries cannot finance their own housing so the successful housing can only be possible if they have subsidies from government and a good financial system.

By accepting the enlargement of housing development, housing can get benefit by using the principles of micro-finance instead of having to rely on long term mortgage based lending that most financial institutions in developing countries are reluctant or unable to deal because of financial problems, weak institutional framework, low domestic saving accumulation, inflation, etc. As seen, in Indonesia and Laos (Ministry of Settlement and Regional Infrastructure (III), 2003; United Nations, 2001).

For housing development programs in developing countries, government separates housing finance agency, for example, BTN in Indonesia, the Ministry of Finance in Laos, National Treasure and National Bank in Malaysia, and Government Housing Bank in Thailand (GHB), and other financial institutes (Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003; Lao Development Bank, 2003; Ong and Lenard, 2002; National housing Authority of Thailand, 2003; http://www.ghb.co.th/, http://www.ghbhomecenter.com/). In addition, the government established other agencies i.e. the Ministry of Housing and Local Government in Malaysia, National Housing Authority in Thailand, and others that are responsible for the control and implementation of all components of housing, including design and planning, bidding, construction management, housing delivery and maintenance. All agencies cooperate in the housing development programs.

Indonesia case study - State-Owned Savings Bank (BTN)

The Indonesia government is preparing financial support to assist housing industry for producing more houses and assist low income households for owning or renting houses. The financial support consists of: (a) subsidies on advance payment, (b) subsidies on interest rate. (c) subsidies on credit insurance. They also subsidized construction credit for housing industry and low cost housing projects and they are

intended to reduce land certification and permitting costs. For low income households, the government budget will be focused on provisions of basic infrastructures including water and sanitation.

The KPR interest rate is one of subsidy loans for specific house-types of the Government of Indonesia housing policy. Only the long-term government support for housing came from the KPR interest-rate subsidy for moderate income households. Lenders receive subsidized liquidity credit from bank of Indonesia and the loan is fixed, below-market interest rates to qualified households. The interest rates charged to borrowers and the proportion of liquidity credit to lenders vary from the cost of units. Developers, public and private, seek qualifying customers to whom they pre-sell the houses. They receive the borrowers' mortgage finance directly from the bank and construct proto-type houses at the set prices. There will be no further appraisal conducted and real values of the houses are not assessed, posing a risk to the lender. From the developer standpoint, this system is, of course, highly profitable since no construction credit is required.

Additional incentives were provided for developers to increase housing production, for example, through issuing preferential development rights (location permit). Developers had been, however, required to build a mixture of house-types 1-3-6 rule (low, middle, high cost housing) for 30 years until the economic and financial crisis of 1997. However, the 1997 collapse was just the final straw for an uncontrollable economic inflation. This system had an increasingly negative impact on housing market and housing finance sector development.

Housing finance for Indonesia comprises three types (Ministry of Settlement and Regional Infrastructure, 2003) as follows:

a. Mainstream housing finance, which provides unsubsidized mortgage finance to high income households, with loans typically ranging from Rp. 100 to 300 million;
b. Moderate income housing finance, with loans of Rp.10 to 25 million. Currently, this is primarily limited to the low cost housing by KPR credit (KPR/RSS) subsidy system and a few smaller loans from regional banks and other banks;
c. Micro-finance for housing, a non-mortgage finance approach to housing credit characterized by small loans - for example, Rp.10 million or less -

used for incremental building, improvement and expansion, often associated with improving the housing to support income generation activities.

This research considers KPR credit for low income people who can afford housing. The KPR/RSS system applies to only a fraction of the eligible households. More importantly, the KPR/RSS system stifles the expansion of low cost housing and availability of housing finance for modest income households. The KPR/RS/RSS system should be replaced with a subsidy approach which encourages expansion of commercially-based mortgage lending. A number of these banks were noted to be unsuccessful or problematic. In any event, this type of lending by banks KPR/RSS programs other than BTN is now very limited. Despite the potential for cost of funds for these loans, there have apparently been frequent delays in receiving the requisite funds from the Ministry of Finance (Ministry of Settlement and Regional Infrastructure, 2003).

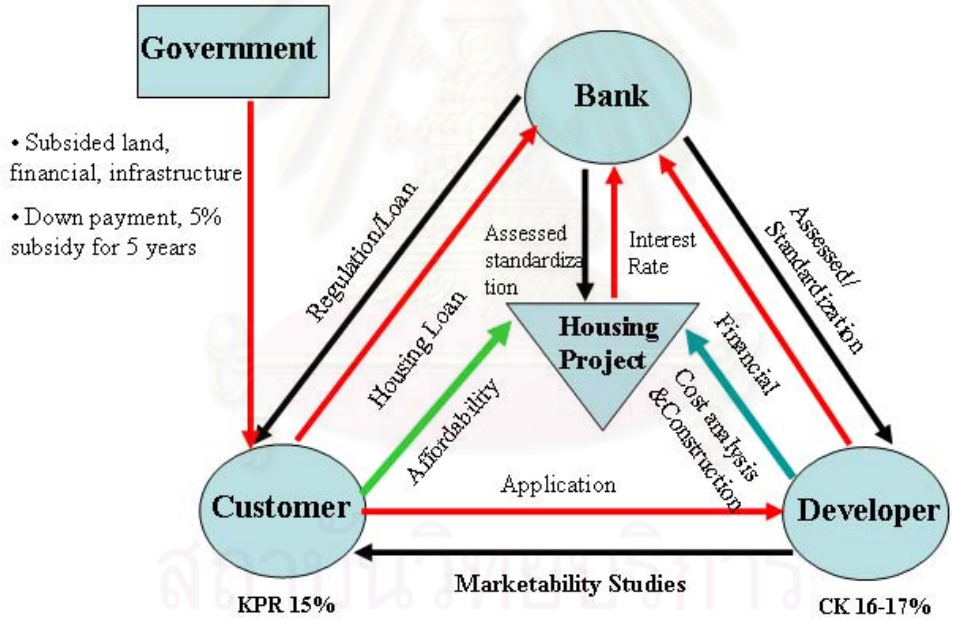


Figure 3.9 : Housing Finance System of Indonesia (KPR)

The large proportion of self-employed and family workers makes borrowing for housing through conventional KPR loans even more difficult. Also, an increased confidence in the future income may have a negative effect on the willingness of households to borrow for housing and may influence tenure choice. At the same time, the high labor force participation negatively affects possible direct self-help involvement by household members.

Laos case study – Ministry of Finance

Since 1975, with the purpose of increasing the housing stocks, a public housing policy was announced. A housing policy for government staffs was announced in Prime-Ministerial Decree 194/PM. Under this policy, public housing units are transferred to the concerned government staffs who are provided with long-term credit for house construction and new house construction. Each individual staff member receives a co-financing from the government (Patoumxay, 2003). The Ministry of Finance in Laos supported this project. Moreover, any banks in Laos are providing only short or mid term loans to urban property market, they do not have a financial system policy for housing development projects. (Lao Development Bank, 2003)

Malaysia case study – National Treasure and National Bank of Malaysia

In Malaysia, a housing loan scheme for the low income group is operated by the Ministry of Housing and Local Government (MHLG). This scheme, known as the housing loan Trust Fund For Lower Income Group, has employed a revolving fund system since 1976. This fund supports the building of houses on the land of those who are not eligible to secure a housing loan from banks and financing institutions. The loan has a 4% annual interest rate 5 to 20 years (Ministry of Housing and Local Government of Malaysia, 2002).

The agencies involved in the public low cost housing program (PLCHP) are the Federal Treasury, the Ministry of Housing and Local Government (MHLG) and the state government. The Federal Treasury provides subsidized loans to the state government through the MHLG. On the request of the state government, the Ministry of Housing and Local Government (MHLG) may offer technical advice and assistance to the state government in implementing the program through the National Housing Department and at the state level who might use their technical department.

The responsibilities of the state governments, who are the owners of the housing projects, are to identify state land or acquire alienated land for the project site, to select suitable building contractors for implementing project work monitored by the National Housing Department, to identify eligible buyers through the Computerized Open Registration System for the low cost housing built, to collect loan installments from the housing buyers, and to pay them back to the Federal Treasury and other financial institute.

The bridging finance for Public Low Cost Housing Project (PLCHP) is in the form of loan from federal government to state government. The Federal Treasury Loan carries a 4 % annual interest rate per annum over a payment period of 20 -25 years. In addition to the loan, each state is also provided with a revolving fund for initial expenditures on the program before the loan is disbursed. For any PLCHP project, the states have to sign a loan agreement with the Federal Treasury and they are responsible for the loan payments (Ministry of Housing and Local Government of Malaysia, 2002).

For the end, financing for the PLCHP unit does not involve loan transactions although each individual buyer has to sign a separate sale agreement with the respective state that charges buyer 5.5% annual interest rate on the actual purchase price of the housing. Both the land and the house become collateral for the loan to the state government (Ministry of Housing and Local Government of Malaysia, 2002).

Thailand case study – Government Housing Bank (GHB).

The Government Housing Bank of Thailand (GHB) has been operating for more than 50 years. It is a Thai government enterprise under the Ministry of Finance's jurisdiction. The Government Housing Bank has a primary objective of providing housing finance for the people of Thailand. The bank has special focus on providing residential financing for low-and-medium income borrowers. Currently, the GHB are undertaking and continuing many housing finance, and cooperating with NHA in housing loans for the government's low cost housing, the Baan Eur Ah-torn project. (National Housing Authority of Thailand (NHA), 2003, http://www.ghb.co.th, http://www.ghbhomecenter.com).

The Government Housing Bank is the main support for long term loans with low interest rates in this low cost housing project. This financial support, namely post-finance for the low income group, was implemented after pre-finance or down payment with NHA. They also help NHA in the analysis and classification of the buyers who can afford house. However, if the buyer fails to make the payment for 3 months, the bank will sell back the housing to NHA to look for a new buyer.

From the research, it can be seen that each individual government in the four countries tried to help their low income people to own a house through their own capacity with the minimum support from housing project, public utilities, and government financial budget.

The financial system of Indonesia, Malaysia and Thailand has become successful because of their financial system are strong and active mainstream banking sector. Both private and public banks are commercially oriented, with continuous competition for consumer finance and mortgage finance business, improving regulation, and supervision with consolidated supervisory, assuring improvement in efficiency by the formation of a well-developed group of organizations and institutions which support real estate functions overall, and the appraisal associations of an extensive network of regional banks, micro-finance institutions, credit unions, and rural banks.

However, they have some weaknesses. For example, housing finance is largely limited to high income households. Long term loan and low interest rate are the factors that help the low income people buy houses. Moreover, they still need more support from government in infrastructure, public utilities and facilities for the sustainability of the project.

3.5 Land Policy

The main objective of the land use policy in any country is to ensure that the land needed for urban and region development (either for public and private use) is available in the sufficient quantities, at the appropriate locations, for the appropriate tenure, at the right time and at the appropriate prices, having consideration for efficiency and equity in the allocation of the resources determined in urban and regional plans. The land use policy also incorporates a social benefit dimension.

In Southeast Asia, the main problem in housing development in the urban areas is usually the availability of land, the planning and regulation of housing development, but not the construction of housing. This is because in large urban areas, land are the expensive land would have effect on the increasing cost of the project. Most of the countries in this study have not effectively coordinated low cost housing with an adequate land policy. They need to support the land acquisition policy with appropriate land prices, land banking, taxation, land administration, land evaluation and town planning.

The success of public housing is possible through hard changes in law and practices relating to subdivision, ownership, and alienation of land. The

organizational means to implement statutes and policies are fragmented and uncoordinated.

A good housing system requires a reasonable and cheap price. There have been several recent positive changes to land administration regulations and practices and to the land titling system. Nevertheless, several important constraints remain affecting the efficient functioning of the land market for housing: the unnecessarily complex and costly titling of land, inappropriate regulations, severely constrained supply of land because of too many respective agencies and the permitting system, and the incomplete decentralization of land administration functions. There are several positive actions which make the housing market more efficient and require instructions for all steps in coordination: improving the efficiency in land titling, registration facilitating and the supply of land, improving the permitting process, and completion of the decentralization of land administration.

Land banking is another choice. The principle here is that the government, usually through special development authorities, purchases as many lands as possible at a time when prices are low. The land stored is controlled and regulated by the government and used for development programs in the future. Shortage of available land cannot be avoided in the big city that land prices are high. Land policies should be prepared for any development by keeping lands on land banking (Sephen, Yeh, and Laquian, 1979).

Indonesia case study – Land policy, law and regulation

The land supply is more constrained than the need, especially for low income housing. Holding land out of development is prohibited by the Indonesian law (Ministry of Settlement and Regional Infrastructure (III), 2003)

Under The National Board for Housing and Settlement Policy and Supervision, (BKP4N) government was forced to develop methodologies and provide assistance as required. Also they need the association of local governments to review land availabilities, especially of the new lower income housing. The key efficiency and affordability in the land and housing is land titling and registration, land supply and improving the permitting process. The main problem in any housing development program is the time taken to obtain lands permits, which can be reduced by limiting the number of members in the review committee that would help the housing

development project flow better (Ministry of Settlement and Regional Infrastructure (III), 2003).

In spite of the ineffectiveness of spatial planning, there was effort of National Land Agency (BPN) and National Coordinating Body for Spatial Planning (BKTRN) to reserve land for human settlement in order to maintain sustainable land use. In 1999, the law on local governance was replaced by a new one that gives greater authorities to the local government. In fact, there are many disputes between local, regional and national governments due to different interpretations on the new responsibilities of local government. The local government holds power and is responsible for looking for land location, providing lands for development projects, solving land conflicts and compensation, determining land values for taxation, managing absentee lands, solving communal land disputes, managing land development permits and planning the use of lands. While BPN was assigned for filing all data of state owned lands, providing cadastral maps showing accurate land rights, developing up to date information technology for filing, providing geographical information systems for land policy and national food security.

Laos case study – Land policy, law and regulation

The state is the owner of all lands on behalf of the Lao people. It grants legal ownership of land use rights to individual household. It is the strategy of the government to move towards the implementation of a land registration system and the issue of titles to all landholders. In its 1994-2000 Public Investment Program, the government of the Lao PDR made a commitment to develop a land-titling system. A land-titling project is in the process of surveying and assigning titles throughout Vientiane and other towns. Lack of formal land rights make people reluctant to invest in their houses and services (Urban Research Institute of Laos; 2000, United Nations, 2001; Vangkeomany, **interview**, 24 March 2004).

Once such system is established, clear land-use rights can be established: private investments are encouraged; credit markets can be developed; and the sale of land-use rights as well as taxes on land transactions can become a source of funds for the government. The major policy measures of the government outline in the implementation of the Habitat Agenda by UNDP (United Nations, 2001).

Malaysia case study – Land policy, law and regulations

There are various laws and regulations affecting the housing industry in Malaysia. There are the National Land Code, 1966; the state land rules; the Strata Titles Act, 1985; the Strata Titles regulation; the Housing Developers (Control and Licensing) Regulations, 1966; the Housing Developers (Control and Licensing) Regulations, 1989; the Housing Developers (Housing Development Account) Regulations , 1991; the Town and Control Planning Act, 1976; the Environmental Quality Act, 1974; the Land Acquisition Act, 1960; and other related land law (Ministry of Housing and Local Government of Malaysia, 2002).

In Malaysia, there is no law which required the government to provide housing accommodation except the section 3 (a) or (c) of the Land Acquisition Act 1960. This section is sometimes used by state economic development corporations to acquire land for housing development (Ministry of Housing and Local Government of Malaysia, 2002).

In the land system of Malaysia, land use is controlled by the land legislation and planning law of state. Two laws controlling land use in the Malaysia Peninsular are the National Land Code and the Town and Country Planning (Code/ Regulation/ Act). With the enforcement of the National Land Code in 1966 (Ministry of Housing and Local Government of Malaysia, 2002), all states come under a uniform land law. All alienated land in the states are held in under the Torrens System of land registration. The objectives of the Torrens System are to provide security and simplicity in all land transactions. The role of the federal government in land administration and resource management is very limited.

On alienation by the state authorities, the lands will be subjected to one of the categories of agriculture, building, and industry. The state may also alienate a piece of land without any category of land use as provided by the National Land Code.

The housing industry in Malaysia is protected by both housing legislation such as the Housing Development Act together with its regulations and various land laws which include the National Land Code, the Strata Titles Act and other related land laws. These protective measures enable the Malaysia housing industry to develop successfully in providing the public housing and the economic growth of Malaysia (Ministry of Housing and Local Government of Malaysia, 2002). Local authorities

may provide housing accommodations by the erection of houses on any land acquired or appropriated, or by acquiring houses.

The issue of Strata titles for high-rise buildings was already made in the National Land Code. The basic objective of the Strata Title Act 1985 is the issuance of a separated document of title known as a strata title to the individual owner in respect of his parcel in a subdivided building. This document specifies right and responsibility in the management and maintenance of the common properties for the benefits of all parcel ownerships.

There are several advantages of the Strata title such as the freedom of transfer, change, lease, lien and other dealings allowed by the National Land Code. The innovation of the Strata Title Act is the introduction of the concept of a provisional block (a high-rise building), it allows the developers to carry out the development of the project in different stages or phases, deciding whether to proceed with the next phase or not. This will save the developer losses or financial risks, and help in establishing the management funds. The states of Sabah and Sarawark have their own strata title from legislation as in appendix 4.

Thailand case study – Land policy, law and regulation

Available land, especially those in Bangkok, has been acquired for public use from several government agencies such as The Port Authority of Thailand, the State Railways of Thailand, the Ministry of Interior, The Ministry of Defense, the government and so on. They have their own land reserved for the future use in any development program. Some of the most important land resource problems come from land acquisition (Stephen, Yeh, and Laquian, 1979).

Rapid urbanization has caused several serious problems regarding public services. Uncontrolled rapid urbanization has adversely and costly affected Thai government. It is worthwhile for the government to manage and control urbanization growth by better land use and planning. Also the demands of the population growth rate in the capital city, Bangkok, require more land and housing units to solve the housing problem in the urban area.

The problems of land use and land titles in Bangkok under National Housing Authority's housing development program are the shortage in land use and the high prices of land in the capital city (Bangkok). NHA seeks available land and a good location for a low cost housing project – the land locating close to places of

employment, having infrastructure, public utilities and facilities and existing community services. Thai government has proper control methods though taxation and distribution of landed properties to control the prices of land, but they cannot control the prices of land owned by the private sector. The high prices of land are the main problem in housing development programs. There are 4 types of land for low cost housing projects such as NHA land, public agencies' land, private land and land sold with completed buildings in the stock market (NPA). Currently, NHA have a problem with land shortage and high land prices. The turnkey system is the solution implemented by developers.

While comparing land policies among the four countries, Laos does not have substantial one because land availabilities are still adequate in the capital city and the housing demands are of less significant number. However, part of problems resides with land acquisition. Low cost housing projects in Indonesia, Malaysia and Thailand experienced with hard issues related to land and location. These two critical factors may badly affect the feasibility of a project. Land price may increase the project cost and consequently will hamper the buying abilities of the low income people. Government intervention takes place where necessary by means of land provision and financial support, but not all issues can be resolved, such as transportation logistic which becomes a major burden for locations situated far away from the city. Moreover, delay in official approval for land acquisition and land use badly affected developers and those people who were waiting for new housing. There are some cases in Malaysia where it took 3 to 5 years to obtain approval. And on the top of these difficulties, official procedures and practices differ between central and local governments.

3.6 Infrastructure and public facilities.

In order to improve the quality of lives, the government provides housing, infrastructure facilities, public facilities, and greater opportunities to participate in income generating activities to support the affordability of housing units by the low income group.

For housing development programs to be successful and sustainable, the government has to supported infrastructures, public utilities and facilities for housing projects. It is very important to provide roads, bridges, drainages, water supplies,

electricity, telephones, public transportation, and community services. Moreover, all infrastructure needs participation from the buyers to maintain for use in the long term and saving operation and maintenance costs and their money. Government assists in the housing projects by establishing community organizations to manage the projects after the buyer's have occupied the housing units. The organization will be trained and transfer know-how management, operation and maintenance systems for strengthening of the communities.

In Indonesia, Laos, Malaysia and Thailand, all governments support infrastructures, public utilities and facilities depending on their budget, planning and conditions. The governments of Indonesia, Laos and Thailand are responsible for providing everything and they have problems with financial support that cause delays, increased costs and effects to buyers who use the utilities and facilities (Ministry of Settlement and Regional Infrastructure (IV), 2004; United Nations, 2001; Patoumxay, 2003; National housing Authority of Thailand, 2003). In Malaysia, the government provides infrastructures and the private sector, as developers, provide adequate community facilities for the maximum benefit of the low income group such as community centers, playgrounds, open spaces, public libraries, and landcapes to enhance the quality of the surrounding environment to be maintained for the benefits of future generations (Ministry of Housing and Local Government, Malaysia, 2002).

3.7 Summary

The success or failure in low cost housing project is affected from the government policies, strategies, planning and financial supports for low income people. Moreover, it needs coordination and clear responsibility among many Ministries, institutes, agencies and developers, professional services and etc for achieving the project success (Vangkeomany, **interview**, 24 March 2004; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). Low cost housing delivery system in those countries are similar in concept, but different in their housing policies, financial subsidies, housing designs, housing prices, technology in constructions, etc. Moreover, it is related to their country conditions, economy, resources capacities, affordability, government supports, etc. Their housing policies, have a common objective of providing low cost housing units for low income people who can afford by their own income with the government supports for financial,

infrastructures, public utilities and facilities, and so on. For project success and sustainability, it was required community participation in the project.

Housing administration is the project management provided by public sector, which is the most significant for project success. There are many stages in low cost housing process that should be considered. From the research, it was found that the advantages of low cost housing policy in the target countries were mentioned above. However, the weak points come from unclear housing policies, lack of financial support, land not available, expensive land quotation where many of them are without infrastructure.

There is a difference between the state enterprise and government office in implementing low cost housing project. The enterprise has more power, incentives in financial capacities, professional staffs, effective methods, and coordination in project implementation than government office. In government office, there are a lot of offices involved and a lot of steps for giving approvals, delay in financial supports, lack of human resources and specialists in housing construction, etc. However, the enterprise also has problem in project implementation such as the large amount of housing need, their capacities to supply house units, financial budgets, need for more fund, delays of the projects that increase the holding cost, risk, etc.

Housing finance policy is the key to make the housing development successful. On the other hand, the contributions to project failure were: lack of financial support, high interest rate, and the affordability of target group to return money. Land locations and prices of the land increase housing project prices and make low cost housing project infeasible. Governments are always concerned and attempt to solve these problems by giving land, issuing laws and regulations for land and housing development that would reduce project cost. All low cost housing projects are in the capital city and urban area where land prices are very high and their government faced with land shortage. If the land is located in suburban or the place far from existing infrastructures, and community facilities, employment opportunities, etc., these lands need more financial supports for land improvement, maintaining existing facilities systems and new construction infrastructures, etc..

CHAPTER IV
COMPARATIVE LOW COST HOUSING PROCESS ANALYSIS

The research objectives are to perfor m comparative study of low cost housing process, to identify and to analyze problem s and constraints in each country, and the critical success factors of the process in order to implement a low cost housing project to a fruitful com pletion. From the vast experiences of Indonesia, Malaysia and Thailand over the past 30 years, experiences gave significant success factors for each stage. These should be considered to avoi d the same mistakes during implementation and to have a better prepar ation for the low cost housing projects. T he low cos t housing processes in the f our countries are complicat ed and required cooperation between Ministries, offices, institutions, agencies, developers and communities. The implementation is different from country to country, but the basi c process is alm ost the same.

From the research works of the low co st housing program s, the implementation process is divided into 9 stages includi ng policy, land acquisition, feasibility study, financing, design and planning, bidding, construction, delive ry, and m aintenance. In this chapter, low cost housing projects are studied in three phases as pre-construction, construction and post-construction. Firstl y, the pre-constructi on phase include the policy determ ining, land acquisition, and fi nancial stages. In this phase, the government is responsible for preparing housing policy, financing policy and land policy, preparing laws and re gulations, supporting infrastruc tures and pub lic utilities and facilities, etc. Seco ndly, the construction phase includes the stages of feasibility study, design and planning, bidding, and c onstruction. They are conducted by the Ministries, offices, institutions agencies, developers, and contra ctors. Finally, the post-construction phase is the stage of delivery and m aintenance, which is th e responsibility of financial institutions, buyers and communities.

4.1 Feasibility study

In the four countries, the housing policie s are issued by the national policy of each country. The objective is to provide housing for low-incom e people and to so lve

housing problems for the benefits of the society. In a low cost housing project, there are three components: government, developers and target group. Moreover, their objectives for housing development were different. The government aims to help low income people, to solve housing problem in the city and to improve quality of life by giving policies and finance for housing development programs, support of utilities and facilities. On the other hand, developers are the suppliers who provide house units follow policies, their objectives are to get more profit and to save their funding. Targeted group consist of the low income people who cannot afford housing units by their own saving.

Feasibility study is a very important phase before starting to propose a project. The feasibility study is done by conducting a study of the benefit aspects of the project, impacts to the society, economic and environment, and preparation of initial budget. A feasibility study may include physical consideration such as geographical aspect, habit, culture, traditional, social and economic, household income, etc. (Ler, 1989; National Housing Authority of Thailand, 2003).

The feasibility study includes the preliminary design of each activity that the cost and benefit ratio may be calculated. This also includes the economic analysis of the project as the basis for decision-making by the government to carry out development projects. The feasibility study will also cover all stages of low cost housing project such as the responsible organization of the Ministries, offices and institutions, system and regulations, human resources, research studies capacity of each country's resources such as land, material, labors, construction technique required (National housing Authority of Thailand, 2003; Ler, 1989; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005).

The government of Malaysia, Indonesia, and Thailand have conducted the feasibility studies after a housing policy was issued; the first low cost housing project is usually a pilot project. This pilot project's aims are to experiment, monitor, evaluate of the design and planning, and to use this experience for the next projects (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). Feasibility study in Laos is poor and limited; the Environment Impact Assessment was not considered seriously (United Nations, 2001; Patoumxay, 2003; Oulachanh, **interview**, 24 March 2004; Vangkeomany, **interview**, 24 March 2004). The feasibility study normally consists of financial analysis. But in the project under the government policy, budget support and times was limited. These have negative impacts on the

success of the projects (Karukose, **interview**, 14 May 2004; Argyantoro, **interview**, 6 September 2004; Bin Mat Seek, **interview**, 21 February 2005).

Currently, the targeted countries have Ministries, offices and agencies which are responsible to give the permission and to concern on environment impact assessment (Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003; Karukose, **interview**, 14 May 2004; Argyantoro, **interview**, 6 September 2004; Bin Mat Seek, **interview**, 21 February 2005). All construction project are required to do feasibility studies that include the environment impact assessment. Environment Impact Assessment became a problem for project approval as in Thailand. If a low cost housing project does not pass an Environment Impact Assessment (EIA), the project would be unfeasible (Karukose, **interview**, 14 May 2004). The project cannot start and the delay will affect the project cost and project success.

Some low cost housing projects did not pass the EIA because of a number of reasons such as poor project's layout plan, various society and environment problems tending to occur from the project, poor location, employment, poor infrastructures, and public utilities and facilities. In Thailand, drainage design become the main problem that should be considered and should follow the standard of urban development plan and regulation. Moreover, they have to redesign, adjust the planning layout and all utility and facility services, etc. and give the explanation to the approval authorities (Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003; Karukose, **interview**, 14 May 2004; Argyantoro, **interview**, 6 September 2004; Bin Mat Seek, **interview**, 21 February 2005).

In Laos, socio-economic and environment impact assessment were not undertaken, because the project came from the government policy. Currently, any development project in Laos required a feasibility study in socio-economic and EIA.

Malaysia (developer), and Thailand (NHA and developer) feasibility studies were selected for discussion, details are as follow:

Malaysia case study – Feasibility study on low cost housing project by Developer

As seen in Appendix.6, a feasibility study on 30 Percent Low Cost Housing Policy in Malaysia was performed by developers in 1982 (Ler, 1989; Ministry of Housing and Local Government of Malaysia, 2002). Developers who are interested in

low cost housing project have to prepare proposal about how to sell their projects. There are various stages such as preliminary survey, plan preparation, application, and implementation.

From preliminary stage, developers have to apply for land acquisition and approval for land development. Next, in planning preparation stage, developer prepares site and layout plan, drainage design and section plan and submit all with land acquisition application for the conversion and subdivision approval. After he gets the approval, in the application stage, developer designs, preparing the building plan, land survey. For the engineering work, some developers lack staffs and they use the professional service in their project to save money and time as well as guarantee their required quality. On the other hand, developers need to apply developer license to implement the low cost housing project from the public sector who responsible for housing development. In the implementation stage, developer organizations consist of the project planning division, contract administration division, finance and control division, sales administration division, etc.

Thailand case study - Feasibility of low cost housing project

The low cost housing projects in Thailand, there are two types: low cost housing project by NHA (NHA's land or buying land), and turn key project by developers. Now, NHA faces with the problem of the land unavailability and the high price of lands that are affecting the housing development projects (National housing Authority of Thailand, 2003). In feasibility study, there are several levels, e.g. a big scale housing development project which was considered in land location, urban planning, development strategy, social-economic, environment impact, employment, infrastructure, public utilities and facilities, community participant, etc. For low cost housing project, it a big scale supported by the government policy. Project location is on the vacant land in urban and suburban areas.

Feasibility study in the NHA low cost housing implementation is shown as follows:

- Housing projects are constructed on NHA's land acquisition or the land bought from private sector. The criteria of land selection are the distances to the main road or the road pass that land, and new public transportation. Also, the land has to be big enough to accommodate the housing development project such as housing units, open spaces, community services and so on. NHA committee will

consider and perform the site investigation on that land, estimate the price, negotiate with the land owner and execute a contract.

- Survey, topography, planning layout should be included with all community services, the number of housing design in land area follows the regulation of 50 units for 1 Rai for flats, 12 unit for 1 Rai for single house, household design density are 3.5 to 4 persons for one unit. (1 Rai=1,600 Sq.m)
- Estimating of the price and cost of low cost housing project as follows: land price, land development price, base costs including house units cost, all community services and facilities such as open space, landscape, parking, etc, overhead and operation cost, construction interest rate, contingency (Budget and Implementing).

The total amount of the estimated cost described above will be used in calculating unit cost of the number of houses. From all information, NHA will consider the feasibility of this low cost housing project. If this project is infeasible, NHA will reconsider the land price or look for another land, reduce other price, and the housing design and other community services, and etc. In order to guarantee the selling of project, NHA will open the pre-sale of house units to those who are interested in this project, and the buyers need to register and deposit money to reserve the housing unit.

Feasibility study in the turn-key low cost housing (by Developers)

These low cost housing projects implemented by developers who have funds and abilities for big scale housing construction project. The process is described below:

- NHA will announce to the developers, who are interested in buying low cost housing project under NHA's regulations, the job description, condition/criteria, design standards and specifications, controlled house unit price and duration. In addition, NHA will control the construction process as a construction supervisor, etc. Developers will propose the master's plan, project detail design and housing unit price to NHA.
- After developers submit the low cost housing project proposal, NHA will consider the bids by breaking down and checking all prices and select a developer who can supply for this project. Developer who passed the consideration of NHA will make Memo of Understanding (MOU) with NHA

to guarantee that he agrees to sale housing project to NHA. Then, NHA wil l open pre-sale for housing dem and on pr omoting the developer's low cost housing project. If there ar e a lot of interested buye rs, the project would be feasible to u ndertake. If pre-sale does not pass, this projec t will be canc elled. All cost of the procedures by the developer.

- For the housing project i mplementation, NHA controls the prices, qualities and times. Before starting the project, developer will get 50% of land price for their first implementation project and will get the rem aining when the projec t is completed.

4.1.1 Housing need and affordability

Housing need is the most im portant fact or to determ ine the exact nu mber of housing units, the target group and other info rmation such as household, fa mily size, density, occupation, m onthly incom e, expe nditure, saving and so on. Housing need can determine the number of houses by estim ating or forecasting from statistical data, by field surveys, or by the legislation and so on. In addition, it depends on the condition and situation of their countries as well. From housing need, information will be used for design, planning, cost estimation and etc.

The procedures of feasibility studies in housing projects, in Indonesia, Malaysia and Thailand are nearly the sam e. The low incom e people who need house register and reserv e houses, then the governm ent builds acco rding to the requirem ent. Indonesia determ ined the num ber of housing units based on the estim ation of t he population growth rate, and stat istical data related to th e num ber of the people and household who need houses (M inistry of Set tlement and Regional Inf rastructure (II), 2003).

In Laos, housing developm ent is under th e responsibility of public sector, it needs the supports from the government by given policies, assistance, and planning for im proving quality of life and developing their country. For th e last project for pensioners, the government has the list of the pensioners (Patoum xay, 2003). On the other hand, from statistical report, they al so have the list of people who need house countrywide that will b e used for housing design for the next projects (National Statistic Center of Laos, 2002).

Malaysia has a good advantage because they are using an online registration system, nam ely "a National Computerized System". It was set up to im prove the transparency and accountability of the allocation of low-cost units in bo th private and

public developments. A pre-registration of eligible buyers is suggested in order to allow the government to monitor the sales of low-cost houses. However, the system did not keep up to dated to identify eligible buyers and at the same time, there are some errors. Buyers who have already owned their houses are sometime selected. (Ministry of Housing and Local Government of Malaysia, 2002; Ong and Lenard, 2002).

In Thailand, the number of the housing need is from the list of "Poor People Registration". From past experience, an opened pre-sale for assessing the exact number of housing units to be built, the targeted group has to reserve the house units. After that, there are several low cost housing projects in different locations that the buyers prefer to buy, it was a mismatch between the demand and the supply. To avoid such problem, interested people have to make a down payment to reserve their housing units.

Affordability is one factor to determine and classify the monthly income level of low, middle, and high income. It will find by statistical data and survey.

4.1.2 Land planning, location and ground condition.

Land is the most critical factor of the project success in term of customer satisfaction and the economics of the project. Land investigation includes location, pricing, ground condition, disaster, flood area, distance from existing community services, infrastructure, utilities and facilities, employment opportunities, public transportation, etc. Urban planning and management are the most important to reduce the number of slums and squatters in the city by having a good urban planning, clearing in housing development zone, etc (Karukose, interview, 14 May 2004; Argyantoro, interview, 6 September 2004; Bin Mat Seek, interview, 21 February 2005).

As discussed in chapter III on land policy, land acquisition would be the main problem for housing development program. Land will be owned by government, states, people, squatter people, private sector, etc. Land system, law and registration of land titles and land administration are the authorities of the central government and state governments for controlling land use planning, land tenures, land conversion, etc. Land prices in the city will be high and not available for low cost housing projects and have effect on the project feasibility. In Indonesia, Malaysia and Thailand, the governments have problems with land shortage. In the urban area such as the big cities like Jakarta, Kuala Lumpur and Bangkok, land acquisition is a problem for

public housing projects. Their governments try to support by providing land, but the land are sometimes far from the city, lack of infrastructure, public utilities and facilities that would need a big financial support for construction of new infrastructure and all utilities and facilities, etc.

The private sectors who owned the land in Indonesia, Malaysia and Thailand, used to build a more profitable commercial buildings, but they got a small profit from a housing development program. Indonesia with a large population growth rate adopted single houses or flats that need more land space. Land/space is the problem of cities like Jakarta, Kuala Lumpur and Bangkok (Ministry of Settlement and Regional Infrastructure (II, III), 2003; Nurahma, **interview**, 08 September 2004).

In Thailand, the government own lands and land tenure, which are then given to NHA for housing development programs. Now they have problems with land shortage and price of the lands in the city and urban areas that make a low cost housing project unfeasible (Karukose, **interview**, 14 May 2004). They called for developers who owned land to joint in the project.

Land availability and land price issues make many proposed low cost housing projects infeasible (Ministry of Settlement and Regional Infrastructure (III, IV), 2003; National housing Authority of Thailand, 2003; Ministry of Housing and Local Government of Malaysia, 2002; Argyantoro, **interview**, 6 September 2004; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). The governments try to solve this problem by providing lands and they also tried to adjust and redesign housing units, use local materials, traditional labour skills, etc., to reduce project cost to cover facilities within the limited budget. In addition, they proposed new housing model for flat and high-rise building, and use prefabrication technique to cope with land problems and also reduce operation and fixed cost (Ministry of Housing and Local Government of Malaysia, 2002; Bin Mat Seek, **interview**, 21 February 2005).

Ground condition is one of the problems that affect the project cost. Investigation is needed during the feasibility study phase to avoid any problem and cost escalation and to enhance the success of the project. In Malaysia and Thailand, the land allocation for housing project always had problems with the ground condition (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). For the first investigation and feasibility study, they were not properly conducted the soil testing of ground condition. A bad ground condition will increase the project cost

because they have to do a groun d im provement and m ight need to ad just the foundations to support the building.

On the other hand, land location should avoid the problem mentioned above and also the flood lands, disaster zones, etc. Indonesia has a num ber of islands surrounding by the seas, their ground conditions and some times in trouble, as well as the problem of disasters and earthquakes (Ministry of Settlem ent and Regional Infrastructure (IV), 2004; Argyantoro, **interview**, 6 Septem ber 2004; Nurahm a, **interview**, 08 Septem ber 2004). Laos does not ha ve problem with ground condition and the land nearby the city are available, except the land are in the city of Vientiane, where the land prices are expensive, and generally owned by people or private sectors (Patoumxay, 2003; Oulachanh, **interview**, 24 March 2004; Vangkeomany, **interview**, 24 March 2004).

4.1.3 Land acquisition, land law and regulation

In Indonesia, Malaysia and Thailand, Th ere are land laws and regulations, and urban planning to control and m anage la nds and housing for urban developm ent. Some laws and regulations are so old and not flexible for some current situations. For example, in the capital city, the lands are expensive and some regulations are so strict that make the projects infeasible. (Karukose, **interview**, 14 May 2004; Argyantoro, **interview**, 6 Septem ber 2004; Bin Mat Seek, **interview**, 21 February 2005; Ministry of Housing and Local Governm ent of Mala ysia, 2002). Especially in Malaysia, the government are strengthening the laws and regulations, and the lands are owned by state governments. For a developer who want s to use land in housing developm ent, it takes at least 3 to 5 years for the approval which delays and increases the holding cost of project (Ministry of Housing and Local Government of Malaysia, 2002; Ong and Lenard, 2002).

In Thailand, there are urban planning and regulations for land developm ent zones, which are classified by the colors on the urban planning map. For example, the housing developm ent is yellow color zone. The urban regulations specifies m ore clearly for the housing development, the height, area, green area, and etc.

Housing laws, regulations, and urban planning regulations exist in Laos. However, these rules are not taken in to act ion, and they have used some regulations but not so astrictive. Currently, they are preparing for new regulations which are more effective by reviewing the old regulations (Patoum xay, 2003; Vangkeom any, **interview**, 24 March 2004). On other hand, they have edited and issued new law and

regulations of urban planning for land and housing (Ministry of Communication, Transportation, Post and Construction, 1992; Urban Research Institute of Laos, 2000).

In Laos, the government lack of information of housing development, income distribution to classify levels of income for setting target group. Other problems are inaccurate housing data, lack of database, poor data collection, and storage system. All information is needed for planning and estimating of housing development in the near future. On the other hand, they lack budgets to support and lack human resource and specialists in the field of data collection, planning and design for housing development.

4.1.4 Social economic, and Environment Impact Assignment

The housing sector plays an important role not only in the area of economic development of a country but also in social areas. For successful and sustainable low cost housing project, every developing country government is concerned with social and community as a basic of the sustainable projects and gives the responsibility of community management to local government and target group community (Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003; National housing Authority of Thailand, 2003; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005; Argyantoro, **interview**, 6 September 2004). Their government attempts to support the sustainable housing development projects community, cultural and environmental need by providing training, knowledge in community management and development (Ministry of Housing and Local Government of Malaysia, 2002; Ong and Lenard, 2002; National housing Authority of Thailand, 2003; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005).

Nowadays, government is concerned with environment issues. It is one of the significant factors that people's need should be considered and protected. There are many Ministries, offices and institutes which deal with consideration, analysis, and approval for housing development program, especially for low cost housing projects. In Indonesia, there are Ministry of Public Works, State Ministry of the Environment in Jakarta and other agencies. Laos has Ministry of Communication, Transport, Post and Construction and Urban Planning Institute, Science, Technology and Environment Office, etc. In addition, Malaysia has Ministry of Housing and Local Government of Malaysia, Local government department, Environment department and others. Finally, Thailand has Ministry of Science and Environment.

Environmental Impact Assessment (EIA) is a part of a preliminary feasibility study and project planning. It is conducted to identify and evaluate important environmental consequences and social factors associated with project design and operations. This assessment is not accepted and approved by the Ministries or Institutes responsible for this matter. Project would be infeasible and delayed in approval because of the requirement of further details, and layout plan adjustment for effectiveness and acceptable (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005).

4.1.5 Infrastructure, public facilities, and community service.

In Indonesia, Malaysia and Thailand, low cost housing projects were constructed in the capital cities such as Jakarta, Kuala Lumpur and Bangkok. These projects were planned and selected location close to infrastructures, public utilities and facilities and community service; for convenience and reduced project cost and government budget for support it. However, some projects were constructed in new cities far from existing of all facilities that required the government and agencies to provide new infrastructure, public utilities and facilities and community services and increased project cost. Because the budget is limited, housing units have to be redesigned in order to adjust the cost to cover on this matter (National Housing Authority of Thailand, 2003 and Ministry of Housing and Local Government of Malaysia, 2002; Ministry of Settlement and Regional Infrastructure (I), (II), (III), 2003).

Moreover, there are some problems: delays of providing all utilities and facilities from offices and agencies who are responsible to support infrastructures, public utilities and facilities and community services, their task is not especially for this project. They have infrastructures on their Master's plan. Their problem was the budget to support on this matter (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). The projects need the corporation from many Ministries, offices, and institutes by pushing infrastructure planning and public utilities and facilities before the planning process that will help to sell housing units and attach the low income people to buy housing units.

Previously, in Indonesia the population density and migration rate are not so high in the big city like Jakarta. The lands are still available and close to all infrastructure and facility service. The Government could provide financial support for improving and maintaining existing infrastructure (Fashridjal, 1997; National

Urban Development Corporation (I), 1989). Currently, Jakarta is so crowded and has high population density that there is housing shortage in the city and many problems will occur from high density and health problems, etc (Ministry of Settlement and Regional Infrastructure (II, IV), 2003).

For Laos, the low cost housing projects are located in suburban area given by government. There are some parts of projects close to main road, and facilities, but for other parts, they were poor in planning, feasibility study, infrastructure design and support, poor in public utilities and facilities and community services. Moreover, the government lacks financial support, which is the main problems of unsuccessful project (Patoumxay, 2003; Oulachanh, **interview**, 24 March 2004; Vangkeomany, **interview**, 24 March 2004).

So far, Malaysian government is very strong in economic and resource capacity, they are always concerned with infrastructures, public utilities and facilities by supporting the operation and maintenance cost. The advantage of Malaysia is the good policy and planning for housing development. Low cost housing development projects are implemented by private sector or developers. The private sector that get low cost housing have to follow the regulations and is under the supervision of government as National Housing Department to provide infrastructures, public utilities and facilities in housing projects. Moreover, for the sustainable low cost housing projects, government needs participation from local government and community in that project area for monitoring and management on this matter (Ministry of Housing and Local Government of Malaysia, 2002; Ong and Lenard, 2002; Bin Mat Seek, **interview**, 21 February 2005).

In Thailand, the government is concerned and tries to solve housing problems through NHA as a key of implementing projects. In the past, government has support for housing improvement by support lands and long term loans with low interest rates but higher rate than that of Baan Eur Ah-torn Project which is implementing now. Only in this project that government provided subsidies for the cost of public utilities development for each unit of housing 1,900 US$ and for the cost of central public facilities of each project (National housing Authority of Thailand, 2003). Infrastructures, public transportation, and other public facilities are under another Ministries, institutes and agencies. They follow their master's planning and budget, but the financial support was delay to the low cost housing project. NHA attempted to solve these problems, but it needs big amount of budget that they cannot afford all

projects. Their solution is to redesign, adjust housing to cover utilities and facilities as well to save their maintenance budget (National Housing Authority of Thailand; The Japan International Cooperation Agency, 1997; Karukose, **interview**, 14 May 2004).

Since 1996, urban infrastructure development projects and programs in Lao PDR have been significantly increased in terms of numbers and areas of coverages. Laos' national policy has prioritized infrastructures and facilities improvement. They lack financing support and they have to borrow from international banks and the local funds. The government also launched road construction projects. There are other problems such as insufficient transportation, public facilities, solid waste collection, drainage and sewerage problems, and a poor road networks (United Nations, 2001; Patoumxay, 2003; Vangkeomany, **interview**, 24 March 2004)

4.1.6 Community Management

The public housing which is one of several low cost housing projects in the developing countries, provides houses to the target group such as low income people. The advantage of low cost housing in Indonesia is that they have housing projects by the group of communities. The Government of Indonesia has adopted a community-based housing strategy to allow a low income household who has no access to the institutional housing finance to acquire affordable houses (Ong and Lenard, 2002). Project implementation involves community participation, income-generating activities and the creation of community based management organization. Nearly forty community-based organizations have been formed in more than twelve cities and villages in Indonesia. The progress was severely affected by the regional financial crisis but a decade of experience can provide a foundation for the provision of affordable and sustainable housing in Indonesia (Ong and Lenard, 2002).

Thailand also have low cost housing projects provided by the community corporation fund and manage project by their own under the supervisor of NHA (Panisapak and Susan, 2003).

After the completion of low cost housing projects in Indonesia, Malaysia and Thailand, their main focus is local government and community in participation and management for sustainable of project. The government has prepared and planned to give responsibility on housing management to the community. Moreover, the government provide training and workshop for community management and sustainable of project and have community office control and management by monitoring and evaluation until they can manage by themselves (Ministry of Housing

and Local Governm ent of Malaysia, 2002; National Housing Authority of Thailand, 2003; Ministry of Settlem ent and Regional Infrastructure (II), (III), 2003; Ong and Lenard, 2002).

For Laos, the governm ent did not have policy and plan for community management, there has been only one low cost housing project in Laos for the pensioners' staffs. They lack of experi ence in m ass housing project and comm unity participation that would be affected to the sustainable of project.

Malaysia, as m entioned above, pla nned and designed for community management in the public housing to m anage and monitor community facilities. They also have offices for community staffs w ho are responsible for m anaging the project, which are under the supervision of the state or local government (Ministry of Housing and Local Government of Malaysia, 2002). The committee itself is in voluntary basis, which involves various field of professi onals, form s a community organization to manage and maintain the housing area. The community needs the necessary technical and planning skills and techniqu es enabling th em to im plement acceptable solu tions to provid e affordable housing. It is neces sary to strength en a sense of collectiv e community ownership and responsibility fo r the im plementation of sustainable low cost housing strategies and programmes (Ong and Lenard, 2002).

In Thailand , there is an operatio n guideline on community m anagement (National Housing Authority of Thailand, 2003; Karukose, **interview**, 14 May 2004). NHA m anaged and controlled project durin g the first f ive years. NHA for med organization and trainings in community management for strengthening community to achieve a good living and sustainability for communities (National Housing Authority of Thailand, 2003).

4.2 Housing Finance

Finance, an essential factor to any hous ing program, is in short supply in m ost developing countries (Minis try of Settlem ent and Regio nal Infrastru cture (III, IV), 2003; United Nations, 2001; Patoumxay, 2003; Vangkeomany, **interview**, 24 March 2004). Housing is one program of various national priorities that com petes for government funding. Housing is expensive and requires large investm ent and long-term comm itment from those countries. Hous ing finance is the core of the low cost housing process. Finance provides the flow and smooth running of the whole process. If there is insufficient financial support, then the process will be stopped.

The sources of housing finance are from the governm ent budget, allocated through budget process, and household savings, both form al and inform al. Mainstream financial institutions are withdrawing from providing financial services to people who are suffering from irregular employment and who do not have good credit guarantee (Minis try of Settlem ent and Regional Infrastructure (III), 2003; Lao Development Bank, 2003; Salleh and Choong, 2002; Ministry of Housing and Local Government of Malaysia, 2002; Ong, and Lenard, 2002; National housing Authority of Thailand, 2003). Fin ancial ins titutions, both nation al an d regional, will prov ide finance for the low-income community by their regulation and system.

4.2.1 Housing bank and financial institutions

Regarding the organization of housi ng finance for housing developm ent program in the developing countries, the gove rnments have separated housing finance agencies to im plement and support to low income group. I n the four countries, there are BTN of Indonesia, National Bank of Mala ysia, Ministry of Finance of Laos, and Government Housing Bank (GBH) of Thailand. The governm ent supports people by providing money for infrastructures, public ut ilities, down paym ents or guarantees to the banks, and so on. Housing banks and financ ial institutes are responsible to offer long term loans, low interest rates, and collect m oney from buyers and they need guarantees from governm ent for low incom e group. The implem entation of those finance institutes and agencies in each c ountry was not similar to that discussed in chapter III.

In Laos, the project was supported by the Ministry of Finance and the National Treasure of Laos. Unfortunately, the government did not pay by cash during that time, they were paid by credit that depended on the progress of work and the paym ent was delayed; otherwise developer could finish within 2 years. For pensioned people to buy the house, they had to sign a contract a nd pay down paym ent 10% of housing price, and pay 5% per m onth of their governm ent sa laries to Ministry of finance of Laos without interest rate. Almost pensioners cannot afford to pay, which discontinue the project for pensioned people (United Nations, 2001; Patoumxay, 2003).

Malaysia governm ent has a clear housi ng policy and strategy for target group. Also, there are strong in econom ic, financial support, clear in laws and regulations on housing developm ent. The fina nce institutes have implem ented policies and guidelines as well as strategies to create a viable housing system . On the other hand, the buyers who got a house unit are not the target group, because som e target groups

cannot afford and pass the qualification of financial institutes to get loans (Ministry of Housing and Local Government of Malaysia, 2002; Ong and Lenard, 2002).

The financial system in developing countries have problem with long-term loan, mortgage, interest rate etc. There is only one way to solve housing finance problem, it requires a housing finance policy which is subsidized from governm ent. Government's subsides and respective in terest rate is show n in Table 4.1, 4.2, 4.3, 4.4, 4.5.

Table 4.1 Government Subsidy for Low Cost Housing Project

Description	Indonesia	Malaysia	Thailand	Laos
Government policy	(As table below)	95% (Borrowed)	2,100	Down payment 10%, monthly payment 5% of pensioner's salary
Interest rate (%)	(As table below)	9%	10-15%	None
Duration (Years)	(As table below)	25	30	No limit depend on housing types
Infrastructures, utilities and facilities (US$/Project)	*	*	14,000 - 26,000	*

(Source: Patoumxay, 2003; National Housing Authority of Thailand, 2003; Ong and Lenard, 2002) Remark: * Not available

Table 4.2 The KPR Subsidy of Indonesia

Target group	Income (US$/month)	Interest rate payment subsidy			Down payment subsidy		
		Maximum (%)	KPR (US$)	Maximum duration (Years)	Maximum (%)	KPR (US$)	Maximum duration (Years)
I	90<X<150	15	3,060	20	22.5	2,790	20
II	50<X<90	10	2,250	20	27.5	1,812.5	20
III	35<X<50	10	1,260	20	35.0	910	20

(Source: Ministry of Settlement and Regional Infrastructure (III), 2003)

Table 4.3 The Interest Rate Subsidy of Indonesia

Target group	Subsidy interest rate (%/year)										
	Year										
	1	2	3	4	5	6	7	8	9	10	11
I	10	12	13.5	14.5	@	@	@	@	@	@	@
II	8	10	11.5	13.5	14	14.5	@	@	@	@	@
III	6	7	8	9	10	11	12	13.5	14	14.5	@

Remark: @ base on interest rate on the market

(Source: Ministry of Settlement and Regional Infrastructure (III), 2003)

Table 4.4: The Interest Rate of Lao P.D.R.

Type of loan	Interest rate (%)			
Currency	Short term	Mid-term	Long term	Special
Baht	6.5	7	7.5	10
US$	6	7	8	11

(Source: Lao Development Bank, July 2003).

In Thailand, housing is the biggest investm ent for low incom e people who have limited financing resource. This is the government policy to support low income people by instructing Government Housing Bank, Government Saving Bank and other banks as the m ain finance institutes to support the low incom e group to purchase houses. Financing can be divi ded into pre-financing and post financing. Pre-financing is the f inance in cons truction phas e until completion project. P re-financing is the source of funds for developers to implem ent projects. In this project, pre-financing is supported by NHA bud get, after contract signing between NHA a nd developer, NHA will pay 50% the price of land to d eveloper and will p ay all when pro ject completed. Post-financing is for purchase of house by the target group with long term and l ow interest rate. During the construction phase , buyers have to pay 300 baht per m onth for down pa yment after they won the house to make sure the real buyers have ability to pay, the interest rate as show in Table 4.5.

Table 4.5: Down Payment and Payment Rate during 30 years of Baan Eua-Athhorn

Description	House area (m^2)	Price (unit/Baht)	Down payment (Baht)	Central service	Year 1-3	Year 4-5	Year 28
Flat	24	250,000	2,400	200	1,000	1,250	2,100
Flat	33	390,000	3,600	300	1,500	2,000	3,100
Single house (Including land)	41.1	390,000	3,600	300	1,500	2,000	3,100

Remark: Currency 1 US$ = 38 Baht

Buyers have contracts with Government Saving Bank or National Saving Bank with interest rates of: (1) year 1-3: interest rate 4% per year, (2) year 4-5: interest rate 5% per year, (3) after year 6: interest rate 6.25% per year. Moreover, land price is 12,000 baht (300 US$) and they have to pay for public service with land price, they are 300 baht per month (after 5 year of NHA operation).

Indonesia case study – Finance implementation

In Indonesia, sources of funds for the low cost housing projects are from two groups as below:

i. Funds from the people will be div ided in to two types such as:(i) m onthly incomes, life insu rances, social insu rances and pension funds and (ii) f rom the banks with interests.
ii. Funds from the governm ent from the national governm ent sources (state assets, state enterprise, central and provincial) and funds from fore ign sources (loans, donors, investors).

Housing financial in Indonesia is under performing. Also, housing investment is low. For observation, the GDP of I ndonesia is small with a huge population growth rate. Housing is not in the high priority. They have pol icies for other developm ent programs that are m ore im portant and m ore urgent than housing developm ent. Housing is an im portant part of econom ic sector. It contributes to the job creation, expansion of the financial system and creates household income or wealth.

In the past housing subsidy program s are both KPR interest rate subsidies and local level and community-oriented subsidy programs as shown in Table 4.2. and 4.3, the KPR interest rate subsidies were proved to be too expensive when their costs

could not be hidden through soft loans by Bank of Indonesia and the Ministry of Finance had to carry them on the national budget. Local level subsidies were much more affordable and served low-income household need. None of these programs received long-term budget support. The housing programs require flexible and varied subsidy approaches, a combination of technical assistance, capacity building and investment support. Finance in Indonesia is expensive because of macro-economic conditions and industry inefficiencies and unsustainable. Lenders do not extend moderate income lending (Marja and Iskandar, 2001; Ong and Lenard, 2002).

Laos case study – Finance implementation

In Laos, according to the last project implementation, it was different from Thailand and other countries. It was a small project of 170 housing units but took time over 5 years. The project started from the Prime-Ministerial issued Decree 194/PM promulgated a housing policy for government staffs. Under this policy, public housing was transferred to the respective government staffs, government staffs are also provided with long-term credit for housing construction and new house construction by individual staff received co-financing from the government. Banks in Laos are providing short and middle term loans to urban property markets, but they do not have policy for housing development program.

In Laos, the sources of money for construction houses to Lao people are their own saving. Because they are low income people, it will take more than 20 years as shown in Table 3.3. Furthermore, Lao tradition for construction housing is self-help, as informal settlements, which means that they sometimes are not concerned with housing standards and regulations of urban planning. They want to save money for a few years and construct a house partially as core house. For example: They construct foundations, columns, beams in the fist year and construct roof, walls and floors in the second year, and so on. They cannot build a complete house within one year; it is related to their savings and their income affordability. The financial system in Laos is the short-term mortgage loans and for commercial interest rate. Banks offer loan only for short and middle duration of 1 to 3 years, with the high interest rate. That means low income people cannot return it on time. It needs the government policy to subsidize of budgets or others such as grants, loans, and investment from overseas.

The financial constraint is lack of special mortgage loan for housing (United Nations, 2001; Lao Development Bank, July 2003).

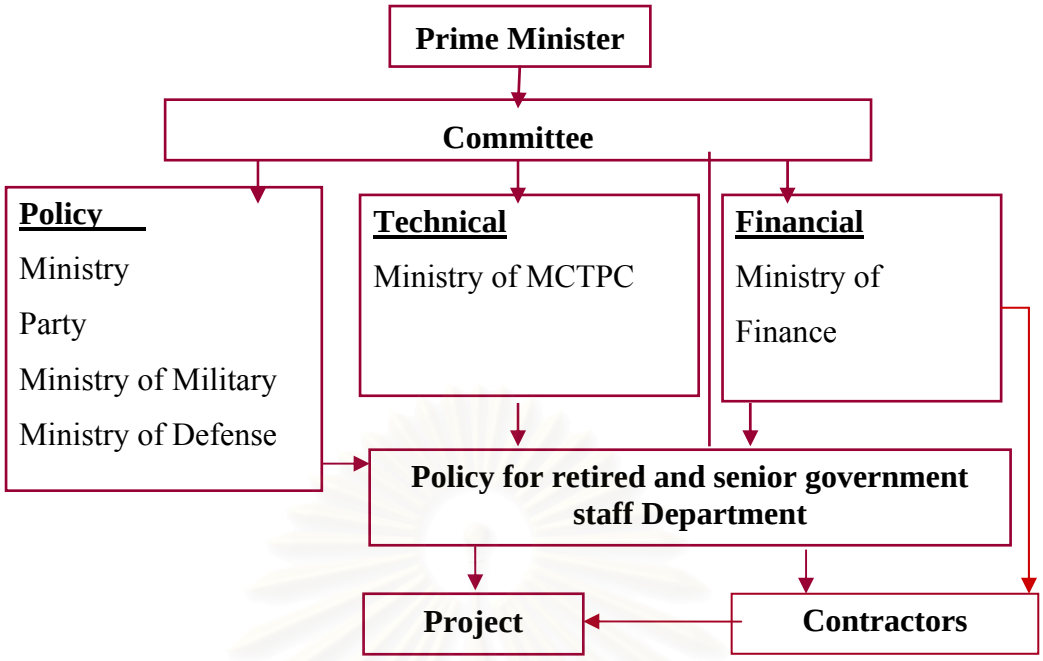


Figure 4.1: Organization of the Housing Welfare for Pensioned Government Officials in Vientiane Project.

Malaysia case study – Finance implementation

The main objective of the housing policy in Malaysia is to provide adequate, affordable and quality housing for all Malaysians with special emphasis given to the low-income group. In this regard, both the public and private sectors have a role to play in building low cost houses under the various programs. Financial supports as well as incentives are provided to ensure house buyers are accessible to the various programs.

The agencies involved in the public low cost housing programs are Bank Negara Malaysia, the Federal Treasury, the Ministry of Housing and Local Government, and the state government. The Federal Treasury provided subsidized loan to the state government thought the Ministry of Housing and Local Government. Bank Negara Malaysia, the central bank, implements policies and guidelines as well as assists the strategic planning to create a viable housing system, which helps individual households to own a house. In the Ministry, they separated the Housing Loan Scheme Division to deal with low cost housing projects as shown in figure 3.5 and follow the housing loan division work flow chart as in the figure 4.2. On request of the state government, the Ministry may offer technical advice and assistance to the state government in implementing the programs, by the National Housing department and at the state level might use their technical department. (Ministry of Housing and Local Government, Malaysia, 2002).

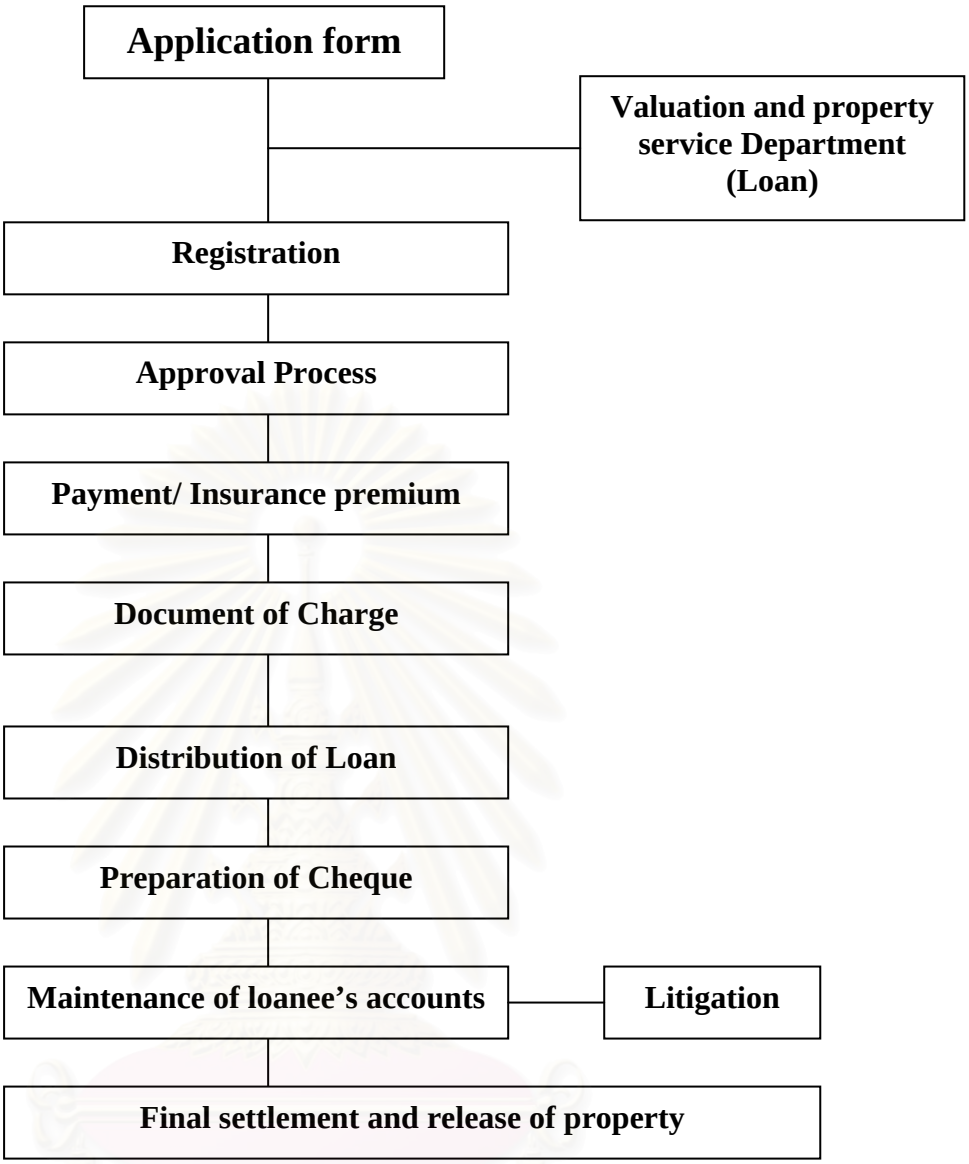


Figure 4.2: Work Flow Chart of Housing Loan Division, Malaysia.

Malaysia directed banks and financial institutions to provided eligible house buyers the 95% financing, with a maximum repayment period of 25 years and maximum interest rate of 9% (Ong and Lenard, 2002). In addition, house buyers will have easier access and assistance in obtaining funding to own their houses, with the recent announcement of the withdrawal of Employees Provident Funds (EPF) for housing purchases or to reduce the settlement of balance of the housing loan.

There are also government housing finance for civil servants who required purchasing houses. It was the less developed states that the financial system becomes a big problem in the housing delivery system. The loan processing was delayed in approval and release of funds. On the other hand, developers preferred to sell to non

civil servants; they often complain of cash flow problems arising from delayed payment (Ministry of Housing and Local Government, Malaysia, 2002).

Thailand case study – Government Housing Bank.

Regarding housing finance in Thailand, the National Housing Authority of Thailand (NHA) coordinates with domestic financial institutions. There are various forms of capitalization for investment in housing construction projects such as pre-finance and the post finance loan to the target group. For long term high purchase, it has installment in 30 years at progressive rate about 10-15% of household monthly income. Project financial management is encouraged through securitization transactions. NHA appoints its chief finance officer to be accountable for the financial management of low cost housing projects and over all finance of the organizations (National Housing Authority of Thailand, 2003).

4.3 Planning and design

In this research, low cost housing projects in four countries were located in the urban or suburban areas. They encountered many problems from site development, resettlement, infrastructure and public utilities and facilities as road, bridge, drainage, water supply, electricity, public transportation, environment impact, communities, etc (Ministry of Settlement and Regional Infrastructure (IV), 2004; Patoumxay, 2003; Ong and Lenard, 2002 ; Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003).

Housing construction in those countries were mentioned above, there are mainly divided into two groups. The first is the formal sector, which is the construction according to standards, building laws, codes and specifications, done by public or private developers. The other is the informal section, which is often self-help or self-serving which does not consider standards, specifications with traditional skill construction. Twenty percent of houses are constructed by formal sector, and the other 80% of houses are constructed by informal sector (Sabaruddin and Argyantoro, 2004; Ministry of Settlement and Regional Infrastructure (IV), 2004).

4.3.1 Housing design concept and system for low cost housing

The houses were built according to the re quirements of the users or the people who will live in. Thus, the design respons ibilities would be shared mostly by the users, not solely by the architects. The low cost housing units is a very simple house constructed and designed by concerning limitation such as budget, affordability, physical characteristic, habit, culture, build ing material, m inimum design standard in three aspects: health, security and com fort, land and locatio n, resource available su ch as labour s kill, buildin g m aterial, equipm ent, construction m ethod and technolog y, customer's participation and satisfac tion, and etc (Lo, 1976; Madhava, and Murthy, 1983; Ministry of Settlem ent and Regional Infrastru cture (III), 2003; National housing Authority of Thailand, 2003). The ex ample shown in Table 4.6 is from the standard room size.

Table 4.6 Comparison of the minimum size of recent simple house and effective land size from various resources.

Standard room size per person (m^2)	Size (m^2) for 3 persons				Size (m^2) for 3 persons			
	Type of house	Land size (L)			Type of house	Land size (L)		
		Minimum	Effective	Ideal		Minimum	Effective	Ideal
(Under standard) 7.2	21.6	60	72-90	200	28.8	60	72-90	200
(Indonesia) 9.0	27.0	60	72-90	200	36.0	60	72-90	200
(International) 12.0	36.0	60	-	-	48.0	60	-	-

(Source: E conomic View of Utiliz ation of lo cal building m aterial by Minis try o f Settlement and Region al Infrastructure, Re search institute for hum an settlem ents, 2004).

The approach and commit ment to public housing vary from country to country, the difference being th e housing units, floor plans, design standards, quality of design, construction systems, cost, selling prices or rent, etc. as shown in Table 4.7.

The conceptual design of housing developm ent is based on the location as the main f actor. It is consis tent with th e pr inciple and direction of urban developm ent responding to the real need of the focus group (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). Its physical design will enhance the

relationship among the residents in their own families, communities and society, to encourage self-help economic activities, and to create a better quality living community; namely, the standard housing units with appropriate environment and necessary infrastructures at affordable prices (Ministry of Housing and Local Government of Malaysia, 2002).

Table 4.7: Comparative low cost housing area and prices in four countries

Country	Description	Housing units (m^2)	Design Person/ Unit	Housing Prices (US$)
Indonesia	Single house, flat	21-56	3-3.5	5,000-10,000
Malaysia	Single house, flat, high rise building	65	3-4	6,600-11,100
Thailand	Single house flat	41.1 24-33	3.5-4	10,300
Laos	Single house	96	5	16,399

(Sources: Ministry of Settlement and Regional Infrastructure, 2003, Ministry of Housing and Local Government, Malaysia , 2002, National Housing Authority of Thailand, 2003, and Patoumxay, 2003)

In Malaysia, some housing designs lack modular building systems, which was introduced several years ago (Lawrence Chan, 2002). Up to now, it has not taken into the real practice in the construction. The model of the housing design will limit and become more efficient components, which can be systematically factory built and installed on site. This will also provide some reduction in the industry's dependence on labour skills (Ong and Lenard, 2002; Ministry of Housing and Local Government of Malaysia, 2002).

4.3.2 Construction method and technology

The size and construction standard of a housing unit will help to determine the costs in producing public house, other factors having influence on projects are materials, construction system , construction technology and labor skills and so on. Thailand and Malaysia have experienced with prefabrication products for a longer time than other countries for mass housing projects (Chan, 2002; Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003). The benefit of using new technology is to save time and money, but it should be used in the big scale of mass housing programs. On the other hand, others

countries have adopted the conventional methods of construction. This kind of construction work need the good construction supervision for quality control and labour skills become the major problem (Salleh and Choong, 2002; Patoumxay, 2003).

4.3.3. Labors and materials

Labour and materials are the factors that designers are also considering for high quality and cost effective. Labour skill is needed for a low cost housing project to save time and cost. Designers consider whether they should use labor or prefabrication to shorten the construction time. In the four countries, sometimes they have problems with labour shortage, lack of labour skills, because all labours come from countryside. They are farmers who have to go back home during the harvest season or for other reasons. Lack of skills of labour has become a major problem that impacts the cost of the project because of delays caused by work to be rectified.

In rural area of Southeast Asia, people with a minimum skill can build their own houses quite easily because the climate is mild and building materials are available. The responsibilities of government is mainly to provide infrastructures, public facilities and technical staffs for training of housing construction and using indigenous materials for low cost housing. In urban area, housing is much more complicated, the high population density and rapid population growth are forcing governments for housing development. The main problems are the high land costs and land shortage, unskilled workers, imported building materials, etc. The budget for a house unit is a major factor to control all housing design planning for low cost housing and it has to meet the minimum housing standards (Sabarudin, and Argyantoro, 2004).

In Indonesia, according to the new housing regulation by the Ministry of Settlement and Regional Infrastructure Decree No. 403/2002, they issued " Technical Manual of Recent Simple Houses" a low cost housing guideline, and utilized local building materials, cultures and architectures (Ministry of Settlement and Regional Infrastructure (II), 2003; Sabarudin, and Argyantoro, 2004). See Appendix 2.

4.3.4 Types of houses

Most people preferred reinforced concrete buildings. It is even better in single or double storeyed house. In those countries, the types of houses are different because of customers' habits, traditions, cultures, preferences, satisfaction, convenience, and other conditions such as materials used, construction techniques, labor skills, and so

on (Ministry of Settlement and Regional Infrastructure (II), 2003; Sabarudin, and Argyantoro, 2004).

Public housing for low-income people are of two types: the owned housing and the rental housing. Normally, the owned housing type is designed from the customer's preference and participation to selection of housing style, housing standards, and physical aspects. It is usually not located in the city, because of the high price of the land. Owned housing will be designed as single houses, double house or row house. House rental was for non-permanent renters, workers. The types of houses are flats, condominiums, and always located in the capital city where the lands are expensive.

Indonesia, Indonesian people prefer to live in a single house, row house or flat. They don't like to live in high-rise building. Other reason is from the conditions of Indonesia, sometime they have problems with disasters such as earthquakes, floods, etc. High-rise buildings that are designed to be able to bear such disasters would cost a lot more. For low cost housing in Indonesia, there are two types of concepts of the "Modest Health House" (RS), (RSS) that are changed to the new housing design called "Health Basic Housing" (RHS). (Ministry of Settlement and Regional Infrastructure(II), 2003)

Laos, housing design in Laos using minimum standard "Housing Welfare for Pensioned Government Officials' Project", in Vientiane, has an area of 96 m^2 with 3 bedrooms, a living room, and a bathroom. (Housing and urban planning Department, Laos, 1992; Patoumxay, 2003)

Malaysia, low cost housing project is called people housing program. There are several types such as single houses, raw houses, 5 stores flats is in the cities and the major towns and terrace houses in rural areas and small towns, high rise buildings (18 stores). In Kuala Lumpur, a lot of high-rise buildings were built by public and developers. The minimum design for low cost housing is as follows: standard built up area of a minimum of 24 to 63 m^2 with 1 or 3 bedrooms, a living room, a kitchen, two bath rooms**.**

Thailand, NHA has classified the residential types with 5 storied residential building comprising of 2 types of unit as multipurpose unit type with 24 m^2, a bedroom unit type with 33 m^2, and the low-rise building comprising 3 types of unit such as 2 storied single house with 16-24 sq.wah, 2 storied semi-detached house with 16-24 sq.wah, 2 storied row house with 16-24 sq.wah ("wah" is a linear measure equivalent to 2 meters) (National Housing Authority, 2003).

Comparing the four countries, Malaysia is the most advantaged housing design. Their housing design is for owned and rental housing, considering on the customers', habits, satisfaction, enough apace area, rooms and bathrooms, and available service facilities. The Ministry of Housing and Local Government have strong regulations and housing standards for low cost housing projects. Their low cost housing project meet the minimum standards. Both public and private follow the same regulations and minimum standards. They have disadvantage; the high-rise buildings will create problems to social life, community participation, and etc. However, they have no choice because the land prices in the big city are very expensive. To solve housing problem, the government has encouraged people to live in flats, high rise buildings in order to reduce their cost of operation and maintenance, utilities and facilities cost. For Thailand and Indonesia, the budget of one housing unit controlled all designs. The type of housing units follows standard, but they lack of plan to solve problems that would occur in the future of the increase of household as urban sprawl problems and will become a permanent slum. For Laos, the constraints are lack of financial support, import materials, lack of labor skills that produces a higher construction cost. However, housing types follow the customers' prefer and satisfaction such as the spaces, habits, tradition of living with the big family, comfort, etc.

4.4 Bidding phase

Bidding phase is important to control the construction cost and quality of a housing project to meet the standard and the objective of low cost housing within the limited budget, time and standard quality. Bidding process is usually prepared and approved by public organizations that are responsible for housing program such as Ministries, National Housing Authority, National Housing Development. Public sector would prepare bidding documents including project information, housing design, planning and scheduling, quantity take off for bill of quantities (BoQ), standard specifications, contract document, contractors qualification, bidding forms etc. This phase is to consider the qualification of developers and contractors and consider whether they are appropriate for construction of the low cost housing project and achieving to the objective of public sector (Ministry of Settlement and Regional Infrastructure (III), 2003, Ministry of Communication, Transportation, Post and Construction, 1992; Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003). All bidding documents are important

and need to be considered, if it is not clear and miscalculated that will affect the success of project, over budget and delay schedule (Patoumxay, 2003).

4.4.1 Bidding Documentation

Design and preparing for bidding process (Oladapo, 2001) include preparation of implementation manual, management guideline, design and planning, estimating, cost checking and reviews: bills of quantities, life cycle costing and maintenance issues, value management, condition of contract, bidding documents (bills of quantities, specifications, design flexibility) provide for expansion and upgrading and constructability, stakeholder participation in design and pre-qualification.

In the step of bidding process (Oladapo, 2001), there are documents, bid briefing, clarification of design, technology, specifications and quality control, completion time, project organization, flexible management, conditions of contract, payment procedures, conflict resolution procedures, materials and resources purchasing strategy, bidding analysis, interview and selection, contract award, cost check and review.

The public sector prepares housing demand, housing design standards and specifications and announce for buying low cost housing projects from developers. Developers who are interested in the project will prepare proposal to sell the housing project in accordance with the public sector requirement such as housing type, space, standards and specifications, controlled price for one unit, limit of time, etc (Karukose, **interview**, 14 May 2004; Argyantoro, **interview**, 6 September 2004; Nurahma , **interview**, 08 September 2004; Bin Mat Seek, **interview**, 21 February 2005).

In Thailand and Malaysia, it is the same basic process that they give the project to the developer for implementation of low cost housing project (Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand (NHA), 2003; Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005). In Indonesia, there are various agencies and developers who are implementing the housing development program (Ministry of Settlement and Regional Infrastructure (II, III, IV), 2003). In Indonesia and Laos, the contractors construct the low cost housing projects under the supervision of the government office, as the project owner and supervisor, to ensure that the project meets the standard, the budget and time schedule (Patoumxay, 2003).

4.4.2 Bidding process.

Developer will submit their proposals of the low cost housing project to the public authority who control the house unit price and construction time. The proposal will include project information, location, planning layout, project design, project cost, planning and scheduling, and cash flow, etc. The project owner will check and analyze all information and select the developer for implementing the low cost housing.

The good example of selecting developers and contractors is found in Malaysia. They have good strategy requiring all developers and contractors to apply for the license in implementing low cost housing project. The regulations issued by the National Housing Department will guaranty the success of project and profitability for the contractors and developers in the future project. Also in Thailand, NHA has the contractor list from their legislation; it includes company profile, staffs, work experience, bank guarantee, etc. These information are very useful to evaluate the contractors and can use as reference for the next low cost housing project.

In Laos, the bidding process was not successful, because of the lack of experience in housing development program as in mass housing implementation, lack of technical staffs, and also the contractors' lack of experience, and lack of fund. In addition, contractors sometimes propose very low price to get the project but they cannot do it and it delayed the project for a long time. Consequently, the project was delayed and the holding cost has increased.

4.5 Construction phase

In Indonesia, Malaysia and Thailand, the government offices are responsible for construction supervision and issuing standards and specifications, regulations and guidelines for low cost housing implementation. They divided project into many phases that was related to their preparation budget and ability to build of housing units. Usually, the first phase is a pilot project, to ensure that the design and standard specifications meet requirements. From the experience, they will adjust and modify for effectiveness of the next project phase (Ministry of Settlement and Regional Infrastructure (IV), 2004; Ministry of Housing and Local Government of Malaysia, 2002; National housing Authority of Thailand, 2003).

4.5.1 Project management

Project duration is controlling all work s in construction phase that has m ajor influences on success or failure of projec t. Construction projects were designed and constructed by developers in accord ance with the standard s, regulatio ns, technical specifications of the owner of the project. Project m anagement consists of project management, sale management, project finance management, and so on. C onstruction is the responsibility of the developers and contractors.

Indonesia is a huge country with a thousand of islands, National Urban Development Corporation was divided into seven regions for construction control (National urban development corporation (Perum Perumnas) (III), 2003).

In Malaysia, The National Housing Department has 5 regional offices for construction control under Mi nistry of Housing and Local governm ent of Malaysia (Ministry of Housing and Local Government of Malaysia, 2002).

In Thailand, NHA is divided into four parts by geographic location to monitor, evaluate, construction supervision of project (National housing Authority of Thailand, 2003).

In Laos, Housing and U rban Planning De partment is responsible in design and construction supervision of the low cost housing project (Patoumxay, 2003).

4.5.2 Construction supervision

From long experience of i mplementing of low cost housing in the countries mentioned above, the public sector as the project owner was responsible for construction supervisor. The m ain tasks are to control and guarantee that the construction follow the design, planning, st andards and specifications and project schedule. F or construction supervisi on work, it needs hum an resources and professionals' staffs to m onitor and eval uate the progress of project, quantity approval, and consultation pr ovided to developers. In Indonesia, Malaysia and Thailand, they lack hum an resources, beca use there are a lot of housing projects countrywide, and their staffs lack expe rience in housing developm ent and new construction technology. They need trainings and workshops for developm ent of their knowledge. In Laos, they lack hum an resources and specialists in housing development like other countri es m entioned above. Furtherm ore, they ha ve to learn from other countries above for the next low cost housing projects in the near future.

On the other hand, low cost housing projects need contractors or developers who have experience, labor skills, new technologi es, such as the prefabrication, to save

budget in finishing works on tim e. Also, this phase needs supports from professional and consulting services including architects and engineers, m echanical and electrical engineers, quantity surveyors, etc.

In low cost housing projects, there ar e several types of houses. T hey are different in construction methods and skills, fa cility supports, etc. In Ind onesia, Laos, Malaysia an d Thailand, the govern ment offi ces m onitor and evalu ate each step of progress of the projects until they are taken over and given to the buyers.

4.5.3 Professional service

Because of the need to reduce the tasks of the p ublic sector, and the lack of staff who are sp ecialist of special work s, prof essional services would be required. T he professional service who can guarantee the project is following the design, standards specification under the construction supervisor and guideline of the public sector. The professional involved in the housing process include architects, town planners, quality surveyors, consultant engineers, land su rveyors, landscape designer, electrical and mechanical engineers, etc. Both th e public sector and private secto r need their experience to advise on quality assuranc e (Ministry of Settlem ent and Regional Infrastructure (II, III), 2003; Chan, 2002; Ministry of Housing and Local Governm ent of Malaysia, 2002).

In Indonesia, Malaysia and Thailand ha ve several com panies with the high professional fees (Ministry of Settlem ent and Regional Infras tructure (III), 2003; Chan, 2002; Ministry of Housing and Local Governm ent of Malaysia, 2002). Laos lacks professional services and also it is inexperienced in m ass housing and poor in quality control (Patoumxay, 2003; Vangkeom any, **interview**, 24 March 2004). In Laos, it doesn't have laws and regulations of professional license in quality assurance. This problem does affect the quality of housing projects in Laos. S ome housing construction do not follow housing standard and specification.

4.6 Housing delivery phase

Concerning housing delivery process in Indonesia, Thailand and Laos, the government office and Ministry of Finance ar e responsible for sele cting the eligible buyers. The buyers apply for low cost housi ng units and subm it all their inform ation such as m onthly incom e, their affordabi lity, bank statem ent, etc. The governm ents have the regulation concerni ng the buyers' abilities to pa y back with subsidized interest rate for long-term payment up to their policies. Also, the governm ent is

concerned with the community participation and gives responsibilities to the public centers of housing projects. In Indonesia, Malaysia and Thailand, they used the same delivery system. Buyers sign contracts with government or financial institutes and make down payment for the first time with the subsidized low interest rates.

In Malaysia, moreover, the buyers will directly contact the developers who have "30% Low Cost Housing Project" in their housing projects. Once they apply to state government for house unit and loan from the financial institutions, they are entitled to obtain 95% of the loans with low interest rate. This policy is applied to those who has low income. The national computerized system has been set up to improve the transparency and accountability of the allocation of low-cost units in both private and public developments. A pre-registration of eligible buyers is suggested in order to allow the government to monitor the sales of the low cost houses. However, there is also problem that the system is not updated enough to identify eligible buyers and to screen out the potential buyers who already have owned a house at the same time (Ong and Lenard, 2002).

4.7 Maintenance phase

4.7.1 Housing management system

Success in public housing does not end with planning and construction, but this constitutes a good beginning and the maintenance of success depends much on the quality of housing management or estate management. Housing management and maintenance require cooperation with community service and participation (Karukose, **interview**, 14 May 2004; Bin Mat Seek, **interview**, 21 February 2005).

The payment of housing maintenance system for a single house is taken care of by house owners. This payment is included central services, community facilities services such as electricity, garbage men, cleaners, etc. For high-rise buildings, the owners have to pay for the services such as lift, garbage collection, maintenance costs and other utility and facility services, and they got some support from government.

4.7.2 Community participation

Indonesia and Malaysia, give the responsibility to the local governments and communities to establish the community offices responsible for housing management and maintenance (Argyantoro, **interview**, 6 September 2004; Bin Mat Seek, **interview**, 21 February 2005). In Thailand, NHA has issued operation guidelines for community management (Karukose, **interview**, 14 May 2004; National Housing

Authority of Thailand, 2003). NHA will manage the concern projects for the first 5 years with the communities. The first 2 years is in the responsibilities of the contractors. After 2 years, it was the responsibility of NHA, and they also provide training on community management to the communities to strengthen their abilities to manage by themselves. For Laos, there is the lack of funds for the maintenance process, after taking over; the owners were responsible for their own houses. However, several of them have to stay in the poor conditioned house because they do not have adequate repair and maintenance budgets (Vangkeomany, **interview**, 24 March 2004; Patoumxay, 2003).

4.8 Summary

Comparative studies in the four countries showed that the housing policies are some that different in the context of policies, subsidies, and implementation. The reason is the diversity in many factors such as geographic location, economic condition, resources, social, life style, traditional habit and culture, etc. However, they still have a common objective which is to provide housing to low income people. On the other hand, they have similar problems related to financial supports, infrastructure, public utilities and facilities, etc. The most important stage, policy and finance should be highly attended to both public and private sectors need to cooperate in low cost housing projects for success.

Malaysia has the most outstanding record of success during the implementation of low cost housing projects. Their achievements are due to their government clear policy, strong and strict laws and regulations. Indonesian system holds a good concept, but the economy complication in Indonesia caused burden to housing development. Thailand has founded Baan Eua Arthorn project since 2003, housing projects has met some degree of success. Laos is only one country that has only a housing policy for pensioned government's offices and is far from the other countries in terms of housing needs and country condition, etc. The condition and housing requirement are smaller. The potential problems reside on financial support, lack of human resources and labor forces, imported construction materials and so forth.

Low cost housing projects have to fulfill their objective within a limited budget and follow the housing design standards and specifications, low cost housing process can be summarized for Indonesia, Laos, Malaysia and Thailand, as follows:

1. As to housing policy, the formulated housing policies are the results of governments' surveys and research. Governments keep updated on information related to housing conditions, housing need. They set limited levels and focus on the target groups as low income people and their affordability. They research focus on local materials, new construction technologies. To better responded to the housing need, they tend to use pre-sale, registration and down payment, which now in practice in Thailand, or to register online as in Malaysia. All of the above mentioned techniques are to assure the certainty of the number of housing units and housing demands. Thus, they increase the accuracy in housing planning and estimation of investment budgets.

   Housing policy is necessary to maximize the success while implementing low cost housing programs, to set housing development strategy, and to set a 5 year plan of housing development program. Project monitoring and evaluation are also carried out through government policy. Indonesia and Malaysia have done well. However, Indonesia have some problem with the huge number of housing need and needs big amount of financial supports for construction, infrastructures, public utilities and facilities, etc..

   Housing administration and organization have a clear responsibilities. They have to follow strictly the housing policies, laws, regulations and others. With the big number of house need, compared with the capacity of public sector, they are lacking human resources, especially the technical staffs for construction supervision, monitoring and evaluation projects that would affect the low cost housing project success. Low cost housing projects need good cooperation between public and private sectors, where the latter usually acts as the main supplier. Public sector alone does not have enough capacity to provide houses to low income people.
2. In feasibility study, after the issuance of a policy, the government assigned Ministries, offices, institutes the responsibilities to implement housing development programs according to the contents of the policy. These offices should undertake a complete set of feasibility studies according to the guideline of the policy. In Indonesia, Laos, Malaysia, and Thailand, the first low cost housing project phase, was a pilot low cost housing project. The lessons learnt from the experiences were discussed and the designs were re-

adjusted to raise effectiveness and effi ciency of existing p roject. Also, they will be used afterwards for the next projects.

3. Finance sub sidies in lo ng term loa ns a nd low inte rest ra tes in the cou ntries above would help low incom e people to be able to own house units. The subsidy rate was related to their econo mic, conditions of governm ent support, and targeted group's affordability.
4. In planning and design phase, housing de sign standards and specifications in four countries are a little di fferent. In the past, standa rd design is 5-5.5 person per house unit, but now in the urban area the design is 3 to 4 persons per one unit. Buildings have been designed w ith the m ain objective of custo mer's satisfaction, habits and their cultur es within lim ited budgets and m inimum standards and quality cont rol, and so on. Land locatio ns and planning layouts become factors for project success. The most advantaged country is Malaysia with the housing style, big space and customer's satisfaction and affordability, and with a complete utilities and facilities.

   The governments of Indonesia, Malaysia and Thailand pay serious attention to research and study on the low cost housing projects. They support researches and studies on several aspects related to housing projects. The following topics received particular inte rest: new m aterials, new construction m ethods and modern technologies to reduce cost a nd increase housing quality. W hile, the Lao govern ment still suffer from lack of financial sup ports for h uman resources, research studies, and trainings.
5. Bidding is im portant and would aff ect th e success of projects. The construction contracts contro l all construction projects to finish in acco rdance with standards, specifications, qualit y, budget and schedules. The selection of developers and contractors who are able to co nstruct pro ject is one of the factors of project success.
6. In construction phase, housing constr uction need developers who have capacities, funds, and experience in lo w cost housing projects. The m ost advantaged developers are in Ma laysia and Thailand; they were su ccessful in low cost housing projects in term of abilities and house supplies to the targeted groups. Construction should follow the construction m ethods and techniques while at the sam e tim e assure econ omic efficiency and con stant concern on environment im pact. The actual existi ng advantage can be the governm ent

guidelines for low cost housing project design and implementation. They facilitate the implementation of low cost housing projects, by giving recommendations on material for uses, construction methods and technologies, etc. Government is lacking their own human resources to control, monitor and evaluate construction projects. To solve this problem, they use outside professional services to help both public and private sectors. The professional services could guarantee quality of projects, save times and human resources.

7. Housing delivery and maintenance system needs community development and participation, and needs the supports from both central government and local government. The target groups were almost satisfied with low cost housing projects toward the physical aspects such as housing design, spaces, utilities and facilities. Low cost housing projects have solved housing problem and improve quality of life of the people. Meanwhile the government continues to look after the livelihood of the people. The major concern touch upon employment opportunities which could improve the targeted group's incomes and, community development for the sustainability of the projects.
8. For Laos, they have only one low cost housing project, the housing problem is not the big number of housing need; they are rich in resources and can use local building materials to build house. Their main problems in housing development are lack of financial supports, lack of human resources, low priority of housing policy, etc. Currently, it may not have housing problem yet. If they are not prepared and plan ahead, the problems to occur will encounter a lot of housing problems especially in the capital city as the other countries mentioned above.

CHAPTER V
CRITICAL SUCCESS FACTORS (CSF) ANALYSIS

The success of a construction project can be defined as the ability to complete the project and achieve the project objective on schedule. Also, the budget and the quality of the design should meet with the respective standard and specifications. In addition, a low cost housing project might be defined as successful when the objective to provide houses to the targeted group has been achieved, whereas the low income people can buy the provided houses. Low cost housing should match with the customers' satisfaction, and the preset minimum standards of requirements and house unit prices where all incurred costs shall be spent within the limit of the preset budgets and schedules.

In each stage of low cost housing process, there are several factors on which success and failure of the project will depend. To minimize problems when implementing such kind of project, one should define the critical success factors. They should be well planned and prepared prior to implementing low cost housing project. This study identifies, analyzes, and categorizes various critical success factors (CSFs) in each stage of low cost housing project of the government projects.

5.1 Success factors in low cost housing process.

The main objective of this chapter is to identify critical success factor in each stage of construction process. In a low cost housing process, there are nine stages: policy, land procurement, finance, feasibility study, design and planning, bidding, construction, delivery and maintenance. Based on the combination of the literatures reviewed and the results of interviews conducted in four countries, it used the same format and questionnaires. From those information in literature review and interviews, it found some success factors that will be used for preparing Cause-Effect diagram in order to define success factors in each stage of low cost housing project as show in the list of Appendix 7. The list does not include all success factors in all low cost housing

process. This list will be used to guide a nd can be continually re vised and utilized in order to improve for the next research.

Data collections in four countries were in the sam e for mat (by visit, interview and questionnaire survey) at the Ministri es, governm ent offices, institutes and agencies who are survey related and res ponsible for low cost housing projects. The respondents are policy and decision m akers, project directors, project m anagers, project engineers, designers, and so on. The questionnaire was divided into three parts. The f irst pa rt is the g eneral inf ormation of respondent s su ch as nam es, positions, their work experiences, their responsibilities and addresses. The second part defines which stage will have influence on the success of low cost housing projects and which stage will us ually encou nter prob lems in the process. And the last pa rt identifies th e m ost critical success factor in each stage. T he score of 1 to 5 shows influence of the important factors on the least to the most.

The respondents from Indonesia, Laos, Ma laysia and Thailand, were diffe rent in work responsibilities, experience, deferent levels and stages, but they were cooperated in low cost housing projects. Indonesia, Malaysia and Thailand have long experience in low cost housing projects over 30 years. The returned repl ied questionnaires comprised 2 respondents from Laos, 12 res pondents from Thailand, 12 respondents from Malaysia and 3 respondents from Indonesia.

The data analysis provided the result of the most influential stage on success project am ong determ ination policy, financi ng and land and location stage. From the finding in each country, the m ost influence stage was the policy and financing stag e similarly. However, the major problem in the low cost housing stage in f our countries was the land acquisition and fi nancing stage. Also, when co nsidered in each country, the results were similar to the total one.

From literature review, interview, case studies conducted in low cost housing projects, by Cause-Effect diagram influence factors in low cost housing project process are presented as follows:

Figure 5.1 : Cause and Effect diagram “Low cost housing process”

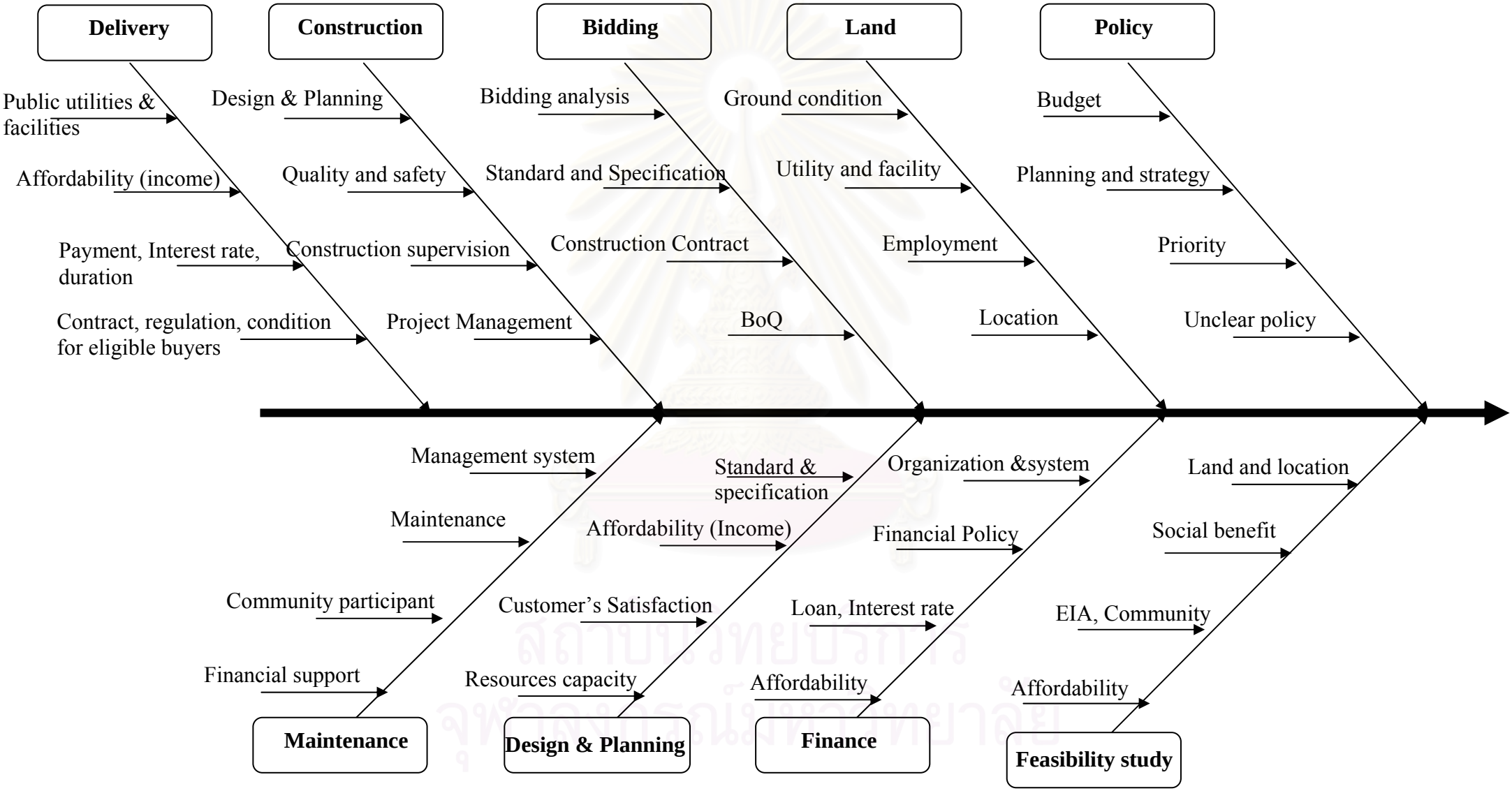
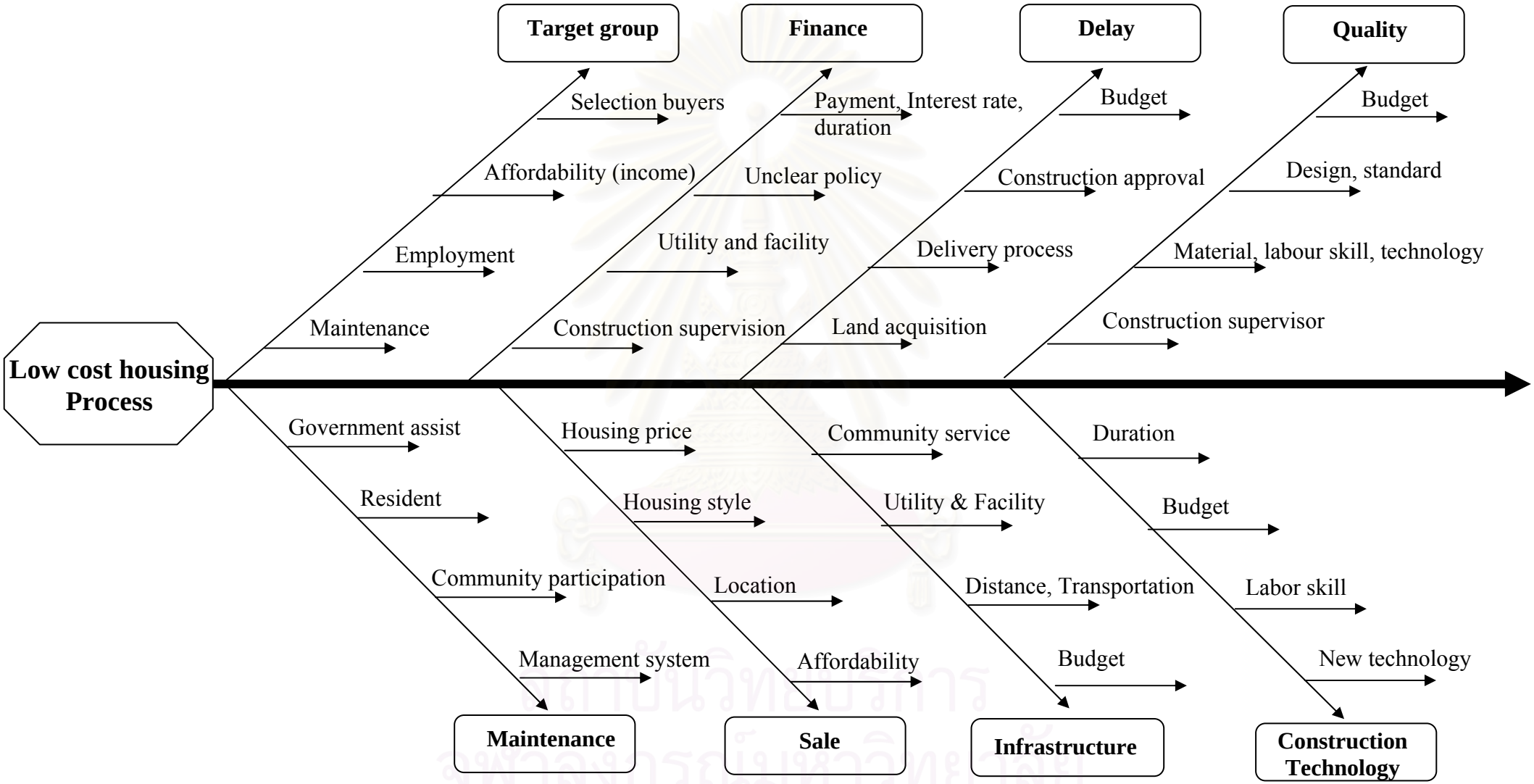


Figure 5.1 : Cause and Effect diagram “Low cost housing process” (Continued).



5.2 Critical success factor (CSF)

Definition of critical success factor (CSF)

Critical success factors are defined as those factors which predict success on the projects. In the literature review, several authors identified, explained, and discussed the factors that are critical to the success of a project. (Sanvido, Parfitt, Guvenis, and Coyle, 1992; Kometa and Olomolaiye, 1997; Surasakhon, Subsompon, and Kunawatsatit, 2004)

From the findings from interviews, (Karukose, **interview**, 14 May 2004; Oulachanh, **interview**, 24 March 2004; Vangkeomany, **interview**, 24 March 2004; Argyantoro, **interview**, 6 September 2004; Murbintoro, **interview**, 4 September 2004; Bin Mat Seek, **interview**, 21 February 2005) the most important stage of the process are the housing policy formulation and the financing stage. Both of them must be carefully considered and planned. Failure in one of these phases will lead to serious impact on the low cost housing projects.

There were the questionnaires distributed to various people from various profession profiles who are involved in the low cost housing projects such as decision makers, project managers, project engineers, designers etc. The scores 1 to 5 are used to score the importance of critical success factors of the projects, where 1 is defined as the least and 5 is the most influence factor: "1" being "Less influence", "2" being "Quite influence", "3" being "Influences", "4" being "Very influence", and "5" being "Most influence".

Calculation of Significance Indexes

The relative significance index of the success factors (Zhang, 2005, and Kometa and Olomolaiye, 1997), the following simple formula is the percentage of significance. This means that "5", "4", "3", "2", and "1" have significant indexes of 100, 80, 60, 40 and 20 respectively trail responses appear in Table 5.1.

$$\text{Significance Index: Si} = \frac{20R_{i1} + 40R_{i2} + 60R_{i3} + 80R_{i4} + 100R_{i5}}{R_{i1} + R_{i2} + R_{i3} + R_{i4} + R_{i5}}$$

Where Si = Significance Index for the ith factor

Ri1= Number of response as 1 for the ith factor

Ri2= Number of response as 2 for the ith factor

Ri3= Number of response as 3 for the ith factor

Ri4= Number of response as 4 for the ith factor

Ri5= Number of response as 5 for the ith factor

Table 5.1: Critical success factors in low cost housing process

1. Policy	Summary				29	Indonesia				3	Laos				2	Malaysia				12	Thailand				12	Significance Index				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	Sum	Indonesia	Laos	Malaysia	Thailand
Government budget ability and financial support	0	5	3	8	13	0	1	0	2	0	0	5	3	8	14	0	3	0	3	6	0	1	3	3	5	80.00	66.67	80.67	80.00	80.00
Housing eed(amount, orfow nda idtdle ncome)	2	2	4	7	13	0	1	0	1	1	2	2	4	8	13	0	1	2	2	7	2	0	2	2	5	79.29	73.33	79.31	85.00	74.55
Resource apacity(land, aterial, abbr nda thers)	0	2	5	14	7	0	0	0	2	1	0	3	5	14	7	0	1	2	6	3	0	0	2	6	3	78.57	86.67	77.24	78.33	81.82
Affordability inome)	0	2	5	11	7	0	0	0	1	2	0	2	5	12	7	0	2	4	2	3	0	0	1	6	2	78.40	93.33	78.46	70.91	82.22
Public utilities (water supply, electricity, public transportation)	0	0	8	10	6	0	0	0	0	0	0	0	9	10	6	0	0	4	6	2	0	0	2	4	4	78.33	0.00	77.60	76.67	84.00
Infrastructure support (road, water, electricity)	0	2	8	12	6	0	0	0	2	1	0	2	9	12	6	0	2	4	5	1	0	0	2	5	4	75.71	86.67	75.17	68.33	83.64
Law and regulation for land and housing	1	4	7	7	9	0	0	1	0	2	1	4	8	7	9	0	4	3	3	2	1	0	2	3	5	73.57	86.67	73.10	65.00	80.00
Urban lanning nda ousing evelopment rograms	0	1	14	8	5	0	0	0	2	1	0	1	15	8	5	0	1	7	2	2	0	0	6	3	2	72.14	86.67	71.72	68.33	72.73
Priority of housing development program	0	4	8	8	5	0	0	0	0	0	0	4	9	8	5	0	1	1	7	3	0	3	6	0	2	71.20	0.00	70.77	80.00	61.82
Duration	0	4	14	8	2	0	0	1	1	1	0	4	15	8	2	0	3	5	4	0	0	1	6	3	1	65.71	80.00	65.52	61.67	67.27
Human esource(staff, esigner, specialist, upervisors nda thers)	2	4	10	8	3	0	0	1	1	1	2	4	11	8	3	1	4	4	3	0	1	0	4	3	2	64.44	80.00	64.29	55.00	70.00
Feasibility study for cost benefit analysis	0	8	9	9	2	0	0	0	2	1	0	8	10	9	2	0	5	3	4	0	0	3	5	2	1	63.57	86.67	63.45	58.33	61.82
Planning nda trategy	3	2	10	10	1	0	0	0	0	0	3	2	10	11	1	0	1	5	6	0	3	1	5	2	1	63.08	0.00	63.70	68.33	55.00
Housing nvestment	1	4	13	7	1	0	0	0	0	0	1	4	13	8	1	1	2	6	3	0	0	2	7	2	1	62.31	0.00	62.96	58.33	63.33
2. Feasibility Study																														
Financing bud(get, inancial system)	0	0	5	13	11	0	0	0	1	2	0	0	5	13	12	0	0	2	6	4	0	0	3	6	3	84.14	93.33	84.67	83.33	80.00
Housing eeds	2	1	4	8	13	0	0	0	1	2	2	1	4	8	14	0	1	2	5	4	2	0	2	2	5	80.71	93.33	81.38	80.00	74.55
Resource lan(d, abbr, aterial)	0	1	8	12	8	0	0	1	1	1	0	1	8	13	8	0	1	2	6	3	0	0	5	3	4	78.62	80.00	78.67	78.33	78.33
Infrastructure support (road, water, electricity)	0	1	5	14	5	0	0	0	0	0	0	1	5	14	6	0	1	4	6	1	0	0	1	8	2	78.40	0.00	79.23	71.67	81.82
Affordability inome)	0	4	5	13	7	0	0	0	1	2	0	4	5	13	8	0	3	2	5	2	0	1	3	6	2	75.86	93.33	76.67	70.00	75.00
Public facilities support	0	1	11	12	4	0	0	1	2	0	0	1	11	12	5	0	1	6	5	0	0	0	4	5	2	73.57	73.33	74.48	66.67	76.36
Construction ermitted (Location overnment/agency)	0	1	9	4	3	0	1	0	2	0	0	1	9	5	3	0	0	9	1	2	0	0	0	0	0	70.59	66.67	71.11	68.33	0.00
Environment impact and communities	0	5	10	8	5	0	0	1	2	0	0	5	10	8	6	0	3	4	5	0	0	2	5	1	3	69.29	73.33	70.34	63.33	69.09
Benefit orfocial nda conomic	1	6	7	11	4	0	0	1	2	0	1	6	7	12	4	0	2	3	4	3	1	4	3	3	1	67.59	73.33	68.00	73.33	58.33
Environment mpact ssessment EIA) (	1	4	3	3	3	0	0	0	0	0	1	4	3	3	4	1	4	3	3	1	0	0	0	0	0	64.29	0.00	66.67	58.33	0.00
Duration	0	7	7	10	1	0	0	0	0	0	0	7	7	11	1	0	4	4	4	0	0	3	3	4	1	64.00	0.00	64.62	60.00	65.45
Constructability, method and technique	1	4	12	11	0	0	0	1	2	0	1	4	12	12	0	1	1	7	3	0	0	3	4	4	0	63.57	73.33	64.14	60.00	61.82
Housing nvestment Pr(vate, orfigners ectors)	3	8	6	7	2	0	0	0	0	0	3	8	6	8	2	1	4	2	5	0	2	4	4	0	2	57.69	0.00	58.52	58.33	53.33
3. Land																														
Land olicy nda and ubsidize	1	2	5	5	15	0	0	0	1	2	1	2	5	5	16	1	1	3	3	4	0	1	2	1	7	82.14	93.33	82.76	73.33	85.45
Location nda istance	0	0	7	14	8	0	0	0	1	2	0	0	7	15	8	0	0	6	4	2	0	0	1	7	4	80.69	93.33	80.67	73.33	85.00
Land aw nda egulation,	1	3	5	10	9	0	0	1	1	1	1	3	5	10	10	1	2	3	4	2	0	1	1	5	4	76.43	80.00	77.24	66.67	81.82
Public ransportation	1	1	7	14	6	0	0	0	2	1	1	1	7	15	6	0	1	5	4	2	1	0	2	6	3	75.86	86.67	76.00	71.67	76.67
Land n het oogl ondition no(lood, ofts lay, and illf nda thers)	1	2	6	10	7	0	0	0	0	0	1	2	6	10	8	1	2	2	5	2	0	0	4	4	4	75.38	0.00	76.30	68.33	80.00
Infrastructure	0	2	10	10	4	0	0	0	0	0	0	2	10	11	4	0	1	6	4	1	0	1	4	4	3	72.31	0.00	72.59	68.33	75.00
Employment	0	4	12	10	3	0	1	0	1	1	0	4	12	11	3	0	3	5	4	0	0	0	7	4	1	68.28	73.33	68.67	61.67	70.00
Environment mpact	0	7	6	9	3	0	0	0	0	0	0	7	6	9	4	0	5	2	5	0	0	2	4	4	1	66.40	0.00	67.69	60.00	67.27
Communities	0	9	8	11	0	0	0	3	0	0	0	9	8	12	0	0	7	1	4	0	0	2	4	5	0	61.43	60.00	62.07	55.00	65.45

4. Finance																														
Housing bank or bank support for housing	2	2	5	7	12	0	0	0	0	2	2	2	5	7	13	2	1	3	2	4	0	1	2	5	4	77.86	100.00	78.62	68.33	80.00
Affordability (Income)	0	3	7	15	4	0	0	0	1	2	0	3	7	16	4	0	2	5	5	0	0	1	2	7	2	73.79	93.33	74.00	65.00	76.67
Government support for bank guarantee	0	4	9	12	3	0	0	1	1	1	0	4	9	13	3	0	3	5	4	0	0	1	3	5	2	70.00	80.00	70.34	61.67	74.55
Interest rate	2	3	8	11	4	0	0	0	1	1	2	3	8	12	4	2	1	4	5	0	0	2	3	4	3	68.57	90.00	68.97	60.00	73.33
Loan	1	4	8	13	2	0	0	1	1	0	1	4	8	14	2	0	3	4	5	0	1	1	2	6	2	67.86	70.00	68.28	63.33	71.67
Housing delivery	0	5	8	11	2	0	0	0	0	0	0	5	8	11	3	0	4	5	3	0	0	1	3	8	0	67.69	0.00	68.89	58.33	71.67
Housing investment(private sector)	1	8	9	8	2	0	0	2	1	0	1	8	9	8	3	1	5	3	3	0	0	3	4	4	0	61.43	66.67	62.76	53.33	61.82
Duration	0	8	12	5	2	0	1	1	0	0	0	8	12	6	2	0	5	5	2	0	0	2	6	1	2	60.74	50.00	61.43	55.00	65.45
5. Design, Planning and Scheduling																														
Land area and location	0	1	6	18	4	0	0	0	3	0	0	1	6	19	4	0	0	2	8	2	0	1	4	5	2	77.24	80.00	77.33	80.00	73.33
Quality control and safety	0	0	11	10	7	0	0	0	2	1	0	0	11	10	8	0	0	5	5	2	0	0	5	4	2	77.14	86.67	77.93	75.00	74.55
Housing law and regulation	0	2	7	14	5	0	0	0	2	1	0	2	7	14	6	0	2	3	7	0	0	0	4	4	3	75.71	86.67	76.55	68.33	78.18
Housing standard, technical specification	0	1	10	12	5	0	0	2	0	1	0	1	10	13	5	0	1	3	5	3	0	0	5	6	0	75.00	73.33	75.17	76.67	70.91
Customer's satisfied	1	1	8	15	4	0	1	0	1	1	1	1	8	16	4	0	1	4	7	0	1	0	4	4	3	73.79	73.33	74.00	70.00	73.33
Affordability (Income)	0	2	8	13	3	0	0	0	0	0	0	2	8	14	3	0	1	3	7	1	0	1	4	5	2	73.08	0.00	73.33	73.33	73.33
Physical aspect(design, model, user need, housing space, family size)	2	2	6	13	5	0	0	1	1	1	2	2	6	14	5	0	1	2	7	2	2	1	2	4	2	72.14	80.00	72.41	76.67	65.45
Environment regulation (Law)	0	3	10	12	3	0	0	2	1	0	0	3	10	13	3	0	1	5	6	0	0	2	3	4	2	70.71	66.67	71.03	68.33	70.91
Customer's needs (participation)	2	3	6	9	5	0	0	0	0	0	2	3	6	9	6	0	1	4	7	0	2	2	2	2	3	69.60	0.00	70.77	70.00	63.64
Community and neighborhoods	0	1	14	11	1	0	0	0	1	1	0	1	14	12	1	0	0	8	4	0	0	0	6	4	1	68.89	90.00	69.29	66.67	70.91
Construction method and technology	0	4	13	7	4	0	0	1	2	0	0	4	13	7	5	0	1	8	1	2	0	3	4	4	0	67.86	73.33	68.97	66.67	61.82
Duration	0	2	14	8	1	0	0	0	0	0	0	2	14	9	1	0	2	7	2	0	0	0	7	3	1	66.40	0.00	66.92	60.00	69.09
Resources capacity (labors skill, material, equipment)	0	3	15	10	1	0	1	0	2	0	0	3	15	11	1	0	2	6	4	0	0	0	9	2	1	66.21	66.67	66.67	63.33	66.67
6. Bidding																														
Budget	0	1	2	18	8	0	0	0	2	1	0	1	2	18	9	0	0	1	7	4	0	1	1	9	1	82.76	86.67	83.33	85.00	76.67
Contractors capacity (fund, equipment and human resources)	0	1	6	10	9	0	0	0	0	0	0	1	6	10	10	0	0	3	7	2	0	1	3	3	5	80.77	0.00	81.48	78.33	80.00
Bidding analysis/ selection	0	1	10	12	5	0	0	1	1	1	0	1	10	13	5	0	0	5	5	2	0	1	4	4	2	75.00	80.00	75.17	75.00	72.73
Construction contract	0	3	7	14	4	0	0	1	2	0	0	3	7	15	4	0	1	4	5	2	0	2	2	5	2	73.57	73.33	73.79	73.33	72.73
Bidding process	0	3	9	12	5	0	1	1	1	0	0	3	9	13	5	0	1	5	5	1	0	1	3	4	4	73.10	60.00	73.33	70.00	78.33
Contractors list (company registration, experience, guaranty)	0	3	9	12	5	0	0	0	2	1	0	3	9	13	5	0	2	3	5	2	0	1	6	3	2	73.10	86.67	73.33	71.67	70.00
Duration	0	4	8	6	7	0	0	0	0	0	0	4	8	7	7	0	3	3	3	3	0	1	5	1	4	72.80	0.00	73.08	70.00	74.55
Bill of quantity (BoQ) quality	1	2	10	11	5	0	0	0	2	1	1	2	10	12	5	0	1	5	5	1	1	1	5	2	3	71.72	86.67	72.00	70.00	68.33
Design, planning and schedule	0	2	10	14	2	0	0	1	1	1	0	2	10	15	2	0	1	3	7	1	0	1	6	4	0	71.43	80.00	71.72	73.33	65.45

110

7. Construction																											
Construction ethod nd echnique	0	0	8	9	9	0	0	0	1	0	0	0	8	9	10	0	0	5	5	2	0	0	3	3	5	80.77	80.00	81.48	75.00	83.64
Quality ontrol, omitoring and evaluation	0	1	7	11	10	0	0	0	2	1	0	1	7	11	11	0	0	4	6	2	0	1	3	3	5	80.69	86.67	81.33	76.67	80.00
Housing tandard nd pecification	0	0	7	14	7	0	0	0	1	2	0	0	7	14	8	0	0	4	7	1	0	0	3	6	2	80.00	93.33	80.69	75.00	78.18
Design, lanning nd chedule	0	0	10	12	7	0	0	0	1	2	0	0	10	13	7	0	0	5	5	2	0	0	5	5	2	77.93	93.33	78.00	75.00	75.00
Project rganization nd anagement ystem	1	0	8	13	7	0	0	0	3	0	1	0	8	13	8	0	0	4	6	2	1	0	4	4	3	77.24	80.00	78.00	76.67	73.33
Labors kill	0	1	8	14	5	0	0	0	3	0	0	1	8	14	6	0	1	5	5	1	0	0	3	6	2	76.43	80.00	77.24	70.00	78.18
Materials ontrol	0	1	8	15	4	0	1	1	1	0	0	1	8	15	5	0	0	4	7	1	0	0	3	7	1	75.71	60.00	76.55	75.00	76.36
Cost ontrol	0	3	6	14	5	0	0	1	1	0	0	3	6	15	5	0	0	2	8	2	0	3	3	3	3	75.00	70.00	75.17	80.00	70.00
Construction upervision En(gineer)	0	3	5	13	4	0	0	0	0	0	0	3	5	14	4	0	1	1	8	2	0	2	4	3	2	74.40	0.00	74.62	78.33	69.09
New echnology nd refabrication	0	2	9	9	5	0	0	0	0	0	0	2	9	9	6	0	2	5	3	2	0	0	4	5	2	73.60	0.00	74.62	68.33	76.36
Payment ropess	0	5	4	16	4	0	1	0	2	0	0	5	4	17	4	0	0	3	7	2	0	4	1	5	2	73.10	66.67	73.33	78.33	68.33
Equipment ontrol	0	2	10	13	3	0	1	0	2	0	0	2	10	14	3	0	0	5	6	1	0	1	5	4	1	72.14	66.67	72.41	73.33	69.09
Contract ocument	0	3	11	12	3	0	1	1	1	0	0	3	11	13	3	0	1	4	7	0	0	1	6	3	2	70.34	60.00	70.67	70.00	70.00
8. Delivery																											
Customer's atisfaction	0	2	6	13	8	0	0	0	0	3	0	2	6	13	9	0	0	5	6	1	0	2	1	6	3	78.62	100.00	79.33	73.33	76.67
Affordability in(come)	0	1	5	15	5	0	0	0	0	0	0	1	5	16	5	0	0	4	6	2	0	1	1	7	3	78.46	0.00	78.52	76.67	80.00
Public utilities	0	1	7	13	5	0	0	0	0	0	0	1	7	13	6	0	0	4	8	0	0	1	3	5	3	76.92	0.00	77.78	73.33	76.67
Infrastructure	0	1	7	12	4	0	0	0	0	0	0	1	7	13	4	0	0	6	5	0	0	1	1	6	3	75.83	0.00	76.00	69.09	80.00
Community str(ong, oulsing anagement)	0	2	9	10	5	0	0	0	0	0	0	2	9	10	6	0	1	6	5	0	0	1	3	5	3	73.85	0.00	74.81	66.67	76.67
Documentation nd ayment ropess	1	3	9	11	5	0	0	0	3	0	1	3	9	11	6	0	0	6	4	2	1	3	3	4	1	71.03	80.00	72.00	73.33	61.67
Delivery ropess	0	4	9	12	3	0	0	1	2	0	0	4	9	13	3	0	1	6	4	1	0	3	2	4	2	70.00	73.33	70.34	68.33	69.09
9. Maintenance																											
Communities arpicipant	0	4	7	9	9	0	0	0	2	1	0	4	7	9	10	0	1	5	4	2	0	3	2	3	4	75.86	86.67	76.67	71.67	73.33
Maintenance ystem	0	1	14	8	6	0	0	1	0	2	0	1	14	8	7	0	0	7	5	0	0	1	6	3	2	73.10	86.67	74.00	68.33	70.00
Housing anagement ad(ministration)	0	2	11	13	3	0	0	2	1	0	0	2	11	14	3	0	1	5	6	0	0	1	4	5	2	71.72	66.67	72.00	68.33	73.33
10. Government Required																											
Policy	0	0	5	3	17	0	0	0	0	0	0	0	5	3	18	0	0	3	3	6	0	0	2	0	9	89.60	0.00	90.00	85.00	92.73
Financial nd udgeting	0	0	2	10	14	0	0	0	0	0	0	0	2	11	14	0	0	1	5	6	0	0	1	4	7	89.23	0.00	88.89	88.33	90.00
Infrastructure roa(d, ridge, drainage, thers)	0	1	5	12	8	0	0	0	0	0	0	1	5	12	9	0	0	3	6	3	0	1	2	6	3	80.77	0.00	81.48	80.00	78.33
Land nd ocation	0	1	5	13	7	0	0	0	0	0	0	1	5	14	7	0	0	2	6	4	0	1	3	6	2	80.00	0.00	80.00	83.33	75.00
Improve quality of life	0	0	6	13	6	0	0	0	0	0	0	0	6	14	6	0	0	3	6	3	0	0	3	6	2	80.00	0.00	80.00	80.00	78.18
Public utility (water supply, electricity, transportation)	1	0	5	13	7	0	0	0	0	0	1	0	5	13	8	0	0	3	7	2	1	0	2	6	3	79.23	0.00	80.00	78.33	76.67
provide mployment, raining kill	0	2	9	13	2	0	0	0	0	0	0	2	9	14	2	0	1	4	6	1	0	1	5	5	1	71.54	0.00	71.85	71.67	70.00
Construction echnology	0	3	7	14	1	0	0	0	0	0	0	3	7	15	1	0	1	5	6	0	0	2	2	7	0	70.40	0.00	70.77	68.33	69.09
Human esource tra(ining, ensinar, orkshop)	0	3	13	6	3	0	0	0	0	0	0	3	13	6	4	0	1	8	3	0	0	2	5	3	1	67.20	0.00	68.46	63.33	65.45

5.2.1. Policy

The critical success factors (CSFs) were identified through the questionnaire survey, which afterward calculation defined significant indexes of success factors as shown in Table 5.1. For the four countries, based on all responses, the top five critical success factors in policy stage are (1) Government budget, (2) Housing needs, (3) Resource capacity, (4) Affordability (income), and (5) Public utility as shown in Table 5.3.

However, analysis was done for each country; the results are shown in Table 5.2. In Indonesia, the result revealed the top five critical success factors ranked in order of importance: (1) Affordability, (2) Resource capacity, (3) Housing need, (4) Government budget, and (5) Infrastructure support. These results reveal that the most significant factor are affordabilities, the resource potential of a country, the variety of conditions, number of housing need and the budgets with the possibility to build more low cost houses. In Laos, data showed a bit different result, while the survey in Malaysia pointed out that the most important critical success factors is the housing number and the last is income affordability. Malaysian has the country's stronger economic condition. With a better living condition and strong economic growth, the support to housing development projects and the target group can be well maintained. Thailand case differed absolutely from the other countries because the first factor is the public utility and the fifth factor is the housing need; it means that they need more government support for public utilities and others factors.

Table 5.2: The Significant Indexes in policy stage.

1. Policy	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Government budget ability and financial support	80.00	66.67	80.67	80.00	80.00
Housing need (amount, for low and middle income)	79.29	73.33	79.31	85.00	74.55
Resource capacity (land, material, labor and others)	78.57	86.67	77.24	78.33	81.82
Affordability (income)	78.40	93.33	78.46	70.91	82.22
Public utilities (water supply, electricity, public transportation)	78.33	0.00	77.60	76.67	84.00

5.2.2. Feasibility Study

In the feasibility study stage, the significant indexes of the top five (1) Finance, (2) Housing needs, (3) Resource, (4) Infrastructure support, and (5) affordability are determined. The top five significant indexes show that, in the feasibility stage, the policymakers and the decision maker should pay careful attention to the financial system including long term loans, interest rates and other as shown in Table 5.3.

Table 5.3: The Significant Indexes in feasibility study stage.

2. Feasibility Study	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Financing (budget, financial system)	84.14	93.33	84.67	83.33	80.00
Housing needs	80.71	93.33	81.38	80.00	74.55
Resource (land, labor, material)	78.62	80.00	78.67	78.33	78.33
Infrastructure support (road, water, electricity)	78.40	0.00	79.23	71.67	81.82
Affordability (income)	75.86	93.33	76.67	70.00	75.00

5.2.3. Land acquisition.

In land acquisition stage, the top five critical success factors are (1) Land policy and land subsidy, (2) Location and distance, (3) Land law and regulation, (4) Public transportation, and (5) Ground condition, as shown in Table 5.4 However, the critical success factors in each country are nearly the same. This means that at that stage, land policy for housing development, and the location selection may affect the whole project success in term of economic and customer's satisfaction. Land uses must follow land laws, regulations and urban planning. Furthermore, public transportation must be available to meet customers need, at least to take them to their work places. The lands should be in good conditions to avoid high cost resulting from land speculation and free from problems probable to arise in the near future.

Table 5.4: The Significant Indexes in land acquisition stage.

3. Land	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Land policy and land subsidize	82.14	93.33	82.76	73.33	85.45
Location and distance	80.69	93.33	80.67	73.33	85.00
Land law and regulation	76.43	80.00	77.24	66.67	81.82
Public transportation	75.86	86.67	76.00	71.67	76.67
Land in the good condition (no flood, soft clay, land fill and others)	75.38	0.00	76.30	68.33	80.00

5.2.4. Finance.

The top five critical suc cess factors are (1) Housing bank, (2) Affordability, (3) Government support (G uarantee), (4) Interest rate, and (5) Loan as shown in Table 5.5. In considerating of each country, they got the sam e results. This means that th ey need housing banks or financial institutions to support the housing projects and assure the buying affordabilities of the lo w incom e people. Thus to estim ate the am ount of money required from their governm ents to support the targeted group, and financial policy in term of long term loans and low interest rates.

Table 5.5: The Significant Indexes in finance stage.

4. Finance	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Housing bank or bank support for housing	77.86	100.00	78.62	68.33	80.00
Affordability (Income)	73.79	93.33	74.00	65.00	76.67
Government support for bank guarantee	70.00	80.00	70.34	61.67	74.55
Interest rate	68.57	90.00	68.97	60.00	73.33
Loan	67.86	70.00	68.28	63.33	71.67

5.2.5. Design and Planning.

Based on the results from four countries, the top five critical success factors are (1) Land area and location (2) Quality con trol, (3) Housing law and regulation, (4) Housing standard and specification (5) Custom er's satisfaction as shown in th e table below. The exception can be seen in Indonesi a result, where critical success factors are believed to be "quality control" and "housing law" as first priority. "Land area and location" represents the first priority for the other 4 c ountries, but Indonesia ranked it as the second factors among the five top key factors of success.

Table 5.6: The Significant Indexes in design, planning and scheduling Stage.

5. Design, Planning and Scheduling	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Land area and location	77.24	80.00	77.33	80.00	73.33
Quality control and safety	77.14	86.67	77.93	75.00	74.55
Housing law and regulation	75.71	86.67	76.55	68.33	78.18
Housing standard, technical specification	75.00	73.33	75.17	76.67	70.91
Customer's satisfied	73.79	73.33	74.00	70.00	73.33

5.2.6. Bidding.

From the results, the top five critic al success factors are (1) budget, (2) Contractor capacity, (3) Bidding analysis, (4) Construction contract (5) Bidding process the Table 5.7 as shown below. Howe ver, Thailand differs from the others by ranking "contractor's capacity" the first and "bidding process" as the last. Perhaps they could be important indicator to reveal the concerned problems occurring with the contractors' capacities and their bidding processes.

Table 5.7: The Significant indexes in bidding stage.

6. Bidding	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Budget	82.76	86.67	83.33	85.00	76.67
Contractors capacity (fund, equipment and human resources)	80.77	0.00	81.48	78.33	80.00
Bidding analysis/ Selection	75.00	80.00	75.17	75.00	72.73
Construction contract	73.57	73.33	73.79	73.33	72.73
Bidding process	73.10	60.00	73.33	70.00	78.33

5.2.7. Construction.

In this stage, the top five critical success factors are (1) Construction method, (2) Quality control, (3) Hou sing standard a nd specification, (4) Design and planning, (5) Project organization and m anagement as show n in the table below. Survey in Laos and Thailand give the sam e results while results from Indonesia diverge from the group, their interest is alm ost focused on "Housing standard and specification" and "Design and planning". Also, Malaysia, vot ed equally for "quality control" and "project organization and management" as the leading factors.

Table 5.8: The Significant Indexes in construction stage.

7. Construction	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Construction method and technique	80.77	80.00	81.48	75.00	83.64
Quality control, Monitoring and evaluation	80.69	86.67	81.33	76.67	80.00
Housing standard and specification	80.00	93.33	80.69	75.00	78.18
Design, Planning and Schedule	77.93	93.33	78.00	75.00	75.00
Project organization and management system	77.24	80.00	78.00	76.67	73.33

5.2.8. Delivery.

The top five critical success factors are (1) Customer's satisfaction, (2) Affordability, (3) Public utility, (4) Infrastructure, (5) Community management, as shown in the table below. Based on the results, Laos votes were almost similar to the others in the group. Malaysia and Thailand, stressed on "Affordability of target group" and "infrastructure" as the high priority. In Indonesia, Customers' satisfaction is also the most important critical success factors and they have a bit difference from others country, as show in Table 5.1. Their critical success factors are documentation, payment process, and delivery process, etc.

Table 5.9: The Significant Indexes in delivery stage.

8. Delivery	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Customer's satisfaction	78.62	100.00	79.33	73.33	76.67
Affordability (income)	78.46	0.00	78.52	76.67	80.00
Public utilities	76.92	0.00	77.78	73.33	76.67
Infrastructure	75.83	0.00	76.00	69.09	80.00
Community (strong, housing management)	73.85	0.00	74.81	66.67	76.67

5.2.9. Maintenance

In this stage, the most important critical success factors can be respectively listed as "community's participant", "housing management", and "maintenance system". In the past, this stage does not exist; it was originally believed that such activities should be left with the customers and encourage them to manage by themselves. Then, after several successes and after long accumulated experience, they re-considered this matter. Nowadays, during the planning step, they include "the maintenance system" in the planning process and ask the communities to participate in this task.

Table 5.10: The Significant Indexes in maintenance stage.

9. Maintenance	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Communities participant	75.86	86.67	76.67	71.67	73.33
Maintenance system	73.10	86.67	74.00	68.33	70.00
Housing management (administration)	71.72	66.67	72.00	68.33	73.33

5.2.10. Support required from government

The top five critical success factors which are required from government are (1) Policy, (2) Financial support, (3) Infrastructure, (4) Land subsidy, (5) Improving quality of life (Income) as shown in the Table 5.11. The related information of Indonesia was not available. There are some similarities showed in Laos and Thailand. In Malaysia, data showed a slight difference. Apparently, all four countries unanimously ranked "financial and budget" in second place.

Table 5.11: The Significant Indexes of support required from government

10. Support required from government	Significance Index				
	Sum	Indonesia	Laos	Malaysia	Thailand
Policy	89.60	*	90.00	85.00	92.73
Financial and budgeting	89.23	*	88.89	88.33	90.00
Infrastructure (Road, bridge, drainage, others)	80.77	*	81.48	80.00	78.33
Land and location	80.00	*	80.00	83.33	75.00
Improving quality of life	80.00	*	80.00	80.00	78.18

5.3 Summary

Low cost housing projects in four countries were summarized in a model for low cost housing process with critical success factors in each stage. Those critical success factors exert considerable influence on low cost housing projects successes. Therefore, it is strongly recommended that the policymakers, decision makers, designers, project managers and the others who are responsible for the project should pay due diligence while implementing this type of project.

Various success factors have been identified through case studies, literature review, and interviews and correspondences by those who were mentioned above. The success factors are further analyzed in each stage of low cost housing process such as policy determining, feasibility study, land acquisition, finance, design and planning, bidding, construction, delivery and maintenance.

The research on critical success factor (CSF) in each stage of the process was limited in the number of respondents and time for distributing questionnaires in each country mentioned above. These CSFs do not include all success factors in all low cost housing process, which was used as a guide and can continually be revised and utilized to improve for further research.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

To provide low cost housing for low income people is one of the main issues in several developing countries, including Indonesia, Laos, Malaysia and Thailand in order to improve the quality of lives. It becomes the government policy to ensure that every people, particularly the low income group should have access to adequate and decent houses affordable by their income. This research attempted to study low cost housing administration in each country, from the point of view of the public owner. The objective is to study low cost housing process, organizations of government offices, to define problems and constrains, and to identify the critical success factors (CSF) in each stage of the low cost housing process, including policy, land, feasibility study, financing, design and planning, bidding, construction, delivery and maintenance.

6.1 Summary and Conclusion

It was found that in the low cost housing project, housing programs are formulated based on various factors such as housing need, population growth rates, household size, family structure, household income distribution of existing housing stock, construction capacity, availability of resources, pre-financing and end-financing and the extent of housing size and others. In Indonesia, Laos, Malaysia and Thailand, the low cost housing is under the government control and support. They have the common objective of providing low cost housing units to low income people suitable with their incomes. The project implementation has the same basic process, and government supports such as financial, land, infrastructures, public utilities, facilities, etc. The most advantage is that their governments are more concerned on sustainability of low cost housing projects by assigning responsibilities to the local authorities and communities to manage and maintains the low cost housing project after low income people occupy housing units.

As a comparison between the low cost housing administration of Indonesia, Laos, Malaysia and Thailand, they are coordinated with other agencies and developers

for incentive housing supplies. In Indone sia and Thailand, governm ent provides housing policy and financial support, and th ey are implemented by National Housing Authority (NHA), a state enterprise under th e governm ent control. In Malaysia and Laos, housing developm ent program is under the Ministry of Hous ing, National Housing Authority, Housing Departm ent, etc. All m inistries, offices, institutes are coordinated in this project as shown in the low cost housing project diagram in Figure 6.1.

Financial support has to follow the gove rnment policy. There is the N ational Treasure, housing banks, and other financial institutes to give supports for long term loans, low interes t ra tes, bank guarant ees, etc. They are facing with incom e affordabilities of the people in the targe ted group who do not have fix incom e and could not pay back the borrowed money.

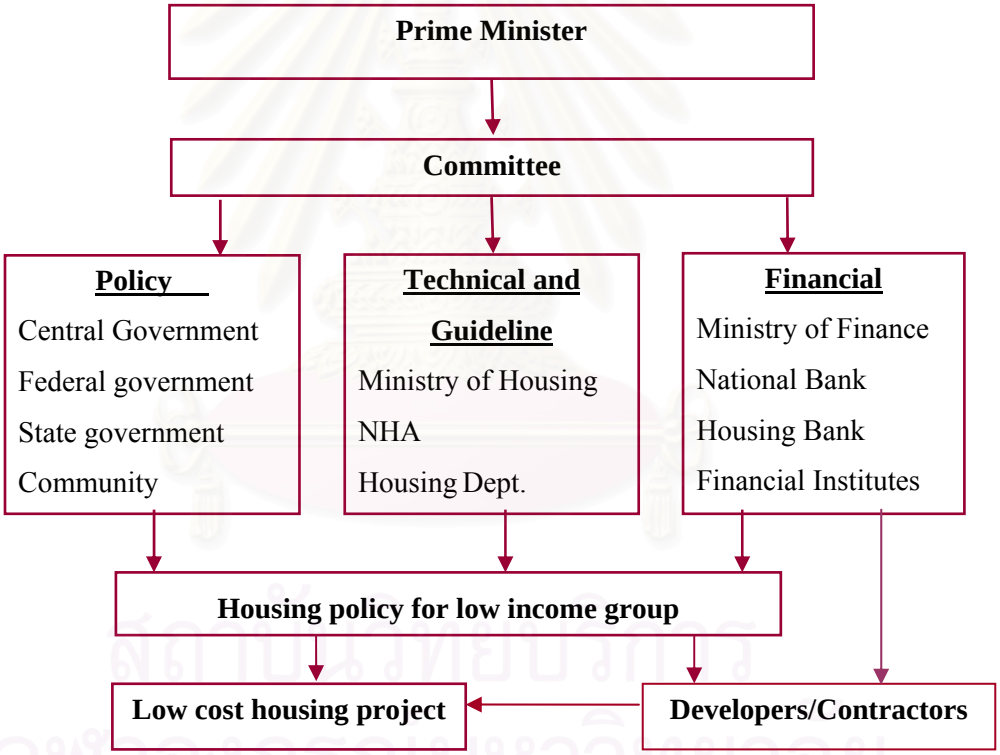


Figure 6.1: The organization structure for low cost housing programs.

It was found that, in low cost housing pr ocesses in four count ries, the stage of policy and financial is the most significant and will affect project successes in term of providing low cost houses to low income people. However, the major problems in low cost housing stage in four countries, were the policy, financing, and land acquisition stage.

This research attempts to identify critical success factors (CSF) from those who are responsible for and participate in the low cost housing projects. From data analysis the critical success factors in each stage of low cost housing were presented. For example: the top five critical success factors in policy stage are (1) Government budget, (2) Housing needs, (3) Resource capacity, (4) Affordability (income), and (5) Public utility. Those critical success factors in each country were slightly different because of their condition, social economic, tradition and others.

6.2 Recommendation

To be successful in low cost housing process, the government should be clear in policy and the target group and they should prepare and plan for the housing development. They should not wait until housing problems occur and become so difficult to solve.

The housing policy should be established in early stage. The national housing policy must clearly state how far the government will be prepared for public housing, and the contribution of the private sector in housing development plan. It should also state who can expect the housing unit. Moreover, the government should be concerned on housing development by performing research and feasibility study on planning and estimating housing budgets and giving supports in infrastructures, public utilities and facilities, especially for human resources to improve housing sector by providing budgets and trainings in low cost housing projects and management, sharing and learning with other countries in the region. Otherwise, they are different in some conditions, economic, policies, and so forth.

Housing administration work is the main core of low cost housing project implementation. Housing sector should have good organization, management system, policy, planning and strategy of implementation, research and study on resource available such as material, labors, lands, physical conditions, social benefits, impact environmental assessment, and etc. Based on the discussion and problems mentioned above, the following actions are proposed for low cost housing project:

1. Development of policy, planning and strategy in housing development programs, set target group, affordabilities, long term loans, interest rates, master plans, subsidy scheme, etc. Government supports the provision of financial, infrastructure and services, community development, employment opportunity, etc.

2. Development of housing laws and regulations, facilities and implementation of transparent and participative planning and design, and enforcement of building laws, regulations and standards.
3. Development of financing system , s ubsidies, support housing m arket, and providing economic support for low income people
4. Design and construction should be techni cally and economically efficient, and concerning on environm ental impact . Developm ent in housing design standards and specifications should m atch with the incom e level of low income people. Buildings should be desi gned to satisfy custom ers and should be flexible to the changing dem and a nd with consideration of custom er's habit, tradition and cultural patterns.
5. Land locations of public housings should be close to em ployment opportunities. The objective is to improve income of the low income group.
6. Housing estates and co mmunities s hould be large enough to increase basic social pleasure such as sc hools, markets, clinics, and good transportation to them.
7. Housing managem ent or estate m anagement should be substantial and efficient, enhanced by comm unity partic ipation. The community pa rticipation is the key to success and sustainable housing project.
8. The governm ent offices should continue to prepare forms and guidelines, which will clarify all procedures and reduce the time for approval. Among the hot issues, the problem that seem to be hardest to resolve are the design of a plan layout, the application for im plementation, and the app lication for land acquisition.
9. For new low cost housing projects, they should consider the critical success factors (CSF), which were m entioned in Chapter V. The CSFs are the significant factors and as the sam ples to study in the process for low cost housing projects success and the CSFs will depend on the co nditions of those countries as well.

Recommendation for further study

1. From this study of low cost housing pr oject in adm inistration, organizations, problems and constraints, the continuing research should try to concentrate in more detail on each of the low cost housing project process.

2. From critical success factor, the further re search is suggested to be identified in details of sub-critical success factors of each critical success factors, for th e project success.
3. Low cost housing guidelines for deve loping countries in Southeast Asian countries are recomm ended. The guideli nes in planning, design, construction, monitoring and construction supervisi on can enhance a smooth execution in each stage.

REFERENCES

Amno, Z. M. Low cost housing project for the info rmal sector workers in Se marang Municipality. Master's thesis, civil engi neering, Asian Institute of Technology, HS-90-3, 1974.

Abd-el-Hamid, E. A review of some of the m ajor factors affecting the provision of housing in Trinidad an d Tobago in the 1980'S. Nigeria, Housing Science Journal, 3, 6 (1979): 445-460.

Abd-el-Hamid, K .R. Low cost housing: problem s in technologica l innovation and recapitulation techniques. India, Housing Science Journal, 6, 3 (1982): 255-270.

Aphaylat, K., Iterbeke, M., Th ielens, D., and Plyplu, N. Low cost housing demonstration project Laos. Low cost housing project by cooperating of UNDP, IETU, KU, and KMIT, 1988.

Ajibola, K., and Olubodun, O. F. Appraisal of low cost housing design-case study of federal government housing typology, Nigeria. Housing Science Journal, 14, 2 (1990): 091-105.

Ambika, P., and Adhikari. A proposal for appropriate standard for low incom e housing for Katm andu, Nepal: guideline and sam ples. Toronto, Canada. Housing Science Journal, 18, 3 (1994): 167-202.

Abraham, L. G. Critical success factor for con struction industry. School of civil and environmental engineering, Georgia Institute of Technology, Atlanta, 2002.

Balchin, P. Housing policy and introduction . Routiledg e London an d New York, ISBN 0-415-09302-3, 1995.

Black, C., Akintoye, A., and Fitzgerald, E. An analysis of success factors and benefit of partner ing in con struction. International Journal of Project Managem ent, No.18 (2000): 423-434.

Bank of Thailand. Bank lending, the housing m arket, a nd risks: a test for financial fragility. Thailand, November 2004.

Correa, C. M. Function and spatial planni ng in low cost h ousing. Housing Science Journal, 1, 1 (1977): 273-292.

Clugston D. W . Low c ost housing schem es develope d in advanced countries for application in developing countries. Housing Science Journal, l, 1 (1977): 179-197.

Chan, L. Housing delivery system : the industry viewpoint . Housing the nation: a definitive study, Minis try of Housing and Local Government of Malaysia, 2002.

Department of Economic and Social Affair. Housing policy guidelines for developing countries. United Nation, New York, (1976).

Dhahran. The housing problem in developing countries . Conference on housing problem in developing countries. Intern ational association for housing science (IAHA) and University of Petroleum and Minerals (UMP), (1978).

Dluhosch, E. Design and assignm ent of cost alternatives of staged low cost housing. Massachusetts, USA, Housing Science Journal, 3, 6 (1979): 401-430.

Djabbar, O. S. Basic factors determining hous ing standard in Tashkent . Uzbekistan, USSR, Housing Science Journal, 14, 4 (1990): 233-243.

East-West Center, Hawaii. Low cost housing technology , An East-W est Perspective, US, Perga mon Press, Oxford, New Yor k, Toronto, Sydney, Paris, Frankfurt, (1976).

Erguden, S. Low cost housing: policy and constraint in developing countries. Housing policy section, United Nation C enter for Hum an Settlem ent (Habitat). International conference on spatial in formation for sustainable developm ent Nairobi, Kenya, 2001.

Fashridjal, N. The low incom e housing delivery system in Jakarta, Indonesia . Master's thesis, civil engineering, Asian Instit ute of Technology, Thailand, No. 12, 1977.

Hwang M.C. A search for low cost land develo pment technique. Urban and regional studies, Asian Institute of technology, Tha iland, Housing Sc ience Journal, l, 1 (1977): 365-379.

Hassan, K. S. Low income housing and it's industri alization in developing countries. Housing Science Journal, l, 1 (1977): 307-319.

Hassan, M. M. Low cost housing finance in devel oping countries: with reference to Egypt. Saudi Arabia, Housing Science Journal, l.14, 1 (1990): 011-024.

International development research center. Southeast Asian low cost housing study group. Conference of Southeast Asian low-cost housing study group at Bali, Indonesia, 1973.

International development research center, Southeast Asian low cost housing study. Low cost housing in Laos, Vientiane. Ottawa, Canada, 1973.

Jorgensen, N.O. Housing finance for low income groups. General Printers Ltd. Homa Bay Road, Nairobi, Kenya, 1975.

John, H., H., and Toledo, O. Related to low cost housing. Housing Science Journal, 3, 2 (1979): 143-151.

Kukreti, A. R. Design and Evaluation criteria for low cost housing. Master's thesis, civil engineering, Asian Institute of Technology, 1974.

Karaesen, E. Some technical and financial aspects of low cost housing in developing countries. Housing Science Journal, 7, 2 (1983): 127-135.

Kometa, S.T., and Olomolaiye, P.O. Evaluation of factors influencing construction clients' decision to build. Journal of management in engineering / March / April. (ASCE) 13, 2, 1997.

Kaitilla, S. Housing quality: a measure of housing satisfaction? Papua New Guinea, Housing Science Journal, 22, 3 (1998): 147-157.

Lo, P. Kh. Performance evaluation and design of a low cost housing system in Malaysia. Master's thesis, civil engineering, Asian Institute of Technology, 1976.

Ler, A. B. An evaluation of the 30 per cent low cost housing policy in Malaysia, case studies of private housing project in Selangor state. Master 's thesis, civil engineering, Asian Institute of Technology, Thailand, No. 89, 1989.

Lao Development Bank. Notice: loan and interest rate. Vientiane Laos P.D.R, July 2003.

Mohan, D., and Roorkee, U.P. Traditional and improved building material for low cost housing. Housing Science Journal, l, 1 (1977): 165-178.

Mathur, G. C. Transfer of technology and application of research result for low cost housing in developing countries. Housing Science Journal, l, l (1977): 165-178.

Mohan, D. New building materials. Housing Science Journal, 3, 6 (1979): 431- 436.

Madhava Rao, A. G., Ram achanda Murthy D.S. Performance evaluation of low cost houses. Housing Science Journal, 7, 1 (1983):027-048.

Meeks, C. B. Improving the quality of low cost housing: the use of national standards. University of Georgia, Housing Science Journal, 13, 4 (1989): 267-275.

Marat, M. T., and Scoffham, E. Planning for a sustainable housing future what can we learn from the past. United Kingdom, Housing Science Journal, 22, 4 (1998) 237-243.

Ministry of Communication, Transportation, Post and Construction. Guideline on housing construction regulation. Housing and Urban Planning Department, Laos, 1992.

Ministry of Communication, Transportation, Post and Construction. Term of reference of Ministry of Communication, Transportation, Post and Construction and Department. Laos, 2001.

Marja, H. S., and Iskandar, B. P. "Policy development for enabling the housing market to work in Indonesia". Technical assistance housing market Indonesia, Ministry of Settlement and Regional Infrastructure, Human Settlements Development, December 2001.

Ministry of Housing and Local Governm ent of Malaysia, Housing policy, Malaysia, 2002.

Minute of meeting of committee of social welfare. Low cost housing "Eua Atron". fifth on 1 October 2546.

Ministry of Settlement and Regional Infrastructure (I). Addendum: housing development facility by housing subsidy support program, Decree No. 24/KPTS/M/2003. Indonesia, 2003.

Ministry of Settlement and Regional Infrastructure (II). Action plan for" One million housing development" national movement. Housing sector, Indonesia, 2003.

Ministry of Settlement and Regional Infrastructure (III). Technical assistance for policy development for enabling the housing market to work in Indonesia. Housing market Indonesia project, Indonesia, 2003.

Ministry of Settlement and Regional Infrastructure (IV). Human settlement country profile of Indonesia, 2004.

Nathalang, W. Housing in Thailand. Southeast Asian low cost housing study, development research center Ottawa Canada, applied scientific research corporation of Thailand, 1974.

National urban development corporation (Perum Perumnas) (I). The role of public sector in housing development. The International advanced seminar course on housing strategies for the urban low income groups, planning and construction of Perum Perumnas, Indonesia, 1989.

National urban development corporation (Perum Perumnas) (II). National housing development policy in Indonesia. Indonesia, 1989.

National Housing Authority of Thailand and the Japan International Cooperation Agency. Technical assistance for housing and urban development. Thailand, 1997.

National Statistic Center of Laos. Poverty in Lao PDR during the 1990's. committee for planning and cooperation, 2002.

National housing Authority of Thailand (NHA). Annual report 2003, Bangkok, Thailand 2003.

Oladapo, M. A. A framework for cost management of low cost housing. International conference on spatial information for sustainable development Narirobi, Kenya, 2-5 October 2001.

Oladapo, M. A. Procurement systems and project organization model for low cost housing. FIG XXII International Congress, Washington, D.C. USA, April 19-26 2002.

Ong, H. Ch., and Lenard, D. Partnerships between stakeholders in the provision of and access to affordable housing in Malaysia. FIG XXII International congress, Washington, D.C USA, April 19-26, 2002.

Panichkaru, M. Low cost housing standards and building technology for aided-self-help housing programmes: the case study in Colombo, Sri Lanka. Master's thesis, civil engineering, Asian Institute of Technology, 1974. SSPR HS 82-15.

Patoumxay, S. An evaluation of housing welfare for pensioned government officials in Vientiane, Lao P.D.R. Masters thesis, Department of Housing, Chulalongkorn University. ISBN 974-17-4668-7, 2003.

Ramaswamy, G. S. Research and development on low cost housing. Housing Science Journal, l, 1 (1977): 231-246.

Ramaswamy, G. S. Low cost housing strategy and technology. Sym posium on reduction of housing cost, Salvador/BA-March/1978, 124, 1978.

Rodell, M. J. Employment and planned improvem ent in low cost housing. Bouwcentrum International Education, 1979.

Ramamurthy, K. N. Housing managem ent for developing countries. Trin idad, Housing Science Journal, 8, 2 (1984): 149-153.

Razaliagus, M. Urban development and housing policy in Malaysia. United Kingdom, Housing Science Journal, l.21, 2 (1997) 097-106.

Stephen, H.K., Yeh., and Laquian, A.A. Housing Asia's millions: prob lem, policies, and prospect for low cost housing in S outheast Asia. Interna tional development center, Ottawa, Canada, 1979.

Sinha, I.B. Solution to the problem of low in come group housing in developing countries by use of prefabricated system. Housing Science Journal, 3, 6 (1979) 445-460.

Sanvido, V., Grobler F., Partitt, K. , Guvenis, M., and Coyle, M. Critical succes s factors for construction projects. Journal of Construction Engineering and Management. 118, 1 March 1992.

Salleh, G., and Choong, L. C. Low cost housing issue and problem. Housing the nation: a definitiv e stu dy, Ministry of Housing and Local Government of Malaysia, 2002.

Sabaruddin, A., and Argyantoro, A. Economic view of utilization of local build ing material. Minis try of Settlem ent and Regional Inf rastructure, Research institute for human settlements, 2004.

Surasakhon, W., Subsompon, W., and Kunawatsatit, P. Key process which contribute to the success of construction projects. The Ninth East Asia-Pacific conference on structure engineering and constr uction. C onstruction and Engineering Management, CME-52. Thailand, 2004.

Tanphiphat, S. Low cost housing policy developm ent in Tha iland. National Housing Authority of Thailand, 1982.

United Nations Center for Hum an Settlements (Habitat). National trends in housing-production practices. ISBN 92-1-131234-5, Indonesia, 1993.

Urban Research Institute of Laos. Draft of regulation of urban planning developm ent of Vientiane prefecture year 2000-2010 . Housing and urban planning Department, Ministry of Communi cation, Transport, Post and Construction (MCTPC), 2000.

United Nations, 2001. Country report on the implem entation of the habitat agenda in the Lao People's Democratic Republic . The special session of the United Nations general assembly, Istanbul, 6-8 June 2001 New York.

Vitaliano, T . S. The low incom e housing delivery system in Manila, Philippine . Master's thesis, civil engineering, Asian Instit ute of Technology, Thailand, 121, 1977.

Wahab, K. A. National housing policy and its eff ects on reduction of housing cost. Housing Science Journal, l.2, 6 (1978): 549-554.

Yue, M. Y. Location aspect in lo w cost hou sing developm ent in Southeast Asia. Conference of Southeast Asia low cost housing to develop in Philippines, International Development Research Center, Canada, 1975.

Interviews:

Amri, BTN Bank, Jakarta, Indonesia. 4 September 2004.

Argyantoro Arvi, Directorate general of housing and settlem ent, Ministry of Settlements and Regional Infrastructu re, Jakarta, Indonesia. 6 Septem ber 2004.

Bin Mat Seek Baharudin, General Manage ment of National Housing Departm ent, Ministry of Housing and Local Government, Malaysia, 21 February 2005.

Karukose Aran, Deputy director project m anagement Departm ent, National Housing Authority of Thailand, Thailand, 14 May 2004.

Murbintoro Tito, Director of Financial and Bidding Department, Ministry of Finance. 4 September 2004.

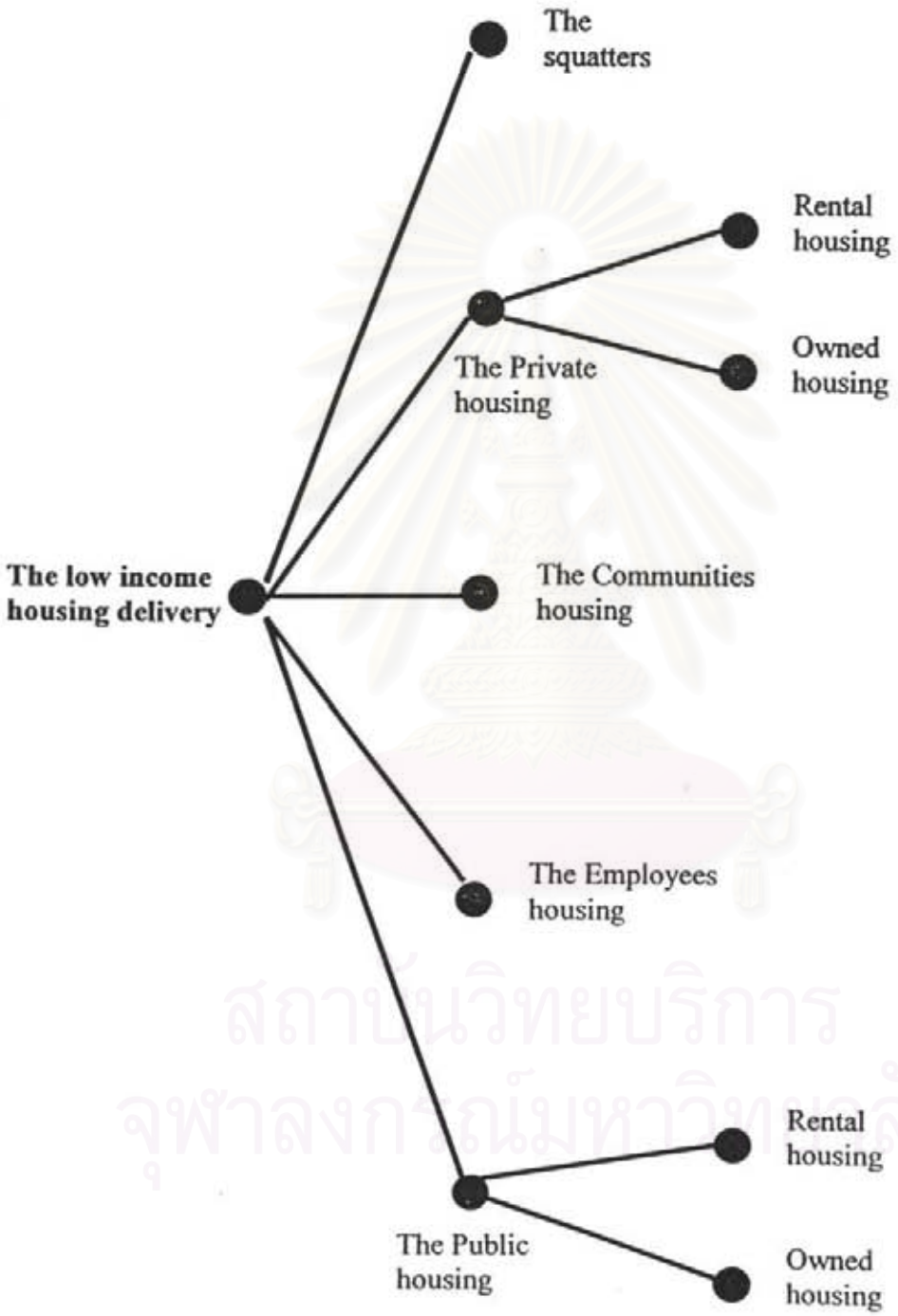
Oulachanh Khammant, Deputy of Retied and senior on governm ent staff departm ent, Vientiane, Laos, 24 March 2004.

Tresani Nurahm a, Gene ral Managem ent Re ntal Housing Business, National Urban Development Corporation (Perum Pe rumnas), Jakarta, Indonesia. 08 September 2004

Vangkeomany Sengthong, Deputy of Housing and Urban Planning Departm ent (DHUP), Housing and Urban Planni ng Departm ent, Ministry of Communication, Transportati on, Post and Construction (MC TPC). Vientiane, Laos, 24 March 2004.

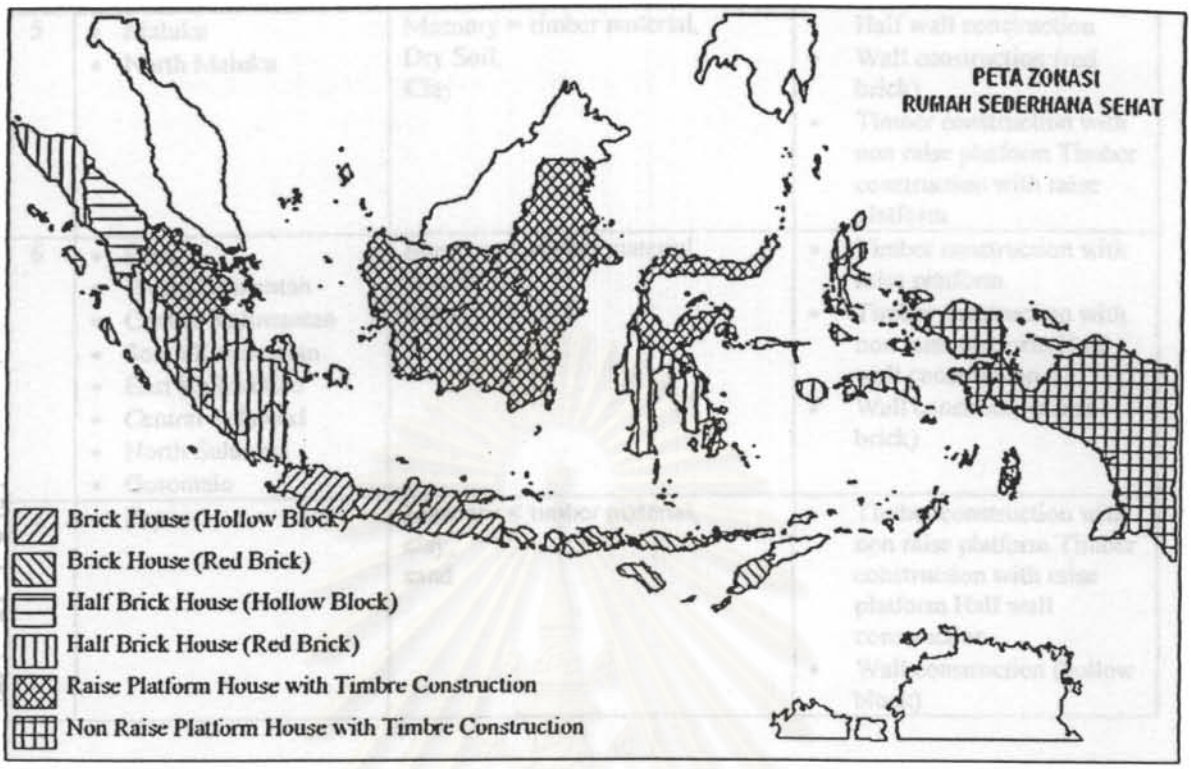
APPENDICES

Appendix .1 Low cost housing delivery system



The low cost housing delivery system in developing country

Appendix. 2. Map of recent simple house in Indonesia (According to Ministry Degree No. 403/2002).



Map of Recent Simple House according to Ministry Decree No. 403/2002

Tipology of Recent Simple House Design

No	Province	Building Material and Geological Condition	Prototipe Design
1	• Bali • NTB • NTT	Masonry > timber material, Dry soil, Clay	• Wall construction (Red Brick)
2	• DKI • West Java • Banten • Central Java • East Java • Yogyakarta	Masonry > timber material, Dry Soil, Sand	• Wall construction (Hollow block)
3	• Nangroe Aceh Darussalam • West Sumatera • Jambi • Bengkulu • South Sumatera • Bangka Belitung • Lampung • South Sulawesi • South East Sulawesi	Masonry = timber material, Wet Soil, Clay	• Half wall construction • Wall construction (red brick) • Timber construction with raise platform • Timber construction with non raise platform
4	• North Sumatera	Masonry = timber material, Wet Soil, Sand	• Half wall construction • Wall construction (hollow block) • Timber construction with raise platform • Timber construction with non raise platform

5	• Maluku • North Maluku	Masonry = timber material, Dry Soil, Clay	• Half wall construction • Wall construction (red brick) • Timber construction with non raise platform Timber construction with raise platform
6	• Riau • West Kalimantan • Central Kalimantan • South Kalimantan • East Kalimantan • Central Sulawesi • North Sulawesi • Gorontalo	Masonry < timber material, Wet Soil, Clay	• Timber construction with raise platform • Timber construction with non raise platform Half wall construction • Wall construction (red brick)
7	• Papua	Masonry < timber material, clay, sand	• Timber construction with non raise platform Timber construction with raise platform Half wall construction • Wall construction (hollow block)

Appendix. 3: Law, regulation, organization and application of Ministry of Housing and Local Government of Malaysia.

LAWS AND REGULATIONS RELATING TO REAL ESTATE AND HOUSING DEVELOPMENT INDUSTRY

Ministry of Housing and Local Government
- Housing Development (Control and Licensing) Act 1966
- Housing Development (Control and Licensing) Regulations 1989
- Housing Development (Housing Development Account) Regulations 1991
- Housing Development (the Tribunal for Homebuyers Claims) Regulations 2002
- Housing Development (Compounding of Offences) Regulations 2002

Local Government Department
- Street, Drainage and Building Act 1974 (Act 133)
- Town and Country Planning Act 1976 (Act 172)
- Town Planners Act 1995 (Act 538)
- Local Government Act 1976 (Act 171)
- Road Transport Act 1987 (Act 333)
- Control of Rent (Repeal) Act 1997 (Act 572)
- Control of Rent Act 1966 (Act 363) (Revised 1988)
- Federal Territory of Kuala Lumpur Land Rules 1995
- Uniform Building By-Laws 1984
- Malaysian Constitution, Schedule 9, Item 76(4) & 95(A)

National Housing Department
- Street, Drainage and Building Act 1974 (Act 133)
- Uniform Building By-Laws 1984

Fire Services Department
- Fire Services Act 1988 (Act 341)
- Uniform Building By-Laws 1984

Department of Town and Country Planning, Peninsular Malaysia
- FMS Town Board Enactment (Cap 137) Chapter IX
- National Land Code Act 56 of 1965
- National Land Code (Penang and Malacca Titles) Act 1963 (Act 518)
- Street, Drainage and Building Act 1974 (Act 133)
- Strata Titles Act 1985 (Act 318)
- Town and Country Planning Act 1976 (Act 172)
- Uniform Building By-Laws 1984

Sewerage Services Department
- Sewerage Services Act 1993 (Act 508)

Other Related Legislation
- Communications and Multimedia Act 1998 (Act 588)
- Continental Shelf Act 1966 (Act 83)
- Electricity Supply Act 1990 (Act 447)
- Energy Commission Act 2001 (Act 610)
- Environmental Quality Act 1974 (Act 127)
- Food Act 1983 (Act 281)
- Land Acquisition Act 1960 (Act 486) (Revised 1992)
- Land and Mining Plans and Documents (Photographic Copies) Act 1950 (Act 233) (Revised 1980)
- Land Conservation Act 1960 (Act 385) (Revised 1989)
- Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994 (Act 520) (Construction Industry Development Board / CIDB)
- Malaysian Communications and Multimedia Commission Act 1998 (Act 589)
- Mining Enactment (FMS Cap 137)
- Municipal Ordinance S.S. Cap 133
- National Land Rehabilitation and Consolidation Authority (Incorporation) Act 1966 (Act 398) (Revised 1989)
- Occupational Safety and Health Act 1994 (Act 514)
- Pengurusan Danaharta Nasional Berhad Act 1998
- Real Property Gains Tax Act 1976 (Act 169)
- Urban Development Authority Act (Act 46)
- Waters Act 1920 (Act 418) (Revised 1989)
- Waters Enactment FMS Cap 146

MINISTRY OF HOUSING AND LOCAL GOVERNMENT

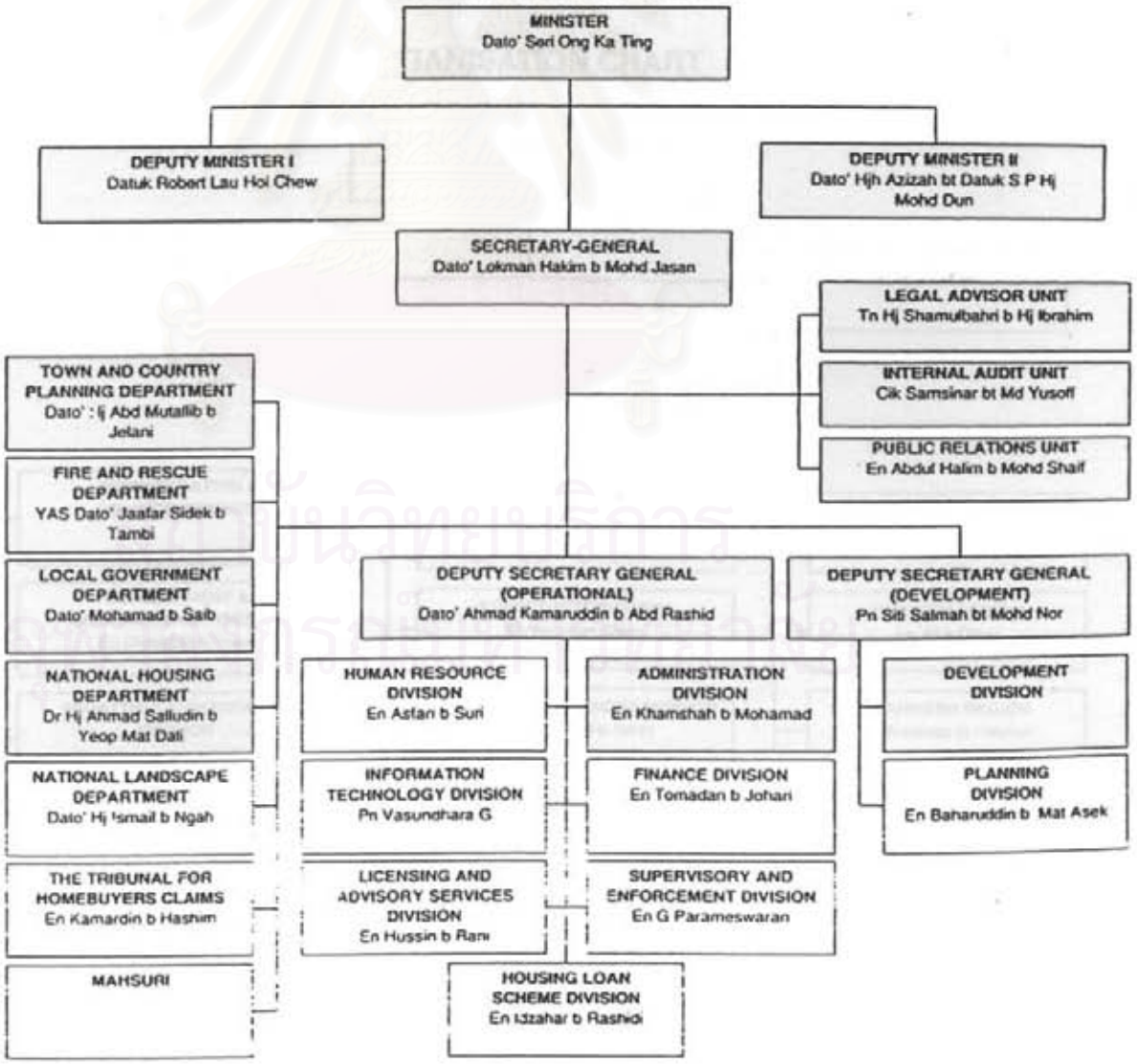
OBJECTIVE

- To create and implement a comprehensive plan for the whole country by strengthening the physical, social, economic and environmental system both in urban and rural areas.
- To encourage, upgrade and assist local authorities in providing quality urban services and provision of social amenities, recreational facilities and economic opportunities.
- To ensure adequate, comfortable and balanced development of housing complete with social and recreational facilities.
- To ensure safety of life and properties through effective fire preventive and control measures, protection from hazardous materials, humanitarian and rescue services and public education pertaining to fire safety.
- To regulate the sewerage services in the country so as to ensure the services rendered are up to expectation, at reasonable cost, in order to control the contamination,
- To develop comprehensive and quality landscaping throughout the country in line with the objectives of making Malaysia a garden country.

FUNCTIONS

- To formulate and implement strategic policies and programmes underlined by the Ministry of Housing and Local Government in line with the objectives of the National Development Policy.
- To coordinate provision of housing for the nation particularly for the lower income group.
- To establish effective local governments that contribute towards progressive societies and comfortable and beautiful environments.
- To provide efficient and effective fire prevention and control services for the safety of life and properties.
- To strengthen and implement urban and rural physical, social, economic and environmental planning systems in accordance to the Town and Country Planning Act 1976.

ORGANISATION CHART



NATIONAL HOUSING DEPARTMENT

The National Housing Department was officially established in 1976 as a result of the Cabinet's decision to replace the Malaysian Housing Trust which existed since 1950 and was abolished through the Act A339 - Malaysian Housing Trust Act (Abolishment) 1976.

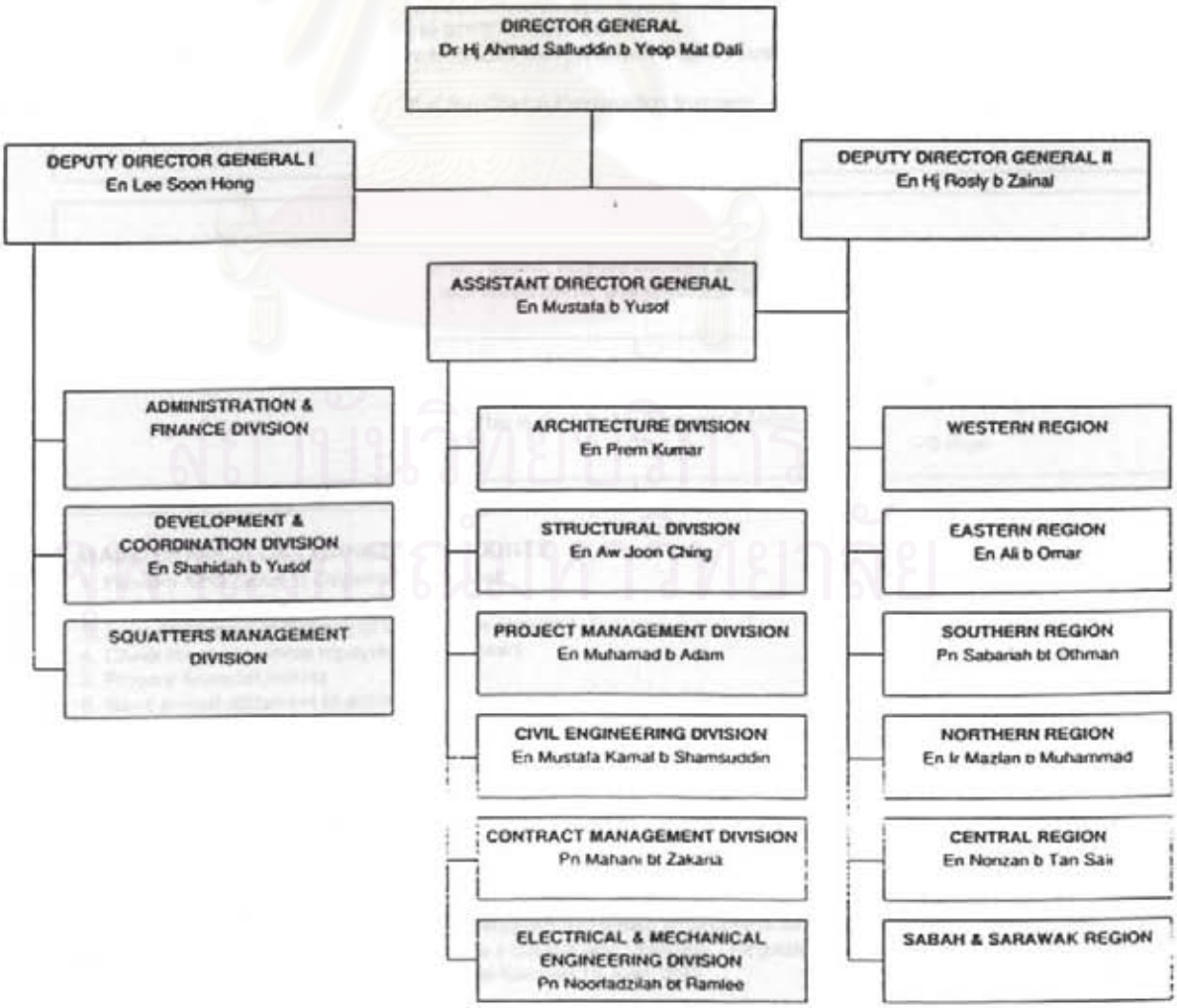
OBJECTIVE

To ensure that all Malaysians, particularly the low-income group, have access to adequate, affordable, and quality housing.

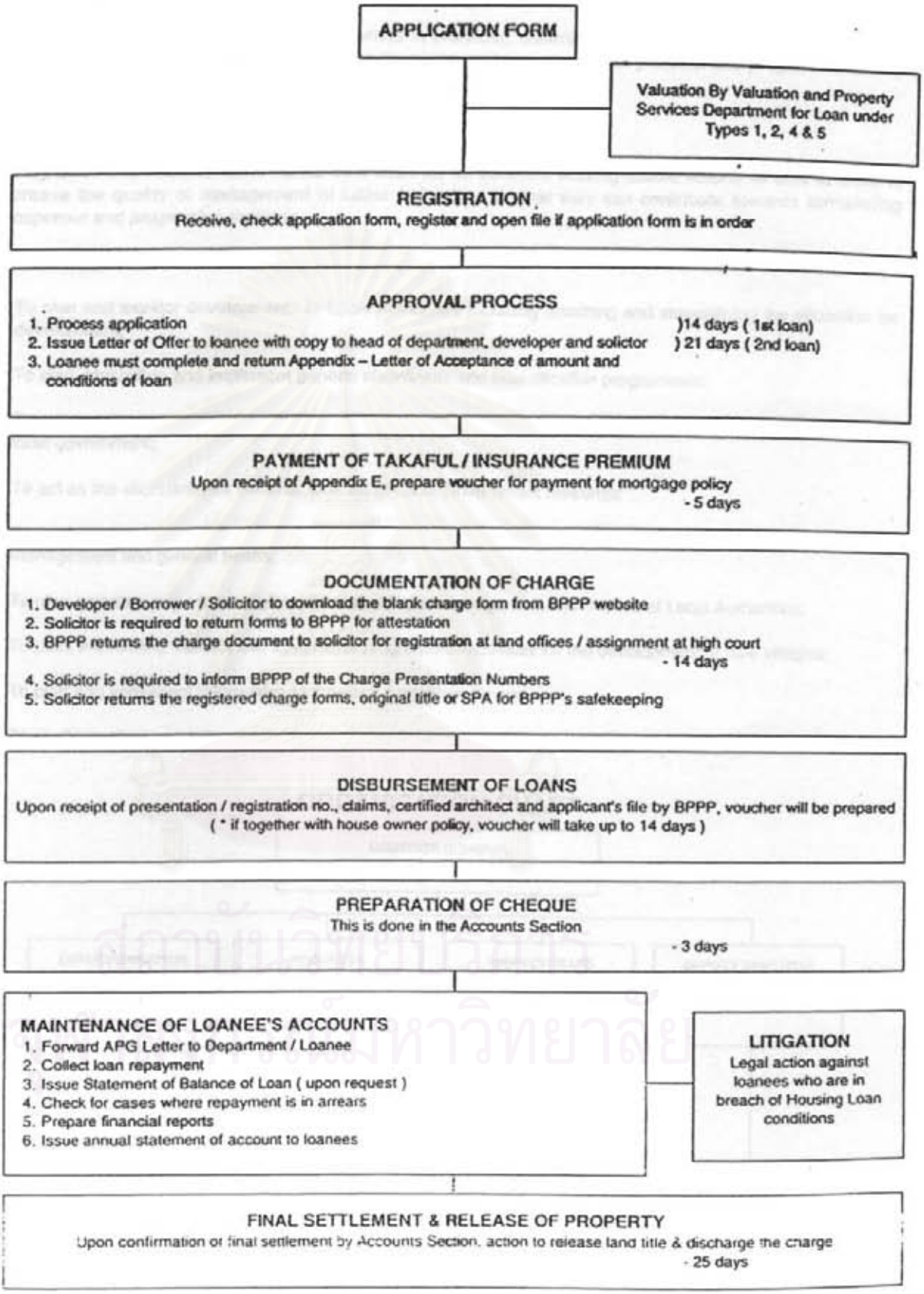
FUNCTIONS

- To formulate strategies and guidelines for the implementation and maintenance of People's Housing Programmes;
- To collect and analyse data on housing needs, particularly for rental to squatters and low-income groups;
- To identify and acquire project sites, if necessary;
- To conduct feasibility studies on proposed People's Housing Projects;
- To provide technical services such as surveying, architectural, engineering (civil, structural, electrical and mechanical), contract and tender management in the implementation of the People's Housing Projects,
- To coordinate and evaluate the designs submitted by consultants;
- To monitor the construction and progress of People's Housing Projects;
- To prepare reports on the performance of projects; and
- To evaluate the operational and technical aspects of People's Housing Projects.

ORGANISATION CHART



MINISTRY OF FINANCE
HOUSING LOAN DIVISION WORK FLOW CHART



NOTE : Treasury Housing Loans are now released according to progress of work and subject to the Third Schedule of Schedules G & H of the Housing Development (Control and Licensing) Regulations 1989. This is stipulated in para 13.1(f) of Treasury Circular No. 6 of 1995 which came into force on 15 June 1995

LOCAL GOVERNMENT DEPARTMENT

OBJECTIVE

To support, guide and assist Local Authorities in planning, controlling and implementing socio-economic development programmes and urban services towards creating a prosperous, peaceful and progressive society in accordance with the National Development Goal.

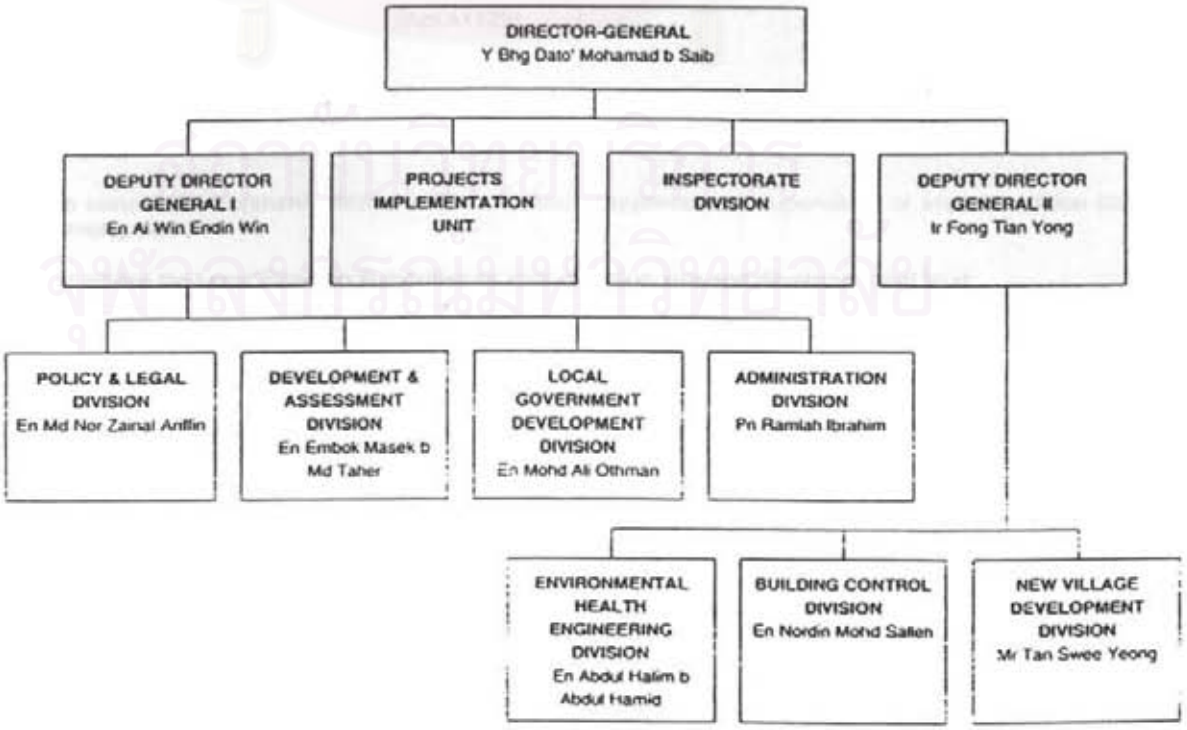
MISSION

To lay down and cultivate moral values as a basis for an excellent working culture among all staff in order to increase the quality of management of Local Authorities so that they can contribute towards formulating prosperous and progressive societies.

FUNCTIONS

- To plan and monitor developments in Local Authorities including obtaining and streamlining the allocation for development;
- To plan, streamline and implement general cleanliness and beautification programmes;
- To prepare procedures and guidelines and to support the legislation and amendment of laws pertaining to local government;
- To act as the secretariat for National Council of Local Government meetings;
- To plan, streamline, supervise and implement projects, educational/awareness programmes on solid waste management and general health;
- To plan and take steps to strengthen the capability of management and finance of Local Authorities;
- To plan, implement, monitor and streamline programmes/activities for the development of new villages;
- To plan and implement information technology programmes; and
- To study, analyse and take appropriate actions pertaining to public complaints.

ORGANISATION CHART



DEPARTMENT OF TOWN AND COUNTRY PLANNING, PENINSULAR MALAYSIA

OBJECTIVES

- To plan for the advancement and reinforcement of the physical, social, economic and environmental planning systems so as to ensure the well-being of the people and to raise the living standards in line with the Government's objectives, particularly that of the National Development Policy and Vision 2020;
- To promote and ensure the smooth implementation of the Town and Country Planning Act 1976 (Act 172) and the Town and Country Planning Act (Amendment) 1995 (Act A933) and the Town and Country Planning (Amendment) Act 2001 (Act A1129) so that development plans form the basis for the planning and control of all land use and development;
- To ensure quality of professional expertise and information for the purposes of long term planning; and
- To provide advisory planning services to all Government agencies at the Federal, State and Local levels.

FUNCTIONS

Federal Level

- To establish a comprehensive, effective and efficient planning system through planning legislation, planning methodology, planning research, planning standards and procedures;
- To translate national socio-economic policies into physical and spatial terms through the formulation of related landuse and human settlement policies and programme;
- To provide supervision to ensure smooth and organised planning services;
- To provide in-service training facilities for all categories of technical personnel at all levels of planning services;
- To provide direct assistance to the State Government agencies in the preparation of Development Plans including State Structure Plans and District Local Plans;
- To prepare, maintain and publish statistics, bulletins and methodology in connection with town and country planning;
- To provide rural planning services to the Ministry of Rural and Regional Development and Department of Aboriginal Affairs, particularly the planning of rural growth centres for development into viable settlements and preparation of settlement plans; and
- To function as a secretariat to the National Physical Planning Council set up under the Town and Country Planning (Amendment) Act 2001 (Act A1129).

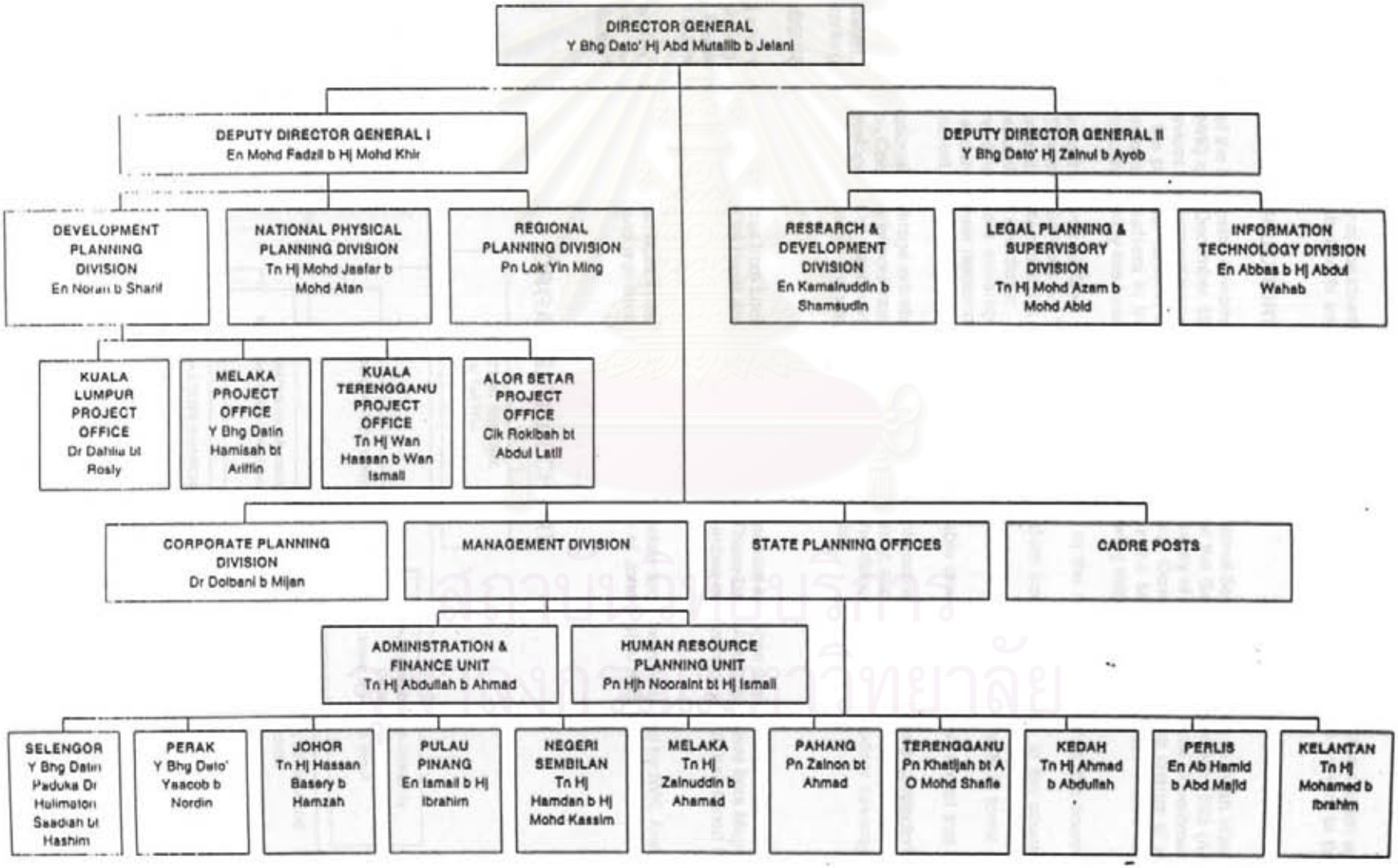
State Level

- To act as a principal advisor to the State Government on all planning matters including use and development of land;
- To control development within the State including approval and supervision of implementation plans for development;
- To advise the Local Planning Authorities on town planning, use and development of land;
- To determine broad landuse and zoning, and assist in preparing town plans;
- To conduct landuse surveys and research, and
- To function as a Secretariat to the State Planning Committee set up under the Town and Country Planning Act 1976 (Act 172)

Local Level

- To plan, regulate and control the use and development of land and buildings within the local authority area;
- To undertake, assist and encourage collection, maintenance and publication of statistic, bulletins, monographs and other publication relating to town and country planning and its methodology; and
- To perform other such functions assigned by the State Authority or the State Planning Committee from time to time.

ORGANISTIONAL CHART
DEPARTMENT OF TOWN AND COUNTRY PLANNING



DEPARTMENT OF SEWERAGE SERVICES

OBJECTIVE

To modernise the sewerage sector of the country with the provision of appropriate sewerage systems which will meet the effluent quality standards and to ensure a more responsive and efficient sewerage service to the customers.

FUNCTIONS AND ROLE OF REGULATORY BODY

Following the decision of the Malaysian Government to privatise the National Sewerage Services to Indah Water Konsortium Sdn Bhd (IWK) on 9 December 1993 and the enactment of the Sewerage Services Act 1993 (Act 508), the Sewerage Services Department was established under the Ministry of Housing and Local Government on 1 March 1994 with the principal function to regulate the Concession Company and to take charge of all responsibilities on sewerage matters in the country. Now, under the Ministry of Energy, Water and Communications, the Regulatory Body has been entrusted with the following responsibilities:

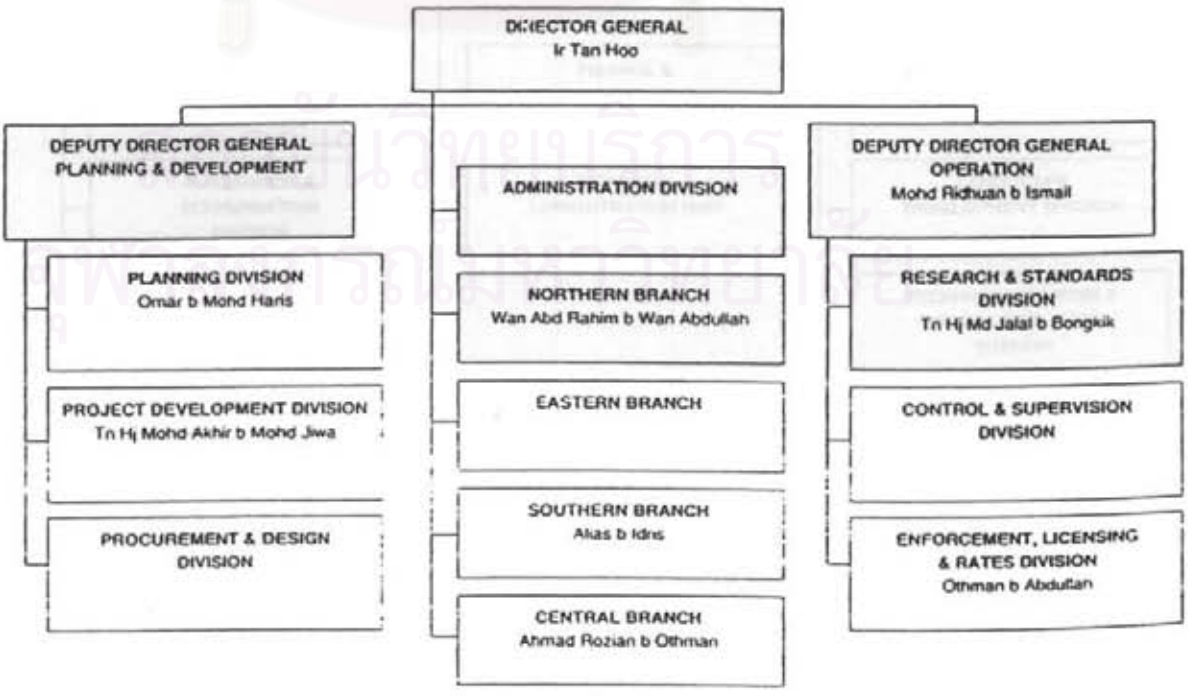
- To plan, regulate and enforce all laws and regulations related to the sewerage sector in this country according to the Sewerage Services Act 1993;
- To ensure the smooth implementation of appropriate and modern sewerage systems in the country according to the established standards;
- To encourage and develop the sewerage industry in order that it can be managed efficiently in terms of cost, technology and manpower resources;
- To protect the interest of consumers by ensuring the best available sewerage services at a cost that is affordable;
- To ensure the national sewerage privatisation project will be implemented successfully and satisfactorily by the Concession Company without causing problems to the country; and
- To assist the development of the country's economy through the development of a modern sewerage sector to protect the environment and water resources of the country.

SEWERAGE SERVICES

The taking over of sewerage services from Local Authorities was implemented in stages starting from April 1994. At the beginning of 1995, a total of 59 Local Authorities were involved. These Local Authorities were from Negeri Sembilan, Perak, Kedah, Johor, Pahang and Terengganu. The total number of treatment plants maintained by IWK (as at December 2001) is 7002.

As at December 2001, sewerage services in 85 Local Authorities were taken over and maintained by IWK. Areas not yet taken over for operations and maintenance are the Municipality of Johor Bahru and Local Authorities in Kelantan, Sabah and Sarawak.

ORGANISATION CHART



NATIONAL LANDSCAPE DEPARTMENT

National Landscape Department was officially established on 1 January 1996 in line with the Government's decision to create an agency entrusted with responsibilities to landscape the country. The need to create a department was also highlighted in the policy paper 'Landscaping the Nation' which among others, particularly mentioned 'A dedicated department headed by a senior officer should be in charge of all tree planting'. The National Landscape Department was established after the upgrading of Public Parks and Landscaping Coordination and Supervision Section of the Department of Town and Country Planning.

AIM

The aim of National Landscape Department is to make Malaysia a 'Garden Nation' through development of quality landscape to meet the needs and aspiration of the people.

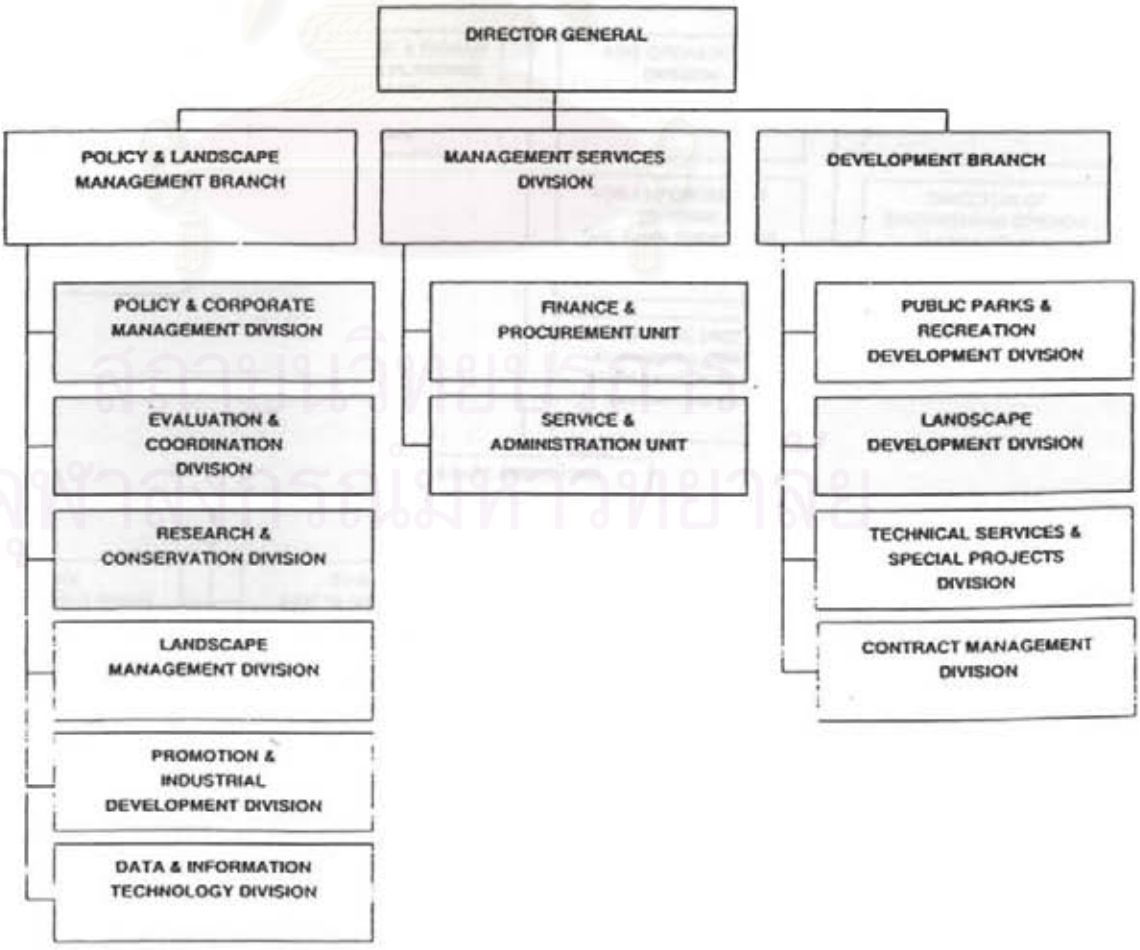
OBJECTIVES

- To create a clean, attractive, comfortable and safe environment;
- To formulate policy, procedures and legislation in order to facilitate and co-ordinate landscape development;
- To achieve a balance between physical development and livable environment through country-wide implementation of quality landscaping activities;
- To plan and develop quality and progressive public parks, open space and recreational parks;
- To encourage professionalism in planning, development, maintenance and management of landscape; and
- To encourage and monitor national landscape industry.

FUNCTIONS

- To advise various levels of Government on planning, development and management of landscape;
- To plan, coordinate, implement and supervise landscape development throughout the country;
- To research, formulate and implement policy, standards, regulations and guidelines on landscaping and other related activities;
- To conduct research and development (R&D) training program for various government agencies and private sector;
- To establish information dissemination system and reference centre; and
- To be a lead agency in landscape development.

ORGANISATION CHART



FIRE & RESCUE DEPARTMENT, MALAYSIA

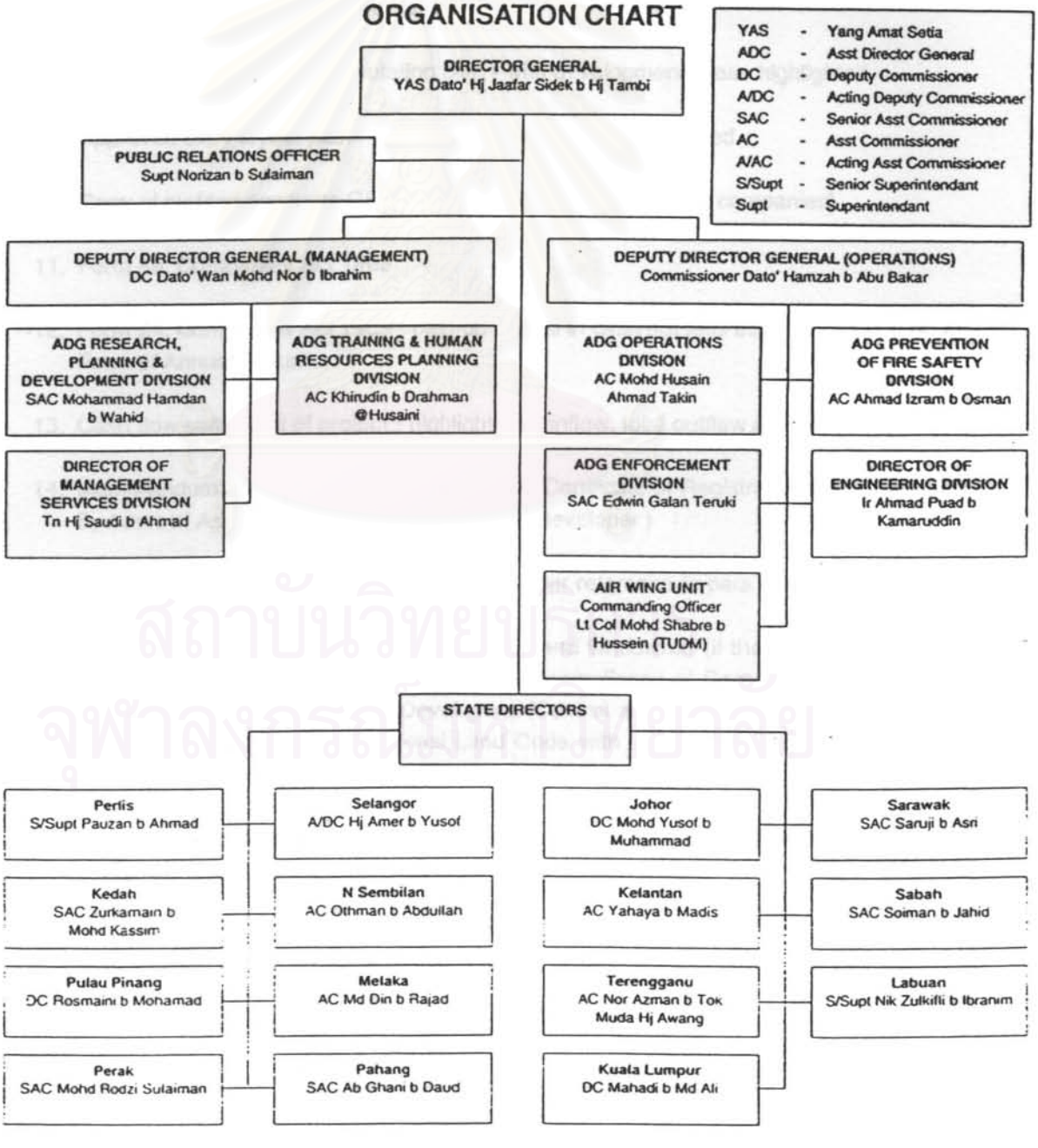
OBJECTIVE

To provide fire fighting and fire prevention services, enforcing laws pertaining to fire safety and the provision of efficient and effective humanitarian services.

FUNCTIONS

- The taking of lawful measures for the purpose of:-
  - i) extinguishing, fighting, preventing and controlling fire;
  - ii) protecting life and property in the event of a fire;
  - iii) securing the provision, maintenance and proper regulation of fire-escapes; and
  - iv) securing and provision of adequate means of exit in the event of fire from designated premises.
- The making of investigations into the cause, origin and circumstances of fire; and
- Performing humanitarian services, including the protection of life and property in any calamity.

ORGANISATION CHART



DOCUMENTS TO BE SUBMITTED WHEN APPLYING FOR DEVELOPER'S LICENCE UNDER REGULATION 3 OF THE HOUSING DEVELOPERS (CONTROL AND LICENSING) (AMENDMENT) REGULATIONS 2002

1. Application Form (Schedule A)
2. Copy of Land Title documents
3. Official search certificate
4. Conversion approval / surrender and re-alienation / proposed housing scheme
5. Form 5A/7G of National Land Code / Jadual III AND complete payment receipts eg premium
6. Approval for amalgamation and sub-division AND Form 9C/9A/7D of the National Land Code
7. Certification from Board of Surveyors
8. Copy of approved pre-computation plan - with development areas highlighted
9. Approved site / layout plan - with development areas highlighted
10. Copy of audited accounts OR management accounts (for new companies)
11. Form 49, Companies Act 1965
12. Form 24, Companies Act 1965 - paid-up capital in cash not less than RM250,000.00 and the Form of Annual Return
13. Cash flow statement of project - highlight total inflow, total outflow and surplus
14. Memorandum and Articles of Association OR Certificate of Registration of Business OR By-Laws of Association (stating objective as developer)
15. Statutory declaration in Form L2C with particular reference to para (f)
16. Joint venture agreement between developer and landowner (if the land does not belong to the developer). The agreement must provide for compliance of Regulation 5(5)(a), Regulation 10, Regulation 11 of the Housing Developers (Control and Licensing) (Amendment) Regulations 2002 OR Form 14A of the National Land Code with stamp duty and assessment duly paid to indicate that the transfer of ownership is in process
17. FIC approval if foreign investment exceeds 15% for a foreign individual or 30% for several foreign parties
18. To specify in the application form the name(s) of the holding company or subsidiary company(ies) under the same management or group

DOCUMENTS TO BE SUBMITTED WHEN APPLYING FOR ADVERTISEMENT AND SALE PERMIT UNDER REGULATION 5 & 6 OF THE HOUSING DEVELOPERS (CONTROL AND LICENSING) (AMENDMENT) REGULATIONS 2002

1. Application Form (Schedule D)

2. Local Authority approval letter for building plan & Form B, if applicable

3. Valid approved building plan

4. Three (3) copies of each type of proposed advertisement. Brochure in Bahasa Malaysia is compulsory

5. Price list of all units - mark the lowest and the highest price

6. Confirm charges on land - whether or not it is charged to any financial institutions

7. Approval letter on the pricing for low cost housing

Note:

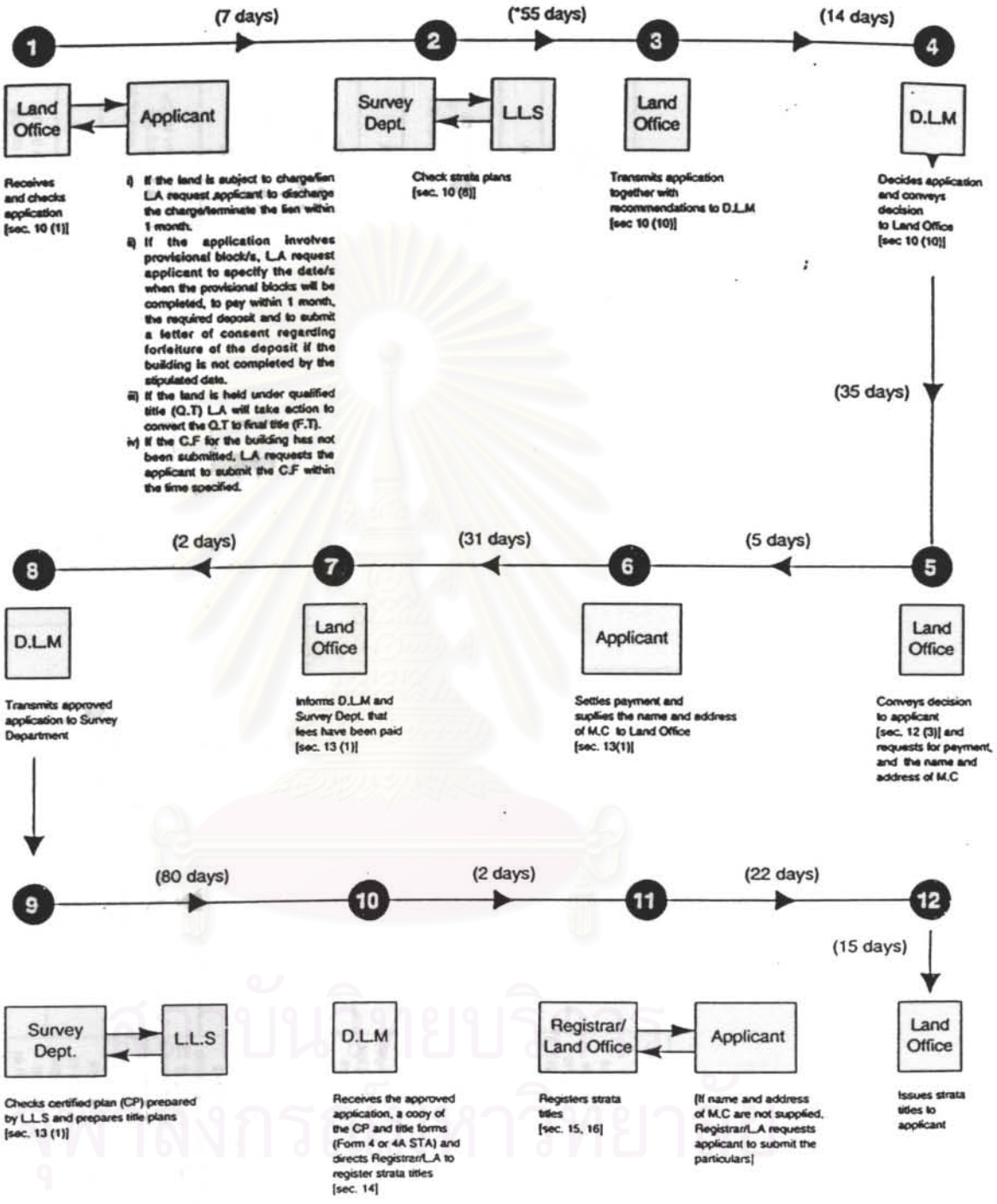
a) The draft advertisement must comply with Regulation 6 of the Housing Developers (Control and Licensing) (Amendment) Regulations 2002, clearly stating:

   i. Name of the developer, with full address and telephone number
   ii. Developer's License and Advertisement and Sale Permit number and the validity period
   iii. Tenure of land - freehold / leasehold / Malay reserved land etc. If it is leasehold land, the status of the lease, date of expiry of lease must be clearly stated in the advertisement
   iv. Charge on the land - name the financial institution where land is charged
   v. Name of the approving local authority
   vi. Approval of the local authority / building plan
   vii. Date of targeted completion of the project - state the month and year
   viii. Lowest and highest price and total units for each type of property

b) The draft brochure must indicate the typical floor plan as well as the detailed measurements and specification in Bahasa Malaysia.

c) The statement "....subject to change..." must be omitted from all advertisements.

FLOW CHART SHOWING THE PROCESS OF APPLICATIONS FOR STRATA TITLES IN WEST MALAYSIA (INCORPORATING THE AMENDMENTS VIDE A753 & A951)



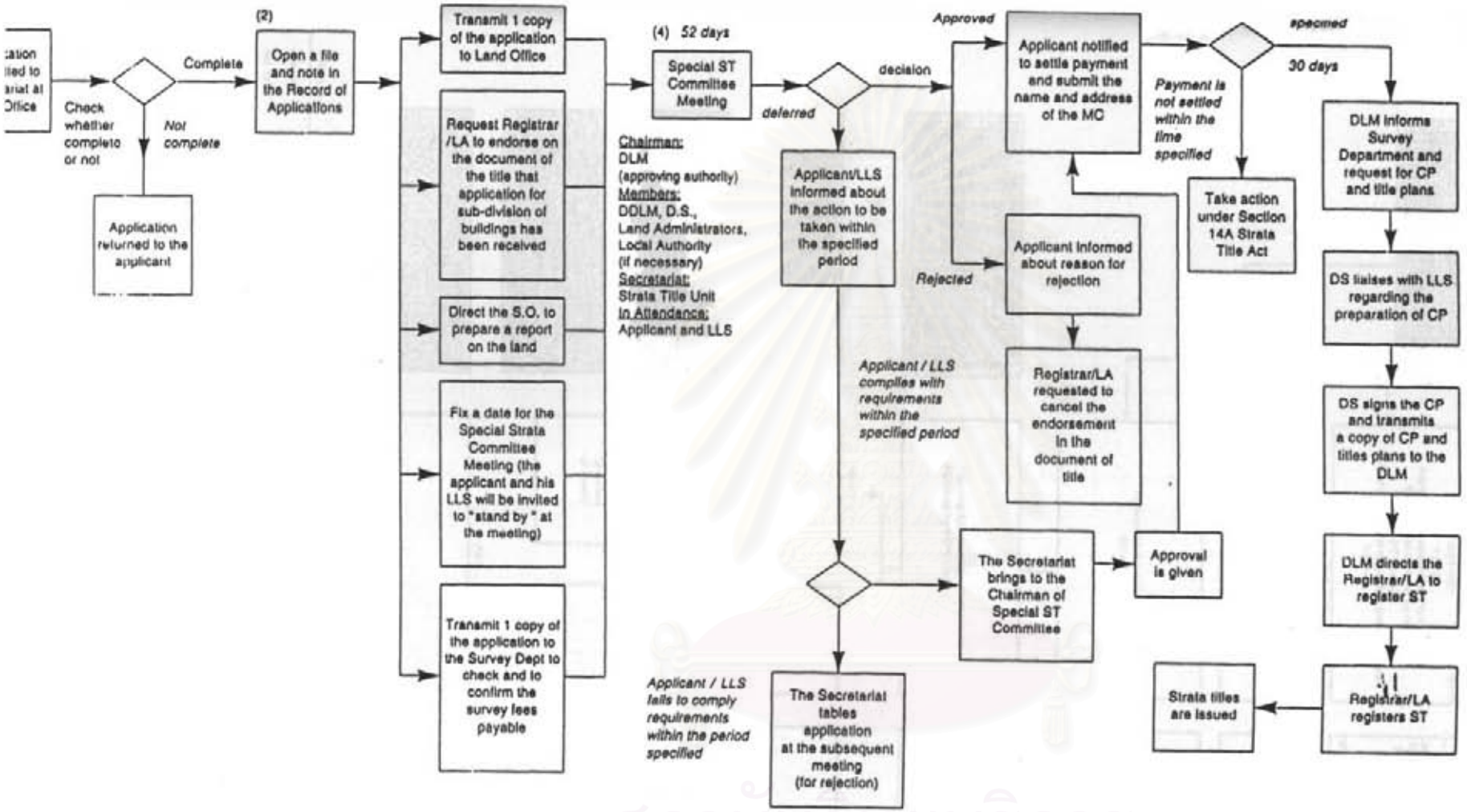
Note:

L.L.S - Licensed Land Surveyor
D.L.M - Director of Land and Mines
L.A - Land Administrator

* - before amendments, 33 days
** - before amendments, 52 days
*** - before amendments, 45 days

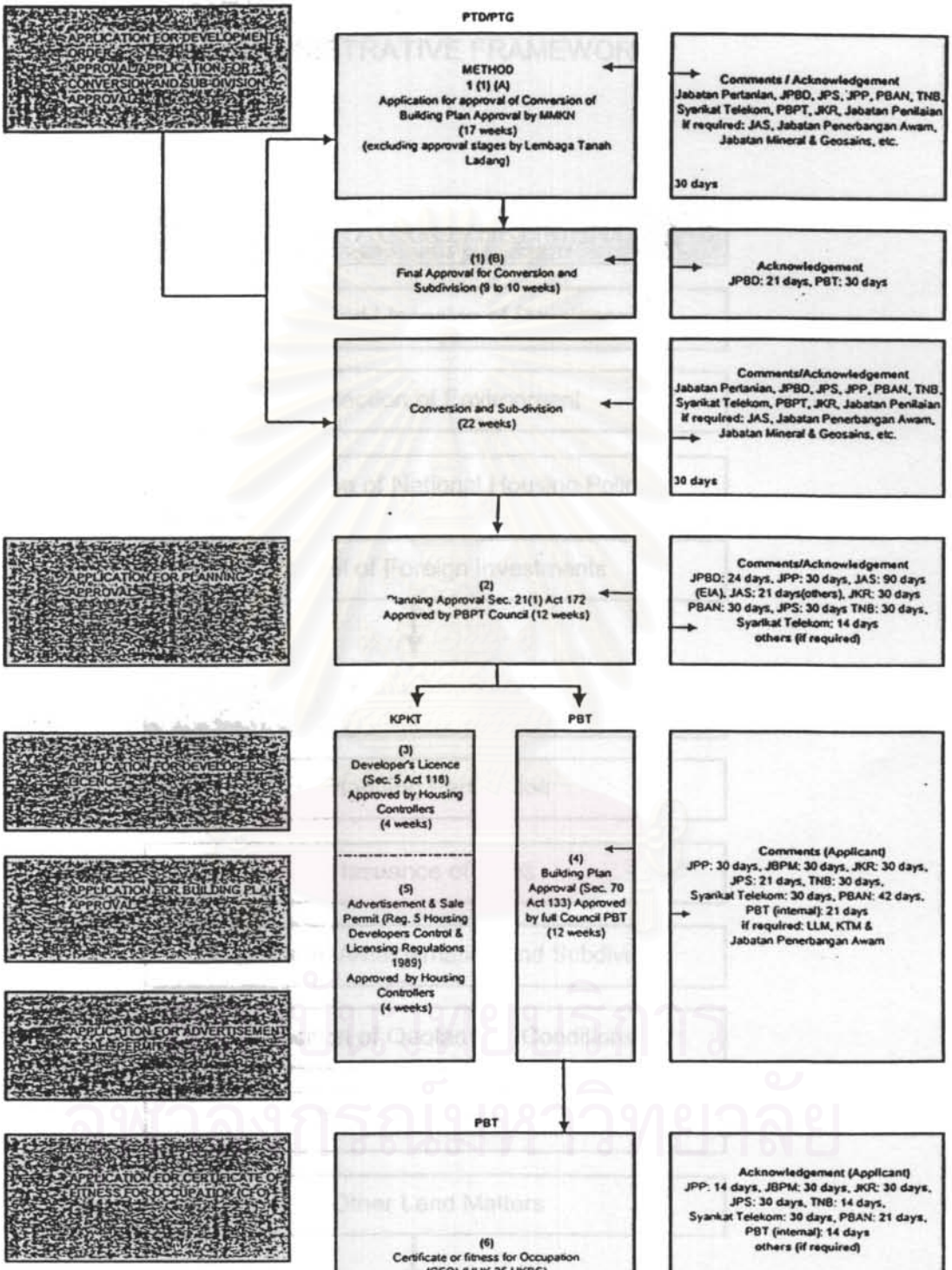
TOTAL : 268 DAYS
(For complete application only)
National Land Council decision on 19 / 11 / 1992.
Issue of strata titles not later than 12 months from the date of submission of complete applications

Note: See also flowcharts for the 'One Stop Agency' in the following page.



Total time frame : 180 days (6 months)

PROPERTY PRODUCTION / DELIVERY PROCESS
FLOW CHART OF DEVELOPMENT APPROVAL IN PENINSULAR MALAYSIAN
(EXCEPT IN FEDERAL TERRITORY OF KUALA LUMPUR AND PUTRAJAYA)

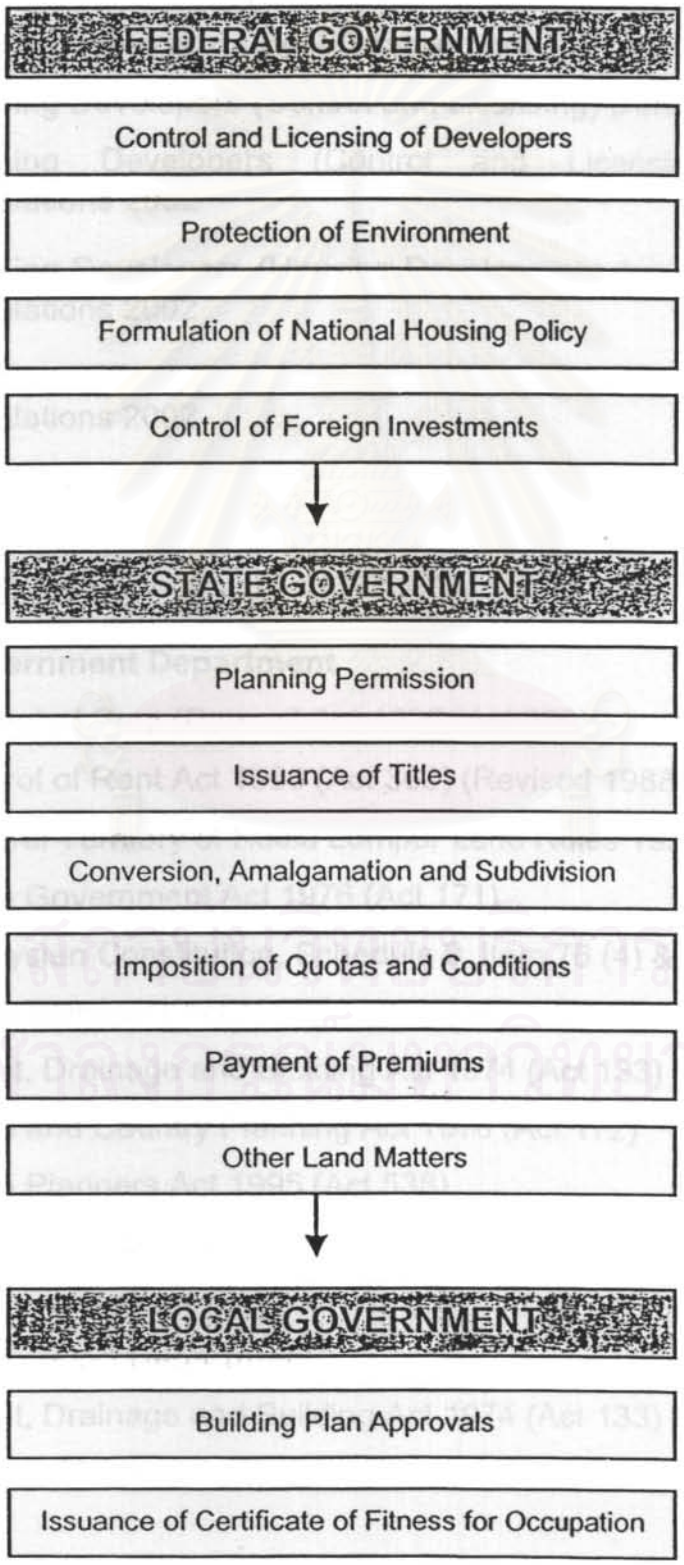


Indicators:

Act 118	Housing Developers (Control & Licensing) (Amendment) Act 2002
Act 133	Streets , Drainage & Building Act 1974
Act 172	Town & Country Planning Act 1976
BPKN	Bahagian Pelesanan & Khidmat Nasihat
	Kementerian Perumahan Dan Kerajaan Tempatan
KPKT	Kementerian Perumahan Dan Kerajaan Tempatan
KTN	Kanun Tanah Negara 1965
MMKN	Mesyuarat Majlis Kerajaan Negeri
PBAN	Pihak Berkuasa Air Negeri
PBT	Pihak Berkuasa Tempatan
PBPT	Pihak Berkuasa Perancang Tempatan (termasuk PBT, SEDC,
	Lembaga Kemajuan Wilayah, Pegawai Daerah, dll)
UKBS	Undang-undang Kecil Bangunan Seragam 1984
UUK	Undang-undang Kecil

REGULATORY FRAMEWORK

ADMINISTRATIVE FRAMEWORK



REGULATORY FRAMEWORK

LAWS AND REGULATIONS RELATING TO PROPERTY INDUSTRY

1. Ministry of Housing and Local Government

- Housing Developers (Control and Licensing) (Amendment) Act 2002
- Housing Developers (Control and Licensing) (Amendment) Regulations 2002
- Housing Developers (Housing Development Account) (Amendment) Regulations 2002
- Housing Development (the Tribunal for Homebuyers Claims) Regulations 2002
- Housing Development (Compounding of Offences) Regulations 2002

2. Local Government Department

- Control of Rent (Repeal) Act 1997 (Act 572)
- Control of Rent Act 1966 (Act 363) (Revised 1988)
- Federal Territory of Kuala Lumpur Land Rules 1995
- Local Government Act 1976 (Act 171)
- Malaysian Constitution, Schedule 9, Item 76 (4) & 95 (A)
- Road Transport Act 1987 (Act 333)
- Street, Drainage and Building Act 1974 (Act 133)
- Town and Country Planning Act 1976 (Act 172)
- Town Planners Act 1995 (Act 538)
- Uniform Building By-Laws 1984

3. National Housing Department

- Street, Drainage and Building Act 1974 (Act 133)
- Uniform Building By-laws 1984

4. **Fire Services Department**

- Fire Services Act 1988 (Act 341)
- Uniform Building By-laws 1984

5. **Department of Town and Country Planning, Peninsular Malaysia**

- FMS Town Board Enactment (Cap 137) Chapter IX
- National Land Code Act 56 of 1965
- National Land Code (Penang and Malacca Titles) Act 1963 (Act 518)
- Street, Drainage and Building Act 1974 (Act 133)
- Strata Titles Act 1985 (Act 318)
- Town and Country Planning Act 1976 (Act 172)
- Uniform Building By-Laws 1984

6. **Sewerage Services Department**

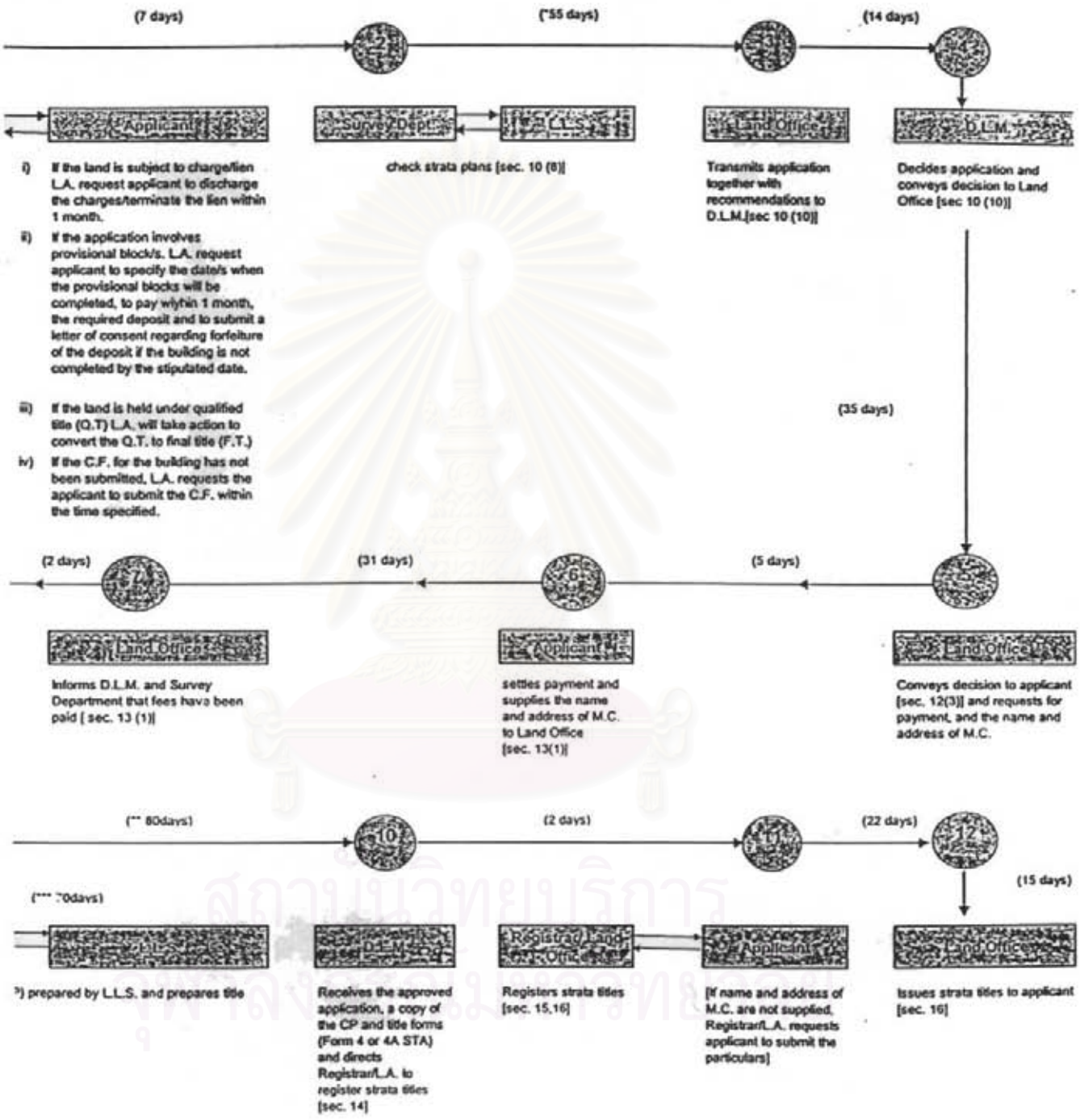
- Sewerage Services Act 1993 (Act 508)

7. **Other Related Legislation**

- Communications and Multimedia Act 1988 (Act 588)
- Continental Shelf Act 1966 (Act 83)
- Electricity Supply Act 1990 (Act 447)
- Energy Commission Act 2001 (Act 610)
- Environmental Quality Act 1974 (Act 127)
- Food Act 1983 (Act 281)
- Land Acquisition Act 1960 (Act 486) (Revised 1992)
- Land and Mining Plans and Documents (Photographic Copies) Act 1950 (Act 233) (Revised 1980)
- Land Conservation Act 1960 (Act 385) (Revised 1989)

- Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994 (Act 520) (Construction Industry Development Board/CIDB)
- Malaysian Communications and Multimedia Commission Act 1998 (Act 589)
- Mining Enactment (FMS Cap 137)
- Municipal Ordinance S.S. Cap 133
- National Land Rehabilitation and Consolidation Authority (Incorporation) Act 1966 (Act 398) (Revised 1989)
- Occupational Safety and Health Act 1994 (Act 514)
- Pengurusan Danaharta Nasional Berhad Act 1998
- Real Property Gains Tax Act 1976 (Act 169)
- Urban Development Authority Act (Act 46)
- Water Act 1920 (Act 418) (Revised 1989)
- Waters Enactment FMS Cap 146

FLOW CHART SHOWING THE PROCESS OF APPLICATIONS FOR STRATA TITLES IN WEST MALAYSIA (INCORPORATING THE AMENDMENTS VIDE A 753 & A 951)

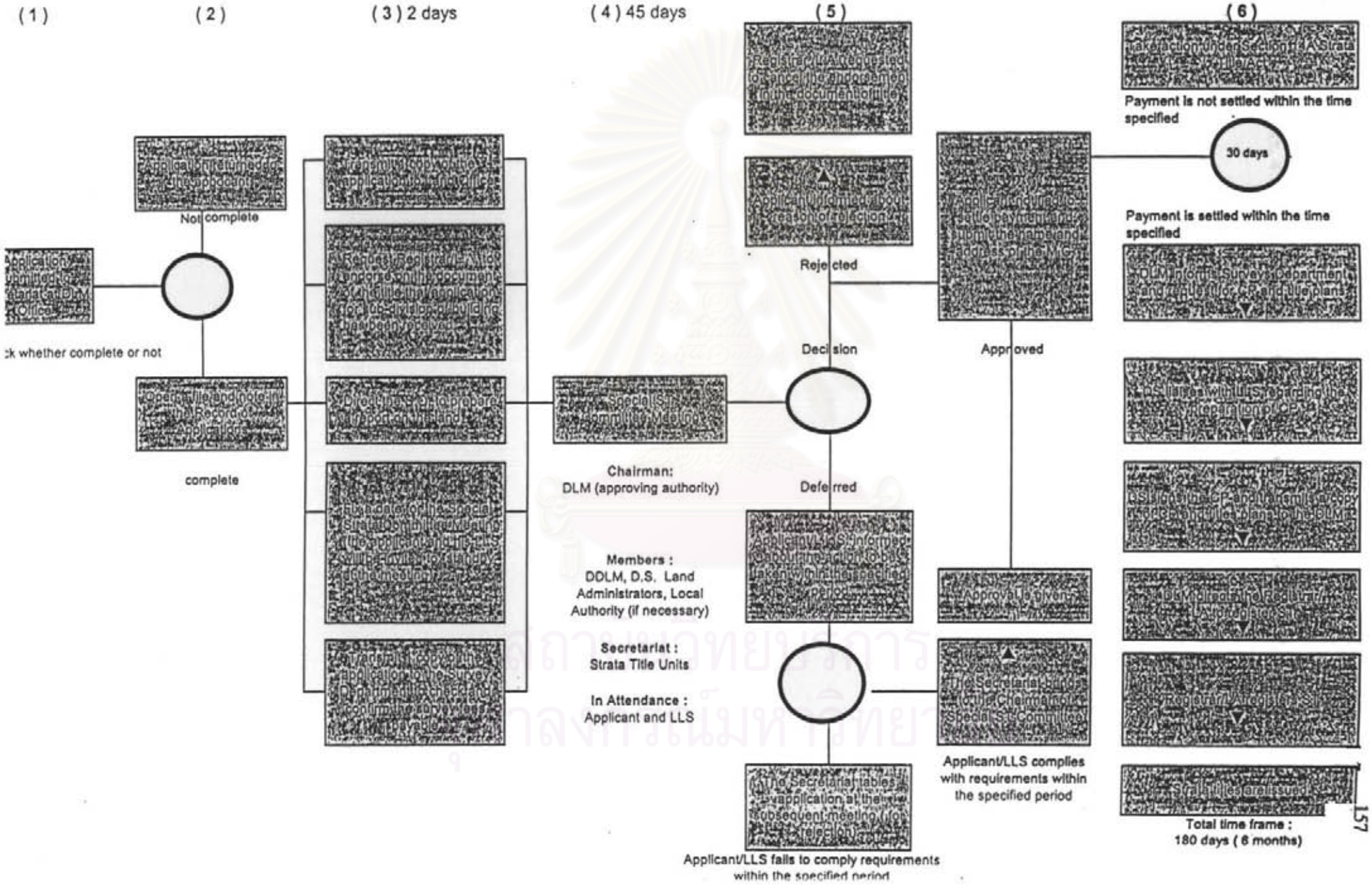


TOTAL : 268 DAYS

(For complete application only)
National Land Council decision on 19/11/1992
Issue of strata title not later than 12 months from the date of submission of complete applications

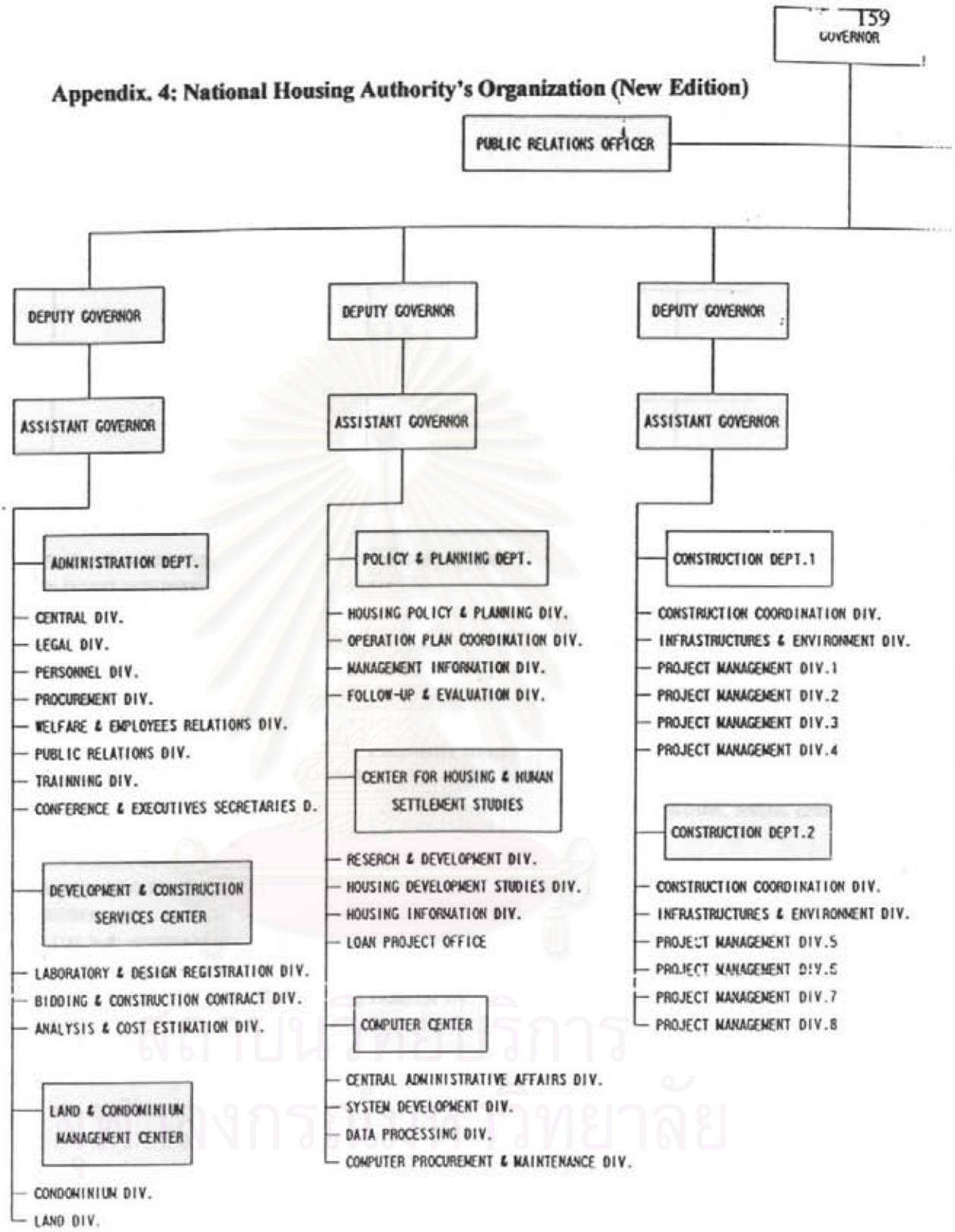
- Licensed Land Surveyor
- Director of Lands and Mines
- Land Administrator
- before amendments, 33 days
- before amendments, 52 days
- before amendments, 45days

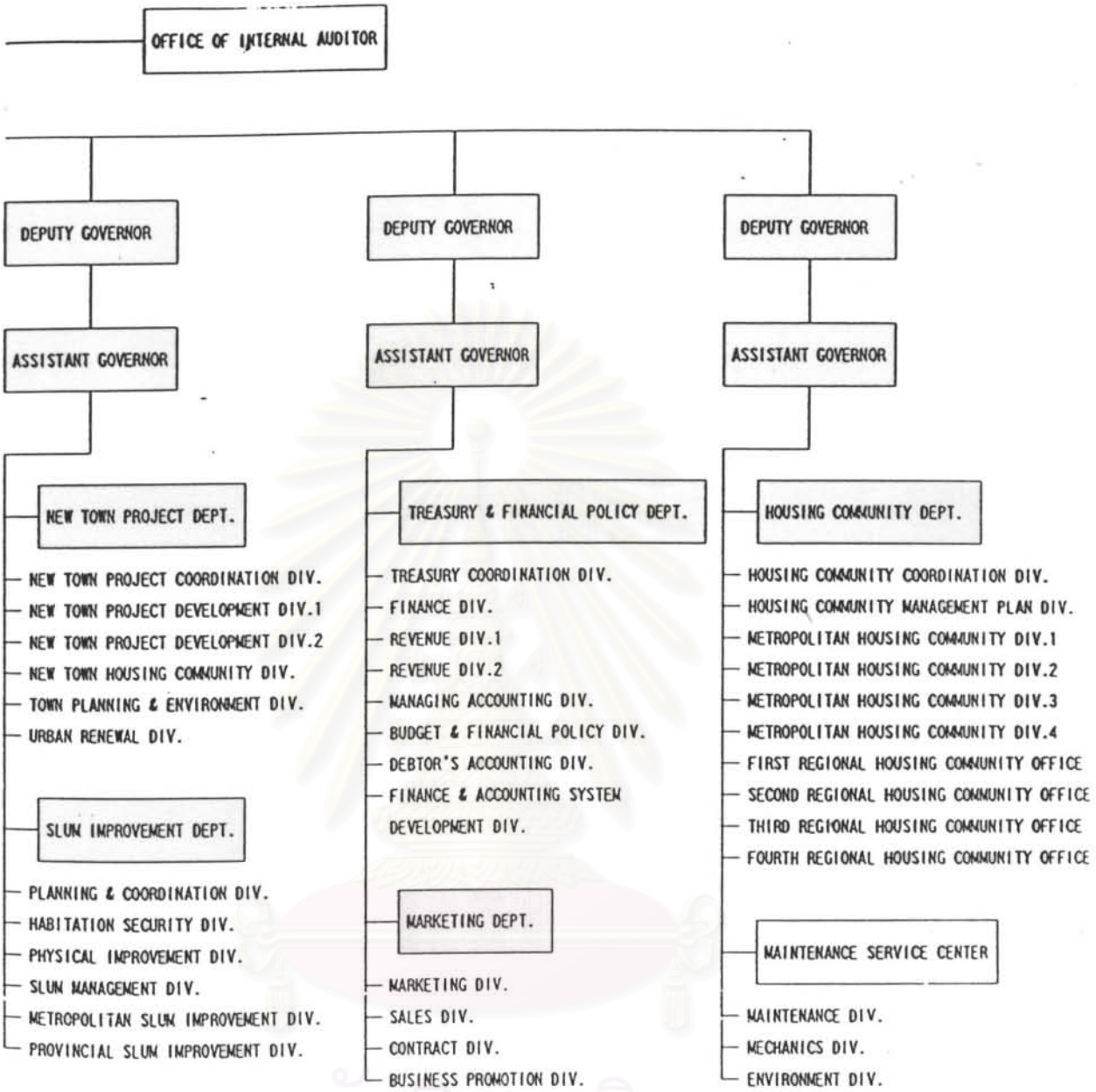
nd Executive Committee in the D.L.M.


(1)
(2)
(3) 2 days
(4) 45 days
(5)
(6)
Not complete
ck whether complete or not
complete
Chairman:
DLM (approving authority)
Members :
DDLM, D.S. Land
Administrators, Local
Authority (if necessary)
Secretariat :
Strata Title Units
In Attendance :
Applicant and LLS
Decision
Rejected
Deferred
Approved
Payment is not settled within the time specified
30 days
Payment is settled within the time specified
Applicant/LLS complies
with requirements within
the specified period
Applicant/LLS fails to comply requirements
within the specified period
Total time frame :
180 days (6 months)

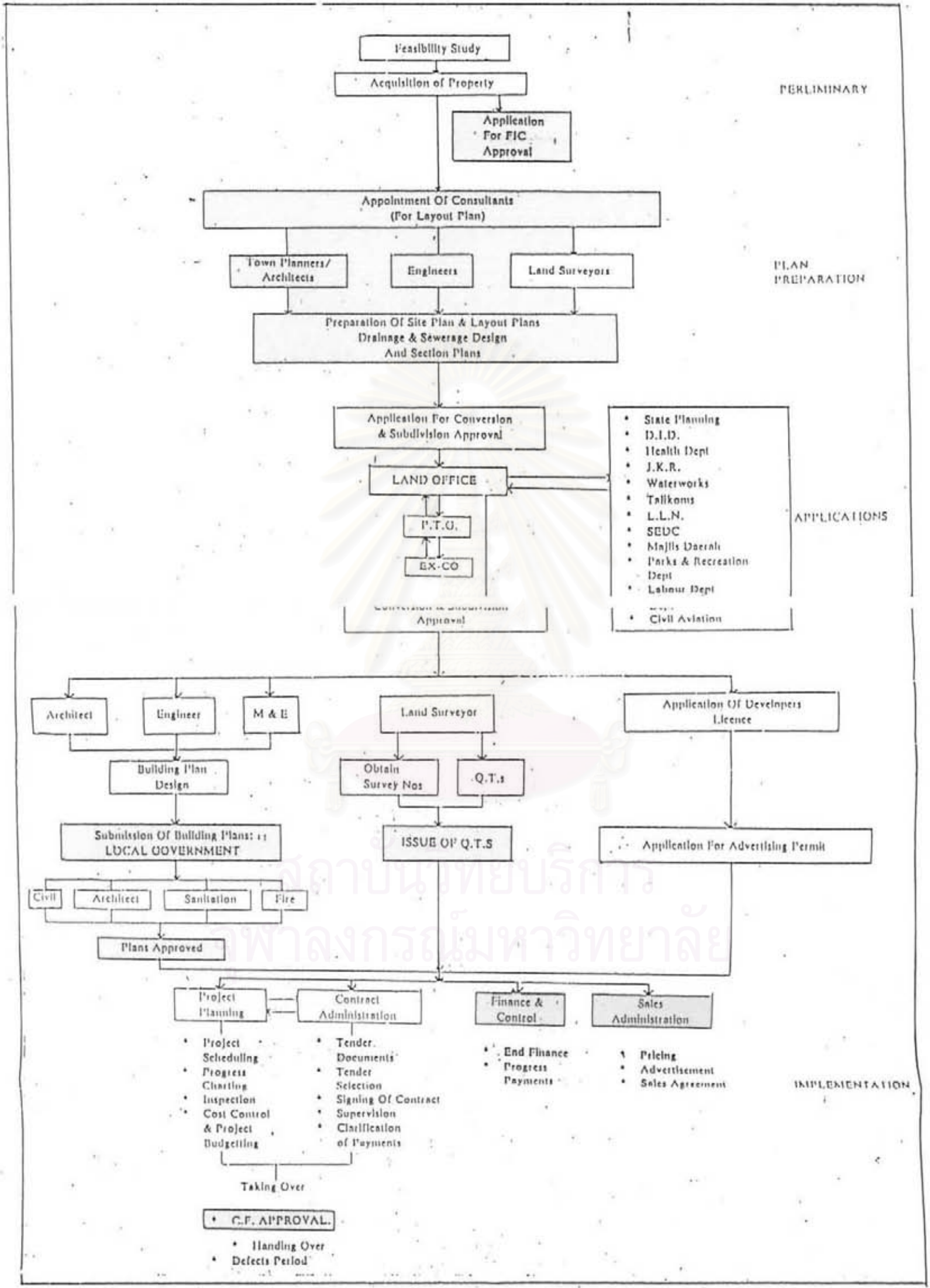
Appendix. 4: National Housing Authority's Organization (New Edition)

Appendix. 4: National Housing Authority's Organization (New Edition)





Appendix. 5: Flowchart summarizing the housing development process.


Feasibility Study
Acquisition of Property
Application For FIC Approval
PERLIMINARY
Appointment Of Consultants (For Layout Plan)
Town Planners/ Architects
Engineers
Land Surveyors
PLAN PREPARATION
Preparation Of Site Plan & Layout Plans Drainage & Sewerage Design And Section Plans
Application For Conversion & Subdivision Approval
LAND OFFICE
P.T.G.
EX-CO
State Planning
D.I.D.
Health Dept
J.K.R.
Waterworks
Telikoms
L.L.N.
SEDC
Majlis Daerah
Parks & Recreation Dept
Labour Dept
Civil Aviation
APPLICATIONS
Architect
Engineer
M & E
Land Surveyor
Application Of Developers Licence
Building Plan Design
Obtain Survey Nos
Q.T.s
Submission Of Building Plans: LOCAL GOVERNMENT
ISSUE OF Q.T.S
Application For Advertising Permit
Civil
Architect
Sanitation
Fire
Plans Approved
Project Planning
Contract Administration
Finance & Control
Sales Administration
Project Scheduling
Progress Charting
Inspection
Cost Control & Project Budgetting
Tender Documents
Tender Selection
Signing Of Contract
Supervision
Clarification of Payments
End Finance
Progress Payments
Pricing
Advertisement
Sales Agreement
IMPLEMENTATION
Taking Over
C.F. APPROVAL.
Handing Over
Defects Period

Appendix. 6: Success Factors in each stage of low cost housing project

1. Policy

Housing need(amount, for low and middle income)
Duration
Planning and strategy
Priorities of housing development programs
Resource capacity(land, material, labor and others)
Human resource(staff, designer, specialist, supervisors and others)
Law and regulation for land and housing
Feasibility study for cost benefit analysis
Government budget ability and financial support
Urban planning and housing development programs
Affordability (income)
Infrastructure support (road, water, electricity)
Public utilities (water supply, electricity, public transportation
Housing investment

2. Feasibility Study

Housing need
Resource (land, labor, material)
Financing (budget, financial system)
Constructability, method and technique
Benefit for social and economic
Environment impact and communities
Infrastructure and facilities support
Affordability (income)
Infrastructure support (road, water, electricity)
Housing Investment (Private, foreigners sectors)
Duration
Environment Impact Assessment (EIA)
Construction permitted (Location government/agency)

3. Land

Land policy and land subsidize
Land law and regulation,
Location and distance
Employment
Public transportation
Environment impact
Communities
Infrastructure
Land in the good condition (no flood, soft clay, land fill and others)

4. Financing

Housing bank or bank support for housing
Interest rate
Loan
Government support for bank guarantee
Duration
Affordability (Income)
Housing investment(private sector)
Housing delivery

5. Design, Planning and Scheduling

Physical aspect(design, model, user need, housing space, family size)
Customer's needs (participation)
Affordability (Income)
Housing law and regulation
Resources capacity (labors skill, material, equipment)
Land area and location
Housing standard, technical specification
Construction method and technology
Quality control and safety
Customer's satisfied
Community and neighborhoods
Environment regulation (Law)
Duration

6. Bidding

Bill of quantity (BoQ) quality
Bidding process
Budget
Bidding analysis/ selection
Design, planning and schedule
Contractors list (company registration, experience, guaranty)
Contractors capacity (fund, equipment and human resources)
Construction contract
Duration

7. Construction

Project organization and management system
Housing standard and specification
Labors skill
Materials control
Equipment control
Construction method and technique
Quality control, monitoring and evaluation
Design, planning and schedule
Contract document
Payment process

Cost control
Construction supervision (Engineer)
New technology and prefabrication

8. Delivery

Delivery process
Documentation and payment process
Affordability (income)
Customer’s satisfaction
Public utilities
Infrastructure
Community (strong, housing management)

9. Maintenance

Maintenance system
Housing management (administration)
Communities participant

Government Required

Policy
Financial and budgeting
Land and location
Construction technology
Human resource (training, seminar, workshop)
Improve quality of life
provide employment, training skill
Infrastructure(Road, bridge, drainage, others)
Public utility (water supply, electricity, transportation)

Appendix 7: Critical Success Factors Questionnaire Form

Questionnaire

Low Cost Housing Project

(Project Promoter)

I. General Information

Name and Surname……..……..

Position……

Experience in low cost housing projects……years

Responsibility……..…

…….…….……

…….…….……

…….……..…..

Address:……..……

……

……

…….……..…

II. Low Cost Housing Project

Please rank the order of state in low cost housing development process. If there is any other state not provided, please add it to the list:

Description	Rank
Policy	
Feasibility study	
Land and Location	
Financing and Budgeting	
Design and planning	
Bidding	
Construction	
Delivery	
Maintenance	

III. Low Cost Housing Process

Please give the score of 1 to 5 for influence of each state on the success of low cost housing projects. If there is any other state not provided, please add it to the list:

1= Least influence ⟶ 5= Most influence

Description	1	2	3	4	5
Policy					
Feasibility study					
Land					
Financing					
Design and planning					
Bidding					
Construction					
Delivery					
Maintenance					

IV. Problems and Constraints.

Please give the score of 1 to 5 for problems in each state on the success of low cost housing projects. If there is any other state not provided, please add it to the list:

1= Least ⟶ 5= Most

Description	1	2	3	4	5
Policy					
Feasibility study					
Land					
Financing					
Design and planning					
Bidding					
Construction					
Delivery					
Maintenance					

V. Factors Affecting Low Cost Housing Process.

Please give the score of 1 to 5 for influence of each state on the success of low cost housing projects. If there is any other state not provided, please add it to the list:

1= Least influence ⟶ 5= Most influence

1. Policy

Description	1	2	3	4	5
Housing need(amount, for low and middle income)					
Resource abilities(land, material, labor and others)					
Human resource(staff, designer, specialist, supervisors and others)					
Law and regulation for land and housing					
Feasibility study for cost benefit analysis					
Government budget ability and financial support					
Urban planning and housing development programs					
Affordability (income)					
Infrastructure support (road, water, electricity)					
Investment (Private, foreigners sectors)					
Duration					

2. Feasibility Study

Description	1	2	3	4	5
Housing needs					
Resource (land, labor, material)					
Financing (budget, financial system)					
Construction ability, method and technique					
Benefit for social and economic					
Environment impact and communities					
Infrastructure and facilities support					
Customer’s ability (income)					
Infrastructure support (road, water, electricity)					
Investment (Private, foreigners sectors)					
Duration					

3. Land

Description	1	2	3	4	5
Land policy and land subsidize					
Land law and regulation,					
Location and distance					
Employment					
Public transportation					
Environment impact					
Communities					
Infrastructure					
Land in the good condition (no flood, soft glay, land fill and others)					

4. Financing

Description	1	2	3	4	5
Housing bank or bank support for housing					
Interest rate					
Loan					
Government support for bank guarantee					
Duration					
Affordability (Income)					
Housing investment(private sector)					

5. Design, Planning and Scheduling

Description	1	2	3	4	5
Physical aspect(design, model, user need, housing space, family size)					
Housing law and regulation					
Resources(labors skill, material, equipment)					
Land area and location					
Technical specification					
Housing standard					
Construction method and technology					
Quality control					
Safety					
Customer’s satisfied					
Neighborhoods					
Environment Regulation (Law)					

6. Bidding

Description	1	2	3	4	5
Quality of Bill of Quantity (BoQ)					
Bidding process					
Budget					
Bidding analysis/ Selection					
Planning and schedule					
Contractors list (company registration, experience, guaranty)					
Contractors ability and experience					
Construction contract					

7. Construction

Description	1	2	3	4	5
Project organization					
Project management system					
Labors skill					
Materials control					
Equipment control					
Construction method and technique					
Quality control, Monitoring and evaluation					
Planning and Schedule					
Contract document					
Payment process					
Cost control					

8. Delivery

Description	1	2	3	4	5
Documentation and payment process					
Delivery process					
Customer's satisfaction					
Public utilities					
Transportation					
Community (strong, management)					

9. Maintenance

Description	1	2	3	4	5
Maintenance system					
Housing administration					
Communities participant					

10. Others

……..

Description	1	2	3	4	5

……..

Description	1	2	3	4	5

……..

Description	1	2	3	4	5

VI. Recommendation

Please give comments by given score of 1 to 5 for more government support in each state low cost housing process. If there is any other state not provided, please add it to the list:

1= Least ⟶ 5= More

Description	1	2	3	4	5
Policy					
Financial and budgeting					
Land					
Construction technology					
Human resource (training, seminar, workshop)					
Improve quality of life					
Employment, training skill					
Infrastructure(Road, bridge, drainage, others)					
Public utility (water supply, electricity, transportation)					

Vita

Pipong Phimphachanh was born in Houa phanh, Lao P.D.R., in 1974. She received the B.S.Eng. degree in Civil Engin eering from National Un iversity of Laos, Lao P.D.R., in Vientiane in 1998. She becam e a lecturer at the National University of Laos in 1999. She was accepted to the Master of Engineering (Civil Engineering) in the Departm ent of Ci vil Engineeri ng, Chulalongkorn University since 2003. Her research is Construction Management.