

**AN EVALUATION OF THE APPLICATION OF LAND SHARING
TECHNIQUE IN SRI LANKAN CONTEXT
THE CASE OF SIRIMUTHU UYANA HOUSING DEVELOPMENT PROJECT IN
COLOMBO**

Witharana H.W.I.H.

108977M

Master of Science in Town & Country Planning

Department of Town & Country Planning
University of Moratuwa
Sri Lanka

December 2015

**AN EVALUATION OF THE APPLICATION OF LAND SHARING
TECHNIQUE IN SRI LANKAN CONTEXT
THE CASE OF SIRIMUTHU UYANA HOUSING DEVELOPMENT PROJECT IN
COLOMBO**

Himida Witharana Indumathie Himida Witharana

108977M

Dissertation Submitted in partial fulfillment of the requirements for the
Degree Master of Science in Town & Country Planning

Department of Town & Country Planning
University of Moratuwa
Sri Lanka

December 2015

DECLARATION

I declare that this is my own work and this Dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

I also declare that the total number of words in the body in this report (excluding the Tables, Graphs, References and Appendixes) are 18948.

.....

.....

Date

H. W. I. H. Witharana

108977M

2011/2014

Department of Town and Country Planning

CERTIFICATION

I certify herewith that H. W. I. H. Witharana (108977M) of the 2011 / 2014 group has prepared this dissertation under my supervision.

.....

Signature of the of Principal
Supervisor

.....

Head of the Department
Town & Country Planning

Date

Date

ACKNOWLEDGEMENT

I am deeply indebted to my principle supervisor **Dr. Rizvi Noordeen**, Senior lecture Department of Town and Country Planning, University of Moratuwa for his great insights, perspectives and guidance provided throughout this research study.

My sincere thanks go to the guidance provided by the **Dr. Rangajeewa Ratnayaka**, Head of the Department, Department of Town and Country Planning, University of Moratuwa by helping in various ways to clarify the things related to my academic work in time with excellent cooperation and guidance throughout and to continue this study on the above topic.

Author extends sincere gratitude to **Dr. Jagath Munasinghe, Dr. Malani Herath and Plnr. L. A. Susantha**, Senior lecturers, Department of Town and Country Planning, University of Moratuwa their cooperation and supports rendered at various stage of this research study.

Sincere thanks to support rendered by the academic and non-academic members of the Department of Town and Country planning, Specially **Pratibhani Bandusena**, lecturer Department of Town and Country Planning, University of Moratuwa will be sincerely appreciated.

I would like to acknowledge Chathurika Privihari, Research Assistant, Department of Architecture, University of Moratuwa.

Lastly, but not least, I should express my heartfelt gratitude to **Plnr. Priyashantha**, Deputy Director, Urban Regeneration Project in Urban Development Authority and his team (specially Chamila & Gayani)for their generous assistance provided during primary& secondary data collection stage and many individuals, friends and colleagues who have not been mentioned here personally in making this educational process a success. May be I could not have made it without your supports.

Finally I would like to express my most sincere gratitude to my Son Sahel, Husband & my family. There great love and care are the greatest encouragement for me during the academic year 2011-2014

ABSTRACT

The importance of the problem of low income underserved urban settlements in the city of Colombo is beyond debate. According to the Urban Development Authority, 1999 Colombo Development Plan statistics there are about 68,000 dwellers living in different parts of the city are deprived of basic human necessities to lead a decent living. They do not have legal rights to their land and lack many services enjoyed by other settlers in the city. At the same time, the government finds it extremely difficult to allocate land not only for these dwellers but also for incoming migrant streams. The governments to date, in fact, have paid their due attention to solve this problem. Several land management techniques have been applied to tackle the growth of low income settlements while increasing the urban land supply such as land pooling, land zoning, land banking, and integrated programs like *Sahasapura*. However, those programs had their limitations in addition to the shortage of urban land and financial constraints.

Therefore, it is suggested to adopt the land sharing technique in order to provide a solution to this problem. The technique is being practice in many Asian countries especially in Thailand, Indonesia and Cambodia and, to a limited it was practiced in Sri Lanka, too. It is a method that land owners and the occupants (squatters or tenants) reach an agreement whereby the land owners develop the economically most attractive part of the land and the dwellers built houses on the other part with full or limited land ownership (Archer, 1989). As results, some of their attempts have been successful while some of them are failed. So far none of formal institutions or individuals evaluates the application of land sharing technique in the context of Sri Lanka. The main task of the present research is to study an evaluation of application of land sharing technique in Sri Lankan context.

The research was carried out in Edirisinghe Watta, Stadiumgama Watta & Lyima Watta at Sirimavo Bandaranayaka Mawatha, Colombo. The sites were amalgamated into one site and the total site was selected using a set of criteria and Land Sharing main principles. The collected data were analyzed and critically evaluated the applicability of the technique. According to the findings, the finalized result implies the most suitable criteria such as community organization, land sharing agreement, better cooperation of the landlord, capital investment, strong support from the outside agencies and lower the development pressure of the application of Land Sharing technique in Sri Lankan context.

TABLE OF CONTENTS

DECLARATION.....	I
CERTIFICATION.....	II
ACKNOWLEDGEMENT.....	III
ABSTRACT.....	IV
TABLE OF CONTENTS.....	V
LIST OF TABLES.....	VIII
LIST OF FIGURES.....	VIII
Chapter One.....	1
INTRODUCTION.....	1
1.1 Background of the study.....	1
1.2 Problem Statement.....	2
1.3 Objective of the research.....	3
1.4 Scope & Limitation.....	3
1.5 Research Flow.....	4
1.6 Summary.....	5
Chapter Two.....	6
LITRETURE REVIEW.....	6
2.1 Introduction.....	6
2.2 Low Income Settlements.....	6
2.3 Origin of the Low Income Settlements.....	6
2.3.1 Definitions of Low Income Settlements.....	6
2.4 Land Supply.....	8
2.4.1 Supply of lands for housing.....	8
2.5 Land Market.....	9
2.6 Land Management.....	9
2.6.1 Land Management Techniques.....	9
2.7 Attempts for Evaluation of Low-income Settlements Upgrading in the World.....	17
2.8 Conclusion.....	20
Chapter Three.....	22
LAND MANAGEMENT IN SRI LANKA.....	22
3.1 Introduction.....	22
3.2 Evolution of Land Policies in Sri Lanka.....	22
3.3 Institutional Framework.....	24
3.3.1 Survey Department.....	24
3.3.2 Land Commissioner’s Department.....	25

3.3.3	Natural Resources Management Centre (NRMC), of the Department of Agriculture	25
3.3.4	Land Use Policy Planning Division (LUPPD)	25
3.3.5	Urban Development Authority (UDA).....	26
3.4	Institutional constraints	26
3.5	Regulatory Role of relevant Agencies.....	26
3.5.1	Urban Development Authority	26
3.5.2	Ministry of Lands and Land Development.....	27
3.5.3	Sri Lanka Land Reclamation and Development Corporation (SLRDC)	27
3.6	Legal and Regulatory Framework for Land Management in Sri Lanka.....	28
3.7	Land Management	30
3.8	Chapter Summary	30
Chapter Four.....		31
RESEARCH DESIGN		31
4.1	Introduction	31
4.2	Research Question.....	31
4.3	Method of study.....	31
4.4	Selection of case study area.....	33
4.5	Distribution Pattern of the Slums & Shanties within the CMC Area	33
4.6	Introduction of study area.....	34
4.7	Criteria Used for Justification of the Land Sharing Project Site Selection	36
4.8	Data Collection and Survey method.....	37
4.9	Analysis Method.....	37
4.10	Main Criteria of Land Sharing selected for present study	37
Chapter Five		39
ANALYSIS		39
5.1	Introduction	39
5.2	Basic information	39
5.2.1	Education level	39
5.2.2	Employment	40
5.2.3	Income Level	40
5.2.4	Period of occupations	41
5.2.5	Landownership	41
5.2.6	Approximate extent of encroached property	41
5.3	Thematic Analysis of Evaluation Criteria	42
5.3.1	Community Organization	42

5.3.2	LS agreement.....	43
5.3.3	Densification.....	44
5.3.4	Building Design.....	44
5.3.5	Reconstruction.....	45
5.3.6	Capital investment.....	45
5.3.7	Cross subsidy.....	45
5.3.8	Community participation.....	45
5.3.9	Lower the development pressure.....	46
5.3.10	Better the cooperation of the landlord.....	47
5.3.11	Understanding between Landlord and Tenant.....	47
5.3.12	Stronger the support from the outside agencies.....	48
5.4	Findings.....	49
Chapter Six.....		50
DISCUSSION AND CONCLUSION.....		50
6.1	Introduction.....	50
6.2	Discussion.....	50
6.3	Conclusion.....	54
6.4	Research Contribution.....	55
Bibliography.....		56
Appendix.....		58

LIST OF TABLES

Table 2-1: Different definitions for low income settlements in different countries and organizations	8
Table 2-2: Experience in LST in Thailand	13
Table 2-3: Land Sharing Experience in Phnom Penh-Cambodia.....	14
Table 2-5: World Experiences in impact evaluation	18
Table 4-1: Sampling method & target group.....	37
Table 5-15: Level of understanding	47
Table 5-16: Criteria evaluation.....	49

LIST OF FIGURES

Figure 2-5: Dematagoda Land Sharing Experience	16
Figure 4-1: Conceptual Framework.....	32
Figure 4-2: Figure 3.2 explain the Distribution Pattern of the Slums & Shanties within the CMC Area	33
Figure 4-3: Figure 3.3: Types of underserved housing units in the city of Colombo.....	34
Figure 4-4: Figure 3.4: Zoning Plan-2020.....	35
Figure 4-5: Figure 3.5: Location Map of Project site	35
Figure 4-6: Project site	36
Figure 5-1: Education Levels	39
Figure 5-2: Employment sectors	40
Figure 5-3: Income Distribution	40
Figure 5-4: Period of occupation	41
Figure 5-5: Extent of property	41

Chapter One

INTRODUCTION

1.1 Background of the study

The land is a natural resource which is limited by supply and scares for all physical development activities of growing people. It can't be increased in quantity but it can be increased in quality by providing adequate supply of services to land ensuring the adequate supply of affordable infrastructure.

The food, clothing and shelter are the essential human needs. The shelter is defined as “**a house, building or structure that is a dwelling or place for habitation by humans**” (Hamdi, 1991). According to Hamdi, millions people in the world are living without shelter due to lack of adequate habitable housing in the world. Therefore it become a global problem specially in developing countries like Sri Lanka, due to major social, cultural and economic problems including poverty, unplanned urbanization, poor economic and development policy and rapid urban population growth. In Sri Lanka, this situation is worst in the capital city, Colombo. The Colombo City Development Plan (UDA, 2008) revealed that there were approximately 66,000 households within the city of Colombo (the Colombo Municipal Council area) living in under-served settlements unfit for human habitation. This figure, since gaining independence in 1948, the Sri Lankan government has attempted to find a solution to this issue and has introduced many policies, programs and projects to address the problem of under-served settlements. Resettlement and relocation has been a subject widely discussed for the last two decades. Many slum relocation projects have been implemented in Sri Lanka during the last three decades. Studies were conducted to find the methods that can be applied to supply land for slum dwellers. Performance of such projects on displacement and eviction of communities is often associated with urban development in many developing countries of Asia. The demand of land for various development activities in prime areas is high and the supply is limited.

Both private and public sector developers target sites that are underutilized in economic terms. Most often these sites are happened to be the living and working areas occupied by the people of the lower circles of the urban society.

The urban low income housing problem in the Colombo metropolitan region is characterized by the lack of buildable urban lands affordable by the poor. Around 50% [about 500,000 inhabitants] live in slums and squatter settlements under unsatisfactory housing conditions. The land market is unable to cope with this kind of demand.

As an answer to this situation in third world countries various urban development and land management methods have been used as an investment method during the last two-three decades. Some of them are Land readjustment, Land pooling, Land sharing, and Urban renewal programme. Land sharing is the most important land management technique out of them. According to (UN, 2008), Land Sharing is Asia's home grown strategy for resolving urban land conflicts between poor communities (who need the land they occupy for their housing) and private or government landowners (who want to the land back to develop it). Using the land sharing technique land supply for low income families has been successfully achieved in many third world countries. In addition countries such as Thailand (Bangkok), Philippine and India (Hyderabad) has used this land sharing technique in development projects and proved the successes.

1.2 Problem Statement

Sri Lanka is a developing country which experiences a rapid urbanization process. Due to rapid urbanization associated with the scarcity of affordable land 51% of Colombo city population lives in crowded underserved settlement with poor infrastructure and substandard housing. According to CMC and SEWANATHA, 2002 and 2010, Urban slums report: The case of Colombo Sri Lanka, 1000 acres of state land and other reserves are being occupied by these people. Those land plots are very small irregular shaped and lack of infrastructure facilities. Therefore these lands do not come into formal development process due to in planning approval and financial facilities.

Hence, the government has to address the burden in developing countries and the problem of low income underserved urban settlements in the city of Colombo is beyond debate. The 68,000 dwellers living in different parts of the city are deprived of basic human necessities to lead a decent living (CMC, 2010) they do not have legal rights to their land and lack of services enjoyed by other settlers in the city. At the same time, the government finds it extremely difficult to allocate land not only for these dwellers but also for low income migrant to the city.

The governments to date, in fact, have paid their due attention to solve this problem. Several land management techniques have been applied to tackle the growth of low

income settlements. They include land pooling, land zoning, land banking, and integrated programs like “*Sahasapura*”. However, those programs had their limitations in addition to the shortage of urban land and financial constraints.

The population growth gradually increases day by day in the world and so many problems arise especially in developing countries. Land scarcity is the main reason for emerging haphazard development with slums and shanties in the global context as well. Therefore, it is suggested here to adopt the land sharing technique in order to provide a solution to this problem.

At recent past in Sri Lankan context land sharing technique has got the main attention among other land management techniques. As results, some of their attempts have been successful while some of them are failed. There are many issues caused for above mentioned successes and failures in application of land sharing techniques such as the level of development happened after the application of land sharing technique and its status of success or failures. So far none of formal institutions or individuals evaluates the application of land sharing technique in the context of Sri Lanka.

1.3 Objective of the research

Overall objective of the research is to evaluate the applicability of land sharing technique that applied for expand the supply of urban lands in Colombo city.

In addition the study will focuses the following sub objectives.

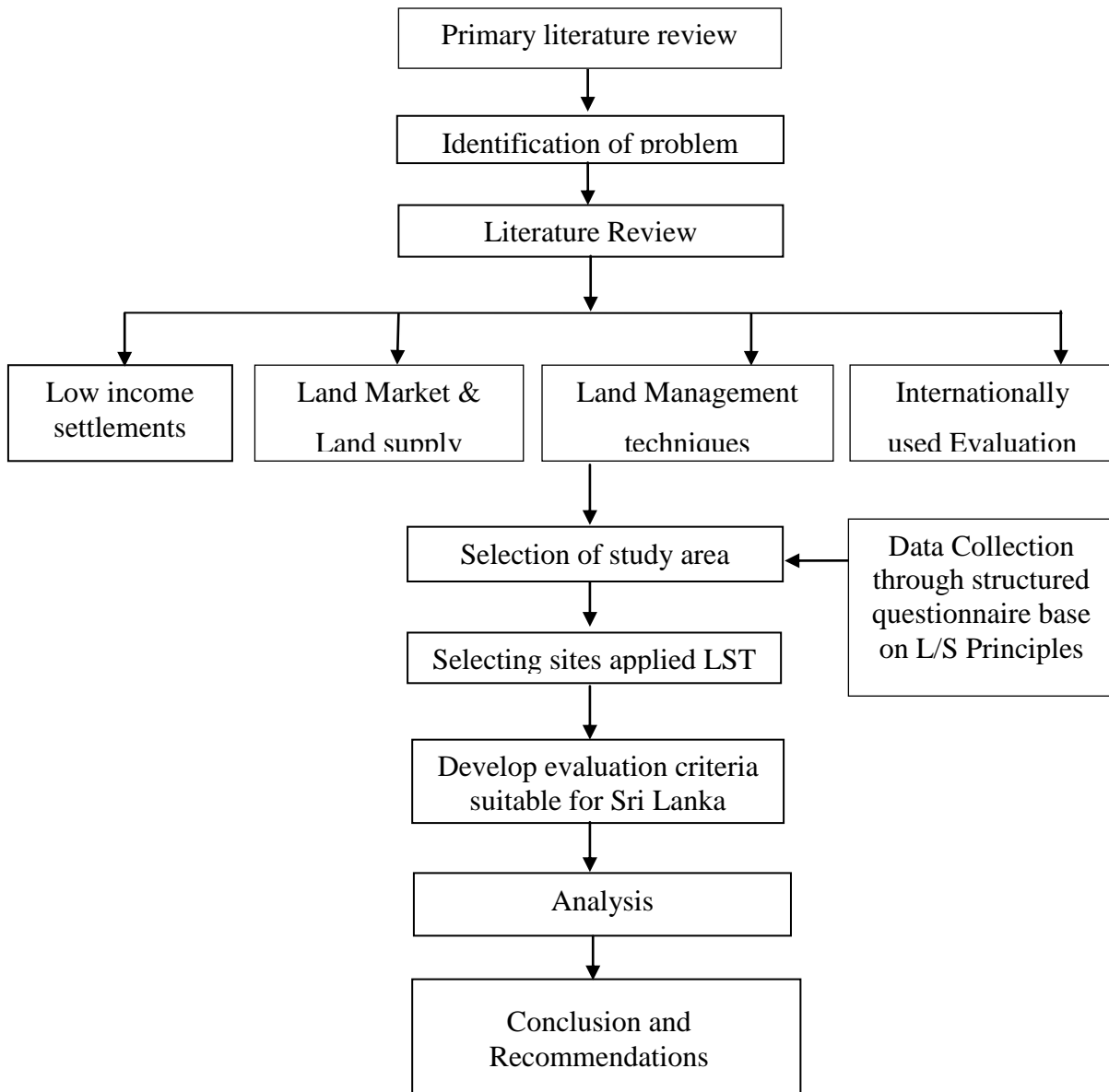
- To identify the evaluation criteria for evaluate applicability of LST
- To develop suitable criteria to evaluate the applicability of Land sharing technique that applied in Sri Lanka.

1.4 Scope & Limitation

This study mainly focuses to identify evaluation criteria that evaluate for applicability of Land Sharing technique in city of Colombo. There are several limitations of this study as follows; Due to time constraint this study does not evaluate the impacts of the land sharing technique.

Although many projects applying the land sharing technique are available in the Sri Lankan context, with successive and failures this study is limited to one case study of Sirimuthu Uyana housing project in the city of Colombo.

1.5 Research Flow



1.6 Summary

This research is focusing on evaluating the application of land sharing in to the Sri Lankan context. From the Asian perspective land sharing technique has got the main attention among other land management techniques which were used to optimize the land utilization mainly in the urban centers. By looking at the world experiences Sri Lanka was also implemented several projects by applying the land sharing technique. There are research studies done only for study the applicability of the land sharing in the context of Sri Lanka in recent past. But so far none of formal institutions or individuals evaluates the applicability of land sharing technique that has been applied to solve the supply of urban lands and optimizing the land uses in the context of Sri Lanka. Hence, this study is focusing on that aspect by getting a critical case study from the selected context. These study findings will important to incorporate in future application of land sharing technique in Sri Lanka.

Chapter Two

LITRETURE REVIEW

2.1 Introduction

This chapter discusses available literature on the definitions on Low Income settlement and the concepts of land management. Furthermore detail study focuses the land sharing technique and the practice of land sharing in the developing countries. This study specially focuses on the identification of the main principles and criteria used for evaluating the application of land sharing technique in the world. In addition, it discusses what were constrains and benefits of land sharing and also how to achieve an increased supply of the land for low income settlement in the developing countries. Finally identified different criteria used internationally were summarized and selected for current study.

2.2 Low Income Settlements

2.3 Origin of the Low Income Settlements

The origin of the low income settlements was evident from 18th and 19th centuries. Millions of people migrated to urban areas due to agglomeration economies in urban center due to industrialization. Hence, these migrated people were unable to access affordable accommodation in the city centers. Therefore they illegally occupied in government owned lands without proper ownership (Sirinivas, 2015). This dilemma can be seen in the context of Sri Lanka as well. The majority of low income people concentrated in limited space and their surrounding environment in the urban centers. This was caused due to the high density and absence of maintenance in low income settlement in the city of Colombo. Having considered the gradual creation of these settlements it is said that slum and shanties are a production of wrong economic development. (CMC and SEVANATHA, (2002and 2010) Urban slums Reports: The case of Colombo Sri Lanka)

2.3.1 Definitions of Low Income Settlements

The concept of low-income settlement and its definition vary from country to country depending on the socio-economic conditions of the society concerned. In Sri Lanka, there are several definitions of low-income settlements.

The policy paper on slum and shanty upgrading in Colombo prepared by the Slums and Shanty Division of the Urban Development Authority of the Ministry of Local Government, Housing and Construction in 1979, was the first ever attempt by the government to identify the low-income settlement as a larger development program in the Colombo MC. The terms used are as follows.

- Slums

The term refers to old tenement buildings built for influxes of migrant labor to the city mostly in the 1930s; in the local language this type of settlement arrangement is called *mudukku*. People who live in these types of houses do not like to call their houses by the official name or the popular local term. They usually call these houses as row houses (*Peligewal*) (Nawagamuwa A. and Viking, N, 2003)

- Shanties

A collection of small, single-unit improvised structures constructed with non-durable materials on vacant land throughout the city are shanties. Shanties illegally occupy state or private land, usually with no regular water, sanitation or electricity supply, and the majority is built on land vulnerable to frequent flooding. In local language this type of settlement arrangement is called *Pelpath*. (Nawagamuwa, 2003)

According to a city wide survey of low income resettlement carried out by the Ministry of Urban Development and Housing in 1998/99 the following sub categories of low income settlement were identified.

- Slums
- Low cost flats
- Old deteriorated quarters
- Shanties (squatter housing)
- Relocated housing
- Unplanned permanent dwellings

The UDA has identified low-income settlements as underserved settlements. Accordingly the term underserved settlements following characteristics can be seen. (Nawagamuwa, 2003)

- Concentration of residential units built on state or private land that is not owned by the residents.
- Very high population density (approximately 820 persons per hectare)
- Congested housing (with each block averaging 1.5 perches)
- Lack of services and infrastructure facilities

In the international context, different organizations and different countries have given various definitions for that concept

Table 2-1: Different definitions for low income settlements in different countries and organizations

Country/organization	Concept for Low income Settlement	Definitions
UN habitat	Slum	Slum is an area that combines the following characteristics. In varying extents: <ul style="list-style-type: none"> ➤ Inadequate access to safe water ➤ Inadequate access to sanitation and other Infrastructure ➤ Poor structural quality of housing ➤ Overcrowding ➤ Insecure residential status Source: UNHABITAT (2008).
India(Improvement and clearance Act, 1956-under section 3)	Slum	The act uses the following criteria for defining slums:- <ul style="list-style-type: none"> ➤ Area in any respect unfit for human habitation ➤ Area by reason of dilapidation, overcrowding and design of such arrangement of streets Building s narrowness or faulty ➤ Lake of ventilation, light sanitation facilities or any combination of these factors which are detrimental to safety, health and morals

Source: (Nawagamuwa, 2003)

2.4 Land Supply

2.4.1 Supply of lands for housing

Regarding the supply of land for housing it should be noted that,

- Land is not part of a market supply until it is offered for sale. Although land is not being used, the owner may reject to place it on the market in the hope its value will rise (i.e. speculation), or simply because money is not needed.
- Different suppliers of land can be distinguished corresponding to different demand for land.
- Land parcels may be grouped together based on some similarities such as size or location, and could be supplied to separate markets.
- Government policies would affect land suppliers. (For example, planning regulations) UN-HABITAT,(2008)

2.5 Land Market

Any land that is suitable for development has a value and can be bought or sold, whether it is publicly or privately owned, and whether it exists within the formal or informal market systems.

Market forces ultimately determine who would use which parcel of land and how much that land would cost unless when government delivers public land directly to people. Important differences in demand and corresponding differences in supply create land markets that can be distinguished from one another. The fundamental factors of supply and demand will determine land market. Operation of this market will be basically based on the land price. (Sandhu, 2004)

2.6 Land Management

Land Management can be defined as the process of managing the use and development of land resources in a sustainable way. Land resources are used for a variety of purposes which are interactive and may compete with one another. Therefore it is desirable to plan and manage all uses of land in an intergraded manner. (P. D. Dale, 1988)

2.6.1 Land Management Techniques

According to Dale P. D. and McLaughlin J.D. (1988) there are various types of Land Management Techniques. They are:

- Land re-adjustment/Land Pooling

The concept of land-pooling consists in acquisition of a plot of land divided into a large number of small parcels belonging to an equally large number of land owners; plan and provide all necessary infrastructure such as road, water supply, drainage, electricity and telephone, open spaces, community service area; consolidate and replot the parcels and give back to the owners. The cost of planning and providing infrastructure is covered from the land itself to be contributed by each landowner. Thus the owner gets back about 12- 30% smaller piece of land but with all necessary infrastructure including parks and open spaces. (Oil, 2003)

- Land Banking

land banking is “the structural acquisition and temporary management of land in rural areas by an impartial State agency, with the purpose to redistribute and /or lease out this land with a view to improve the agricultural structure and/or to reallocate the land for other purposes with a general public interest” (Damen, 2004)

- Zoning

Zoning describes the control by authority of the **use of land**, and of the buildings thereon. Areas of **land** are divided by appropriate authorities into zones within which various **uses** are permitted. (Robbins, 1984)

- Mixed Use

Mixed-use development is a type of urban development that blends residential, commercial, cultural, institutional, or industrial **uses**, where those functions are physically and functionally integrated, and that provides pedestrian connections. (Coupland, 1997)

- Guided Land Development

Guided land development (GLD) is a land management technique for guiding the conversion of privately owned land parcels in the urban boundary from rural to urban uses through the infrastructure systems. (Mattingly, 1994)

- Urban Renewal

Urban renewal, which is generally called urban regeneration ("regeneration" in the United Kingdom), “Revitalization" in the United States is a program of land redevelopment in areas of moderate to high density urban land use. Renewal has had both successes and failures. (Mattingly, 1994)

- Land reclamation

Land reclamation is the gain of land from the sea, or wetlands, or other water bodies, and restoration of productivity or use to lands that have been degraded by human activities or impaired by natural phenomena. (Wordie, 1997)

- Ceiling

Land ceiling is provision for the imposition of a ceiling on vacant land in urban agglomerations, for the acquisition of such land in excess of the ceiling limit, to regulate the construction of buildings on such land and for matters connected therewith, with a view to preventing the concentration of urban land in the hands of a few persons and speculation and profiteering therein and with a view to bringing about an equitable distribution of land in urban agglomerations to subserve the common good. (The Urban Land (Ceiling And Regulation) Act, 1976)

2.6.1.1 Concept of Land sharing

Land sharing term has been defined as Asia's home grown strategy for solving urban land conflicts between poor communities (who need the land they occupy for their housing) and private or government landowners (who want to the land back to develop it) (UN - 2008) Land owners and the occupants (squatters or tenants) reach an agreement whereby the land owners develop the economically most attractive part of the plot and the dwellers built houses on the other part with full or limited land ownership. (United Nations, 1995, 88)

Land-sharing is a method to alleviate the housing shortages for the urban poor in Third World countries which has received considerable attention. Land-sharing has been implemented with success in Thailand and to a lesser degree in the Philippines. From the introduction in Bangkok in 1982 until 1994, seven land-sharing projects had provided or were about to provide housing for roughly 6,800 families (Archer, 1994)

There are ten criteria identified to evaluate the applicability of land sharing technique. These criteria were gathered from reviewing scholarly articles from Archer 1994, Rabé 2005, and United Nations 2008. They are:

1. **Community organization:** Negotiations for land sharing require that slum dwellers are organized to counter the thread of eviction.
2. **A land sharing agreement:** This requires a binding agreement to partition the land. Usually the land parcel with the best development potential is allocated to the landlord.
3. **Densification:** Re-housing the community in a smaller area requires increased residential densities.
4. **Reconstruction:** The increase in density and the need to clear part of the site usually necessitates the reconstruction of houses.
5. **Capital investment:** Reconstruction requires capital from the domestic savings of the residents or loans from outside sources.
6. **Cross-subsidy:** Method of cost recovery
7. **Community Participation:** Squatters' willingness to take part in the project
8. **The lower development pressure:** underutilized land will be developed effectively
9. **The better the cooperation of the landlord:** To established better the liaison between developer and tenants.
10. **The stronger the support from outside agencies:** To obtained cooperation from outside agencies to provide infrastructure facilities

2.6.1.2 Land sharing process

- Identified Government Land with unauthorized squatters
- Survey of the unauthorized squatters
- Interview of the unauthorized squatters
- Make a proposal
- Meeting with occupants
- Feasibility study
- Cabinet approval

- Find a Developer/Contractor
- Discuss with other relevant agencies
- Signing the Land Sharing agreement
- Temporary relocation of occupants
- Construction resettlement buildings
- Provide infrastructure
- Other development
- Resettle the squatters
- Cost recovery
- Maintenance

(Archer, 1994)

2.6.1.3 International Experiences

Land Sharing Applicability in other countries in the world is discussed here. In 2003, Cambodian authorities launched four pilot slum upgrading projects in the capital city of Phnom Penh using the technique of land sharing. Following table gives an Overview of Original Land Sharing Settlements in Thailand.

Table 2-2: Experience in LST in Thailand

Name of Settlement	General information of the Project	Summary of outcome	Success or Failure of the Project	Reasons
---------------------------	---	---------------------------	--	----------------

KlongToey Area-3	Number of families -7500 Total area (ha) - 69 Land Owner - Port Authority	11.5 ha sub-leased to 1200 families for 20 years via National Housing Authority	Successful land sharing project	Main L/S principals are successfully applied. <ul style="list-style-type: none"> ▪ Community organizations ▪ A land sharing agreement ▪ Densification ▪ Reconstruction ▪ Capital investment ▪ Cross-subsidy ▪ Community Participation ▪ The stronger the support from outside agencies
Rama-4	Number of families-1250 Total area(ha)- 8.5 Land Owner- NHDA	2.4 Ha. reserved to re-house residents; 850 high-rise units leased to community by CPB on 20-year leases	successful land sharing project	Main LS principals are successfully applied. <ul style="list-style-type: none"> ▪ Community organizations ▪ A land sharing agreement ▪ Densification ▪ Reconstruction ▪ Capital investment ▪ Cross-subsidy ▪ Community Participation ▪ The stronger the support from outside agencies

Source: compiled by author

Table 2-3: Land Sharing Experience in Phnom Penh-Cambodia

Name of Settlement	General information of the Project	Summary of outcome for slum dwellers	Project success or not	Reasons
BoreiKeila	Number of	2 ha reserved to	successful	Main LS principals are

	families -1776 Total area (ha.) -14,1 Land Owner - MoEYS	re-house residents in 10 apartment blocks; developer received 2.6 ha for commercial development and later bought remaining portion of land.	land sharing project	successfully applied. <ul style="list-style-type: none"> ▪ Community organizations ▪ A land sharing agreement ▪ Densification ▪ Reconstruction ▪ Capital investment ▪ Cross-subsidy ▪ Community Participation ▪ The stronger the support from outside agencies
Railway A and B (Santipheap)	Number of families-70 Total area (ha.) 1.3 Land Owner - State Railway Co.	Individual relocation of residents, after unsuccessful land sharing negotiation	unsuccessful land sharing project	No <ul style="list-style-type: none"> ▪ Strong Community organizations ▪ Successful a land sharing agreement ▪ The strong support from outside agencies

Source: compiled by author

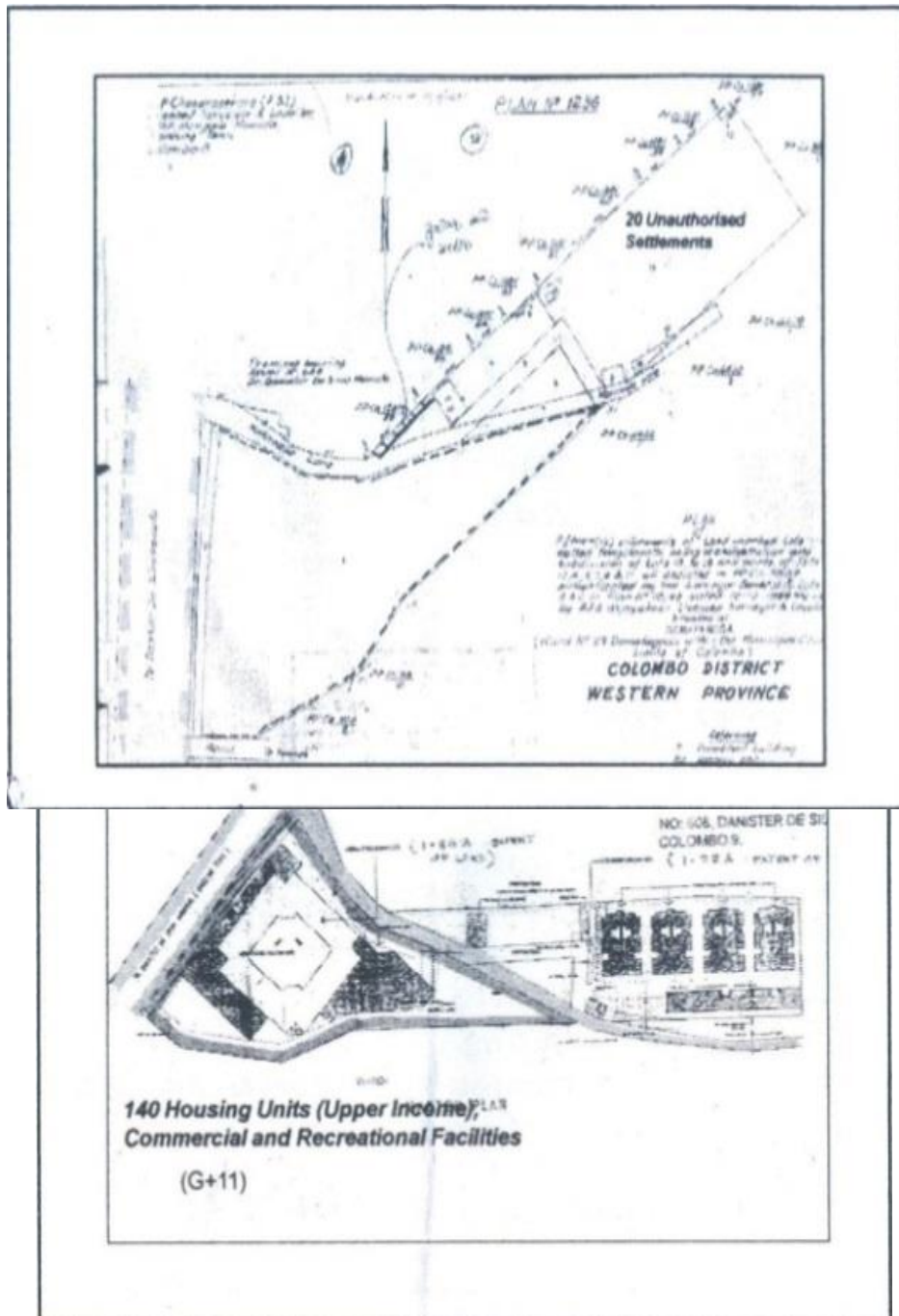
2.6.1.4 Experience in Sri Lanka

There are several housing developments in Sri Lanka. In Dematagoda Housing project UDA took over the land. There were 20 low income families who were illegally in occupation at this site. Totally there are 116 housing units, 20 units would be allocated for relocation purposes to re house the families who were in occupation at the site prior to commencement of the project. The balance 96 housing units will be sold in the open market through public tender. UDA expects to earn approximately Rs. 150.0 million from this sale, which is much higher than the original land value of Rs.53.12 million. After handover this project to the private party the project was failed due to the lack of common facilities and the developer couldn't fulfill the agreed conditions. The primary data on this project as follows.

- Land Location : Danister de Silva Mawatha, Dematagoda.

- Land Owner : Urban Development Authority
- Land Extent : 3A 1R 18 P
- Developer : MS Ascon Construction and Investment Privat Limited
- Contract agreement : The developer will hand over 108 housing units of approximately 500 ft² to UDA
- Estimated land value : Rs. 53,125,440
- Land Extent use for Middle income housing project: 1.89 acres
(Developer's investment will sell them in the open market)
- No. of middle income housing unit : 140
- Floor space varies from : 812 sq.ft-927 sq. ft And 1120 sq.ft.-1194 sq. ft
- Commercial floor spaces : 20000sq ft.

Figure 2-4: Dematagoda Land Sharing Experience



2.7 Attempts for Evaluation of Low-income Settlements Upgrading in the World

In the world, local and central governments are increasingly utilizing slum or neighborhood upgrading programs to deal with the multiple problems of urban context. These programs employ a methodology of integral interventions, combining of both infrastructure works and social services targeted to specific neighborhoods. Due to this variety of interventions the evaluation of their impact is complicated and requires a comprehensive approach.

A large proportion of the urban poor in developing countries live in urban or peri-urban areas, under conditions of overcrowding, deficient urban and social services, poverty, high exposure to crime and violence, and other social problems. Consequently, migration to urban areas shifted the location of global poverty to the cities, triggering the process known as the urbanization of poverty (UN-Habitat, 2003). However, currently the number of people moving into slums is increasing (UN-Habitat, 2011).

Hence, there are many slum upgrading programs were initiated around the world mainly in developing countries. In these programs the complementary relationships that may exist between different interventions within a program make it very difficult to determine which of the components is more efficient at achieving the observed results.

There is a wide range of indicators employed in different studies to measure housing, neighborhood, and individual outcomes, according to the objectives of the programs.

Policy makers and housing rights professionals worldwide are interested in “land sharing” as an instrument of slum improvement and secure tenure provision in urban areas. In Asian context there was prominent attention to land sharing technique. Some of the examples are as follows. Several land sharing schemes are currently underway in the

capital city of Cambodia, Phnom Penh, as pilot projects of a large-scale slum upgrading program. At least eight successful instances of land sharing were recorded in inner city

County & City	Successes in LST	Factors considered
---------------	------------------	--------------------

<p>1. Thailand</p> <p>Phnom Penh & Bangkok</p>	<ul style="list-style-type: none"> ▪ Difficult to replicate ▪ Only a limited “solution” to the global problem of landlessness and squatting ▪ A technical solution in only a few selected settlements in the city ▪ The time consuming nature of the negotiation and land subdivision processes. ▪ In the current climate of “interest sharing” as poor communities and developers each seek to maximize their benefit, the parties involved may not be interested in the compromise entailed by land sharing. ▪ Land sharing may not even be a sufficient inducement for residents of informal settlements, who are able to negotiate with developers 	<p>Criteria of the Project Evaluation</p> <ul style="list-style-type: none"> ▪ Booming property market ▪ Community organization and consensus ▪ Well-established communities ▪ Third party intermediation ▪ Physical/technical feasibility ▪ Financial feasibility
---	--	--

settlements of Bangkok during the 1970s and 1980s. During the same time, several land sharing schemes were also undertaken in informal settlements in Hyderabad, India. In Bangkok, all but one of these cases has been on public land. In all these cases, the land sharing agreements were drawn up only after a period of alternating conflict and negotiations. Following table shows the evaluation of some of these projects.

Table 2-4: World Experiences in impact evaluation

Source: compiled by author

<p>Cambodia BoreiKeila , DeyKraham, Railway A and B</p>	<p>The majority of residents of informal settlements currently believe that they already have full “ownership” of their house.</p>	<p>Criteria of the Project Evaluation</p> <ul style="list-style-type: none"> • A Buoyant Local Economy • Well-Established Settlements • Innovative Financial Arrangements • Evolving Community Networks • Physical/technical Constraints • Absence of Third Party Intermediation
--	--	--

Thailand land sharing projects were not success due to above mentioned failures. Furthermore the criteria were used to evaluate also showed that in Thailand situation these criteria were not successfully implemented at the project. Therefore the whole project was resulted as a failed project.

In Cambodian projects they were unable to apply the land sharing criteria successfully at the field. Ultimately those projects were succeeding in application of land sharing technique.

It is important to note that the scarcity of evaluations published, prevents a certain assessment of the effectiveness of slum upgrading programs. Providing better housing and housing facilities improves the wellbeing of slum dwellers and increases their satisfaction with life, but none of the evaluations conclusively shows improvements in their livelihood. Land titling programs (Land secure full or limited ownership) have positive effects on housing investments and negative effects on fertility. Depending on previous arrangements and the intra-household allocation of the burden of protecting the unsecured land from other slum dwellers, there can be positive effects.

2.8 Conclusion

Base on the literature review it was observed that low income people are a major part of the city. The concept of land sharing technique is important and many developing countries have applied this land management tool. Land-sharing has been implemented with mix results. The concept behind land sharing is the landowner and the land occupants (squatters or tenants) reach an agreement whereby the land owner develops the land economically most attractive part of the plot and the dwellers build houses on the other part with full or limited land ownership. Land-sharing offers several advantages as governments are finding it increasingly difficult to find land for sites-and-services and other public housing schemes in locations near income-generating activities, and eviction is increasingly becoming an unacceptable method to clear land for development projects.

Therefore using Land sharing technique most of the countries could fulfill the requirement of optimal land utilization in cities where most of the economical lands were occupied by underserved settlements. There are lot of attempts were done to improve these kind of land in globally as well as in the context of Sri Lanka. The evaluation of the application of these projects was hardly done. In global context there are some evidences regarding the evaluation of application land sharing technique of the projects by using several criteria. These criteria are discussed in the literature. Finally evaluation criteria were generated from literature review of addressing the problems of Sri Lankan context. The criteria depict verging fulfillment of the objectives for determining a possible methodology to identify the feasibility of the redevelopment of underserved settlement in city of Colombo. However, no comprehensive study seems to have carried out to investigate and document the application of land sharing technique in Sri Lankan context. What might be necessary is to conduct more thorough, large-scale evaluations of programs that combine housing upgrades with broader interventions that address other major problems affecting slum dwellers in Sri Lanka.

Summing up the literature, the evaluation of impacts of land sharing technique in the global context as well as in Sri Lankan context limited number of aspects are been considered. There are no criteria to determine the impacts on environmental aspects of the selected context. Although most of the literature discuss on different criteria on evaluating the applicability of land management and slum upgrading for the land and housing developments, there is a lack of knowledge regard to identify the specific criteria

that can use for the evaluation of land sharing technique as a better land management technique for Sri Lankan low income settlement developments. Therefore this study will compile the evaluation criteria more specified to the Sri Lankan context low income settlement development including the criteria of environmental aspects as well. It is a common conclusion of the evaluations of the programs that there is a need for the financial system to move down market and to reach the satisfaction in living conditions of the population.

Chapter Three

LAND MANAGEMENT IN SRI LANKA

3.1 Introduction

Land is one of the most critical resources of a particular country or a nation for their development. Problems relating to land and its usage occupy a central place in human society, irrespective of country and socio-economic system. The strong significance of this issue is revealed even by history, and in many times. The success or failure of the rulers, or governments was greatly influenced by their ability of handling the land policies. Even today, conflicts among the nations, as well as individuals, of the various societies in the world is mostly based on land resources and its allocation. According to the present discussions of development the major constraints in efficient land utilization in most developing countries are distribution of land, inappropriate land policies, outdated regulations, as well as malfunctions of institutions relating to land management. Considering Sri Lanka, even after fifty years of independence, more than 80 percent of land is under the control of the state as of 1985, through various legislations, ordinances and acts activated irregularly.

3.2 Evolution of Land Policies in Sri Lanka

Sri Lanka had a long history of civilized societies, which goes back to 6th century B.C. But throughout this long period of history there is no clear evidence of arrangements regarding the rights to land. There is a disagreement among the historians on the role of the king in relation to land, as to whether it was absolute over-lordship or only a trusteeship (Herath, 2006 cited from Siriweera, 1994). Except the king, religious institutions held land rights but could not sell, mortgage or just give away as the king could. Most of these lands were cultivated by tenants or by temple serfs.

With invasion of British rule in 1815, the above-discussed traditional feudal and semi feudal arrangements were changed. British rulers were interested in plantation agriculture which was characterized by large scale agriculture involving large sized holdings, heavy use of capital and labor and producing for export. Using their right of invasion, the age-old system of service tenure of the country was abolished in 1832, with the intention of releasing labor for the plantation sector and a new legislation the Crown Land Encroachment Ordinance (CLEO) was introduced in 1840 in order to obtain more land for the expansion of the plantations, which caused the transfer of nearly 90% of total area

of land to the Crown (Herath, 2006 cited from Maddumabandara, 2000). With the introduction of the 'Registration of Temple Land Ordinance of 1856' much more land was stolen by the states amounting to about 500,000 acres for the expansion of the plantation sector. A considerable amount of this was under the control of temples (Herath, 2006 cited from Sessional Paper, 1990).

The plantation sector grew rapidly compelling the British rulers to seek new opportunities for more land resulting in the Waste Land Ordinance of 1897 (but succeeded only partially because of difficulties in establishing claims to lands already developed) (Herath, 2006 cited from Peiris, 1996). There were other pieces of legislation as the Partition Ordinance of 1863, Land surveys Ordinance 1863, Services Tenure Ordinance 1870 and some other which served to formalize and smooth the process of land transactions but conceived essentially as a means of fostering the growth and development of the plantation sector.

The Land Development Ordinance (LDO) of 1935, which set the pattern for the future course of land development in the country (Herath, 2006 cited from Jogaratnam, 2001) gave the first change in the traditional colonial attitude to land policy in Sri Lanka. For the first time the principle of government initiative in separating land was introduced by this policy and a Land Commissioner's Department was established to supervise and control the alienation and use of Crown land. The Crown Land Marks Ordinance of 1930, Crown Lands (Claims) Ordinance of 1931, and Land Settlement Ordinance of 1931 are other pieces of land legislations enacted after the land commission of 1927. A second land commission was appointed in 1955 to examine the policy of government relating to alienation of crown land, assistance to peasant colonists, and efficient use of Crown land and to propose necessary amendments to the Development Ordinance of 1935. The final report of the commission was presented in 1958. Based on the report some fairly minor amendments were made to the ordinance in 1960 and 1969. (Herath, 2006)

Land Reform Law No.1 of 1972 was one of the revolutionary steps in land policies of Sri Lanka. The law was enacted in the same year with growing shortage of land for new settlement in the Wet zone and with raising cost of developing land for colonization in the Dry Zone. Following the Land reform Law No.1, the Agricultural Productivity Law No.2 of 1972 was enacted to ensure the proper utilization and development of all acquired lands. In providing for the sale of state lands to individual cultivators, sale of State Lands Law No. 43 was passed in 1973.

The Law aimed primarily at giving freehold tenure to allottees on Colonization schemes, village Expansion Schemes etc. The Land Reform (Amendment) Law of 1975 extended the ceiling on land ownership to estates owned by public companies also. In 1976 the Land Reform Law No.1 was extended to cover public lands.

According to the findings of the Land Commission of 1987 a large extent of undeveloped land was available, and in the light of the many problems of the landless a 'Presidential Task Force' was set up in 1989 (Maddumabandara, 2000). Even at present, new legislations and policies are being introduced while most of the previous ones are being operated. However, one would have to focus attention only on a few major enactments, which have enduring impacts on society rather than all the available enactments. The present regulatory environment has impacts on the urban poor settlements and their livelihood patterns. Following are the major legislations and regulatory tools identified most relevant for initiatives of land management in these low income settlements.

1. Housing and Town Improvement Ordinance – 1915
2. Town and Country Planning Ordinance – 1945
3. Ceiling on Housing Property Law – 1973
4. Urban Development Authority Act - 1978
5. Draft Regulations for Low Income Settlements
6. Community Building Guidelines by National Housing Development Authority (NHDA)

3.3 Institutional Framework

There are eight key government institutions involved with land related activities in Sri Lanka. They include four agencies of the Ministry of Agriculture and Lands (MAL) and four agencies outside the MAL, as follows:

3.3.1 Survey Department

Responsible for land surveying and mapping of country, General work program includes contour surveys for irrigation and other purposes, block and topographical preliminary plan surveys and settlement demarcation surveys, town surveys, forest surveys, sporadic surveys including acquisitions, aerial surveys.

3.3.2 Land Commissioner's Department

Responsible for the protection, development, management and distribution of state-owned land, including the distribution of lands under various schemes, issue of permits, grants and leases under principal acts and laws relevant to administration of lands. Land distribution programs predominate and concern relieving landlessness and unemployment. The Department is also involved with the alienation of state land.

3.3.3 Natural Resources Management Centre (NRMC), of the Department of Agriculture

The Centre optimizes land and water resources use on a scientific basis for excellence in agriculture. To achieve this NRMC is engaged in: ·

- Development and dissemination of land conservation and water management techniques for sustainable agriculture;
- Development and maintenance of a database on land and water resources; ·
- Soil survey, land suitability evaluation and land use planning; ·
- Technical assistance for watershed management, land use planning and farm development;
- Implementation of the Soil Conservation Act of 1951, amended in 1996 and training trainers in soil and water conservation.

3.3.4 Land Use Policy Planning Division (LUPPD)

This Division of the Ministry of Agriculture and Lands has the responsibility for introducing systematic land use planning throughout the country, based on scientific criteria. Its objective is to ensure the utilization of natural resources to the maximum benefit of society, by the formulation of land use policies and the preparation of land use plans. These should allocate land resources among competing users on a rational basis, so that optimal and sustainable land uses are maintained.

Strategies adopted by the LUPPD in achieving these objectives include:

- Preparation of land use plans at national and sub-national levels;
- Preparation of a national land use policy;
- Establishment of a land information system and a land data bank;
- Conduct training and awareness programs on land use planning for agencies

The National Land Commission under the LUPPD formulates national policy statements regarding the use of land in the country. To achieve this, a Technical Secretariat attached to the Commission is required to evaluate physical and socio-economic factors relevant to natural resources management.

3.3.5 Urban Development Authority (UDA)

The Authority is expected to promote integrated planning and implementation of economic and physical development of areas declared by the Minister to be Urban Development Areas. In any area declared as an Urban Development Area, the UDA is expected to:

- Carry out integrated planning and physical development;
- Prepare a development plan;
- Implement programs of development consistent with integrated planning;
- Formulate and implement an urban land use policy;
- Develop environmental standards and prepare schemes for environmental improvement.

3.4 Institutional constraints

Various government agencies and line departments have responsibilities for the full range of land issues confronting the state. Each tends to focus on a sectoral approach in its activities, but such a concentration of attention can become a limiting issue in itself, as cross-fertilization of knowledge becomes constrained. There is a lack of coordination and cross-sectoral interventions resulting in unnecessary duplication of efforts. There is a growing imperative to incorporate social and tenurial aspects in land assistance programs, particularly in the field of land registration. The institutional support to be given at the grassroots level to land users in resolving land tenure questions is still deficient.

3.5 Regulatory Role of relevant Agencies

3.5.1 Urban Development Authority

The principal activity of the UDA is to promote and regulate the integrated planning and physical development, having regard to the amenities and services provided to the community, prepare development plans for such development areas.

Further, it formulates and implements urban land use policies and development of environmental standards and implementation of such schemes.

Section 15 stipulates that where the Minister certifies that any land vested in a local authority is required by the UDA, the Minister may by Order published in the Gazette vest such land in the UDA. Where, land is declared as a development area that land is deemed to be required for a public purpose and may be acquired under the LAA by the Government. Lands declared for a development area is paid the market value for the purpose of determining the amount of compensation (section 16 (2)).

Urban Development Projects (Special Provisions) Act No 2 of 1980 provides for the declaration of lands urgently required for carrying out urban development projects. This act enables the UDA to take speedy possession of a private land required for urban development projects where the APs are denied the legal rights in a court of law to restrain acquisition procedure.

3.5.2 Ministry of Lands and Land Development

The Ministry for the subject of “Lands” was established in 1932, as per the recommendation of the Committee appointed in respect of the subject of Land and Agriculture of the State Council 1931.

The main objectives of establishing this Ministry were to implement activities such as formulate and implement state land policies, conserve state lands, land settlement, land acquisition of lands for public purposes, with in the country.

It deals with Land Surveying, Land Acquisition, Land Alienation and Disposition Land Policy and Development, Land Used Policy Planning, Land Title Registration.

3.5.3 Sri Lanka Land Reclamation and Development Corporation (SLRDC)

The Corporation is the authority responsible for the maintenance of canals in Colombo and in any area declared. The amendments to the Principal Act by Act No.35 of 2006 are:

- a) To have the custody, management, improvement, maintenance and control of canals and prevention of pollution of canals;
 - b) To prohibit filling or developing any area of land declared to be a Reclamation and Development Area under section 2 and 2b of the Act, without the written approval of the Corporation;
 - c) To declare any area of land other than an area declared to be a Reclamation and Development Area under section 2, as a low lying marshy, waste or swampy area;
- and

- d) To declare any area of land on a canal bank as a “Canal Reservation” and prohibiting the construction of buildings or structures in such area without the written approval of the Corporation.

The strengths of the Corporation include:

- a) The powers vested with the Corporation by the act of Parliament to acquire, reclaim and develop lands in any part of Sri Lanka and to engage in diversified activities;
- b) The availability of expertise knowledge and machinery for land development, storm water drainage designing, civil engineering construction, inland dredging, fabrication work and environmental studies;
- c) The achievement of ICTAD – M1 registration enabling the Corporation to engage in construction projects with unlimited value; and
- d) Ability to take legal action against unauthorized reclamation & development of areas and canal reservations declared under the act.

The Agency’s opportunities include:

- a) The increasing demand for buildable lands by different users;
- b) The emerging demand for recreational facilities in and around water bodies;
- c) The increasing demand for inland dredging where the Corporation has a monopoly;
- d) Supply of sea sand to the construction industry by dredging off – shore sand due to environmental hazards caused by sand mining in the rivers; and
- e) Creation of land by sea reclamation.

3.6 Legal and Regulatory Framework for Land Management in Sri Lanka

The current Sri Lankan laws governing matters relating to land, such as land acquisition, recovery of state lands, claiming rights of acquisitive prescription, declaration of reservations, compensation for property losses and compensation for improvements in Sri Lanka are enshrined in a number of legislative enactments.

1. Land Development Ordinance – No. 19 of 1935

Land Development Ordinance is an ordinance to provide for the systematic development and alienation of state land in Sri Lanka. This ordinance (LDO) sets out the procedure for cancellation of a state land given on a permit or grant for non-compliance of the conditions of permit.

2. Land Grants (Special Provisions) Act – No. 43 of 1979

An Act to provide for the vesting in the state of agricultural or Estate Land which is vested in the land reform commission under the land reform law; to enable the transfer, free of charge, to the landless of the land so vested in the state; and to provide for matters connected therewith or incidental thereto.

3. State Land Ordinance – No. 08 of 1947

An Ordinance to make provision for the grant and disposition of state Lands in Sri Lanka; for the management and control of such lands and foreshore; for regulation of the use of the water of lakes and public streams; and for other matters incidental to or connected with the matters aforesaid.

4. State Land (Recovery of possession) Act – No. 07 of 1979

An Act to make provision for the recovery of possession of state lands from persons in unauthorized possession or occupation thereof and for matters connected therewith or incidental thereto.

5. Land Acquisition Act – No. 09 of 1950

This is an Act to make provision for the acquisition of lands and servitudes for public purposes and to provide for matters connected with or incidental to such provision. The law discourages unnecessary acquisition, as lands acquired for one purpose cannot be used for a different purpose, and lands that remain unused be returned to the original owners.

Several progressive provisions have been introduced in the LA Regulations of 2008 relating to provision of compensation for affected land at market rates, reconstruction cost of structure without depreciations, valuation for whole plot of land for determining proportional unit cost for the affected land parcel, business losses, relocation assistance etc.

6. Land Settlement Ordinance – No. 20 of 1931

An Ordinance to amend and consolidate the law relating to land settlement

7. Title Registration Act – No. 21 of 1998

An Act to make provision for the investigation and registration of title to a land parcel; for the regulation of transactions relating to a land parcel so registered; and for matters connected therewith or incidental thereto.

3.7 Land Management

Land Management can be defined as the process of managing the use and development of land resources in a sustainable way. Land resources are used for a variety of purposes which are interactive and may compete with one another. Therefore it is desirable to plan and manage all uses of land in an intergraded manner. (Dale P. D. and McLaughlin.J.D.1988)

3.8 Chapter Summary

Land development and the management is one of the major concerns of many of the developing countries including Sri Lanka. The optimization of the land uses and address the land scarcity in the city centers are the main issues related to the land management at cities. The land management techniques have been identified to address these kinds of issues in cities. These land management practices have implemented with the support of institutional and legal framework. The evolution of land related policies for proper management of land resources and the institutions which were responsible for handling the land resources were also discussed in brief within this chapter.

In Sri Lanka UDA act as a main agency which is responsible for implementing these kind of land management projects with the legal background of declaring lands for suitable developments and deciding on the suitable land uses and developments for the optimal utilization of the scare lands. Most of the projects in Sri Lanka has took place in the city of Colombo where most of the underserved settlements such as urban slums and shanties were emerged in the fringe of city center, reservation lands, canal banks and etc. But these lands have more economical value due to its location of close proximity to the city center. Therefore UDA has used land management techniques for optimize the utilization of these kind of lands in the city of Colombo. Mostly used land management techniques are mentioned at the last section of this chapter. This study is particularly looking at the Land sharing technique that has been applied in the context of Colombo as the most applicable and most suitable land management techniques among all those techniques.

Chapter Four

RESEARCH DESIGN

4.1 Introduction

This chapter presents the development and formulation of the conceptual framework of the research study methods of the preparation and assembly of the data to achieve the objectives of the study. The study is both qualitative and quantitative investigation and evaluation of successes and failures of land management techniques to supply land for low income housing in Sri Lankan context. The Chapter is explained the method of the study, selection of area for case study, data collection and analysis procedure with the methods and techniques that are decided to apply.

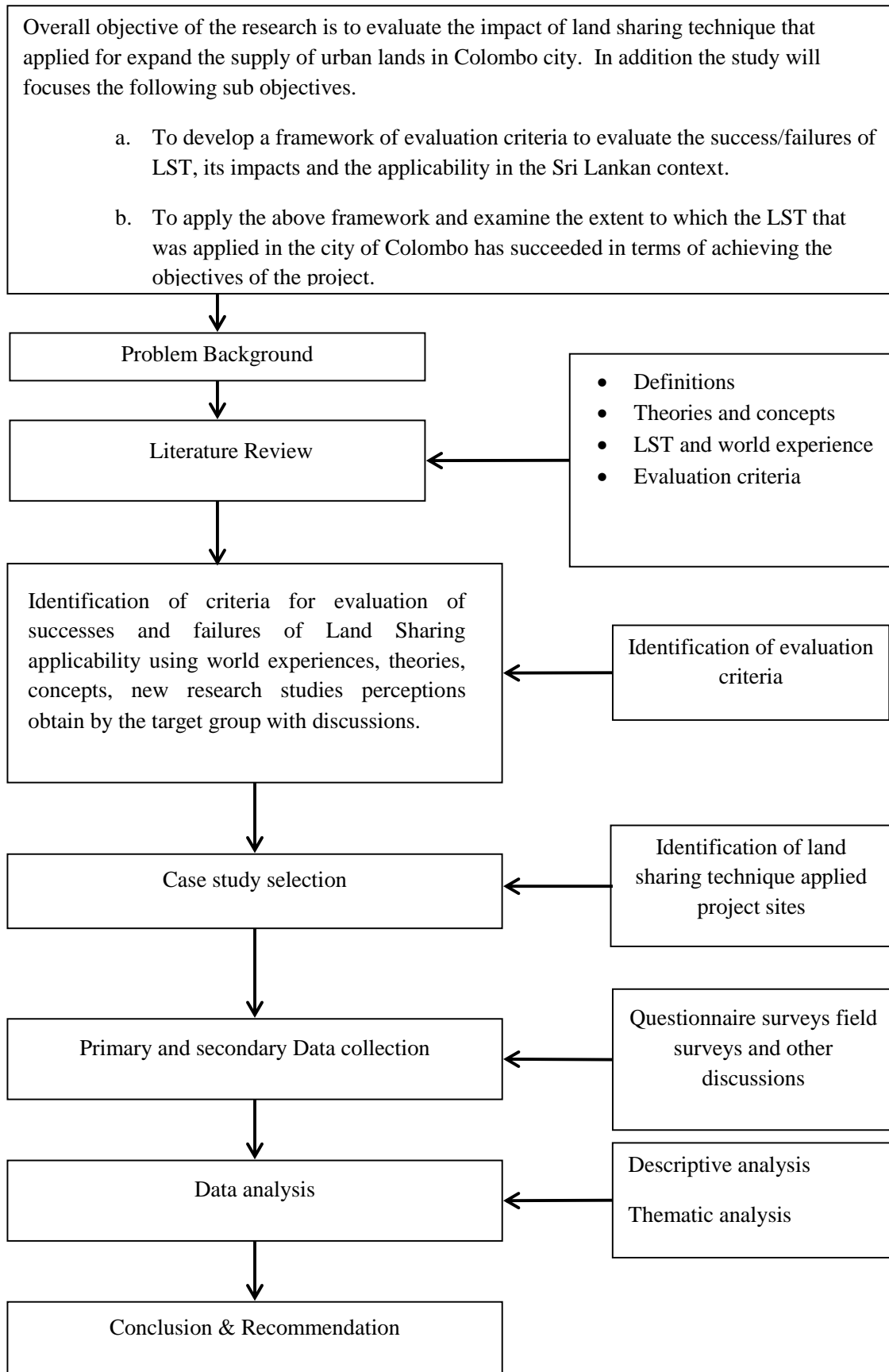
4.2 Research Question

What are the successes and failures in application of land sharing techniques in urban context of Sri Lanka in order to increase the land supply?

4.3 Method of study

This research conducted based on following steps. Mainly background study was carried out to establish the research problem, aim and objectives of the study. In the second stage present comprehensive literature was reviewed to identify evaluation criteria that effect for successes and failures of Land Sharing Technique. Next stage is identification of land sharing project sites in order to select a case study. In the fourth stage secondary data were collected from UDA and primary data was collected by the questionnaire survey, field observations and other discussions from different focus groups. At the fifth stage, all survey data and the field observations were analyzed in order to evaluate the current status of the case study area. After the Multi-Criteria evaluation at the sixth stage, conclusions and relevant recommendations were finally established based on overall study.

Figure 4-1: Conceptual Framework



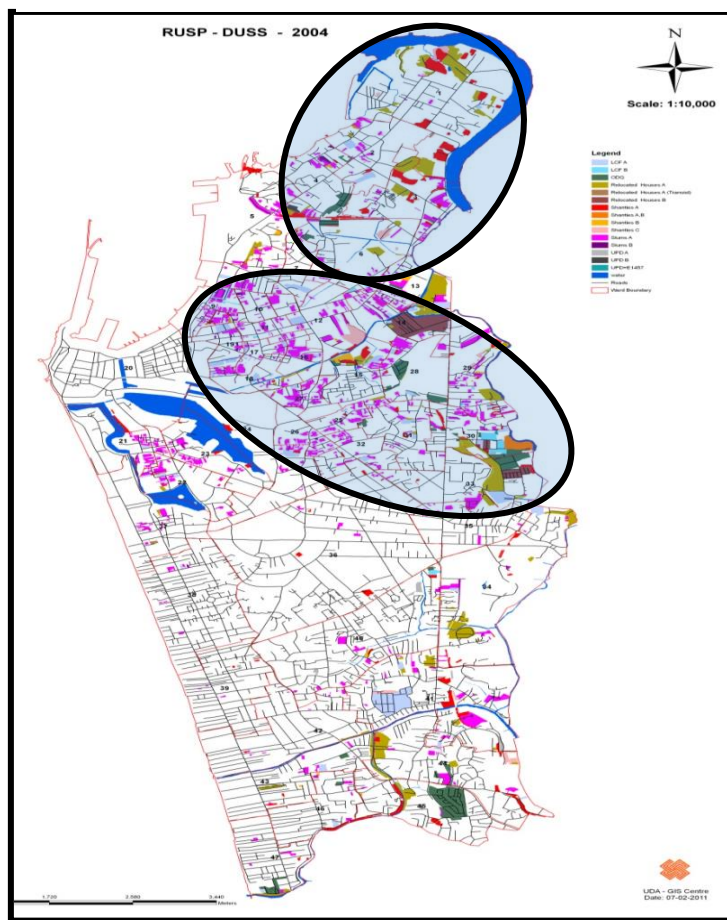
4.4 Selection of case study area

Over 51% of the Colombo city population lives in shanties, slums or dilapidated old housing schemes which occupied nine percent of the total land extent of the city. Urban Development Authority has identified a total number of 68,812 families living in 1,499 community clusters (underserved settlements) which do not have a healthy environment for human habitation and access to basic infrastructure facilities such as clean water, electricity, sanitation etc. Relocation of these families in new housing schemes with acceptable standards will be one major step in the direction of transforming Colombo into a world recognized city with a clean and pleasing environment.

4.5 Distribution Pattern of the Slums & Shanties within the CMC Area

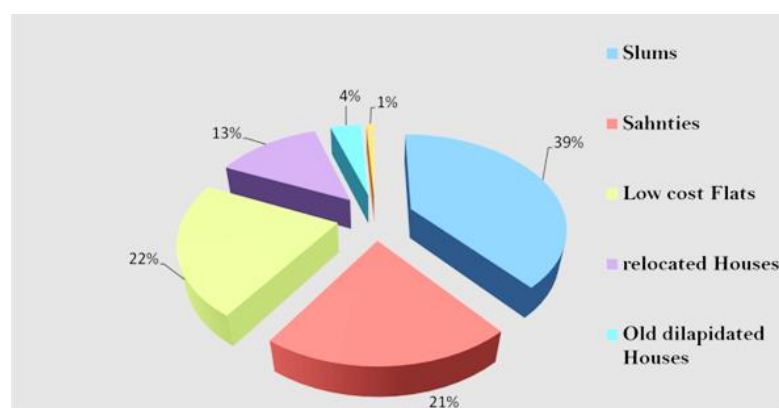
- 68,000 Slum & Shanties scattered within CMC area.
- Mostly in Northern ,Central & Eastern areas in the City
- Lives in 1,499 settlements
- Occupies 900 Acres of valuable Urban Lands

Figure 4-2: Figure 3.2 explain the Distribution Pattern of the Slums & Shanties within the CMC Area



Source: UDA

Figure 4-3: Figure 3.3: Types of underserved housing units in the city of Colombo



Source: CMC, Urban Slum Report, 2010

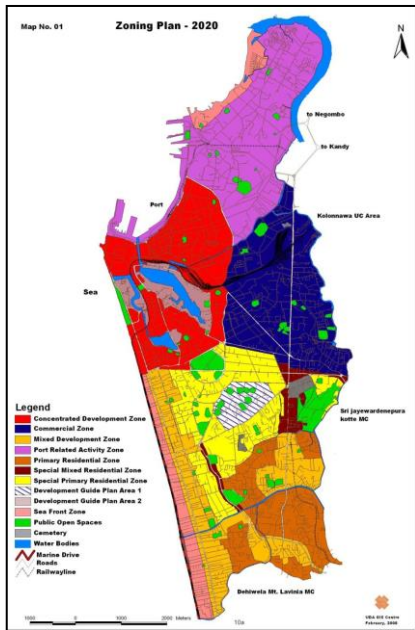
The study area was selected within the limits of Colombo Municipal Council area due to following reasons.

1. Existing low income settlement and lack of access to city's infrastructure network to the urban poor. In Sri Lanka 51% of Colombo City's population lives in crowded under-served settlement with poor infrastructure and substandard housing. In 2010 there were 70,000 such families living in these settlement.
2. Land ownership problem. Of them, 80% slums were on government property.

4.6 Introduction of study area

Sirimovo Bandaranayaka Mawatha and Edirisinghe Watta was selected which applied the Land Sharing Technique after considering several characteristics that needed to apply efficient and effective Land Sharing Technique. The project site is located in Colombo Municipal Council area. Land belongs to Urban Development Authority. Therefore new planning scheme should be in accordance with the rules and regulation of Colombo development plan (amendment) 2008. There are nine development zones proposed in the City of Colombo (amendment 2008). The project site (Sirimovo Bandaranayaka Mawatha) is situated in port related activity zone. (Figure 4.4) The total project area is 12 Acre 1 roods 0 perches. The total housing units are about 546. According to history this land was a waste dumping site of Colombo Municipal Council. But after a period of time it was abandoned. After that People used it for residential purposes.

Figure 4-4: Figure 3.4: Zoning Plan-2020



Source: Colombo Development Plan (amendment) 2008-UDA

Figure 4-5: Figure 3.5: Location Map of Project site

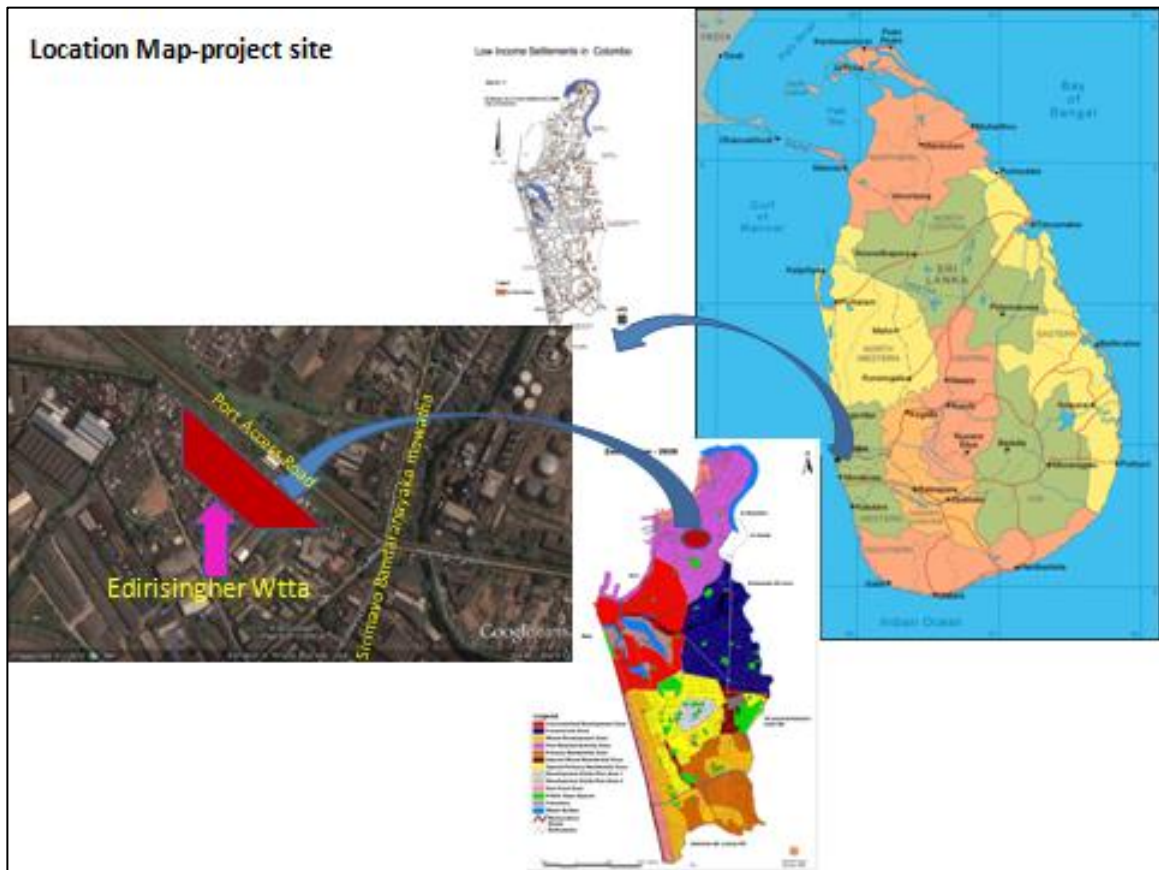


Figure 4-6: Project site



4.7 Criteria Used for Justification of the Land Sharing Project Site Selection

1. Ownership of the land

Ownership is the most important factor of the land sharing project. In this selected site ownership of land belongs to Urban Development Authority.

2. Availability of slums and shanties on site

There are 546 slums units within the site. They settle on the government land without proper ownership. Most houses are made as temporary structures. There is relatively small and scattered between other land uses. Therefore, it can't get the highest and best use of the land.

3. lack of infrastructure

An individual accessibility for every house is not available and infrastructure facilities like water, sanitation facilities are also lacking. Occupants make informal arrangements for infrastructure like water and electricity.

4. Proposed site for resettlement by Urban Development Authority

Urban development authority identified the proposed site and constructed houses to resettle underserved settlement in Colombo city. UDA has suggested 546 housing unit to be built on the site. There are 546 numbers of existing housing units within the site among them some of the houses needed to be temporarily relocated at the corner of the same premises.

4.8 Data Collection and Survey method

To carry out this research a survey has been carried out using a questionnaire among the occupants and UDA officers. This is the main data collection method other than the secondary data collection.

Table 4-1: Sampling method & target group

Type of group	Sample size	Method use for Survey	Survey method
1. Unauthorized occupants of the Edirisinghewatta	150 people	Questionnaire & interviews	Random sample survey
2. UDA officers	5 officers	Questionnaire & interviews	Random sample survey

Source: compiled by author

4.9 Analysis Method

The survey findings are analyzed by using the descriptive and thematic analysis as qualitative results. The evaluation of the LST is doing using the evaluation criteria extracted from the literature. These evaluation criteria are specified according to the Sri Lankan Context with the knowledge of expertise.

4.10 Main Criteria of Land Sharing selected for present study

In the literature review, following criteria were used by many different countries in evaluation of applicability in land sharing technique. Accordingly those criteria are identified for evaluation of the Land Sharing technique in this study.

1. Community organizations
2. A land sharing agreement
3. Densification
4. Reconstruction
5. Capital investment

6. Cross-subsidy
7. Community Participation
8. The lower the development pressure
9. The better the cooperation of the landlord
10. The stronger the support from outside agencies

Chapter Five

ANALYSIS

5.1 Introduction

The aim of this chapter is to present the research findings of the empirical investigation and convey the underpinned symbolism of the study area regarding the applicability of LST in Sri Lanka. Thematic analysis was carried out by aiming the objectives of the study to identify and prioritized the criteria that should consider in Sri Lankan context when applying LST. Moreover discussion carried out with the intention of prioritizing the criteria and approaching the conclusion of this study. Analysis

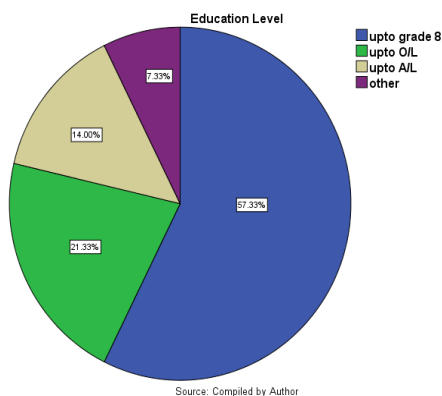
5.2 Basic information

The survey was conducted among 150 families from the whole population of 550 families. All the families were relocated and the basic information was collected regarding their personal information and property. Mainly the education level, employment type and the income level data was collected and as the data for property, extent of the land, Land ownership, period of occupation and the type of ownership of occupancy data collected.

5.2.1 Education level

Majority of the people live in this area are educated up to Grade 8 level and it is 57.3% from the total population. Meanwhile there are 7% of graduated people as well as 14% of them has higher education level such as diploma level education.

Figure 5-1: Education Levels

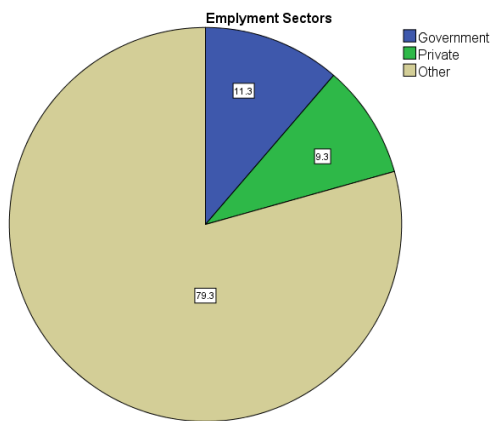


Source: compiled by author

5.2.2 Employment

79.3% of the occupants are under the category of other including self – employments such as aluminum workshops, mobile vending, food outlets and daily workers. There are some illegal sectors as well such as drug dealing. 11.3% of occupants are engaged in government sector employment and 9.3% of occupants engaged in private sector such as some companies, factories and etc.

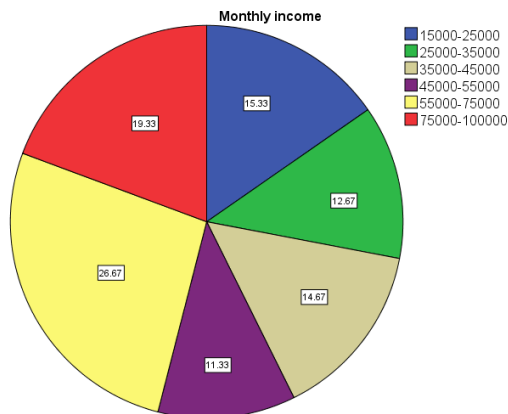
Figure 5-2: Employment sectors



5.2.3 Income Level

The income distribution is varied low income groups to higher levels starting from Rs.10,000 to over Rs.100,000. Over 25% of the occupants are in Rs.55,000 to 75,000 monthly income levels. Nearly 20% occupants has more than Rs.75,000 up to the maximum of rs.100, 000 income level while 15% people under Rs.15,000 - Rs.25000 income level. Other than that about 25% of occupants belong to middle income category which is Rs.35,000 – Rs.55,000 monthly income.

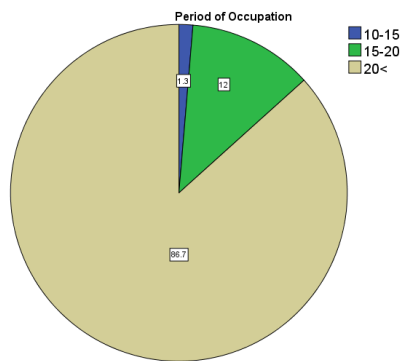
Figure 5-3: Income Distribution



5.2.4 Period of occupations

87% of the occupants are living in this place for more than 20 years. Most of them are living in this place from their birth. Another 12% have been living here from 15-20 years. The remaining 1% has been living here for less than the households are living 10-15 years.

Figure 5-4: Period of occupation



Source: compiled by author

5.2.5 Landownership

Originally 100% of land is crown lands and with the development plans 100% this land acquired by Urban Development authority and currently the total land belongs to Urban Development Authority.

5.2.6 Approximate extent of encroached property

According to the survey it was revealed that there are more than 45% of occupants have encroached upon small plots in extent of 2 – 4 perch. 27% occupants have encroached 1-2 perch and 9% are encroached in extents 4 – 6 perch while 8% of people have below 1 perch land. 10% of people have over 6 perch of land.

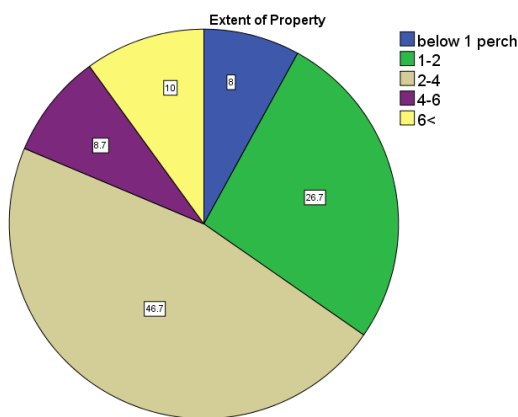


Figure 5-5: Extent of property

Source: compiled by author

5.3 Thematic Analysis of Evaluation Criteria

5.3.1 Community Organization

According to the survey findings 87.3% of the occupants are already members of their community organization. They are organized to counter the threat of eviction. They have a community leader. He conveys the decision on behalf of slum dwellers to authorities. Hence it make ease to get public participation for the project and deliver the concept of Land sharing. 78.7% of occupants have got chance to negotiation and 100% of them got advantages out of the project discussions. Similarly 81.3% of tenants contribute to the project at their capacities.

In Edisinghe watta, sirimuthuuyana housing project total 546 families have faced a threat of eviction from UDA since they are been unauthorized settlers in government land. To counter the threat of eviction these people have organized through a community organization which leads by one of them. There are about 130 occupants in this organization. Through the community organization this people got a chance to negotiate with government agents about the upcoming housing project.

Accordingly the public participation has encouraged and 100% of people gave their contribution to the project. Through that they got following advantages. The main advantage they got is they could relocate on site and this was not an involuntary relocation at all. They could get improved infrastructure facilities and also they could develop their self-esteem by upgrading their living standards. There are other indirect benefits as well. Those who doing self-employments such as food outlets they could provide food for those who work at the site and those who work as daily workers also could work in this project.

The community organization is the main agency to organize occupants together to contribute to the project. Through the organization they also took some actions. They are the main responsible persons those who provide safety for the site and other equipment and materials at the site both day and night. They contribute their labor force to the project. They took the responsibility of landscaping the site as well.

All these actions were easily mobilize through the community organization rather than involving UDA directly. The leader of the organization handles all necessary arrangement for mobilizing these actions. The leader was instructed by the UDA in advance.

Hence because of this community organization they could mobilize those actions as well. It reduces the burden on the UDA.

5.3.2 LS agreement

Land sharing agreement is a necessary requirement to be complete when applying this technique for land management. According to the selected case study 100% of the people have signed a land sharing agreement by UDA with other agreements. 78% of the occupants had faith on UDA as project agency and the people had trust worthy with UDA as the government agent. Other than the land sharing agreement there are few other agreements such as water and electricity bill payments, paying 2500 per month as a lease for 25 years' time. Only 2.7% of tenants were relocated on site, 97% could stay in their own houses and all of them were relocated in the same land. All the tenants got leasehold ownership for the new houses. Most of valuable part of the land was developing by UDA. One part of the land will be developing as a fuel station and the other part will be given to a foreign company for commercial development.

The main part of the land sharing agreement is the getting ownership for the new houses. The Preference for ownership for this settlement is 100% of the occupants are expecting freehold ownership of this settlement. All the occupants wish to be resettled on the same place due to close proximity to their work places, hospitals, schools and etc. They have a strong relationship with neighborhood. 100% of the occupants like to be resettled on a part of the site during construction period. Nobody likes to be relocated in another place far away from the site. Already UDA has signed an agreement to give opportunity to transfer to a corner part of the land with temporary hut. All the people trust land owner (UDA). Here very small part of the land was cleared by removing existing settlements. They were also relocated in the same land temporarily.

The main reasons for applying L/S techniques are in the Dematagoda new housing scheme occupants did not like to relocate elsewhere because majority of them were doing jobs in the surrounding area and proximity to their children's schools was an important factor. Then UDA has faced lot of difficulties in relocation process. Then UDA thought to apply the Land Sharing technique as successive land management technique to this site. Because occupants will be resettled temporarily in a corner of the site and then a new housing scheme will be constructed and subsequently occupants will be settled in the new

building. The excess land will be used for other development purposes to recover the cost. (UDA expects to sell the excess houses and land in the open market).

- According to UDA all occupants like UDA proposal.
- All occupants like high rise development

5.3.3 Densification

Currently all the tenants were relocated into housing apartments with their own will and whole relocation process was handled by the UDA. According to the Land sharing agreement all occupants agreed to relocate in a housing apartment. 100% of occupants prefer to be shifted to high rise apartments with basic facilities better than previous conditions. Among them 66.7% of the occupants are willing to have maximum five storied housing apartments. They expect 500-600 sq. ft. floor area for one housing unit. Over 70% of tenant said that there are some negative impacts on the design of the apartment as well as in entire housing scheme. Therefore it is added new criteria as “Building Design” for better evaluation of the project. Following are the failures caused in the design stage of the project.

- Not having their own land
- No space to continue their self-employment activities

5.3.4 Building Design

Design failures are one of the major issue people faced such as Given house is smaller than earlier house, Limited space inside the houses, two houses faced each other and it limits the privacy, maintenance difficulties and etc. After allocating land for mix development there is not enough land for providing recreation and open spaces for all occupants. The available space is not sufficient for providing all agreed facilities. As example they have provided parking facilities but it is not sufficient. Total no. of houses 546 and it is required to parking facilities 546. There is only one community hall and also it is very small.

Although there are negatives some people mentioned about the positive impacts as well. Since they don't have a fix and sufficient income to build a proper house this was best opportunity to live with better quality of life including improved infrastructure facilities. It enhances the safety, sanitation and health in the area. And all these caused to establish their self-esteem.

5.3.5 Reconstruction

None of the previous buildings or houses was reconstructed. Whole land was redeveloped and most valuable part of the land opens for new developments as well. In this context no reconstruction was happened.

5.3.6 Capital investment

Since 100% people already has agreement with UDA. The expected method used supply capital investment is government capital. UDA provide financial facility to constructing new housing scheme. This project is fully funded by UDA own funds. There was no financial collection from occupants. There are some financial agreements with the tenants for offering the new ownership for houses. Occupants didn't do any kind of financial contribution to the project as well.

5.3.7 Cross subsidy

There was no any kind of external funds/subsidies or allowances for this project or financial contribution from occupants. Project cost fully bared by UDA. The cost recovery was done by renting a part of most valuable part of the land for local commercial development, selling other most valuable part of the land for foreign company and collecting Rs. 50,000 as initiation fees and Rs. 2500 per month for 30 years as lease from tenants.

5.3.8 Community participation

Only 8% of the occupants were given any kind of contribution to each and every stage of the project. The highest public participation it is about 66% was given in the stages of project discussions and other discussions on peoples' perception, LS agreement and final relocation. The preliminary stages and construction stages got less participation about only 4%.

According to the discussions with people site occupants are relatively well organized and community participation is in satisfactory level. According to the UDA people always discuss their problems with community leaders. UDA agrees to give money for temporary relocation and reach an agreement for it. Any kind of relocation project has to take the public participation in order to achieve maximum success of the project. In this project

via community organization UDA could get highest participation of the occupants. Taking account of peoples' views UDA plans give new houses built on the site to occupants under freehold ownership. UDA wants the optimum utilization of the land. Then UDA has the view that their proposal will realize optimum utilization of the land. But since past few decades this land was not developed. The main reasons for not improving the property are, most of the (80%) people do not improve the property because they don't have money. Most of them are low income people. They do not have regular income sources. They can only fulfill their daily needs. 10% of the occupants do not improve the property because they don't have clear ownership for their property. Another 10% said that they are not improving the property because of the threat of eviction. The entire occupants in Edirisinghe watta (100%) had been educated about the site to be developed through UDA awareness programs.

5.3.9 Lower the development pressure

This land was not been developed for last few decades due to following mentioned reasons. 66% of the occupants were preferred to the new development.

Following infrastructure facilities were improved with the project and satisfaction levels are as follows.

- Roads
- Water & electricity
- Drainage & Sanitation
- Waste Management
- Vehicle parking
- Social & Recreation

The Land demand and the land value also increased after the project. There are major social, economic and environmental improvements except the physical developments. 100% of the occupants like the new planning proposal. Their land extents were very limited and environmental conditions were not satisfactory. They had lack of infrastructure facilities. Due to their housing conditions they were deprived of social acceptance.

Therefore they expected a new housing program, good quality of life style with basic facilities, especially for their children. 80% of occupants liked to develop the most valuable part of the land in the site by Urban Development Authority. As a reason they

said they also will get higher accessibility. 10% of occupant opposed to such development. They mentioned that it will be a threat to their daily Life style and freedom. Rest of the 10% said it was not provided the facilities such as playground, community centers etc. All of the occupants liked to bear the 50% infrastructure cost and maintenance of new building.

The total land extent of the site is 12A 1R. UDA expects to build 546 housing units on it. They relocated the occupants temporarily on the corner of the site. After construction houses was offered to 60 families without any fee. UDA has invited infrastructure facility building agencies to provide necessary facilities but still UDA couldn't provide a playground, sufficient parking lot, open space, community centers and other social infrastructure regarding religious and recreation. But the main objective of the UDA was to increasing housing supply for low income people while enhance the quality of the life of the shanty people and create a good city. UDA targets to obtain a high profit by selling the rest of the houses and land.

Most of the valuable land surrounding Edirisinghe watta belongs to UDA. UDA built 546 housing units in 4 high-rise apartments and resettled those squatters and clear the land and use them for other development for activities for cost recovery. Some people like the proposal but some do not like due to their socio-cultural problems.

5.3.10 Better the cooperation of the landlord

73% of people could develop a better understanding between UDA and themselves.

5.3.11 Understanding between Landlord and Tenant

Table 5-1: Level of understanding

condition	Frequency	Percent
Very satisfied	30	20%
Satisfied	80	53%
Moderate	21	14%
Unsatisfied	13	8.6%
Very unsatisfied	6	4%
Total	150	100

Source: survey data

5.3.12 Stronger the support from the outside agencies

Mainly for the infrastructure developments external agencies were supported. Most of the supported agencies were government agencies such as Ceylon Electricity Board, NWSDB, CMC and etc. UDA has already invited relevant agencies such as Water Board, Electricity Board, CMC, condominium Authority, Fire Department, etc. to provide infrastructure facilities. All these were supported to the project as third party intermediations. Among them CMC, Water Board, Electricity Board, Tudawe Brothers, Condominium Authority are the main agencies which has highly contribution to the project.

Earlier the people live here has no proper infrastructure facilities. They has several issues such as,

- No proper internal road connection available to each housing units.
- Sanitation facilities are not good. There are no individual toilets & bathroom facilities available.
- Electricity facilities are not available for each housing units.
- No proper drainage system of the settlement.
- No Garbage collection center is available at the site. Entire settlement occupants dump garbage to drainage canal.
- No health facilities within the area.

Not only that there were lot of issues in Environmental condition & social abuse such as,

- All occupants complained about the physical safety in the settlement. Drugs and violence spreaded all over the settlement and people want to live in peace & harmony.
- This land was an abandoned garbage damping site. People did not have proper drainage system & or garbage collection point. They encroached small size land plots. The entire occupant population duped their garbage to the canal. They did not have even a small garden.
- According to discussion with Urban Development Authority officers, the housing proposal was identified by the amended Colombo Development Plan in 2008. According to UDA officers there were ongoing 12 resettlement projects in the city of Colombo. There were 546 families at Edirisingha Watta target project.

With all these reasons UDA could get the support from outside agencies to improve the infrastructure facilities for the occupants.

5.4 Findings

According to the questionnaire survey and information formulated through discussions in this study, findings on land sharing application in Sri Lanka are as follows.

- Land sharing technique was successfully implemented as the most suitable land management technique for increase of land supply in Colombo.
- As a planning authority, the decision taken by UDA was successful and the project was completed with minimal negative impacts.
- It was a technique for getting optimal utilization of the land and upgrading the low income settlements in and around the Colombo.
- The common set of criteria for negative aspects is based on high density, poor design aspects, environmental aspects and bad political influence for the projects.
- The criteria analysis shows the successful and failed criteria of land sharing application in Colombo.

Table 5-2: Criteria evaluation

Successful criteria	Unsuccessful criteria
Community organization	Reconstruction
Land sharing agreement	Better cooperation between landlord and tenants
Support from outside agencies	Community participation
Capital investment	Densification
Cross subsidy	Building Design

Source: survey data

According to the findings, it is proved getting optimal utilization of the land and upgrading the low income settlements in and around the Colombo to fulfill the main objective of the UDA as the main planning agency of the country by using land sharing as the most suitable land management technique for Sri Lanka. In addition, it was revealed that Identified 10 evaluation criteria are not enough to evaluate the each aspects of land sharing. The criteria lacking in concern are design aspects, environmental aspects and political influences to the projects. The most important expectation of the entire exercise in releasing the most valuable part of the land for development was succeeded due to that occupants were willing to allow the owner to develop the most attractive valuable part of the land and they agreed to release the land for developments.

Chapter Six

DISCUSSION AND CONCLUSION

6.1 Introduction

This chapter is critically discussed on the each evaluation criteria with the survey findings and aims to emphasize the relationships and the reasons behind the relationships of each evaluation criteria. The research findings will use to rank the evaluation criteria of Land Sharing Technique. Finally research findings emphasized the land sharing criteria which are most applicable to Sri Lankan context.

6.2 Discussion

Analysis was done by providing two special questionnaires for the identified two groups (Squatters & developer). Questions relating to land sharing principles were focused to squatters such as Community Organizations, land sharing agreement; densification etc. Community Organization is one of the main criteria. Community Organization was very important when the planning authority was trying to convey the concept of land sharing to the people who have lower level of education and as a segregated community from the society. And also it is a difficult task to increase the land supply in Colombo city due to the underserved settlements. In this situation Community Organization is the main body that could convey the importance of the project while ensures the occupants needs and wants. Here community leader played a major role. He has all the knowledge and skills to handle the people and also explain the situation to the occupants. Hence the land sharing concept was taken into the people through the community leader. Therefore Community Organization is the major body which was importantly involved in to the project success. When occupants faced any of the threat of eviction, they address them through this Community Organization and community leader always involve with negotiations and counter the threat of eviction. Always developer and Community Organization had discussions on each other's need and wants and came up with a common platform. Then it could implement the Land Sharing Technique in location specific way. Finally it could succeed up to the land sharing agreement preparation level.

Comparing situation between other countries in the world such as Cambodia, India and Thailand they are not with any special agreement with community organization. Developer agreed with all of the tenants in the settlement countries has strong agreement with community leader and Developer.

Land sharing agreement is the necessary criteria to be completed to success the application of land sharing process. This is mainly an agreement between landlord and the tenants. Here both parties decide on the development process and relocation process. In land sharing it is focusing only on site relocation. The agreement will signed based on the promise of releasing most valuable part of the land for developer to have mix development while relocating the occupants in a part of the same land. Here on site relocation will happen. But still occupants can live in the same land with upgraded infrastructure facilities and also social status. Other special part of this agreement is that every occupant can get an ownership for their property. This ownership will be full or limited ownership. In this project the process of handing over the ownership finalized and the documentation already started.

When agreed on the land sharing agreement, the Community Organization and the leader has played a main role. Community Organization could easily get the peoples' positive answers to the land sharing agreement. Therefore Community Organization was caused to the success of land sharing agreement as well. Densification is also another main satisfactory answer given from them. The occupants were agreed to live in housing apartments rather than living in shanties. According to the agreement, now there were 4 apartment complexes each having 13 storied.

There are some issues occurred due to the handing over process of apartments. UDA has done a raffle draw session to deliver house for each tenant. The problem is there were three different settlement people namely Edirisinghewatta, Steduem Gamawatta and LymaWatta. In the raffle draw all these people were mixed up and those who lived as relatives earlier got houses in different apartment complexes. This process disturbed their relationships and people didn't like to live with a neighbor from another settlement. This has created a situation of social issues. Earlier this people tend to share their living spaces with relatives but when they resettle into apartments they couldn't do as earlier. In addition, there are different types of settlements in this project area.

- Settlement without basic facilities
- Upgraded settlement with some facilities
- Different religious group
- Different racial group

- Educated and uneducated groups
- Underworld selling and illegal business group

UDA has done a raffle draw session and in that session these people were mixed up and those who lived as group of relatives earlier got houses in different apartment complexes. This process disturbed their relationships and people didn't like to live with a neighbor from another settlement. This has created a situation of social issues. This problem is become high because these apartments are not large enough for some families which have more members. The purpose of densifying the area was success but the social conflicts were arising. Some social group people were no longer in the same apartment. All of them were mixed up and they didn't like to that. The worst situations also came up such as police complains on fights between neighbors and etc.

In Sri Lanka reconstruction of underserved settlements is not happening. Normal practice is to remove them from their own land and relocate into another place. Prior to this practice the UDA has identified land sharing as the most suitable technique for land management in this kind of underserved settlements they could built apartments in the partial of same land and relocated people there. Then excess land will be developed in order to getting benefits. Here 12 acres and 1 rood land was identified for the project. Only 3 acres of land clear and the people who lived there were temporally relocated at the corner of the land. The financial support for building temporary huts and other facilities such as temporary access roads, sanitation facilities were provided by the UDA. After completing the apartments all occupants including those who temporarily relocated resettle into the flats.

This project was fully funded by the UDA. In the financial section of the project main concern is going to the capital and the cross subsidy. The support from outside agencies also concern in here. For this project there is no any other financial source. All the money invested to the project was given by UDA. But as cost recovery mechanism they had some agreements with the occupants. They were;

- Down payment for electricity establishment Rs. 10,000
- Down payment for housing ownership Rs. 50,000
- Housing lease per month Rs. 2500 for 39 years' time period'
- Monthly payment of electricity and water bills

But this mechanism has some issues. Some tenants don't have affordability for monthly payment is not enough. Sometime due to political intervention some are avoid monthly payment. The main issue is Government changers and some political decisions are changed. As an example, after becoming new government the down payment for housing ownership Rs.50000 was repaid.

Community participation was not in 100% in this project. There were two main groups. They are those who had to temporarily relocate and those who had not. The people who were resettled not willing to contribute to the project. But the majority of the people were participated to the project. Mainly the community organization is participated to the project in each stage as much as possible. Other than the landlord and the tenants there are some outside agencies who supported the project. Mainly the CMC as the local authority supported the project. Then the shipping authority also supported because the adjacent lands belong to them and they contributed to the discussion on upcoming developments. Then the CEB, NWSDB, SLLRDC are supported by providing basic infrastructure for the people. As per the view of UDA they said the community participation was high comparing to other housing projects but according to the survey results of occupants it was not in satisfactory level.

The development pressure in this area was very low in few decades back due to not having clear title to the land, unable to fulfill the CMC and UDA requirements, land extent bellow 6 perch, No moneymaker waste dumping site using by CMC and all the above reasons. Then UDA has identified Land Sharing Technique and applied. Through that the site was identified to develop a housing apartment with basic infrastructure facilities and mix development around. In the land sharing agreement landlord agreed to provide all physical and social infrastructure facilities such as roads, water, electricity, sanitation, waste management and social infrastructure such as community hall, common hall, playground, open spaces and landscaping the area. But landlord has allocated most valuable part of the land for mix development. The UDA has provided the entire physical infrastructure but they are still lack in providing the social infrastructure. After allocating land for mix development there is not enough land for providing recreation and open spaces for all occupants. The available space is not sufficient for providing all agreed facilities. As example they have provided parking facilities but it is not sufficient. Total no. of houses 546 and it is required to parking facilities 546. There is only one community hall and also it is very small.

As government agency before the project the developer should consider about the number of families in the project site. Especially they pay more attention about children in the families. There are 546 families and there are more than 50 children but there are no enough facilities for their leisure activities and also no proper facilities for their education such as library, reading room and etc. as the concept of land sharing explain there should be facilities to improve the attitudes of the people. They are lacking in this project. The concept of upgrading their living standards should meet children needs. At survey findings and observations children were stressful and unrest and gathered in places and shouting due to not having the enough space for play or spend their leisure time.

The table below shows that satisfy positive answers given by both parties relatively to capital investment. Costs subsidy was the main principle of this project and selling of most valuable part of this land can be taken as recovery path. The developer was expected the rate of community participation was very high by launching awareness programmes and taking participations of the squatters.

By considering above mentioned factors it can be shown all the principles used in analysis were in a satisfied manner.

6.3 Conclusion

The main objective of the project was to evaluate the applicability of this technique to upgrade low income settlement while increasing the land supply in city of Colombo. Edirisinghe watta land belongs to government (UDA). By Unauthorized occupants had encroach this land. Therefore a huge area of government was under unplanned haphazard development. Therefore it is need to apply land sharing techniques to supply land for them. But under existing conditions it is not possible to get optimum utilization of the land and increased the supply of land to low income people. Thus a new land sharing planning scheme is proposed. All most all occupants at Edirisinghe watta prefer to have such a planned scheme. There are no problems impeding the commencement of a new planning scheme.

The analysis indicates that all the housing units can be accommodated in a condominium housing complex with basic facilities. And the cost of the project is recovered by selling or using most valuable part of the land for other development activities. Also full or

limited ownership is provided for land occupants. This is more successful for people in this site who are under the threat of eviction.

In the practice of land sharing technique the UDA as a land owner and a developer fulfilled a very important role throughout the project. UDA always appreciated public participation. UDA found cost recovery methods. Peaceful environment background was created. UDA selected lower development pressure land and created a demand for land and increased supply of land.

6.4 Research Contribution

There are 11 criteria used to evaluate the applicability of the land sharing technique. Among them reconstruction, better cooperation between landlord and the tenant and community participation aspects are unsuccessful in the application of Sri Lankan context. But all other criteria are successfully applied. Therefore land sharing is applicable land management technique for Sri Lanka. But there should be more criteria for the better evaluation of impacts specified into Sri Lankan context. Through the survey findings and the findings from the focus group discussion reveal that there are many environmental concerns and much more political influence occurred in these projects. In addition building design also used for evaluates the successful manner. Therefore when evaluating the application of land sharing technique into Sri Lanka the criteria suggested through literature survey should readjust due to identification of criteria on Building design aspect, environmental aspects as well as to political influences.

In this study mainly identified the most suitable criteria for evaluation adopted from case studies and also the least considered criteria. Especially the findings reveal new criteria which should include to better evaluation of the Sri Lankan projects. According to the final results and the findings of the research the evaluation criteria are ranked with reference to the Sri Lankan land sharing experiences. These ranked criteria can use for future studies related to the land sharing projects.

Successful criteria	Unsuccessful criteria
1. Community organization	1. Reconstruction
2. Land sharing agreement	2. Better cooperation between landlord and tenants
3. Support from outside agencies	3. Community participation
4. Capital investment	4. Densification
5. Cross subsidy	5. Building Design

Bibliography

- Angel Sholomo, R. W. (1993). *Lands for Housing the Poor*. Singapore.
- Archer, R. W. (1984). *Land Management for Adequate Land Supply and Planned Landuse in Asian Cities. HSD Working Paper*.
- Archer, R. W. (1987). *Transferring the Urban Land Pooling/Readjustment Technique to the Development Countries of Asia. Human Settlements Development Program, HSD Working Paper*.
- Archer, R. W. (1989). *Land sharing in Urban Land Development in Thailand*.
- Archer, R. W. (1991). *Provision of Urban Infrastructure through Land Subdivision Control in Thailand. HSD Research Paper No 26*.
- Baker, L. (1991). *Private Public Partnership in Land Development. Housing and Urban Program*.
- Ballah, A. P. (1987). *Policy of Land Acquisition and Development - Analysis of an Indian Experience. Third World Planning Review, Volume 9(No 2)*.
- Boonyabacha, S. A. (1999). *Land Sharing as an Alternative to Eviction, The Bangkok Experience. Third World Planning Review, 10, 107 - 112*.
- CITYNET, E. (1995). *Municipal Land Management in Asia: A comparative Study*. New York: United Nations.
- CMC. (2010). *Urban Slum Report, The Case of Colombo Sri Lanka*. Sri Lanka: SEVANATHA.
- Coupland, A. (1997). *Reclaiming the city*.
- Damen, J. (2004). *Land Banking in Netherlands in the context of land consolidation. Land and Water Management*.
- ESCAP. (1985). *A Regional Overview on current practice towards more effective utilization of urban lands. Land policies in Human Settlements*.
- Field, E. (2005). *Impact Evaluation for Slum Upgrading Interventions*.
- Herath. (2006).
- Herath, J. (2006). *Distributional Impacts of Land Policies in Sri Lanka. National Land and Agriculture reform*.
- Jogaratnam, T. (2001). *Allocation of State Land for Peasant Agriculture in Sri Lanka. Towards an Employment Strategy Framework in Sri Lanka*.
- Kumuduni, J. D. (2009). *Applicability of Land readjustment technique in city of Colombo*. Sri Lanka: Bachelor's Thesis.
- Laura Jaitman, J. B. (2001). *Evaluation of slum upgrading programs; Literature review and Methodological approaches*.

- Maddumabandara, C. M. (1998). Land use and Land Settlements: The Last fifty years and some thought on Future policy. *socio-economic Review*.
- Matovu, G. (October 2000). *Regional Roundtable on Upgrading Low Income Settlements* . Johannesburg, South Africa: Municipal Development Program, Eastern and Southern Africa Regional Office.
- Mattingly, M. (1994). Urban land development in Nepal: A case for a management approach.
- Nawagamuwa, A. (2003). Slums, Squatter Areas and Informal Settlements – Do They Block or Help Urban Sustainability in Developing Contexts? *9th International Conference on Sri Lankan Studies*.
- O. Anna, S. K. (1997). Urban Renewal in Wanathamulla; High Density Low income Housing . *Bachelor's Thesis*.
- Oil, P. P. (2003, December). The Public Private Participatory Urban Development in Nepal. *Land Pooling - 2nd FIG Regional Conference, 2 -5*.
- P. D. Dale. (1988). An introduction with special reference to cadastral problems in Third World countries. *Land information and Management*.
- Paul, E. (2000). An Innovative but insufficient instrument of secure Tenure for the poor. *Land sharing in Phnom Penh*.
- Rabe, P. E. (2005). Land sharing in Phnom Penh: An innovative but sufficient of secure tenure for the poor.
- Robbins, R. L. (1984). Introduction - land use and zoning . *Lasalle National Bank Criteria and Municipal Constitutional Liability*.
- Sandhu, K. (2004). Impact of Neo-urban Paraphanelia on Amristar city: of Transformation and Transgression. *Sri Lanka Journal of Real Estate*.
- Shomolo Angel, S. B. (1988). Land sharing as an alternative to Eviction; Land sharing in Bangkok . *Third World Planning review*.
- Sirinivas, H. (2015). Urban Squatters and Slums, Defining Squatter Settlements. *Concept Note Sereis E - 036*.
- siriweera, I. W. (1994). A study of the Economic History of the Pre-modern of Sri Lanka.
- UN-HABITAT. (2003). *The Challenge of Slums; Global Report on Human Settlements*. Sri Lanka: UN-Habitat.
- Viratkapan, R. P. (2006). What has contributed to their success or failure? *Slum Relocation Projects in Bangkok*.
- Wordie, J. (1997). Land grabbing titans who changed HK's profit for good. *Glossary Environmental Statistics*.
- World Bank. (2002). *Upgrading of Low income urban settlements; Country Assessment Report*. Mali, Thailand: AFTUI.

Appendix

Structure Questionnaire for People Household survey for evaluation of success or/and failures of the Land Sharing Techniques that have applied in Sri Lankan context with special reference to City of Colombo By

H. W. I. H. Witharana (Master of Science in Town & Country Planning, Master
Dissertation, Department of Town & Country Planning University of Moratuwa)

Dear Participants,

I'm undertaking a study on evaluation of success or/and failures of the Land Sharing
Techniques that have been applied in Sri Lankan context with special reference to City of
Colombo. This is conducted among families who reside at Edirisinghe Watta and
Sirimavo Bandaranayake Watta housing project in Colombo.

The information you provide will be useful for urban planners and policy makers for the
provision of proper urban planning. You are kindly requested to participate into this
research and give your honors responses. All responses to this questionnaire will be
helped and created in strict confidence and use only for the research purpose.

Thank you very much for taking time to complete the questionnaire. Your effort is greatly
appreciated.

PART A – BASIC INFORMATION

1. Name of the occupant:

.....

2. Address:

.....

3. Age:

.....

4. What is your profession?

I. Government

II. Private

III. Other

5. How much is your monthly income (Rs.)?

i. 5000 -15000

ii. 15000-25000

iii. 25000-35000

iv. 35000-45000

v. 45000-55000

vi. more than 55000

6. What is your educational Qualification?

I. Up to Grade 8

II. Up to O/L

III. Up to A/L

IV.

Other

7. Period of Occupation (Years)

I. 0-5

III. 10 -20

II. 5-10

IV. More than 20

8. Land Ownership

- I. Private Ownership
- II. Government Ownership

9. Type of ownership of occupancy

- I. Freehold
- II. Leasehold
- III. User permit
- IV. Unauthorized

10. Approximate extent of property

- I. Below 1 perch
- II. 1-2 perch
- III. 2-6 perch
- IV. More than 6 perch

PART B – CRITERIA EVALUATION

Evaluation Criteria

Following are the identified main criteria for evaluation of the Land Sharing technique.

- 11. Community organizations
- 12. A land sharing agreement
- 13. Densification
- 14. Reconstruction
- 15. Capital investment
- 16. Cross-subsidy
- 17. Community Participation
- 18. Lower the development pressure
- 19. Better the cooperation of the landlord
- 20. Stronger the support from outside agencies

Criteria 01 – COMMUNITY ORGANIZATIONS

1) Did you face any threat of eviction from UDA as unauthorized settlers in this area?

- Yes
- No

2) Are there any community organizations in your settlement to counter the threat of eviction?

- Yes
- No

If yes,

I. Are you a leader of that organization?

- Yes
- No

II. Are you a member of that organization?

- Yes
- No

III. Did your organization have a chance to negotiate on the upcoming housing development projects in your settlement area?

- Yes
- No

IV. What is your contribution into above mentioned project?

Yes No

V. What are the results you get from negotiations with project officials?

.....
.....
.....

VI. How you organize yourselves for contribute to the project?

.....
.....

VII. What kind of actions you take?

.....
.....

VIII. How do you mobilize those actions?

.....
.....

Criteria 02 - LAND SHARING AGREEMENT

I. Did you sign a LS agreement with UDA?

.....
.....

II. Did you have faith about UDA?

Yes No

III. Are there any other agreements with the government?

Yes No

IV. If yes, what sort of agreement is it?

.....

V. During the construction period did you relocate in another place temporarily?

Yes No

VI. Are you living in the same land that you occupied previously?

Yes No

VII. Did you get the land ownership for the current lands according to the LS agreement?

Yes No

VIII. As an unauthorized tenant which type of ownership do you expect in this settlement?

Freehold

- Leasehold
- User permit
- Unauthorized

IX. Did the government develop the most valuable part of your land?
 Yes No

Criteria 03 – DENSIFICATION

I. Do you like to live in high rise apartment with basic facilities?
 Yes No

II. How many floors do you expected?

- G+1
- G+2
- G+3
- G+4
- G+5 above

III. Did the government resettle you into housing apartments?
 Yes No

IV. Do you like this method of resettlement?
 Yes No

V. Are there any negative impacts for you by this method?
 Yes No

VI. Do you like it? (LS)
 Yes No

If yes, why?

.....

Criteria 04 – RECONSTRUCTION

I. According to Land Sharing did you get an opportunity to resettle on the site?
 Yes No

Do you like it?

.....
 What are the reasons?

Criteria 05 - CAPITAL INVESTMENT

I. What is the method of supply money for constructing housing apartment?

- Funds
- Loans
- UDA Own funds
- Government Allowances

II. Did the government collected funds from the residents for the new houses?

III. What kind of financial agreement government had?

IV. Did you do any kind of contribution to the project?

 if yes, the amounts – Rs.....

Criteria 06 – CROSS SUBSIDY

I. Are there any external aids or funds for the project?
 Yes No

II. If yes, Which Agency?

III. Did the project implemented by taking a Loan?

IV. Is this fully funded by the government?

V. What is the cost recovery mechanism of the project?

Criteria 07 – COMMUNITY PARTICIPATION

I. Did community participation take place at every stage of the project?
 Yes No

	Stages of the project	Community participation	Details (specify the community contribution)
1.	Project discussion	Yes / No	
2.	People’s perception	Yes / No	
3.	LS agreement	Yes / No	
4.	On site relocation	Yes / No	
5.	Land clearing	Yes / No	
6.	Basic Infrastructure layering	Yes / No	

7.	Construction	Yes / No	
8.	Finishing	Yes / No	
9.	Landscape and provide Common facilities	Yes / No	
10.	Resettle the people	Yes / No	

Criteria 08 – LOWER DEVELOPMENT PRESSURE

I. What are the new facilities you got from housing development?

.....

II. UDA as land owner hopes to develop most attractive part of the land. Do you like it?

Yes No

If yes, why?

.....

III. What kind of new development took place in the land?

.....

IV. What the reasons are for not improve the property?

- i. No clear title
- ii. Unable to fulfill the CMC and UDA requirements
- iii. Extent bellow 6 perch
- iv. No money
- v. All the above
- vi. Any other reasons

V. Did it change the land value of this area?

Yes No

Land value before the housing project -

Land value after the housing project -

VI. Did the demand for the lands changed due to the development take place?

Yes No

If yes, how the land demand changed? (increased or decreased)

.....

VII. Did the socio-cultural status changed due to the housing development?

Yes No

Is it affected to the quality of life of the people?

.....
.....

Specify the changes in Economic status of people – (self-employments, income level, job opportunities etc.)

.....
.....

Specify the status of health and sanitation improvements – (Waste management)

.....
.....

Specify the status of leisure and recreation facilities – (open spaces, children parks, play grounds, community halls etc.)

.....
.....

Specify the status of social interactions, unity and togetherness in the community?

.....
.....

Specify the mental status of after relocation into new housing apartments?

.....
.....

VIII. Do you know about upcoming development proposal in your settlement?

Yes No

IX. Do you think it will obstruct your freedom?

Yes No

If yes, what are the reasons?

.....
.....
.....

X. Are there any new development proposals suggested to this area relate with housing development?

.....
.....
.....

XI. What is your idea on current development and the development pressure of this area?

.....
.....
.....

Criteria 09 – BETTER COOPERATION OF LANDLORD

I. Are there a better understanding between landlord and the development agency?

Yes No

II. Did you discuss the problems you have with the agency?

Yes No

Criteria 10 – STRONGER SUPPORT FROM OUTSIDE AGENCIES

I. Are there any funds or support given agencies for the infrastructure improvement in this project?

Yes No

II. What are those supportive agencies?

.....
.....

III. Currently, are you satisfied with the following Services in this settlement?

I. Water

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Moderate	<input type="checkbox"/>
Unsatisfied	<input type="checkbox"/>
Very unsatisfied	<input type="checkbox"/>

II. Electricity

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Moderate	<input type="checkbox"/>
Unsatisfied	<input type="checkbox"/>
Very unsatisfied	<input type="checkbox"/>

III. Roads and footpaths

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Moderate	<input type="checkbox"/>
Unsatisfied	<input type="checkbox"/>
Very unsatisfied	<input type="checkbox"/>

IV. Sanitation (Toilets)

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Moderate	<input type="checkbox"/>
Unsatisfied	<input type="checkbox"/>
Very unsatisfied	<input type="checkbox"/>

V. Drainage

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Moderate	<input type="checkbox"/>
Unsatisfied	<input type="checkbox"/>

Very unsatisfied

VI. Health services

- Very satisfied
- Satisfied
- Moderate
- Unsatisfied
- Very unsatisfied

VII. Garbage collection

- Very satisfied
- Satisfied
- Moderate
- Unsatisfied
- Very unsatisfied

11. Currently, is there adequate safety in this community?

Yes No

I. Are there any crimes reported in your settlement in past?

Yes No

II. Are they increased or decreased after the housing project?

Increased decreased

Reason for the change -

.....
.....

III. Are there illegal Drug dealers or Drug addicted people in this area before the housing project?

Yes No

What happened to them after the project and reasons?

.....
.....

IV. Are there any reported violence situations in this area before housing project?

Yes No

What happened to them after the project and reasons?

.....
.....

V. Do you see any kind of environmental pollution in this area before the project?

Yes No What are they?

.....
.....

What is the status of the environmental pollution level after the project?

.....
.....

VI. Are there any specific impacts (negative or positive) on the environment due to the project?

.....
.....

Interview Guideline for officials

Direct interview for evaluation of success or/and failures of the Land Sharing Techniques that have been applied in Sri Lankan context with special reference to City of Colombo

By H. W. I. H. Witharana (Master of Science in Town & Country Planning, Master Dissertation, Department of Town & Country Planning University of Moratuwa)

Dear Participants,

I'm undertaking a study on evaluation of success or/and failures of the Land Sharing Techniques that have applied in Sri Lankan context with special reference to City of Colombo. This is conducted among officers who involved LS PROCESS at Edirisinghe Watta and Sirimavo Bandaranayake Watta housing project in Colombo.

The information you provide will be useful for urban planners and policy makers for the provision of proper urban planning. You are kindly requested to participate into this research and give your honors responses. All responses to this questionnaire will be helped and created in strict confidence and use only for the research purpose.

Thank you very much for taking time to complete the questionnaire. Your effort is greatly appreciated.

PART A – BASIC INFORMATION

1. Name of the interviewee :
2. Name of the institute :
3. Position :

PART B – PROJECT INFORMATION

1. Are Edirisinghe watta and Sirimavo Bandaranayake watta housing projects undertaking LST?
2. Under what development plan did you declared this land to be develop?
3. When did you identify this land to be developed?
4. How many families lived in above mentioned two settlements?
5. What is the method used to find capital investment for constructing the housing scheme?
6. What are the main sources of capital investment of this project?
7. What is the plan to develop this land?
8. What are the objectives of your plan?
9. Why do you decide to apply a land sharing for this location?

10. Which method/mechanism is used for land sharing procedure?
11. Do you think occupants like your proposal? Why? How do you know?
12. Do you think occupants prefer to live in high rise apartments?
13. Which type developments are you used for most valuable part of the land in your project?
14. Do you think occupants like your new proposal? Why?
15. What is the method occupant relocate till implement LS proposal?
16. How many houses do you provide for low income people?
17. Do you think to take participation of occupants on your development?
18. What is the method of cost recovery?
19. Who are the third party intermediations?
20. Have your project any physical/technical/environmental/social constrains?
21. As your objectives, do you think you can get an optimum utilization of the land?
22. Do you consider social background of the settlement?
23. Did you conduct a SIA for the project?
24. Did you conduct an EIA for the project?
25. What are the environmental improvements you proposed?
26. How do you manage to control the environment pollution in and around the project?
27. Did you achieve your objectives of the plan?
28. Is this a success project in terms of every aspect?
 - Environment -
 - Economic -
 - Social -
 - Physical -
29. What is your satisfaction on the project?
30. Are there any political influences to the project? What are they?