



**2nd NATIONAL SYMPOSIUM
ON
REAL ESTATE MANAGEMENT AND VALUATION
2016**



**Research and Professional Development Center (EMV-RPDC)
Department of Estate Management and Valuation
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura**

B.Sc. (Special) Estate Management and Valuation Degree Programme



Accreditation of the RICS – UK for the B.Sc. (Special) Estate Management and Valuation Degree programme, conducted by the DEMV is an absolute indication of its quality and relevancy in producing competent graduates in the field of Real Estate Management and Valuation as the Careerists of the Real Estate World

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Sri Lankan Real Estate Society



“Contribution of Real Estate on Socio-Economic Development of the Country”

Symposium Proceedings

**2nd National Symposium
On Real Estate Management and Valuation
15th December 2016**

Research and Professional Development Center (EMV- RPDC)
Department of Estate Management and Valuation
Faculty of Management Studies and Commerce
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Sri Lanka

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Preface

We are very pleased and proud to introduce the proceedings of 2nd National Symposium on Real Estate Management and Valuation (NSREMV), 2016. The theme of the conference which is the 'Contribution of Real Estate on Socio Economic Development of the Country' opens a distinctive wide range of views on all aspects in the relevant field. There is no hesitation that the symposium lays the foundation to bridge the industry and academia, providing an excellent opportunity to exchange mutual ideas in an open forum. The knowledge gathered from such events would absolutely enhance the quality of the graduates who are prepared to join with the industry.

This year the response for the call for papers is impressive and shows the growing interest of the researchers in dissemination of their thoughts in this platform. The symposium consists of two types of presentation forums such as, 'Questions and Answering session' and the 'Research Findings presentation session'. The question and answering session comprises with the key relevant experts from the industry, under the sub theme which is timely important as 'Disaster Management'

There are 20 number of papers written by scholars in the field, focusing on distinguished issues on real estate and its contributions. In this background this volume of proceedings from the symposium delivers a stimulating and informative document for readers to engage with a selection of refereed papers that bloom in the SREMV 2016. Having the striking experience in the symposia for the second time, the DEMV wishes to add the features of international standards to the 3rd symposium and is expected to launch with the collaboration of a leading National organization.

Finally, we as the conference team greatly appreciate all who contributed to the success of the event. We certainly acknowledge the unconditional contribution made by the sponsors whose identity is presented at the back cover of the proceeding book in facilitating to share the financial burden of the symposium. We sincerely wish the continuing success of the event.

Dr. (Mrs) N.C. Wickramaarachchi
Symposium Chair

Message from the Vice Chancellor



It is with great pleasure I write my congratulatory message for the Second National Symposium on Real Estate Management and Valuation, 2016, organized by the Department of Estate Management and Valuation (DEMVA), Faculty of Management Studies and Commerce, University of Sri Jayewardenepura on the theme of 'Contribution of Real Estate on Socio Economic Development of the Country'.

I appreciate the progress of DEMVA in taking steps to continue a forum towards the development of the research culture, on a topical theme as an annual event.

This is indeed an excellent opportunity for the department and the industry to strengthen their links while sharing their innovative research findings with other intellectuals. I am pleased to note that DEMVA has not only producing graduates to satisfy the needs of the society, but also provide a suitable background that assists to support the academics industry relationship. The symposium is an excellent example of university and industry cooperation.

I would like to extend my gratitude to the DEMVA for organizing this annual event and would like to send my wishes to all participants for a fruitful day.

Professor Sampath Amarathunge

Vice Chancellor

University of Sri Jayewardenepura

Message from the Dean, Faculty of Management Studies and Commerce



As the Dean of FMSC, it is a great pleasure for me to send this message to the Second National Symposium on Real Estate Management and Valuation- 2016 organized by the Department of Estate Management and Valuation (DEMVA) and also to convey my warmest congratulations to all who present their research papers.

As a faculty we are committed to high quality teaching and research, promoting an intellectually stimulating multidisciplinary environment for the undergraduates and are dedicated to impart them with specialized knowledge, skills and attitudes to prepare them to face future challenges in personal and professional life. In achieving these objectives, the contribution of each department is of greater significance and it is the responsibility of the respective departments to create ample opportunities for the undergraduates and expose them to valuable experiences in order to make them versatile graduates pledged for national development. Therefore, in this backdrop I note this national symposium on the timely selected theme for this year, 'Contribution of Real Estate on Socio Economic Development of the Country' as a praiseworthy attempt in line with the intents of the faculty to promote research, a requisite for the development of critical and analytical skills among undergraduates, academics and professionals.

Further I believe that, this special event to be held for the second time would essentially contribute to the department of EMV to earn the due recognition in the Faculty and the Sri Lankan University system as well.

While sincerely appreciating the role of the academic members of the department for their invaluable efforts to make this a success, I wish that, all the participants will get maximum benefits out of this rare opportunity.

Wish you all the best

Dr. U. Anura Kumara

Dean

Faculty of Management Studies and Commerce

Message from the Head of the Department



I am, being the Head of the Department of Estate Management and Valuation, too privileged to place this brief note in the Proceeding Book of the 2nd EMV National Symposium 2016 organized by the Department of Estate Management and Valuation, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura.

In the era of the country, Sri Lanka, is stepping towards a swift of economic and social advancement up to the status required for sustainable & developed nation in the world, national Universities are supposed to work faster rate than conventional universities. In this junction, the Department of Estate Management and Valuation is pledged to be taking part actively in the national agenda by means of conducting research and publications in the field of Real Estate Management and Valuation parallel to the producing of competent human resources for the industry.

The 2nd EMV National Symposium is one and only forum in the country opened to share knowledge and experience in the field of Real Estate Management and Valuation. With the experience of two successful symposiums in 2015 and 2016, Department has already started to organize the 3rd symposium as an International Real Estate Forum in 2017 as it is an unfulfilled need within the South Asian region.

I convey my best wishes for all contributors who display their academic, research and professional caliber in this event realizing the effort taken by the Department of Estate Management and Valuation. Also I would like to thank to all the stakeholders for their valuable contributions by means of funding and other ways to make this event a success. My special appreciation is due to Dr. (Mrs.) Nishani Wickramaarachchi, Senior Lecturer, and her team for undertaking the responsibility in organizing the EMV National Symposium 2016.

Professor R G Ariyawansa

Head

Department of Estate Management and Valuation

Message from the Symposium Chair



It is indeed with great pride that I write this message for the Second National Symposium on Real Estate Management and Valuation (SEMV), 2016 organized by the Department of Estate Management and Valuation (DEMVA) of University of Sri Jayewardenepura.

This is a real honour and privilege to serve as the Chair of the SEMV, 2016 and I cordially welcome you all to this memorable event. I have the assurance that this forum will bring together a tremendous and rich diversity of authors and speakers from academics, and industry to share ideas and new perspectives on an extensive range of current issues.

The excellence and the success of SEMV, 2016 would not have been possible without the support of all who contributed at their utmost enthusiasm. I offer my gratitude to Professor R.G. Ariyawansa (HOD), the conference committee, the entire DEMVA academic staff, the non-academic staff, Faculty of Graduate Studies USJP and the students' association of DEMVA for their understanding and the involvement towards the realization of the SEMV 2016. I wish you all a productive and inspiring academic session.

Dr. (Mrs.) N.C. Wickramaarachchi

Senior Lecturer

Department of Estate Management and Valuation

University of Sri Jayewardenepura

Value of Real Estate

Bricks, Sand and Cement in quantities and cost create only physical entities on the land which will be visible. Visible entities on land in quantities and cost that generate qualities and utilities only will be valuable. Cost and quantities are tangible and measureable, but qualities and utilities are intangible and immeasurable. Following short sentence is about the same, but it tells you a long story that might be yours as well as many others.

“Some old parents say that they can have peaceful sleep in their old dilapidated huts but not in modern palatial houses offered even by their loving sons and daughters”.

*In fact, what it says is that the value of LAND and REAL ESTATE is
“IMMEASURABLE” and “ILLUSIVE”*

Professor R G Ariyawansa

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Exploring Informality as a Tool to Employ to Understand Socio-economic Aspirations in Planning and Implementation: Case of a Resettled Community in Mihindupura, Anuradhapura, Sri Lanka

R. Ratnayake¹

¹Senior Lecturer, Department of Town and Country Planning

University of Moratuwa, Sri Lanka

rangajeevar@gmail.com

Abstract

Planning systems and practices - including plan preparation and implementation - are often recognized as 'formal' processes, which are accomplished through legal and procedural frameworks. Informality is generally understood as an unplannable, uncontrollable and parasitic dimension within the formal planning practice. On the other hand, the formal planning systems are criticized for their low flexibility and non-realistic approach. This article explains the significance of informality within the present planning practice by reviewing and analyzing a resettled community in Anuradhapura, Sri Lanka and later comparing the pre and post resettlement situations. Content analysis and the social network theory are employed in analyzing the information collected through field surveys, key informant interviews and archival documentary research. In view of the findings, we argue that although planning practices are often identified as formal processes, the current study shows how the planning systems themselves operate as in-formalized systems. Further, the results indicate how and when the different actors in social networks are involved in these processes and how the influence of relationships in such networks has changed over time.

Keywords: *actors, informality, planning process, socio-economic aspirations*

1. Introduction

Planning is considered as a subject that is difficult to define (Keeble, 1959). Although planning does not have a single definition, the planning systems and practices - how it is done - are often recognized as government centered formalized processes, which are operated through legal and procedural frameworks. On the other hand, such systems in the global South are often influenced and shaped by the colonial ideologies (Butt, Budge, Ratnayake & Mahanama, 2011). The British contributed to the development of urban planning in the South Asian region by introducing their legal and institutional frameworks for formulating and implementing planning policies, while French, Spanish and Portuguese influences can be seen in the Latin American and African regions (UNHABITAT, 2009).

In recent years, the unique aspects of cities and human settlements in the developing world have dominated the research on planning academia, practice, policy formulation and international development. There is a need for exploring new theories and practices that are relevant to mega cities emerging in the developing world (Roy, 2005). 'Informality' or 'informal -sector' or 'informal settlements' are some of the popular terms that are employed to characterize and explain certain aspects and processes of the third world cities (Butt & Ratnayake, 2015). Usually, this is understood as 'disorder against the formal order' and as 'unplannable' or 'illegal' and used to explain the chaos in cities (Butt & Ratnayake, 2012; Roy, 2007). It is believed that a state like this can be managed by means of policy decisions. The policy makers usually consider any disorderly

arrangement of spaces as ‘problems in the city’ and try to introduce solutions to solve them (Jones, 2016). The academic focus of the studies in the past mainly contributed to the informal urbanism discourse by exploring the areas taken over by squatters and unplanned settlements as a part of urbanism in the cities of developing countries.

In the fields of social sciences, planning and political sciences, this concept is regarded from a different perspective with various theoretical propositions insisting on the importance of understanding informality as a concept governing how the urban systems work. Innes and others (2007) argued that informality signifies planning strategies that are neither prescribed nor proscribed by any rules. If informality is inevitable in the settlements and planning system, the challenge for the planners will be to see how this aspect can be incorporated in the planning process. The aim of this study is to investigate the informality dimension involved in planning practice by reviewing a resettled community in Anuradhapura, Sri Lanka. To present the findings clearly, this article is divided into three sections. The first section reviews various theoretical propositions in which the concept of informality is discussed in the planning academia. This section also describes the different attributes of informality in planning systems and practice. The second section explains the methodology used in the study including the context and the background of the selected case study, methods of data collection and analysis. The third section of the paper analyzes how informality aspects can be seen in the selected case and later evaluates the ways and means of incorporating this into a planning strategy. This section also proposes a future research direction that can further explore how informality can be integrated into the planning system.

2. Literature Review

2.1 Concept of ‘informality’

Compared to the cities in developed countries the cities in the developing world are complex, interweaving and changing. In developing countries cities are growing fast and it is expected that this growth will continue in the following decades (UN Habitat, 2016). Such demographic dynamics increase the diversity of cities. In the developing world, informality is a popular term that was coined to characterize the poor squatter settlements. This term is not confined to housing itself but extends to the areas of economy and transportation as well. This indicates that this concept is a blend of multiple ideas and involves a range of representations. In order to explore the concept of informality, many scholars have developed different schools of thoughts. For the purpose of this study, the above ideas can be categorized into four themes, namely: informality in housing, informality in settlement pattern, informality in planning procedures, and informality in getting the work done through relationships and companionships. It is important to note that these categorizations are different from the conventional informal housing or informal economy.

Informal housing settlements and community responses are well discussed and argued across many literatures. According to Davis (2006), informal housing represents an alternative way of urban development. Apart from housing, informal transportation modes also play a vital role in many countries. Marquez (1990) states that in Lima, Peru, the entire transportation system is driven by the taxis, sedans or station wagons, which carry an average of five to eight people. Not only informal housing and transportation

but also informal economies existing in many countries contribute to the global economy at a substantial level. In Sri Lanka, according to the Census and Statistics Department's annual report of the labor force survey of 2013, 60% of the total employment of the country was contributed by the informal sector economy. It is the same with most of the countries in the global South (AlSayyad, 2004).

Porta and Shleifer (2014) argued that over the years, the dual view of 'informality' as a concept had dominated the academic discourse and also the policy formulation. From one viewpoint informality could be seen as a heroic, entrepreneurial response by the 'poor', while the second viewpoint may consider informality as a parasitic movement that deprives the cities of order and character. De Soto (2000) looked at the informality as an entrepreneurship and states that the informal economy is the people's spontaneous and creative response to the incapability of states to satisfy the basic needs of people. Hall and Pfeiffer (2000) see the informality concept as an aspect of urbanism in the developing world - informal hyper growth - that can threaten the urban sustainability not only in the third world cities but also in first world cities with huge influxes of migration. Irrespective of whether it is first world or third world, such a growth process can be observed in many cities in the world. 'Informal migration' as refugees or asylum seekers is a key component in creating the above situation in many first world cities, especially in Europe and Australia.

In recent years, the concept of informality has been viewed as a state of the art of agile governance and a way of life in an urban system (Roy, 2007). AlSayyad (2004) has stated that informality is not an illegal condition but an accepted way of doing things in practice. Kudva (2009) argued that informal relationships are slippery in nature and the intertwined structure of work and shelter in the formal and informal realms make these positions difficult to deconstruct. This view considers informality as a highly flexible and interactive way of doing things in a plan implementation process. This calls for an urgent examination of existing approaches to dealing with informality in the context of urban planning since it is the way of urbanism in many Asian cities.

2.2 Informality and planning

Irrespective of the level of informality and formality, the adjective 'informal' is used in many complexes and mingled networks attached to different societies. Informal conduct in formal planning processes such as following relationships to get the work done are not restricted by the planning process and they are overlooked by the urban policies. Further, AlSayyad (2004) argued that the people who engage in informal activities are considered as "a problem" to the society. The unrecognized and unlawful existence of such informal activities means that most of the authorities ignore them. The final result of this situation condemns a large number of communities to be underserved in the emerging discussions. Therefore, the importance of considering informality in planning must be recognized. It is also important to acknowledge that formal methods always have to be integrated in every planning process as otherwise it will not be legal. Informal methods however, often play a crucial role in the urban planning process.

According to Innes *et al.* (2007), informality and formality are prevalent in any organization in different degrees. This however, is the reality, but it is officially ignored.

To prepare a successful plan Innes *et al.* (2007) have identified three essential factors: formality, informality and collaboration. Formality comprises an ideal type of government with various legislatures and rules; they are accountable to the executive, the legislature and the public. Along with rules and regulations, the art of getting things done through a collaborative approach is central to planning practice. According to Innes *et al.* (2007), collaboration is by nature informal and *ad hoc*. Collaboration literally refers to co-labor, that is, to work jointly with others. As mentioned before, informality is unregulated behavior and therefore, informality and formality exist at two extremes. Collaboration is useful as it can create a bridge between formality and informality because a formal bureaucracy, with its rigid routines, social detachment, and hierarchical authority, may not by itself be able to solve a problem or address changing or temporal conditions. This offers a strong argument in favor of redirecting urban research so that an earnest attempt will be made to incorporate informality into the domain of planning.

Further, drawing evidences from the Calfed Bay Delta program, Innes *et al.* (2007) emphasized that formal planning processes are mechanistic/ hierarchical. They argued that the formal planning process hires expertise or consultants who may or may not have *experience* but always the *problem is context specific*. If the hired consultants do not know the uniqueness of the problem, their authority will become “*the authority with no authority*”. In such a situation it is possible to extract the informal knowledge spread across the network by collaborating with those already engaged in the work. To enhance the collaboration between formality and informality the committee has used tools like informal stakeholder engagements and shared responsibility instead of holding formal public meetings and setting up work groups that worked under orders and instructions. This method developed transparency and made people responsible for the project (Innes *et al.*, 2007).

2.3 General formal and informal attributes of a planning process

Any planning system irrespective of the scale generally has several levels. That includes preliminary studies/ feasibility studies, planning and designing, obtaining approval and executing the plan. In a planning system, several attributes can be identified and they are manifested at different levels. After reviewing numerous studies including some case studies done by several scholars, this research attempts to identify certain attributes that shape a planning process. *In this connection, regimented regularity, legal, and visual order* (De Soto, 1989; Jacob, 1961; Roy, 2009) can be identified as attributes that are associated with plan preparation, design, approval and implementation stages in a planning process.

Usually the legality is used as a key criterion to separate formality from Informality. Legal or ‘point of law’ aspects include dimensions such as availability of approved procedures, and acceptance of only a few activities from many activities as authorized actions according to the written documents (De Soto, 1989). Such legalized approaches might be open-ended and subject to multiple interpretations and interests (Roy, 2009). Under a given umbrella law there might be several legal frameworks (LFs) that are used by planning authorities for plan making, planning approval procedures and land acquisition purposes (De Soto, 1989; Butt & Ratnayake, 2012). Theoretically, all the legal statements must be transparent in terms of all the activities (Dumini, 2011).

Bureaucracy (Dumini, 2011) is also such a construct in which a chain of command exists with specific delegation of authority, system of supervision and existence of a communication hierarchy (Roy, 2005) following *professional ethics*, *time consumption* (Magigi & Majani, 2006) and existence of *lengthy processes* (Roy, 2005) throughout the planning process. This is primarily due to the legality, which enables several *procedures*, especially in plan preparation, design, approval and implementation stages where *bureaucracy* dominates the planning process. The *bureaucrats* assigned for each planning step do their best to maintain the aforesaid *visual order or the legal framework* (Richman, 2010).

Prior to plan preparation and design, planners engage in feasibility studies or preliminary surveys to identify the problems and potentials of the area. In general, when a planning process is put into practice with rational planning ideologies, planners are required to study the *functional order* of the location/ site. This '*functional order*' constructed by planners may be a result of how people use the particular location. Therefore, *functional order* has been identified as an attribute (Dumini, 2011; Chen, 2012) that explains the mixture of activities where they mutually support, use with diversity, irregularity in shape/order, new additions to the planned situation, and interruptions to the visual order and response to a current need.

During plan implementation and monitoring/ feedback stages, *bureaucrats* - possibly at the local councils - attempt to maintain the visual order planned by planners/ responsible authorities. However, the people at the grass roots level *change the given visual order to a functional order* that makes them comfortable (Dumini, 2011). Emphasizing the existence of these attributes in the planning process, Jacobs (1961) argued that:

“...there is no logic that can be superimposed on the city; people make it, and it is to them, not buildings, that we must fit our plans...supporting the functional order of the cities the planners try to make plans/ legal frameworks and create a visual order...”

(Jacobs, 1961)

According to the aforesaid observation about planning processes there is a possibility of the emergence of *hybridity* with a mix of urban and rural functions (Roy, 2005). Throughout this lengthy process the community is at the bottom level and this keeps the community away from frequent attendance to the information. Thus the communities by themselves organize and establish unions and associations to make themselves a part of the information flow happening throughout the formal planning processes (Board, 2010) from plan preparation to the post implementation stages of the development projects.

Further, attributes such as '*deregulation*' (Roy, 2009) where ownerships and processes cannot be fixed according to any prescribed set of regulations or the law can exist throughout the planning process. Even after implementation of the projects, the concerned authorities with legal power conduct monitoring and feedback sessions to ensure whether the completed project meets the prescribed guidelines or not. But according to Dumini (2011), after implementation there are some possibilities that there might be relationships between the non-regulated system and the regulated procedures. For instance, people might follow strategies for avoiding tax under the rationale of not getting benefits from the government (De Soto, 1989). Also, people might resort to alternatives and subvert the given legal procedures when dealing with public agencies to

meet the needs of those who cannot afford the market price for housing, healthcare, education and sanitation. These can also be identified as the issues that must be addressed in the planning process.

It is evident that although planning is a bureaucracy dominated formal process with legal authority, people try to deviate from it when they are not comfortable with the given legal procedures. People try to reshape the given framework, rather than shaping themselves according to the given framework by the government. This kind of alteration and negotiation has become one of the key attributes of the present planning processes. The discussions and reviews on community centered urban planning processes indicate that such attributes have been added to the urban planning process in many countries.

Apart from the above dimensions existing in the planning process that are described as 'voluntary' (Meagher, 2007), what is identified through dimensions of self-organizing and self-employed nature of the people can be considered as one of the key attributes. Here the community organizes by itself in prospect or contrast to the given legal framework. Since members of the community have fewer powers as individuals they establish themselves into unions or associations. Their willingness to organize themselves collectively enhances their public authority and ultimately leads to a situation where they can exert an influence on the legal authority. Especially during the preliminary surveys the authorities have to acknowledge the existence of such organizations and discuss with them before making final plans, especially in the case of resettlement programs (Ministry of Urban Development & Poverty Alleviation, Government of India, 2004). This helps the planners to incorporate the community perceptions into the planning process, and this is where the public authority (Roy, 2005) exceeds the legal authority.

Associational life (Dumini, 2011), which is related to family relationships and the creation of networks among people have also been recognized as attributes of the different stages of the planning process. This does not only impact the public who are at the receiving end, but also the professionals who produce the plans and designs.

In summary, this study considered the following attributes when examining the planning process of the selected case study. They are law, regimented regularity, legal, visual order, bureaucracy, functional order, irregularity in shape/order, deregulation, associational life, legal authority and public authority. Later in the discussion, these attributes are explained when arguing about the informality in the planning process.

3. Methodology

3.1 Case study: Resettled Community in Mihindupura, Anuradhapura, Sri Lanka
Mihindupura, Anuradhapura, Sri Lanka - located 2km from the present Anuradhapura New Town and located between two rivers, Malwathu Oya and Halpan Ela - is a place where a resettled community has been living for the past 25 years (*Figure 01*). The resettlement project was carried out in 1988, under the case study area of Mihindupura in Anuradhapura.

Figure 1. Location map of the case study- Mihindupura, Anuradhapura, Sri Lanka



Source: Google Earth: Survey Department (2000) and compiled by the author

Anuradhapura Sacred Area Plan, when part of the town was declared as a sacred area to preserve the religious environment. Until 1988 the resettled communities in Mihindupura, comprising 165 families had been living near Kurunegala junction, Anuradhapura, which is 3 km away from their present location. At the commencement of the resettlement project, people in Kurunegala junction were given three location options - in Katukeliyawa, Dewanampiyatissapura and Mihindupura. Of these three sites Mihindupura was the preferred site for the majority at that time. After looking at some other places Mihindupura was selected as the case study for the purpose of current study.

3.2 Methods of data collection and analysis

This study used a qualitative methodology. Main data collection methods were archival documentary search, field observations, photographic survey, semi-structured interviews and focus group discussions. The secondary data were collected from the National Physical Planning Department (NPPD), Sri Lanka, Anuradhapura Municipal Council (AMC) and Wessagiriya Grama Niladhari (GN - Village Administration Division) of Anuradhapura. The archival documentary search was carried out to understand the context and procedures, to review legal provisions and look for written evidences about the program. Semi-structured interviews and focus group discussions were conducted with the community in Mihindupura by officials from the project planning and implementing authorities who have a good understanding of the Anuradhapura Preservation Scheme. The analysis was done by considering two time periods - 1980 to 1990 and 1990 to 2015. During the field study, two questions were asked from the interviewees.

- I. *What were the procedures and experiences you went through in moving from Anuradhapura Town to Mihindupura?* (First question refers to Duration I from 1980 to 1990 representing the period when decisions, rules and regulations relating to Mihindupura resettlement were taken).

- II. *What are the present experiences of the community in Mihindupura?* (Second question refers to Duration II from 1990 to 2015, representing the post resettlement period).

Content analysis, cloud analysis technique and the Social Network Theory (SNA) were used as the main methods of data analysis. Content analysis helped in identifying the attributes of formality and informality within the resettlement process. Cloud analysis was employed to identify the key themes related to participants' responses to the question 'What are the procedures and experiences you went through in moving from Anuradhapura Town to Mihindupura?'

Social Network Theory (SNA) is employed to understand and explain social interactions of people. According to Bruno (1991), by social is meant an essential property that can be discovered and measured, which means something connected or assembled. Based on the identified actors in a network, the in-degree, out-degree and between-ness of the network was calculated. In-degree of a network represents the number of incoming edges into a node. Out-degree of a network refers to the number of outgoing edges originating from a node. When this in-out composite value is obtained it indicates the total connections to a node. For example, this shows how many connections (ties) a particular actor in the network is having with other actors in the same network. According to the SNA, the highest degree value would have been obtained by the focal actor of a network. Focal actor of a network would be the dominator of the network. It aligns other actors to make the interest of the focal actor more realistic. In this study, in and out degrees were studied separately, while only the *composite degree* diagrams are shown in the paper. *Between-ness* of the network identifies the mediator of the network. The mediator plays the *gatekeeper role* of a network. In relating this to informality, the gatekeeper role represents the actor involved in an informal process who finds himself between two formal actors.

4 Results and Discussion

4.1 Anuradhapura Sacred Area Plan and Resettlement: informality in decision making while planning

Informality is more or less interwoven in the decision making process that is always a part of planning. How civic power perceives authority imposed ideas that are supposed to be put into practice through a formal process, and more specifically how it responds to the 'plans' proposed, and how associational life helps in managing the complexity involved in decision making are the key attributes of informality. In the next sections, these attributes will be identified by analyzing the decision making process in relation to the Anuradhapura Sacred Area Plan and subsequent proposals put forward for resettlement of the community, which form the core aspects of this case study.

The time taken for the decision making process in the preparation of the sacred area plan was drawn out to almost 40 years as depicted in Figure 02. The initial idea of declaring the Anuradhapura city as a sacred area was proposed by Mr. S.W.R.D. Bandaranaike who was then the Provincial Administrative Minister. The Anuradhapura Sacred Area Plan was promulgated by the established legal authority in 1949 with the intention of preserving its *visual order* and cultural heritage. It was decided to relocate the

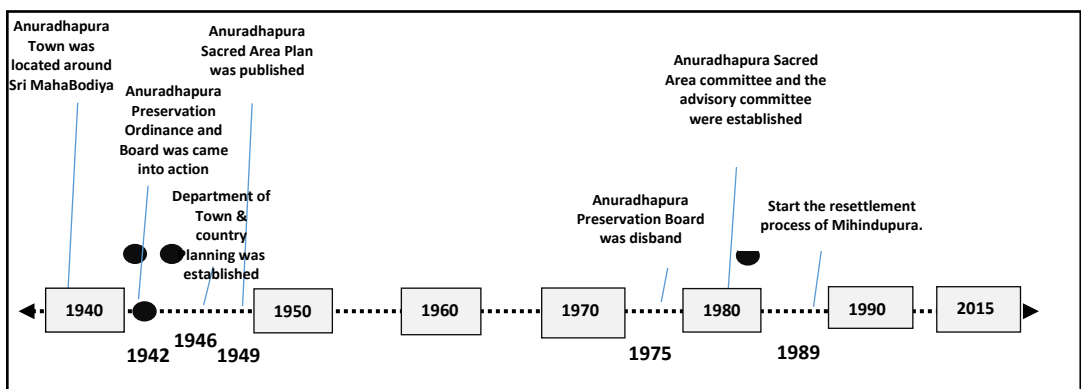
people living in and around the Sri Maha Bodhiya site, which was then marked as the 'Sacred Area'. The procedure that was adopted to relocate the people and their activities was an *involuntary* process. The local communities organized themselves into groups and expressed their objection to the resettlement scheme. As a result of the rise of *public authority* in 1975, the Central Government was forced to disband the Anuradhapura Preservation Board that was established under the Anuradhapura Preservation Ordinance of 1942. It was clear that the *Civic power* had overcome the *legal authority* and forced it to temporarily hold the resettlement process.

As a solution to these continuous contradictions at the two extremes of formality and informality, the planning process turned to a form of *hybridity* of these two extremes as a solution. It was then decided to transfer the powers vested with the Anuradhapura Preservation Board to a Special Commissioner. Due to the continuous delays that arose in the implementation of the Anuradhapura Sacred Area Plan the government conducted a study in 1980 on the failures of the Anuradhapura Preservation Board. They eventually found that the major reason for the delay was ignoring the community and excluding them from the process. This discovery further emphasized the need to set up a *formal mechanism* to give voice to *civic power* and *public authority* in the decision making process. Accordingly, it was decided to establish a new committee called the Sacred Area Committee, in which the Town and Country Planning Department (acting as the secretary of the preservation committee) took the responsibility to give the leadership of the committee to a group of people who had a close *associational life* with the people.

“Anuradhapura town was located around Sri Maha Bodhiya (Sacred tree)... by 1940s the ancient ruins were not preserved and they are out of the eyes of the rulers... the fish, vegetable stalls and other trading activities around Ruwanweli Maha Seya (Stupa) make the devotees depressed...”

(Anuradhapura preservation scheme report, 1996, p.5)

Figure 1: Timeline of sacred area plan, resettlement and post resettlement, Anuradhapura



Associational life can be considered as one of the salient attributes that solved many contradictions between the people and the formal planning processes. The aforesaid advisory committee is headed by the Chief Prelate of the Atamasthana who is in charge

of the eight sacred Buddhist temples in Anuradhapura. Thus, he is considered as the regional civic head in the Anuradhapura area. From the known history it is evident that the *functional order* of Anuradhapura was always connected with the *associational life* that the locals had with Buddhist monks of the temples. Therefore, this new advisory committee was instituted as a *formal mechanism* to address and assuage the mainstream community's concerns. The *hybrid model* was designed to reduce the community's objections towards the resettlement processes proposed under the Anuradhapura Sacred Area Plan.

4.2 During resettlement (1980 – 1990)

Implementation of planning proposals by means of actions or projects never turns out to be the rational, comprehensive process advocated by planning theorists; instead, the matter must be approached by building upon situations (Lindblom, 1959). This was a crucial stage of the resettlement process during which decisions relating to the housing delivery system such as what house, to whom, which location, and what is the design of the house, etc. had to be decided.

The initial analysis done with cloud analysis (Figure 03) about the resettlement process had shown that the land, house, village, Atamasthana, license, temple, government and associations

Figure 2: Key themes during resettlement (1980 – 1990)



were highlighted as the key themes. How informality operated in the process, cutting across different thematic areas is the key aspect discussed in this section.

Source: Authors by analyzing the interviews with people and using cloud analysis

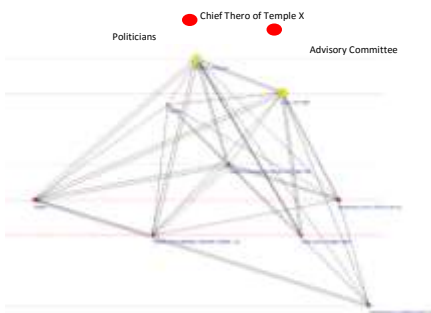
It was clear that informality had enabled the local community's passage through the *rigid* housing delivery process conducted by the government.

It was apparent from the analysis that the Advisory Committee that included the Chief Prelate of the Atamasthana and formed specially to represent civic voice during the early stage had by this time become a *formal institution* in the planning process. Ironically, in later years, the priority of this committee had shifted away from representing the community's needs in respect of resettlement. The *associational life* that formed around the Chief Prelate of the Atamasthana had then started evolving around another *temple* (which was referred in the article as 'temple') and around the *Chief Incumbent Thero of that temple* (who was referred in the analysis as Thero). *Associational life*, a key aspect of informality had acquired its dynamism after evolving over time and the context in which it operated decided the impact.

This situation is further highlighted in the SNA, which was done to identify *actors* who were driving the process. In SNA, FA is identified through the available number of ties that an actor has to/ from the others in a network or any actor who possesses the highest degree of centrality (In degree, out degree).

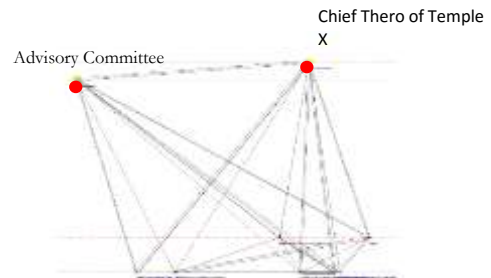
The Thero has the highest number of ties inwards and outwards. But he was not within the formal planning process. Instead, he has *relationships* with all the other actors in the network. From the people living in Kurunegala Junction to Politicians, the Thero has a well spread network. The ties between the Thero and the other actors do not represent the existence of formal relationships. Instead, the actors have their *personal connections, trust* and companionship among each other. For instance, being an actor in the formal planning process, the Disapathi (Government Agent) had only five direct connections (ties). In contrast, the Thero who is not within the formal planning process has eight direct connections (ties). Thus, the Thero has become the FA of the network. Further he was in the middle of most of the networks. For instance, the Anuradhapura Sacred Area Committee members were one of the key decision making bodies from 1980 to 1990. It has a relationship with both the Anuradhapura Urban Council and with the Thero. From both these routes people had selected the Thero to pass their views to the Sacred Area Committee representatives since that helped to reduce the *rigidity* of the formal process as it was much more *flexible, easy* and comfortable for the people than the time consuming formal process. The second process is captured in SNA as the gatekeeper, who transfers information from one actor to the other of the network, obtaining the highest between-ness.

Figure 3: Identification of focal actors (degree) during 1980 – 1990. Figure 4 : Identification of focal actors (degree) during 1980 – 1990.



Source: Authors by analyzing the interviews with people and using social network theory

Figure 5: Identification of focal actors (Between-ness) during 1980 – 1990. Figure 4: Identification of focal actors (Between-ness) during 1980 – 1990.



Source: Authors by analyzing the interviews with people and using social network theory

Eventually the community was relocated to, Mihindupura (Shanthi Villages), Dewanampiyatissapura (Shanthi Villages) and Puranagammana Villages. Out of these three locations people were given the opportunity to select their preferred place. When providing houses the Committee chose a design that consisted of one living room and two bedrooms. They were also given Rs. 25,000 as an incentive by the Ministry that oversees the National Housing Development Authority. After completion of the project

the Sacred Area Committee handed over the responsibility of administering this scheme to the Anuradhapura Urban Council.

4.3 Post Resettlement period (1990 – to present)

As identified through the cloud analysis *land*, *house*, *flooding*, *deeds*, *temple*, *people* and *government* are the major themes highlighted in this period. *Formal processes* did not manage to respond adequately to the challenges and problems that emerged since the resettlement. The key challenges included the need to alter the housing structure for various reasons (both internally and externally driven reasons), flooding in the area and the needs that emerged with the second and third generations of the resettled community. Interestingly, as the diagram shows, the role played by the different actors has also changed when it comes to the implementation, monitoring and feedback stages.

Figure 6: Key themes during resettlement (1990 – 2015)



Source: Authors by analyzing the interviews with people and using cloud analysis

Figure 7. Expected visual order Vs. Present (achieved) visual order



Source: Photographs were taken by authors and the text compiled through interviews

The second generation of the resettled community had started its own families and they do not like to move to another place since Mihindupura is the most comfortable place for them as they had got so used to it. But under the *rigid* formal processes the Anuradhapura Municipal Council (AMC) does not allow people to construct new houses in Mihindupura. But people try to *adapt* to this situation by adding an extension to the existing house. This is an example of how the community had circumvented the *formal rigid legal procedures*. The other interesting fact was that these additional constructions were later approved by the AMC. This reveals that the planning regulation enacted in the 1980s does not support the needs of today and the question is who should address this issue? Further, most of the householders had changed the layout of the original house

given to them in order to accommodate their requirements by means of alterations or extensions. This has led to converting the pre-determined *visual order/ regulated regime* into a *functional order*, which is comprised of a mixture of activities where they mutually support, uses with *diversity, irregularity in shape/order*, new additions to the planned situation, interruptions to the *visual order* and response to a current need. *Figure 07* illustrates how the 'housing design' finalized at the plan preparation and design stage had changed when it came to the plan implementation, monitoring and feedback stages.

The Malwathu Oya is choked with sand since sand mining is not allowed now due to the intervention of the relevant authorities. But still no authority has taken any action to address the issue of heavy silting in Malwathu Oya that causes severe flooding during the rainy season. This leads people to try and find various ways and means to make their daily lives more comfortable and they do this by taking the law into their own hands. As mentioned above most of the activities were defined earlier under a *legal framework* that was prepared in the 1980s. Thus, the authorities in charge should understand the need for amending such outdated laws according to the needs of the present situation. Outdated *legality* always lacks *power* since the *public* instead of accepting it will always complain about same and profess ignorance of such laws.

In these processes, compared to the Duration I, the Duration II (1990-2015) reveals a change in *focal actors* from the Thero (mentioned in the previous section) to the politicians and to the old villagers in Mihindupura. Compared to all the actors, the community, that is the *people* themselves had become the focal actor of the group, having the highest direct ties with the other actors.

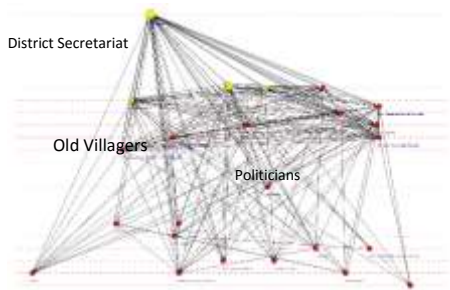
This can be related to the local political ties that they had developed during the previous 25 years. Accordingly, people and politicians who represent the village have the highest interaction level with all the actors in the network. The *old villagers* - community who were resettled - and the politicians of the area have developed direct connections with new villagers who have moved recently to Mihindupura. The District Secretary, Grama Niladhari, and Group Associations help to meet different community needs such as obtaining loans and getting approvals for housing alterations done without approvals, etc. These networks had enabled the locals to get things done in a *flexible way* without going through *rigid procedures*.

While living in Mihindupura for over 20 years, these people have identified *collaborative ways and actions* for overcoming their problems. They have established different community organizations, such as for example 'Piyamithuru', which means 'local friends'. Through these associations they manage to exert some influence on the politicians and get them to fulfill their needs. Also, most of the new villagers who have resettled in Mihindupura are teachers and principals. Currently they occupy leading roles in such associations. Thus, it is a platform created to develop the interaction between the new villagers and the old villagers. Based on the *relationships* developed in these associations some villagers *bypass* the formal procedures when enrolling their children in the schools. In addition, the fact that some of the resettled community members are working in government institutions has largely facilitated these informal processes.

At present the Thero, who was the dominant actor in representing the group in Duration I has fewer connections to the emerged networks in the settlement. From a planning and implementation perspective, this again highlights the way the social networks have evolved in responding to situations over time. For Duration II, the Old Villagers who were one of the most negligible actors in duration I and the Sacred Area Committee act as bridges to transfer information to many of the actors in the network. This shows that in passing information from the District Secretary to the old villagers, the Advisory Committee and the Sacred Area Committee representatives act as the gatekeepers.

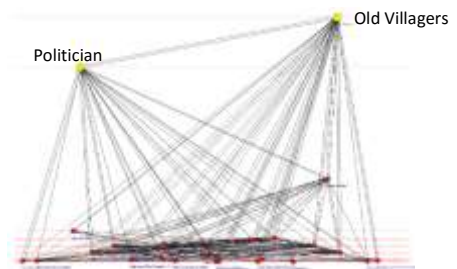
The advisory committee comprises among others the Chief Buddhist Prelate of the eight temples. Rather than having formal *rigid* relationships towards the Buddhist Theros, the people have mutual interdependent *relationships*. As a member of the advisory committee, the so-called Thero represented the formal planning procedure while having an *associational life* with the people in terms of religion. Thus, the presence of such actors reduces the *regularity* of the network and encourages the *information infiltration* across all the actors by promoting an *irregular, unstructured* social network. This prominent role of the above actors also leads to the emphasis of themes attached to such actors as ‘temples’ in the word cloud analysis. Although the Chief Buddhist Prelate of the Atamasthana is no longer playing a prominent role as in Duration I, the temple of the Chief Incumbent still remains the most likely place where people will congregate in an emergency situation such as a flood. Other than that, rather than rely on the *associational life* that people had with the temple in the past, they now tend to go behind the politicians.

Figure 8: Identification of focal actors (degree) during 1990- 2015



Source: Authors by analyzing the interviews with people and using social network theory

Figure 9: Identification of focal actors (Between-ness) during 1990 - 2015



Source: Authors by analyzing the interviews with people and using social network theory

In summary, it is clearly revealed that the people who were *involuntarily* relocated in the 1990s have become the FAs in the post implementation period. Although ‘people’ played a very passive part in the decision making process during the period from the 1980s to 1990, after the resettlement and the passage of around 20 years, the same group of people have become the focal actors (1990-2015), developing the highest interaction among those present in the network. It was also observed that the network has become more *complex* after the implementation of the Mihindupura resettlement process. For instance, Mihindupura has no public transport system, no access to pure drinking water, not all the banks provide loans for the licenses they have in place of the deeds. Also, no

authority has come forward to address this issue. In order to press for the aforesaid unmet needs the people have established group associations to facilitate loans, and other welfare associations. They have also organized water bottle distributors and passenger transport service providers as a response to meet their basic needs in the Mihindupura resettlement scheme. It is noteworthy that such actors did not emerge through formal procedures. This *irregularity* that exists in the network expands the opportunities for the emergence of new actors.

5 Conclusion

The findings of this study shed new light on the aspect of informality in planning. Since it was based on a resettlement project, several key findings can provide some insight on the thinking process of planners and about planning with informality. While no firm definition is brought up, the major argument of this paper is to emphasize that informality is not a separate concept, but more or less an integral part of how things work in reality. People living in Mihindupura are trying to make their lives more comfortable by renegotiating the given rules; and by using their relationships, associations and personal contacts as the key mode of communication. Both the findings from the content analysis and the application of SNA reveal that the Mihindupura planned resettlement is driven not only by the plans and regulations but also by the actors who often operate outside of the legal procedures. Further, it is revealed that the spatial structure of Mihindupura is not only decided by the actors attached to the formal planning process but also by other forces, relationships and peoples' preferences. Irrespective of the laws and legal frameworks prescribed by the government bureaucrats, the community is moving to achieve what it wants and in a way that is more amenable to it (Innes *et al.*, 2007).

The changing behavioral patterns and needs of people are hard to define through a legal framework or a set of predetermined rules and regulations in project planning. All the above factors reveal that it is hard to separate informality from formality in plan making and implementation. Without informality it is impossible for a formal planning practice to continue for a long period. Therefore, the research identifies informality not as a separate entity/ concept but as one of the planning strategies adopted by the community without the intervention of planners or other responsible authorities.

The findings also reveal that people tend to follow a bottom up approach while the planning procedures follow a top down approach. People use their personal relationships to get their work done more easily, while the authorities try their best to tie themselves to the processes and schedules. To our knowledge, this appears to be a normal condition in the planning system in Sri Lanka that creates contradictions between the people and the planners. The findings tell us that the planning process should keep edges to link those paths that come from the ground level where people always interact.

Content analysis for Durations I and II reveals that the identified themes are not completely associated with the formal planning processes but have an informal dimension in responding to situations. It emphasizes the need to incorporate informality in plan making and implementation since informality is the people's spontaneous and creative response to the state's incapacity to satisfy their basic needs (Jones, 2016; Roy, 2001). Thus, the results emphasize that each and every plan integrates a certain degree

of unintended informality, even though the authorities try to force people to follow the given rules and regulations as they are, which is not practical. It stresses the need for keeping spaces for community perceptions at every possible level of the decision making process rather than fixing the planning process rigidly to a certain hierarchical procedure and order, so that it will be flexible enough to address the community concerns.

Further, the findings point to the mutual relationship that exists among the people, politics and planning in the context of planning. Existence of politicians as the focal actors and mediators in Durations I and II emphasize that politicians have played a vital role from the decision making to the project implementation stages. In this connection, the results of the current study draw attention to the triangular form of interdependency between planning, people and politics. Relating this to general planning practice, the planners used to place the stakeholders with their vested interests at lower power levels. But this study clearly highlights how the role and place of stakeholders may change over time, and how new groups or groups that were dormant earlier can rise up and make their presence felt later on in the process.

The research reveals “informality as a planning tool” is not a new practice in the urban planning context to understand socio-economic aspirations of the stakeholders. The only difference is it is not practiced by the planners or other professionals but by the people themselves. It is the officially ignored reality in most of the planning procedures. The people who are not directly incorporated within the framework of planning or any other legal framework follow informality as a strategy to fill the gaps in the formal plans and programs implemented by the professionals. Therefore, the research urges the need to incorporate informal strategies into the professional planning process in order to reduce the contradictions between the planning practices and the community.

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Legal and Policy Issues in the Alienation of State Land for Peasantry in Sri Lanka

Sarath Mathilal de Silva¹

¹Attorney – at – Law

Retired Professor in Legal Studies

University of Sri Jayawardenepura, Sri Lanka

Abstract

This paper reviews literature on the law governing alienation of State land for peasantry in order to identify legal issues in particular and socio economic issues associated with the operation of the law. This study is primarily a legal study and is confined to two related law areas namely, the Land Development Ordinance No.18 of 1935 and the 13th Amendment to the 1978 Constitution. As revealed in the literature review, land as a source of economic and social issues entered the community as a result of the law and land policy adopted by the British colonial era. At the start, land utilization issues emerged as a social ethnic problem. Later it has become a political issue extending towards the worsening of the ethnic problem. In the final analysis, as the literature review reveals, country's legal framework on the alienation of State land for peasantry in the context of major peasant settlement schemes is posing crucial legal issues on land tenure, gender discrimination, encroachment linked to productivity and living standards of the peasantry involving both statutes and constitutional aspects, which have had adverse impact on the proper administration of State land in Sri Lanka.

Keywords: *land alienation, land policy, state land, irrigated paddy cultivation*

1.Introduction

Land is a finite resource. Hence down the ages it has been a repository of all human emotions. Land provides status, wealth and power. Looked at from the point of Western Economics, it is an important factor of production.

The Issue of land has occupied a place of centrality in State policy under all post – independence Governments. The utilization & distribution of lands & land settlement also became a factor in the ethnic issues in the country & figured in previous attempts at solving such issue.

1.1 Objectives and Scope of the Paper

The objectives of this paper are to review literature the law governing the alienation of State land for peasantry in order to indentify legal issues in particular and policy based socio economic issues associated with the operation of the law. The study which is primarily a legal study, is confined to two related law areas namely, the Land Development Ordinance No.18 of 1935¹ and the 13th Amendment to the 1978 Constitution.²

1.2 Historical background

The ownership patterns and the tenurial systems prevailing in Sri Lanka to date are the result of a process of evolution over many centuries. In ancient times, while our kings claimed certain rights in relation land, it is likely that the role of the king was more as a trustee or custodian³ It is generally accepted that the king controlled grants in land. There were several types of grants that were given by the king ⁴

During the British period in Sri Lanka (1796 -1948), legislation enacted by the British colonial government provided the initial legal thrust for such a state ownership of land. All lands in the country that were not permanently occupied and those for which ownership could not be proven became the property of the Crown under the Crown Lands Encroachment Ordinance No.12 of 1840⁵ and the Wastelands Ordinance No. 1 of 1879.⁶

The Land Development Ordinance of 1935⁷ was enacted as a result of the conclusions reached by the Land Commission of 1927. In Sri Lanka, settling people by alienation of various types of State land as a development strategy has become a popular rural development strategy during the pre and post-Independence eras. Among various types of settlement schemes, major settlement schemes, known also as major peasant colonization schemes have been subjected to more debate than other schemes due to their contribution to society and economy of the country.

Prior to 1987, the law governing land settlement schemes has been the Land Development Ordinance of 1935. After 1987, with the introduction of the 13th Amendment to the 1978 Constitution, Land Development Ordinance still operates subject to the 13th Amendment to the 1978 Constitution.

2.Literature Review

2.1 Land Development Ordinance and the Irrigated Paddy Sector.

Three important works of literature for review under land policy are three Reports of Land Commissions of 1927, 1957 and 1987. They are important because they are the official government Reports of the Land Commissions appointed by the Government at that time. It was noted that the Land Commission of 1927 indeed placed preservation of peasantry first and foremost.⁸ Hence conditions concerning use and fragmentation as recommended by the Land Commission of 1927 had been embodied in permits and grants under the Land Development Ordinance.⁹

In the view of the Second Land Commission of 1957¹⁰, it was not enough to ascribe the land problems at that time solely to failures of administration within the framework of the present Land Development Ordinance or even to failure to implement the recommendations of the Land Commission (1927). According to the Land Commission of 1957, the general situation of country had altered so radically and fewer restriction on allotments in the settlement schemes were thus essential.¹¹

The Land Commission of 1957 also noted that a high proportion of land alienated under the Ordinance had not been satisfactorily developed.¹² The Land Commission of 1957 stated in its Report that certain features of the tenure may have contributed to the failure to develop so much of this land.¹³ On the other hand, the Commission of 1957 was satisfied that there are several reasons not connected with the tenure why land had not been developed such as its unsuitability for cultivation, lack of roads and marketing facilities etc.¹⁴

The 3rd Land Commission of 1987¹⁵ reviewed the operation of the Reports of the two periods of the Land Commissions, 1927 and 1957. In the view of Land Commission of 1987, in spite of certain positive aspects like such as peasant colonization and village expansion in unoccupied lands under State ownership, there were also more negative aspects, such as the widespread problems of landlessness, large scale encroachment of state lands and the restrictive nature of the land market.

The Land Commission of 1987, strongly 'believed that 'land policy must necessarily form an integral and organic component of wide national development strategy. It should neither be treated in isolation nor confined to State land alone, but must rather be a comprehensive review at national level.' The Land Commission of 1987 also believed that the established policy of creating and preserving a multitude of prosperous, self-supporting and self-respecting peasant proprietors still hold valid and should continue for the future.¹⁶ The Land Commission of 1987, was inclined to believe that any failure to create a class of prosperous peasant proprietors was due not so much to any innate incapacity of the peasantry itself, but rather to constraints inherent in a highly bureaucratized system of land management.¹⁷

Apart from the above mentioned three Reports of the Land Commission of 1927, 1957, 1987, a fair number of Commissions and Committees of inquiry as well as foreign missions have gone into various aspects of land policy and related issues from time to time since the beginning of 1950s.¹⁸

Kumarasiri (1998)¹⁹ who at that time also held the post of the Land Commissioner of the Department of Land Commissioner, focused on review of the fifty years of land administration in Sri Lanka. As he noted, with the introduction of the 13th amendment to the Constitution, land administration activities have become confused due to improper coordination, lack of clarity and defects in the legal framework governing State land. Herath (2010)²⁰, is critical of the State land law in Sri Lanka in that he emphasizes that State land law in Sri Lanka is in a state of ambiguity and complexity. According to Herath (2010), the provisions made in the legislation relating to state land are not adequate for the present social and economic circumstances. In addition, through the 13th Amendment to the Constitution, the powers of the State land have been devolved and issues have arisen between the Central Government and the Provincial Councils due to delay in the implementation of devolved powers. In consequence a great inconvenience have been caused to the public.

2.2. Informal land Transactions and Encroachments

Shanmugarathan (1982)²¹, as far back in 1980s noted two issues in State land. The first issue has been the illegal land market operating in the colonization schemes and the second issue has been the encroachment of state land within or around the settlement schemes by the unauthorized persons. Findings of Ratnayake (2014)²² reveal that entrepreneurs in the colonization schemes have lent money to farmers and when the farmers were unable to repay them took over their lands, resulting serious issues: *de facto* land owners and labourers.

The Article by Chandrasiri (2011)²³ examines changes in land ownership – possessory system in the colonization schemes and the future challenges to land ownership – possession resulting therefrom. The field survey covered major irrigation schemes namely, Parakrama Samudra, Mahaweli H, Udawalawa and Kirindi Oya settlement schemes started at different period and findings of other research on this subject by others were taken into account.

The findings of both sources revealed that 60% of the protected land holdings of the schemes in terms of number of holdings and the extent of all holdings are subject to different informal possessory systems such as leasing, mortgaging etc. The reasons for transferring of holdings to others on informal basis included the inadequacy of family labour, inability to cultivate due to engagement in other occupations, residence outside the scheme and urgent financial needs.²⁴ In consequence of this process, two categories of farmers due to concentration of land holdings among the rich holders on the one hand and landless persons on the other hand had been the result. When the land holdings are subject to different informal possessory systems without permanent title, as Chandrasiri (2010) emphasizes there is no long term investments to improve its productivity²⁵.

The study by Samarasingha and Aheewar (2013)²⁶ reveal that about 28% of the lowland plots in the study areas are informally fragmented into less than 1.5 acres in extent. In older schemes of Minnariya and Minipe stage I, the informal land fragmentation of less than 1.5 acres has occurred among 45% and 56% of the farmers respectively. Some of the direct effects of land fragmentation as noted by the study are reduced land productivity, intensive cultivation, deforestation, cultivation of reservations and disputes among community members harming social integration.²⁷

2.3. Gender Perspective

Kishali and Dr. Almeida Guneratne²⁸, pay attention to the impact of constitutional provisions, statutory provisions and administrative practices on gender discriminatory laws. Accordingly, at one level, the need for specific reform of gender discriminatory laws arises from the fact that existing laws cannot be struck down by the Sri Lankan courts, even though they may be violative of the constitutional provisions relating to gender equality, namely Article 12(1) and Article 12(2) of the 1978 Constitution. Moreover, Article 16(1) of the Constitution stipulates that all existing written law and unwritten law shall be valid and operative notwithstanding any inconsistency with the Constitution of 1978. The impact of this provision is further aggravated by the fact that Sri Lankan courts do not have substantive powers of judicial review.²⁹

As the study emphasized, discrimination against female spouses who succeed to land under the Land Development Ordinance is found both in the legislative scheme for succession and according to the findings of the empirical research of this study. Therefore literature indicates that the situation of surviving spouse being deprived of their full legal right to succeed to state land, appears to be the result of an unfortunate combination of unnecessarily complex legislation, incomplete and erroneous transferring of such legislation into guidance for officials and selective implementation even of such guidance.³⁰ The research study by Kishali and Dr. Almeida (2010), finally conclude, a

thorough overhaul of laws and regulations relating to land and property rights of women as well as the initiation of a comprehensive awareness program in this regard is imperative.³¹

Having examined the provisions of Land Development Ordinance on the subject of succession, Herath (2010)³² also confirms gender disparity provisions in the Land Development Ordinance.

2.4. Irrigation policy

Since the prosperity of the peasantry is one of the objectives to be achieved under the major peasant settlement schemes under the Land Development Ordinance, the impact of irrigation policy and profitability irrigated paddy farming have greater bearing on the realization of the aforesaid objective of the prosperity of the peasantry. Moreover, paddy is the dominant crop cultivated under the major irrigated schemes in Sri Lanka. Therefore a brief review of literature on irrigation policy and its impact on paddy sector is useful.

Three researchers namely, M.M.M Aheeyar, M.A.C.S Bandara, M.T. Pathmajani, (2012),³³ conducted a research into 'Farmer Participation in Irrigation System Management : Achievements and Drawbacks' to assess the problems and prospects of the Participation in Irrigation System Management (PIM) policy implemented through different management models. The study highlighted the main issues confronting farmer participation irrigation system management. As found in the literature, though the Government envisaged that PIM policy would help to solve the problems in irrigated agriculture and water resources management, research observations show that long term substantiality of the management transfer problem have raised doubts on the effectiveness of the policy. Past study findings referred to by Aheeyar et al, (2012)³⁴ showed mixed results on the performance of PIM in irrigation system management, water use efficiency, agriculture production and the government cost reduction.

Furthermore, as noted by Aruna Shantha and Assan Ali (2014)³⁵, irrigation is the most important strategic factor in the development in the rural sector in Sri Lanka and irrigation can play a central role in poverty reduction. As they noted, authorized state organizations failed to accomplish equity principles among upstream and downstream users.³⁶ Under these circumstances, in the view of Aruna Shantha and Assan Ali (2014), the irrigation investments in Sri Lanka have not been playing a rationale role on resource optimization.

2.5. Profitability of the Irrigated Paddy Sector

It is also necessary to review the literature on the profitability of irrigated paddy sector in the context of the prevalence of informal land transactions and consequent fragmentation of allotments obtained in the settlement scheme with its impact on the land productivity and paddy farming real incomes. As Wijetunge and Abeysekera (2010)³⁷ noted in their study, despite the decline of the share of agriculture in national output and increasing industrial and services sector output, agriculture still plays an important role in increasing the country's food supply as well as providing employment opportunities specially for the rural sector.

Wijetunge (2013)³⁸, added, that irrespective of the fact that all the successive governments followed some intensive measures to protect paddy farmers, their living standards have been continually deteriorating over the years owing to rising production cost over the farm gate price and yield improvement.³⁹

As Wijetunge and Abeysekera (2010)⁴⁰ also find, despite numerous public sector interventions and the incentive mechanisms introduced by the government. Sri Lanka's agriculture sector up to now has in general, failed to deliver the expected.⁴¹ The study clearly shows that present system of paddy farming is less attractive to the younger generations. As Padamajani (2010)⁴², noted, in spite of the significant advances in the rice production in the past few decades, there is a rising concern about declining productivity and restricted scope for expansion of future rice production in Sri Lanka.

Nadeeka and Gamage (2011),⁴³ provides statistics pertaining to the trajectories of transformation in the agriculture sector particularly the smallholder farming sector in Sri Lanka during the six decades after independence. According to Nadeeka and Gamage (2011)⁴⁴ it is a matter of concern that over the last six decades, the country has achieved self-sufficiency in rice while the paddy holdings have fragmented resulting in operation of uneconomic extents by the majority of farmers. The latter tendency has implications for income of paddy farmers.

Therefore they conclude that in spite of the relatively better productivity performance of crops over the years, Sri Lanka's yield remained well below their technical potential.⁴⁵ The poor performance of paddy in Sri Lanka in realizing technical potential could be attributed to a few factors. A major one is non availability of perennial sources of irrigation water to a significant sector of farmers. Though area under irrigation has increased over the years many areas in the island lack an assured water supply. This has affected the productivity potential of new seeds even in the irrigated areas in the dry zone.⁴⁶

One of areas of considerable controversy, as highlighted by Sanderatne (2001)⁴⁷, is with respect to the protected tenure in colonization schemes under the Land Development Ordinance of 1935. According to him, merits and defects of the restrictions imposed on the land held under this Ordinance have led to controversy till today.⁴⁸

2.6. The 13th Amendment to the Constitution and the Subject of State Land.

At the time of the adoption of the 13th Amendment, the State owned as much as 82.3% of all lands in Sri Lanka as stated in the Report of the Land Commission of 1987. In terms of the 13th Amendment the Constitution some activities relating to the subject of land have been allocated to the Provincial Councils. Thereafter in 1992, these activities have been further decentralized to Divisional Secretaries under the Transfer of Powers (Divisional Secretaries) Act No .58 of 1992. In consequence there are three institutions dealing with the subject of State land: Land Commissioner General, Provincial Council Land Commissioner and Divisional Secretaries. Although these three officers are independent from one another the statute they are required to comply with are the same which have created complexities in land administration. Due to defects of the land

management at the Divisional Secretariat level, there has been an increase of the problems of people. Therefore a need has arisen to devise a comprehensive scheme to oversee the land work of the Divisional Secretariats.

Referring to 13th Amendment to the Constitution which emerged as a result of the ethnic conflict there are many elements in the package which limit the powers enjoyed by the regions and allow the Centre to interfere even in the areas that have been devolved. There are two principal issues that the devolution debate over State land need to address. The first is the extent to which the regional units are given power and autonomy to control and manage State land in the region. The second is what needs to be reformed at the Centre, in order to make these a reality. Very often the second does not automatically follow from the first.

Under mentioned remaining issues are linked to the 13th Amendment to the 1978 Constitution (a) wide powers of the President inconsistent with the proper devolution of powers over the State land. (b) issue of the extent of devolution of powers over the State land (c) issue with regard to inter provincial schemes (d) issues relating to ethnicity and criteria for land settlement (e) issues relating to institutional framework – the establishment of the National Land Commission as provided by the 13th Amendment. The outcome of this situation is the increasing encroachments, failure to alienate State land to the lawful citizens, encroachment of environmentally sensitive land, corrupt practices resulting from non-compliance with laws and regulations.

2.7. Legal Aspects.

The Article published by Sunil Bastian (1997)⁴⁹ is centred around the question of taking away the power over state – owned land from the central State in the political struggle to develop power to regional units in Sri Lanka. He makes the central point that the state owned land had been distributed in a variety and different ways and the colonization schemes are the centre of debate when it comes to the ethnic question.⁵⁰

According to Bastian (1997) another political link between these policies and ethnic politics arises due to changes in the demographic patterns brought about by these projects. Colonization schemes have contributed to changes in the ethnic composition with an increasing Sinhalese population and decreasing Tamil population. Especially in the Eastern province where such settlements took place. Referring to 13th Amendment to the Constitution which emerged as a result of the ethnic conflict he is of the view there are many elements in the package which limit the powers enjoyed by the regions and allow the centre to interfere even in the areas that have been devolved.⁵¹

Bastian (2013)⁵² in another succinct paper alleged that policies to protect the peasantry through distribution of state land became a major factor in worsening ethnic relations.⁵³ The main issue was the settlement of the people in the Eastern Province. He strongly believes that this became a fundamental reason for the civil war.

The Article by Prof. Soyza (2007)⁵⁴ has discussed land utilization issue in Sri Lanka and its social and political dimensions with an evaluation of efforts to resolve it. Explaining the development of the land utilization issues he stated that at the start land utilization

issue emerged as a social ethnic problem. Later it has become a political issue with the worsening of the ethnic problem. The heightened state of the ethnic problem is the claim of the Tamil community for North- East Provinces as their native land and their demand for self-governance of these two Provinces together.⁵⁵

According to Prof. Soyza (2007) land ownership issue in Sri Lanka is highly complicated and confused issue among other political, economic and social issues of the country. On the one hand, it is a complex economic and social issue faced by the whole country. On the other hand it has gone to such an extent demanding separate State.⁵⁶

2.8 Implementation Aspects.

According to Boralassa (2007)⁵⁷ commenting on the operation of the 13th Amendment, although a scheme has been formulated for the release of the State land of the Republic to the provincial Councils that scheme is not in place. As he noted, some Provincial councils have even passed Ordinances exceeding the limits of 13th Amendment and as a result, great delay and confusion have been caused in land administration activities.

According to Jayatilake (2007) ⁵⁸, today there are three institutions dealing with the subject of State land. : Land Commissioner General, Provincial Council Land Commissioner and Divisional Secretaries. Although these three officers are independent from one another, the statutes they are required to comply with are the same, which has created complexities in land administration.

The study by Nadeeka (2011)⁵⁹ evaluated the relationship between the Central Government and Provincial Council system in relation to land delivery to beneficiaries through an empirical study. Nadeeka noted that although the powers had been devolved on the Provincial Councils, the powers relating to alienation of State land are still with the centre. Therefore powers entrusted to Provincial Councils, according to Nadeeka, are powers of utilization of State land and not the powers of alienation of State land.

3. Results and Discussion

As revealed in the literature review, land as a source of economic and social issues entered the community as a result of the land policy adopted by the British colonial era. Some of the key steps in the political - economic history of Sri Lanka took place during the British colonial period. Literature review suggests that in making use of the control over state land, the Central Government has carried out policies that have contributed directly to the worsening of ethnic relations. The most glaring example of such a policy as commented by some literature, is the large scale irrigation schemes in Dry Zone in Sri Lanka a part of which is in the North and East.

As literature review indicated, one of the areas of considerable controversy is with respect to the protective tenure on colonization schemes under the Land Development Ordinance of 1935. The merits and defects of the restrictions imposed on land held under this Ordinance has led to controversy till today. Literature review indicates that although the provisions of Land Development Ordinance have instituted the state of the 'protected tenure' for the land granted to settlers the empirical situation in settlement schemes is complex.

Literature review indicates that a considerable proportion of land under Land Development Ordinance had not been sufficiently developed, and certain features of the tenure may have contributed to the failure to develop so much of this land. It was also revealed that there are several reasons not connected to tenure as to why land has not been sufficiently developed. Literature review reveals that law and policy to deal with encroachment issue has met with limited success. Literature review on gender discriminatory aspects of law finds that gender discriminatory aspects of law are apparent both in the terms of the Constitution of 1978 and the statute law.

Therefore question to be posed from the aforesaid literature review is how can the key objective of prosperity of the peasantry with the aforesaid defects in the major irrigated settlement schemes governed under the Land Development Ordinance be realized and what legal and policy interventions are necessary to resolve the connected issues which remain today. The review of literature on legal and operational aspects of the 13th Amendment on the subject confirms that there are legal and operational problems in the land administration after the introduction of the 13th Amendment.

4. Conclusion

In summing up, this Literature Review concludes that there are in the context of alienation of State land for peasantry in the context of major peasant settlement schemes, several issues remaining to be addressed for resolution, which have arisen in the two areas of law namely (a) Land Development Ordinance and (b) the 13th Amendment to the Constitution of 1978 in relation to the subject of land.

With regard to the Land Development Ordinance the issues remaining to be resolve include:

- (a) To ascertain substance of the Land Development Ordinance as amended.
- (b) Whether to continue with the objective of prosperity of the peasantry under the existing protected tenure.
- (c) Issues relating to existing land tenure.
- (d) Issues relating to disposal, inheritance of allotments also involving gender perspective.
- (e) Issues relating productivity and profitability of the irrigated paddy sector which is intimately linked to the objective of the prosperity of the peasantry.
- (f) Ethnic implications of the major irrigated peasant settlement schemes.

With regard to the 13th Amendment to the Constitution, issues remaining to be addressed include

- (i) Legal issues which have arisen due to defects in the provisions of the 13th Amendment in relation to the subject of land.
- (ii) The operational issues which have arisen due to improper devolution of powers from the Central Government to the Provincial Councils.

Therefore it is concluded that the above issues revealed from the aforesaid literature review need to be addressed for resolution with regard to alienation of State land for

peasantry in Sri Lanka. At a time a new Constitution is being drafted, it is essential give proper consideration in the drafting process so as not to repeat issues as found in the 13th Amendment to the Constitution in relation to the subject of State land.

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Compensation in Terms of Equity for Losses and Unjust Enrichments Caused by Non- Quality Buildings

J.N. Hettiarachchi

Senior Lecturer, Department of Estate Management and Valuation

University of Sri Jayewardenepura, Sri Lanka

hettiarachjn@gmail.com

Abstract

Unjust enrichment is unjust, it is lack of legal validity. Equity is justice and fairness. Compensation` is something given to compensate for loss, suffering or injury, and damage is defined as physical harm reducing the value or usefulness of something or financial compensation for a loss or injury. The objective is to identify the financial losses of the buildings in quality aspect in selected projects. The comparison method and the net income capitalised methods were used. As per the available literature, the professional involvement, management, use of poor materials, urgency of work completion and political influences are some of the reasons for non-quality buildings. Results of the analysis reveal that that average percentage of losses of buildings in all 11 projects, due to non-achievement of required quality. . Therefore the client is entitled for compensation for all losses caused by non-quality building and it should comply with legal definition of compensation.

Keywords; *unjust, equity, compensation, non-quality buildings*

1. Introduction

1.1. Unjust Enrichment

Civilized society and the law do not tolerate unjust enrichment and damage to either party due the breach of duty of care, negligence and on the other hand operation of statues passed by the legislature too, perhaps create environment for unjust enrichment and losses to the society. It is the utmost duty on the shoulders of the each individual and society at large to stick to the principle stemming from the law of Natural Justice that states “No one should be unjustly enriched at the expense of another”. Similarly “No one should be suffered by a loss due to acts of other party” Bottomley v Bannister (1932). Unjust enrichment is unjust, it is lack of legal validity (Peiris, 1972). The principle of unjust enrichment holds that a person who has been unjustly enriched at the expense of another is required to make restitution to another (ethheinonline.org/HOL/Landingpage?=hein.journal/trl79&div==66&id=&page 2015).

Unjust enrichment is a legal term denoting a particular causative event in which one party is unjustly enriched at the expense of another and an obligation to make restitution arises regardless of liability for doing. Unjust enrichment is an equitable doctrine that allows recovery when a party has unjustly retained money which in justice and equity belongs to another (Paul2001); (McCreasy v Shiels (1952).

In spite of existence of well-established composition of neighborhood principle many acts of members of society unjustly affect the other members and their property. Any breach of neighborhood principle of duty of care gives rise to loss to one party and unjust enrichment to another.

Tem quality is one of the targets in a construction project that has to be achieved to safe guard the interest of a client with endangering the cash flow and other economic and legal consequences resulting from non-achievement of quality of a building. It is obvious that non quality buildings are identified in construction industry give rise to losses and unjust enrichments in the construction industry.

1.2. Law of Equity

Equity is justice and fairness. Law of Equity has originated from the law of Natural Justice which is one of the oldest schools of jurisprudence. It has linked with moral and ethical dimensions of human experience. Natural law and its role in civil society developed from ancient time in different social culture and religious environment. Plato (428 BC) has emphasized that the ideal lawmaker is philosopher king, since he has unlimited authority to do this (Gunasekara,2000). Cicero (106 BC) affirmed the view that the need to revamp and update civil law in harmony with universal postulates of equity and fair dealing (Gunasekara, 2000). During middle age St. Thomas Aquinas (1225) made contributions to the development of fair and just system of law. He made three fold division of law, Lex Divina (Law of Divine) which is described as will of God, Lex Naturale (Natural Law) and Lex Humana (Law of Human being). In law the term Equity refers to a particular set of remedied associated with procedures. These equitable doctrines and procedures are distinguished from “legal” ones. Equitable relief is generally available only when a legal insufficient or inadequate in some way. (Equity/Wex Legal Dictionary/Encyclopedia/LII/LegalInformation 2016); (<http://www.law.comwell.edu/wex/equity> 2016).

Today equitable remedies are available subject to the equitable maxims. Equitable remedies are specific performance, quantum meruit, injunctions and reformation. (digitalcommons.law.msu.edu/cgi/viewcontext.cgi?artcal=1045&content=facpub 2016).

Some of the maxims in equity are as follows.

- a.* Equity sees that as done that ought to be done.
- b.* Equity will not suffer a wrong without remedy.
- c.* Equality is equity.
- d.* Equity acts in personam.
- e.* He who comes in to equity must come in clean hands.
- f.* Equity follows law.
- g.* g.When equities are equal law will prevail.
- h.* Equity will not allow a statute to be used as a clock of fraud.

(<http://en.wikipedia.org/wiki/maxims-of-equity> 2016).

Today the society feels the importance of application of equity principles to minimize unjust enrichment and losses and also to pay compensation to suffered party and property.

1.3. Compensation and Damage

Compensation is the reparation of a wrong through a delivery of an equivalent, usually sum of money (Dagan, 1997).Damage is a pecuniary compensation obtainable by success

in an action, for a wrong which is either tort or breach of contract, the compensation being in a form of lump sum (Harvey, 1980). Oxford Dictionary meaning of `compensation` is something given to compensate for loss, suffering or injury, and damage is defined as physical harm reducing the value or usefulness of something or financial compensation for a loss or injury.

Damages are assessed with the intention of making the innocent parties position so far as money can do it) equivalent to what it would have been if the contract had been properly performed (Murdock & Hughes – 2008). Damage will not always an adequate remedy for the loser because the damage paid will not be sufficient to really compensate him. “Equity never acts in vain” Hayton and Charles (2005). In *Ong v Underwood* (1983), Barakbah said “the compensation that will give the suffered party reparation for a wrongful act and for all natural and direct consequences of the wrongful act. So far as money can compensate” (Narthan, 1986).

Damages are monetary compensation to put the suffered party in the position he would have been in, had the wrong against him not being committed. (James, 1994). In case of contracts, the damages are sum of money to put suffered party, in the position he would have been in, had the contract been duly performed.

Lord Blackburn in *Living Stone Vs Rawyards* (1980), expressed the view that “where any injury to be compensated by damages in setting to sum of money to be given for reparation of damages you should as early as possible get at the sum of money which will put the party who had been injured in the same position as he would have been in, if he not sustained the wrong for which he is now getting his compensation or reparation”.

1.4. Scope of study

In a building project there are three main objectives namely time, cost and quality. However, only the quality factor is considered for this study. The study is limited to multi storied buildings owned by one client. The measurement quality is based on the rate of depreciation and the condition of each building. Main analysis is based on before and after method described as Cost Comparison Method, Net Income Method and Capital Value Method, The study is limited to the projects of a charitable and educational institute and the effects of commercial or residential buildings are ignored from the study. Only the financial losses and unjust enrichments are considered in this study and other losses are not considered.

1.5 Significance of problem

In spite of excessive of developed techniques and professionalism, very high percentage of buildings suffered by quality problem. Quality is a concept which is difficult to measure because it is a unique factor. Many people think that quality means the appearance and strength of building. But it is identified that expected quality is depending on the budgeted cost of a building. Preliminary study reveals that loss due to non-quality of a building is difficult to quantify due to many problems. Some of them are complexity and uniqueness.

Loss due to non-quality of a building is latent, perhaps for a certain period of time and starts showing signs of non-quality with high depreciation and structural failure of the building. In fact these losses are not compensated in Sri Lanka and owners have to undergo negative cash flows and continuous losses and high life cycle costs. This is due to absence of application of proper criteria to measure quantity on time and client's dislike to attend long legal proceedings. Non achievement of quality of buildings also affects real estate values and redevelopment. Therefore it is evident losses due to non-achievement of quality in buildings is an acute problem that has to be addressed.

1.6. Objectives

1.6.1. Main objective

To study on compensation in terms of Equity for losses and Unjust Enrichments of non-quality buildings.

1.6.2. Specific Objectives

- a.* To identify the reasons for non-quality buildings.
- b.* To identify the losses with regard to non-quality buildings.
- c.* To formulate models to calculate losses for compensation on non-quality buildings under Equity.

2. Literature Review

2.1. Quality Factor

This study emphasizes the importance of quality of a building because the achievement quality target is vital fact as far as the cash flow of the client is concerned. The achievement of quality target in a construction project has a great impact on the value of real estate. Therefore, the literature review is focused on the followings.

- a.* Quality problems and management
- b.* Effects of non-achievement of quality
- c.* Relationship between quality and real estate management.

Quality is not a new concept and it dates back to Hrappa civilization era in ancient India. (1953, Basham). It gradually developed with blessings of industrial revolution in 18th century in England. Today with the development of technical and professional perspectives the term quality has gained recognition as an important construction project target. The pioneering American quality "Gurus" such as Deming (1992) and Crosby (1979) have done an immense service to identify and upgrade quality of a product. (Deming, 1982) stated that quality is a triangle involving the interaction of a product, customer and the way he or she uses the product depreciates in quality. The International Standards 9000 lays down a new development and provides insights regarding the contemporary pursuits of quality. This is an internationally agreed method of a quality assurance system (Sadgrove, 994). It has identified some typical quality problems and how they can be resolved by a system of quality assurance.

Table 2.1. Quality problems in construction projects

Typical quality problem	How problems solved
Staff makes mistakes as they are not properly trained	Ensure that everyone knows what their job is & how to do it
People use out of date specifications	Ensure that everyone uses the current versions of documents
Mistakes are made because the right person was not involved in the decision	Specify who will be responsible for the quality
Different Departments do not talk to each other (Behavior of building team)	Ensure co-ordination and communication between staff. (members of building team)
People do not see the quality as their responsibility	Place responsibility on the person who does it
Faulty products are delivered to the customer	Carry out proper inspection checks

Sources – Sadgover (1994)

In achieving a set quality target a building team headed by the project manager has to identify what quality is and what is expected as quality. Failure to adhere to above guidelines is visible in many construction projects especially because of the nature of uniqueness and complexity. This will be a good guideline for the current study.

Table 2.2 gives the involvement and responsibility of client, advisor and contractor. In achieving quality target it is important to identify the above relationships between professionals too. A building project has several distinct stages, two main ones are preconstruction and construction. Preconstruction and construction stages are subdivided into brief, design, specification, tendering and operation. This grouping in sequence of all the tasks are directed at accomplishing one particular outcome and every activity becomes a part of the project (Hill, 1987). Hills specifies that four factors affect a quality of a building.

- Quality of design process
- Quality of construction process
- Quality of product
- Quality of maintenance

Table 2.2 Structure of involvement & responsibility in construction projects

Client/Employer	Representation	Project Manager – Client's representative
	Advisor	Advisory group, feasibility, Consultant
	Stakeholders	Client's direct contractor, preferred suppliers

Advisor/Client	Design relationship	Architect, Design leader
	Management	Consultant Team Manager
	Design	Architect, Designer, Engineer, Consultant
	Administration	Project Manager, Consultant, Architect
	Site Inspection	Site Engineer, Clerk of works
	Financial	Cost Advisor, Quantity Surveyors
Contractor	Overall responsibility	Builder, Contractor, Design/Build Contractor, Management Contractor
	Contractor's Staff	Construction Manager, Construction Planner, Site Agent
	Partial Responsibility	Engineering Contractor, Package Contractor, Specialist Contractor, Sub-Contractor, Nominated Contractor, Work Contractor.

Sources – Murdoch & Highes

Hill (1987) specifies that quality of product needs reliability in all the materials and components incorporated in a building which shows that quality of materials will be dependent variable in determining the quality of end product. He further states that quality means conformance to predetermined requirements and there must be some means to ensure that an unbroken chain of conformance of requirements of a buildings.

Defective features on walls will be non-conformance with specification or defective design, this will give rise to non-achievement of quality of a building (Dilrukshi, 2008).

The quality of conformance is the extent to which a firm and its suppliers surpass the design specification required to meet the customers' needs (Pyzdek, 2988).

From the literature review it is observed that, poor quality buildings which do not comply with the requirements are built due to the following reasons. (Silva, 1998).

- i.* Fast build buildings
- ii.* Material related issues
- iii.* Labour related issues
- iv.* Equipment related issues
- v.* Shortage of technical adviser

The word 'quality' can have different meanings to different people in different situations and is a difficult term to define. The quality that is applicable to building projects is even more difficult to define (Silva,1998). Quality is unique in building industry. Some of the reasons for this are as follows (Silva,1998).

- i. Unlike in manufactured products, a building project is always a unique one.
- ii. Total responsibility for the creation of a building is usually divided between many different people and organizations. However, in design and building procurement design and construction will be a single and continuous responsibility.
- iii. In a building project; the design and construction do not come under a single and continuous responsibility. In most of the situations, those who design the building are separate from those who produce it.
- iv. A team for a building project usually works only once, in one particular project since a building project is a unique one.
- v. The building project extends comparatively to a longer period of time; therefore sometimes the meaning of quality is specific and easily changes over time. The three main participants of a building project are client, constructor and consultant even though the parties to a contract will be confined only to the contractor and the client.

The quality is the total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which a product and service in use will meet the expectation of customer (Pyzdek, 1988). He further defines the quality control as a standard of comparison for verifying or checking the findings of an experiment.

Crosby (1979) defines the quality as meeting requirements and states that the only true measure of quality is through the cost of quality. Requirements are initially determined by the external customers, external needs are cascaded to the individual process through the concept of the internal customer. The customer can be defined as anyone to whom the product is handed over. Thus there are a series of standards, or internal customer requirements that are developed to define exactly what is meant by quality at each phase. Crosby popularized the concept saying that “do it right, the first time and zero defects” approach after 1970’s.

Crosby further defines the quality as the conformance to requirement period. (Garwin, 1982) identified eight dimensions of quality.

Performance	-	Based on functional requirements.
Features	-	Customization & Product differentials.
Reliability	-	viability for individual product components.
Durability	-	Overall expected life of product before disposal.
Conformance specifications.	-	How well the manufactured product meets design
Serviceability	-	Includes how external failures are dealt with.
Aesthetics	-	Personal judgment, not related to functionality.
Perceived quality	-	Reputation and impact of advertising.

At this point it is necessary to identify direct application of above dimensions to building construction. It is observed that all dimensions are applicable to manufacturing industry. But only some dimensions are applicable for building industry.

In more recent times there is a more flexible view of scholars. Ashford (1989) commenting on quality in construction states that quality is a summation of all those characteristics which together makes a product acceptable to the market. Every producer of goods or services wishes to maximize the quality of his or her purchasers. On the other hand if a firm wants protect suppliers of such goods or services, it has to ensure the quality of their products.

Another important view expressed by Parti (1996) reveals that quality is difficult to measure and evaluate, and hard to achieve strictly through formal codifications and documentation process. (Guide to Project Management Body of Knowledge – PMBOK 2013).

One of the reasons for a low quality building will be low bid procurement system. This is a traditional method. In this situation, the drawback is that a successful bidder is solely determined on lowest bid. (Guidelines on Government Tender Procedure, 1997). Multi parameter bid award system is based on a system where the owner makes his choice considering the parameters such as time, cost and quality.

Fong, (1990) expressed that a proper understanding of professionals on quality management system (QM), quality strategy system (QS), quality assurance (QA) and quality inspection system are very important to achievement of quality, avoiding losses to the client. Fong further proposes a paradigm which looks at the overall quality of total built – environment. Quality profile needs to monitor quality throughout the construction process. It proposes to change fragmented one, based on co- ordination, communication and consensus of the building team (Brandon,1992); (PMBOK,2013).Construction relationship and organization theory play a competent role in determining quality assurance (Stone, 1967).

2.1.1. Briefing, Designing, Specifying and construction

Briefing, designing and specifying are the main stages that need strict supervision and control in the achievement of expected quality of the end product. Especially at initial stages identification of client's requirement is an important task because in the absence of clear identification of requirements, the project will never achieve set quality target (Silva, 1998). At the same time it is of utmost importance to prepare specifications accordingly for the design in conformance with client's requirements for the expected quality (Ashford, 1989). Construction or operation is a stage in which all defects in the previous stages come to light. Therefore close involvement of the consultants is a must, to see how contractor controls the construction stage particularly with regard to:

- a. Change to the design for expected quality due to changes to client's requirements
- b. Contractor's involvement to incorporate their quality design to the whole design.

Griffith has identified following reasons for a project to fall behind set quality target. Client and consultant misunderstood or not agreed upon the details of a brief, with special attention to the purpose of building, appearance or performance. The brief should precisely give the client's genuine needs. If not such discrepancies adversely affects the level of quality.

- a. Failure of the consultant to match the quality with cost at the initial stage.
- b. Failure to communicate design requirements to the contractor.
- c. Failure of consultant to understand the required quality in technical terms.
- d. Insufficient time frame to build the desired quality level.
- e. Failure to convince the required quality level to the contractor and other members of the team.

1.1.2 Past case studies

Silva, (1998), who was an architect in-charge of projects under study where her institute (State Engineering Corporation) was the consultant, has identified non-achievement of the expected quality. This is due to different set of reasons for each project. This study analyzed the reasons for non-quality and their effects. The researcher explains that the reason why three case studies were carried out mainly to get real picture of quality in “real life projects”. This is strengthened by “specific cases” as it will indicate “just how and why things happen as they do”. In these circumstances this research is important and relevant in deciding the reasons for non-quality and their effects.

General Project information

Project (i)	Design and Construction of an Advanced Technical Institute.
Project (ii)	Design and Construction of the Examination Centre.
Project (iii)	Design and Construction of the Sugathadasa Indoor Stadium.

Table 2.3 General Information of Projects

	Project 1	Project 2	Project 3
Client	Sri Lanka Institute of Advanced Training Education (SLIATE)	Ministry of Education and Higher Education	Urban Development Authority
Client's Representatives	Consulting Engineer, University Grant Commission (UGC)	Project Secondary Education Project	Sugathadasa Stadium Development Committee
Consultant	State Engineering Corporation (SEC)	SEC	SEC
Contractor	SEC	C.H International Technical Corporation	SEC
Funding Agency	Sri Lankan Government	Asian Development Bank	Sri Lankan Government
Project Cost	Rs. 240 Million	Rs. 362 Million	Rs. 30 Million
Location	Galle	Battaramulla	Colombo
Procurement	Design and Build	Traditional	Design and Build
Type of Building	Scattered buildings on a hilly site. Single to five storied buildings	Two inter-connected blocks, comprising four to seven stories	Stadium for 20,000. Spectators with ancillary building

Sources- Silva 1998.

Project 1**Identified problems affected the quality.**

- i Incomplete Drawing - Architectural drawings were available at commencement but structural drawings delayed.
- ii Clients requirements
Uncertainty of the identification of real purpose of the building to be constructed.
Misunderstanding & Misinformation.
Misunderstanding and wrong information affect the quality.
- iii Specifications
Poor selection of Colour Scheme and not applying selected colour code prevent the achievement of quality.
- iv Pressure on completion
Pressure on design and preparation of drawings disturb the concentration of professionals which results in poor quality drawings and ultimately low quality end product.
- v. Political influences
Political influences on the construction and completion, from inception to handing over of the project. Researcher is of the opinion that above reasons adversely affected the quality of a project.

Project 2**Identified problems affected the quality**

- i. Offering contractor, for a lower tender sum.
Client accepted a lower tender which is less than Rs. 100 Million of the consultant's estimate.
- ii. Design Review.
Review of design and drawings certain discrepancies identified jointly by architect, engineer and quantity surveyor.
- iii. Specification.
Problems encountered during construction stage due to non-availability of detailed method of assembly of many items (aluminum work, air-conditioning and fire work etc.)
- iv. Trade Skills.
Though consultant expected employment of specialist sub-contractors, the main contractor employed inexperienced sub-contractors for special trades.
- v. Work sequence. To
avoid the idling of labour, the contractor ignored the work program and painting work was begun when the walls were not ready to start painting.

The researcher's findings were that project has not achieved the expected quality, because of financial difficulties of the contractor, mainly because of unrealistic tender sum. Here the project suffered from the loss quality.

Project 3**Identified problems affected the quality.****Role conflict**

Role of Project Manager was not clearly defined. Problems arose due to co-ordination of project. Perhaps DGM issued instructions and took decisions on the construction, which led to conflicts/inter-group conflicts. The contractor made some changes to some structural details of roof without consent of their consultant.

Client's team

Client's team was comprised of powerful politicians. Due to poor technical knowledge of them problems occurred.

Power & Authority

Professionals had to work contrary to the specifications due to involvement of high powered politicians.

Ambiguity and changes in the requirements

There had been biases in the needs articulation, client and his committee tried to get their own need implemented.

Planning

It had been noticed that there was no proper plan for the project and due to this, there had been an imbalance in time, cost and quality.

The date of handing over was suddenly decided by the client and therefore cut shorts on finishes occurred creating low quality.

Remarks

From the analysis of the above case studies it is evident that all three projects were completed without achieving set quality target. These non-achievements of quality definitely gave rise to losses to one party and unjust enrichments to another party identified. From the above literature review it was evident that expected quality was not achieved in the above projects. Therefore, undoubtedly client suffered financial losses. Having this defect the author of the current research intends to formulate a model to calculate the losses to the client in respect of eleven selected projects. For this purpose he has selected eleven projects in different parts of the country.

3. Methodology

Methodology encompasses primary and secondary data. Primary data is collected by structured questionnaire and interviews with professionals and the client. Secondary data comprised of information via internet, journals, books and past studies. Collected data are compiled for easy reference and analysis. In addition valuation reports were prepared for subject properties by the author to represent values at two situations.

- I. Theoretical valuation with the current depreciation level as at today.
- II. Theoretical valuation for a normal quality building with standard level of depreciation as at today.

The author has personally investigated every project and necessary data were compiled and scheduled in tabular form. Two values were compared as a tool to assess the loss to the client as a result of such non quality. For this purpose eleven construction projects were identified in eight districts. In all projects the client is the Don Bosco Institute which is a charitable and educational organization. The projects of one client were selected to maintain a uniformity in all calculation and reliable comparison. The formulated models were complied with the legal definitions of compensation and the concepts of Equity. The framed models were used to calculate losses if any, for all eleven projects under review.

Following models formulated are as follows.

- (i) Cost comparison method.
 - (ii) Net income method.
 - (iii) Capital value method
- Finally losses due to non-achievement of quality were presented in a tabular form.

4. Analysis and Discussion

4.1. Models designed for calculation on loss of quality

The analysis of real estate values and cost information refer to non-achievement of quality of eleven building projects under review. For this purpose, the author formulated a methodology namely, the Theoretical method, Net income and Capital Value Method. By adopting such methods quality problem of each project was analyzed. Following factors were identified in the study.

- Eleven completed building projects of same client but in different districts were evaluated for current research.
- Inspected and calculated floor areas and collect detailed description of construction.
- Calculation of current cost of building after depreciation on theoretical value. (On a reasonably derived depreciated rate)
- Calculation of the actual current cost after depreciation on actual depreciation rate.
- Compared and contrasted answers of (c) and (d) to calculate the loss if any.
- Preparation of valuation reports by author for every project which are also considered as a tool to calculate value of buildings from real estate valuation point of view.

Model 1 (Theoretical Method) - Cost Comparison

- X - Initial cost
 d - depreciation % (Theoretical)
 d₁ - depreciation % (Actual)
 V - Value of building (Theoretical)
 V₁ - Value of building (Actual)
 L - Loss

Theoretical Value

$$V = X - (X \times d \%) \quad \dots\dots\dots (1)$$

Actual Value

$$V_1 = X - (X \times d_1 \%) \quad \dots\dots\dots (2)$$

(1) - (2) Above.

$$V - V_1 = \{ X - (X \times d \%) \} - \{ X - (X \times d_1 \%) \} \quad \text{----- Model 1}$$

If the answer is plus, the difference will be the loss to the owner.

Model 2 (Net Income method)

The net income derived by using of 4, 5, 6 (Method of valuation for real estate) method or by preparing comparable rent schedules, if available.

In case of charitable properties, comparable rentals are difficult to match. However, author calculated rent of all eleven projects under review, by dividing capital value by Years Purchase.

$$\text{Floor area} = \text{fa}$$

$$\text{Rent} = R$$

$$\text{Rate /unit} = r \quad (\text{quality building})$$

$$\text{Rate /unit} = r_1 \quad (\text{non-quality building})$$

$$\text{Annual net market rent for a building with expected quality} = R$$

$$\text{Annual net market rent for building with non quality} = R_1$$

$$R = \text{fa} \times (r) \quad \dots\dots\dots (1)$$

$$R_1 = \text{fa} \times (r_1) \quad \dots\dots\dots (2)$$

Equation (1) - (2)

$$R - R_1 = \text{fa} (r) - \text{fa} (r_1)$$

$$R - R_1 = \text{fa} (r - r_1) \quad \dots\dots\dots \text{Model 2}$$

If the answer is plus, that will be the loss of rent; due to non quality building.

To calculate loss of rent either (1) or (2) given below can be used.

Loss Of Rent (LOR) = Capital Value (CV) / Years' Purchase (YP)

$$\text{LOR} = \text{CP} / \text{YP} \dots \dots \dots (1)$$

or

$$\text{LOR} = 3\% \text{ of Land Value (LV)} + 5\% \text{ of Building Value (BV)}$$

$$\text{LOR} = 3\% (\text{LV}) + 5\% (\text{BV}) \dots \dots \dots (2)$$

Model 3 (Capital value)

(i) Capital value method

R = (net rent from expected quality)

R₁ = (net rent from non-quality)

Capital value = CV (quality building).

Capital value = CV₁ (non quality building).

Years' Purchase = YP

$$\text{CV} = \text{R} \times \text{YP}$$

$$\text{CV} = \text{R} \times \text{YP} @ \% (n) \text{ yrs} \dots \dots \dots (1)$$

$$\text{CV}_1 = \text{R}_1 \times \text{YP} @ \% (n) \text{ yrs} \dots \dots \dots (2)$$

$$\text{CV} - \text{CV}_1 = (\text{R} \times \text{YP}) - (\text{R}_1 \times \text{YP})$$

$$\text{CV} - \text{CV}_1 = \text{YP} (\text{R} - \text{R}_1) \dots \dots \dots \text{Model 3a}$$

If the answer is plus, the difference is the loss due to non-achieved quality.

(ii) Cost and value method

Quality building

R₁ = Net rent under 3,5,6 method.

R₂ = Net rent under Investment method

R₃ = Average of R₁ and R₂.

Non quality building

R₄ = Net rent under 3,5,6 method.

R₅ = Net rent under Investment method

R₆ = Average R₄ and R₅.

CV = Capital Value of quality building.

CV₁ = Capital Value of non quality building.

Therefore ;

$$\text{CV} - \text{CV}_1 = (\text{R}_3 \times \text{YP}) - (\text{R}_6 \times \text{YP})$$

$$\text{CV} - \text{CV}_1 = \text{YP} (\text{R}_3 - \text{R}_6) \dots \dots \dots \text{Model 3b}$$

If the answer is plus, the difference is the loss due to non quality.

4.2. Quality Analysis

Silva (2000), has derived the following factors as causes for non-achievement of three large building projects analyzed from Sri Lankan point of view.

- Incomplete drawings, misunderstanding and misinformation, uncertainty of specifications, pressure on completion, and political influences.
- Opting for lower contractor, discrepancies in designs reviewed and poor cost management, misuse of trade skills and problems in work sequence.
- Role conflicts, inter-group conflicts, power and authority, ambiguity and changes in requirements, poor planning and crashing, poor communications and co-ordination.

Some of the causes for non-achievement of quality of buildings have been identified by author, in relation to the eleven properties under review in the present research.

Following analysis focused on above definitions.

According to literature review and data collection, above causes (a,b,c) are common, affecting quality of a building. These causes were identified in all eleven projects under review in the current

research at different levels. This was confirmed by discussions with the authorities of Don Bosco (the client) and field inspections personally carried out by author himself who is an incorporate valuer, a lawyer and a quality surveyor in the industry and following facts were observed.

- (a) Poor design & planning.
- (b) Poor usage and application of trade skills
- (c) Poor construction project management
- (d) Wrong selection of contractors.
- (e) Poor management, supervision and planning
- (f) Irregular cost management.
- (g) Use of poor quality building materials..

Table given below elaborates on above issues linked (a - g) with the 11 projects under review

Table 4.1 Percentages of identified defects

Project	(a)	(b)	(c)	(d)	(e)	(f)	(g)	Total	Percentage
1	X	X	X	X	X	X	X	7	100
2	-	-	X	X	X	-	X	4	57
3	-	X	X	-	X	X	-	4	57
4	-	X	X	-	X	X	X	5	71
5	-	-	X	-	-	-	-	1	14
6	x	X	X	-	X	X	-	5	71
7	X	X	-	X	X	X	X	6	86
8	-	-	X	X	X	-	X		57
9	X	X	X	-	X	X	X	6	86
10	-	X	X	-	X	X	X	5	71
11	x	X	X	-	x	X	x	6	86
Total	5	8	10	4	10	8	8	53	68

Source: Compiled by author

The above table shows author's observations by close field inspections, in consultation with client's authority and relevant professionals. It is evident that effects which identified as defects are the ones which lead to low quality. Accordingly, Project No.1 has suffered all identified defects (a – g) and Projects 7, 9 and 11 come to the second place showing a percentage of 86 of identified defects. Project 5 suffered only by 14%. Accordingly, the order of low quality is listed below.

Project	low quality %
1	100
7, 9,11	86
4, 6,10	71
2, 3, 8	57
5	14

Having studied causes for non-achievement of quality of buildings, author designed four methods to analyze the projects visited, and data was collected there from. The eleven construction projects of completed buildings for Don Bosco Institute, showed that main causes for low quality, are poor construction, project management and supervision. (Refer above table). These fact were derived from the discussions held with the professionals and the examination of available documents at Don Bosco Institute. Author's field visits confirmed that contractor's work has not been monitored due to

lack of, construction engineering and architectural expertise to the projects, which has given rise to poor quality buildings.

The author as an incorporated valuer, has prepared real estate valuation reports in respect of each property to arrive at the current value of such land and building required for analysis.

This has been done via field inspections in respect of each property located in eight districts in Sri Lanka. Calculation of current cost of buildings revealed that there is higher a depreciation than that of the accepted standard rate of depreciation in similar buildings. The standard rate of depreciated rate is derived from 30 professionals and their opinion is as under.

Year 1 – 20	1 % (each year).
Year 21 – 40	1.5 % (each year).

Poor quality construction was identified from following common features, which appear in the normal buildings compared with buildings under reviewed.

- (a) Major and minor cracks on walls
- (b) Tilted buildings
- (c) Additional expenses incurred to upgrade the building, due to inadequacy of original quality.
- (d) Lower life cycle of buildings and higher life cycle cost.
- (e) Faster physical, economic and functional obsolescence.
- (f) Failure of concrete structure of the buildings.
- (g) Use of poor quality materials by contractors, due to ignorance of the client.

Observations made by the author enabled identifications given above, the common defects in the building under review, in conjunction with adhered defects in subject buildings.

Identified defects in the buildings concerned in the research are;

- (i) Lapses in design stage.
- (ii) Tilted building; reinforced by additional expenses. (Don Bosco Head Quarters building)
- (iii) High life cycle costs.
- (iv) Obsolescence (physical and functional)
- (v) Poor quality material used.
- (vi) Inadequacy of trained professionals (e.g. the professionals involved in the construction of headquarters building Don Bosco are not competent and contractor is not reliable, no adequate soil tests have been carried out and poor design in many cases.

Having identified the defective conditions of 11 buildings visited, four methods have been designed to calculate and test non-quality issue of each property due to above identified features.

(i). Method 1

Theoretical Estimate Method

- (a) In this method depreciated current cost is calculated by using reasonable building rates; most appropriate rate depending on the nature of construction and location etc. These

rates were derived by the author with his own experience over 25 years in the field of quantity surveying and in consultation with prominent quantity surveyors in Sri Lanka.

- (b) Theoretical current cost is compared with the cost estimates and values of buildings ascertained by a quantity surveyor and valuer (Fellow member of Institute of valuers of Sri Lanka) to derive the loss, if any, due to non-quality buildings.

(ii).Method

Net Income Method

The net rent should be ascertained either with rental comparisons, or with 3, 5, 6 method of valuation since the author has selected mainly educational buildings 3, 5, 6 method is the most appropriate method to be adopted. Net rent is derived by taking 3 % of land value, 5% of building value and 6 % of value of machineries. From net rent calculated under theoretical values and actual values, the loss of net rent may be ascertained if any.

Net rent also calculated by dividing capital value of the property (computed in the valuation report) by relevant Years' Purchase.(present value of Rs. 1 per annum)

(iii).Method 3

Capital Value Method

Under this method, capital value was calculated by multiplying net rent and relevant Years' Purchase. This was done for both instances of theoretical capital value and currently available capital value. Comparison of two answers gives loss of capital value, if any, due to non- quality construction.

Statistical Analysis

Model 1 (Theoretical estimate) Cost Comparison Method

Theoretical Value

$$V - V_1 = \{ X - (X d \%) \} - \{ X - (X d_1 \%) \}$$

If the answer is plus, the difference will be the loss to the owner.

Computation by Model 1 (For three projects)

Cost comparison Method

Building No 1 project 1 (Building age 15 yrs.)

Theoretical estimate

30,800 sqft @ Rs. 3000.00 per sq ft -Rs.92,400,000.00

Less

15% for Depreciation

Rs.4,620,000.00

Depreciated present estimate

Rs.87,780,000.00

Incorporate valuer's estimate

valuer's depreciated estimate

Depreciated current building estimate Rs. 61,600,000.00

(as per valuation report)

Loss due to non-quality (87,780,000- 61600000)Rs. 26,180,000.00

Annual loss

Total loss = YP @ 6 % 40 years x Annual loss

Annual loss = 26,180,000/ 15

Annual loss = Rs. 1,745,333.00

Building No 2 (Building age 15 yrs.)

Theoretical estimate

8,400 sqft @ Rs. 1500.00 per Sqft Rs. 12,600,000.00

Less

15% for Depreciation

Rs.1,890,000.00

Depreciated present estimate	-	<u>Rs. 10,710,000.00</u>
<u>Incorporate valuer's estimate</u>		
<u>valuer's depreciate estimate</u>		
Depreciated current building estimate (refer recent valuation report)	-	<u>Rs. 8,400,000.00</u>
Loss due to non-quality (10,710,000-8,400,000)		<u>Rs. 2,310,000.00</u>
<u>Building No 3 (Building age 15 yrs.)</u>		
<u>Theoretical estimate</u>		
13,370 sqft @ Rs. 2500.00 per sqft	-	Rs. 33,425,000.00
<u>Less</u>		
15% for Depreciation	-	<u>Rs. 5,013,750.00</u>
Depreciated present estimate		<u>Rs. 28,411,250.00</u>
<u>Incorporate valuer's estimate</u>		
Depreciated current building estimate (refer recent valuation report)	-	<u>Rs. 24,060,000.00</u>
Loss due to non-quality		<u>Rs. 4,345,250.00</u>

Summary of results

<u>Item</u>	<u>Theoretical Estimate</u>	<u>Inc.V's estimate</u>	<u>Loss</u>	<u>%</u>	<u>Annual loss</u>
Project (1)	87,780,000	61,600,000	26,180,000	29.80	1,745,000
Project (2)	10,710,000	8,400,000	2,310,000	21.50	154,000
Project (3)	28,411,250	24,066,000	4,345,250	15.30	289,683
Total	126,901,250	94,066,000	32,835,250	25	2,188,683

Accordingly total loss due to quality is Rs.32,835,250.00

Annual loss Rs. 2,188,683

Derived ModelModel 2 (Net Income Method)

(a) The net income can be derived as in above analysis of 3, 5, 6 method or by preparing comparable rent schedules.

(b) Net Rent can also be reliably calculated by using the valuation equation ;

$$\text{Net income (NI)} = \text{Capital Value (CP)} / \text{Years' Purchase (YP)}$$

$$\text{Accordingly NI} = \text{CP (theoretical)} / \text{YP} \text{ ----- (1)}$$

$$\text{NI}_1 = \text{CP}_1 \text{ (actual)} / \text{YP} \text{ ----- (2)}$$

$$\text{NI} - \text{NI}_1 = \text{Loss} = (\text{CP} \times \text{YP}) - (\text{CP}_1 \times \text{YP}) \text{ Model 2(a)}$$

Computation losses by Model 2.

Following steps need to be followed for better results.

Step 1

Estimate the theoretical cost of building.(current).(building No.1,2,3).

Step 2

Extract the value of land from valuation report and add to building value.

Step 3

Estimate the cost of building.(actual).(building No.1,2,3) as per incorporated valuer.

Step 4

Extract the value of land from valuation report and add to building value.

Step 5

Calculate net rent using 3,5,6 method by using theoretical building cost and the cost of buildings as estimated by the valuer.

Step 6

Calculate the capital value by adding the land value separately to both theoretical and actual building values.

Step 7

Such capital value can be divided by relevant Years' Purchase to find out the net rent.

Step 8

Take the average of 5 and 7 to estimate the loss on rent.

Computation of loss of rent by model 2Calculation 1

Theoretical estimate of buildings (as above)	-Rs.	126,900,000
Land value (valuation report)	-	<u>Rs. 55,847,000</u>
Total value	-	<u>Rs. 182,747,000</u>

Calculation of annual rent (using 3, 5, 6 valuation method)

Building	126,900,000	x	5/100	=Rs.	6,345,000
Land	55,800,000	x	3/100	=	<u>Rs. 1,674,000</u>
Annual Net rent	=				<u>Rs.8,019,000</u>
Valuer's estimate of buildings (Valuation report)	-				Rs. 94,000,000
Land value (valuation report)					<u>Rs. 55,800,000</u>
Capital value	=				<u>Rs.149,800,000</u>
Building	- 94,000,000	x	5/100	=	Rs.4,700,000
Land	- 55,800,000	x	3/100	=	<u>Rs 1,674,000</u>
AnnualNet Rent	=				<u>Rs.6,374,000</u>
Loss = 8,000,000 - 6,300,000	=				<u>Rs.1,700,000</u>

Calculation 2

Capital value	=	Net annual rent x YP @ 4% 40 yr.
Net income	=	182,700,000 / 19
Net annual Rent	=	<u>Rs. 9,615,789</u>
Capital value = Net annual rent x YP @ 4% 40 yr.		
Net annual rent	=	149,800,000 / 19
Net annual rent	=	<u>Rs. 7,884,210</u>
Loss = Rs. 9,800,000 - Rs. 7,800,000	=	<u>Rs.2,000,000</u>

Calculated loss from above analysisUnder 3,5, 6 methodAverage Rent

Rs. 8,000,000 pa	Rs.9,800,000 pa
Rs. 6,300,000 pa	Rs.7,800,000 pa

Under investment method

Rs. 8,900,000
Rs.7,050,000

Model 3 (Capital value)

Capital Value can also be calculated by comparing two values of 'quality building' and the 'non quality building'.

Loss of Capital Value (LCP) = Value of Land (VL) + Value of Quality Building(VQB) minus Value of Land (VL) +Value of Non Quality Building (VNQB).

$$LCP = (VL + VQB) - (VL + VNQB)$$

ComputationCapital value under theoretical estimate (Figures from model 2).

Capital value	=	Net income x YP @	4% 40yr
CV	=	8,000,000 x 19	
CV	=	<u>Rs. 152,000,000</u>	

Capital value under valuer's estimate

Capital value	=	Net income x YP @	4 % 40 yr
CV	=	6,370,000 x 19	

$$\begin{aligned} \text{CV} &= \text{Rs. } 121,030,000 \\ \text{Loss of capital value due non-quality} & \\ &= \text{Rs. } 152,000,000 - \text{Rs. } 121,000,000 = \text{Rs. } 31,000,000.00 \end{aligned}$$

Loss of capital value due to non quality will be Rupees Thirty One Million.

Identified reasons for non-quality of buildings

Following reasons were identified from literature review and past research work. Identified reasons for non-achievement of quality are professional involvement, management, use of poor materials, urgency of work completion and political influences. In most of the instances in public sector most lapses cannot be made liable due to political power.

However in a situation where non quality building is constructed, losses should be computed and assessed for the suffered party to get compensation against such loss. As theme of research is unjust enrichment, once the loss is computed it should be claimed from the party unjustly enriched at the expense of owner.

In fulfilling the second objective of the research, author has identified non quality in all building projects that he has inspected and reviewed in the research. Consequently author has concluded identifying great losses in each of the project. Another objective of study is to examine whether there are designed models for calculation of compensation for each loss due to non-quality. From the questionnaire survey and interviews held with professionals it was disclosed that there is no such system of compensation except some ad hoc methods.

In achieving other objective author has formulated four models to compute losses in compliance with real estate terms, Law of Equity, and legal definition of compensation. Having calculated the losses for all eleven projects under three models author has compiled results in a tabular form for easy reference.

Summary of results under models 1,2, 3

Table 3.2 losses from projects

<i>Location</i>	Theoretical% Cost Method	Net Ren t% Method Value	Capital %	Average %	Remarks
Don Bosco Headquarters <i>Dungalpitiya, Negambo Gampaha district</i>	25.8	20.5	25	23.70	(Loss)
<i>Don Bosco, Uswetakeyyawa Wattala - Gampaha district</i>	11	29	11	17.00	(Loss)
Don Bosco - Kotadeniyawa Gampaha district	6.6	1	6.6	4.70	(Loss)
Don Bosco, Dankotuwa Puttalam district	6.6	6	6.1	6.40	(Loss)
Don Bosco, Matiyagane Kurunegala district	1.3	0.8	0.8	0.43	(Loss)
Don Bosco, Murunkan, Mannar district	16.5	16.5	16.5	16.50	(Loss)
Don Bosco, Bibeale Monaragala district	16.6	14.8	15	15.40	(Loss)
Don Bosco, Arabegam Kandy district	0	3.6	3.7	2.40	(Loss)

Don Bosco, Katukele Kandy district	16.4	14.7	16.4	15.80	(Loss)
Don Bosco, Hungama Hambantota district	7.8	2.1	7.8	5.90	(Loss)
Don Bosco, Nochchiyagama	19.1	18.1	19.1	18.70	(Loss)

Sources : Compiled by author

Above table shows that average percentage of losses of buildings in all 11 projects, due to non-achievement of required quality. Lowest quality is found in project No.1, that gives highest loss. Inversely highest quality is achieved in project No.5 which gives lowest loss. In other words it is evident that the client (Don Bosco Institute) suffered losses due to poor quality and in turn unjust enrichment gained by contractors and other relevant parties. Therefore the client is entitled for compensation for all losses caused by non-quality building and it should comply with legal definition of compensation.

5. Conclusion

- a. A low quality building gives rise to financial losses to the client.
- b. Different reasons create non quality buildings.
- c. Currently no specific method available for reasonable compensation for non-quality.
- d. Professional involvement too responsible for non-quality.
- e. Formulated models in the current research purely based on income and real estate factors which appear to be the best method to remedy any loss under Equity.
- f. Identification of quality can be done by various means. Author's conclusions based on a selected method of valuation of real estate and cost approach.
- g. Low quality buildings reduce economic life of a building with high maintenance costs. This definitely affects the cash flow of the client. It also causes high depreciation.
- h. Majority of construction projects suffer from quality problem.
- i. Proposed models are in accordance with the main theme of the research.

6. Recommendations

- (a) Responsible institutions should be established to take measures to maintain standards and specifications to derive expected quality.
- (b) On completion of a project, the quality should be tested to examine the expected quality and if its low quality building, the loss should be assessed and compensation should be paid by responsible parties.
- (c) If defects appeared after certain period of time losses due to non-quality should be calculated by using reasonable models.

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This paper is a byproduct of an ongoing Ph. D research of the author. This publication is focused on the theme of the research in progress based on compensation for losses and unjust enrichments of real estate.

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Review of Price Formation of Land and Landed Properties in Colombo: Is it a Myth or Reality?

D. Prathapasinghe¹

¹Chartered Valuation Surveyor, Managing Director, Prathap Chartered Valuation and Consultancy (Pvt.) Ltd.

dprathapasinghe@gmail.com¹,

R G Ariyawansa²

²Professor, Department of Estate Management and Valuation, University of Sri Jayewardenepura, Sri Lanka

ariyaw71@sip.ac.lk²

Abstract

Land and landed properties are fundamental ingredients for the socio-economic development of a country. In any development project, land and buildings are essentially a part of it as either among its inputs or in the process or among the outputs of the project. On the other hand, land is an inevitable investment or/and consumption purchase of all individuals, families, organizations and nations. Hence, in a market economy, land and property market is supposed to play a live and a vibrant role instead to be a silent or unreliable sector. However, research on land and property markets in various context raises debatable questions over some concepts associated with land and property markets such as “informality of markets”, “immaturity of markets”, “land as dead capital”, “property crimes”, “lack of property democracy”, “unaffordable land and property prices”, “lack of professional engagement” etc. Even though there are several debatable problems in global land markets, it is clear that all such problems are interrelated and collectively influence the price formation resulting unprofessionally decided property prices in the market disrupting all the socio-economic goals of such nations. Most of developing cities, including the city of Colombo, with poorly organized land and property markets have been facing this problem as a vicious cycle. Hence, the aim of this paper is to analyze the role of the property markets in general and issue in connections with the price formation of land and landed properties in Colombo in particular. This theoretical discussion is underpinned with some practical cases and life experience of authors. At the end, some recommendations are presented for a moderate situation against the problem.

Keywords: *land and property price, price formation, market economy, professionalism, land and property market*

1 Introduction

Land is considered from different perspectives by different disciplines. For households, it is a location for their residence where utility is maximized, for business firms, it is a location for them to maximize profit. For individuals, families and nations, land is a wealth, treasure, power and the mighty. For physical planners, it is an actual space suitable for living, working and other social functions. It is an economic commodity in economists' and accountants' viewpoints. When it comes to lawyers and valuers, it is a set of real property rights. In general, it is a fundamental resource on which economic well-being and social stability of individuals, families and nations is based on. As such, it should be continuously monitored and managed for the benefits of the present and the future generations (Ariyawansa, 2008; Economic Commission for Europe, 2004).

Furthermore, land is a key factor of production. Accordingly, a rent is paid in return for its use. It holds space for other factors of production used in any economic activity. Generally, Land is a natural resource which is finite in supply; as such for any investment decisions, the scarcity of land is a prime concern (Harvey, 1993). At the same time, land becomes an economic resource once it is secured with property rights (Perera, 2008). These property rights are in various forms. “The nature of land rights and the way they are enforced have significant consequences for resource allocation and economic efficiency” (Gershon 1999 in Perera 2008). On the other hand, land is a foundation for any social and economic activities of the society and it is depicted as a source of wealth of the society. However, land has to be identified in scientific means and secured and managed by professional mechanism so that those can be used in an economically viable and socially acceptable manner. If it is not utilized in this manner, land may be just an element, and not an economic resource, which generates benefits to the society. As De Soto mentions, the resources, which are not properly identified and secured to make commercially and financially visible in the economy, it just becomes dead capital (Ariyawansa, 2008, Perera 2008; Soto, 2000). It is further argued that such a situation may create huge irregularities and issues which may paralyze the smooth flow of economic and social activities in an economy. Particularly, it may have negative impact on the effective functioning of the property market and hinder effective resource allocation of the economy (Ariyawansa, 2008; Perera, 2008; Soto, 2000).

On the other hand, land has special characteristics which clearly distinguish it from other production factors and those characteristics are unique in nature. The common attributes of land are; each parcel of land is unique in its location, land is not physically mobile, it is durable, and its supply is finite thereby value is determined (Premathilaka, 2016; Appraisal institute 1996). In economic terms, land has value as a source of wealth since it is demanded for various economic and social activities in the market, as such it is considered as marketable commodity. As supply is fixed, increased demand leads to increased price in the market. In fact, the natural supply of land is fix and, therefore, increase of usable land is expensive as it incurs various cost such as cost of preparation, acquisition, legal cost, professional charges and so on.

At the same time, land has to be protected in the interest of public. Though private land ownership is allowed in free market economies, its use is restricted for the betterment of the mass society as it is a natural resource, which has to be managed and used properly to ensure its existence over generations for the well-being of the globe. On the other hand, it is restricted as the use of land by one should not disturb or violate right of others (Hettiarachchi, 2015). Therefore, government intervention is a must in securing land right through various land ownership and use controls by means of land registration, licenses, approvals, land zoning, building & planning regulations etc. It can be questioned as such mere regulation, procedures etc are adequate to monitor and manage land and landed property market. Simple answer is “not adequate”. In fact, the market mechanism should be strengthened by means of scientific education on land and building market, increasing the availability and access to data and information for the market participants, establishing professionally qualified and accountable facilitations for the market operation etc. These actions may be more powerful tools for monitoring and management of valuable and scared land in the market.

Real Estate

Based on land, the term Real Estate has emerged. Real Estate constitutes land and everything attached to it and it is physically tangible. “Real Estate comprises of land and all things that are natural parts of land (i.e. trees, mineral etc.) as well as all things that are attached to it by people (i.e. buildings, improvements etc.)” (Shapiro *et al*, 2013; The Appraisal of Real Estate, 1980). This means that land can be improved and developed by adding values for various purposes subject to legal and planning compliances. If no improvement is done, land will remain as a natural resource on its own right. This implies that along with any attempt taken by the man to modify the natural land adding artificial feature(s) either in terms of physical, legal, or social, it becomes a real estate. Real estate can be categorized in terms of its use as Residential, Commercial, Industrial, Leisure, and Agricultural use etc.

Real estate is a unique product, which has distinct characteristics when compared with other economic commodities in the market. Real estate can be owned by public or private and its use allocation is restricted by government intervention as taxation and land use control. Key unique features of real estate are summarized below.

- Elasticity of supply. Unlike the land, properties/structures built on land can be increased.
- Each parcel of real estate is unique in its location and composition, it is physically immobile, and is durable. This feature is similar with the land. However, in many case uniqueness of each parcel of real estate can be monitored as it is decided by the man.
- Heterogeneity - each parcel of real estate is different in location, size, shape, specification and amenities etc.
- High cost of transfer. Transferring in physical is impossible.
- Special risk. It associates various types of risks such as physical risk, risk of liability, financial risk, economic risk, and so on.
- Lack of liquidity in the property market. This is an acute situation due to high transaction and entry cost, size of lots and their indivisibility, imperfect knowledge, lack of transactions, lack of central market place, and legal issues in terms of securing title. Yet, innovative real estate ownerships/tenure types, highly marketable real estate products and intensive marketing approaches etc may reduce the cost of transactions, increase the value and capacity of properties to be kept as a collateral, being hedged against the inflation and thereby increase the liquidity.
- Lack of transparency and published market data- unlike other markets, one key feature of the property market is that it has no free & easy access to data and information for property transactions. Even available data are neither updated nor transparent. Therefore, property market is considered as imperfect.
- Multiplicity of interest. Single real estate can generate different property interests. For instance, for a residential property, one can claim as a freeholder while another one can claim as leaseholder and at the same time some others can claim for different interests under some personal agreements from the same property.

- The motivation of ownership. This means that real estate can be owned for different purposes.

(Authors modified views of Isaac and Steley, 2000; Isaac and Enever, 2002)

Real Property

The above context leads to create a land tenure system. The land tenure is the way under which different types of land rights are secured. In legal perspective, the secured property is called as Real Property. “Real Property comprises all rights, interest and benefits inherent in the legal ownership of physical real estate. Specially, an estate in land is the degree, nature, or extent of interests that a person has in it” (Premathilaka, 2016; Ariyawansa, 2016; Shapiro *et al*, 2013; The Appraisal of Real Estate, 1980). Property ownership can be different types such as Freehold, Leasehold, Tenancy, or Right to use etc. Moreover, it can be public or private ownership. All types of property rights can be subject to government or private limitations. Government limitations can be taxation on land, land acquisition for public purpose and restriction on use etc, while private limitations can be easements, right of way, and party walls etc. (Premathilaka, 2016; Ariyawansa, 2016; Shapiro *et al*, 2013; Appraisal Institute 1996).

Secured land ownership enhances productivity of land related investment. As such, it leads effectively to create the property market where sale, purchase, lease or renting of land is taken place for considerations. Particularly, private property right is becoming a key factor of development mostly in market based economies as it plays a vital role in the development of a country (Wakely, 2008; Byamugisha, 1999). It also causes positive impacts on economic growth, land productivity, property market efficiency, financial market and social wellbeing of the people etc. Proper and well managed property right system improves accesses to institutional credits, more investment in land, and higher productivity of land, higher output and income from lands thereby the higher land values (Wakely, 2008; 2012; Byamugisha 1999) and it increases the property liquidity in the market. Byamugisha says that “... The role played by private property rights in the economic developments of the western world has been powerfully documented by economic historians such as North and Thomas (1973) and Rosenberg and Bridzell (1986). Private property right emphasizes “...the ability of individuals and organizations to make enforceable claims to property and make contracts stick...” Byamugisha concluded by emphasizing that there is a significant positive association between secure property rights and economic growth (Byamugisha 1999). Private property right may lead to other property related problems as well. Regularity process is much more difficult when private property ownership is very high. Supply can't be increased by intervening the government when it is required. Concept of international property ownerships is other side of this problem. Local community may not happy with the offering of land right to other nations. Foreign money flowing into the local property market through property rights may create some other particular market problems such as artificial increase of local property prices.

Land & Property Market and its Role

Simply the property market is a mechanism through which property transactions are taken place. Buying and selling of land and buildings is the primary role of the real estate market. However, there are several associated market operations as prerequisites of

active property markets such as transactions of property finance, provision of infrastructure and facilities, and various services as complementary products of the real estate markets. All these markets are supposed to act collaboratively to make sure efficient and effective delivery of required space for different social activities.

As it is mentioned above, the common attributes of land are; each parcel of land is unique in its location, land is not physically mobile, it is durable, and its supply is finite. Land secured by tenure is considered as an economic commodity which can be exchanged between parties (buyers & sellers) for consideration. What is actually exchanged in the market is real property (property rights) not just a physical real estate itself. Land as economic commodity is demanded either for rent or outright consideration for its use as such it has ability of trading which leads to creation of property market.

Matured and efficient property market is the place where the real properties are traded between buyers & sellers through a price mechanism usually without undue restrictions (Ariyawansa, 2016.) Further, it is expected that buyers and sellers are prudent & knowledgeable and also act at arm length transaction. Generally, level of efficiency of any market is determined by its formation, price setting, standards & quality of products and the efficiency of its function. As against other efficient market, the property market has no particular place to be identified. Also contrary to the others, the property market is informal in nature, and it is less structured, and more diverse. In all aspects, the property market is regarded as unique. Moreover, transactions are more heterogeneous, and fewer in number. Also, buyers and sellers are randomly come together in determining prices which mostly happen through agents and almost of all transactions require professional opinion on potential likely price of a given property. Consequently, the market is inevitably more complex. As Peter Wyatt points out (in Appraisal Institute 2001 in Property Valuation 2013). “the market is never being considered as strongly efficient due to decentralized trading, the heterogeneity, and high cost of each unit of products, the high cost and lengthy process involved in property transaction...” Land has derived demand so volume of property market and its values depend on the affordability of income or extra profits made elsewhere in the economy to be transferred into property market of which performance in return influence the performance of the economy further. Moreover, many studies revealed that there is direct relationship between performance of the property market and that of the wider economy of a country (Wakely, 2008).

Almost all activities of people are directly or indirectly based on the land. It is generally an economic fact that people’s needs are continually increasing and its diversity and multiplicity leads to complexity of satisfaction. Also the property demand depends on four cornerstones namely Scarcity, Utility, Desirability and Purchasing power (Premathilaka, 2016). First two facts are land related and the second two customer related. If all four factors are not met accordingly, neither a property exchange is expected nor the market transactions is realized.

On the other hand, changing of demographic setting in society results major impact on property market. Demographic variables are the data that describes the composition of a population, such as age, race, gender, income, migration patterns and population

growth and so on (Ariyawansa, 2009). Demographic changes may gradually convert rural areas into small urban areas, small urban areas into large urban areas and large urban areas into cosmopolitan cities where property markets are inevitably much more complex. Hence, demographic information and statistics are highly significant factors that affect how real estate is priced and what types of properties are in demand. Major shifts in the demographic profile of a nation can have a large impact on real estate trends for several decades, for instance impact of population ageing on real estate will be considerable in all over the world (Ariyawansa, 2008; Perera, 2008).

In a demographic change, migration of people is one of the major influence on real estate as people are moving from one place to other for various reasons such as education, employments, health, better facilities, political reasons, socio-cultural and environmental reasons (Ariyawansa, 2009). On the other hand, the purpose of migration may be in different forms such as permanent or temporary. If temporary it may be for short term or long term, multiple visits or single visit. Individual visits or groups such as families or teams. Accordingly, it is the responsibility of the property market to provide required space for different migrants at required quality and quantity at an affordable price. In this connection pricing may be a very crucial factor for the promotion of migrants for cities as an economic development strategy. If real estate prices are not affordable, such cities may not be attracted by tourists, students, investors etc.

When considered the demographic profiles of a country, it is evident that internal migration of a country is a continued process which is particularly a result of urbanization, employment availability, good education & health and overall it is due to an expectation for high standards of living patterns, economic prosperity and social wellbeing. Therefore, more the migration is taken place in urban areas, higher the demand for land and landed properties. Reason is that people want a place to accommodate with other related services, facilities and infrastructure. Consequence of higher demand for land in urban areas is that the existing large lands are subdivided into smaller plots in compliance with planning regulations to meet the increased demand. Accordingly, subdivision of land for sale has become an established business venture particularly in suburban areas. For instance, in Colombo suburbs and outskirts, many land sales have been successfully carried out by real estate companies during the last few decades for instance Home Land Ltd, Prime Land Ltd, The Finance Ltd, Blue Mountain Ltd... are some of the key players.

Even though the land market operations are made by reputed companies in the country, due to some irregularities, informalities as well as immaturities of the market system, the land market in Colombo is evident as an unaffordable high priced land and property market. It has happened through simple market processes. Firstly, those who needed land used to seek land sellers in and around the locality where they wish to settle with their families. Similarly, investors who are to invest on businesses of services, facilities and infrastructure also tend to look for lands in and around people's settlements. Consequently, demand for land has happened to increase paving the way for more and more subdivisions. Along with this market experience, individuals who have small plots of land also tend to sell their land at similar or more price without incurring the cost of preparation as much as those companies spent. This way such individuals could earn huge income as a capital gain of their lands. Another adverse impact of land sale experience

in Colombo is that those who have saving, may be black money or foreign earnings, buy lands as an investment motive hoping to enjoy capital gain through selling the land in future at a higher price as the land price is being rapidly increased. These process increases the land speculation and thereby reduction of the land supply for development. All these ultimately determine unprecedented higher price for land and buildings in Colombo.

One can simply justify the higher land price (the determination of higher price) as correct phenomenon pointing out the fact that the land is limited in supply and due to higher demand determination of higher price is in line with the theory. It is true to a certain extent. However, the views of the general public and small and medium sector investors are different as they are suffering from the affordability issue of land and property in the city of Colombo. They are having some views as the “land market price is artificial” and “land sellers are earning extraordinary profits” etc. This process will increase more marginalize citizen in the city with no lands or defeating from the land market battle. It is a booming ramos/grievance that the original city dweller may overcome in numbers as well as political and economic power by newly wealthier migrants to the city. Another growing concern is that professionally qualified valuers’ including the Government Chief Valuer’s opinion on land value is being challenged and wealthier individuals and firms are prepared to buy land and property at higher prices than the professionally estimated land values in Colombo. In this junction, it is worthwhile to examine whether the price formation of the land market in Colombo is a MYTH or a REALITY.

Pricing for Land and Property

Price is an amount paid or agreed to pay for a property by a potential buyer in the market. The price is different from value as the price is what is actually paid or prepared to pay, while the value is a likely price that would be agreed by buyer and the seller (Isaac and Steley, 2000). Value is market driven and is an objective opinion of a valuer with regard to a particular property in the market. “Value is an estimate of the price that would be achieved if the property were to be sold in the market” (RICS, 2004). As per Richard Ratcliff “valuation is a prediction of human behavior under uncertainty” (Kummerow, 2010). Conversely, the price is what is actually asked for. “Price is the actual observable money exchanged when a property is exchanged (Premathilaka, 2016; Real estate Appraisal, 2006). As the real estate is unique in nature and property interests are different, it commands an individual estimate of value to guide buyers in every event of sale so that the price can be arrived at through negotiation on rational basis.

On the other hand, as per the Neo-classical economic theory, there are three factors that contribute to the economy and its wealth. Those are people, money and land. Generally, all of these are scarce in supply, hence all have value. Comparatively, the land is finite in supply and inherently has unique characteristics rather than others. Thus, land is given more concern in resource allocation for different uses. Land can be owned by both private & the public. In resource allocation, decision for resource allocation by public is based on the need of society, but private resource allocation is based on the economic demand. The public owner aims to get value for money at a least cost. But the private owner wants to get highest and best use to achieve the highest return based on economic demand. In this context, Supply and Demand Pricing Theory comes into play.

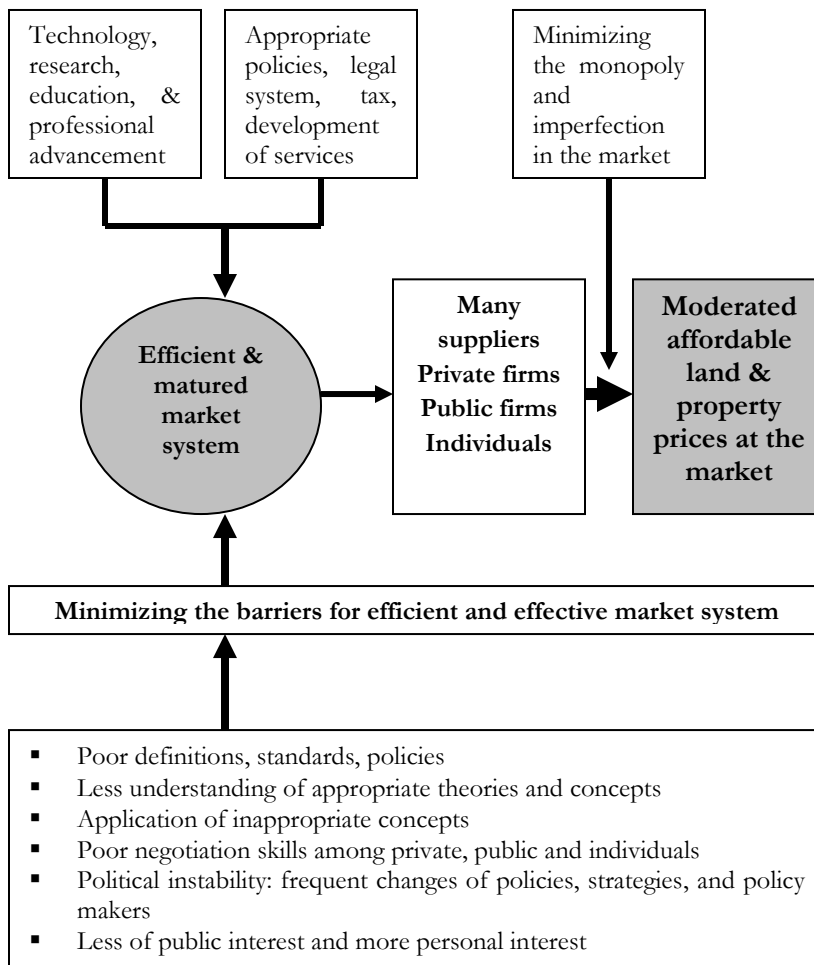
As per the theory, price is an outcome of intersection between supply and demand. The intersection matches the quantity of demand and supply at which market equilibrium takes place. While the demand constant, if supply is increased, then the price will decrease. Likewise, both factors can be changed depending on the degree of elasticity of supply and demand; then the price will be adjusted accordingly.

However, as the real estate is unique in nature, this equation does not necessarily work out as explained. Real estate is limited in supply, but use can be changed to meet market demand. Nevertheless, such change of uses is still subject to legal and government intervention in the form of land use controls and taxation. Real estate itself is also unique in terms of location, inherent characteristics, and user requirements etc. Yet again, supply of land cannot be simply increased as potential real estate development can be limited due to physical, legal, political, financial, and planning restrictions. Moreover, Property market is imperfect due to the lack of information and data for sales evidence; thus the operation of real estate market becomes more complicated. Even under the situation explained above, property market price is determined as per the supply and demand pricing theory, though perfect equilibrium may not be achieved in any circumstance. Researchers, scholars have discussed this matter globally and stressed about the state intervention as a feasible strategy on the matter. Following model (Figure 01) has been proposed by Ariyawansa (2008) in his book “Issues in Property Development...” as to support in seeking solutions for the property price formation issue.

Irrational Land Price Formation and its Consequence

Though the land price is supposed to be decided by market forces, currently it is questioned whether it is rational. There are many experiences and evidence to support this argument. Professional and general public are heavily discussing this issue at a rate ever than before. Therefore, it is an obligation to look into this suspicious price mechanism prevailed in the market and its consequences. If land price is determined not in line with the market forces or incompliance with pricing theory, the market become distorted and becomes more imperfect then may not prudent to follow to read its shape & pace in future. If market system becomes stagnant, property sellers get dominant power to decide price. This may influence other small market players to follow. When such determined prices become established, actual price mechanism is naturally ignored and buyers will begin to consider the distorted price is as the actual. The worst case in this mechanism is that even the professionals particularly valuers may be directly or indirectly influenced by this distortion. Sometime, they may compel to justify this as so called market price corollary is creating it as the market norm which consequently leads the market become more & more distorted & imperfect further leading to establish the irrational price formations in the market. This of course a kind of vicious circle. Finally, what happen is sellers enjoy super profits or higher capital gains surrendering peculiarly wealthier buyers while marginalizing genuine land buyers from the market. Some of them are forced to push out towards periphery or even beyond due to unaffordability of land prices. Some others may remain in the city suffering severe difficulties of this market distortion.

Figure: 01 Overall public participation for moderated (affordable) land and property prices



Source: Ariyawansa, 2008, p.113

Therefore, the main concern in this study is to see whether the existing property market in Colombo actually operates in line with the theory of Demand and Supply. If it happens so, why an extraordinary land price escalation is evident particularly in new land subdivision for sale. It is expected that the buyers and sellers in the property market are prudent and knowledgeable and acting at arm's length transactions to decide the price. Is it the actual practice that we experience in pricing of land?

Of course, land subdivisions involve various cost of development to make land suit for sale. At the time purchasing large land for development, it still has to incur cost for planning approvals, development, marketing, timing, funding, and profit. However, considering all, it can be argued and questioned whether the price determined by land sellers is based on rational basis reflecting market forces. Following statistics indicate

that asking prices in land subdivisions around Colombo are very high compared with the market comparable available at the same period of sale.

Table 01: Land Price Evidence from Colombo

No.	Location	Price prevails per perch Rs.	Price in sale per perch Rs.	Duration
1	Temple Road, Maharagama	550,000 – 650,000	750,000 – 850,000	January – May 2016
2	Kalalgoda Road, Pannipitiya	450,000 – 550,000	650,000 – 700,000	April – September 2016
3	Makuluduwa, Piliyandala	300,000 – 400,000	450,000 – 550,000	August 2015 – March 2016
4	Hunupitiya, Wattala	400,000 – 500,000	650,000 – 750,000	June – October 2016
5	Cinnamon Garden Colombo 7	7 – 9 million	11 – 13 million	Late 2015 – 2016
6	Marine drive, Colombo 4	7– 8 million	10 – 12million	2015 – 2016
7	Nawala, Koswattha area	1.5 – 2 million	2.5 – 3.5 million	2015 – 2016
8	Battaramulla Diyawannawa	2 – 3 million	3 – 4 million	2015 – 2016

Source: Authors' field survey data, 2016.

When considered above tables, it is clearly visible a colossal gap between the existing prices and new asking prices. It is well accepted the fact that the asking prices of new land subdivisions are invariably higher than what is existing in the market as there is distinct value additions made by developers through improvements & development which in returns has to be reflected in new market prices of land subdivisions. However, such an increase must be within justifiable range anything beyond which is questionable by prudent buyers. Therefore, our question is how this much of increase can be justified on equitable & rational basis in a given market circumstance. Accordingly, it must be examined through pragmatic approach to find out potential reasons to prevail such a scenario. Therefore, followings reasons can be forwarded as questions to be researched not for simple answers.

- a) Is it because of buyers' lack of knowledge, lack of prudence, excitement to buy, or fear of losing opportunity due to land scarcity?
- b) Is it all about ignorance of buyers about how they should react for?
- c) Is it because the sellers' market where buyers become victim over sellers' power to decide the price?
- d) Is it lack of Government interventions?
- e) Is it due to giving up of duty of real estate professionals?
- f) Is it because lack of good governance and accountability of relevant agencies?
- g) Is it all about property market imperfectness?
- h) Is this because of immaturity of market system in the country?
- i) Is it because the country is still in stage of developing (irrespective of lower-middle income status)

Also a broader and globally debatable theme on land market can be noted as to whether the land should be managed or controlled by market as it does in other commodity markets.

As far as the land and property market in Colombo and country is concerned, some market related issues in buyer's point of view can be pointed out as follows.

- a) If you want to buy a house, do you have a reliable way or access to information of availability of houses?
- b) How do you find or decide whether the available land or house is the property suitable to your needs?
- c) How do you know it is a problem free property?
- d) Do you really think of the cost and benefits, conveniences and inconveniences etc in connection with the property? If you know those, how do you know whether your knowledge is correct?
- e) Can you keep trust on the market and institutions and people who are prepared to help you?
- f) If you or your colleague or one who is known to you has purchased a house recently, are you or your colleague happy or unhappy? If happy, is it 100%?
- g) What is the degree of confidence that you have in recommending a land or property seller or an agent to you relations or to your colleague for an urgent purchase of a property?
- h) Do you really believe that opinions on Value of properties determined by professional Valuers are reflecting true market behaviours and are justifiable enough to rely upon?

Potential Solutions

In this context, sustainable solution must be sought for. Few suggestions are put forward for further discussions as follows.

a) Introduction of Land Pricing Model

Type of cost in land sub divisions is identified as,

- Purchasing Cost
- Planning Approval cost
- Development cost
- Finance cost
- Profit
- Transaction cost. This is an unclear and shaded to be discussed. General discussion with stakeholders reveals that it includes all cost even with bribes to officials and whatever cost which does not fall within the other formal items may add in here.

If all cost is rounded to 100% of price determined, what should be the percentage of each cost category as against the asking price set by the seller? Or otherwise, Percentage of each cost category can be based on purchasing price of the entire land. In this case, they have to disclose actual price of land purchase which will ensure,

- actual stamp duty for the government

- actual market reflection of land sale evidence
- Transference of sales
- Justify the Rational of Price setting
- Improved perfectness of property market.

b) Establishment of Regulatory Mechanism

It should not just be an authorizer to force the developer or market but be the facilitator, guider, regulator, and monitor of the land subdivision and price setting to bring win-win scenario in the market. Also, they should carry out market research, data base management, information drive, professional input providing, and pushing the market forward in profitable and equitable manner to make market forces active and thereby creating sustainable property market is a reality.

c) Land and Property Market Education

Instead of formal education programmes, it is needed to think of know and awareness of land and property market among general public the mass society. This is about the factor affecting to the cost, price etc, regulations and barriers, current and future conditions of available properties etc, sellers, developers, agents and so on. This information should be endorsed by an authorized body.

d) Need of Professionalism in Land and Property Market Operations

Land and property as sensitive, valuable, multi-faceted component components, all the decision makers and assistant in the process should be professionally qualified. All of these actors should undergo continuous training and development to make sure their professional service.

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The Impact of Government Policy on Property Market and Property Development with Specific Reference to Development and Changes: Urban Land Market in the City of Colombo, 1965 – 2005

H.M. Premathilaka

Senior Lecturer, Department of Estate Management & Valuation,
University of Sri Jayewardenapura, Sri Lanka
hmpremathilaka@yahoo.com

Abstract

Land is a form of accumulating and transferring wealth from generation to generations. It is the foundation of all forms of human activity. Land which is a scarce natural resource plays a key role in development. Optimum allocation of land is important to ensure human welfare. There are two kinds of mechanisms for distributing land resources within a society, land markets and governments. The main mechanism of distributing land resources within the City of Colombo is the land market. The Sri Lankan economy and society is vastly different to what it was in early 1960s. The objective of this study is to examine the effect of government policy on the property market and property development. This study examines the impact of economic, social, legal and policy changes that have occurred during this period on land market in the city of Colombo. It is assumed that the effects of the above facts on land market are reflected through land values and frequency of land transactions. In order to examine the above relationships, land value data for a 40 years period situated within five wards of Colombo Municipal Council have been collected from the City Region of the Valuation Department and these data were categorized according to two different periods of economic and political regimes, viz. liberal regimes and dirigisme regimes and a random sample of these properties were inspected and further data collected and analyzed. This study shows that the land market development and changes are associated with different regimes. During the periods of the liberal regimes the country achieved higher economic growth while the study area experienced expansion of urban land marked activities and significant structural changes by reallocating most of the lands from lower-value to higher-value uses escalating land values much more than those prevailing during dirigisme regimes.

Keywords: *liberal regimes, dirigisme regimes, economic growth, urban land market, city of Colombo.*

1. Introduction

Colombo city has a land area of 3731 ha and out of this 96.28 ha of land is covered by lakes, channels and other inland water bodies. Private land owners have claimed about 73% of the total land extent and the remainder is distributed among the state and the Colombo Municipality as 21% and 6% respectively (UDA 1980). Land use Survey - 1996, conducted by the Urban Development Authority identified the different land use categories in the city of Colombo (Table 1).

Policies are one of the main drivers which bring development to any nation. Since independence, successive governments have adopted several policies, launched numerous programmes, and started a large number of projects to promote the development of the country. These efforts have manifested themselves in bringing about certain significant socio-economic changes in the country. Until around 1970's

there were no clearly defined government policies on urban development or specified criteria to guide the spatial development.

Table 1 General Land use Pattern-City of Colombo – 1996

Type of Land use	Extent (Ha)	Percentage
Residential	1401.56	37.58
Manufacturing Industries	0148.53	03.98
Transport, Communication and Utilities	0982.56	26.35
Commercial	0225.39	06.04
Cultural, Environmental and	0249.44	06.69
Recreational	0411.40	11.03
Institutional	0262.24	07.03
Vacant and Non-Urban uses	0048.12	01.29
Other Urban uses		
Total	3729.24	100.00

Source: Land use Survey, 1996 Urban Development Authority.

2. Literature Review

2.1 Property Market: Market is not a physical concept. A market is a set of arrangements in which buyers and sellers are brought together through the price mechanism. Real estate markets involve the exchange of property rights for other assets such as money. There is no uniform market for property. Each parcel of land is unique at least by way of situation. The property market is an amalgamation of several sub markets. These sub markets are differentiated by property type and location. Properties are generally described in reference to its nature and use:

(i) Agricultural (ii) Residential (iii) Commercial (iv) Industrial (v) Special purpose. Four real estate markets can be identified to correspond to five broad categories of property.

Agricultural : Plantation Estates, Small Holdings, Village Gardens, Paddy lands and other field crops, Vegetable lands, Forest-timber, Waste land.

Residential : Residences, Houses, Cottages, Apartments/Flats, Tenements/Line rooms.

Commercial : Shopping plazas, Shops/Boutiques, Hotels, Offices, Cinemas/Theatres, Warehouses/Go-down/Stores.

Industrial : Heavy Industries – Cement Plant, Light Industries/Factories, Workshops/Garages

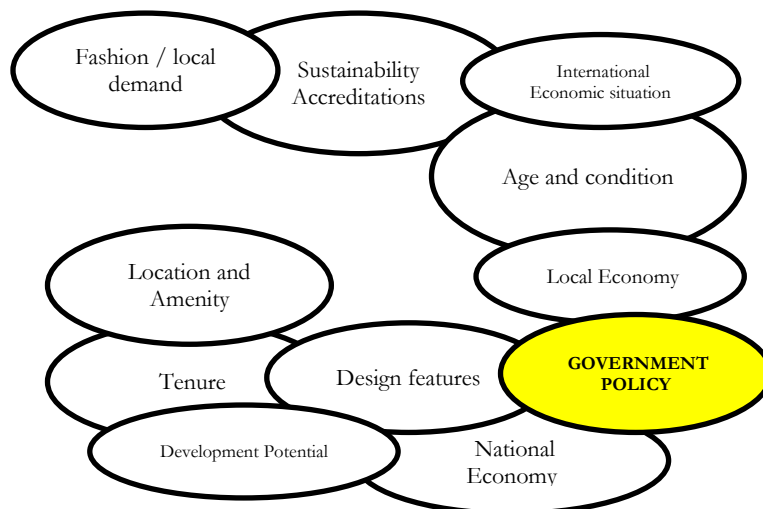
2.2 Market Segmentations: Market Segmentation is a concept in marketing theory which recognizes that there are different groups of potential customers with different requirements, and products can be differentiated to meet these. The variety of houses (viz.: 2 bed room, 3 bed room, 4 bed room etc.) constructed by the property developers in the construction sector provides an example of this process of market segmentation.

According to the location, property market can be categorized as local, regional, national and international. Occupation interests are traded in the letting market and as rent is the price of occupation, the level of rental value is determined by the forces of supply and demand for property to let. Similarly, the price of property investment interests is determined by investment demand and supply in the investment sector. As different

factors determine occupation demand and supply from investment demand and supply, these two markets require a separate analysis. Similarly, the development sector requires an independent analysis. The nature of landed property, the method of conducting transactions in it and the lack of public information relating to transactions all contribute to the imperfections of the market.

2.3 Factors affecting property values: It is intriguing sometimes to pause and ponder on the question: where does value come from? The price that an asset achieves in a sale provides concrete evidence that somebody valued an asset up to a certain price and that he was willing to pay that sum of money to enjoy the ‘value’ bestowed by the asset. The price obtained by the vendor crystallizes the value of the asset and it is often a valuers’ role to try to estimate what that price is if sold on the open market on the date of valuation.

Figure 1. What affects property values?



Value of a property is subliminally underpinned by a number of factors some of which enhance value and some of which detract from value. Take for example the value of a major hotel in the tourist district of a famous city. A large part of the hotel’s business will probably rely on international tourists who will make decisions on whether to travel based upon economic stability in their own countries and advantageous exchange rates. A major hotel’s business and therefore its value will tend to decline when there is a global recession, general economic uncertainty and exchange rate turbulence. There is also a supply and demand relationship between the number of bed-spaces provided by hotels of a particular quality and the demand for those bed-spaces. Where new hotels are developed the supply and demand relationship could be disturbed to the detriment of existing providers if there is already sufficient supply in the market (David Issac and John O’Leary 2012).

However, in the residential sector housing values are less affected by the arrival of new stock because new developments only represents a tiny proportion of the millions of

dwellings which already exist and which tend therefore to set the tone for housing values. Housing values are more likely to be influenced by mortgage credit availability, interest rates, changes in stamp duty thresholds and the confidence of borrowers to be able to take on and meet loan payments. The latter is a factor of job security and employment rates generally.

2.4 The legal dimension: Beside the legal interests in land, government statutes may act to constrain land in one way or another. For example the government can intervene in respect of lessees and tenants of certain properties, both to give security of tenure and to control levels of rent. The government also intervenes through its fiscal policy to tax income (wealth tax) and capital gains arising from land. Local authorities have statutory control over the development and use of land through the Town and Country Planning Acts and over the construction of buildings through the building regulations.

For the purpose of land market development in the city of Colombo, it is necessary to solve the urban squatter problem. Advocating a community agreed land allocation principle “minimum dislocation and maximum retention” by securing land tenure is the most appropriate solution for the urban squatter problem. It is found that the land tenure regularization process based on the said principle demonstrating an environmental management strategy which helps the land and land market development in the vicinity (Premathilaka, 1999).

The transfer of ownership of 1700 municipal houses whose monthly rent was below Rs. 25/- to sitting tenants free of charge has been very effective and successful in optimizing land use and developing the land market. Subsequent to the transfer of ownership of municipal houses 23% of the households have obtained financial facilities for further improvements and investments by mortgaging these houses. Therefore, policy makers may bring necessary amendments to the Local Authority (Amendment) Act No. 63 of 1979 to transfer the ownership of 1500 houses whose monthly rent is above Rs. 25/- and below Rs. 50/- to the sitting tenants either free or at a reasonable price (Premathilaka, 2003).

2.5 Definition of value:

Value: The question of value definition has confused valuers and philosophers for centuries. Greek Philosopher Plato described ‘the notion of value as the most difficult question of all sciences’.

Market value and market rent are defined in the International Valuation Standards (IVS), effective from 01.01.2012, published by the International Valuation Standards Council (IVSC) and adopted by the Royal Institution of Chartered Surveyors (RICS) in RICS valuation – professional standards (the 2012 Red Book, Eric Shapiro, David Mackmin and Gary Sams – 2013).

The IVS definition of market value adopted by the RICS is : The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction after proper marketing wherein the parties had each acted knowledgeably prudently and without compulsion.

Market rent is defined as the estimated amount for which a property would be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm's-length transaction, after proper marketing where the parties had each acted knowledgeably, prudently and without compulsion.

Sri Lanka is committed to an open market economy, which implies development through perfectly competitive market. Land which is a scarce natural resource plays a key role in development. Land is the foundation of all forms of human activity. It is the means of life without which human beings could never have existed an earth which their continued existence and progress depend. Hence optimum allocation of the limited supply of this unique resource at the local, regional, national and international levels is an importance aspect to ensure human welfare. There are two kinds of mechanisms for the allocation of land resources within a society, land markets and governments. The main mechanism of distributing land resources within the city of Colombo is the land market.

Based on extensive literature review of the factors affecting property values in urban areas, some of the important components of property values and which a property valuer will normally be aware of can be listed as follows:

- (a) Physical factors external to the property. The geographic location, the environment, (class of residents, and the type of residences in the immediate neighborhood and proximity to places of importance) public transport and infrastructural services such as electricity, water, sewerage drainage and communication services.
- (b) Factors integral to the property, the physical factors of the property (lie of the land, soil, shape and size) accessibility and economic and legal attributes and/or liabilities.
- (c) The national and local economic conditions which determine the level of property values. Land values are also influenced by the social, cultural factors and life pattern of the people in the particular area.
- (d) Legal factors – state of ownership, planning and ongoing regulations.
- (e) Government policy, the national and local economic conditions (micro and macro) which determine the level of values

Land values change when the above described factors that influence value change. This study examines the impact of economic, social, legal and policy changes that have occurred during this period on land market and it is mainly focused on pre liberalization era and post liberalization era. If land markets function effectively, price signals can provide the information needed for efficient land allocation, where markets are defective, price signals work at less than full efficiency (Harvey, 1996).

Effective functioning of land market depends on the national and local economic conditions which determine the level of property values, pattern of land ownership and distribution, land titling and registration, availability of a survey plan to identify the

property with the boundaries, reduced transaction costs, transparency in transaction, balance knowledge of buyers and sellers, ability to obtain financial facilities and easy access to other relevant information (Premathilaka, 1998).

2.6 Development

Over time the demand for land resources changes, brought about by changes in the size, income and tastes of the population, the rate of growth of economic activity, methods of transport, techniques of production and distribution. On the supply side, existing buildings wear out or become less suitable to present uses, and the cost of constructing new buildings or adapting old buildings changes. Development is the response to such changes.

The sixty-seven years since the independence have witnessed significant structural changes and qualitative transformations in the economy. The predominantly agricultural economy of the 1950's has transformed into a diversified one. This diversification, which was very gradual till the late 1970's, gained momentum in the last two and a half decades. The most notable feature of this transformation is the structural change where manufacturing and services make a higher contribution to Gross Domestic Product (GDP) than agriculture. By 2004 industry contributed 26.5 per cent of GDP, while agriculture, forestry and fishing together contributed 17.9 per cent of GDP. This is in sharp contrast to the structure of the economy in 1950, when the contribution of agriculture was 41 per cent and manufacturing (consisting mainly of processing tea, rubber and coconut) accounted for only 16 per cent of GDP. This contribution of services rose from 41 per cent in 1950 to 55.7 per cent of GDP by 2004 (Central Bank Annual Reports 1951 – 2004).

Though, there is a tendency perceive that the period before 1977 as one of little changes. In fact, there were significant economic and social transformations that occurred between 1950 and 1977. This period also witnessed profound changes in the ownership and management of economic enterprises. Bus transport was nationalized in 1958. In 1961 the Bank of Ceylon was nationalized and the People's Bank and the Insurance Corporation were established as state enterprises. From 1970 to 1977 the country moved into an import-substitution industrial strategy. The plantations were taken over by the state in 1972 – 74 and several state industrial enterprises were also established. In short, the commanding heights of the economy were vested in the state.

2.7 The Post Liberalization Era – 1978 – 2005

The economic reforms introduced in November 1977 marked a watershed in the country's economy. They reversed the policies pursued from 1970 to 1977. The economic reforms included the liberalization of trade and exchange controls, and the introduction of an economic strategy dependent on private investment and market forces. Foreign investment was encouraged and a greater reliance was placed on export. To support these policies, the Government adopted a unified exchange rate, devalued the Sri Lankan Rupee and adopted a floating exchange rate. These policy reforms relied on large-scale support from international agencies, notably the IMF and World Bank and donor countries.

These reforms of 1977 were a sharp break from past economic regimes. The new policies transformed a closed tightly-controlled inward looking economy into a market-oriented outward-looking one. It was the beginning of a process that laid greater emphasis on private enterprise and lesser reliance on state owned and controlled economic enterprises. Foreign assistance was aggressively sought and successfully obtained. The multi-lateral agencies supported the liberalized measure. The IMF provided balance of payments support, while the World Bank gave long-term credit for development programmes and arranged donor assistance through the annual Aid Club meetings.

The fiscal policy orientation changed drastically. Fiscal policies were used to support the market orientation and private sector emphasis on economic growth and to create a climate conducive to private investment and private economic enterprises. The reduction in taxes and the use of a wide range of tax incentives encouraged investment. Direct taxation became an instrument for resource allocation rather than to mobilize resources for public investment or for income distribution. The emphasis in government expenditure shifted to investment, particularly in infrastructure and large-scale projects like the Accelerated Mahaweli Scheme, rather than on consumption, welfare and social development expenditure (Jayasundara 1986: 56-57).

The economic policies pursued included an urban renewal programme, the development of economic infrastructure, the establishment of a Free Trade Zone and the implementation of an Accelerated Mahaweli Development Programme, which was to increase agricultural production and enhance energy by the generation of hydro power.

The economic reforms and enhanced foreign funds led to a high rate of economic growth till 1983, when ethnic violence resulted in a setback. The subsequent period of terrorism undermined business confidence, foreign investment and tourism, besides dislocating agriculture, fisheries and a few industries in the North. The economic growth rate fell from 4.3 per cent in 1986 to 1.5 per cent in 1987. The insurgency in the South from 1987 to 1989 dislocated work and seriously impaired economic activity. In 1988-89 growth averaged only 2.5 per cent.

The weak economic performance in the late 1980s led the government to adopt further structural reforms to strengthen budgetary management, reducing inflation and improving the balance of payments and external reserve position that had weakened considerably. The economy was liberalized further after 1989.

The process of privatization gained momentum and by end 1993, 42 state enterprises had been privatized. Further, most of the state owned plantations were handed over to 22 companies for management. The two state banks were re-structured to meet the capital adequacy requirements by the infusion of Rs. 24 billion and restrictions on foreign investment in the Colombo Stock Market were removed.

The change of government in 1994 was very significant. For the first time since independence, despite a change of government, a continuity of economic policies was assured. The government announced its commitment to continue market friendly open

economic policies. It too gave private enterprise the lead role in economic activity and pledged to support private enterprise and characterized its strategy as “Open Economic Polices With a Human Face”.

The government liberalized trade further by decreasing tariffs, reduced corporate and personal taxation to a maximum of 30 per cent. The corporate tax rate was reduced to 15 per cent for enterprises in agriculture, fisheries, livestock and tourism. It gave further incentives for foreign investment and embarked on a far-reaching programme of privatization. The government privatized, inter alia, the plantations, telecommunications, the National Development Bank and Air Lanka. It introduced a new safety net for the poor, Samurdhi, which was similar to the earlier Janasaviya programme. The government also gave incentives for garment industries to be established in the regions and introduced a number of measures to assist agriculture.

Economic growth has varied significantly within this period. In the 1950's the economy grew by an annual average of 3 per cent; in the 1960's by 4.7 per cent: and in the 1970's by 3.9 per cent. Economic growth has been somewhat higher in the last two decades. In the 1980's we achieved an economic growth of 4.3 percent, and in the 1990's it was still higher at 5.2 percent per year. In the last five years (2000-2004) the economy grew by only 4 percent (Table 2).

Table 2 : Economic Growth by Decades and Semi-Decades

Decade	Semi Decade	Annual Average GDP Growth	
1951 – 59		3.0	
	1951 – 54		3.9
1960 – 69	1955 – 59		2.5
		4.7	
	1960 – 64		4.5
	1965 - 69		4.8
1970 – 79		3.9	
	1970 – 74		2.9
	1975 – 79		4.9
1980 – 89	1980 – 84	4.3	5.4
	1985 - 89		3.2
1990 – 99	1990 – 94	5.2	5.5
	1995 – 99		4.9
	2000 - 2004		4.0

Source: Central Bank of Sri Lanka, Annual Reports and Central Bank of Sri Lanka Economic Progress of Independent Sri Lanka (1998).

The periods of very low growth have been due to external shocks, internal disruptions or both. In the 1970 – 74 period the annual economic growth was only 2.9 per cent. During this period, adverse terms of trade caused by sharp oil price hikes and international food grain shortages, created enormous strains on foreign exchange

resources and fiscal operations. The insurgency of 1971 disrupted nearly all economic activities and increased government expenditures on defense from less than 1 per cent of GDP to 4 per cent of GDP in 1972 – 75. In 1971 the growth rate dropped to as low as 0.2 per cent. A severe drought, coinciding with the escalation of international prices of food, fertilizer and oil, led to severe hardships and constraints on economic growth. Again in 1987 – 89 the annual average economic growth was only 2.2 per cent. The insurgency, which disrupted nearly all economic activities, was mainly responsible for this severe dip in economic growth from an annual average of 4.8 per cent in the previous three years to only 2.2 per cent per year in the next three years (1987 – 89). Once again there was a slowing down in the economy prior to 1987, partly due to the North East war and partly owing to a slowing down of foreign investment and budgetary difficulties (Atukorala and Jayasuriya 1994).

Several other years of low growth were associated with internal shock. In 1983 – 84 economic growth slipped to 5 per cent from the average of 6.2 per cent for the 1978–82 period owing to the ethnic violence in July 1983. Economic growth fell to as low as 3.8 per cent in 1996, when drought conditions, not only affected domestic agricultural production, but created an energy crisis, which disrupted industrial production. In contrast, periods of high growth did not suffer such external and internal shocks.

Alternating economic policies were a significant factor in retarding the country's economic growth. The discontinuity of economic policies was an important factor for slowing economic growth. Fundamentally different economic regimes alternated giving rise to considerable uncertainty, reversal of economic policies and an unsatisfactory climate for foreign and domestic investment. These alternating policy regimes provide useful perspectives on economic growth as differing economic growth rates are associated with different regimes. Periods of economic liberalization, freer trade, lesser controls and lesser state management achieved higher rates of economic growth than periods of state control of the economy. This can be seen clearly from Table 3, where the economic performances by the two types of economic and political regimes are categorized.

Table 3: Economic Growth by Regimes (percent Per Annum)

Liberal Regimes		Dirigisme Regimes	
1951 - 55	4.3	1956 - 1959	1.6
1965 - 69	4.8	1960 - 1964	4.5
1978 - 93	4.9	1970 - 1974	2.9
1994 - 99	5.0	1975 - 1977	3.3
2000 - 04	4.0		

Sources: Central Bank of Sri Lanka Annual Reports.

The administrative area coming under the purview of Colombo Municipal Council is relatively small in extent 37.29 sq.km. which accommodates less than one million inhabitants. The city experienced a slow population growth rate i.e. annual growth rate during the period 1981 – 2001 was 0.4%. The current city population (as per population census of 2001) was 642,020 people, which is only an increase of 79,570 people (12%) during the last 30 year period since 1971 (please see Table 4).

Table 4: The Area, Population Density & Growth Rate of the City of Colombo (1870 – 2001)

Census	Extent (Ha)	Population	Density (P/Ha)	Growth Rate
1871	2448.6	98,847	40	-
1881	2448.6	110,509	45	1.18
1891	2448.6	126,825	52	1.48
1901	2720.6	154,691	56	2.20
1911	3091.1	211,274	68	3.66
1921	3350.3	224,163	73	0.61
1931	3368.4	284,155	84	2.67
1946	3438.4	362,074	105	1.83
1953	3593.9	425,081	118	2.48
1963	3717.4	511,639	138	2.04
1971	3711.0	562,430	152	1.24
1981	3711.0	587,647	158	0.45
2001	3729.0	642,020	172	0.46

Source:

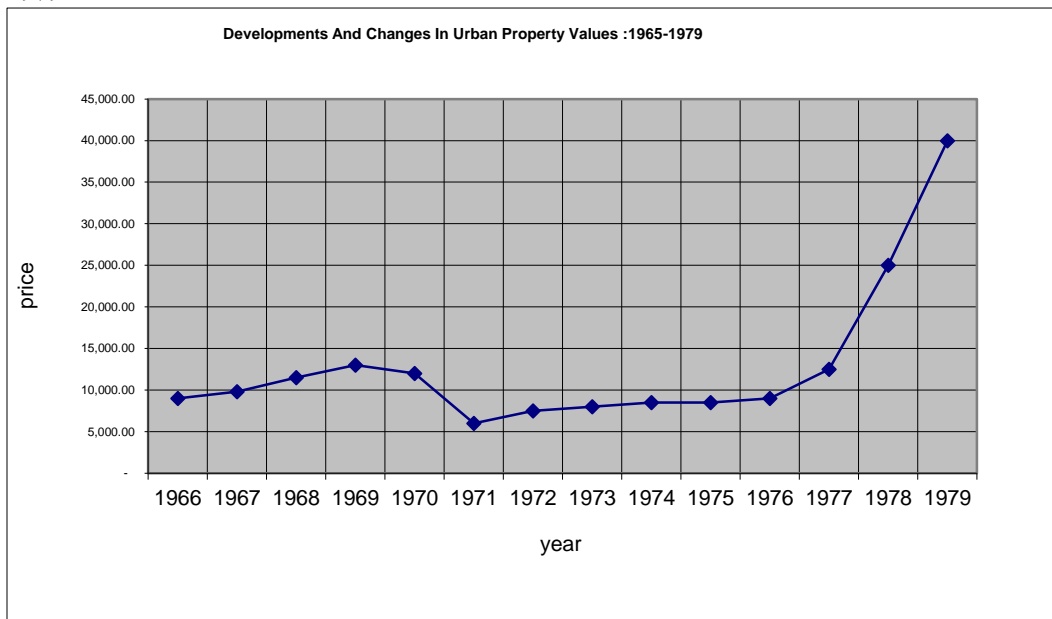
1. Centenary Volume, CMC, 1963
2. Urban Development Authority, 1996
3. Census of Population - 2001

3 Analysis and Discussions

It is assumed that the levels of values in the property market are influenced by the economic growth levels political stability and government policy of the country. In order to examine the impact of economic, legal and policy changes, 420 land prices for a 40 year period situated within five wards of the Colombo Municipal Council viz. Kompanngaweediya, Wekanda, Hunupitiya, Suduwella and Cinnamon Gardens were collected from the city region of the Valuation Department and these data were categorized according to two deferent periods of economic and political regimes, viz. liberal regimes and dirigisme regimes and a random sample of these properties were inspected and further data collected and analyzed according to two different periods of economic and political regimes. Physical development (change of skyline), opening of new roads viz. Duplication Road, Perahera Mawatha and Navam Mawatha, infrastructure facilities, service sector improvements (opening of branch of various banks) were observed and identified as the indicators of development and change influencing level of property values in the study area.

It is observed that the property values reached its peak in 1969 and gradually fell down up to 1977 and again started increasing since 1977. Further, confirms the Chief Valuer's statement on property market in his administration report for the year 1978.

Figure 2. Developments and changes in urban property values in the study area :1965-1979

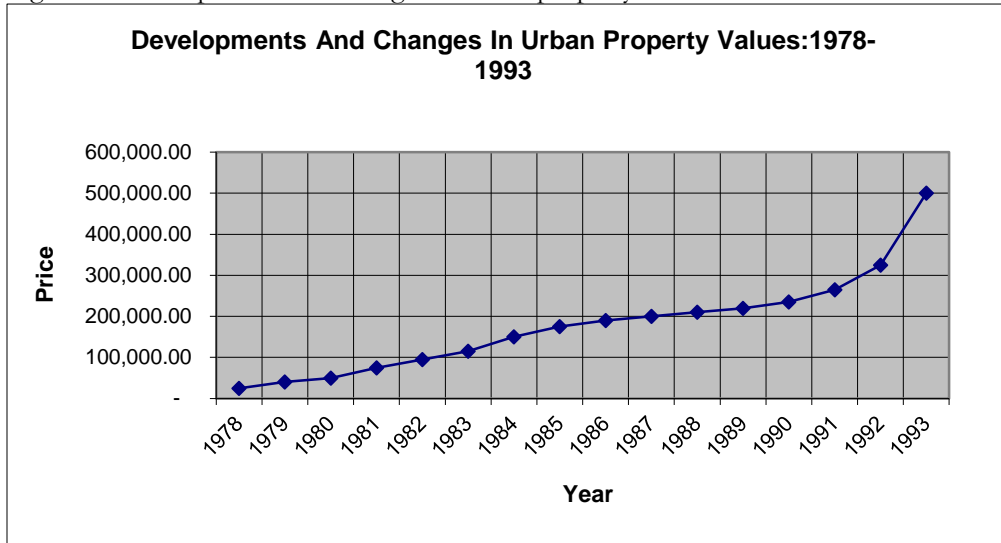


Property market value reflections on development and change during the period 1965 – 1977 are given in Figure 2. Economic growth during 1965 – 1969 is 4.8% per annum while that of 1970 – 1974 is 2.9% and from 1975 – 1977 is 3.3% (Table 3). This study clearly shows that there is a positive relationship between economic growth and level of land values. Reasons for the cause of downward trend in the level of property values during 1970 – 1977 were examined and found that the state has acquired some private properties in the study area during this period discouraging private sector investment in the property market.

1. Premises bearing Assessment No. 440, Union Place, in extent 1A-1R-26.68p was acquired for the CWE on 31.08.1973.
2. Premises bearing Assessment No. 55/75, 55/58, Vauxhall Lane, in extent 2A-1R-27.18p was acquired for the JEDB on 18.03.1976.
3. Land fronting Union Place and Staples Street in extent 1A-0R-10P was acquired for the Ministry of Defense & Foreign Affairs on 15.09.1972.
4. Premises bearing Assessment No. 255, Dharmapala Mawatha, in extent 0A-1R-37.75p was acquired for Osusala on 09.11.1973.

Some of the legislative enactments passed by the parliament during this period are the other reasons for it.

Figure 3. Developments and changes in urban property values:1978-1993

**Table 5: Some of the legislative enactments passed by the parliament affecting property values by Regimes**

Liberal Regimes	Dirigisme Regimes
<p>1. Urban Development Authority Law No. 41 of 1978 Amendment Act No. 70 of 1979. Amendment Act No. 4 of 1982.</p> <p>2. National Housing Development Authority Act No. 17 of 1979. Amendment Act No. 5 of 1982</p> <p>Rent Amendment Act No. 55 of 1980. Residential premises constructed after 01.01.1980 and rented-out thereafter and residential premises occupied by the owner as at 01.01.1980 and rented out thereafter are exempted from the provisions of the Rent Act No. 7 of 1972, by Rent Amendment Act No. 55 of 1980.</p> <p>Ceiling on Housing Property (special provisions) Act No. 4 of 1988</p>	<p>* Condominium property Act No. 12 of 1970 and * Apartment ownership law No. 11 of 1973 (equity oriented, implemented to transfer the ownership of existing properties to sitting tenants).</p> <p>(i) Protection of Tenancy Special Provision Act. No. 28 of 1970.</p> <p>(ii) Direct intervention on private property rights by the government. Land Reform Law No. 1 of 1972 to reduce the concentration of ownership of land in a few hands, ceiling limit to ownership of property (maximum 50 acres)</p>

<p>Statutory limitation with respect to ownership of number of houses has been removed (development oriented).</p> <p>Rent Amendment Act No. 26 of 2002.</p> <p>Local Authority (amendment) Act No. 63 of 1979 objective was to transfer of ownership of 1700 municipal houses whose monthly rent was below Rs. 25/- to sitting tenants free of charge has been very effective and successful in optimizing land use and developing the land market (Premathilaka H.M. 1998).</p> <p>Condominium property Act No. 12 of 1970 Apartment ownership law No. 11 of 1973 Amendment Act No. 45 of 1982 Amendment Act No. 27 and Amendment Act No. 39 of 2003. Efficiency oriented, implemented to construct condominiums.</p>	<p>(iii) Ceiling on Housing Property Law No. 1 of 1973.</p> <p>(iv) Rent Act No. 7 of 1972 (direct price control)</p> <p>(v) Land Reform Amendment Act No. 39 of 1975 (Acquisition of Tea Estates owned by foreign companies). It is observed during this period some of the tea companies sold their offices and tea stores in the study area.</p> <p>(vi) Business Undertakings (Acquisition) Act No. 35 of 1971</p>
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Source: Compiled by the author, 2016

Urban Development Authority Law No. 41 of 1978 was enacted and the Urban Development Authority was established in 1978 with the objective to promote integrated planning and implementation of economic social and physical development of certain areas as may be declared by the Minister and the Colombo Municipal area was declared as a development area under Section 3(i) of UDA Law No. 41 of 1978 in Gazette notification No. 4/1 dated September 30, 1978.

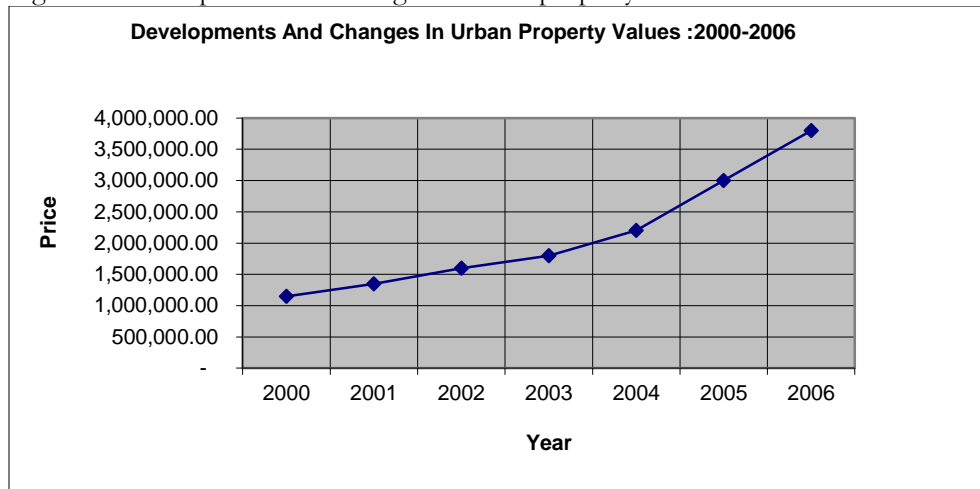
It was observed due to long leases of state lands provided to private developers by the Urban Development Authority the volume of urban investments and economic activities increased rapidly in the study area. Example: Navaloka Hospital Limited, Sampath Bank, No. 110, Sir James Peiris Mawatha, NDB Bank Navam Mawatha, all constructed on 99 years lease hold state lands from the UDA (see Table for more details).

As a result by 1978/79 property values started rising (see Figure 3). By this time there were several important features that influence the property development activities as introduced by the state, and also by the private sector. The state had given a lot of prominent and attractive concessions to investors on housing development, and the number of private property developers in the Urban Sector was growing. This trend continued until 1983.

In 1983 due to the unsettled conditions that prevailed in the country there was a slight set back in the Urban property market, but still there was no reduction in property values, the number of transactions that took place were few (personal communication author

had with Land Registrar Colombo District). By 1986 the price of Urban property started rising again. During this period property values in major cities rose rapidly as there was instability in most of the remote areas in the country due to insurgent activities. During the period 1990/93 it was observed that there were very steep increases in Urban property values both in the case of commercial and residential properties (see Figure 3).

Figure 4. Developments and changes in urban property values: 2000-2006



It was observed that in 1995 the economic conditions of the country was not stable and a decline in the share market, nevertheless there was no decline in the property market. Investments on property market mainly on Urban property seemed to be the best secured investment. The reasons observed for rapid escalation in land prices is mainly due to the physical development in the study area (see Table 6).

Table 6: Details of valuable new buildings added to the study area during the period 1977 – 2006

Location of the property	Extent of land A – R – P	Total floor area sq.ft	No. of floors and height	Year of construction	Remarks
1. Access Tower Union Place (Access Realities Pvt. Ltd.)	01-00-07.0	140000	13 floors 160 ft	1998	Property fronting Union Place with a broad return frontage to Dawson Street. Basement and first floor is used for vehicle parking. Entire building is used for commercial activities. Some of the occupants Bank of Ceylon, KFC, Acces Marketing Pvt. Ltd.
2. Hilton	01-02-10.7	306000	34 floors 380 ft	1997	

Shopping Mall and Colombo Residencies					Property fronting Union Place with a broad return frontage to Staple Street. First & Second floors used for vehicle parking. Third floor for sports & recreational purposes. 4 th to 34 th floors either residential or for office uses.
3. Sampath Bank, 110, Sir James Peiris Mw.	01-00-00.0	150000	11 floors 130 ft	1993	
4. NDB Bank Navam Mw.	01-00-00.0	35000	5 floors 70 ft	1989	Property fronting Sir James Peiris Mawatha with a return frontage to Navam Mawatha.
5. DHPL Building	04-00-32.0	70000	15 floors	1991	Property fronting Navam Mawatha facing Bera Lake.
6. Nawaloka Hospital Ltd.	00-00-30.0	100000	4 floors 40 ft	1985	Property fronting Navam Mawatha facing Bera Lake.
7. Green Lanka Tower, Evergreen Shipping Pvt. Ltd.	00-00-30.0	40500	10 floors 100 ft	1995	Property partly fronting Sir James Peiris Mw. 99 years lease hold property owned by CMC and UDA. Former fish market and Auyrvedic Medical Center of CMC.
8. Sayuru Sevana (Ceylon Ocean Lines)	00-01-26.0	15000	9 floors 110 ft	1997	Part of former Wekanda Mills then belonging to George Steuarts (Tea Stores)
9. Ceylon Chamber of Commerce	00-00-17.0	30300	5 floors 55 ft.	1990	Part of former Wekanda Mills then belonging to George Steuarts (Tea Stores)
10. No. 46/10	00-00-30.0	10000	5 floors 73 ft.	1989	

Navam Mw.			8 floors 90 ft.		Fronting Navam Mawatha close to the bridge connecting Navam Mawatha to Duplication Road.
11. Valiant Towers	00-00-20.0	57600	7 floors 75 ft	1988	Fronting a private road off Navam Mawatha.
12. Jetwing House	00-02-00.0	21000	IBM I-5 floors 50 ft.	1994	
13. IBM building Navam Mw. East-West Co. Ltd.	00-01-20.00 00-01-00.0	50000 40000	IBM II 8 floors 80 ft.	1984	Fronting a private road off Navam Mawatha.
14. Millenium House	00-01-10.0	70000	10 floors 110 ft.	1985	Fronting a private road off Navam Mawatha.
15. Forbes & Walker Ltd. (presently owned by M.J.F. Group)	00-01-00	306000	5 floors 55 ft	1996	Located within Navam Business Centre
16. No. 75 Brybrooke Place Hemas House	00-01-10.0	90000	10 floors 95 ft.	1988	Located within Navam Business Centre
				1995	Located within Navam Business Centre. Nations Trust Bank & Sampath Bank are housed in this building.
					Land bought @ Rs. 650,000/- per perch on 10.03.2993.

Source: Compiled by the author, 2016

4. Conclusions

- (1) Periods of economic liberalization freer trade, lesser controls and lesser state management achieved more efficient functioning of land market allocating lands to their optimum uses at competitive prices.
- (2) This study shows that the land market development and changes are associated with different regimes. During the periods of the liberal regimes, the country achieved higher economic growth while the study area experiences expansion of urban land market activities and significant structural changes by reallocating most of the lands from lower-value to higher-value uses escalating land values much more than those prevailing during dirigisme regimes.
- (3) It is necessary to increase the amount of buildable land for commercial, residential, and recreational purposes to prevent speculative increases of land prices and undesirable sub division of urban land.
- (4) The study shows, from 1977 onwards there had been increasing confidence of people in the government's encouragement of private development and ownership of property and the result was a rapid rise in property values in Colombo City far beyond expectations. In the study area the rise is about 1000 times, commercial blocks that fetched about Rs. 4000/- a perch in pre 1977 era has escalated to about Rs. 4,000,000/- a perch in 2006.
- (5) The location of the port, accessibility from all parts of the country and broad range of employment opportunities, infrastructure facilities and services that the city offers are the advantages that Colombo has in relations to other cities in the country and the reasons for very high land prices prevailing in the city making it a national and international land market.

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A Review on Indicators of Corporate Real Estate Strategies for Hotel Industry in Sri Lanka

Kaluthanthri P C¹

¹Senior Lecturer, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
prathap@sjp.ac.lk

Osmadi A²

² Senior Lecturer, School of Housing, Building and Planning
Universiti Sains Malaysia, Malaysia
a.osmadi@usm.my

Abstract

Corporate strategy is a set of a unique programme designed to achieve specific objectives of the organization. It describes the philosophy of the business which executed at departmental level through a functional and tactical plan of the organization. Many organizations focused on production, marketing, finance and human resources as important functional level priorities and marginal emphasis was given for Corporate Real Estate (CRE); the real estate portfolio of a non-real estate organization. However, organizations are required to strategically manage its CRE to unleash the potentiality of CRE because real estate is a primary factor of production. The outcome of the effective and efficient implementation of the tactical real estate plan is the successful attainment of organization's objectives. An effective strategic management of its CRE is a requirement of the hotel industry; a subset of travel and tourism industry of Sri Lanka to add value to successful attainment of hotel's objectives. Therefore effective application of CRE strategies at the operational level is vital. Since, industry specific tactical level indicators of CRE strategies are not reviewed at the national context, this study focused to identify tactical level CRE strategic indicators of the hotel industry in Sri Lanka. Total of 38 respondents participated in the expert review session that comprised with academic, senior managers of hotels, management of the regulatory body of tourism in Sri Lanka and industry veterans. The Analytic Hierarchy Process (AHP) used as the methodology of the study to review expert opinion on indicators of CRE strategies of the hotel industry in Sri Lanka. The expert panel prioritized 27 CRE strategic indicators of the hotel industry in Sri Lanka. The finding contributes CRE literature of hotel industry in Sri Lanka and the study recommends empirical validation of identified CRE strategic indicators to test the impact of each indicator on CRE strategy in the hotel industry in Sri Lanka.

Keywords: *Corporate Real Estate, Strategy, Indicators, Hotel Industry*

Introduction

Corporate Real Estate (CRE), the real estate of non-real estate companies is an important strategic resource of a hotel to successfully offer its products and services in a competitive way to its existing and potential customers. According to the Hiang Liow and Ooi, (2004) CRE is a strategic resource which includes operational and investment real estate of the business organization. Apgar (1995) identified CRE as the fifth resource of the organization after the capital, people, technology, and information. The economic classification on factors of production identifies land (literary real estate of a commercial business) as the first input with labor, capital, and entrepreneurship and represents a significant percentage of the total assets of any organization. On account of this, CRE becomes an important strategic resource and requires strategic attainment to unleash its competitive advantage.

A business strategy is a unique programme designed by the senior management of the organization to accomplish overall objectives of the organization. The effective and efficient use of limited resources and the successful attainment of business objectives is an outcome of the efficacious implementation of business strategy. In general, the strategy classifies into three tiers as corporate, functional and tactical level. The corporate strategy ensures the strategic direction of the organization and focused on organization's vision and mission. With reference to this, the corporate strategy becomes an umbrella strategy covers every corner of the organization. The departmental level strategies are contributors of the value chain of the organization by ensuring strategic attainment of business process activities. The tactical level plans deployed at the divisional and/or sectional level to effective and efficient implementation of departmental strategies. The strategy of the organization showcases ways and means to achieve organization's objectives within the dynamic business environment while in line with the vision, mission of the organization. According to the Kay, (2000) the organization strategy earmark the firm's marketplace within its competitors, depict milestones, pinpoint the strategic direction and portrait future of the organization (Prahalad and Ramaswamy, 2000). Thus strategy craft competitive battleground for organization setting. Despite this, organizations must accept changes of the business environment and ready to outperform and benchmark the best practices in the industry (Porter, 2002).

The statistics of World Travel and Tourism Council, (2016), confirmed that Travel and Tourism industry is one of the leading contributors to Sri Lankan GDP with a total of LKR 1,107.1 bn or 10.6 per cent of GDP in the year 2015. According to the statistics, during the period of 2010-2015, the industry showed the rapid growth of 19.8 per cent which overruled the world tourism growth of 4.7 per cent. The conclusion of country's 30-year long war in 2009 and accelerated infrastructure development during the period are major contributors to this growth. The hotel industry, a subset of the Travel and Tourism industry had a positive impact on this growth and portrait with an increase total number of hotels and rooms up to 354 and 19,376 respectively at the end of 2015 from 253 hotels and 14,714 rooms in 2010. The significant increase in a number of rooms and related facilities are contributors of holding a substantial amount of CRE by a hotel. Thus effective and efficient management of CRE become an integral functional requirement to add value to the performance of the hotel. This alarmed senior management of hotels to investigate, analyze, and identify how CRE strategies are used to add value to the overall strategic plan of the hotels.

CRE strategy is an integral part of the corporate strategy of the organization which crafted by the line manager of the CRE division focusing strategic plan of the organization. Thomas (1978) confirmed that application of strategy is different in service sector compared to manufacturing sector mainly due to nature of the service product. Further it is noted that researchers in the corporate real estate sector focused only corporate real estate issues and continuously ignore strategic link of corporate real estate and the business strategy. This leads corporate real estate to become isolated functional area of many non real estate organizations and disconnected from the boardroom discussion of CRE at senior management and board of directors meetings.

According to Nourse and Roulac, (1993); Lindholm, (2008) strategic link of CRE strategies and business strategy is a prerequisite for successful implementation of functional strategies of an organization. The characteristics of CRE within the context of a hotel namely; (a) functional nature of the real estate, (b) land as a factor of production (technically land is a CRE in the context of organization) and (c) the dual decision structure by real estate manager of the organization and the respective functional manager are key points which strengthen the scholars' argument. On account of this, the effective and efficient use of CRE strategy of an organization becomes a requirement for successful implementation of other functional strategies of the hotel. Therefore, CRE strategy should have hand in hand relationship between other functional strategies as well as corporate strategy of the organization. This confirmed that CRE strategy become an adopted strategy as per the nature of the organization and industry (Oladokun and Aluko, 2016).

The tactical level of CRE strategy has nurtured by industry specific characteristics where the nature of business and culture make an impact on strategic practices of CRE. For that reason, nature of the industry, customary practices, the amount of CRE holding in production and service delivery are operational key success factors or key result areas which influence the application of CRE strategies at the tactical level of the hotel. On account of this, the CRE indicators, a measurable variable used as representations of an associated factor or quantities of CRE strategies of the hotel industry are exactly not same as with other industries. As a result, reviews of indicators of CRE strategies are important to successful implementation of CRE strategies in the hotel industry.

A study of Kaluthanthri and Osmadi (2016), classified CRE strategies of hotel industry into two categories as Contributors of Cost Reduction and Contributors of Revenue and introduced seven CRE strategies based on the expert review which founded upon three main strategic CRE reviews by Nourse and Roulac (1993), Lindholm and Leväinen (2006), and De Jonge, (1996). Accordingly, the study argued senior management of the hotel industry need to operationalize seven strategies in the context of hotel environment to maximize the operational efficiencies of identified CRE strategies of the hotel. On account of this, senior management of the hotel needs to exercise dynamic CRE operational indicators to operationalize identified CRE strategies at the tactical level. However, it is noted that there is no review on operational indicators of CRE strategies of the hotel industry in Sri Lanka and no documentations on indicators of CRE strategies. That being so, the study aims to review expert opinion on operational indicators of CRE strategies of the hotel industry in Sri Lanka. The experts of industry namely; senior management, and researchers of hotel and leisure industry are contributors to review these operational indicators of CRE strategies of the hotel industry in Sri Lanka. The results of the study add to the empirical literature of strategies CRE in the context of hotel industry with meaningful insights.

The structure of the study articulated in three major sections with (a) literature review on CRE strategies, and indicators (b), methodology, (c) analysis and finally the (d) conclusion, which explain the outcome of the study.

Literature review

The literature review on CRE strategies broadly focused on three main scholarly discussions, namely; *Alternative Real Estate Strategies (ARES)* of Nourse and Roulac (1993), *Elements of Added Value* of De Jonge (1996) and *Model for Identifying the Added Value of Corporate Real Estate Management* of Lindholm and Leväinen (2006). The review of three strategic discussions of above scholarly works summarized by Kaluthanthri and Osmadi (2016) into two main categories namely (a) Contributors of Revenue and (b) Contributors of Cost Reduction and seven strategies were identified. Refer table 01 for details

Table 1: Value Added Strategies of Corporate Real Estate

Category	Proposed Category	Nourse and Roulac (1993)	Lindholm and Leväinen (2006)	De Jonge, (1996)
Contributors of Cost Reduction	Reduce CRE Cost	Occupancy cost minimization	Reduce cost	Cost reduction
	Increasing Productivity	Facilitate and control Production Operation and Service Delivery	Increase Productivity	Increasing Productivity
	Increase Flexibility	Flexibility	Increase Flexibility	Increase of Flexibility
Contributors of Revenue	Increase HR Satisfaction	Promote Human Resource Objectives	Increase Employee Satisfaction	----
	Promote Marketing and Sales	Promote Sales and Selling Process	Promote Marketing and Sales	PR and marketing
	Facilitate Managerial and Knowledge Process	Promote Marketing Message	Increase Innovation	Changing the culture
	Increase Value of the Assets	Facilitate Managerial Process and Knowledge Work	Increase value of the Assets	Increase of value
---	---	---	---	Risk control

Defined by author based on Nourse and Roulac (1993) , Lindholm and Leväinen (2006), De Jonge, (1996)

* The value adding element “Risk control” ignored since the indicators of that element already included in other strategies in the summary table

The indicators of CRE strategies identified as measurable variable used to represent association which adds value to hotel through operationalization of CRE strategies. The study systematically scrutinizes the literature to summarize best possible indicators of CRE strategy which become a guiding tool for expert review of the study.

The review on indicators of *Alternative Real Estate Strategies (ARES)* of Nourse and Roulac (1993), *Elements of Added Value* of De Jonge (1996) and *Model for Identifying the Added Value of Corporate Real Estate Management* of Lindholm and Leväinen (2006) led to identification of 27 common indicators which can be listed under the seven CRE strategies. Theoretically summarized indicators for the study shown in table 02

Table 02: Indicators of Value Added Strategies of Corporate Real Estate

CRE Strategy	Indicator
Reduce Cost	Minimize operational expenses
	More efficient use of work space
	Establish workplace standards
	Minimize acquisition cost
Increase Productivity	Facilities Management for operations
	Convenient locations
	Employees preferred locations
Increase Flexibility	Service friendly designs
	Accommodate space requirement
	Ensure multiple use of space
	Create flexible work solutions
Increase HR Satisfaction	Chose leasing instead owning
	Introduce functional work place
	Provide desired amenities
	Convenient built environment
Promote Marketing and Sales	Location convenience for employees
	Invest location
	Physical institutional advertising
	Link environment with company product
Facilitate Management and Knowledge Work	Use design and layout for branding
	Design for innovation
	Users participation for design phase
Increase Value of the Assets	Accept business changes
	Timely purchase real estate
	Timely redevelop obsolete property
	Trade off on lease purchase decision
	Manage risk of property

Source: Defined by author based on Nourse and Roulac (1993), Lindholm and Leväinen (2006), De Jonge, (1996)

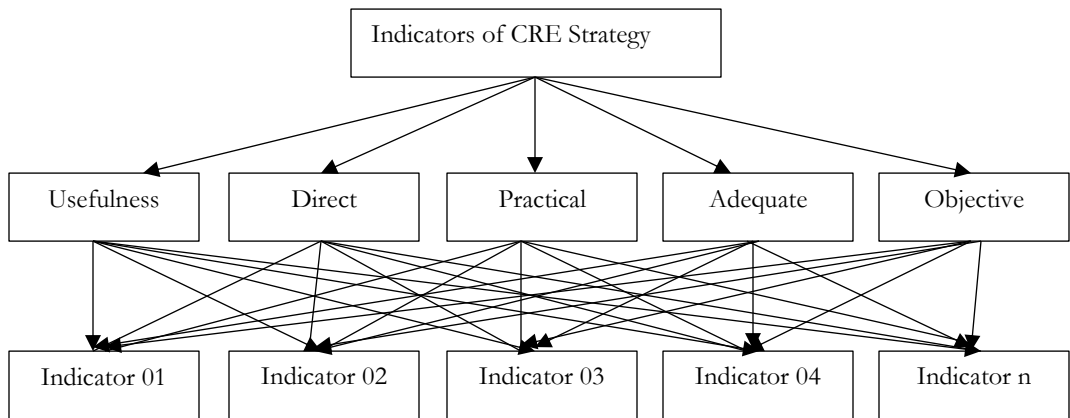
Methodology

The study used Analytic Hierarchy Process (AHP), a model which measure the relative importance of an element based on pairwise comparison with other. The model is suitable for a judgmental review by experts. According to Saaty (1987), the AHP comparison scale measures the absolute judgment of experts on one element compared to another element based on given criterion or attribute.

The general AHP model, represent as a hierarchy which has several levels, including the goal of the model, decision criteria, and the alternatives or elements (Saaty, 1987). The AHP hierarchy of the study designed in a way to identifies suitable indicators of CRE strategies for the hotel industry in Sri Lanka; the goal of the study. The study runs the general AHP model seven times independently to identify AHP priorities for indicators of each CRE strategy.

The hierarchy of the AHP model of the study consists of three levels as shown in figure 01. The goal of the model is the identification of AHP priorities of indicators of CRE strategy. The second level of the model portrait the five criteria used to prioritize indicators for each CRE strategy. The lowest level of the hierarchy shows alternatives indicator of the model.

Figure 01: AHP Model on Indicators of CRE Strategies for Hotel, Sri Lanka



Decision Criteria

The priority order of indicators of each CRE strategy reviewed based on five criteria namely; (a) Usefulness, (b) Direct measurement, (c) Practical, (d) Adequate, and (e) Objective. The five criteria defined as follows.

Usefulness: is used to measure the ability and efficacy of the indicator to implement given CRE strategy at tactical level of the hotel. The indicator should be fit for the purpose and the results of the indicator should be useful for management of the hotel to review the successfulness of CRE strategic decision.

Direct Measurement: the indicator of the given CRE strategy should be able to clearly measure or implement intendant programe/activity of the strategy. The management of the hotel would agree that indicator is logical to use as an activity of tactical level.

Practical: the indicator should be able to apply within the context of hotel environment and able to implement without making additional cost or time.

Adequate: the indicator should be cover important aspects/dimensions of given CRE strategy.

Objective: the indicator should be clear and unambiguous about what is being explained as CRE strategy.

The pair-wise comparison of the relative important of each indicator of given CRE strategy done using 1 to 9 scale. The scale values are given in table 03.

Table 03: Pairwise Comparison Scale for AHP Preference

Numerical scale value	Definition of the scale
1	Equally preferred
2	Equally to moderately
3	Moderately preferred
4	Moderately to strongly
5	Strongly preferred
6	Strongly to very strongly
7	Very strongly preferred
8	Very strongly to extremely
9	Extremely preferred

Source: (Al-Harbi, 2001)

Sample of the study

The study defined an expert as a Sri Lankan who has an academic experience in real estate, or a person who published scientific articles based on the empirical study in a scientific journal or who has management experience in real estate decision making on hotel or attended a scholarly conference and presented findings of real estate management about the hotel industry. Thus the study ensures holistic review on indicators of CRE strategies by experts to fulfil the aims of the study. With reference to this, the total population of the study includes academics, executive staff of hotels who make real estate decisions, and members who presented real estate management findings of hotels at national or international research conferences and journals.

Total of 38 experts responded to the study with a 42.69 per cent participation ratio out of 90 experts who were selected using convenience sampling method. The characteristics of the respondents were given in table 04.

Table 04: Category of Experts

Participant Category	No of Participants
Academics	03
Senior management staff of hotels	12
Middle management staff of hotels	14
Management staff of Sri Lanka Tourist Development Authority	02
Management staff of Travel Advisory Organizations	05
Opinion Leaders	02
Total	38

Source: Field data (2016)

Analysis

The first step of the study is the pair-wise comparison of decision criteria of the AHP model. The results of the pair-wise comparison of decision criterion of the study used to synthesize final priorities of each CRE strategy to reach the goal of the AHP model. The results of the pair-wise comparison and the consistency ratio are given in given in table 5. The consistency ratio of 2.5 per cent, which is less than 10 per cent is under acceptance level as per the decision rule (Saaty, (1987).

Table 05: AHP Priority Weight of Decision Criterion

Criteria	Usefulness	Direct	Practical	Adequate	Objective	Priority Weight	Priority
Usefulness	1	1.00	0.20	2.00	0.25	0.096	4
Direct	1.00	1	0.50	2.00	0.20	0.108	3
Practical	5.00	2.00	1	4.00	0.50	0.28	2
Adequate	0.50	0.50	0.25	1	0.14	0.058	5
Objective	4.00	5.00	2.00	7.00	1	0.458	1
Sum of Priority						1.000	
Consistency Ratio						0.025	

Source: Field data (2016)

The study evaluates the priorities of indicators of each CRE strategy based on the overall priority weight of the criteria. The result of the analysis is shown in table 6 to 10. The final outcome confirms overall priorities of an individual indicator of CRE strategy of the hotel industry in Sri Lanka.

The AHP weights of indicators of “Reduce Cost Strategy” are given in table 06.

Table 06: AHP Priority Weight for Reduce Cost Strategy

Indicator	AHP Weight
Minimize operational expenses	0.681
More efficient use of work space	0.243
Establish workplace standards	0.071
Minimize acquisition cost	0.005
Sum of Priority	1.000

Source: Field data (2016)

Experts confirmed that “Minimize operational expenses” is the most important indicator or tactical activity under the “Reduce Cost” strategy followed by “More efficient use of workspace” and “Establish workplace standards” based on synthesizing final priorities according to the criteria of the model. An important consideration is that these three indicators are contributing more than 99 per cent of total weight of the AHP model. The consistency ratio of the AHP weight is 0.012 and under the acceptable level.

Table 07 showed AHP priority weight for “Increase Productivity Strategy”. Experts confirmed, “Convenient locations” as the most important indicator under the “Increase Productivity” strategy. According to the priority analysis, the location becomes the primary tactic to increase the productivity of the hotel. The selection of the location is a key to increasing output of the hotel in terms of room occupancy, number guest visits, and the number of nights stay. The overall consistency ratio of 0.01 confirmed that expert view is under the acceptable level. However, the indicator on “Employee preferred locations” is given lowest priority. The study argued that hotel should focus customer location first and employees should give the lowest priority. However, this could be vice versa on a business organization like an industrial park, or back office requirement.

Table 07: AHP Priority Weight for Increase Productivity Strategy

Indicator	AHP Weight
Facilities management for operations	0.361
Convenient locations	0.423
Employees preferred locations	0.007
Service friendly designs	0.209
Sum of Priority	1.000

Source: field data (2016)

The review results on “Increase Flexibility” confirmed that experts are focused on how to ensure multiple uses of space as a tactical application of the CRE strategy. According to the results, the hotel management needs to explore the possibility of how to ensure customization of space requirement of hotel facilities such as banquet, hot desk lobby, car park etc... without making any inconvenience to day to day functions of the hotel. Further as a second most important indicator “Ensure multiple uses of space” confirmed that multipurpose or parallel use like temporary partitioning of the main ballroom for a small group meeting or supporting parallel sessions of a conference are contributors for the performance of the hotel with the condition of minimum cost to the hotel. The 0.036 consistency ratio of the review results is par with the decision rule of the Saaty (1987). Refer table 8 for details

Table 08: AHP Priority Weight for Increase Flexibility Strategy

Indicator	AHP Weight
Accommodate space requirement	0.527
Ensure multiple use of space	0.385
Create flexible work solutions	0.231
Chose leasing instead owning	0.077
Sum of Priority	1.000

Source: field data (2016)

The next reviewed CRE strategy was “Increase HR Satisfaction” with the consistency ratio of 0.079 focused on how to increase work satisfaction of employees of the hotel through built environment. According to the AHP results the “Functional workplace” is the most important indicator which is applied in organizational context through designing a standard physical working environment for employee and facilitate work environment with fixtures, fitting, and real estate services. The second heights priority was “Provide desired amenities” ensure availability of regular facilities such as sanitary, drinking water, filing systems which make pleasant and productive workplace for employees. Results of the priority order are given in table 09.

Table 09: AHP Priority Weight for Increase Satisfaction Strategy

Indicator	AHP Weight
Introduce functional work place	0.416
Provide desired amenities	0.260
Convenient built environment	0.251
Location convenience for employees	0.073
Sum of Priority	1.000

Source: field data (2016)

The strategy of “Promote Marketing and Sales” executed through “Invest location” and “Make design and layout for branding” as tactical level indicators with the AHP priority of 0.474 and 0.301 respectively. According to the experts’ comments hotel building is a physical form of communication and the management of the hotel need to effectively use space as a factor of branding. This could be in a form of architectural design, location, color codes, fixtures, and fittings. The consistency ratio of the AHP priority on “Promote Marketing and Sales” was 0.01.

“Design for innovation” which portrait conducive designing of building layout and structures which inspire work innovation with the 0.359 AHP weight identified as the key indicator of the CRE strategy; “Facilitate Management and Knowledge Work”. According to experts’ review, the layout arrangement and structure of the work environment encourage creative thinking and innovation of employees. Thus service departments like kitchen, bar, restaurants, and backend office of the hotel should be designed in a way which promotes creative thinking. This could be colour coding, heating, lighting and facility management. The second important indicator was “Accept business changes” with AHP weight of 0.311 encourages a timely change of the design, and layout of the service areas as per the changes in economic, technological and social changes or trends in the industry which ensure real estate support for innovation.

The final CRE strategy; “Increase Value of the Assets” operationalized through “Timely redevelop obsolete property” and “Trade off on lease purchase decision” received AHP weight of 0.401 and 0.312 respectively. Refer table 10 for details

Table 10: AHP Priority Weight Increase Value of the Assets Strategy

Indicator	AHP Weight
Timely purchase real estate	0.250
Timely redevelop obsolete property	0.401
Trade off on lease purchase decision	0.312
Manage risk of property	0.037
Sum of Priority	1.000

Source: field data (2016)

The management of the hotel need to focus and attentive on factors affecting the obsolescence of property including, economic, physical and financial obsolescence and take corrective actions timely to maintain the value of the property. The indicator trade-off between lease and purchase decision should be implemented with careful analysis of advantage of ownership, legal restrictions on ownership. The 0.059 consistency ratio for the AHP analysis confirmed the decision rule of Saaty (1987).

Conclusion

An AHP model designed to facilitate the CRE managers of the hotel industry in Sri Lanka to review the appropriate indicators or tactics of seven CRE strategies for the hotel industry in Sri Lanka. The model used five criteria to review indicators of each CRE strategy which identified through literature review. The hierarchy of the AHP model reflects the expert review of the study to reach the AHP goal which is applied in a simple spreadsheet calculation. The outcome of the AHP model confirmed relative importance of each indicator of the CRE strategy in the overall strategic application of the hotel industry in Sri Lanka.

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A Review of Approaches to Sustainability and the Process of Real Estate Development

Upuli Perera¹

¹Senior Lecturer, Department of Estate Management and Valuation, University of Sri Jayewardenepura, Sri Lanka
tgup@sjp.ac.lk

Abstract

This is a working paper reviewing evolved frames of references of sustainability and real estate development process (REDP) models. The objective is to highlight the complexities bounded in operationalising the notion of sustainability and to offer a conceptualisation, how that complexities can be best captured within the REDP. The current discourse on sustainability and REDP has already recognised the institutional approach of seeing the analogy through the webs of relations of agency, structure and power relationships. The review highlights, the contemporary institutional model of REDP should recognise the knowledge and feedback loop dynamics more explicitly to embed the meaning and to operationalize the notion of sustainability in a meaningful manner.

Keywords: *sustainability, real estate development process, institutional approach*

1 Introduction

Since the publication of Brundtland report (WCED, 1987), plethora literature addressed the issue of sustainability. Given the fact that natural capital stock is constant, sustainability was highlighted as a key necessary condition for any development spectrum (Özkaynak, Devine, and Rigby, 2004, Pearce *et.al*, 1990). On the other hand real estate development process (REDP) is a significant factor that shapes our built environment and the way people live and work, and thereby determines and enables human activity to evolve (Squires and Heurkens, 2014). Therefore in the context of built-form, the objective of REDP was necessitated to achieve sustainable development. For that reason, sustainability is analogous to real estate development, whilst REDP is a primary catalysts to achieve sustainable development.

To operationalise sustainability within the real estate development process, the early approaches and strategies relied heavily on prescriptive technological fixtures: the “*greening process*” on the assumption that people should be in adherence to those prescribed solutions. However, as highlighted by many academic analysis, such approaches were often been challenged, at the level of operation (Bagheri and Hjorth, 2007). Therefore an alternative approach to view the sustainability notion was embraced – the institutional approach. The view of institutional approach has been shaped through Giddens theory of structuration and Herbamas critical theory which had transformative impact on communicative actions in the planning process. Following Giddens it sees how the meanings of different actors subsequently becomes socially constructed within an interaction process of structure, agency and power (relational webs and network of systems). With the underpinning of the critical theory the (institutional) approach sees how these interactive process can be mobilized to achieve specific social objective like planning and developing real estate. Thus institutionalist approach view the world in relational contexts (Healey, 1997).

In general the paper welcomes the institutional approach to view both sustainability and REDP. Accordingly, the aim of the paper is to conceptualise, how this analogy of sustainability and REDP can be deepened and systematized through the lens of institutional approach imperatives, in a way that sustainability can be effectively operationalised within the REDP frameworks.

2. Methods

This paper follows the systematic review approach. It is an approach that entails the usage of an explicit approach to search, appraise and synthesise available literature to satisfy the aim of the topic under study (Victor, 2008). Thus it uses published scholarly works that are already empirically tested and follows the process of (i) define the purpose and scope of the review (ii) seek out studies relevant to the scope and purpose of the review (iii) Appraise the studies according to the purpose (iv) analyse each study and synthesise the results (Bryman, 2015).

Given the scope of the study was to conceptualise sustainability within the REDP, published works related to both sustainability and REDP models - journal articles, books and other internet sources have been gathered for appraisal. For this matter, the paper particularly drew attention on how institutionalist approach driven frameworks have shaped the contemporary meanings of sustainability and the REDP models. Accordingly, it has first reviewed the level in which both sustainability and REDP models have been shaped by this contemporary understanding of institutional models. Thereafter welcoming the institutionalist landscape, the review has conceptualised how sustainability can be embedded in REDP models in a more meaningful manner.

3 Review of Literature and Conceptualising sustainability

The view of sustainability is an evolution (Glavič, and Lukman, 2007). It emerged in 1970s as a reaction to the degradation of environment and the societies well-being in the post-war new economy's industrial cities or what otherwise known as OECD¹ countries (Wood, 2005, Leal Filho, 2000). The post-war accelerated economic developments and the neo-liberalisation induced changes to environment and resource consumption patterns (in a negative manner) gave rise to environmental movements to lobby on "sustainable development". They urged an eco-centric view of the world: economic actions being responsible on the negative influences that it might have on natural environments and the future societies (Glavič, and Lukman, 2007).

The first officially recognised definition for sustainability was declared by *Brundtland Report*² stating "...economic growth can and should be managed in such a way that the quality of life of future generations is ensured" (WCED, 1989). This definition was tied up with three well-known fundamental principles of sustainability i.e. the economic principles, environmental principles and social principles. The paper published by the Brundtland

¹ The Organisation for Economic Co-operation and Development (OECD) is an intergovernmental economic organisation with 35 member **countries**, founded in 1961 to stimulate economic progress and world trade.

²A report published by United Nations World Commission on Environment and Development (WCED), 1987 in the search for a sustainable development path.

Commission: *Our Common Future*, showed how these economic, environmental and social elements of sustainable development has been tagged between - “needs”, “limits” and “equity” respectively. When such discourse was translated into subsequent plethora definitions and research agendas, its frames of references of sustainability more broadly evolved in two trajectories.

Sustainability Trajectory 1 – Standard Approaches

The first trajectory is the early versions of standard approach sustainability that simply followed the Brundtland’s standard definitional base of three interlocking pillars: economic, environment and social (Fig 1). A content analysis employed by Lombardi, *et.al.*, (2011) in their study in assessing the sustainability principles within the UK urban policy on regeneration programs points out sustainability has been mostly described as a ‘three-pillar’ issue at the same time giving more prominence to environmental pillar than the socioeconomic pillar. Such conceptualisation are associated with the view that sustainability can be achieved through the technological fixtures (Lombardi, *et. al.*, (2011): green technology for instance. In the academic literature this version has been trendier during 1990s to early 2000. These definitions have been largely subsumed by the dominant objectivism driven economic paradigm (Matutinović, 2007). For instance a content analysis undertaken by Glavič’s study (2007) highlighted, the social sustainability principles contained in the definitions under review were (i) social responsibility and ethical investments (ii) polluter pays principle and (iii) reporting to stakeholders and planning with general public, whilst the environmental sustainability principles were (i) minimising resource usages, (ii) source reduction, (iii) renewable resources, (iv) recycling and regenerations and (v) degradation. It demonstrates that these principles/approaches are largely underpinned by the *laissez-faire* economics, where the interpretation of social and environment sustainability is limited to how far the economic activities cause market inefficiencies and failures.

However, the sustainability initiatives underpinned though these standard approaches drew many criticisms: “sustainable practices” became a cliché (Walker, 2012) hypocrisy: fake greenery, delusion (Robinson, J., 2004), absurdness of designs (Horton, Hadfield-Hill and Kraftl, 2015), environmental gentrification (Curran, and Hamilton, 2012; Checker, 2011) etc. Those critics highlighted, the early frames of references for sustainability has failed to achieve its set objectives thus has become illusive at the time of operationalising the notion. As stated by Robinson, (2004) the context that *Brundtland’s* definition got published was to first popularise and make the concept of “sustainability” by penetrating it to governments and businesses, thus was presented in a romantic style. It was argued that for sustainability the markets (or economic pillar) cannot by itself register the social and environmental cost (Norgaard, 1997 as in Herman Daly, 2000) thus the standard approaches of early versions cannot warrant meaningful operationalisation of sustainability.

Sustainability Trajectory 2 – Institutional Approach

Those arguments created a point of departure from standard approach towards an alternative way of viewing sustainability – understanding sustainability in the light of social constructionism driven institutional approaches. This trajectory was particularly sprung up from mid-2000 onwards and meant to view sustainability in the shoes of cultural and political issues, inextricably tied to prevailing values and beliefs in the society

(Glavič, and Lukman, 2007, Matutinović, 2007). The Robinson's (2004) analysis on how the concept of sustainable development has played out in industrialized countries since 1987 concluded that sustainability was "ultimately an issue of human behaviour, and negotiation over preferred futures, under conditions of deep contingency and uncertainty". Discussing the critics and the concerns of past praxis of "sustainability" he highlighted, sustainability was largely problem driven and socially constructed. It is socially constructed because, "sustainability" in development reflects the social consensus about what is sustainable or unsustainable development, therefore cannot be translated into a blueprint or a defined end (Voss, Bauknecht, and Kemp, eds., 2006). The (sustainability) science may help to identify directions in which changes are needed but it does not guarantee new trajectories for sustainability (Kemp, and Martens, 2007).

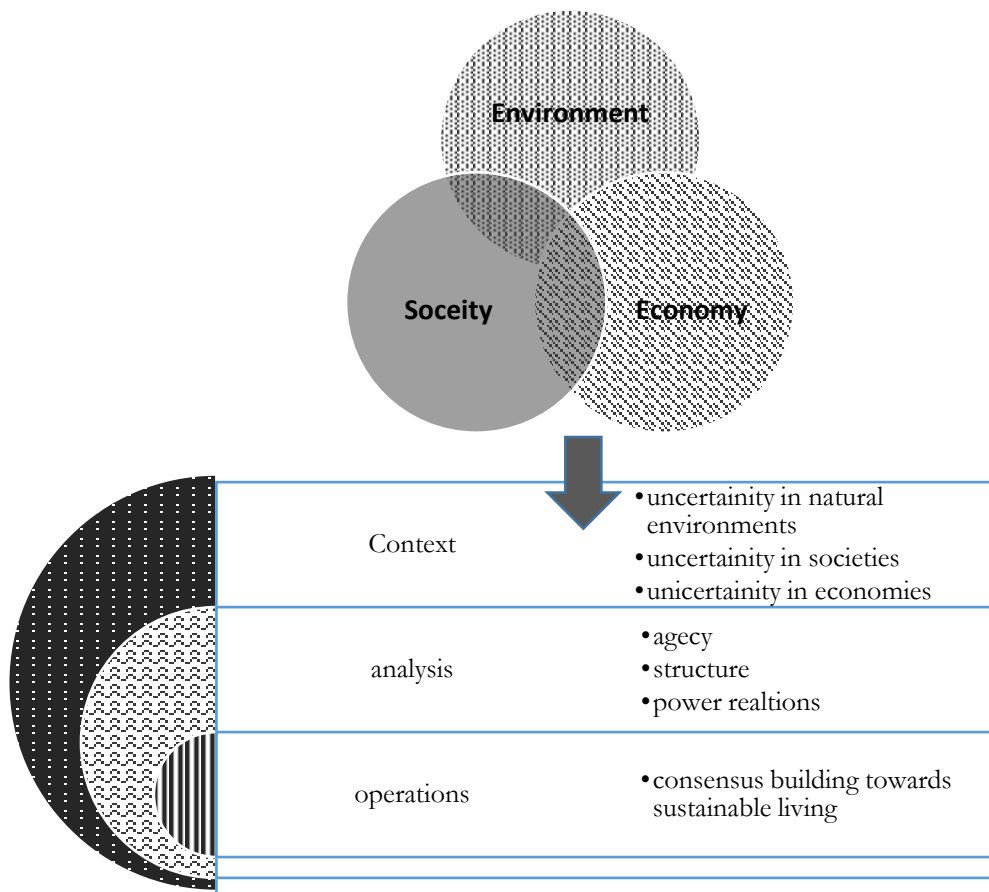
This shift of institutional approach to define sustainability in the light of; problem driven and solutions through consensus building has already penetrated into the policy language of the OECD countries. For instance European Union (2004: 39) defined sustainable urban design as a process whereby "*all the actors involved . . . work together through partnerships and effective participatory processes to integrate functional, environmental, and quality considerations to design, plan and manage [the] built environment*". Invariably, the five guiding principles of "UK Sustainable Development Strategy Securing the Future" included good governance - engaging people's creativity, energy, and diversity, as one such primary principle of sustainability. Furthermore the primary drive for UK planning reforms 2010 was to enact localism (Localism Act 2011) in order to empower local communities and local government in the real estate development process. Moreover by 2016, United Nations in its Sustainable Development Agenda for 2030 (2016) has expanded its previous *Brundtland's* version of sustainability into 17 (seventeen) goals based on different world problems whilst goal 17 recognises the stakeholder partnerships and engagement of all actors as a means to achieve the rest 16 sustainability goals.

Therefore, the second trajectory of institutional view of sustainability comprehends the vocabulary of: relationships between the structures, agency and their power relationships, uncertainty and socially constructed problems. The "structures" apprehend the previous view of sustainability, whilst recognising that those structures are not isolated but shaped by the actions of stakeholders and the power relationships associated in those actions. On the other hand it recognised that the defined problems are socially constructed and solutions needs to be dealt with uncertainty. Thus as shown in Figure 1, the second trajectory shows a shift from three-pillar ring view of sustainability towards dual nested model. In shows, the clearer social, economic, and environmental zones in the early versions of sustainability are becoming fuzzier in the later view, concerning social, environmental and economic uncertainties in an integrated manner.

Accordingly, on the whole, the institutional approach of sustainability purports three basic elements to operationalise sustainability. Firstly, it is the reflexive mode of governance through engaging communities and collaborative planning (Blewitt, 2014; Ramasubramanian, 2010; Robinson, 2004; Kemp, and Martens, 2007). In other words, it is a consensus building process for problem solving. Secondly, this consensus building process to be proactive to grasp local knowledge to work in the direction of what

sustainability science have been suggested in addressing a particular issue (Schreurs, and Moulaert, 2014; Naess, 2001). For instance Naess argued that consensus building process should not be to destroy everything together but to build alliances towards a common goal of sustainable lives.

Figure 1 – Conceptual shift of sustainability towards integrated approaches



Source: Author construct, 2016

Left: the standard view on interlocking rings implying three independent dimensions where sustainable development is achieved in the overlapping region; Right: A nested model removing the nebulous distinction between the economic, environmental and social elements.

This element on the other hand provide a point of entry for the sustainability science (apprehend by the previous approaches) to remain within the institutional approach. Thirdly, the recognition that sustainability is process-based rather than end point oriented fixed goal (Bagheri, and Hjorth, 2007). What it suggest is, with the recognition of future uncertainty and adaptability and even the change of frames of references of

actors themselves, the engaging communities and consensus building is to trigger an incremental social learning process and not for the traditional deal of “the answer by forecast”.

4. Analysis and Discussions

REDP Models and Institutional turns

REDP is the catalysts to operationalise sustainability related to build form. The models to explain REDP primarily classified into (i) equilibrium models (ii) event-sequence models (iii) agency models and (iv) structural models (v) institutional models (Squires, and Heurkens, 2014; Adams, and Tiedell, 2012; Healey, 1991; Ratcliffe, Stubbs and Shepherd, 2004).

The equilibrium REDP models focused on demand and supply of real estate (Healey, 1991, 1992). In other words whether the development has brought in sufficient supply to meet the demand, with the real estate adage, “at the right place the right time and the right place” (Healey, 1991). Therefore the analysis of REDP here is translated into analysing of rents and yields, land and building valuation, driving the assessment focus on returns and losses (Healey, 1992). The event sequence models on the other hand appreciates the timescale complexities of the REDP. With its neo-classical economic traditions (Healey, 1991) it unpacks the development process into constituent events. Some examples include: Cadman and Austin-Crowe (1978, P.3) who divided the process in to (i) evaluation (ii) preparation (iii) implementation (iv) disposal, Miles et.al 1991 classification on (i) inception of an idea (ii) refinement of the idea (iii) Feasibility (iv) contract negotiation (v) formal commitment (vi) construction (vii) completion and formal opening (viii) asset and property management and so on. The model scope therefore translated the analysis into distinguish steps to understand the relationships between different stages (Ratcliffe, Stubbs, and Shepherd, 2004) and the social relations of actors surrounded in each event (Healey, 1991). The agency model places the actors or otherwise may refer as stakeholders in the centre of the REDP analysis. This model emphasis the distinction between actors, their roles and the power relations in the development process. For instance whilst developer becomes the primary actor in the development process their role as the co-ordinator of resources and catalyst in the development process (Drewett, 1973; Kaiser, and Weiss, 1970; Craven, 1969) largely determines the outcomes of the real estate development. Finally, structural models, rooting back to Marxist sources nurtured in the urban political economy literature (Healey, 1991), analyses how different markets are structured through power relations of capital, labour and landowner. The analysis of scholarly works that followed structural models for REDP (Ball, (1983); Boddy, M. (1981), Massey, D. and Catalano, A. (1978); Ambrose, P. (1986), Harvey, (1982) (1985), Holland, Ott and Riddiough, 2000 and so on) highlights, this model has been particularly in use to seek how a certain policy (or policy change) have had an implication(s) on the flow of different forms of capital and surplus generations between developers, state sector, industry and so on.

Even though these models were in use REDP process in the direction which it was intended to be, those models particularly place the analytical emphasis on a selected typology – demand and supply, event, actor and interest or structure whilst the contexts of unselected typologies were left on assumptions (Healey, 1991). As pointed out by

Healey, the equilibrium model assumes standardised demand in exercising their decision making based on analysing of rents and yields, land and building valuation, thus do not recognise the diverse form of demand. E.g.: the demand from user and demand from investor would be treated in the same way. Invariably the event-sequence model pay attention to the “processes” but displace the actors and interests who are actually implementing the processes. Even though both agency and structure models in general opens up the agency and power relational complexities, it provides little penetration into the events, activities and structures in the REDP. Therefore indifferent to the shift of views on sustainability, those shortcomings on the whole gave rise to institutional approach of REDP models.

Institutional model of REDP: The institutional turns to analyse real estate development process (REDP) was pioneered by Pasty Healy a British Town planner and emeritus professor. In 1992 in his paper published on “*An institutional model of the development process*” recognised that the real estate development process is complex; bounded by events involved in the project, agency varieties, their roles and activities, general tendencies in social relations of the development process in ways which connect to macro-economic and political questions, spatial and temporal variations (Healey, 1991). As a result, the institutional model for REDP was developed by combining all the variables that had been identified in the previous REDP models. Instead of centring the analysis in to specific typology this approach proposes all typologies in distinguish level of analysis. The first level of analysis is the empirical observation level: recognition of concrete events, agencies involved and their power relations evolve between them. The second level of analysis is the assessment of strategies and interest of actors related to resources, rules and ideas governing the development process. The third is the level that make connection with the social relations expressed in the prevailing model of production, mode of regulation and ideology of the society within which development is being taken place.

Accordingly, with the same vocabulary and variables with that of sustainability, the institutional model of REDP showed an evolution in a similar direction with that of sustainability. Over the period the institutional model of REDP had been in the popular mode across research agenda on real estate planning and development. However much attention for the model was received by scholars to understand the real estate approaches under different contexts. For example, Adams, D. and Tiesdell, S., 2012 employed the institutional model of REDP to analyse the property industry in UK. Squires, G. and Heurkens, E., 2014 combined this approach with their conceptual framework to understand the real estate approaches across various international real estate markets. Doak and Karadimitriou (2007) presented a conceptual framework to analyse REDP in the context of land redevelopment to reflect its complexities and networks. In this respect the attention of institutional model of REDP received with respect to conceptualising sustainability explicitly – the core objective of REDP, has been limited.

Figure 2: Institutional model of REDP

<i>Roles in Consumption</i>		
<ol style="list-style-type: none"> 1. Material Values: Production, consumption, investment 2. Property rights 3. Guardian of environmental quality 		
<i>Factors of Production</i> <ol style="list-style-type: none"> 1. Land 2. Labour 3. Capital 	<i>Events in the real estate development process</i> e.g. Identification of development opportunities Land assembly Site clearance Acquisition of finance Organisation of construction Organisation of infrastructure Marketing/managing the end product	<i>Products/Outputs</i> - In the Building <ol style="list-style-type: none"> 1. Material values 2. Bundle of property rights 3. Symbolic/aesthetic values -In the production process <ol style="list-style-type: none"> 1. Profits 2. Jobs 3. Demands for related goods/services <i>Impacts</i> Wider economic Political, environmental Sociocultural effects
<i>Roles in production</i>		
<ol style="list-style-type: none"> 1. Land: Ownership rights; use/development rights 2. Labour: physical production; supplier organisation 3. Capital: Money; raw materials/machinery 		
<ol style="list-style-type: none"> 1. Roles and relationships 2. Strategies and Interests 3. Rules-resources-ideas 4. Mode of production 5. Mode of regulation 		

Source: Adopted from Healy, 1992

Conceptualising sustainability within institutional model of REDP: A Research Agenda

Highlighted by institutional approach both sustainability and real estate development are problem driven. i.e. emerged to solve a particular issue in the social world. Therefore in the contemporary discourse on the development, embedding sustainability has become an obvious orientation. Sustainability has reached its maturity to recognise, its problem

definition are socially constructed and the solutions are to be sought within a consensus building process. The institutional model of REDP on the other hand is equipped with all required variables to perform a wider and deeper analysis on real estate outcome. Combining these two compounds together, the paper finally suggest how the institutional model of REDP can be revived with contemporary institutional view of sustainability. This highlights two missing links.

Firstly, the REDP analysis should recognise the consensus building element highlighted within the contemporary meanings of sustainability. In other words REDP to detect the knowledge creation dynamics of actors. Having recognised the stakeholder engagement, their agency, role and interest as a part of REDP, the relational outcomes that need to be recognised are, not only “their power relations” but also creation and transformation of “knowledge”. Each stakeholder’s knowledge is provisional (Kemp and Martens, 2007) thus engagement and consensus building is a knowledge diffusion process. As stated by Robinson (2004), Acemoglu, Johnson, Robinson, and Thaicharoen (2003) stated, consensus building opens multiple perspective that allows for, and reinforces, social learning and changes in views over time; and that is provisional but not concrete. Therefore REDP should demonstrate how this social learning process have an impact within the process and the process outcome.

Secondly, the REDP analysis should recognise the process is non-linear. This apprehends the feedback loop nature of the knowledge dynamics within the REDP. Feedback loops to convey the lessons/experience of a new sustainable trajectory – either via a deliberate or natural process. Bounded by first element, this identify the fact that meanings of sustainability comes in trajectories, therefore learning needs to be feed back into the next level of understanding. As stated by Gottdiener, 1994) production of space (in this case real estate) is captured best as the complex articulation between structure and agency, which is always in motion. The other advantage of highlighting the feedback loops of the REDP is that the negative feedback loops in the system self-correct the system towards positive feedback loops (Bagheri and Hjorth, 2007). This ensures this reflexive mode of consensus building is indeed proactive towards sustainability recommended in the sustainability science.

5. Conclusions

Both sustainability and REDP models have been evolved to a level that it recognises the institutional approach as a means to view both problems and solutions. The contemporary understanding admits, sustainability is a problem driven notion and such problems are socially constructed. Therefore sustainability is viewed in a larger picture of agency, structure and power, in the context of economic, social and environmental uncertainties. Thus the contemporary frames of references of sustainability notion urge proactive and process-based consensus building of actors to overcome its operationalising challenges. REDP on the other hand is a one primary catalyst in which sustainability related with built-forms are addressed. Therefore REDP should also be improved at a similar phase with that of sustainability. Despite the institutional model of REDP is equipped with required landscape that suits for a larger picture of sustainability, the model has not yet received much scrutiny into reflecting consensus building impacts on project outcomes. Accordingly the paper informs the Institutional model of REDP

to take into account the knowledge creation dynamics and the feedback loop dynamics, to offer a meaningful operation of sustainability.

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Highest and Best Use of Plantation Industry Properties in Sri Lanka: Special Reference to the Plantation Properties of ABC Company

Sampath P. Dayaratne¹,

¹Ace Property & Business Consultants (Pvt.) Ltd.
sdayaratne@gmail.com,

Kennedy D. Gunawardana²

²Professor, University of Sri Jayewardenepura, Sri Lanka
kennedy@sip.ac.lk

Abstract

Managing Plantation Industry in Sri Lanka is becoming an insurmountable challenge, requiring an urgent solution. This is due to change in rapid market condition and inability of only the Government of Sri Lanka to tackle the situation for a solution and underutilization of productive land area. With a decade old industry cannot be thrown away as a result of the industry is a bread winner of many people depends on it. In order to come up with viable solutions to this issue, authors have investigated literature extensively and analyzed with the help of the data collected from ABC Company. Accordingly, a model has developed to initiate the management of plantation industry in Sri Lanka. This covers the participation of private-public-employees to manage the plantation industry, which can be used globally where plantation industry is in operation as a sustainable business model.

Keywords: *plantation industry, management, PPP sustainability model, public private partnership*

1 Introduction

Land which is scarce natural resources plays a key role in development. Land is the foundation of all forms of human activity. It is the means of life without which human beings could never have existed and on which their continued existence and progress depend. Land is one of the factors of production. For any physical development to take place there should be land as the priority requirement. Much of investors' incentive for the development maintenance and improvements of resources is rooted in the concept of property rights. At present with 82% of total the state dominates land ownership in Sri Lanka. Agricultural land accounts for approximately 2.79 million hectares or about 43% of total land mass, of this 53% is owned by the state, but farmed by private farmers under varying tenure agreements (World Bank, 1996).

Plantation agriculture sector in Sri Lanka comprising Tea, Rubber & Coconut continues to play an important role in the national economy. Enhance the productivity, profitability & sustainability of plantation industry, major component of the land comprises covering these cropping areas.

1.1 Plantation Industry in Sri Lanka

Tea Industry

Tea is a perennial plant and belongs to the species *Camellia sinensis* or *Camellia thea* and it is consumed as a beverage after brewing. Tea originated in China and is mentioned in a Chinese dictionary of 350 BC. By the middle of the 17th century tea invaded Europe.

The word tea is derived from the Portuguese word 'Tcha', and Portugal claims to be the first to introduce tea to Europe. Tea became popular in England in 1680.

The commercial planting of tea in Sri Lanka was introduced by a Scotsman, James Taylor in 1867 on 19 acres of land on Loolecondera Estate, Hewaheta. This was carried out with the idea of testing tea as a possible alternative crop for coffee which was facing a leaf rust disease at that time. The first consignment of tea was exported in 1872 and the production of tea topped the 1 million pound (454,000kg) mark by 1884.

Rubber Industry

It was Christopher Columbus who is thought to have first discovered natural rubber in Haiti in 1493, where he saw the natives playing with ball made from the 'sap' of a tree called 'cau-uchu'. In 1736, natural rubber was introduced to the western world by Charles de la Condamine. In 1770, John Priestly found that natural rubber could erase or rub away pencil marks. Hence, he called the material 'rubber'.

In 1876, Sir Henry Wickham collected some 70,000 seeds and is supposed to have secretly carried them to London from Brazil. Years later, these rubber seeds were planted in large scale in Asia (in places such as Sri Lanka and Singapore) as well as Africa.

Coconut Industry

The coconut palm, *Cocos nucifera* is a member of the family Arecaceae (palm family). The term 'cocos' is derived from 16th century Portuguese and Spanish meaning 'grinning face' from the three small holes on the coconut shell that resembles human features.

A French company, J.H. Vavasseur and Company, set up operations in Ceylon with a unique solution for shipping coconuts to Europe. They shredded the coconut meat and dried it thoroughly, making it easier to pack without spoilage. By the early 1890's they were shipping six thousand tons of desiccated coconut, a figure that multiplied by ten in 1900.

1.2 Business Model in Plantation Industry

All the plantation lands were given on lease. Leaseholders were not developing the plantation industry and not in favour of cultivating the land because of the short lease period that would expire. There are 23 Regional Plantation Companies managing tea, rubber, sugar, oil palm, cashew and Palmyra estates. The estates were given to them under a lease agreement in 1992 by the then government. Until then they were managed by the ABC Company and XYZ Company despite losses running into millions of rupees. Lease rental derived at the time of leasing such lands were based on the valuation. A significant controversy arose due to low annual lease rental has decided for those lands.

1.3 Statement of the problem

The best performing plantation companies which increase their productivity, application of bio fertilizer and engaged in worker welfare, brand promotion and encouragement of investments to promote high value exports. There are certainly many challenges. In addition to issues in key export markets and low labour productivity, the government's decision to withdraw the fertilizer subsidy and the impact of banning of the use of the

chemical weedicides, along with the newly introduced charge for cash withdrawal for worker wages.

The question with regard to the sustainability of the plantation industry now lies very much with the joint collaboration of all the stakeholders providing a fair market valuation for their properties to lease out for the plantation purposes. Only theatrics and political pressure cannot resolve this issue which requires a reasoned and long-term approach. They can continue to make unrealistic and unreasonable demands, which they themselves very well know are infeasible, or accept the present-day reality and cooperate with the Regional Plantation Companies. The future of the plantation industry depends on it and is in the hands of all the stakeholders such as government, investors and workers.

Having considered the issues in the sustainable development in Plantation Industry in Sri Lanka research question formulated as “What are the barriers in implementing sustainable business model for the Plantation Industry in Sri Lanka?” In order to find out possible solution to the said question, an objective has formulated as to determine possible policy model to implement for business sustainability in Plantation Industry in Sri Lanka. Due to the main constrain of financial issue in plantation industry it was advised look for possible partnership with different stakeholders.

2. Literature Review

2.1 Global view of partnership

Urban areas across the globe are characterized by their own set of complex issues, the financial challenges are notably the same; at all levels of economic development, there is a far greater financing need for development projects than can be provided by the traditional public purse alone. Recognizing this, governments around the world are turning to partnerships as one possible financing option for large scale investments in the provision of affordable plantation sector development and other basic infrastructure assets. The principal reason for adopting a partnership model for the provision of circular economic development is that, where project suitability is correctly measured and implemented, this approach can offer greater value for money when compared with traditional procurement. Almost all countries around the world have witnessed some form of investment in the successful provision for development since the early 1990s. Although the level and success of partnership varies sharply, particularly in the developing world, their well-documented potential in consistently generating efficiency gains in developed countries like Canada, the Netherlands and the United Kingdom (UK) cannot be overlooked. In these countries, partnerships have been a significant contributor to lowering costs and increasing operating efficiencies for development projects (UN Habitat 2011). Partnerships hare risks involved in the investment.

2.2 Risk allocation among stakeholders

An important aspect of a partnership project is an explicit arrangement for allocation of risks between the parties involved. A good feasibility study provides the background that is needed for an allocation exercise. The following general principles may be considered to manage and allocate risks are eliminate or reduce to the extent possible the chances of a risk to occur. For example, when possible, borrow in local currency to

avoid exchange rate risk, allocate risks to the party that is best equipped to manage them most cost effectively. For example, political and regulatory risks are more appropriate for the public sector, while operating risks are more suited to the private sector. The commercial risks are generally allocated to the private sector. But deviations can be considered on the basis of valid reasons - for example, sharing of commercial risks may be considered to attract private investors in an untested partnership market, Consider insurance (if available) to deal with risks which neither party is able to manage but still can maintain value for money in the project, when neither party is in a position to effectively manage a risk, it may be kept unallocated with an indication in the contract how the risk may be shared between the parties or assumed by a party in the event of its occurrence. In case of a concession contract, it may also be transferred to the end-users by way of charging higher tariffs.

It is not advisable to transfer all risks to the private party. There should be a good balance in risk allocation between parties. If a good balance is not achieved, it will result in increased costs and one or all parties may not be able to fully realize their potential. Government means government in general or the concerned ministry, department or an organ of government as the case may be.

Although the general principle of allocating risk that the party who is in the best position to manage should assume the risk applies to all situations, the party in the best position to manage a particular risk may vary from one situation to another. Many risks are project and situation specific.

2.3 Public Private Partnerships

According to the Canadian Public Private Partnership which is the guide of local government in Canada said that Private Public Partnerships (PPPs) are arrangements between government and private sector entities for the purpose of providing public infrastructure, community facilities and related services. Such partnerships are characterized by the sharing of investment, risk, responsibility and reward between the partners. The reasons for establishing such partnerships vary but generally involve the financing, design, construction, operation and maintenance of public infrastructure and services (accessed on 31.10.2016 available at <https://www.pppcouncil.ca/>)

According to a Policy Framework for PPPs, Department of the Environment and Local Government in Ireland said that a Public Private Partnership is a partnership between the public sector and the private sector for the purpose of delivering a project or a service traditionally provided by the public sector. PPPs come in a variety of different forms, but at the heart of every successful project is the concept that better value for money may be achieved through the exploitation of private sector competencies and the allocation of risk to the party best able to manage it (accessed on 31.10.2016 available at www.housing.gov.ie/)

According to the 4Ps, UK local government procurement agency Public private partnerships (PPPs) are a generic term for the relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services.

The term PPP is used to describe a wide variety of working arrangements from loose, informal and strategic partnerships to formal joint venture companies (accessed on 31.10.2016 available at <https://www.gov.uk/guidance/public-sector-procurement-policy>)

According to the World Bank reference guide a long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility. PPP can be defined as a long-term contract based on service outputs where there is significant risk transfer to the private sector. Typically, these long-term contract obligations involve design, major procurement, operation of a facility and/or maintenance along with the provision of significant private finance (UNECE, 2008).

2.4 Benefits of Public Private Partnerships

Adams et.al (2006) suggest five key benefits: protecting existing and future taxpayers, reducing the overall tax burden, spreading risk, reducing “bureaucracy” and increasing the effectiveness of delivery of many public sector “responsibilities”. However, in the context of China, a developing economy, it can be argued that the introduction of private capital and/or servicing private debt used to construct public projects over the long-term is a necessary and even essential strategy to meet the developmental objectives. Hence, the twin inputs of private sector management expertise and private sector finance are viewed as the only practical vehicles for attaining the social, economic and environmental objectives. In addition, it can be argued that since many PPP projects are long-term in nature (under the Concession and Divestiture types) then this provides a long-term commitment on the part of the private company to meet their obligations under the contract. In turn this should help Government to avoid otherwise considerable tax increases that would be required to meet the objectives. But a key constraint here is access to capital.

Rondinelli, (2007) identify that true public-private partnerships begin by identifying the central problem, then asking who should help solve it. They may be initiated from the private, government or civil society sector, but they are not about then arrow plan of any one partner. Public-private partnerships are about shared agendas and combined resources, risks, rewards, and linkages that can magnify scale.

2.5 Critical success factors

Suhaiza and Shochrul, (2013) show that good governance, commitment of the public and private sectors, favorable legal framework, sound economic policy and availability of finance market are the top five Critical Success Factors of Private Public Partnership implementation. Although the rankings of many factors were different between the public and private sectors, there were no significant differences in the perception of the public and private sectors concerning the importance of the Critical Success Factors except for a few factors

Jacobson and Choi, (2008), are presented and analyzed ten success factors: specific plan/vision, commitment, open communication and trust, willingness to compromise/collaborate, respect, community outreach, political support, expert advice

and review, risk awareness, and clear roles and responsibilities. High degrees of commitment and shared vision between the client, architect, and contractor are shown to be important aspects for construction success as well as pairing factors of open communication and trust with high levels of compromise or collaboration.

One of the survey findings of Cheung et.al, (2012) carried out were compared with the results achieved by a previous researcher in a similar survey conducted in the UK. The comparison showed that amongst the top five success factors ranked by Hong Kong respondents, three were also ranked highly by the Australians and British. These success factors included: “Commitment and responsibility of public and private sectors”; “Strong and good private consortium”; and “Appropriate risk allocation and risk sharing”. Therefore, it can be concluded that there are certain common critical success factors for conducting PPP projects, irrespective of the geographical locations.

2.6 Risk allocation

Ke et al (2011) showed that the top ten risks identified according to their risk significance index score are: government’s intervention; poor political decision making; financial risk; government’s reliability; market demand change; corruption; subjective evaluation; interest rate change; immature juristic system; and inflation.

Further Ke et al (2011), showed a great degree of conformity between the two allocation schemes. These interviews effectively reinforce the rationale of the preferred risk allocations, so that they can be considered as equitable for PPP projects.

Demirag et.al, (2012), "showed that the financial structure of the deals generates risk aversion in both debt and equity financiers and that the need to attract affordable finance leads to risk diffusion through a network of companies using various means that include contractual mitigation through insurance, performance support guarantees, interest rate swaps and inflation hedges. The risk aversion and diffusion and the consequent need for advice add cost to the projects, impacting on the government’s economic argument for risk transfer.

Zou et.al, (2008) found that properly assessing risks (financial, government’s political and public’s acceptance/rejection risks), ensuring value for money and protecting the public (and end users’) interests are essential in PPP infrastructure projects and this can only be achieved through optimal risk identification, assessment, allocation and management from a life cycle perspective and balanced interests between the Government/public and private partners as well as product end users.

Nisar, (2007), showed PPP contracts commonly require the private agent to take responsibilities for the performance of the asset over a long term, at least for a significant part of its useful life, so that efficiencies arising from long term asset management can be obtained. The evidence is finely balanced on the usefulness of such initiatives in realizing efficiency gains, although there is clear benefit of risk transfer.

ESCAP Guide Book (2011) showed that risks are inherent in all PPP projects as in any other infrastructure projects. They arise due to uncertain future outcomes which may have direct effect on the provision of services by the project, and/or the commercial

viability of the project. The risk allocation to parties in contract and the management of risks are, therefore, at the heart of a PPP design. This is also an important element in establishing the business case for a PPP project. The risk analysis, allocation and management involve the identification of all possible risks and assessing their likelihood, examining the likely effects of the risks in quantitative and qualitative terms, consideration of suitable mitigation measures that may be available and allocation of risks to parties.

Nataraj, (2007) showed that financing in projects is a challenge in South Asian countries, where financial markets are shallow and there are limited options for financing long term projects. To ease financing constraints, priorities should include: developing longer-term bond markets; developing investment policies and regulatory guidelines that encourage banks, insurance companies, pensions and mutual funds, and other financial institutions to help finance infrastructure projects; and, encouraging the use of innovative financing instruments to mitigate lender's risks. To help close the funding gap, the governments of Bangladesh, India, and Pakistan are establishing facilities to provide long term finance for projects.

2.7 Valuation for Plantation Industry Development

ESCAP Guide Book (2011) showed that projects have long gestation periods, and often are not financially viable on their own. A feasibility study may reveal that a project is not commercially viable or attractive to private investors but is economically and socially desirable from long-term considerations. In such a situation, various options can be considered for improving the project's commercial viability and attractiveness. These options may include government intervention of various types and provision of incentives or subsidies. Government support is also well justified when a project can generate substantial external benefits, which cannot be captured or priced by the project operator. Social welfare is improved by undertaking such projects with government support. Government support may also be needed considering a fundamental problem in infrastructure financing that arises due to a mismatch between the shorter duration of market valuation time compared with the long life of many infrastructure assets.

PPP in Indonesia (2012) showed that to date, land acquisition is deemed to be one of main problems in the overall PPP transaction process. Land acquisition in Indonesia is part of the government support but is also included in investment costs. Furthermore, the land release process in Indonesia for PPP projects can take much longer than stated in the investment agreement. This means the private sector still bears the cost of releasing the required land. Commonly, governments have to provide compensation to the community from which land has been acquired thereby increasing the expense and the length of the process. High compensation costs for land affects the length of a project's concession period making the investment less attractive to the private sector parties since the return on investment is prolonged.

ADB (2012) showed that there is a lack of clarity about the nature and form of government support that can be provided to PPP projects, and the associated risk management arrangements with the property valuation.

2.8 Government Guarantee in PPPs

PPP in Indonesia (2012) showed that the success of a PPP project is usually determined at the beginning of its lifecycle when the government devises the project. The development of the PPP model in Indonesia has been relatively slowing in comparison to countries such as Singapore or the UK. Furthermore, the Indonesian government is still relatively new to the concept of better project preparation and management, yet the country is on the right track towards improving PPP project implementation. The government still needs to considerably improve project preparation relating to asset, resource and financial management. It should also provide clear procedures for the private sector in order to provide a clear view of potential projects as well as the mechanism to enter the market in Indonesia. The government should give a clear picture of PPP investment processes, ensure a good business climate, and provide government support to increase the bankability of a given project, as well as reduce potential risks throughout a project's lifecycle. Thus, the government is not seen to take account of the general public's opinion on the project resulting in protests and demonstrations by the public against the project.

2.9 Stakeholder participation in Plantation Industry Development

Belniak, (2008) shows that revitalization projects call for a close co-operation between the citizens and authorities. Insufficient information and involvement of citizens may lead to reactions impeding the projects. Integration of the poor into the plantation development system is achievable with effective and efficient PPP. Poverty and marginalization can be addressed through carefully planned agricultural practices. There is a need for inter-sectorial collaboration and partnership between the public and private sectors in addressing informal settlement challenge and poverty eradication in developing countries.

Othman and Abdellatif, (2011) shows that affordable housing is one of the greatest challenges that face countries around the globe, especially developing countries. The complexity of the problem hinders governments, alone, from achieving their plans for sustainable development. Project stakeholders must have social responsibilities towards supporting government initiatives for plantation development. The five-domain CSR-partnership model developed by the authors will help integrating the CSR of project stakeholders as an approach for developing plantation industry. There is little consensus among stakeholders on the benefits of involving the private sector engagement in development. Moving ahead successfully with PPP projects in the medium-term will require continued efforts to build awareness of the positive experiences of PPPs, hold consultations with policy-makers and other key stakeholders on the range of options for PPPs, and address stakeholders' concerns at the beginning.

3 Analysis

3.1 Case Study: History and Background of ABC Company

The Land Reform (Amendment) Law which came into effect in 1975, vested all company owned plantation lands, in the state. With this nationalization of the plantations, the management of estates were somewhat broad based, as the land vested was given over to several managing organizations. There was the State Plantations Corporation which managed a few plantations prior to the nationalization and a new organization by the

name ABC Company was created in 1976 under the State Agricultural Corporations Act No: 11 of 1972. In addition to these two organizations, new forms of organizations were created to manage some of the nationalized plantations. These included **USAWASAMA** (Up Country Co-operative Estates Development Board) and **JANAWASA** and electoral co-operatives.

It has been argued that the allocation of land among several managing organizations resulted in a severe dislocation of the management in the tea crop sector, while it also resulted in several disadvantages such as a drop in output, wastage and inefficiency. The immediate impact of Land Reform was therefore not favourable to the tea industry.

In view of this situation, the Government that came to power in 1977 took several steps to unify the management structures and practices in the interest of the tea industry. This included the abolition of **USAWASAMA**, **JANAWASA** and Electoral Co-operatives and the handing over of all the properties managed by these organizations to the ABC and XYZ.

These two principal managing organizations were brought under two separate ministries since 1980 and their management structures were also decentralized through a system of Regional Boards thus granting freedom and decision making powers to the regions with a view of improving productivity.

3.2 Pre-structuring status

By the year 1978 regional offices of the ABC had been established for the management of the estates. Two years later, by mid-1980, the regional offices were re-organized into Regional Boards, which were to become independent entities.

The objective of forming regional offices and later Boards had been to decentralize management to improve decision making at the estate level. The role of the head office was primarily intended to initiate overall policy guidance and manage the finances of the groups of estates in Boards. The head office was also to undertake the marketing of produce. In practice, the decentralization process did not work and instead, it continued to centralize decision making at the head office. There are a number of reasons for this, but with finance and marketing responsibility retained at the head office most other decision making ultimately required the approval of head office managers. This resulted in the Regional Boards stumbling with ineffective management which in turn resulted in less than effective decision making or authority granted to the estates. All approvals had to be sought from the Central Board. Ultimately in this managerial environment, managers on estates which are the ultimate strategic business units were never encouraged to be innovators.

Institutional environment of public sector operation was the major cause of the failure of the ABC. Some factors which contributed are;

- a. The bureaucratic form of structure which created layers of management responsibility on top of each other but all ultimately responsible to head office for approval.

- b. Lack of innovation due to centralized authority.
- c. Absence of an effective incentive system which would reward the better managers based on their performance.
- d. Being a statutory body and acting as a Public Sector Board, it was subjected to undue political influence in its operations.
- e. Commercial mentality was secondary to welfare issues, since being a public sector organization was very ineffective in negotiations with labour unions.

Due to these reasons and some others, the Board was facing financial crisis by the year 1989. Therefore, on the advice of the IBRD, the Minister of Finance and Planning proposed the appointment of a Consultancy team to investigate the question of restructuring the plantation sector. Accordingly, to implement the recommendation, the Plantation Restructuring Unit (PRU) was established.

3.3 Post-Restructuring Status

The most far-reaching event that occurred in the Sri Lankan tea industry during recent years was the privatization of tea estates. The divestiture of 54% of tea land from the state to private sector ownership was completed in 1995.

The state held the ownership of 55 estates after the privatization of which 22 estates were under ABC management. All these estates were identified as unviable estates and the criteria employed for the identification was that;

- These estates had made annual losses over the last several years
- Yields of tea or rubber were below 1000 kg/per/ha per annum for the last several years.

The 22 estates left over with the ABC after the restructuring process was managed by the Board Office through a regional office in Kandy. By the year 1999, only 16 estates were remaining with the ABC, and it was decided to restructure these estates into 4 clusters headed by cluster directors, to give more autonomy in decision making and effective management through Small Group Activity (SGA). This exercise was completed by 15th October 1999.

Like with the earlier experience the Cluster System also, did not work in practice due to centralized decision making by the Board Office. Therefore, the performance of the estates during the Cluster Management period was evaluated which showed a decline and thereafter it was decided to reintroduce the Regional Office to manage all 16 estates as earlier. This was implemented by the 15th of March 2002.

Current position of ABC Company

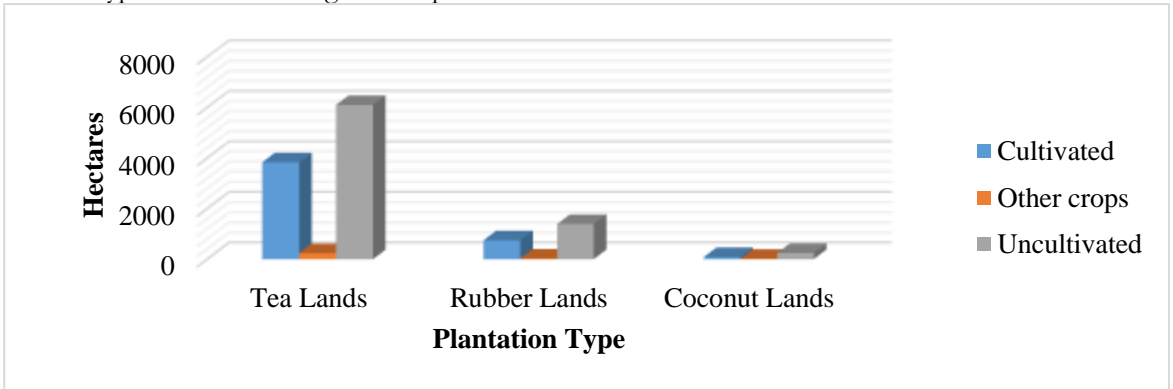
Total land extent belongs to ABC Company for plantation purposes are about 12,000 hectares. Majority of lands located in hill country and other are in Northern and Uva provinces. One of the main issue is illegal approached and scoters to lands.

“Million dollar question on whether Sri Lanka has benefitted from privatization” of plantations, to which the answer should be abundantly clear to any rational individual,

particularly looking at the present plight of non-privatized estates. At the time of privatization in 1992, the Government Treasury had to subsidize the some State Plantation Agencies – ABC Company and XYZ Company– to the tune of Rs. 5 billion a year (Daily Mirror, 2015)

Graph 1: Land Usage

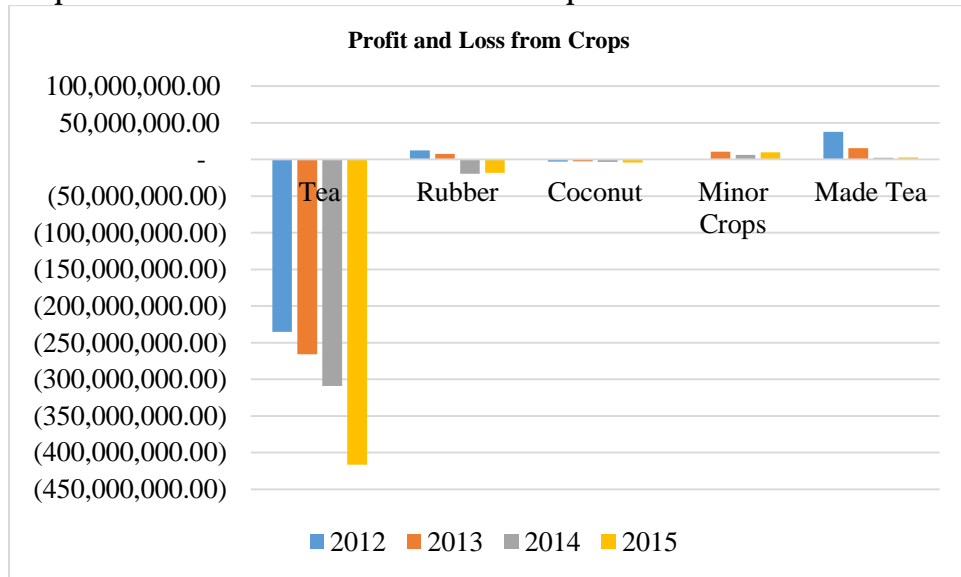
Land usage of ABC Company has revealed in Graph 1. There are uncultivated areas in all types of lands are higher compared to cultivated lands.



Source: Financial Accounts (ABC Company)

Many uncultivated lands are available in Tea Plantation areas compared to other plantation lands of Rubber and Coconut.

Graph 2: Profit and Loss from Plantation Crops

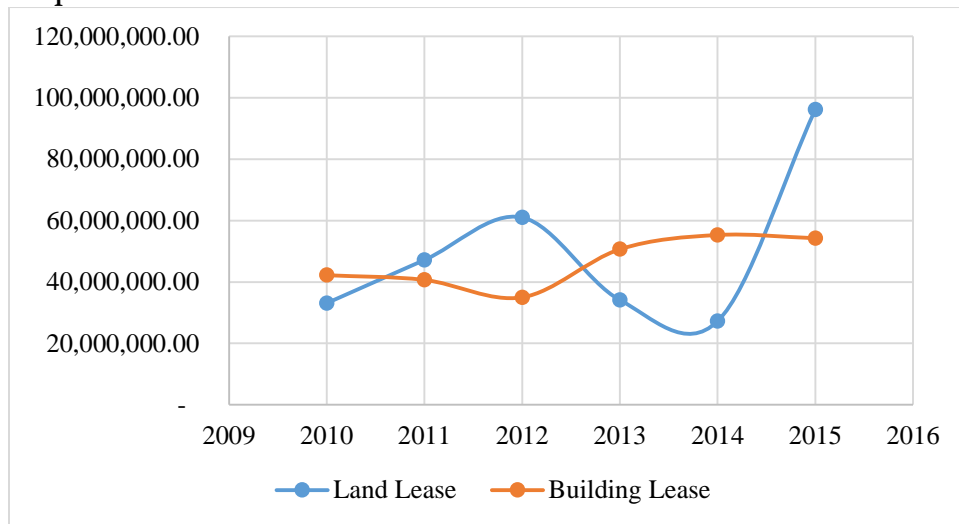


Source: Financial Accounts (ABC Company)

Main plantation crops of Tea, Rubber, Coconut, Minor Crops and trading of Made Tea of ABC Company are given in the Graph 2. Through-out four years, income from tea

and coconut plantation have revealed a loss, while rubber plantation has mix return. Made Tea has shown an income for four years, while the level of income has dropped during 2014 and 2015 compared to 2012 and 2013.

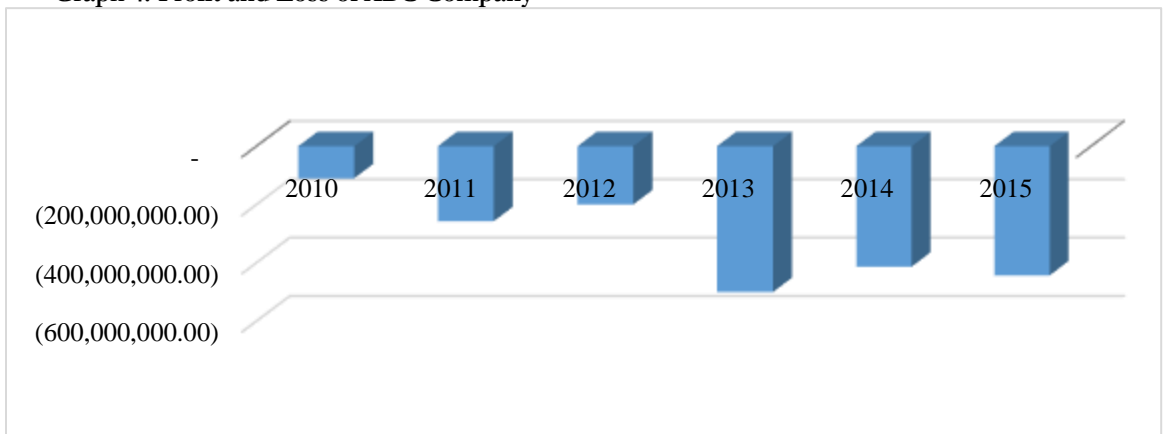
Graph 3: Annual Lease Rentals Income from Land Lease-out



Source: Financial Accounts (ABC Company)

Mainly lease out of lands and building income of ABC Company are reveals in the Graph 3. Land lease income has increased until the year 2012 and declined by the year 2014. It has re captured in the year 2015. Building lease-out income were constant till 2013 and shown increase thereafter keeping the income remaining same.

Graph 4: Profit and Loss of ABC Company



Source: Financial Accounts (ABC Company)

The Graph 4 reveals continuous loss of ABC Company for last six years. In the year 2013, it showed the highest loss and recovered in the year 2014 and loss has increased in year 2015 against the year 2014.

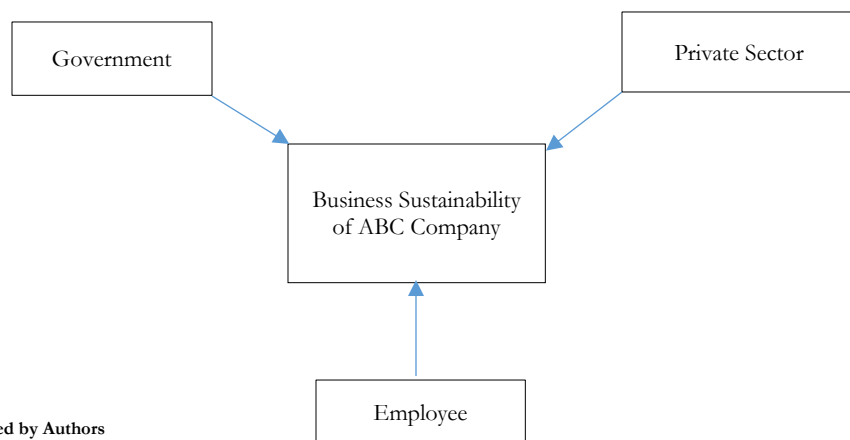
4. Results and Discussion

The initial effort of the Government model has not become fully self-sustainable making continuous losses for ABC Company. Having more about 12,000 Hectares of land the total utilization of the land is about 4,664 Hectares for major plantation crops of Tea, Rubber and Coconut. Other cultivated lands extent is about 281 Hectares and balance amount of 7,737 Hectares are idling. One reason for this lies in enhanced outlays to low valuation of the lease rentals, which increased rental amount and lowered revenues. However, the costs of administration and processing are covered entirely by the revenue generated not only by the land lease and consumer division, but the contribution from Government Treasury Department.

Apart from the financial side, there are other aspects of sustainability allied with the interest of three major stakeholders of this model, which is integration and involvement of private-public-employee partnership into the business to ensure the output. Considering the regular losses from the plantation crops shown in above graphs, it is suggested to find an alternative solution to continue their business with the implementation of risk sharing process. In order to do so, private-public-partnership model is suggested. This will provide relief to the institution as well as to the Government Treasury Department.

5. Proposed Implementation model for PPEP

This model not only reduces the costs for the ABC Company, but also its workload. The Corporation acts as a facilitator instead of a service provider, keen to see the coverage of this model as it possibly bring considerable amount of benefits to the plantation industry and to the community.



Source: Compiled by Authors

The model supports not only the livelihoods of around workers, but has also organized them into an entrepreneur who are responsible for handling the agriculture. Revenue earned in the project is managed by themselves and entire land is administrated by the Estate Superintendent. For addressing issues in implementation and discussing new

ideas, an annual multi-stakeholder forum to be created where members from different stakeholder groups and plantation management experts come together. This multi actor platform provides a mechanism to facilitate learning, sharing and communicating amongst different stakeholders.

6. Conclusion

Urban Local Bodies are facing a challenging task of providing essential services to plantation areas. The solution, as evident from the model proposed in this paper, is through a cost effective, well designed decentralized “Public-Private-Employee-Partnership” approach to plantation sector development and management, which focuses on productivity land utilization at its best in a scientific manner. Being revenue driven, such PPEP models have the potential to become financially viable for all the stakeholders. However, such models, which are at a nascent stage of development, require strong institutional, governance, policy and market support to become successful on a large scale.

7. Recommendation : Challenges and Way Forward

Replication and scale up of such decentralized partnership based model can go a long way to resolve the endemic lands in plantation estates challenges across Sri Lanka. However, there are few bottlenecks that need to be addressed for the success of such initiatives:

- a) Convincing estate sector stakeholders to pay a reasonable land lease rental for the usage of the land it its best based on the fair market value and responsibility of the government not to diverted general tax payers’ money to plantation sector development. Also, those who pay it would be reluctant to annual increases in user charges, which would eventually lead to a plateau in revenue generation. Responsible institutions, due to various socio-political compulsions, remain unwilling to administer process.
- b) Inculcating habit of work segregation from work at estates and own land area of the estate at source is an enormous challenge due to poor education and consciousness towards it. Demand for agriculture not only increases the by society, but also reduces unrest of the employees as a result of continuous working environmental model.
- c) The decentralized model requires land within the estate for the agriculture purpose for the plantation workers, which is becoming gradually difficult due to increasing urbanization and mounting land value. Unfortunately such land requirements are not taken care of during village expansion or town planning. Provision of land will support the management of plantation estate management through the active participation of employees.
- d) Encouraging PPEP to enhance the involvement in utilize the lands at a lease on fair value will benefit to the ABC Company.
- e) Employee-centric PP models of Plantation Sector Development and Management intensive due to full engagement in the socio-economic development processes. Although these models integrate livelihoods of all the people in the engaged in the work at the plantation estate thus cannot

completely be replaced by mechanization. However there is a scope for technological interventions to improve systems to co-exist in a manner that can enhance the productivity and return from investment. Most of the technological advancement has taken place only for the centralized and mechanized models due to pure cost benefit considerations by private operators. The policy framework needs to recognize requirements of technologies for such model, as it is not possible to deal with the growing problem only through large, expensive, mechanized projects.

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Development and Management Issues in Connection with Co-Ownership of Land and Properties under the Viharagam and Devalagam Ordinance No. 19 of 1931 Buddhist Temporalities, Sri Lanka: Case Study in Ratnapura District

W. M. Dananjaya Ranasinghe¹

¹Assistant District Valuer
Government Valuation Department

R. G. Ariyawansa²

²Professor, Department of Estate Management and Valuation
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura
ariyaw71@sjp.ac.lk

Abstract

The Viharagam and Devalagam Ordinance in Sri Lanka is a main legal system, which courses to arise many legal, economic and social problems for such properties since having Co-ownerships. In the ancient period of the country, this was not a big issue as the co-ownership concept was adopted to strengthen the relationships between families and individuals. With the advancement of society and legal enactment related to lands, people gradually tend to refuse enjoying lands with co-ownership instead of having lands as separate entities. Also most of such landed properties are underutilized and as a result of that contribution to the economy is at low. Besides, there is a big failure in management and development of temple and Devala properties though amendments to the Ordinance which expect solutions for these issues. All the governments, after the independence in 1948, has failed to make a considerable influence in the Ordinance or to introduce an Act related to Devalagam and Viharagam properties in order to solve these problems and to formalize the land use of such Viharagam and Devalagam areas. The background of these issues are originated with the long term possessory of those lands from generation to generation and to use as separate entity of the part owned by the present generation which, however, has been obstructed due to the shortage of the prevailing law. Hence, the objective of this paper is to review the Viharagam and Devalagam Ordinance No.19 of 1931, Buddhist Temporalities and to examine the management and development issues in connection with the Viharagam and Devalagam lands. In order to carry out the study, a sample of three hundred fifty (350) people were interviewed via a properly organized questionnaire survey among Paraveni families in Ratnapura District. Also in-depth interviews were done with chief of Devala and Temples as well as the community leaders in the study area. However, this paper discusses only the results of in-depth interviews and the review of the Act. Study noted that the co-ownership issue has been prevailing from generation to generation over many years even before the Viharagam and Devalagam Ordinance is introduced. This critical issue was become more complicated along with the judgment stating that the Paraveni lands with co-ownership rights cannot be partitioned. Secondly, the barriers towards the management and development of Paraveni properties are identified under eight particular aspects. These findings are directly useful for the Paraveni land owners, relevant religious institutions and for the government in development and management of such lands and properties. This will result to bring socio-economic benefits to local and national level development too. Further, this can be applied to similar context in any part of the world.

Key words: *Co-ownership of land, Vihara and Devalagam Ordinance, Land Development and Management issues*

Introduction

Viharas, Temples and Devalers³, which were highly respected by the people, had been more recognized by ancient kings of the country offering large extend of lands with the view of the betterment of such institutions. Among these lands, Paraveni Pangu⁴ lands is the major sector with having development and management issues. These lands are listed and it is called as Commissioner List. This list is old for 145 years at present (Presidential Commissioner report: issues of Vihara and Devalagam, 2006) by which hereditary shares are not amended in this. Therefore, it goes to partnership rights and causes various issues among land and property owners. These issues can be identified as “Inappropriate of Rajakariya”, “Issues in Income Distribution”, “Dissatisfaction on Property Right”, “Legal Encumbrance”, “Difficulties in Financing/Banking”, “wasting time in Property Management/Admin process, institutional conflict, boundary demarcation issues” etc. As a consequence of this situation; land development, land management and declaration of title etc have been serious issues in connection with this lands and properties.

When compared to legal system affected to general lands, being the lands in Vihara & Devalagam portfolio (Commissioner List), there is no provisions to solve the co-ownership problems in the Vihagam and Devalagam Ordinance. Hence, the co-ownership enjoyment of Devalas and temples land are taken into the discussion among the members of the affected society.

There are many issues related with the co-ownership properties in connection with the development and Management in Sri Lanka, mainly co-ownership enjoyment of Devalas and Tempaltries. In ancient period this was not a big issue as the co-ownership concept was overwhelmingly adopted as to strengthen the relationship between families and individuals (Case No./partition/357 District court Ratnapura, 12/10/2011). With the development of the society and with legal enactments related to lands, people gradually refused to enjoy lands with co-ownership and tried to enjoy land as a separate entity (Case No./partition/269 District court Ratnapura, 27/10/2000). This fact was fastened with the legal enactment to the lands by Roman Dutch law. Section 51(1) and (2) of Partition Act No.16 of 1951 facilitates to part a co-ownership land in a District Court, resulting this law was well used by Paraveni people (Case No./partition/269 District court Ratnapura, 27/10/2000). However, a problem was arisen in 1977 with the Partition Act No. 21 of 1977 (Section 48(1)) as the ownership of “Paraweni-Himikaru” (Occupier of Property) is not included in the interpretation of this Act (Badeema⁵). This fact is well clarified by Case No./partition/357 District Court Ratnapura. According to the present situation regarding these lands, various socio-economic issues have been arisen.

³ Religious places available in Sri Lanka particularly for Buddhist devotees

⁴ Lands under the Ordinance are two kinds as Paraweeni Pangu land and Bandara Lands. Lands which was given to Temple/Vihara/devals are called Bandara Lands. In the meantime, some lands were given to villagers (families) around such relevant religious institutions. These families should use and reside on such lands and they must provide some duties to the relevant religious institution as a condition.

⁵ Right, relationship with the land

Methodology

Field data were collected by means of discussions held with Basnyaka Nilame of Saman Devalaya, Mohottala Nilames, Vidanes, Secretaries, Viharadpathi of Delgamuwa Dalada Rajamaha Viharaya, community leaders and other experts in the fields related to Devalagam and Viharagam during April 2015 to June 2015.

There are 53,671 numbers of paraveni families living in Sri Lanka within an area of land 185,511 acres. The number of Devala and Vihara including to the Ordinance is 573 within the districts of Anuradapura, Kurunagala, Mathale, Mahanuwara, Kegalla, Badulla, Monaragala, Rathnapura and Gall. This study is limited to analyze Paraveni Pangu Lands in Rathnapura District only. Sample of the study is 350 families out of 3319 Paraveni families in the district.

This paper, however, is based on the data and information obtained from the discussions only.

Co-ownership of the real property

Ownership of undivided shares represents the essence of the concept of co-ownership. The fundamental feature of the concept is that specific portions of co-owned property are not separately assigned to the different co-owners. There is no division of the co-owned property, and each co-owner is entitled to the entirety of the property, in proportion to the extent to his undivided interest (Peiris, 1976).

Viharagam and Dewalagam Ordinance No. 19 of 1931 Buddhist Temporalities, Sri Lanka

Outlines of the Main Provisions of BTO of 1931

SECTION	TOPIC COVERED
Section 2	Interpretation section
Section 3	To which temples the BTO applies
Section 4	Management of Temple Property
Section 5	Public Trustee's Powers
Sections 7 - 9	Trustees for Dalada Maligawa, Dewales and Atamasthana
Sections 10 - 19	Trustees for other temples, the appointment, Qualifications, Term of Office, Necessity to give Security, Suspension/ Dismissal/ Filling of Vacancies, Ability to sue and be sued/ Neglect of Duty
Sections 20 -22	Temple Property; in whom they vest; Commitment of Services; Contracts on behalf of temple etc,
Section 23	Pudgalika Property of a Bhikku (Personal Property of Monks)
Section 25	Application of Temple Income by Trustees
Section 26 & 27	Invalidity of Mortgages/ Alienation of Temple property and Recovery of Property Improperly Alienated
Sections 29 -31	Leases of Temple Property and Setting Aside Improvident Leases
Section 32	Recovery of Proceession of Property from Trustee/ or Viharadipathi (Chief Incumbent) who has Vacated office
Section 33	Generals Powers of the District Court in Matters governed by the BTO

Section 34	Prescription Not Applicable To Temple Property
Sections 35 - 39	Accounts and Audits
Sections 41 - 42	Registers of Bhikkus and Offence of "Passing Off" as a Bhikku
Section 43	Powers of Minister To Make Regulations under the BTO
Sections 45 - 48	Transitory Provisions

Source: The Buddhist Temporalities Ordinance no 19 in 1931 (BTO)

The following four sections are important to property Management and Development

Section 20 – All temple property and all offerings to vest in trustee.

Section 21 – Commutation under the service tenures ordinance to be paid to trustees or controlling Viharadipathi.

Section 26 – Mortgage or alienation of immovable property invalid,
Provided that section shall not be applied either to Paraveni Pangu or to a sale in execution of any property if the right for the seizure thereof was issued after written of three months to the Public Trustee.

Section 27 –Transfer of Parvenu Pangu land,

Problem of Development and Management of lands and properties

Development and management issues in Paraveni land and properties in Viharagam and Devalagam in Sri Lanka have been a continuous problem. The Paraveni lands extents are 23781.3 Amunu⁶ under the Viharagam and Devalagam Ordinance in Sri Lanka but the function of this landed property become delay due to the impact of this ordinance (Property right protection Organization of Dumbara, 2010; Registration record of Paraveni land in 1870; Presidential Commission report on disputes relating the Buddhist temple & land, seasonal paper 3 of 2006). Sales of lands, land transfers, land mortgage, land development and land Management are the key issues in connection with the co-ownership of Paraveni lands. There are so many cases in courts against the ordinance and regarding these issues (Property right protection Organization of Dumbara, 2010). There are so many people quarrelling with neighbors against these issues (Presidential Commission report on disputes relating the Buddhist temple & land, seasonal paper 3 of 2006). The considerable amount of landed properties are not in well-developed due to this issue and there is no any method to solve the partition issues under the Buddhist religious places and Devalas lands. The issue was emerged after introducing the Partition Act in 1977 [Section 48(1)] in which the ownership of “Paraweni Himikaru” (Paraweni owner) is not included in the interpretation of the act. Following figure 01 briefs the situation.

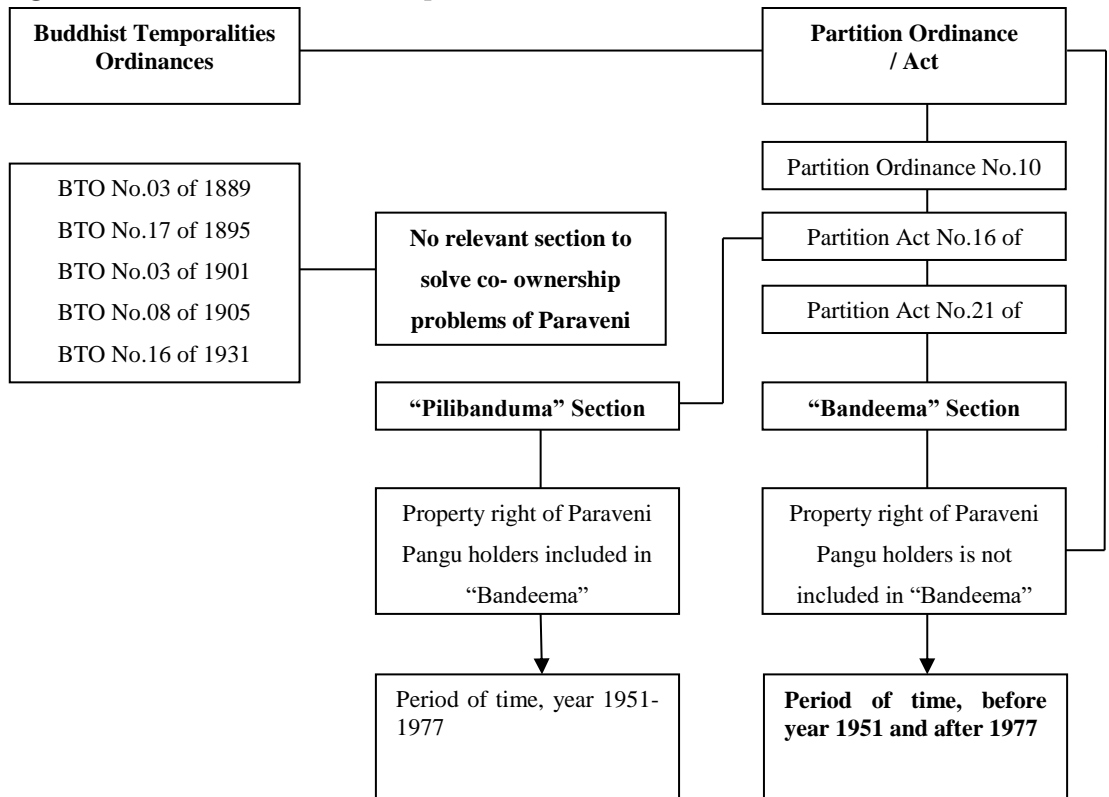
As per the figure No.01, the concept of “Bandeema” of Paraveni Pangu holders, is not included in the Partition Act No.21 of 1977. Hence, the co-ownership problem cannot be solved after the year1977.

⁶ This is a traditional method of measuring land. This likely equal to 2.5 acres of paddy land and 4 acres of highlands.

Application of Buddhist Temples the Ordinance

Unlike previous Ordinances, this Ordinance of 1931 specifically stated that the provisions of this Ordinance are applicable to "every temple" in Sri Lanka. However, by an order published in the gazette by the Minister, any Temple other than the Dalada Maligawa⁷, Sripadasthana⁸ and the operation of all or any of the provisions of the Ordinance (Section 3). According to the Ordinance "Temple" means Vihara, Dagoba, Devala, Kovila, Arama, or any place of Buddhist Worship. It also includes the Dalada Maligawa, Sripadasthana and the Atamasthana⁹ of Anuradhapura".

Figure 01: Arisen of the Co-Ownership Problem



Considering the Buddhist religious places and Devalas property, there are two types of properties which is known as "Paraveni Pangu" lands and "Bandara" Lands. The Paraveni Pangu lands is 58.5% out of total Temple and Devalalands (Registration record of Paraveni land in 1870, Presidential Commission report on disputes relating the Buddhist temple & land, seasonal paper 3 of 2006).

⁷ Temple of Relic Tooth, Kandy in Sri Lanka

⁸ The temple and the place where the Foot Print of the Lord Buddha was established.

⁹ The eight most religious viharas in the sacred city of Anuradhapura, Sri Lanka

Issues arisen due the co-ownership are in different nature which are, however, interrelated. Following paragraphs brief major issues and open for the further reviews by the future researches.

Inappropriate of Rajakariya (Duties to be fulfilled for Temples)

At ancient time barter system came into existence and in that the duties decided with the extent of task agreed and no one can change the assigned duties. At the English period the duties of Paraveni were valued for a certain amount of prices. Those ancient prices have not changed at all along with era changed. Hence, the income earned with this is not enough at present to maintain the Devala's and temple's day today functions properly. The Vihara, temples and Devalas are not in a position to take legal measures against the Paraveni for not fulfilling their duties entrusted because the legal approach is too expansive in proportion to the return of that duty.

Paraveni owners are not very keen on their duties. Also they do not know about their duties and the necessary training on their entrusted duties. In the meantime, some duties have been changed in line with the development of society. For instance, some people/family have duty of supplying copra for lighting lamps carrying in the traditional procession ceremony. However, at present, electricity is mostly used for lighting process. Therefore, such duties are outdated. Under such circumstances, they do not fulfill their duties or sometimes tend to fulfill duties to some extent as a symbol. Same occasions can be found that they do their duties nominally in respect of according land of the duty. At present, Paraveni owners do not work to Vihara temple and/or Devala and do not pay the taxes to them for residing/consuming these lands. However, paraveni owners do not like to give up position of these lands too. Therefore, Paraveni share and temple/Devalas having issues on land position (Report of the Commission of Viharayas, Devalas and Nindagam, Seasonal Paper 1 of 1956).

This is, therefore, evidence that the fundamental expectation of the Act is not property realized due to ignoring its evolution in line with the socio-economic development of the country.

Issues in Income Distribution

The ownership of the persons in Paraveni lands does not have right of that extent which they enjoy even if it is a larger area. Most of them use plots of lands lower than their ownership as the contrary in demarcating the physical extent of the land, creating a clash between the ownership and the enjoyment in case of dividing the income among Paraveni people. As a result of this, income distribution problem is arisen. Paraveni co-owners divided their shares among themselves without any transparency. Religious places do not monitor this matter. Specially, in Ratnapura District, owners face to this problem to greater extent particularly in distributing income of gem field more than the other district in the country. The Commissioner of Buddhist Affairs does not involve into this matter (Page 43, 45 Presidential Commission report on Disputes Relating the Buddhist Temple Lands, Seasonal Paper 3 of 2006). This generates series of socio-economic as well as development and management problems in connection with these lands and properties.

Viharagam and Dewalagam Ordinance No. 19 of 1931 Buddhist Temporalities does not give provisions to divide the income generated by the Paraveni Properties of Vihara and Devalagam. However, provisions regarding the leasing of Banadara lands, are clearly indicated in this ordinance. In section 29(1), (2), (3), (4), (5) & (6) give outlines regarding the power of leasing and section 30 and 31 provides about handing over the property. To solve the income distribution issues in Paraveni lands, no power is vested to Commissioner of Buddhist Affairs or the management of religious places by this ordinance. Hence, the tenures fail to gain the maximum utilization of such lands and therefore, there is no maximum utilization or highest and best use in these lands. This affects regional and local development at large.

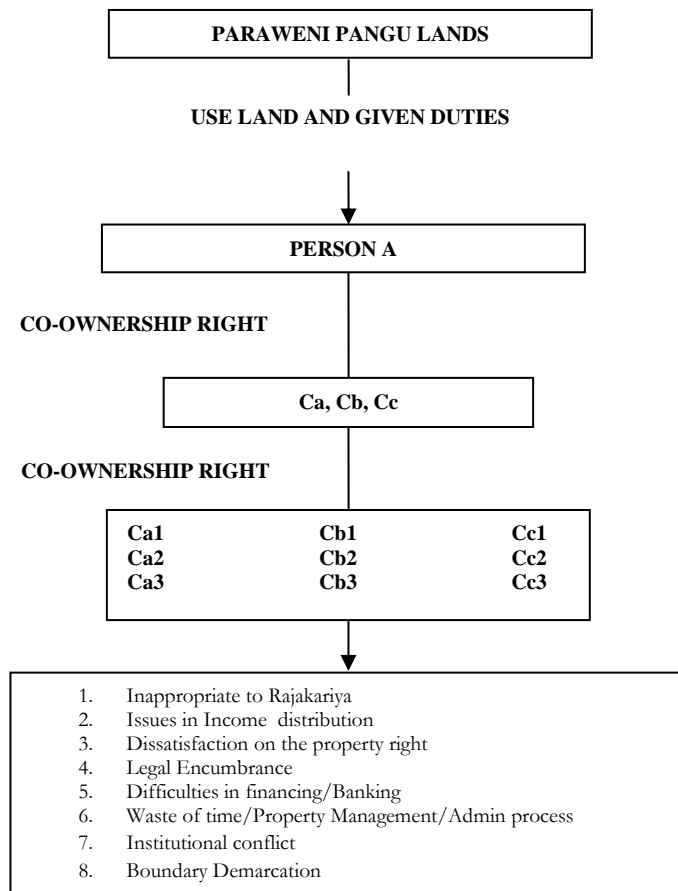
Dissatisfaction on the Property Right

Devala and Vihara temples express their titles of lands through "Sannasa¹⁰" and "Thudapath¹¹". However, hereditary owners say that certain "Sannasa" and Thudaptha documents are not registered. Even though, there is enough written evidences on those disparities occurred in the judiciary procedures that unregistered "Sannasa" or "Thudapatha" cannot be used as an evidence in proving of the right of a property in a Civil Court as per the section 7 of Sannas & Old Deed Ordinance No.6 of 1866 (Case No.12107 Handapangoda Mahinda thero vs. N. Premawardene, Ratnapura District Court in 2015). Some Vihara Temples have had some settlements, but they are not registered properly in government institutions. Therefore, disputes are arisen among "Paraveni People" for co-ownership of properties. As in appropriation and unapplicability of all the ordinances which are enacted to manage Vihara and Devalagam properties, the disputes, especially between temples and tenures and among tenures and tenures are arisen day by day (Presidential Commission report on Disputes Relating the Buddhist Temple Lands. Seasonal Paper 3 of 2006). This type of conflicts in our society tend to end with severe crimes. For instance, in Sri Lanka recent crime records reveals that 62 percent of the murders have been caused due to the land disputes (Bimsaviya Program, 1998) to which this would relate with Vihra and Devalagam lands too.

Following figure No 02 explains the way of co-ownership is generated among paraveni land owners and land development and management issues faced by them.

¹⁰ Official document through which the king offered land and property to temples

¹¹ Do

Figure 02: Co-ownerships among Paraveni Land Owners.

According to the figure 02, property right is expanded as co-ownerships from one generation to another with Paraveni Pangu lands. There upon, the undermentioned eight issues have arisen as illustrated. Here, the person A represents the first Paraveni Pangu land holder and Ca, Cb, Cc are the children or heirs of Person A. Ca1, Ca2, Ca3.....and so on are the grandsons or granddaughters or heirs of person A. Likewise a large circle of family members are sharing the land belonged to the first paraveni owners land without legally demarcated boundaries.

Legal Encumbrance

Buddist Vihara and Devala have Vihara villages and Devala villages. It has specific extent of lands only on certain areas. These Vihara villages and Devala villages in which these Paraveni possessions, changing share of land users make big destructions or restriction of developing the area. To get either solution for these or legal opportunities are rare due to this property ownership. This matter badly occurs through current development process continually. Today's situation is totally different from king's period in socio-

economic and other conditions. In this scenario the transportation, infrastructure facilities, energy and others are came across a great deal with the current developing economic and social changes. But the legal procedure has not clearly formatted for the achievement of infrastructure development. Therefore, the legal functions become barriers to the infrastructure development in these villages. Obtaining licenses/permits etc to a Devala and Temple land is a difficult and complicated procedure. When considering the procedure, initially it is required to obtain formal approval from Basnayaka Nilame, then it should be approved by the Commissioner of Buddhist Affairs. Comparatively obtaining a license to such a land is a time consuming process. And also the knowledge of obtaining license is minimum among Paraveni owners and also the contribution given by the Temple or Dewala is limited in obtaining a license.

“As per the section 27 in Viharagam and Dewalagam Ordinance No. 19 of 1931 buddhist Temporalities; process land transfer is explained.

27(1) whenever a Paraveni Pangu tenants interest in any land held of a temple transferred it shall be duty of the transferee with one month of such transfer to send a written notice in duplicate to the Public Trustee.

27(2) The Public Trustee shall thereupon –

- (a) Send the transferee a written acknowledgment of such a notice within one week of its receipt,
- (b) Keep a register of all such notices, and
- (c) Send one copy of every such notice to the trustee of the temple concerned

27(3) If any transferee fails to comply with the requirements of sub section (1) he shall be guilty of an offence and be liable on summary conviction to a fine of five hundred rupees or in default six month simple imprisonment.”

This fact affect to generate negative views on Paraveni lands, by the purchaser, sellers, investors, developers and occupiers. In the contrary, there are no provisions regarding the obtaining of licenses in case of property development/usage such as gem mining, construction, cultivation etc. These activities are decided by the whims and wishes of Basnayaka Nilames who are ruling the properties at the moment.

Difficulties in Financing/Banking Mortgage or Alienation of Temple Property

No mortgage, sale or other alienation of immovable property belonging to any temple is valid, unless the prior permission had been obtained from the public trustee. Even though, the permission is granted by the Public Trustee, the formal sector in the money market is reluctant to grant credit facilities for these types of Paraveni lands keeping as a mortgage bond (Presidential Commission report on Disputes Relating the Buddhist Temple Lands. Seasonal Paper 3 of 2006). Paraveni owners face problems in finding of money in their activities due to this contradictory situation of ownership of properties. Lack of capital is one of the problems faced by Paraveni owners. Hence, the development procedures pertained to properties is difficult due to lack of capital. So they have to lend from informal sector even they like or dislike. Therefore, financial institutions refuse or act as lethargic manner on these properties (Presidential

Commission report on Disputes Relating the Buddhist Temple Lands. Seasonal Paper 3 of 2006).

As per the section 26 in Viharagam and Dewalagam Ordinance No. 19 of 1931 Buddhist Temporalities; “No mortgages, sales or other alienation of immovable property belonging to any temple, shall be valid or of any effect in law”. This section directly effect on Bandara Lands while indirectly effect on Paraveni lands as a barrier for the development, investment and capital growth.

Property Management Issues of Devala and Vihara

According to the feudal system the duties was not changed from generation to generation. Therefore, good managers for the management of Vihara and Devala cannot be appointed out of the qualified skilled persons as these managers are appointed from the generation to generation. The educated persons of Rajakari families are not engaged in the management process of Paraveni lands as they are employing in comparatively better jobs. Hence, the unskilled persons take the responsibility of management subsequently. The current managers have poor knowledge and they are weak in managerial functions and nor process to be trained them in the present state but they are still being with the administrative functions of Devala and Vihara. Therefore, various issues have arisen between Vihara, Devala and Nilakaru Lease holders with their managerial inabilities in managing Vihara and Devala.

“As per the section 37(1) (b) in Viharagam and Dewalagam Ordinance No. 19 of 1931 Buddhist Temporalities; 37(1) (b) The nature, extent and value of the Paraveni and Maruwena Pangu and other lands belonging to such temple; 37(2) Any Viharadhipathy who without just cause withholds any information required to be given by this section, or who willfully gives false information regarding the same, or who without just cause retains possessions of any property vested in trustees under the provision of this ordinance, or willfully obstructs any trustee or causes any trustee to be obstruct in the discharge of this duties shall be guilty of an offence and be liable on summary conviction to fine not exceeding two hundred rupees.”

There is no further clarifications regarding this matter i.e. who decide the values of these properties? With what format the land to be described? When compared to the other ordinances introduced by the British colonials, most of them are amended so as to get best interpretations of the law. But, the amendments made to the Viharagam and Dewalagam Ordinance No. 19 of 1931 Buddhist Temporalities; is not succeeded towards the property development.

Institutional Conflict

Ordinary public are in view of that the public officers such as Divisional Secretariat, Local Authorities, Gramaniladari, Agrarian Service Department, Land Resettlement Department and other government institutions do not use their discretionary power to represent the common responsibility when implementing their administrative functions. They tend to pay less attention on Paravani owners and bias on the Vihara and Devala lands due to religious background and social power exists with such religious institutions. In this condition, Paraveni owners and government institutions go for judiciary actions

against. Sometimes, injunction is given against Paraveni owner's property. Then the bondage between Paraveni owner's and temple is cracked.

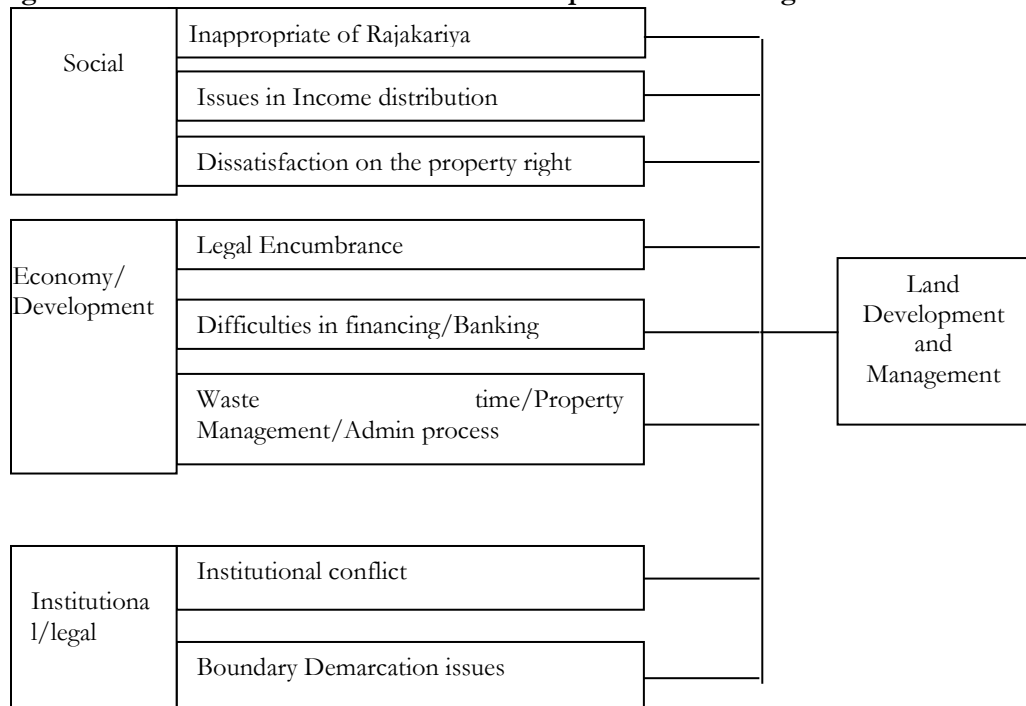
Different government institutions give various opinions on a same legal fact. For instance, the Land Settlement Department pointed out that the "Dumbara" village is not a Paraveni village, on the contrary the Commissioner of Buddhist Affairs says that this is a Paraveni village (Letter No. Bo/Ko/Ra/3/9 dated 1994.12.08 by Commissioner of Buddhist Affairs to Kiriella Nadun Rajamaha viharaya). On the other hand contribution of government institutions is poor for property development. Discussion with some officers revealed that the knowledge of government officers is very poor about Dewala and Temple lands. Further the contribution of Temples and Dewalas is also not adequate or not at all to mitigate these problems (Property Right Protection Organization of Dumbara, 2018).

Boundary Demarcation

Some differences are seen in the title rights and the possession of these Bandara and Paraveni Lands. It is important to make a proper demarcation of boundaries to identify these lands. In ancient period, old measuring systems was used to identify the extents of lands. Most of the Bandara and Paraveni lands are recorded as per the old measuring system. Presently, perches, acres, hectare are used to measure the extent of lands. But, the old measuring scales are still seen in the usage very rarely. According to the land use, these lands are categorized as paddy land and highland which are utilized to cultivate various kinds of indigenous grains like Amu, Meneri, Kurakkan etc. The extent of land is decided according to the type of grain and the volume they decided. (eg. Pala of Paddy, Seru of Kurakkan). It is difficult to measure the extent of the land which belongs to Vihara and Devala unless it is expressed the category of the grain by the name. Unless the name of grain is expressed, whilst deciding the extent, the amount of tax to be paid to the state is considered to decide the extent. Although, the above facts are considered, many problems are still pertained in identifying of extent and boundaries. Such situations are arisen even in judicial cases (Dumbarachana case judgment. Case No 12107/Land, District Court of Rathnapura).

Thus, there are no provisions to demarcate the boundaries in the ordinance at least to obtain the assistance of Survey Department or from a licensed surveyor.

All the above discussed problems are related with three major problems areas such as social, economic/development and Institutional/legal. Ultimately all together affect land and property development and management. Following figure depicts the scenario.

Figure 03: Decisive factors of the Land Development and Management**Conclusion**

Management and Development issues in land and properties under Viharagam and Dewalagam Ordinance has been a prevailing issue for decades. This is severe in Paraveni Pangu lands.

This study was able to trace some key issues as inappropriate Rajakariya, issues in income distribution, dissatisfaction on the property rights, legal encumbrances, and difficulties in financing / banking, waste of time / property management / admin process, institutional conflict and boundary demarcation issues. Due to these problems, lands produce lower contributions for the socio-economic development of families and localities as well as for the country.

In concluding, it is recommended a suitable mediation body with adequate authority to be established to examine properly and find appropriate solutions for the issue of co-ownership of land under the Act.

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Real Estate Management Techniques in Ancient Real Estate Development.

R.M.K.B Rathnayaka¹

¹Assistant Land Officer, Urban Development Authority, Sri Lanka
kosalabuddhini@gmail.com

Abstract

Real estate development and management is an inclusive interrelated disciplines of land and buildings. It is vital to evaluate historical evidences regarding real estate development and management due to fact that it is a guide to modern real estate developers and managers to take decision regarding those. Ancient city of Anuradhapura, ancient Rome Theater, Nalanda University, Traditional Japanese house are evaluated by the paper to identify management techniques. Ancient city of Anuradhapura is remarkable that it is one of the historical city with diverse real estate. It consisted with gardens at least two well and parks. The Royal Goldfish parks alone with the Thisavava and Mihinthale monastery with Kaludiyapokuna illustrated that the formulation of buildings in a city. Nalanda University is one that and it is the 1st higher education institute in the world which was constructed in 3rd century. Significance of this university originated from its international outlook that contribution to the spread of Buddhism in Asia, and the academic scope and range of studies. Theme of 'Giver of Knowledge'. Rather than a heritage monument, Nalanda provided holistic knowledge on different philosophies. Ancient Rome Theater which was constructed in 240 B.C. Purpose of constructing a theater is for the entertainment purpose and people at the ancient time by see a drama or entertained event in the open theater which made pleasure. Common people, freedmen, slaves and even women could Japanese traditional house is another example discussed in the paper that can be identified as historical real estate which was an icon of green building. All the materials used to construct a house were eco-friendly. This study aims to present a theoretical based on the ancient management techniques by evaluating literature.

Keywords: *real estate management techniques, psychological aspects, comprehensive, traditional methods*

1 Introduction

Real Estate Development and Management is a comprehensive interrelated discipline inherent with the land and buildings. Naneesh (2013), pointed out that the real estate is business in nature with the long development cycle from planning to construction. Real estate managers have to keen on higher risk involved in investment. The prediction done by the Naneesh (2013) was that Technology innovation and sustainability will be become key drivers for value of real estate. He further emphasized that there should be a rating system for all buildings to ensure the sustainability which certify the pleasant place for the residence.

From Stone era to modern society, historical evidences regarding real estate proved that ancestors' thorough knowledge on real estate development and management. It leads modern society for the systematic development cooperates with the sustainable development. From 2015 it is remarkable that there is a global vision to achieve Sustainability Development Goals. Eleventh goal for sustainable cities and communities and fifteen goals for life on land is directly linked with the real estate development. By evaluation of history it is highlighted that development and management of land and buildings always accordance with the sustainable of the society. According to Barakat

(2015), Sustainability is an important criteria in the decision-making process for buying and selling real estate.

This paper present a theoretical model for the real estate development and management which pointed out that the ancestor's wide knowledge on real estate development and management with the evidence of Ancient City Sigiriya and Ancient City Anuradhapura from Sri Lanka, Ancient Nalanda University of India, Ancient Rome Theater and Ancient Japanese Traditional House from all over the world.

Objectives

- To evaluate the theories behind real estate development and management
- To build a theoretical model for real estate development and management

Methods

By reviewing different sources of literature it was evaluated the ancient real estate management techniques.

2 Literature Review

In the Sri Lankan history, it is remarkable that the ancestors' philosophies of real estate create new thinking to the modern world. The historical evidence of Ancient City of Anuradhapura has been proved that real estate in the city made pleasure as well as proper management of the entire city. With the impact of the Buddhism the art of site selection and landscaping were accordance with the peace and harmony of the citizens. The city was designed with the urban and suburban park for king and other merchants. It helped to control the dust and heat of the city Bandaranayaka (1974).

The Ancient City of Anuradhapura consisted with gardens at least two well and parks. The Royal Goldfish parks along with the Thisavava and Mihinthale monastery with Kaludiyapokuna illustrated that the formulation of buildings in a city in accordance with the sustainability. It was considered that parks created for royal members and even to monks for creating peaceful environment while water bodies caused to made the city clean.

The above factors proved that ancestors focused on real estate development and management. They were able to identify who are the end users of the real estate and what are the needs that they expect. The royal members of the ancient city Anuradhapura formulated with the sophisticated facilities that generally not expected by the end users.

It is vital to concern on the historical evidences regarding the Development and Management of Real Estate. Besides Sri Lanka it can be identified that there are large number of examples related with the ancient Real Estates. Nalanda University is one that and it is the 1st higher education institute in the world which was constructed in 3rd century. Significance of this university originated from its international outlook that contribution to the spread of Buddhism in Asia, and the academic scope and range of studies (Shenker 2007).

It was an acknowledged seat of learning under the theme of 'Giver of Knowledge'. Rather than a heritage monument, Nalanda provided holistic knowledge on different philosophies. When developing the Nalanda University they were able to identify the threshold population. It was provided learning for 10000 students and 2000 teachers as a platform for living and learning. Scholars who came from China, Korea, Japan, Tibet, Mongolia, Turkey, Sri Lanka etc attracted by those particular features. University was able to teach Buddhism, Astrology, Music, Rhetoric and Medicine.

Kumar (2010) pointed out that university of Nalanda was constructed around these buildings in order to make them into one monastery. The thick walls constructed with the red bricks would not be the only purpose of survival but for the sound proofing. Students (Buddhist and Non Buddhist) learnt by heart some *Sutra* and *Gathas* with higher volume that would not be interrupted by the persons who are nearby. As well as thick walls made in the university supported to link into a one monastery.

There were eight main halls in the university which used for the lecturing, discussion, learning etc. The doors and windows made for proper entry and while the balconies and eaves captured light and ventilation.

Kumar (2010) illustrated that apart from the university buildings there are quarters with three stories reserved for monks. All the stories designed properly with the dragon style with supporting beams of variegated patters. It was well painted and decorated with bright colours.

Features which was an integral with the university shows that the Indian ancient knowledge on real estate marketing. They have identified who are the end users and the demand for the real estate is for education. To fulfill the end customer needs they have used different type of architectural designs.

As well as to keep the students in full time for the lectures they provided well and other basic needs to the students inside the university. In a true sense Nalanda was the first boarding university. Whole boarding system reserved for the students as follows

Basement – New students

Ground floor – Middle Level Students

Top floor- Senior Students

All the monk's quarters made four storied building

All the floors are connected to each other with proper stair cases. It is remarkable at the development stage they concerned on the management. In the modern context, regarding real estate development and management different from early because once the development over it concerns on the management. As well as providing light and ventilation to the university they used open windows to absorb sunlight and the ventilation. They provided open mud cooking oven which can use both sides. They concerned on students who have migrated from different countries. It showed the how far they applied the concept of Facility Management (FM) though the concept not so popularized at that time. Further their thinking provides a new direction to the modern real estate development and Management.

Ancient Rome Theater which was constructed in 240 B.C. Purpose of constructing a theatre is for the entertainment purpose and people at the ancient time by see a drama or entertained event in the open theatre which made pleasure. Common people, freedmen, slaves and even women could go to the theatre "They come to see and to be seen themselves" Manuwald (2011). Modern 2D and 3D theatres and cinemas captured these concepts latter. There are unique characteristics such as

- Separate Place- King and Royal Family
- Front rows- High Income Families
- Middle rows- Middle Income Families
- Balcony- Low Income Families
- A wheeled platform – To bring in corpses
- Periaktoi - Three flats put together to form a triangle, then center mounted on a pivot and used for scene/background changes

The strategy that they have taken to reserve the stairs can be considered as design the way of management of the theatre at the development stage. Feature called "*Vomitorium*", was a proper entry and exit to the theater that add for easy management.

Japanese traditional house is another example that can be identified as historical real estate which was an icon of green building. All the materials used to construct a house were eco-friendly. There were unique characteristics that can be identified as residential property such as Shoji sliding panel with wooden frame doors and windows with wooden frame called *Fusuma Engawa* as outer corridor and *Wagoya*. The hidden fact behind *Engawa* supported to maintain the social status and *Tokonoma* is the room that family members met together and shared their knowledge and experience. It caused to enhance physiological and social values of family.

"Japanese Architecture has always shown an intimate connection with nature. Materials are as natural as possible, like kaya vegetal roofing, wooden trusses and rice-straw mats" Lainez et al (2007).

Yoshino (2007), pointed out that in the Japanese traditional buildings there are various technologies devised exceptionally where livable building with the usage of fossil fuels for cooling. It became a solution for global environment issues called vernacular technology. Traditional Japanese houses made with thatched roof, large window and earthen floor which are eco- friendly and made cool inside the buildings. The technologies used by the Japanese is vital due to fact that it can apply to the modern buildings too.

Research conducted by Yoshino (2007) concerned on four types of house in Japan made with different features. Those are thatched roof and wooden wall single story houses, steel roof and wooden wall single story house, thatched roof and wooden two stories house and tiled wooden wall single story house. He found out by measuring temperature of inside of the building. It has shown that the cooling technologies of traditional buildings which thatched roof decreases indoor temperature than steel roof single story

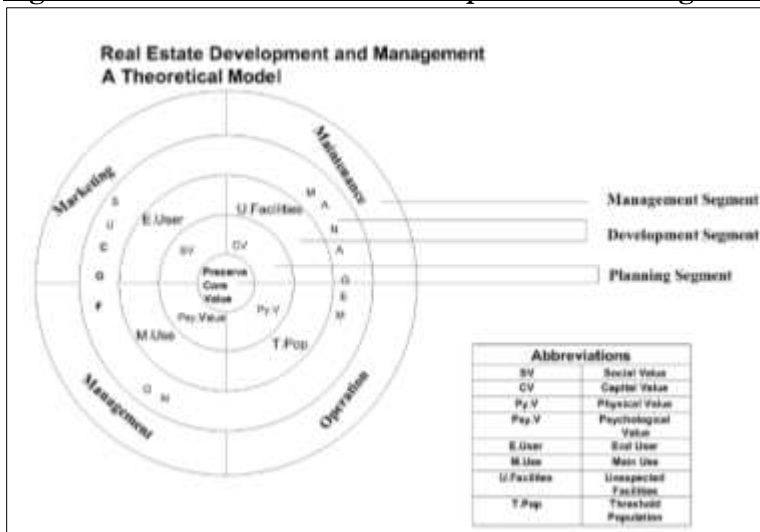
house. It pointed out important clues to the real estate developers that the materials for the construction of a real estate should be a crucial decision.

4 Results and Discussion

The ancient theories evaluated the real estate development and management model which should start with the preserving core values. It includes physical value, psychological values, social values, and cultural values.

Evidence regarding historical real estate proved that the ancestors have a comprehensive knowledge on real estate development and management. It leads for stage of planning real estate development and management. At the planning stage it should preserve the physical value psychological values, social values, and cultural values which are important to user. The end user expects to get maximum utilization form the real estate that he is ready to construct. Ancient examples illustrated that the developer's role of real estate should address to fulfil not only physical construction but also psychological value. It is difficult to quantify the psychological value. It is the expectation of the user to gain the benefit to change the behavior of the user. Considering the Sirigiya it was a fortress with painted walls. Evidence proved that the Sigiriya caused to change the behavior of the King.

Figure 1 Model of Real Estate Development and Management



Source: Compiled by Author

5 Conclusion

The main feature that can be identified from the history is that they were able to focus the Management of the Real Estate at the developing stage. It is supported to easy management because they already design the building considering the way of management. Final fact that can be identified in the planning segment is providing unexpected facilities; focus management, unexpected facilities and identifying threshold

population. It will cause to retain the customer due to fact that he is fully satisfying that he gain from the real estates.

For management segment it can be identified that operation, utilization maintenance and marketing if it followed by proper planning and development segment.

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A Study on Demographic Background of House Buyers: With Reference to Residential Development Projects

W. T. L. Fernando¹

¹Tutor, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
tharindil@yahoo.com

Abstract

Demographic criteria place an important role in determining persons' characteristics. Different demographics contribute differently to buyers' demand for residential houses developed by residential developers, which draws the importance of studying the demographic background of buyers. Even though the demand for residential units are high the absorption rate is low. There may be many reasons but one of them could be lack of understanding in background of house buyers. The objective of the research is to identify the demographic background of house buyers of residential units in Athurugiriya. Population was considered as house buyers who have already purchased a house from a residential development. In this study residential development projects catering middle class income earners, ranging a floor area of 1500-2500 square feet and basic facilities such as water, electricity, telephone & accessibility was considered. The sampling method was random sampling where the sample was taken randomly. The Data was collected using survey method and the tool was questionnaire. Data analysis was done using Statistical Package for Social sciences (SPSS) software. House buying decision is a collective family decision even though final decision will be made by males at most of the time. It shows that mostly the purchase decision is a collective decision done with their family members since this decision is taken mostly among married people. Major age category of buyers are above 50 years which confirms that this is the age that buyers make their purchase decision to purchase a house developed by a developer where there is no involvement. Majority's income of respondents lies at Rs. 50000.

Keywords: *demography, residential, house buyers, development projects*

1 Introduction

Purchasing a home is considered as the largest investment done in one's life and considered as a long time commitment. In order to understand the house purchase decision; it is important to identify house buyers' demographic factors such as age, household composition, income, occupation etc. which will initially influence buyers' decision to buy a house. By understanding the demographic background of buyers' real demand in the housing market could be identified by the developers which will lead to successful transactions. Therefore, a study on the demographic background is very important. Property development in any country tend to happen as a result of property sales. Developers tend to implement various strategies in order to market their property products and to achieve higher profit targets. All these strategies are implemented in order to sell their product successfully and to achieve the set profit targets. There are many other factors which affect the demand for a house but still it is important to identify the demographic profile of the buyers as it provides a suitable aspect to measure demand for residential houses developed through residential development projects.

2 literature review

2.1 House as a Real Estate product

Ariyawansa (2007), indicated that House i.e. a land bound real estate, can be identified as a consumer durable product. One may purchase such a real estate, a house once in his/her life time. Therefore, this is a very particular and crucial buying decision taken during his/her lifetime. Hence, a real estate buyer pays more attention and involves in a high intensive search of information regarding this particular product in making a purchasing decision rather than purchasing other products. At one extreme of the decision process, amount of deliberation and importance are very high in the housing purchase (Harry, 1976, p244. In fact, real estates, specially housing, is an elusive product (Mendes, 1995, pg3). Since housing fulfils one of the basic needs of a human it is more than just a product.

2.2 Housing market & Development

Ariyawansa (2007) cited Harvey (1973: 163-66), and accordingly there are numerous and diverse actors in the housing market and each one has a distinctive way of determining use value and exchange value. They are as follows:(1) The Occupiers, (2) The realtors (estate agents), (3) The landlords operators (4) The developers, (5) The financial institutions, and (6) The government institutions. On the other hand, as the supply of the public housing would remain very low in comparison to the overall demand for housing, the market forces come into play to meet this demand. Allen and Hamnett (1991: 31) have pointed out that the following elements may usefully be incorporated into a theory of spatially discontinuous housing markets. Firstly, in a market situation the relationship between producers and consumers is a reciprocal one and both sides of the 'market' influence the actual outcome (the market must have numerous buyers and sellers of housing services). Further, they have noted that an understanding of the housing market structure should start with housing production, not housing consumption. Such an approach stands in contrast to Rex and Moore's (1967) housing class model which focused essentially on housing consumption rather than housing production. It also provides a strong antidote to 'consumer-led' concepts of market relationships. A 'supply-side' approach to understanding the origins of housing market segmentation not only refers to the physical aspects of housing provision – the numbers and location of housing, its type, size and the standard of provision, etc

There was a boom period for the property development sector in Colombo. Several important features in the private sector property development activities during this period have also been identified. One was the rapid increase in the number of property developers, especially in the city of Colombo, and its suburban areas. They were either public or private companies, limited partnerships or individuals. The other characteristics were the increase of land sub-division schemes and sales of building and residential blocks in Colombo and its suburbs. Some of the companies, involved in the earlier largely land subdivision schemes, turned to the housing development activities this period (Niriella, 2015). In the meantime some real estate companies in the country are constructing houses for target markets in different scales which were not up to the expected level for the customer (Ariyawansa, 2007).

2.3 Consumer Behavior

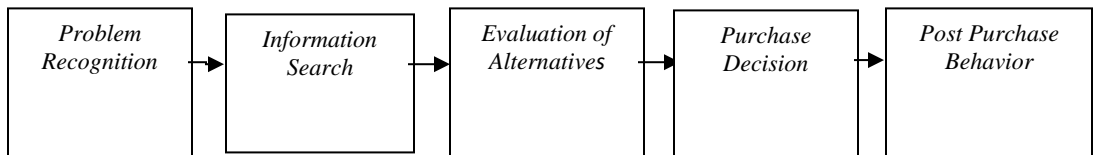


Ariyawansa, 2007

The consumer behavior refers to the purchasing decision of a particular product or a service (Ariyawansa, 2007). Purchasing decision is, in fact, a highly complex one, and subject to wide variety of interrelated economic and behavioral influences (Modern, 1991, pg.147).

Consumer is a living creature. His internal things as desires, expectations, and attitudes, etc. are highly subjective. On the basis of this internal situation, he learns and gets experience from the external environment. Then having reformed the initial base, he tries to perceive elements of the environment.

Since, consumer behavior is influence by internal and external characteristics in the macro environment. Therefore, the influential factors must be properly identified to have a proper understanding about the consumer behavior where consumer behavioral models will come into place.



Source: Kotler (1999) pg.179 as in Ariyawansa, 2007

“Five Stage Model” explains the way of buyer is acting in the market and it emphasizes a situation of a complex buying behavior, where a high weight in the process is given in searching information regarding the purchase. Ariyawansa(2007) stated that this model can be applied to identify the “buying decision processes” even in the housing market similarly to the other goods to a greater extent. This model describes that one, who has a need, tends to find ample of relevant information so that he/she can make a correct buying decision. This model will only explain buying decision process and cannot be utilized to understand a specific consumer behavior related to complex products such as house.

2.4 Factors affecting on Purchasing Decision of Residential Property

(Phan, 2012), stated some factors to be considered by a customer when placing their house purchase decision.

Firstly, “features” of the building structure itself is an important determinant of a household choice of residence (Quigley, as cited in Haddad, 2011, p. 234). Also, it is confirmed that “feature” has significant effects on customers’ house purchase decision making (Sengul *et al.*, 2010, p. 214). The “feature” of house includes “design”, “house

size” and “quality of building” determinants relating to decision making to buy a house of an individual (Adair *et al.*, 1996; Daly *et al.*, 2003; Sengul *et al.*, 2010, p.218; Opoku & Abdul-Muhmin, 2010).

Secondly, “private living space” is one of most important factors affecting to “consumer housing decision”. Living space consists of “size of living room”, “size of kitchen”, “quantity of bathrooms” and “quantity of bedrooms” (Opoku & Abdul-Muhmin, 2010, p.219). In addition, it is accepted that there is relationship between the “space customer” and customers’ purchase making process (Graaskamp, 1981).

Thirdly, “financial” status is much significant to customer house choice (Hinkle and Combs, 1987, p.375; Kaynak & Stevenson, as cited in Sengul *et al.*, 2010, p.220). The “financial” element of real estate requires access to a relative large amount of “capital” and as well as “borrowing costs” (Xiao & Tan, 2007, p. 865). In addition, “financial” status bases on combination of “house price”, “mortgage loans”, “income” and “payment term” (Opoku & Abdul-Muhmin, 2010; Yongzhou, 2009, p.17). Haddad *et al.* (2011) finds out the “economic” factor which is consisted of five variables, such as “income”, “interest rate”, “area”, “conversion” and “taxes”. Moreover, Adair *et al.* (1996, p.24) and Daly *et al.* (2003, p.306) group “interest rate”, “maximum mortgage”, “maximum monthly payment”, and “length of time payment” into “financial” factor.

Fourthly, one of the most important factors affecting individual “decision” making to buy a house is “location” factor (Kaynak & Stevenson, as cited in Sengul *et al.*, 2010, p.219). The “residential location” has an influence on “people’s housing choice” (Zabel & Kiel, as cited in Opoku & Abdul-Muhmin, 2010, p.220). Distance to choose house can be affected by “width of adjacent” and “location to school” (Opoku & Abdul-Muhmin, 2010). Moreover, “distance to central business”, “distance to school” and “distance to work” are considered (Adair *et al.*, 1996, p.23). In addition, “access to recreational facilities” and “access to main roads” are proposed (Iman *et al.*, 2012, p.30). Fifthly, “environment” including “neighborhood”, “area attractiveness”, “view”, “noise from around districts” and “general security” is stated as one of the determinants of a household’s residential decision (Adair, 1996, p.23). It is confirmed that “environment” has a big influent to housing buyer (Tajima, as cited in Opoku & Abdul-Muhmin, 2010, p.224) and it is agreed by Morel *et al.* (2001, p.1119). Particularly, “neighborhood” quality is paid intention highly to house purchase decision making of customer (Gabriel & Rosenthal, 1989, p.240).

Demographic” characteristics of customers are internal factors related to decision making (Mateja & Irena, 2009). “Demographic” characteristics consist of the individuals in term of “gender, age, educational status, marital status, career, the quantity of family members and children, as well as the residence property”. “Demographic” characteristics consist of age (Yalch & Spangenberg, 1990), education (Gattiker *et al.*, 2000), income level (Dawson *et al.*, 1990), gender (Zhang *et al.*, 2007) which are factors influenced on the “purchase intention” of customer. Particularly, “gender” has significantly influence on the financial feature of the house (Sengul *et al.*, 2010, p.214). It is also confirmed that there is a significant difference in real estate buying decisions to “age” and “gender”, and not to “educational levels” and “marital status” (Haddad *et al.*, 2011). Correspondingly,

in this study, “gender” and “age” characteristics are considered as control variables so that investigate whether effect of those demography variables on housing purchase decision making of customers or not. It shows that there are main factors which is considered by customers as well as sub factors which comes under main factors which are considered by a house buyer.

Therefore, a study on demography, can be identified as an important determinant affecting housing market decisions which was carried out through this research. Demography can be defined as a part of the population refers to the number of households in one family. According to this research demographic background will include a detailed description of potential buyers’ age, gender, ethnic group, religion, education level, income level, marital status, occupation and employed sector.

Demographic Factors

Age: Age becomes an important aspect in dealing with property criteria. There are diverging preferences between the adult and older generation. Retired person would prefer to purchase a house with simple design affording movement flexibility inside the house. Hurtubia et al. (2010) stated that age would help them identify the current lifecycle of the household such as young family and old couple. These would influence them to make different decisions in terms of their requirement. In other words, age could identify the number demand in the housing market. According to Krainer (2005), people above 65 years old are reluctant to buy a house even if they can afford it. On the other hand, young people are more penchant to buying a property. Nevertheless, those under 30 years old less likely to commit themselves to purchasing property since many will not have reached their financial stability.

Ethnic group: Ethnic group becomes one of the socio-economic aspects. For example, in Malaysia, each ethnic group such as Malay, Chinese and Indians have their own different cultural perspectives when it comes to buying a house. This demographic factor influences residential choice in terms of the selection of location and thus creates various situations in the property market. Therefore, race has been considered in determining the level of demand and property purchasing.

Marital status: Marital status affects the buyers’ decision-making process. Different buyers’ marriage status such as single, married, a single mother, a single father will result in different preferences. This will influence the individual's basic needs and restrict his capacity or budget to purchase housing units. Married people usually prefer to have their own house. However, Bourassa (1994) argues that young married people do not have the intention to have their own house. At the same time, old married people also refuse to buy the house caused by smaller household size. Besides this, unmarried person intends to stay with his parents rather than move to another house. However, the incidences of divorce among people contribute to growing needs for new houses among single parents. This situation has suggested that marital status should be analyzed to determine house purchasing decision by people.

Employment: Employment becomes one of the household criteria. Increasing the number in employment would decrease the level of unemployment. Employment is part

of the property cycle, which usually refer to the type of occupation that has been employed by the head of household. A good employment would contribute to the financial strength for each household and would encourage the people to find a new residential unit. Meanwhile, losing the employment would influence in home ownership. This situation will basically affect the level of demand for the property market within short and long term period.

Education level: Meanwhile education level is also an indicator of buyer lifestyle. Higher education household had been criticized as the main group influencing the housing system. Moreover, education also influences people to be more careful in buying a house. Different levels of education among people would encourage them to demand different types of house. A higher level of education may encourage people to buy expensive houses whereas a lower level of education level would decrease their intention to buy a house. The impact of education level on buying activities has been studied by previous researchers.

Income: Bujang *et al* (2010) stated that income would influence people in buying a house. The level of income would influence the cycle of the housing market and increase purchasing power by the buyer. Level of income would change from time to time and could be classified into certain classes such as high, medium and low income. The choice of house type would be different based on the level of income which are related to their affordability. Usually married household intend to have high income as compared to unmarried people. This situation had encouraged people to buy new property. High-income people would also prefer to buy high-cost house. Meanwhile, low-income people would have barrier to buy any of the houses. However, Poterba (1991) and Kamara (1994) argue that household income does not give much effect on the value of demand and buying decision. Beside, Kranz & Hon (2006) stated that the impact of these criteria on demand is low and could be ignored.

3 Methods

The population of this study was 120 housing units of prestige category in Millennium city who have already purchased a typical house from the residential development project.

Sample and Sample size

Sample is taken as a representative portion in the population and sampling has done using the formula which is mentioned below. Formula will calculate the sample size also.

$$n = \frac{N}{1 + N * e^2}$$

n = Sample size

N = Population

e = 0.05 (decide level of precision)

95% confidence level and *p* = 0.5 is assumed.

After application of the above formula 90 number of housing units from Millennium city was selected as the sample and a random sampling technique was used to select the houses in this study.

Data collection method & Tool

Data was collected based on primary & secondary data.

- Primary data

Data was collected through structured questionnaire and unstructured interviews. Out of 100 questionnaires 90 questionnaires were collected.

- Secondary data

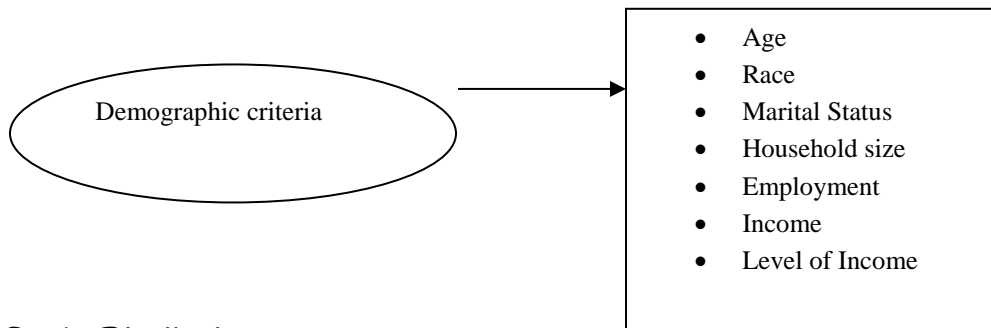
Secondary data will be collected through literature, journal articles, books, websites, local authority, real estate developers, etc.

3. Results and Discussions

To analyze data Statistical Package for Social Science (SPSS) will be used. As data analysis tools mainly descriptive analysis was used and under that mean values, frequency tables and charts were used.

According to Rohayu Majid et al (2012), He has identified age criteria on property as follows.

Figure 1 – Demographic criteria on Property



Gender Distribution

Table 1 - Gender Distribution

Gender	Frequency	Percent
Male	43	41.0
Female	62	59.0
Total	105	100.0

Source by- Tharindi: Survey data 2015

According to the table 1 it shows that the gender distribution has not distributed evenly, where female proportion carries more than half of the sample (59%) and male proportion is less than half of the sample (41%).

Marital Status

According to Rohayu Majid et al (2012), He has identified age criteria on property as follows.

Table 2 – Marital Status criteria on Property

Category	Frequency	Percent
Single	135	67.5
Married	65	32.5
Divorce	0	0

Highest percentage is shown as single.

Table 3 - Marital Status

Marital Status	Frequency	Percent
Married	73	69.5
Unmarried	29	27.6
Divorce	3	2.9
Total	105	100.0

Source by- Tharindi: Survey data 2015

In the table 2 it shows more than three quarter of the sample is married. Married percentage carries 73%, unmarried percentage carries 29% and divorce category carries 2.9% and other category is null.

These two analysis shows dissimilarity where according to Rohayu Majid et al (2012) shows most of respondents are single whereas this research shows highest respondents are married

Education Level

According to Rohayu Majid et al (2012), He has identified age criteria on property as follows.

Table 4 - Education Level on Property

Category	Frequency	Percent
Primary & Secondary Education	95	47.5
Diploma	25	12.5
Degree	73	36.5
Masters	7	3.5

It shows that majority of the respondents are from primary and secondary education which is 47.5%.

Table 5 - Education Level

Educational Level	Frequency	Percent
G.C.E. O/L or below	17	16.2
G.C.E. A/L	58	55.2
Up to the first level degree	18	17.1
Up to the level of P.G. degree	12	11.4
Total	105	100.0

Source by- Tharindi- Survey data 2015

When educational level of the sample is considered more than three quarter is having a minimum qualification of G. C. E. A/L, this ensures a higher probability of providing sensible answers by the respondents.

According to Rohayu Majid et al (2012) and this research most of the respondents are having a basic education which shows a similarity between two analyses.

Sector Distribution

According to Rohayu Majid et al (2012), He has identified sector criteria on property as follows.

Table 6 - Sector Distribution on Property

Category	Frequency	Percent
Government	66	33
Private	111	55.5
Self Employed	6	2
Other	13	3.5

It shows that highest percentage of respondents are employed in the private sector.

Table 7 - Sector Distribution

Sector	Frequency	Percent
Government	24	22.9
Private	61	58.1
Semi-government	7	6.7
Total	92	87.6

Source by- Tharindi: Survey data 2015

According to the above table highest respondents were from the private sector which is 61%, followed by the government sector 22.9% and very few were from semi-government which was 6.7%. According to Rohayu Majid et al (2012) and this research shows highest respondents are employed in the private sector

Income

Table 8 – Income

Income	Frequency	Percent
Below 50000	44	41.9
50001-100000	24	22.9
100001-150000	15	14.3
Above 150000	13	12.4
Total	96	91.4

Source by- Tharindi: Survey data 2015

Most of the respondents are in the income category of below 50000 which consist of 44% when considered separately. But in overall 52% are in the income category above 50000. This shows most of the respondents are in the higher middle income category.

Age Distribution

According to Rohayu Majid et al (2012), He has identified age criteria on property as follows.

Figure2 – Age criteria on Property

Background		Frequency		Percentage (%)	
Demographic Criteria	Element	Male	Female	Male	Female
Age	20 - 29 years old	74	84	37	42
	30 - 39 years old	21	21	10.5	10.5
	40-49 years old	0	0	0	0
	50-59 years old	0	0	0	0
	59 years old and above	0	0	0	0

Most of the respondents that have intention to buy a house lies between 20-30 years old.

Table 9 - Age Distribution

Age	Frequency	Percent
Under 30	28	26.7
30-40	26	24.8
40-50	21	20.0
Above 50	29	27.6
Total	104	99.0

Source by- Tharindi: Survey data 2015

Age analysis is very important in this study because customers considering factors could differ according to their age. In the above table we could observe that the sample is evenly distributed among within mentioned age categories approximately. But higher percentages are between above 50 and under 30 years.

According to age analysis both analysis shows that property decision is made in an age of 20-50.

Occupation

Table 10 - Occupation

Occupation	Frequency	Percent
None	14	13.3
Executive	27	25.7
Professional	41	39.0
Business	9	8.6
Other	14	13.3
Total	105	100.0

Source by- Tharindi: Survey data 2015

The table 4.7 shows a 42% of the sample are in the occupation as professionals, 27% as executives, and 14% as in the category of none or other and 9% in business category. The two analysis shows similarities in demographic factors of age, sector, education and dissimilarity in Marital status.

4. Conclusion

This research is aimed at studying the demographic background of the buyers who had already purchased a residential from a residential development project. The concluded results of this study is as follows.

Surveyed data shows that majority of the buyers are males. It shows that majority of males make a lifelong investment by purchasing a residential from a development project on behalf of their family. The majority buyers are married which shows that mostly families decide to purchase houses from a residential development projects. The majority of buyers belongs to the age category of above 50 years and this may be as a result of their old age that they are not strong enough to build a house on their own and needs facilities (security, leisure, etc.) in one place. Majority's income lies below Rs. 50000. This may be as a result of their age category which carries a fixed income. The majority of respondents have successfully completed their G. C. E. Advanced level. The majority of the respondents were professionals representing the private sector.

When both analyses are considered it showed dissimilarities in some demographic variables and similarities in some variables. So, property decision could change based on the demographic factors which differ from time to time, place to place, area to area, etc. Therefore, it is really important for the developer as well as the buyer to aware of the demographic background which could have an impact of the purchase or investment decision on residential development projects

6. Recommendation

Since investments made to purchase a house is a life time investment, so customers need to pay attention on all the demographic factors discussed in this research, and all possible other aspects and factors which was not covered by this research due to its limitations, in order to make a successful lifelong investment. And also it is recommended for a further study to analyze the impact of each demographic factor towards the investment/purchase decision on residential property.

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Analysis of impact of Property Attributes on Buyer's Behaviour in Luxury Condominium Apartment Market in Colombo, Sri Lanka

M. S. L. Silva¹

¹Tutor, Department of Estate Management and Valuation
University of Sri Jayewardenepura. Sri Lanka,
shanaka.lakmal.silva@gmail.com¹,

N.C.A. Fraser²

²Instructor, Department of Management of Technology
University of Moratuwa. Sri Lanka
alokafraser@y7mail.com²

Abstract

House purchase decision is considered to be one of the most important decisions that a person or a family makes during the life time. A decision made wisely would bring the highest satisfaction through fulfillment of basic needs. Condominium apartments as a new sensation of housing has been evolved and Sri Lankan condominium market is booming over recent years generating a new experience for the locals. As a concept which is totally different from a normal house, people are still getting adopted to it while having positive and negative experiences. The negative experiences have led the prospective buyers to take the purchase decision of a condominium more wisely by searching for more information while making the regulatory framework tighter for the developers. The buyers mostly concern about property attributes and these will have a definite influence on the buyer behavior making the developers thirstier about the attributes influencing buyer behavior which will result in the success of the condominium project. Once the buyers are satisfied about the property attributes developer will earn a loyal customer while generating profits. If not, the developer will lose customers while it will have a direct impact on other customers with continuous loss of sales. So the developers should be aware about the property attributes influencing the buyer behavior in designing projects successfully. So the objective of this research is to identify the property attributes influencing buyer behaviour in purchasing luxury condominium apartments in Colombo. The population of the study is potential buyers who would make demand for luxury condominium apartments in Colombo. The sample of the study was 90 respondents and the sampling method was judgmental sampling and the sample was considered as potential buyers who visit sales offices of luxury condominium apartments in Colombo. Data was collected by means of a questionnaire survey and data analysis was done using Relative Important Index. The results depicts that legal status of the property is the most influential property attribute while quality of the product and the manner the innerspace of the apartment has been utilized are having significant influences on the buyer behaviour in purchasing luxury condominium apartments.

Keywords: *relative importance analysis, property attributes, buyer behaviour, condominium apartments*

1. Introduction

The concept of real estate gets broader due to the human activities which occur from time to time. The property development process has a vital impact on these changes. Property development is the process of enhancing the value of real estate by making physical changes and the improvements there through the application of capital and entrepreneurial skills by a property developer (Ramachandra, 2001). Because of these

developments several real estate property types have been formed. Among these real estate property types, residential properties are of highly importance because of its direct combination with one of the main human needs which is housing or shelter. In today's rapidly changing world, there is a drastic change in the life style of the people. People prefer to have a comfortable living with modern dressing styles and rich looks, sumptuous food, air-conditioned rooms, luxury cars and homes with all facilities/amenities (Sakthivel & Ahamed, 2013). They want to fulfill their lifetime ambitions through owning a beautiful house with an aesthetical appeal and they attain the status of "customers" in the context of home-buying once they complete the transaction of purchase or occupy a residential house or apartment as an owner; such home-buying customers actually influence the demand of a construction project (Manivannan & Somasundaram, 2014).

A condominium is a type of property which has the ability of accommodating several families in a single plot of land. When demanding a luxury condominium apartment the potential buyers will consider several parameters including property attributes which is a significant parameter in buying behavior. Nasar and Manoj, (2015) states that the customers have to be satisfied by marketing products of the attribute as desired by the customers in order to attract customers. Manivannan & Somasundaram, 2014 states that the knowledge about the factors which affect for the customers' buying decision or buying preference will help the developers to gain a better understanding about the buying behavior as well as to launch the residential schemes better and effectively. If the potential buyers are not satisfied with property attributes which affects the purchase decision of luxury condominium apartments, it will result in avoiding the purchase of condominium apartment which will generate negative impacts and consequences on the developer. In order to avoid this problematic situation the developer should be well aware about the property attributes which affects the buyer behavior so that the developer can take necessary steps to make the customers satisfied with the product. So this study was initiated in the aim of studying the property attributes influencing the buyer behavior of potential buyers in purchasing luxury condominium properties in Sri Lankan context.

2. Literature Review

Buyer Behaviour

When marketing a product, knowledge of the buyer behavior is an essential factor where there are buyers of two types where one type is for the consumption purpose and the other type is for the business purpose (Ariyawansa, 2007). The buying behavior of these two categories vary due to factors prevailing internally or externally to the person and to the product and the factors that are combined with the person are age, sex, education, social levels, culture etc. while the factors which are combined with product are price, quality, appearance, legibility etc. (Ariyawansa, 2007). According to Kotler (1991) as cited in Ariyawansa (2007), buyer behavior is influenced by four main factors such as cultural, social, personal, and psychological. Modern, 1991 as cited in Ariyawansa, (2007) the purchasing decision simply refers to as the buying behavior of a product or service where buying decision is a highly complex one due to the variety of inter-related influences of economic and behavioral factors. When considering housing as a real estate product, Ariyawansa, (2007) argued that there is a complex buying behavior in housing market.

As the purchase decision of a house is mostly a decision which one makes once in his life time, he will look up to the best of the available options which gives him the maximum satisfaction which is why a real estate developer should be well aware about the buying behavior of a person in the residential market specially in the luxury condominium market. Hawking *et.al*, (1995) as cited in Ariyawansa, (2007) the success of a firm depends on the value created in the targeted market which is more than what competitors provide and to achieve that goal one should have a clear knowledge about needs, wants, desires and expectations.

Condominium Apartments

Kowshala, (2002) describes condominium as a specific structure which has several units where interior space is owned individually and the other common areas are owned by each and every owner of individual units commonly. Thus, a condominium is a type of property which has the ability of accommodating several families in a single plot of land. It is well known that a condominium is a building or a structure which has two or more stories consisting of parcels, owned and or used separately by individuals and remaining portion of the property being owned by the owners of individual unit in common (Ariyawansa, Udayanthika, 2012; Gajanayake, 2006; Wedamulla, 1997). Accordingly Sepani *et al*, (2006) a person who buys a condominium apartment is technically entitled to own the space from inside their walls and has a shared right to common areas and the facilities. Further it mentions that the responsibility of maintaining these common areas is a responsibility of the condominium association and every owner has a share of interest in the condominium association duly with an obligation to pay for maintenance fees for larger maintenance activities in common areas.

At present condominiums come with a mix of residential and commercial space. Probably the lower floors will be reserved for the commercial activities while upper floors will be used for the residential purposes. These condominium properties come in different prices with different price ranges and different facilities. These luxury condominium apartments have several property attributes which are common and some attributes which are very unique such as the interior design of the apartment.

Property Attributes

Kiefer (2007) states that an unwritten rule in real estate is, “one should buy the cheapest house in an expensive neighborhood”. Luxury condominiums have the ability of fulfilling this need. Normally the neighborhood which is living in luxury condominiums are high net worth, luxury, high end individuals which makes it a very expensive neighborhood. So because of this, people try to afford this type of housing. The property purchase is a complex decision-making process as evidenced by costly acquisition, infrequent purchase, riskiness, high self-expressiveness, and awareness among buyers of significant differences among product alternatives. Buyers are very particular about the property attributes that they are contemplating, thus, giving rise to differences in attribute preferences among them (Manivannan & Somasundaram, 2014).

Ariyawansa (2007) examined the factors that are relatively more important in a buying decision of a house. This study has identified several property attributes that will have an impact on demand. Quality of construction, location, Price, design, size, facilities,

legal environment, and neighborhood are those factors. As they are related with the demand, these factors will have a definite influence on the buyer behavior of residential properties. Manivannan & Somasundaram, (2014) studied Layout as one of the main construct which affect for the customers' decision of purchasing residential flats. The construct was composed of several sub variables Exterior look of the apartment, Interior design of the flat, floor of the flat, no: of bed rooms and servant room. Their findings revealed that regard to layout construct the Exterior look of the Apartment and Interior design of the apartment were the most vital aspects for the purchase decision in the study area. Lun and Steven (2011), in their study Factors affecting the preferences of residential housing in gated community studied the Property physical factor including size of the house, number of bed rooms available, well-built house perception and type of house. As per (Haddad, *et al.*, 2011), their effort was to answer 3 questions. These questions were what are the factors that influence buying behavior of Jordanian people towards apartment? And what are the most influencing factors that affect buying the apartment? And are there any differences in the influencing factors towards the customers' demographic factors. According to this research it has studied several property attributes which has an influence on the buyer behavior. These identified factors are apartment area, decoration, entrance, design and finishing. These attributes were included in a main construct namely Aesthetic and it recorded the 2nd highest mean value of all the constructs revealing the importance of property attributes on the buyer behavior. Zarin, (1996) (1999), has identified several key property attributes which influence the demand for condominiums. These identified factors are quality of the product, design, layout, size of built up area, floor layout and tenure. Tenure is an important attribute which has a high influence on the purchasing behavior. As the house purchase decision is a really important decision in one's life the clear approach is to get a clean title for the property without any issues. Dey, *et al.*, (2013) studied Consumer perception and buyer behaviour for purchase of residential apartments by examining 2 main constructs namely External factors and Internal factors which included Vastu Compliance, Green/ Sustainable development, Availability of store room/ Servant quarters, Kitchen sizes and the Customization within the apartment as sub variables which influences the buyer behaviour.

Accordingly for the study purpose several key property attributes were identified critical through the literature analysis and the factors, Legal status of the property, Quality of finishes, the quality of fittings (pantry etc.), The size of the apartment, Interior design of Apartment, Construction quality, No: of bath rooms, No :of bed rooms, Availability of a maid room and maid bath room, External design of whole building, Construction duration, Living and dining room size, Warranty period of construction, Kitchen size, Availability of a Storage room and availability of walk-in closet were studied to identify the level of influence on the buyer behavior of luxury condominium properties in Colombo.

Relative Importance Analysis

Relative Importance Index (RII) or weight is a type of relative importance analyses and RII aids in finding the contribution a particular variable makes to the prediction of a criterion variable both by itself and in combination with other predictor variables

(Somiah, *et al.*, 2015; Jhonson & lebreton, 2004). The Relative Importance index is calculated by means of the following formula.

$$RII = \frac{\sum W}{A * N}$$

W—weighting given to each statement by the respondents and ranges from 1 to 5

A—Higher response integer (5)

N—total number of respondents.

3. Methods

This study is mainly based on identifying the property attributes influencing Buyer Behaviour in Purchasing Luxury Condominium Apartments and the study was based in Colombo where most of the luxury condominium properties are concentrated. For the study purpose a literature survey was carried out referring to journals and articles with the aim of finding existing literature on various property attributes that influence the buyer in purchasing a luxury condominium apartment. The population of this study is the potential buyers who demand luxury condominium apartments which are located within Colombo city limits and as the population cannot be exactly determined, under the non-probability sampling method, judgmental sampling method was used in this study in selecting the sample for the study purpose. Accordingly 90 respondents were selected and the data were collected by means of a structured questionnaire. The questionnaire was formulated in the form of a Likert scale where the respondents were required to express their level of agreement on a scale of 1- Strongly Disagree to 5- Strongly Agree on the studied factors. The data analysis was carried out by using the RII index formula in determining the property attributes influencing buyer behavior in residential apartments.

4. Analysis

The main objective of the study is to study the factors influencing the buyer behavior in purchasing of luxury condominium apartments and accordingly property attributes legal status of the property, Quality of finishes, the quality of fittings (pantry etc.), The size of the apartment, Interior design of Apartment, Construction quality, No: of bath rooms, No: of bed rooms, Availability of a maid room and maid bath room were studied.

Table 1. Likert Scale Scores

Factors	1	2	3	4	5
legal status of the property	0	1	1	16	72
Quality of finishes	0	0	2	21	67
The quality of fittings (pantry etc.)	1	0	2	22	65
The size of the apartment	0	0	0	31	59
Interior design of Apartment	0	0	4	31	55
Construction quality	1	0	5	34	50
No: of bath rooms	0	1	3	43	43
No :of bed rooms	0	0	8	38	44
Availability of a maid room and maid bath room	0	1	20	19	50
External design of whole building	0	1	11	41	37
Construction duration	4	0	10	30	46

Living and dining room size	0	0	11	50	29
Warranty period of construction	1	2	6	51	30
Kitchen size	1	0	12	50	27
Availability of a Storage room	0	2	20	46	22
Availability of walk-in closet	0	7	51	23	9

Table 1 shows the Likert Scale Values of the factors as per the responses given by the respondents and the construction duration factor was the highest strongly disagreed (1) factor with a score of 4. The highest disagreed (2) and the highest moderate (3) factor was Availability of walk-in closet with a score of 7 and 51 respectively. The highest agreed (4) factor was warranty period of construction with a score of 51 and then highly strongly agreed (5) factor was legal status of the property with a score of 72.

Table 2. Property Attributes influencing buyer behavior in purchasing luxury Condominium apartments.

Factors	SD	RII	Rank
legal status of the property	0.520	0.953	01
Quality of finishes	0.498	0.944	02
The quality of fittings (pantry etc.)	0.577	0.936	03
The size of the apartment	0.478	0.931	04
Interior design of Apartment	0.582	0.913	05
Construction quality	0.706	0.893	06
No: of bath rooms	0.618	0.884	07
No: of bed rooms	0.650	0.880	08
Availability of a maid room and maid bath room	0.856	0.862	09
External design of whole building	0.716	0.853	10
Construction duration	0.981	0.853	11
Living and dining room size	0.640	0.840	12
Warranty period of construction	0.748	0.838	13
Kitchen size	0.680	0.829	14
Availability of a Storage room	0.749	0.796	15
Availability of walk-in closet	0.773	0.676	16

Table 2 shows the Relative importance index (RII) values of each factor and their respective rank. The RII value for the factors were calculated by means of the RII equation and the calculation of the factors were carried as shown below.

$$\text{RII for Legal status of the property} = \frac{1*0+2*1+3*1+4*16+5*72}{5*90}$$

$$= 0.953$$

Accordingly the Legal status of the property factor was ranked first as the most influential property attribute to the buyer behaviour in purchasing luxury condominium apartments with a RII value of 0.953. This indicates that the buyers are highly concerned about the legal status of the property. During the data collection process researcher identified through the interview process that almost all the respondents' preference was for a freehold title which minimize the consequences arising from a the title of a property as the amount of money spent is considerably high. Further a condominium property

comes into existence with the registration of the deed of declaration signed by the owner of the land annexing a plan of subdivision of the building, attested by a notary, thus makes the ownership of land transformed into a property with its owners (Edirimane, 2011). But the issue pertaining regarding the matter is that the buyers enter into sales agreements with the developers by paying a significant amount of the purchase price when the building has not been registered as a provisional condominium property for pre-selling of units or as a semi condominium or fully completed property making the entire payment based only on a sales agreement which is not a title deed (Edirimane, 2011). Further Edirimane, 2011 states as an example that many condominium properties in Wellawatte have not been registered while several hundred unit owners are in occupation without title deeds making the units unable to sale or mortgage as the occupier is not the owner. These facts have made the buyers more concern about the legal status of the property. So the developers of the condominium apartments should really rely on this finding and should try to purchase properties of a clear title in carrying out their developments so that it will grant the buyers a clear freehold title as well.

The second and third mostly influential factor was Quality of finishes and the quality of fittings of the apartment with a RII value of 0.944 and 0.936 respectively. The buyers are highly concerned about the product that they are considering to purchase. This is almost the same for every product where the quality is a big concern in satisfying the need of the human beings. Considering the results of the analysis despite the nature of the product the quality has been a same concern for real estate products too. So developers should be really aware and should pay a big concern about the quality of the fittings and the finishes of the apartment.

The fourth and fifth influential attribute were the size of the apartment and the interior design of the apartment with a RII value of 0.931 and 0.913 respectively. Size of the apartment is a major attribute which influence the buyer behaviour in luxury condominium apartments. In Sri Lankan condominium market a square foot is ranging from 200 USD to 410 USD which shows the importance of the attribute in the deciding the buyer behaviour. As well as their family size also influence in deciding the needed size of the apartment. The other attribute which is closely related with the size of the apartment attribute is the interior design of the apartment. In some apartments the apartments have not been designed and constructed in a manner which increase the efficiency of the layout so that huge area of the apartment becomes unusable. Irregular shapes mostly affects this issue and as the buyers have paid considerable amount of money for every unit of area in the apartment their buyer behaviour is mainly influenced by these attributes.

The sixth influential factor with a RII value of 0.893 was Construction quality which is a prominent attribute influencing the buyer behavior. The buyers should be well aware about the quality of the construction as the construction of a multi storied building includes key complex activities starting from piling to the stage of finishing. Edirimane, 2015 states that construction defects have become a major problem for the prospective buyers as the developers have found ways and means of hiding the defects in the construction until the units are sold and the buyers are not aware about these because of rare chance in identifying defects due to the lack of knoweldge in civil engineering and

building works. Edirimane, 2015 states as an example that in a particular condominium, the complaints keep on arising mentioning serious defects in construction with floor tiles coming off and cracks appearing on external walls. Due to the fact, Edirimane, 2015 recommends the prospective buyers to get the opinion of a civil engineer or a knowledgeable person to have an idea about the construction quality before paying hefty prices to purchase condominiums. So now with these information available the buyers are more keen about the purchase decision and convincing them to buy apartments have become a challenge for the developer. So in order to face this challenge the developers should have a big concern about the quality of the construction.

The rest of the attributes ranked as per the RII values depicts mainly the things associated with the inner space of an apartment. Among the attributes, No: of bath rooms recorded a RII value of 0.884, No: of bed rooms a value of 0.880, Availability of a maid room and maid bath room a value of 0.862, Living and dining room size (0.840), Kitchen size (0.829), Availability of a Storage room (0.796), Availability of walk-in closet (0.676) were ranked respectively. Despite the inner space attributes, construction duration (0.853) and the warranty period (0.838) of the construction too were ranked as 11th and 13th influential factor respectively. Both these attributes have a significant influence on the buyer behaviour because in the present context luxury condominium apartment projects do pre sales of their apartments while the construction is continuing which makes the buyers wait for some time to get the product physically. So they are concerned about the opportunity cost of the investment increasing the concentration on the construction duration. Further the warranty period is a big concern which influence the buyer behaviour because there will be construction defects in the construction after completion. So as the buyers sometimes tend to buy presale condominiums they are concern about the warranty period as a method of assurance regarding the construction.

5. Conclusion

This study was initiated in identifying the property attributes influencing buyer behaviour in purchasing luxury condominium apartments and the results concluded that the buyer behaviour is mostly influenced by the legal status of the property which has raised several issues in recent past in the condominium market in Colombo and the buyers being very attentive on the fact. Further the results depicted that buyer behaviour is influenced by the quality of the product as well as the way the inner space of the apartment have been organized. So based on the results, developers should draw their attention on these property attributes in developing the product so that it will influence the buyer in a positive manner and will result in a satisfied customer with hefty profits in their business.

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Factors Affecting on Prices of Condominium Properties in Colombo: Suppliers' Point of View

J.M.A.I.K. Jayalath¹

¹Tutor, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
ayeshajayalath@ymail.com

Abstract

Condominium living has gained popularity among domestic people as well as foreign people over the last two to three years. It is becoming popular mode of living among the middle and upper class families of the country. However, currently, Condominium housing developments in the country facing several problems. Most of the researchers say that the supply is greater than the demand for condominiums in Sri Lanka than other South Asian countries. There are number of condominium housing developers, companies and agents in Sri Lanka. To monitor the condominium market, the first issue is to understand what the factors that determines the prices of condominium properties. There are number of factors affecting the market price of condominiums. Property market buyers as well as sellers are highly depending on these factors, when buying and selling condominium properties, because based on these factors prices will be changed from one property to another property. This paper generally attempts to discuss the factors that influencing supply for condominium properties in Sri Lanka. Also it is expected to achieve some objectives specifically such as, to analyze the associated characteristics of condominium market in Sri Lanka and to identify the major factor that determines the selling price of condominium properties. Participants in this survey were condominium housing developers in Dehiwala - Mount Lavinia area. There are more than 40 licensed condominium sellers, companies and real estate brokers in this area. Some are built condominium houses for renting purposes. Without them there are 27 condominium developers, selling companies in case study area. Primary data was collected from all suppliers using structured questionnaires. According to the data analysis location is the major factor to determine the market prices of condominium properties in Colombo. In additionally, physical factors and infrastructure facilities are highly affecting to determine the market price of condominium properties as per the suppliers' point of view.

Keywords: *real estate, condominium market, property price, determining factors*

1. Introduction

Since the civil war ended seven years ago, Sri Lanka has rapidly become a hotspot for investment among emerging markets. According to the World Bank, Sri Lanka grew at an average rate of 6.4% between 2010 and 2015. The market for real estate assets in Sri Lanka has shown a significant growth since 2009 after war, with an increase in price levels of real estate assets including bare lands, residential housing, commercial premises, industries and condominium apartments (KPMG, 2012). The construction industry contributed 20.2 percent to the GDP growth in 2014, from 14.4 percent in 2013 (Lamudi, 2015).

Sri Lankan property market has been booming, with healthy demand and supply for luxury properties now a day. Most investments, such as Platinum One, Avic Astoria, Shangri-La mixed development and Altair; impact on increased the price of property in the district. Within the Colombo district, including areas such as Dehiwala-Mount Lavinia, Battaramulla, Ratmalana, Kaduwela, Rajagiriya and Kolonnawa, where major

luxury and mid-range properties are on the rise, an average price range can be identified for each category of property type (Lamudi, 2015).

The condominium market shows a significant impact on real estate market in Sri Lanka due to growing demand for condominium properties, particularly in the Western Province. Urbanization, land shortage are the main reasons for the increased demand of the condominiums. With this increasing demand, also supply of condominium properties has been increased. There are more than 8,129 condominium units have been supplied in Colombo during 2005-2011 (JLL, 2013). When compare value of other real properties, condominiums have higher market prices. In the developed world, condominiums have become a marketable commodity where developers and financiers are working together to construct condominiums for sale in market. To monitor the condominium market, the first issue is to understand the determinants of market price for condominium properties. There are several factors affecting the market price of condominiums. Based on these factors market price will be changed from one property to another property. Property market buyers and sellers are highly depending on such factors, when buying and selling condominium units. Therefore, it is very important to identify what are the determinants of market price for condominium properties. This study attempts to analyze factor affecting market price of condominium properties from suppliers' point of view.

2. Literature Review

When consider different types of residential properties, condominiums is one of the major and modern category of residential real estate. The condominium concept has been around for thousands of years. Siniti (1990) said "Condominium is a western life style of living, brought into urban area of eastern countries due to the lack of serviced land and increasing population density".

"Condominium is described as a building or structure of two or more units, the interior space of each unit being individually owned and balance of property being owned in common by the owners of individual units" (Kowshala, 2002). Under the section 2 of Apartment Ownership Law No. 11 of 1973 in Sri Lanka, the condominium property means "a property comprising land with building or buildings of more than one unit of residential or non-residential accommodation" (www.Lawnet.lk, Accessed on 16/11/2016). The term condominium refers to a system of ownership whereby a unit is owned separately by the individual who purchases it. But owns land and common elements like, elevators, lobby, walkways, halls, roof, stairs, etc. are owned by all the unit owners, and shares the upkeep expenses on the common-property with them.

The owner of condominium unit enjoy common services and amenities at a lesser cost than individual house owners as they jointly own common elements within the condominium property and thus the cost of such services and shared among all owners. Recreation facilities, removal garbage, security services are some of the most commonly shared amenities (Edirimanna, 2006).

The development of premium condominium projects is most prominent in the Central Business District. The growing demand for condominium properties, particularly in the Western Province has risen. Number of completed condominium projects situated in

and around Colombo area. Ex: The Emperor, Crescat Residences, Havelock City, the Monarch, Trillium Residences and etc. There are 8,129 condominium units have been supplied in Colombo during 2005-2011 (JLL, 2013). However, number of projects re-starting such as, the 02 latest projects, Altair and Krissh Square as well as Shangri-La, Avic Astoria and Grand Hyatt will be the largest residential developments in Colombo and one new condominium project start in Kandy.

In additionally, Dehiwala-Mount Lavinia, Battaramulla, Ratmalana, Kaduwela, Rajagiriya and Kolonnawa, where major luxury and mid-range condominium properties are on the rise such as, 2000 plaza, Flora Residencies, Fairway Urban Homes, Marine City Dehiwala, Blue Ocean, The Park Residencies, Royal Park Apartment, Sky Garden and etc. (Lanka Property Web, 2016). When compare the prices of condominiums, High-end apartments range from Rs. 30 million to Rs. 550 million. High-end houses / condominiums range from Rs. 40 million to over Rs. 1.2 billion (Lamudi, 2015).

When compare with other real estate assets condominiums have some associated characteristics. Condominiums have different laws, different institutes as well as some different elements than other real properties. They are briefly describes as follows.

Legal & Institutional Background

When study the supply of condominium properties in Sri Lanka it is important to understand law relating to the condominium properties. The Condominium Property Act No.12 of 1970 was the first legislation enacted for condominium properties in Sri Lanka. This was repealed and replaced by the Apartment Ownership Law No.11 of 1973. The Apartment Ownership Law has been amended by the various legislations such as, Apartment Ownership (Amendment) Act. No. 45 of 1982, Apartment Ownership (Special Provisions) Act No. 04 of 1999, Apartment Ownership (Special Provisions) Act No. 27 of 2002, Apartment Ownership (Amendment) Act No : 39 of 2003 respectively (CMA, 2016).

Condominium Management Authority

Common amenities Board Law of 1973 also has been amended by the various legislation; such as Common Amenities Board (Amendment) Law No. 46 of 1982, Common Amenities Board (Amendment) Act No. 24 of 2003 respectively. A law to provide for the establishment of a public authority known as the condominium management authority for the control. Management, maintenance and administration of the condominium property, semi condominium property and provisional condominium property and for the provision of common amenities thereto, and for matters connected therewith or incidental thereto (www.Lawnet.lk, Accessed on 16/11/2016).

The Condominium Management Authority (CMA), which began its operations in 2005, is a regulatory body that puts forward necessary conditions and issues, certification of condominium, provisional condominium certification or semi-condominium certification after inspecting the site and the plan, which should meet the CMA specifications (Senaratne *et.al*, 2006). In 2014 there are 69 CMA certificates issued for completed buildings, 02 CMA certificates issued for semi condominiums and 9 CMA certificates issued for provisional condominiums (CMA, 2016).

Figure 1- Major Residential Condominium Projects in Colombo

Project Name	Location	Developer	Current (LKR per Unit)	Current (LKR per sq ft)	Current (USD per sq ft)	Sales (Launch Year)
Luxury Segment						
The Emperor	Galle Road, Colombo 03	Asian Hotels	48,000,000	33,100	250	100% (2008)
Premium Segment						
Iceland Residences	Galle Road, Colombo 3	ICC Housing	33,000,000	26,400	200	100% (2007)
Crescat Residences	Galle Road, Colombo 03	Asian Hotels	34,000,000	26,200	200	100% (2006)
Empire Tower	Colombo 03	CT Properties	43,000,000	23,900	180	100% (2007)
Havelock City	Havelock Road, Colombo	Mireka Capital Land	26,000,000	20,800	165	55% (2010)
On Three20	Union Place, Colombo 02	John Keells	25,000,000	22,700	170	75% (2011)
The Monarch	Galle Road, Colombo 03	Asian Hotels	34,000,000	32,400	250	100% (2007)
Mid-Level Segment						
Trilium Residences	Borella, Colombo 08	Trilium Residences	24,000,000	17,800	150	90% (2008)
2000 Plaza Residences	Thalapathpitiya	The 2000 Plaza	19,000,000	15,800	130	100% (2007)
The Fairway	Rajagiriya	Fairway Residences	26,000,000	14,900	120	100% (2007)
The Fairmount	Kotuwegoda, Rajagiriya	Fairway Residences	25,000,000	15,600	130	100% (2008)
110 Parliament	110, Parliament Road	Atlantis (ANPG Group)	22,000,000	16,300	140	15% (2011)
Fairway Sky Garden	Rajagiriya	Fairway Residences	27,000,000	16,400	140	12% (2011)

Source: Jones Lang LaSalle, 2011

Table 1: Upcoming major residential condominium projects in Colombo

Name & Location	Developer	Completion Date
Grand Hyatt - Colombo 03	Canwill holdings Limited (Govt. owned) & MAGA	2017
Krrish Square -Colombo 01	Krrish Group, India	TBC
Altair - Colombo 02	Indocean Developers (Pvt) Ltd, India	2017
Dusit Thani -Colombo 04	Indola Group	2018
Shangri-La - Colombo 01	Hotels Lanka Ltd	2018
Astoria- Colombo 03	Avic China	2017
Destiny - Colombo 02	Imperial Builders (subsidiary of the Lakhani Group)	2017

Source: Lanka Property Web, 2016

Management Corporations

Under Section 26 of Apartment Ownership Law, “Management Corporation” in relation to anyone or more completed subdivided buildings shown in a Condominium Plan or any one or more partly completed buildings shown in a Semi Condominium Plan, means

the Management Corporation established for those buildings. “The owners of the units of a condominium property shall be virtue of this law. Upon registration of a condominium plan be a body corporate with perpetual succession and common seal and shall be called the Management Corporation”. The legal status of a Management Corporation may; a).Sue and be sued on any contract made by it, b). Sue and be sued in respect of any matter affecting the common elements, and c). Be sued in respect of any matter connected to the condominium property or semi condominium property for which the owners of all condominium percales are jointly liable (www.Lawnet.lk, Accessed on 16/11/2016).

To manage and maintain the common elements and to insure and keep insured the subdivided building to the replacement value thereof against fire and other risks are the main duties of Management Corporation under the Apartment Ownership Law. It has power to take lawful steps to recover from any owner of a unit any sum expended by the management corporation, to purchase, hire or otherwise acquire movable property for use by the owners of all the units in connection with their enjoyment of the common elements, to take lawful steps necessary for the performance of its duties under this Law and for the enforcement of the by-laws and etc. (CMA, 2016). There are 118 registered Management Corporations in Government Sector and 29 registered Management Corporations in Private Sector (CMA, 2014).

Common Elements

Common elements are the areas within a subdivided building which do not form part of any condominium unit found within the said building. Whilst a condominium unit can have only one owner or joint owner, Common Elements are jointly owned by all owners of condominium units in proportion to the share values assigned to each unit as shown in the deed of declaration. Simply, if any elements are used by more than one apartment is called Common Elements. It includes, Foundations, columns, gardens, main walls, roof, lobbies, corridors, stairs, stairways, fire escapes, entrances, exists of the buildings, car parks, recreational or community facilities, parking areas, storage spaces, central and appurtenant installations for services such as power, light, gas, hot and cold water, heating, refrigeration and air conditioning, telephone, radio, garbage disposal and incinerations, lifts, escalators, tanks, pumps, motors, fans, compressors, ducts and in general all apparatus and installations existing for common uses, Premises for use by security guards, caretakers and watchmen (www.Lawnet.lk, Accessed on 16/11/2016).

The apartment Ownership Act No. 39 of 2003 is silent on the method of calculating share values or the percentages of value of the common elements for each condominium unit in a subdivided building. It is therefore left to the developer of a condominium project to arrive at a method of fixing the shares values (Edirimanna, 2006).

Factors affecting supply of condominium properties:

Due to lack of land availability in Colombo metropolitan area and convenience in buying a condominium rather than constructing a house, there is a significant demand for the condominiums in Sri Lanka. Customers are encouraged to buy a condominium due to several factors such as modern facilities, good locations with easy access to city centers, affordable prices compared to buying a land and constructing a house, secured parking

facilities, flexible payment schemes offered by the developers, prestige value and secured and peaceful neighborhood. Therefore, more and more property developers tend to invest in condominium projects compared to other types of developments. In addition, less risk and high profits encourage developers to invest in this type of development (Senaratne *et.al*, 2006).

In relation to developer-related factors that affect supply of condominiums, resources and financial availability, timely approvals, level of competition are key factors. Availability of resources both economical and of high quality is very important in condominium development. Further, availability of finances is a major factor considering the risk of the project. Pre-sales have significantly solved this issue (Senaratne *et.al*, 2006).

According to the supplier's point of view, property market sellers and developers are highly depending on Locational, Physical, Neighborhood, Community, Environment, Time related and Subjective factors, when selling condominium properties. These factors briefly describe as follows.

Location: Some earlier studies like Stacy Sirmans and John Benjamin, 1991; Tom Kauko, 2002; Oyebanji, 2003; Olwanday, 2008; Olayinka, Simon and Ayotunde, 2013 concluded that the location is one of major determinant of price of condos. According to Tatt, *et.al*, (2015) property price is undeniably affected by other locational factors such as the nearest rapid transit station, distance from condominium to CBD and distance from condominium to Main Street. Additionally, distance park community (Bible *et. al*, 2011), distance from school (Jud & Watts, 1981), distance from shopping mall (Des Rosiers *et. al*, 1996), distance from hospital (Huh & Kwak, 1997) as well as distance from public facility (Lin & Hwang, 2003) should also be taken in the consideration on property price analysis under suppliers point of view.

Physical Factors: According to Olayinka, *et.al*, (2013), structural attributes likes, Numbers of bedrooms, bathrooms, fireplaces, garages, square footage of house, lot size, age of structure, existence of pool is also affect to determine the price of the real property. According to Ariyawansa and Udayanthika (2011), they conduct an analysis of demand for condominium properties in Colombo, facilities like high speed modern lift, swimming pool, gymnasiums, club, restaurant, playground, laundry and etc. is one of determinants of living condominium in Colombo Sri Lanka. Floor is very important fact to determine prices. Price of upper floors was higher than lower floors compared with other counties where condominium property price of lower units was higher than the price of upper units because of difficulty in accessibility (Ariyawansa & Udayanthika, 2012).

According to the developer's side, size of the land and total no. of units of the Condominium, needed common elements like elevator, parking spaces, quality of the design and cost of construction are important to determine the price of the properties. Also construction defects are significant impact on value of the property in seller's side. Poor workmanship, lack of raw material, plumbing defects etc. cases to increase or decrease market prices.

Neighborhood Factors: Quality of the neighborhood factors is also another factor that affects the values of land as well as property prices. Land value does not only depend on the physical characteristics of a building but also the infrastructure facilities that surround the building. Developments of various transportation modes have become pivotal to physical and economic developments (Olayinka *et.al*, 2013). Also availability of banks and other institutions area available in this area, availability of labor facilities, availability of raw material, availability of investment opportunities and land availability are using to determine the selling price of the condominiums. According to Olayinka, Simon and Ayotunde (2013), the Socio-economic characteristics of neighboring residents, quality of neighboring structures, ownership/rental, and ethnic composition is one of factor affect the prices.

Time Related Factors: Time to time economy is changed based on various factors. Therefore values of the properties are also changed. Ariyawansa & Udayanthika (2012) said, population growth, decreasing household size, growth in household income, land value and scarcity of land determine the living in condominium. Olayinka, Simon and Ayotunde (2013), said details about month and year of sale, number of days on market, age of the building, market value of comparable are influence market value of condominium properties. According to the Zarin (1999), time related attributes like urbanization, level of income, population growth impact of selling price of condominium properties.

Also changes of countries' political background directly affecting to property prices. Government influence in terms of policies, incentives and zone management significantly affect condominium supply. In property development, Government acts as a policy maker and the key regulatory authority. For example, Government's fiscal and monetary policies will affect developer's profit and thereby the supply. Especially, concessions offered by the Board of Investment (BOI) affect developers in supplying condominiums (Senarathne *et.al*, 2006)

Subjective Factors: This includes factors that special for condominium properties. Such as, Related Laws, Rules and Regulations, Management Corporation related details and etc. Value of the property will be depending on the availability of active management corporation. Passive management will lead to decrease value. Also availability of insurance cover for the entire condominium is directly affecting the value of the building. Also target customers, marketing programs are impact on property prices.

3. Methods

First, a literature survey was carried out to find the associated characteristics of condominium market in Sri Lanka and factors affecting to supply condominiums in Sri Lanka. This was mainly obtained from newspapers, journals, articles, periodicals and websites. The selected case study area is Dehiwala-Mount Lavinia area. There are many Condominiums/ Apartments located around Dehiwala Mt. Lavinia. There are more than 40 licensed condominium sellers, companies and real estate brokers in this area. Some are built condominium houses for renting purposes. Without them there are 27 condominium developers, selling companies in case study area. The field study comprised of both structured questionnaires and unstructured interview techniques.

Each participant was given a questionnaire which contains demographic information and factors affecting to determine market value of condominium properties. Determining criteria divided in to 5 major categories and respondents are select one item from 5 point scale ranging from strongly agree to (1) strongly disagree (5). Both descriptive statistics and inferential statistics are used to analyze data. In this study, market price is the dependent variable and there are six independent variables: locational factors, physical factors, neighborhood factors, time related factors and subjective factors. Each of the factors consists with more than two sub factors. Using SPSS software and run descriptive analysis, reliability test, factor analysis and correlation analysis.

4. Analysis

Age of the Company

According to the Table 2, majority of companies are started within 10 years. (2005 – 2015). It can show as 66.7% of the total companies were selected. Secondly, 7 companies are started within 2005 to 1995. It can show as 25.9% of the selected companies. There are two companies are started before 20 years. Also all the companies are Sri Lankan and operate in private sector.

Table 2 – Age of the Company

Age Category	Frequency	Percent
Below 10 Years	18	66.7
10 - 20 Years	7	25.9
20 -30 Years	1	3.7
Above 30	1	3.7

Land Extend

According to the Table 3, Minimum Land Extend is 22 perch and Maximum land extend is 56 perch. Average land extend is 30.15 perch.

Table 3 – Land Extend

	No. of Suppliers	Minimum	Maximum	Mean
Land Extend	27	22	56	30.15

Land Cost

According to the Table 4, minimum land price is Rs. 20,000,000/= and maximum land price is Rs. 70,000,000/=. Average land price is Rs. 37,200,000/=.

Table 4 – Land Cost in Rupees

	No. of suppliers	Minimum	Maximum	Mean
Land Cost (Rs.)	27	20,000,000	70,000,000	37,200,000

Average Cost of Construction per Condominium Unit

According to the Table 5, Minimum cost of construction per unit is Rs. 1,000,000 and Maximum cost of construction per unit is Rs. 8,000,000. Average Land Price is approximately Rs. 3,890,000.

Table 5 – Cost of Construction per unit

	No. of Suppliers	Minimum	Maximum	Mean
Cost of Construction (Rs.)	27	1,000,000	8,000,000	3,885,185.95

Average Selling Price per Condominium Unit

According to the Table 6, Minimum Selling Price per Unit is Rs. 5,000,000 and Maximum Selling Price per Unit is Rs. 20,000,000. Average Land Price is approximately Rs. 14,000,000.

Table 6 – Selling Price

	No. of Suppliers	Minimum	Maximum	Mean
Average Selling Price (Rs.)	27	5,000,000	20,000,000	14,296,296.30

Target Customer

According to the Table 7, majority of companies target the upper middle income customers. It can show as 51.90% in total companies. Secondly, target the low middle income customers. It is 40.70% of the total. There is 7.4% sellers target high income customers and no one target the low income.

Table 7 – Target Customer

	Frequency	Percent
Low Middle Income	11	40.7
Upper Middle Income	14	51.9
High Income	2	7.4
Total	27	100.0

Inferential Statistics

Reliability Test

The reliability of measurement scale was tested by Cronbach's Alpha and the validity was tested by EFA. Based on the Reliability Statistics Table, Cronbach's Alpha values of all variables should be **above 0.7**.

Table 8 – Cronbach’s Alpha

Variables	Alpha	No. of Items
Locational Factors	.837	7
Structural Factors	.701	4
Neighborhood Factors	.700	7
Time Related Factors	.797	4
Subjective Factors	.831	6

According to the Table 8, all the factors got Cronbach’s Alpha above 0.7. Therefore the data is reliable and validate. Therefore that can use all the items in questionnaire for the Factor Analysis and Correlation Analysis.

Factor Analysis

In hear measure the appropriateness of factor analysis using Kaiser-Meyer-Olkin Measure of Sampling Adequacy Test (KMO Test). Kaiser (1974) recommends accepting values should be greater than 0.5 as acceptable. The value of the KMO Measure of Sampling Adequacy for these variables is above 0.5. According to the Table 9, the KMO Measure of Sampling Adequacy meets the minimum criteria and sample can use to examine the Correlation Matrix.

Table 9 - Kaiser-Meyer-Olkin Measure of Sampling Adequacy Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	
Variables	KMO Test Statistics
Locational Factors	.544
Structural Factors	.680
Neighborhood Factors	.510
Time Related Factors	.495
Subjective Factors	.723

Normality Test

Normality Test,

H_0 = Variables are Normally Distributed

H_1 = Variables are Not Normally Distributed

Decision Rule: Reject H_0 , If “P value” < “ β value”

P=.000

β = .05



$P < \beta$; H_0 Rejected (It means variables are Not Normally Distributed)

Table 10 – Normality Test

Variables	Shapiro-Wilk Test Normality		
	Statistic	df	Sig.
Location	.897	27	.012
Structure	.844	27	.001
Neighborhood	.766	27	.000
Environment	.839	27	.001
Subjective	.732	27	.000
Selling Price	.863	27	.002

According to the Table 10, all variables are not normally distributed. Therefore in this data set in which values not clustered in the middle range and not symmetrically distributed. Therefore Non-Parametric Tests use to examine the correlation of these variables.

Correlation Analysis

According to the Normality test the data is not normally distributed. Therefore cannot use person's correlation for measure linear association between two variables. Spearman's correlation can be used when variables are not normally distributed.

H_0 = There is No Linear Relationship between Independent and Dependent Variable.

H_1 = There is a Linear Relationship between Independent and Dependent Variable.

Decision Rule: Reject H_0 , If "P value" < " β value"

P=.000

β = .05



$P < \beta$; H_0 Rejected (There is No Linear Relationship between Independent and Dependent Variable)

Under the test of Spearman's Correlation analysis, it is accepted that there is a relationship between two variables if the significant level is at or below than 0.5. Its means the error of the assumption could only be allowed 5% errors in the long term, and then only the relationship between two variables could be established.

Table 11 - Correlation between Factors and Market value

Variables	Significant Level	Relationship
Locational Factors	.049	Weak positive relationship 0.233
Physical Factors	.000	Strong negative relationship -0.667
Neighborhood Factors	.823	No close relationship
Time Related Factors	.087	No close relationship
Subjective Factors	.029	Weak negative relationship -0.313

According to the Table 11, out of five factors, three factors have significant correlation. (H0 Rejected). The correlation between the Locational Factors and Selling Price is .233 at 0.05 significant levels. There is a positive relationship between Locational factors and Selling Price. The correlation between the Structural Factors and Selling Price is -.667 at 0.05 significant levels. It means there is strong negative relationship between the variable. The correlation between the Subjective Factors and Selling Price is -.313 at 0.05 significant levels. Accordingly there is a negative relationship between Subjective Factors and Selling Price.

5. Conclusion

Through the literature study the condominium concept from various researchers' articles. Similarly, the Legal and Institutional background as well as current trends in condominium housing market in Sri Lanka is also identified through Literature. Through the literature, many number of supply factors specified for determine price of the condominium properties. According to the inferential statistics, majority of the condominium property developers in the study area mainly consider Locational factors to determine Market price. Location is an important aspect of the immovable property. Locational Factors consist with Proximity to school, working place, shopping centers, major city, main roads and high ways and etc. Therefore, **Location is the most significant factor for determine market value of condominium property in the study area.** Another important factor to concern is the structural factors like size of units, numbers of bed rooms and baths, accommodations, common elements, Neighborhood factors like availability of institutional facilities, infrastructure, subjective Factors like Market price, cost of construction and good management corporation are important to determine market value of the condominium property.

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Limitations in Promoting Mixed-use Developments in High-Rise Buildings in Sri Lanka

H. T. Wickremasinghe¹

¹Under Graduate, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
hashinitw@gmail.com

Abstract

Although over the past years mixed-use real estate developments in Sri Lanka have received significant attention amongst the practitioners of real estate including developers and town planners across nations, the project tendency of the developers in Sri Lanka is gravitating mainly towards single use developments. The reason can be the benefits of constructing single use improvements or the limitations imposed on mixed-use developments. The purpose of this study was to provide an insight to the limitations to promote mixed-use developments in high-rise buildings in Sri Lanka. This study was based on a comprehensive theoretical literature review and the secondary data were used. They were collected through papers, official statistics, technical reports, scholarly journals, online articles and publications which were related to the mixed-use development concept and descriptive methods were used for the data analysis. Findings based on the literature review show that mainly there are six significant bases where the leading limitations to promote mixed-use developments in high rise buildings arise. Namely they are ownership twists, land assembly, government intervention in regulations and infrastructure, planning application and procedures, funding and institutional investors' criteria, health, hygiene and environmental issues and management. These study findings will be useful for property developers in the industry, city planners and general public to recognize and be aware of the limitations and overcome them in future developments as this establishes an understanding on the limitations in promoting mixed-use developments in high rise building in Sri Lanka under six main categories.

Keywords: *mixed-use development, high rise buildings, real estate, property development*

1 Introduction

In the present dynamic, increasingly universal and interconnected world, more than half of the world's population (54%) lives in urban regions notwithstanding the fact that there is still considerable variability in the levels of urbanization across nations. As stated in the World Urbanization Prospects (2014), the coming decades will bring further profound changes to the scope and spatial scattering of the worldwide population. It mainly influences and affects the physical growth of urban regions horizontally or vertically. In the meantime, various innovative development models have been introduced to manage the scarce land resource in urban areas along with meeting the changes in preferences of the individuals living in contemporary society. One of these development concepts will be the foundation as well as the area of this study.

Land which is limited in supply can be utilized by individuals in various means. These comprise residential, commercial, industrial, agricultural, environmental, recreational etc. Traditionally and historically, human settlements were developed in mixed-use designs where all these land uses can be seen in a single area of land space. In various urban mega to small cities, mixed-use development concept is becoming progressively significant in order to create a smart and sustainable environment that would encourage

economic strength, social equity and ecological features. As stated by Rabianski (2007), mixed-use development is in a broad sense any urban, peripheral or village development, or even a single building, which amalgams a combination of the above mentioned land uses such as residential, institutional, commercial, or industrial and other uses, where those functions are combined in physical and functional ways. The concept of a mixed-use development may also be used more definitely to denote a mixed-use real estate development project of a building, complex of buildings, or town/city which is developed for mixed-usage by any private developer, governmental organization, or a combination thereof. The key advantages of this concept are better housing variety and density, lesser distances between housing, workplaces, retail businesses, and other destinations or the end points, more compressed development, sturdier neighborhood character and pedestrian and bicycle-friendly backgrounds etc.

As the long-lasting armed conflicts ended in 2009, Sri Lanka has once again unlocked her doors to the external world, with the expectations of getting her long lost glory and opulence back. As a result of this new development initiative, Road Development Authority (RDA), the Urban Development Authority (UDA) and other government institutions have planned and launched several development projects all over the country. Due to these improvements in infrastructure facilities and other government development projects, developers also initiated various developments across the country predominantly in urban areas. However, it can be identified that the developers' propensity is towards single use developments due to many reasons. The reasons can be the benefits and returns of building single use developments as well as the limitations or barriers of constructing mixed use developments. Although mixing uses help to produce more vibrant, adaptable and pleasant environments and to achieve sustainable places which reduce traveling period and help local demand for goods and services in a walkable catchment, the Sri Lankan developers have negative perceptions regarding introducing mixed use developments. Hence, this study was conducted to identify the limitations for mixed use developments to deliver in high-rise buildings in Sri Lanka and to highlight barriers and the enabling factors.

This study was based on a comprehensive theoretical literature review. The secondary data sources such as papers, official statistics, technical reports, scholarly journals, online articles and publications which were related to the mixed-use development concept were used for the data collection and descriptive methods were used for the data analysis. This research study could provide information on the limitations delivering mixed land use developments in Sri Lanka and this would be beneficial to the developers, the parties involved in the construction field and students who are keen about the area as this study enhance the knowledge of barriers of promoting mixed use developments as well as the present situation of those development projects. Furthermore, this would expectedly enhance the awareness of almost all the land users such as commercial, office, service providers etc. and the general public about the research field to mitigate those limitations and encourage mixed use developments.

2 Literature Review

2.1 Defining Mixed-Use Development as a Combination of Land Uses

When a need of formulating an industry-wide definition was arose, as said by Delisle and Grissom (2011) in their article, the industry definition was formulated by the International Council of Shopping Centers, Inc. (ICSC), the National Association of Industrial and Office Properties (NAIOP), the Building Owners and Managers Association International (BOMA), and the National Multi Housing Council (NMHC) collaborating on a cross-organizational effort and it was released at an industry-wide conference in 2006.

'A mixed-use development is a real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions. It is pedestrian-oriented and contains elements of a live-work-play environment. It maximizes space usage, has amenities and architectural expression and tends to mitigate traffic and sprawl.'

The definition espoused by the Urban Land Institute (ULI) is probably the most prevalent definition of the term (Herndon, 2011). In 1976, ULI was the first organization to address the concept in-depth with the publication of their first book on the topic entitled *Mixed-Use Developments: New Ways of Land Use*, and while the concept has evolved over the years, their original definition has essentially remained intact. According to Schwanke (2003), the second edition of the *Mixed-Use Development Handbook* characterizes mixed-use development as consisting of:

- Three or more significant revenue-producing uses that in well planned projects are mutually supporting.
- Significant physical and functional integration of project components including uninterrupted pedestrian connections.
- Development in conformance with a coherent plan.

In addition, ULI expresses that mixed-use must comprise at least three incorporated uses and each of them must be considerable enough to attract a substantial market in their own right. Thus, if this definition is overlapped on the firstly mentioned industry definition, the main areas of ambiguity on the subject of the requisite mixed use characteristics become apparent. For instance, a main disagreement between the two definitions is the minimum number of uses required to be considered mixed-use; the ULI definition defines three whereas the industry definition denotes only two. Moreover, the elements included in the industry definition, but excluded from ULI's, such as architectural expression, traffic mitigation, and sprawl reduction, give emphasis to the indistinct limit between the required elements of mixed-use development and the prospective characteristics or effects of individual mixed-use projects.

Furthermore, mixed use as defined in the mixed-use handbook by Schwanke (1987) describes any combination of commercial (e.g. retail, office, and entertainment) and non-commercial uses, such as residential uses, mixed vertically or horizontally. Thus, it's clear that in many research studies, mixed-use development is explained as a combination of different land uses with many components which tend to create many benefits. For instance shorter distance between work, residence and recreation and goes a long way to enhance the livelihood of the inhabitants.

2.2 The Emergence of Mixed-use Development as an Urban Design Concept

There was a rapid increase in population and urbanization patterns in most town and cities during the 20th century (Sackey, 2009). He further states that the growth rate of population and urbanization was more than the rate of infrastructural development. This condition had led to many severe urban problems such as urban sprawl, vehicular and human congestion, slums and shanties, environmental and social pollution and pressure on the available and accessible infrastructure facilities and services. Significant number of hours has to be spent in traveling to and from work. According to Sackey (2009), there were many environmental and public health issues for the reason that towns and cities were not developed according to a layout with the necessary infrastructure amenities and services. He described that a huge amount of fuel was required by commuters for their transportation on automobiles and that was how a considerable portion of their incomes was spent on. The health and well-being of people were also influenced due to the stress involved in traveling to and from work. Carbon emissions from vehicles also contaminated air and polluted the environment.

Sackey (2009) further stated that with the intention of resolving these urban issues and the associated problems, individuals started seeking for working opportunities not far off from where they live. Large residential neighborhoods served as a main source of market for commercial or business activities. Hence, the residential activities gravitated towards commercial activities and vice versa. Moreover, with the emergence of information and telecommunication technology, it became possible and easy for people to live and work from the same location. The mixed-use building style is not only aggressively recurring in the cities all over the world as high-density, urban in-fill mixed-use developments but is also starting to appear as a critical element of large commercial developments.

2.3 Theories related to mixed-use development

Promoters of mixed-use developments as an urban design approach for instance James Howard Kunstler also advocates certain related concepts and theories. Sackey (2009) has described the concepts as follows.

Transit-oriented development (TOD):

This is a type of community development that comprises of a combination of housing, office, retail and/or other uses incorporated into a walkable neighborhood and situated within a half-mile of quality communal transportation. Effective TOD offers people from all walks of life with convenient, useful, affordable and lively lifestyles. The benefits of TOD include:

- Reduced household driving and thus lowered regional congestion, air pollution and greenhouse gas emissions
- Walkable communities that accommodate more healthy and active lifestyles
- Increased transit ridership and fare revenue
- Potential for added value created through increased and/or sustained property values where transit investments have occurred
- Improved access to jobs and economic opportunity for low-income people and working families

- Expanded mobility choices that reduce dependence on the automobile, reduce transportation costs and free up household income for other purposes

Smart growth:

Smart growth is a better way to build and maintain our towns and cities. Smart growth means building urban, suburban and rural communities with housing and transportation choices near jobs, shops and schools. This approach supports local economies and protects the environment.

At the heart of the American dream is the simple hope that everyone can choose to live in a neighborhood that is beautiful, safe, affordable and easy to get around. Smart growth does just that. Smart growth creates healthy communities with strong local businesses. Smart growth creates neighborhoods with schools and shops nearby and low-cost ways to get around for all our citizens. Smart growth creates jobs that pay well and reinforces the foundations of our economy. Americans want to make their neighborhoods great and smart growth strategies help make that dream a reality.

New Urbanism:

New Urbanism is an urban design movement which promotes environmentally friendly habits by creating walkable neighborhoods containing a wide range of housing and job types. It arose in the United States in the early 1980s, and has gradually influenced many aspects of real estate development, urban planning, and municipal land-use strategies. New Urbanism is strongly influenced by urban design practices that were prominent until the rise of the automobile prior to World War II; it encompasses ten basic principles such as traditional neighborhood design (TND) and transit-oriented development (TOD). These ideas can all be circled back to two concepts: building a sense of community and the development of ecological practices.

The most effective way to implement New Urbanism is to plan for it, and write it into zoning and development codes. This directs all future development into this form. New Urbanism is best planned at all levels of development:

- The single building
- Groups of buildings
- The urban block
- The neighborhood
- Networks of neighborhoods
- Towns
- Cities
- Regions

Increasingly, regional planning techniques are being used to control and shape growth into compact, high-density, mixed-use neighborhoods, villages, towns, and cities. Planning new train systems (instead of more roads) delivers the best results when designed in harmony with regional land planning - known as Transit Oriented Development (TOD). Planning for compact growth, rather than letting it sprawl out, has the potential to greatly increase the quality of the environment. It also prevents

congestion problems and the environmental degradation normally associated with growth.

Intelligent Urbanism:

Principles of Intelligent Urbanism (PIU) is a theory of urban planning composed of a set of ten axioms intended to guide the formulation of city plans and urban designs. They are intended to reconcile and integrate diverse urban planning and management concerns. These axioms include environmental sustainability, heritage conservation, appropriate technology, infrastructure-efficiency, place making, social access, transit-oriented development, regional integration, human scale, and institutional integrity. The term was coined by Prof. Christopher Charles Benninger in 2001.

2.4 Factors Making the Mixed-Use Development Popular

The emerging consensus is that development is more sustainable if it produces a mixture of uses. Segregation of land uses, encouraged in the past, is not relevant now. The trend back to mixed usage brings a number of potential benefits. It ensures vitality through activity and diversity. It makes areas safer. It also reduces the need to travel, making people less reliant on cars, bringing welcome environmental benefits. Diversity of uses adds to the vitality and interest of town centres.

From the developer's perspective a mixed-use development is identified as being a popular format because it is perceived as providing the following benefits, fostered by the following occurrences and optimal land use plan characteristics.

Table 01: Benefits fostered by different occurrences and optimal land use plan characteristics.

Benefits	Occurrences	Optimal land use plan
<ul style="list-style-type: none"> • Convenience of live-work-play options in a single location 	<ul style="list-style-type: none"> • Rising land prices 	<ul style="list-style-type: none"> • Highest land density
<ul style="list-style-type: none"> • Satisfying the desire to live in more of a small-town (e.g. "Main Street") environment. This desire is brought about by changing demographics and psychographics favoring the property type. 	<ul style="list-style-type: none"> • Encouragement by local public agencies (economic development, planning, zoning board, etc.) 	<ul style="list-style-type: none"> • Most rapid absorption of finished sites at the highest price
<ul style="list-style-type: none"> • Reducing traffic congestion 	-	<ul style="list-style-type: none"> • Highest present value of the project
-	-	<ul style="list-style-type: none"> • Financial Feasibility of a Mixed-use Development

Source: Compiles by the Author (2016)

Furthermore, it "forms part of a strategy for sustainable development as well as a theory of good urban form, with the objectives of economic vitality, social equity, and environmental quality" (Grant, 2002). The specific ways in which mixed-use

development advances these goals can be distilled from a sampling of the various books, articles, and zoning codes that elaborate on the benefits of integrating land uses.

Comparison between Single-Use and Mixed-Use Developments

As stated by Cheah C. Y. J. and Tan K. S. (2014) in their study paper some of the key differences between mixed-use and single-use development processes can be identified and summarized as mentioned in Table 1. Identification of these differences would be helpful as they affect the activities and functioning of the role of many parties, including design and engineering professionals.

Table 02. Comparison of Main Features between Mixed-use and Single-use Projects

Phases of Development Process	Mixed-Use Development	Single-Use Development
Project Initiation	<ul style="list-style-type: none"> • Experienced and diverse project development team • Involvement of public sector agencies crucial • Both financial and non-financial development objectives must be well defined • Analyzing multiple markets / development potential and evaluating the overall market synergy 	<ul style="list-style-type: none"> • Single experienced architect/project manager acting as project team leader • Relatively minor/routine involvement of public sector agencies • Common and obvious development objectives • Analyzing only a specific market potential
Feasibility Studies and Financing	<ul style="list-style-type: none"> • Necessity to define alternative development programs and strategies • Complex feasibility analysis to define and optimize the development programs • Necessity to securing large, multi-layer financial commitment and structuring financial arrangements 	<ul style="list-style-type: none"> • Independent development program and strategy • Simple pro-forma analysis and economic modeling • Single source of financing is possible and financial arrangement is straightforward between project owner and bank
Planning and Design	<ul style="list-style-type: none"> • Complex planning and design issues involving urban considerations • Creation of interrelationships among design elements, between project and the surrounding environment • Significant involvement of specialists 	<ul style="list-style-type: none"> • Conventional architectural and structural design process • Urban considerations play a more limited role in overall project planning and design • Involvement of specialists is less profound due to simplicity of design
Construction	<ul style="list-style-type: none"> • Multiple contractors working in different parcels/phases; interfacing is critical • Interaction with more specialists/designers 	<ul style="list-style-type: none"> • Usually single contractor who has sole control of planning and coordination of site works • Fewer number of architects/design engineers
Marketing and Operational Management	<ul style="list-style-type: none"> • More varied and innovative approaches on marketing strategies for numerous uses 	<ul style="list-style-type: none"> • Marketing approaches targeting specific use only

	<ul style="list-style-type: none"> • Long term promotion is necessary to continue building interests among general public • Centralized control management systems for multiple uses 	<ul style="list-style-type: none"> • More effort on promotion before project completion and relatively less thereafter • Single responsibility for property management agency
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Source: Cheah C. Y. J. and Tan K. S. (2014)

3 Results and Discussions

Challenges, Obstacles or Barriers to Mixed-use Development

Various challenges, obstacles or barriers affecting mixed-use development are identified or listed in the literature. Mainly there are seven bases where the leading limitations to introduce mixed-use developments in high rise building arise. Namely they are ownership tangles, government regulations, land assembly, planning application and procedures, funding and institutional investors' criteria, health and environmental issues and management.

Ownership Twists

According to the table 03 one of the criteria is ownership twists. Mixed-use development usually comprises with several owners whose priorities concerning design, administration and changes in use or ownership can be different and clash both during development and after the project is concluded. As discussed by Cheah C. Y. J. and Tan K. S. (2014), reactive resolves are time consuming, expensive, and possibly disastrous to the project. It is essential to organize project and legal documentations for future variations based on each use. Common physical boundaries along with numerous shared building systems and amenities make diverse components reliant on one another for completion.

Table 03: Summary of the identified limitations

Limitation generating areas	Limitations
1. Ownership twists	• Working with the multiple owners
	• Issues with shared boundaries and facilities
2. Land assembly, government intervention in regulations and infrastructure	• Maneuvering through zoning regulations
	• Assembling land parcels
	• Street capacity
	• Addressing transportation issues
3. Planning application and procedures	• Water usage
	• Working with multiple development teams
	• Inadequate capital planning
	• Designing parking
	• Healthy balance of uses
	• Working with planning agencies
	• Managing the financial challenges of a sequenced roll-out of project parts
• Extraordinary planning, management, political patience, capital resources and risk	
4. Funding and institutional investors' criteria	• Securing project finance/capital
	• Mixed use development has inherent funding difficulties.
	• Sewer capacity

5. Health, hygiene and environmental issues	• Air emissions
	• Congestion and traffic issues
	• Addressing environmental issues
	• Designing a pedestrian-friendly environment
	• Difficulty of combining various environmental health and other protective standards
6. Management	• Management of different types of uses
	• Space management
	• Facility management
	• Maintenance and repairs
	• Servants and staff of the management

Source: Compiled by the Author (2016)

Land Assembly

To create a reliable and feasible mixed-use development site, land assembly can be a very challenging task. Bell, J. (2000) highlighted that site selection is the primary problem of mixed-use development for the reason that large parcels of land must be brought together and assembled. While successful mixed-use projects entail the involvement of many actors, local governments conquer the best position to make and sustain the larger vision and to support with critical aspects of the development process for instance land assembly, entitlement, and investment in key infrastructure facilities and other amenities. Stronger local authority acts in assembling sites, possibly using compulsory purchase powers, would facilitate mixed-use development schemes.

Planning Application and Procedures

Cheah C. Y. J. and Tan K. S. (2014) further describe that the lengthy planning application and decision-making process in mixed-use development often discourages developers from considering such projects. The key to any mixed-use development is creating consensus among local residents, neighboring property owners, government agencies and the developer. In order to make things go as smoothly as possible, it is recommended to lay the political groundwork through community outreach efforts. In addition, gaining the support of local government and creating clear lines of communication with government agencies can substantially shorten the entitlement process. Without close interactions between the design team and the relevant statutory bodies, initial phases of the project almost certainly would not have been completed as quickly as they were.

Institutional Investors' Criteria

Institutional investors are sometimes reluctant to invest in mixed-use schemes because they are perceived to offer poor long-term investment prospects, and are typically not large enough to generate the scale of profit sought by this type of investors. However, some developers have successfully attracted investors by structuring multiple investment opportunities into their projects for investors with different levels of investment horizons and return expectations. A project, for example, may offer modest returns to investor in the first few years, when the project faces its greatest uncertainty and increasing returns to middle and long-term investors as the property appreciates in value.

Health, hygiene and environmental issues

These issues would be another limitation when introducing mixed-use developments as managing them is more complex than in single-use development schemes. Due to traffic congestion and high density pollution can be happened in many ways, for instance, air, water, noise pollution. Managing these issues would be challenging as many parties are involved with the process.

Management

Management issues arise from the initial stage of the project to the completion (Schwanke, D., 1987). Some of them are management of different types of uses in different layers of the building which may have different layouts, space management, facility management, maintenance and repairs, managing servants and staff etc.

4 Conclusion

Mixed-use development is comparatively complicated, costly and risky. Conversely, they offer numerous benefits as well. The continuous development of mixed-use projects as an influential community development tool will eventually need all parties involved to continue learning about and refining their approach to these projects.

According to the above findings based on past literature, main six bases where the leading limitations to introduce mixed-use developments in high rise building arise are identified. They are ownership twists, land assembly, government intervention in regulations and infrastructure, planning application and procedures, funding and institutional investors' criteria, health, hygiene and environmental issues and management. Finally, it was found that even though the mixed-development has numerous benefits for many parties, it has factors which limit developers from engaging with such developments.

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Current trend of the Tourism Sector and Factors affecting the Hotel Development and Some Experience of Nilaweli in Trincomalee: A Review of Literature

L.S. Rohanadeera¹

¹Under Graduate, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
rohanadeera96@gmail.com

Abstract

Sri Lanka is one of the most attractive tourist's destinations in the world. Asian tourism icon in Sri Lanka is spread along with the golden beaches, greenery place and cultural heritage in rest of the country. Popular east coast of Nilaweli area is considered as one of the purest white sandy beaches in Asia with having great scenic beauty, which would be tremendous value for tourism. After the end of civil conflict in 2009 and restoration of the tsunami affected area of Indian Ocean in 2004, create high tourist potential development due to the increase of demand for tourism aligned with the supply. Therefore, the hotel development plays a dual role in Sri Lanka in the tourism as industry and real estate industry acknowledged as the creation of built environment. This study discusses the factors affecting to the hotel development in Nilaweli area from the investor's point of view and the current trend of Tourism Industry in area by means of available literature.

Keywords: *hotel development, tourism industry, Nilaweli Area, real estate investment*

1 Introduction

Real estate development is a continual reconfiguration of the built environment to meet various needs of space of society (Ariyawansa, 2016). This means just finishing of physical construction of a building is only a single phase of development. That requires a continuous reorganized process to meet the dynamic needs of the people and society.

Investment on development of hotel facilities contributes to the tourism sector. Investment in this sector is lucrative and money-spinning. Due to the dynamic changes in societies and economies, spending holidays in hotels has become a global fashion. Accordingly, a hotel is as a place for tourists with accommodation facilities, food and other services for a fee for a short stay and accordingly it has become a vital component in the Tourism and Hospitality Industry.

Around the world, the tourism and hospitality industry has been developed widely. Dynamic changes in the tourism and hospitality industry depend on the tourists' arrivals and supply mechanism of lodging facilities for the tourists of different parts of the world. Tourist destinations have a huge impact due to the competition of tourist choice and its worldwide popularity.

Hotel development for tourism is growing concept in rest of the world. In Sri Lankan context, after the thirty years of civil conflict, real estate development has increased significantly. This was happened due to the improving conditions of the social, economic, demographic aspects as well as development of physical infrastructure. Tourism being one of the key local and foreign income earners, government has taken

steps to facilitate hotel development island-wide including the case study area, positioned in Nilaweli in Trincomalee. Sri Lanka Tourism Development authority has offered the investment opportunities to develop lands in that area as the requirement of hotel development. Hotel investor should have critical and specific knowledge about the factors affecting to the hotel development. Therefore, this study intended to discuss the factors affecting the hotel development from the point of the view of the investor and to discuss the current trend of the tourism sector in Nilaweli area.

2 Literature Review

Hotel Property Development

According to the usage of real estate property categorization, properties are categorized in to the residential and non-residential properties. Hotels are coming not only under the sub category of non-residential properties (Ariyawansa, 2016), but also the categorization of commercial accommodation sector which generate profit (Education Bureau in Hong Kong, 2013).

Moreover, Cloete and Venter (2007) mentioned, the concept of hotel development is often used generically to refer to either hotel property development or hotel business development. In a study by Krivosheev (2010), the hotel investment sector of the property market is fairly unique and differs considerably from other commercial real estate developments. This is due to the close link between the tourism industry and the property's performance. The profitability of the investment is reflected by the performances of the operational business within the property premises.

Factors affecting to the hotel development

In this section it describes the previous theoretical studies which identified the factors affecting to the hotel development. Because of the, dynamic changes of the hotel industry sector, and unique characteristics of the hotel, different locations determines the hotel development.

Location - this factor associates with the several attributes which are inherently affected on the hotel setting. Because of the hotel adjacent to the beach side, lake side, and natural environment that takes greater value for the hotel. Lawson (1997), Minoo and Claudia (1999), Newell and Ross (2006), Cloete and Venter (2007), Stefan (2008) and Mohammad and Maryam (2010) stated most of the decision of the hotel developers are based on location factor. While most of the location of the hotel developments are determined its attractiveness.

According to a study by Minoo and Claudia (1999), stated that attractiveness of the area where the unit is located: this factor associates entertainment in the region with attractiveness in the hotel proximity, which may be summed up under "Global attractiveness" of the area.

Financial: Newell and Ross (2006), Cloete and Venter (2007) and Lawson (1997), Krivosheev (2010) stated that financial factor is important. Newell and Ross (2006) stated that Medium term forecast return on investment (five years), Historical rate of returns, Unsystematic risk i.e.; liquidity, business, hotel market risk, rate of return and gross operating profit as a measure of return are the finance sub factors. Moreover, their

study said hotel development sector are all directly related to the financial future performance of the property as an investment.

Government Influence :Minoo and Claudia (1999) , Newell and Ross (2006) and Cloete and Venter (2007) state that the national and local government regulations are affected on the hotel development, such as taxes, legislations, policies and town planning and building regulations, relationships with tourist boards and human resources and staff subsidies as provided by government agencies are the involved factors.

In Sri Lanka, Tourism Development Act No 14 of 1968 , Coast Conservation Act No.57 of 1981 and subsequent Amendments and Pigeon Island Acts and rating classification subsidies are affected to the hotel developments which adjacent to the Coastal side.

Differentiated services and customization: Minoo and Claudia (1999) states that differentiated services and customization in these factors that include variables related to the different traits and characteristics of the service and customization. Associated with this factor the variable translating the hoteliers' association in order to solve common problems and personalized reception and service provided to customer.

Branding and Marketing - Lawson (1997), Minoo and Claudia (1999), Newell and Ross (2006) and Cloete and Venter (2007) expresses their opinions on this factor in different perspectives. Moreover, Minoo and Claudia (1999), in their study mentioned support to marketing, that factor meets general marketing support and specific actions like demand stimulation.

Promotion and widening of service range - this factor associates to promotion with service widening, either through internal extension, like entertainment or through establishing contacts with other tourism suppliers Minoo and Claudia (1999). The association of those three variables leads to the need of promotion integrating, tying and communicating the general and individual offer.

Family backing and commitments of the manager to the firm capital -This factor associates with family support and connection to property/share holder commitment. In the study by Minoo and Claudia (1999) state this relationship translates the linkage present in many hotels. Co-operation with other units, support given to training and family backing and commitments of the manager to the firm capital are other main factors which are discussing about in a study by Minoo and Claudia (1999).

Internal attributes : From a hotel operator/developer's point of view, Sun international defines its hotel development success criteria as (Mc gee 2002 as cited in Cloete and Venter, 2007) flexibility of design (combination of room types such as suites, king size, double – double and inter connecting), efficiency of design, staffing (skills, training and experience) and standards (education, implementation and consistency of standards) except location, accessibility and government requirements when developer has to consider the hotel development.

In a study by Cloete and Venter (2007) mentioned that the hotel developer or hotel organization wanting to develop a hotel, to launch an overarching understanding of a wide, but specific range of hotel operational and development factors.

There is also number of other factors over which an investor has less or no control such as, International, national and local economic, political and social factors National and local government regulations (legislations, town planning and building regulations) and Short and long term business confidence Cloete (1998) .

Newell and Ross (2006) investigate the specific hotel investment characteristics compared to other typical commercial real estate and found that it is the most closely linked property sector to economic conditions and external events such as terrorism and global health infections. Other unique characteristics of hotel investments found is higher volatility than other property sectors resulting from unstable cash flows, low risk adjusted returns, performance of an operating business rather than property, low institutional investor support and special industry-specific features.

Table 1: Global Tourism Industry and Hotel Investments

Over the past years, tourism has developed with continued to be expansion and diversified in varies ways that become one of the largest and fastest growing economic sectors in the world. Many new destinations are arrived and that continued to be growth huge potentials gained from the tourism sector. According to the WTO Global tourist arrivals reported by destinations around the world reached 1184 million in 2015, an increase of 4.4 % percent, over the previous year. Overall demand was robust with 51 million more tourists travelling the world.

Table 1: Tourists Arrivals and Growth in Global, South Asia, and Sri Lanka - 2011 to 2015

Year	Global Tourists Arrivals (Millions)	Global Tourists Growth Change	South Asia Region Tourists Arrivals (Millions)	South Asia Region Tourists Growth Change	Sri Lanka Tourists Arrivals (TF) (1000)	Sri Lanka Tourists Growth Change
2011	995		13.5		856	
2012	1035	5.1% (11/12)	14.6	8.1% (11/12)	1006	17.5%
2013	1087	4.6% (12/13)	16	9.5% (12/13)	1275	26.7%
2014	1133	4.2% (13/14)	17.5	9.4% (13/14)	1527	19.8%
2015	1184	4.4% (14/15)	18.3	4.4 % (14/15)	1798	17.8%

Source: Prepared by Author, Source: World Tourism Organization (UNWTO) 2014, 2015

In a report by, World Travel and Tourism Council, the table 2 shows the total Contribution of Travel and Tourism to GDP was USD 7,170.3bn (9.8% of GDP) in 2015 and to rise by 4.0% pa to USD 10, 986.5bn (10.8% of GDP) in 2026.The travel and tourism investment in 2015 was

USD 775 billion, or 4.2% of total investment. And rise by 4.5% pa over the next ten years to USD 1,254.2bn in 2026 (4.7% of total).

Table 2: The Economic Contribution of Travel and Tourism: Real 2015 Prices (USD Billion) - Capital Investments & Growth of Total Contribution to the GDP

	Year	2011	2012	2013	2014	2015	2026F
World	Investment (USD Billions)	667	695	706	744	775	1,254
	Investment Growth		4.2%	1.5%	5.4%	4.2%	4.7%
	Total Contribution Of Travel and Tourism to GDP (USD Billions)	6,214	6,462	6,717	6,956	7,170	10,987
	Growth of Total Contribution Of Travel and Tourism to GDP		4.0%	3.9%	3.6%	3.1%	4.0%
Sri Lanka	Investment (LKR Billions)	85.6	100.0	108.1	115.7	125.4	213.4
	Investment Growth		16.7%	8.2%	7.0%	8.3%	5.5%
	Total Contribution Of Travel and Tourism to GDP (LKR Billions)	668.0	749.3	884.0	1,067.4	1,093.6	1,979.2
	Growth of Total Contribution Of Travel and Tourism to GDP		13.7%	16.4%	20.8%	2.5%	6.1%

Prepared by Author, Source: World Travel and Tourism Council – 2015, 2016

Moreover, EY'S Centre (2015) recorded "Real estate fundamentals continue to improve and debt and equity capital are abundant, providing a solid foundation for an uptick in transaction volume and overall competition". Global hotel investment continues to rapid increase, with 2014's totals expected to exceed US\$54, 5 billion compared to US\$52 billion in 2013. Global hospitality and leisure transactions increased 8% year 2014, a wave of new hotels will open in 2015, and a robust global development pipeline of approximately 1.3 million guestrooms is in place.

Overview of the South Asia Tourism Industry and Hotel Investments

In south Asia, leading destination regions area India, Sri Lanka and Maldives. According to the WTO South Asian tourist arrivals reported by destinations around the South Asia reached 18.3 million in 2015, an increase of 4.4 % percent, over the previous year (Table 2). Overseas capital accounted for 41.2% in 2014's global hotel investments through October compared to 34.7% in 2013, 29.9% in 2012 and only 25.9% in 2011. Asian investors (primarily dominated by China, Hong Kong, Japan and Singapore) represented 43.2% of the cross-border hotel transactions during the 12 months ending October 2014 (EY'S Centre, 2015).

Overview of the Sri Lanka Tourism Industry and Hotel Investments

Tourism is the third largest foreign exchange earner of the Sri Lankan economy in 2016. Particularly after establishment of the peaceful environment in the country Sri Lanka

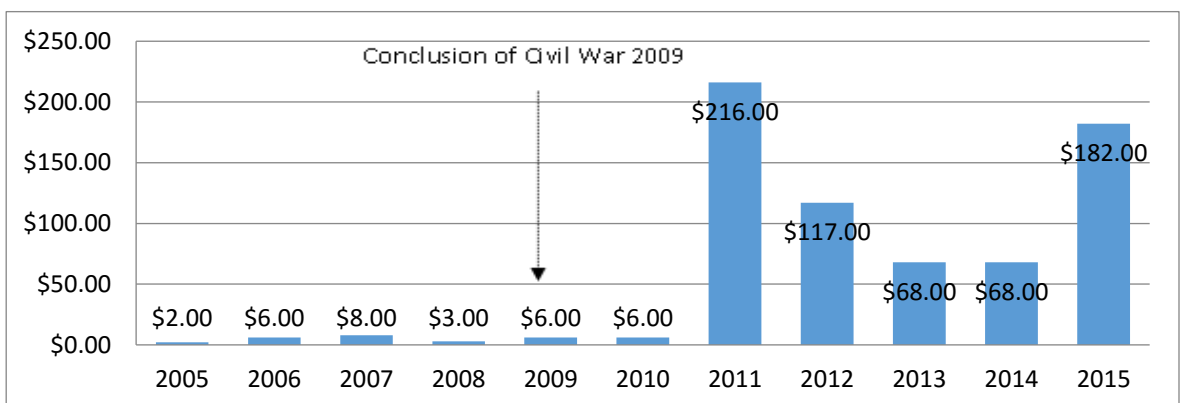
started to record high economic growth. GDP Real Growth Rate in 2015 was 4.79%. The Total Contribution of Travel and Tourism to GDP was LKR 1,067.bn (11.1% of GDP) in 2014 and is forecasted to rise by 2.5% in 2015 and to rise by 6.1% pa to LKR 1,979.2bn (10.5% of GDP) in 2025.

Considering about the Sri Lankan present context, Sri Lankan Tourism has boomed to a new milestone 1,798,000 arrivals in 2015, an increase of 17.8 % percent, over the previous year (Table 1). The Sri Lankan government formulated its “Tourism Development Strategy 2011 – 2016” that is an engine for economic growth of the country and spread the benefits across a larger section of society. The highlight of which is to attract 2.5 million tourist arrivals by 2016 (Sri Lanka Tourism Development Authority, 2014, “Annual Statistical Report”).

And also travel and Tourism investment in 2014 was LKR 115.7bn, or 4.1% of total investment. It rise by 8.3% in 2015, and rise by 5.5% pa over the next 10 years to LKR 213.4bn in 2025 (3.9% of total) (Table 2). Figure 1 show the foreign investment in Sri Lanka in civil conflict situation and post war situation it shows the post war the investments are increased enormously by taking US \$ 216 million in 2011 and US \$182 million in 2015.

Jones Lang LaSalle (2016) said the tourism in Sri Lanka has a unique tourism proposition. According to the Sri Lankan tourism development authority, in Supply side, Sri Lanka had approximately 28,000 rooms in 2014, of which over 60% fall in the informal segment consisting of supplementary establishments and unclassified hotel inventory. The total room inventory across the country increased by 1,850 rooms in 2014. The hotel environment has grown increasingly competitive with an increase in hotel room supply as several new domestic and international players establish their presence in the country.

Figure 1: Post War Foreign Investment in Sri Lanka's Hotel Industry (US \$ Million) - 2005 to 2015



Source: Board of Investment, Sri Lanka

Hotel Development in Nilaweli area

Sri Lanka has best tourist destination of coastal lines including Colombo, Southern Coast and Eastern Coast. The popular Eastern coast, tourist destination comes from Trincomalee and Batticolo.

Map 1: Kuchchiveli Divisional Secretariat Administrative Boundaries

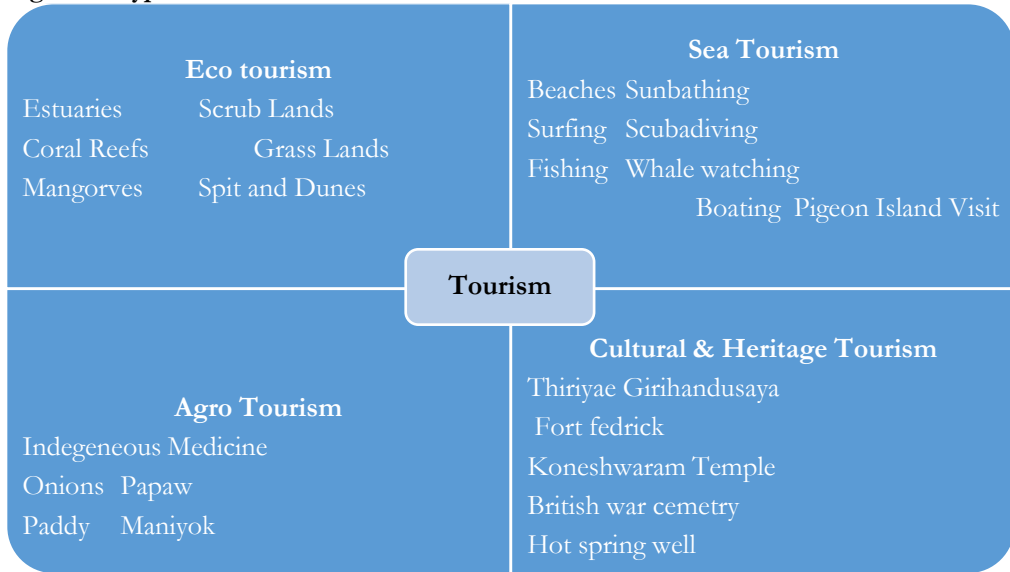


Trincomalee is located in the Eastern Province, in Sri Lanka. It has historically been a role model of ethnic harmony within Sri Lanka that containing natural resources and advantages and also it has cultural assets while enhancing the growth of the region. Nilaweli coastal line area is administrated by the Kuchchaweli divisional secretariat in Trincomalee District. The coastal length of the Kuchchiveli is about 67 km along. Following Map1 shows the administrative area of Kuchchaweli divisional secretariat. Various types of tourism attribute can be found in the Kuchchiveli divisional secretariat area (Figure 2).

Pigeon island national park is also situated 1km of the coast of Nilaweli beach. The pigeon island national park and surrounding under water areas are rich in coral reef biodiversity. Over 100 species of corals and more than 300 species of reef fish have been identified from the Trincomalee area, and many of these species are found within the Pigeon Islands National Park the total area of the park is extended to the 471 hectares. Moreover that it was cited in the IUCN directory of South Asian Protected areas and declared as the Special management area by the Coastal Resource management department of Sri Lanka.

The Girihandusaya temple at Thiriyae is considered the oldest Buddhist temple in Sri Lanka enshrined with the hair relic of the Buddha. It is believed Girihandusaya was built in when the Buddha was alive by the Thapassu and Balluka. In this area having great potential for viewing whales and dolphins that contribute the huge impact to the sea tourism sector.

Figure 2: Types of Tourism in Kuchchiweli Divisional secretariat area.



Source: Prepared By Author using information gathered from Local Authorities

Ocean Tsunami. Post the end of the thirties war, increased the demand of the tourism supply. To fulfill the demand of the tourist's arrivals in east coast in post war situation the accommodation capacity (Rooms) increased rapidly 230 rooms available in 2009 and after the improvement of the socio economic and infrastructure the 628 available rooms in 2013 in present it takes the 895 rooms (Figure 3).

Urban Development Authority put into their strategies to gain Trincomalee as a regional tourism hub under that they strength the local institutions including well established banking and other local institutions in well manner. According to that 5 years (2014-2018) short term period set for the achievements in tourism as the UDA point of views. Moreover, they have focused the tourism industry with creating more job opportunities such as garments handloom, handicrafts, cottage and etc.

Moreover, to improve the condition to meet such demand SLTDA is established investment ready lands owned by Sri Lanka Tourism Development Authority SLTDA. Kuchchaweli in Trincomalee district are 445 acres (Minimum 10 acres per investor) allotment option and period foreign Direct investment land would be offered on a long term basis, upfront payment and nominal annual rentals are the payment type for the construction of beach resorts (Ministry of Economic Development, 2013 "Sri Lankan Tourism Investment Guide"). This situation is greatly beneficial to the hotel

development in this study area. 10 hotel projects are developing to meet the future demand of the tourism supply.

Figure 3: Accommodation Capacity (Rooms) in Tourist Hotels in East Coast - 2006 to 2015



Prepared by Author, Source : Annual Statistical Report – 2015, SLTDA

At present situation, about 55 hotels developments are available including the Classified/ Unclassified/ Boutique Hotels, Boutique Villas/ Guest Houses/ Home Stays/ Bungalows/ Heritage Homes & Bungalows/ Rented Apartments & Rented Homes.

According to the SLTDA records, in future prospects scenario, 10 hotel projects are developing to meet the increasing supply in Nilaweli area. That contains 538 rooms newly added to the accommodation facilities with US \$ 45.92 million allocation for investment in that hotel projects.

4 Analysis

SWOT Analysis for the Nilaweli Area

SWOT for the Nilaweli Area

<p>Strength</p> <ul style="list-style-type: none"> • Attractive Coastal Line with Blue whale Watching • Natural Deep Water Port • Marine • Cultural and Heritage assets • Well located in the South East Asian corridor 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Tourism industry still focus on the traditional sector without looking the new areas (Cruise ship industry, Medical, Ayurvedic , Adventure) • Poor transport connectivity to access between major tourist destination
<p>Opportunity</p> <ul style="list-style-type: none"> • Peaceful environment in the country promote the growth of tourism sector • Increase the employment opportunity from tourism sector • Establishing the Local and Private institutions (Banking) • Low cost destinations 	<p>Threats</p> <ul style="list-style-type: none"> • Inappropriate funding developments • Highly sensitive to political environment • Cultural barriers to promote innovative

Tourism has become one of the major sectors in the economy of Trincomalee. Through that Nilaweli area is creating a huge potential impact to the tourism, and thereby for the hotel development. Literature suggests that factors affecting to the hotel development is very crucial and influenced by the wide range of aspects. Major Factors affecting the hotel development can be summarized as location, finance, government influence, differentiated service and customization, internal attributes, promotion of widening of service range and Family Backing Commitment to the manager to firm capital. Further investigating these factors is significant for hotel development.

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Extrapolating a Sri Lankan Real Estate Price Index: Background Analysis

M.P.G.G.L.Karunaratna¹, M.S.L. Silva²

¹Under Graduate*, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
gayanlakmal66@gmail.com

²Tutor, Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
shanaka.lakmal.silva@gmail.com

Abstract

Real Estate is one of the precious asset that one can invest in because of its significant feature, hedging against inflation. In gaining the utmost benefit of this feature real estate should be purchased or sold at the correct time at the correct value to maximize the financial returns. A keen investor is more concerned about the price levels as he has to take important decisions regarding his invested assets where a proper mechanism would have fulfill his information thirst. Frequent price fluctuations make the decision process a complex one to the investors because of its unpredictability where the investor tends to make decisions on his/ her own judgement which will result either in excess profits or hefty losses. Sri Lanka as a developing country with a booming real estate industry lacks a proper way of tracking the property price fluctuations generating inconveniences for the stake holders of the industry where there is a research gap that needs to be addressed. So this study is aimed at studying on constructing a property price index which is carried out through a comprehensive literature analysis. The literature analysis showed that there are 5 main methods of constructing a property index; Simple Mean/ Median method, Stratification or mix adjustment method, Hedonic Regression method, Repeat sales method and Appraisal-Based methods with their own advantages and disadvantages. Further it was identified that most widely used and accepted method for the construction of a property price index is Hedonic Regression method.

Keywords: *real estate, price indices, property price index*

1. Introduction

“Five centuries from now - barring unimaginable catastrophe - the moon will be developed for Real Estate. There's economic incentive to exploit the moon - the helium-three will be useful in powering fusion reactors, and the rare earth elements could supplant the limited terrestrial supply of these materials” (Seth Shostak). Real Estate can be defined as “The land above and below the earth’s surface, including all things that are permanently attached to it either natural or artificial”. According to Hoesli & Macgregor (2000) Real Estate can be classified according to different criteria. The conventional way to classify property is by sector (office, retails, industrial, housing etc.) and by geographical region as these different classes are considered to have different economic drivers. Important features of Real estate investments which distinguish it from other investments are fixed location, heterogeneity, high unit value and illiquidity.

Internationalization of Real Estate investment market is an unavoidable phenomenon in the current context of the world. This has been an experience even in Sri Lanka. Sri

Lanka is a country which has been practicing market oriented economic policies for urban development since 1978. Thus; Sri Lanka's experience about the market system is more than three decades up to now. Therefore, obviously the country's experience of the market system is considerably a significant one. However, compared to capitalist countries, Sri Lanka's situation is still far below the line requires and need to widen and strengthen the market system in order to reach expected development levels. (World Bank, 2000)

When considering most nations' balance sheets, Real Estate market contributes in a considerable amount, and from household's point of view, Real Estate represents the largest investment in their portfolio. Therefore, house price changes can have far-reaching implications for householders, for instance, housing equity and household debt level changes can radiate through to overall economy. House prices dominate house improvement and renovations expenditure than new house construction, and house prices play a significant role in decision to build new houses as well as the decision to become an owner of the house (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013)

Prof. Ho Lok-Sang introduced property price index to Hong Kong in 1986 and since then, Hong Kong's Real Estate market has been well developing while being a major role player in Hong Kong's financial market. Two major advantages can be noted when having a matured property price index. Because of the mature property price index, transaction mechanism will be gradually perfected, and risk management will improve in financial market. Therefore people will be able to hedge against their risk exposure in the underlined assets. There are several advantages of having a property price index for future market activities. It deprives speculative activities in the Real Estate market, hedge against disclosure to the Real Estate price risk. A property price index can also enhance understanding on future market abilities, only a little capital is required for investment, and investors can invest in sustainable business without facing any physical resources constraints (Feng, 2010).

Because of the absence of the active property price index in Sri Lanka, the above mentioned beneficiaries would not be entitled to the Real Estate investors and the government. Property price indices are one of such areas which have not been researched by the scholars in Sri Lanka. However, property price indices related studies in the country seem not been researched; the reasons for that may be higher complexity in identifying an exact method for constructing property price index and lack of attention to property price fluctuations in Real Estate market in Sri Lanka even though most of other countries like, India, Hong Kong, U.K and USA have matured property price indices. This study, therefore, aims at studying on constructing a property price index under the recognized five methods (Simple Mean/ Median method, Stratification or mix adjustment method, Hedonic Regression method, Repeat sales method and Appraisal-Based method).

2.Literature Review

Real Estate

Real Estate is defined as the land above and below the earth's surface, including all things that are permanently attached to it either natural or artificial. The term "Real Estate" is broader than the term "land". When artificial things are attached to the land, such as a buildings or a structure or a fence, land becomes Real Estate. Real property is broader than Real Estate which is defined as the interest, benefits and rights inherent in ownership of Real Estates. Real Properties includes not only the surface, sub surface and air surface but also the surface rights, subsurface rights and airspace rights, all of which can be owned by different individuals(Ariyawansa,2009).

Real Estate can be divided into two main categories, such as "Commercial properties" and "Residential properties". There are many different meanings for commercial properties. Some countries defines commercial properties as offices and shops, while stating Industrial properties as a separate category. In other countries, commercial properties is defined as office, shops and industrial properties. But in USA, commercial properties are defined as income producing properties, including office, shops, industries, rented apartment blocks and hotels. The types of property in investment market and their financial characteristics vary from country to country. In UK, main property investment is commercial property, but in other countries, such as Netherlands and France, Residential property is the main Real Estate investment. (Hoesli & Macgregor, 2000)

Investment on Real Estate is much better than other investments. Because of the, default risk of a property investment depends on the quality of the tenant, and in shorter length automatically rent adjust to real economy and to inflation, and reviews are " upwards-only "according to the inflation, if they have felled, the rent remains the same. And also Real Estate investment plays as hedge against to the inflation. When making Real Estate investment decisions, investors should consider about the price fluctuations in Real Estate market. (Hoesli & Macgregor, 2000)

Price Indices

Oxford Dictionary defines fluctuation as "an irregular rising and falling in number or amount". Fluctuations are of different types and it depends on the field of areas. Product fluctuations can be seen in a production company while there may be cost fluctuations too. The term "Price Fluctuation" is of vital importance because of its numerous impacts. Madurapperuma (2007) stated that price fluctuation is "the degree of change in the overall price level". Price fluctuations make the investment markets volatile and unpredictable which is why it is necessary to create price indices which is a proper way of forecasting market changes.

According to the Online Business Dictionary price index is "Percentage number that shows the degree to which a price (or a basket of prices) has changed over a period (month, quarter, year) as compared with the price(s) in a certain period (base period) in use as a standard". Price fluctuations are measured in term of changes in price indices.

Price indices indicate the comparative prices of a specified basket of goods and services over time, compared with the prices of such basket of goods and services during a certain (based) period. (Madurapperuma, 2007). Some countries has prepared several price indices such as export and import price indices, Producer Price Indices, rent indices and property price indices etc.

Property price index

The Property Prices Index measures the percentage at which the prices of Real Estate properties are fluctuating over time. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013) According to the Online Business Dictionary property price index is a index, measured by changes of averaging housing purchase prices including mortgage financing and refinancing appraisals.

In practical context, price indices measure changes in prices of a group or bundle of goods with different attributes. This is evidently the case when it comes to preparing property price index because the properties' heterogeneous characteristics such as extent of property, quality, location and range of the property. Prices of different types of property will change at different percentages subject to above mention characteristics. When creating a property price index, it uses measurements of central tendency of a group of property types depending on different attributes for better understanding, because there is no single price of housing. Typical price indices are created normally for non-durable goods and services, such as food and clothing etc. These types of goods and services are purchased and consumed almost immediately. But properties are different, because it serves as durable goods which provide a course of services. In case of such goods, the average value of the total stock of properties or the average value houses sold in a certain period should be considered. It is significant clear about what exactly a property price index is trying to measure. But above mentioned different measures will not have the same value if the properties transacted in any period are not representative of the housing stock. Tracking down of the price fluctuations in the property sector is of vital importance because of its complexity and uncertainty. In Sri Lanka although there is a price index in determining price fluctuations of commodities the absenteeism of a property price index for measuring property price fluctuations has raised several issues and concerns in this regard.

As a developing country, Sri Lankan Real Estate market is experiencing a boom after the post war period. In present context investments in real estate markets have been increased by both local and international investors where international investors plays a significant role. Even though there are more investment opportunities in Sri Lankan Real Estate market, the absence of a proper mechanism to identify the price trends in real estate properties have become a vital issue which bothers investors in decision making process. Accordingly this leads the investors to purchase unworthy properties at higher prices which affects the security of their investments adversely. As a result of the higher purchasing price of properties, the developers will have to launch their Real Estate developments in higher prices, which will further results in loss of sales and potential buyers. So, this scenario discourages investments in Sri Lankan Real Estate market.

The individuals (house holders) are also embarrassed in Real Estate investment decision making due to the absence of an exact method or measurement to identify price fluctuations in Sri Lankan Real Estate market. Therefore inability of taking clear decisions regarding when to buy or sell a Real Estate remains as another issue.

In government's point of view, government will face the inability of forming regulations and policies in Real Estate market due to the absence of an exact method or measurement to identify price fluctuations in Real Estate market in Sri Lanka. Sri Lankan Real Estate market is not correctly regulated by government, and there are only a few regulations and policies which have been framed with the aim of governing Sri Lankan Real Estate market. Therefore, some Real Estate developers earn abnormal profits from Real Estate dealings due the fact that buyer not having a proper knowledge about price trends in Real Estate market. Therefore, lack of methods in identifying price trends in Real Estate market, affects the process of forming government regulations and policies on Real Estate market in a greater extent. Filling this research gap in Sri Lanka context is of vital important not only to the potential investors and policy makers in Real Estate market but also to professionals in other businesses who will be benefited equally while serving their information thirst.

There are many opportunities in society where organizations or people can Use a property price index, which influence directly or indirectly on their practical decision making or on framing economic policies. And also analysts, policy makers and financial institutions can follow Real Estate price trends to expand their knowledge about Real Estate market and also to analyze the impact on economic activities. Moreover, mortgage lenders pay attention to price trends in residential properties because of the ability of judging their default risk. Central bank also considers house price trends to monitor household's borrowing capacity and their effects on aggregate consumption (Balk, Haan, & Diewert, 2013; Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013).

Property price indices have a great significance based on two views, either public decision making or individual (citizen) decision making. Property price index can be used by the government in decision making, such as, as a macro-economic indicator of economic development, in making monetary policy and measurement of inflation, as an input into estimating the value of Real Estate properties, as an element of wealth, as a deflator in the national accounts, as a financial stability or soundness indicator to measure risk exposure, can also be used for making comparisons in inter-area and international context, age as an input in to the consumer price index; which can be used for wage bargaining and indexation purpose. And property price index is important in individual decision making, such as decision making on when to buy or sell a Real Estate property (Balk, Haan, & Diewert, 2013; Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013).

For all most all the countries, investment on Real Estate is a vital aspect to the economic development. In this regard, property price index plays a significant role in Real Estate investments.

Methods of Constructing a Property Price Index

A property price index can be derived by several methods out of which Simple Mean/Median method, Stratification or Mix Adjustment Methods, Repeat Sales Methods, Appraisal-Based Methods and Hedonic Regression Methods are widely accepted. As the objective of this paper is to study on constructing a property price index these methods are further analyzed.

Simple Mean or Median Method

The simplest methods of constructing a Property Price Index based on the some measures of central tendency from the house prices sold in a period, especially use mean or the median. In this method the median is mostly used rather than mean without considering the characteristics of properties, and price index calculate changes in price of the median properties sold from one period to next period. Ignoring different type properties are sold each periods such as two bed room, three bed rooms, houses with swimming pool and dwellings etc... (CBSL) There are some advantages when using Mean or Median method such as easiness of understanding. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013)

Stratification or Mix Adjustment Methods

Stratification method used to reduce sample bias. When compiling Property Price Index, stratification is the simple tool for controlling differences in the composition or “quality mix” of the properties sold, and this method is use when users desire price indices for different housing market segments. Stratification is nothing else than straightening out the total sample of properties into a number of sub-sample or strata. Then measure of the change in the central tendency for each stratum is derived, such as mean or median price index. Aggregate mix-adjusted Property Price Index is usually calculated as a weighted average of indices for each layer (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013).

Repeat Sales Methods

Repeat sale method utilizes information on properties that have been sold more than once, because it is a matched-properties type of method, controlling for period to period variances in the sample of properties is not necessary (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013). According to Northern Ireland Statistics and Research Agency, (2015) the idea of this method is that the quality of a residential property remains approximately same overtime.

Ansah, (2013) stated that, given the fact that the physical and locational characteristics are not essential in the estimation of the repeat-sales method, data are relatively easy and inexpensive to collect when using repeat-sales method. Definitely, the only necessary data required for each property to be used for the repeat-sales index construction are the opening sale price and sale date, property identity, as well as the succeeding sale price and sale date.

Appraisal-Based Methods

The Appraisal-Base Methods has been used in New Zealand and several European countries, such as Denmark, Netherland and Sweden. In most of countries information of assessed values or valuations of properties are available, which may be useful as substitutes for selling prices or, market value of the property. The use of a conventional matched model index number formula simplifies the calculation of the index because there is no need to use econometric methods to estimate the index or to adjust for compositional change, as is the case with hedonic and repeat sales methods. The sale price appraisal ratio method (SPAR) is free from revisions because there is no modelling and pooling of data involved. In comparison to the repeat sales methods and the multi period time dummy hedonic method, previously computed price indices are not re-estimated when new sales data are available. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013)

Hedonic Regression Methods

Hedonic regression method was firstly developed and applied to land characteristics by Waugh (1928) and firstly used by court (1939) to develop price measures for automobiles and this method was popularized by Grliches (1961,1971) and Roshen (1974) (Hulagu, Kizilkaya, Ozbekler, & Tunar, 2016). The first Hedonic House Price Index compiled by US Bureau is "One family house price index" in 1968 (Triplett, 2004). Hedonic method recognizes that heterogeneous goods can be described by their attributes or characteristics. In Real Estate context, that has attributes of structure and the location of properties. In the market these characteristics can't be sold separately, therefore the prices of characteristics are not independently observed. The demand and supply for the Real Estate implicitly define the attribute of the Real Estate marginal contributions to the prices of the Real Estate Properties. Regression techniques can be used to measure those marginal contribution or shadow prices. One purpose of the hedonic regression method might be to obtain estimates of the willingness to pay for, marginal cost of producing, and other one is the different attributes. In preparing quality adjusted property price index focus on the second main purpose. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013)

The market price of Real Estate can be expressed as a function of locational, structural, and neighborhood variables. The implicit price of each housing attribute can be derived from the regression coefficients and the hedonic regression method allow us to estimate the individual effect of each Real Estate characteristics on Real Estate prices, holding all other factors constant (Chin & Chanu, 2003). According to Chin & Chanu, (2003) The location of a Real Estate has been considered in terms of fixed and relative locational attributes. Locational attributes are quantified through substitutes measures such as socioeconomic class. Racial composition, aesthetics attributes, pollution levels ,and proximity to amenities. View may be considered a residential facility usually related with the location of a dwelling site and buyers prefer sites with good views such as lakes, golf courses paddy, and are willing to pay high value for site.

According to Chin & Chanu(2003) prices of properties normally related to their structural attributes. Important structural variable is floor area of the property. Age and floor area are also important structural attributes for multy-storey buildings. And

neighbourhood characteristics also determine the value of the property. Chin & Chanu, (2003) divided neighbourhood category in to three main categories, socio economic variables (e.g. social class of the neighborhood and occupation of the inhabitants), Local government services (e.g. schools, hospitals, garbage collections etc...) and externalities (e.g. crime rate, traffic noise, airport noise and shopping centers.)

Table 1. List of Commonly Used Housing Attributes in Hedonic Price Models

Characteristics of the property		Expected effect on the house price
Locational	Distance from CBD	-
	View of the sea, lakes or rivers	+
	View of hills/valley/golf course	+
	Obstructed view	-
	Length of land lease	+
Structural	Number of rooms, bedrooms, bathrooms	+
	Floor area	+
	Basement, garage, and patio	+
	Building services (e.g. lift, air conditional system etc.)	+
	Floor level (multistory buildings only)	+
	Structural quality (e.g., design, materials, fixtures)	+
	Facilities (e.g., swimming pool, gymnasium, tennis court)	+
	Age of the building	+
	Income of residents	+
Neighborhood	Proximity to good schools	+
	Proximity to Hospitals	?
	Proximity to Places of worship (e.g., mosques, churches, temples)	+
	Crime rate	-
	Traffic/airport noise	-
	Proximity to Shopping centers	?
	Proximity to Forest	?
	Environmental quality (e.g., landscape, garden, playground)	+

(+) Positive impact on housing prices; (-) Negative impact on housing prices

(?) Varies from place to place, the actual effect is an empirical question

Creation of a residential property price index using hedonic methodology, one of the basic step is the identification of the most important characteristics and this is explained statistically and to the greatest extent possible its market value. And selecting property characteristics for the creation of property price index depend on the type of market under consideration (e.g. cultural and demographic characteristics and living standards of the country etc...). To identify most important characteristics for the property price index correlation coefficients and statistical regression methods can be used. (Central Bank of Cyprus, 2011). Variables which were classified as having a multicollinearity relationship between them were excluded from the analysis. In compiling quality adjusted property price index, there are two main hedonic regression methods, such as time dummy approach and imputations approach. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013)

The time dummy variable approach frequently use in academic studies but not so much by statistical agencies in compiling property price index. In this method, the price index follows immediately from the estimated pooled time dummy regression equation, running one overall regression on the pooled data of samples. The time dummy parameter moves the hedonic surface upwards or downwards and measures the influence of “time” on the logarithm of price. Exponentiation the time dummy coefficients thus controls for variations in the quantities of the characteristics and provides a measure of quality-adjusted house price variation between the base period and each comparison period. In the imputation method, separate regression are run for all time periods and the index is compiled by making use of the predicted prices based on the regression coefficients. Because the implicit attributes prices are allowed to fluctuate over time, this method is more flexible than the time dummy variable method. Stratification technique also can be applied or hedonic regression method adjusting quality changes. In this technique, separate regressions should be run for different market segments, such as different types of properties and locations etc... Therefore some practical issues might arise such as different sets of property characteristics will be needed for different market segments and parameter values for the same characteristics can vary across housing market segments (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013).

In the hedonic regression method, there are advantages and disadvantages. Advantages are price indices can be compiled for different types of dwellings and locations through a proper stratification of the sample. This method may be the most efficient for making use of the available data and the imputation variant of the hedonic regression method is analogous to the matched model methodology that is usually used in order to compile price indices. (Eurostat; International Labor Organization; International Monetary Fund; Organization for Economic, 2013). Disadvantages are hedonic regression method is a data consuming method, for some situations, transactions data is not available or available at a high prices, misspecification of the function due to missing variables (no availability of data) can lead to errors in estimates, the choice of functional form is also challenging to determine when no basic knowledge regarding how independent variables affect prices exists. Additionally, the heterogeneous nature of housing market make it difficult to identify the parsimony principle, the coefficients may be very unstable when

a large no of independent variables are included and hedonic price model requires not only technical skills, but also experience and judgment. (Chin & Chanu, 2003).

Conclusion

This study was initiated in studying ways and means of constructing a property price index and the literature analysis showed that Simple Mean/ Median method, Stratification or mix adjustment method, Hedonic Regression method, Repeat sales method and Appraisal-Based methods were the main methods of constructing a property price index and the Hedonic Regression method was identified as the most commonly and widely used and accepted method of constructing a property price index despite its data consumption.

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Questions and Answering Session

Role of Building Technology in Disaster Management

Chandana Jayalath¹

¹Chartered Quantity Surveyor

AECOM (Azerbaijan) Ltd

jayalathchandana@gmail.com

Introduction

There is much evidence to show that every year natural disasters cause a substantial amount of damage throughout the whole world. Over the past decade, annual global fatalities from natural disasters have averaged 106,000 and estimated average annual losses have been US\$165bn¹². The unprecedented rate of urban growth, increasing dependence on complex technical systems and infrastructure networks, all suggest that exposure to natural hazards is increasing. This inspired the topicality of disaster risk reduction, and more importantly, the effective use of building technology in the function of disaster mitigation.

What is meant by disaster mitigating construction?

Over the last three decades, the technological means of confronting with natural disaster expanded greatly¹³. Any type of construction, methodology or approach where the focus is given to deal with potential devastations can be considered disaster mitigating. Adapting disaster risk reduction methods into designs and construction work are a part and parcel of this approach. Indeed, some of these measures include proper land use planning, incorporating building codes and regulations, proper designing and construction of quality infrastructure including structural work such as sea walls, drainage systems etc., and the use of quality construction materials.

Who are the most responsible in taking necessary measures to reduce the risks?

The recent disaster literature highlighted the inadequate engagement in the mitigation of such events¹⁴. Further highlighted was that the construction industry has not been sufficiently involved in disaster planning and management. It is therefore necessary to enhance the construction industry with the requisite capacity and capability to enable proper planning and designing which will in turn help respond effectively to disasters, save lives, rehabilitate vital infrastructure and reinstate economic activities.

The foregoing reflects a discourse of shared responsibility which essentially articulates a social contract for disaster management. In nutshell, this is resilience entailing a metaphor for the balance of rights and responsibilities between the State and its citizens.

Why Sri Lanka needs disaster mitigating construction than ever since?

In the past, efforts had been focused more on reactive measures after a disaster. Over the past few decades, disaster losses in Sri Lanka have increased substantially. The

¹² Emlyn Witta, Kapil Sharmab, Irene Lilla, Mapping construction industry roles to the disaster management cycle, 4th International Conference on Building Resilience, Building Resilience 2014, 8-10 September 2014, Salford Quays, United Kingdom

¹³ The Role of Science and Technology in Disaster Reduction, International Strategy for Disaster Reduction, United Nations

¹⁴ Malalgoda, C., Amaratunga, D., Pathirage, C., Exploring Disaster Risk Reduction in the Built Environment, School of the Built Environment, University of Salford, UK

country has been prone to natural disasters caused by floods, cyclones, landslides, drought and coastal erosion and more frustratingly the vulnerability to low-frequency, high impact events. Creating the political and social will to manage disaster risks continues to be a great challenge.

What are the disaster mitigating construction methods in the worldwide?

There are structural measures encompassing a wide array of alteration of the existing environment. Of them the groins are wall-like structures, built of timber, concrete, metal sheet piling or rock, placed perpendicular to the beach to capture material drifting along the shoreline. Seawalls, revetments, bulkheads, breakwaters are a couple of shoreline protection works. Breakwaters protect the shoreline by breaking down incoming waves to diffuse and refract the wave fronts. Sand dunes are also common in that they involve disrupting the airflow to encourage sand deposition, through the use of fences made of porous materials. Artificial dunes can also be built up by the planting of vegetation. Stabilization, as opposed to construction, of dunes is aimed at securing bare sand surfaces against deflation and achieved through grading, rapid construction of new dunes through the use of earth-moving equipment, surface fixing by addition of chemicals, and planting of vegetation, focusing on grasses, shrubs, and trees.

Strengthening buildings has also been accepted as a norm in disaster management. Here, the dry flood-proofing involves the sealing of a building against floodwaters by making all areas below the flood protection level watertight. With wet flood proofing, floodwaters are intentionally allowed to enter a building to reduce the pressure exerted by deep water. Wet flood proofing at minimum involves the removal of some valuable items and extends to the rebuilding of floodable areas. Elevating a building is the raising of that building above the flood level. Elevation is cheaper than relocation and is less disruptive to the neighborhood. Effective elevation should take in consideration the need to wet flood proof everything still located in the flood prone area, such as basements or garages.

Are these methods applicable in Sri Lanka?

Disaster risk management is not an area new to Sri Lanka; what is new however, is the approach to it. All of the foregoing methods are applicable in tropical settings. In some countries, the traditionally elitist role of the architect who mainly works for wealthy clients is changing. The Dutch architect Johan van Lengen, working with the people of Mexico and later Brasil, described these reoriented professionals as 'barefoot architects' (1982); others, like Rod Hackney in the UK (1988) call them 'community architects'. We need a change in approaches.

Are there any barriers?

In 1976, the first Habitat Conference in Vancouver¹⁵ made people's participation a central element of future housing policies and strategies. But housing agencies struggled to implement it, facing the dilemma of determining: 'whose participation in whose decisions and whose actions?' In today's terminology, we would probably call this the

¹⁵ PCR TOOL 8 Participatory Design, International federation of red Cross and Red crescent societies

dilemma of good governance. There is ample evidence now that participation and the establishment of partnerships between various stakeholders can be effective in solving deficiencies in housing and related services, whilst at the same time building the social and human assets of those involved. Yet, many humanitarian agencies tend to work in a 'supply mode' when providing relief, which makes it hard to shift to a 'support mode'¹⁶, when they get to reconstruction. As a result, participation is practiced in current reconstruction projects and programs, but not in the design stage.

By recognizing the discourse on shared responsibility and disaster resilience as an articulation of a new social contract, we can see that one half of the contract is missing in the discourse: the rights and benefits that citizens would receive. The need to include a rights-based discourse is evident in contention over core risk management dilemmas such as the protection of citizen and property holders' rights, the legitimacy and accountability of government agencies and government decisions, and the uneven distribution of impacts, impositions and benefits of disaster risk and risk management activities. The absence of a rights discourse in Sri Lanka disaster management has the potential to seriously undermine the legitimacy of the new disaster resilience social contract.

Are there any standards in Sri Lanka enforced by law?

Until very recently Sri Lanka did not have an integrated institutional framework for disaster response, and a pro-active policy to tackle the trend of increasing disasters. Over the past decade efforts have been made to establish a legal framework in the country for disaster risk management (DRM). The 2003 floods and landslides disaster and the 2004 tsunami have brought to light the urgent need for a systematic approach to DRM.

The Disaster Management Act enacted 2010 provides the legal base and a high level National Council for Disaster Management to oversee all activities in this area. A separate Ministry for Disaster Management has been created and the Disaster Management Centre has been established as per the Act, as the lead agency in the country for Disaster Management. Building codes applicable in disaster prone countries provide good material for standardizing the future building construction.

The way forward!

As per EERI¹⁷ research following the December 26, 2004 Tsunami, Sri Lanka has reacted swiftly to the tsunami and implemented systems and procedures to speed up recovery. Its focus on a rapid reconstruction and rehabilitation improved existing infrastructure and housing standards. Many of the post-tsunami initiatives paved the way for improvements that transcended the immediate recovery and, in the view of the authors; Sri Lanka is more resilient than it was before the tsunami. I strongly believe, if

¹⁶ Bolado, Mauro (1999) Architect of the Community: From non-Governmental to Governmental approach to housing improvement. <http://www.lth.se/fileadmin/hdm/alumni/papers/ad1999/ad1999-06>.

I. Guillermo Franco (M. EERI, 2005), Guy Carpenter; Alpa Sheth (M. EERI, 2010), VMS Consultants Private Limited; and Michelle Meyer (M. EERI, 2013), Texas A&M University, Report on the Recovery and Reconstruction in Sri Lanka Following the December 26, 2004 Tsunami Now Available, FEBRUARY 19, 2014, EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

people are to be less vulnerable to disasters in the future, they not only need more resilient houses, but also to become more resilient themselves. The process of participation helps empower them, build their capabilities and social networks, all of which are key components of vulnerability reduction.

Ensuring a Resilient Future in Sri Lanka: Reflections from the Professional Audience/General Public

Indu Weerasoori¹

¹Project Manager Urban Planning, Disaster Risk Reduction and Climatic Change, UN Habitat

email-indu@unhabitat.lk

Introduction

Population is increasing very rapidly. The U.N. projects that 80 percent of the world's populations will live in urban areas by 2050. Over the past 30 years, Asia has added over one billion people to its cities (between 1980-2010) and will have added another billion by 2040. As a result of rapid urbanization, the world population is increasingly concentrated in large cities leading to unplanned urban development. As of 2010 the region was home to half of the world's megacities and is projected to have 21 of 37 of the world's megacities (57%) by 2025 (ADB 2012). The population living in Asian urban areas has increased from 17% of the total population to 44% between 1950 and 2010 and may reach 64% by 2050 ([International conference on Building resilience 2013- Book of Abstract](#) and UN Reports)Among the 305 urban agglomerations presently in the Asia Pacific region 119 are situated in coastal areas.

Vulnerability to disasters is increasing in many urban areas due to increased concentrations of poverty and poorly planned settlements with substandard infrastructure. This excessive unplanned urban growth leads to various physical, social and economic vulnerabilities. Communities around the world are faced with the threat of disasters on a daily basis. This is not an exception for Sri Lanka.

According to the approved National Physical Plan, more than 50% of the people in Sri Lanka will be living in declared urban areas by 2030. At present, the majority of urban population in Sri Lanka is concentrated in cities along the coast and in hilly disaster prone areas. Coastal cities are highly vulnerable to disasters and predicted climate impacts including coastal floods, storm surges and sea level rise. The hill country of Sri Lanka frequently experiences landslides that cause enormous damage to lives, property and the national economy. Heavy rains, earthquakes, human activities such as construction and changing land use pattern are common triggers for landslide in Sri Lanka. As per the record of National Building Research Organization (NBRO), that there are 6400 families in 283 locations around in Sri Lanka which are vulnerable for landslide mainly in hilly areas. Among that 131 location are categorized as highly vulnerable zones to landslide hazard and those location are spatially distributed mainly in Badulla Nuwara, Eliya , Rathanapura , Kegalle and Kandy. (NBRO).

What is Resilience?

The concept of “resilience” covers a broad range of issues, sectors and related services. Improving a city's resilience to disasters can include promoting pro-poor economic growth, climate change adaptation/ mitigation as well as disaster risk reduction.

Resilience is the capacity of a system to “bounce back” from an adverse outcome. It is complementary to traditional risk management - which seeks to avoid or minimize the occurrence of adverse event. But when risk avoidance fails and an adverse event does occur, resilience is the strategy that seeks to limit the scope and duration of the resulting damage, and to restore the system to a favorable state (Gray E Marchant, Arizona state University).

When it comes to addressing civic problems, one of today buzzwords is resilience.

At first flush resilience seems a clear lens for addressing the problem of cities, suggesting unlike “sustainable” or livable- fairly inclusive standard of measurement. Resilience reflect a ‘city’s ability to persevere in the face of emergency, to continue its core mission despite daunting challenges, an is as appropriate to discussion about Venice’s rising tides as Medellin’s corruption, Detroit’s unemployment as Budapest’s floods’ (Bruce Watson, 27th Jan 2014, the Guardian). As cities work to build resilience, they should develop procedures that enable them to carry out their daily mission, whatever that mission may be.

The term resilience has been adapted by different scholars, scientists, and policy makers in “an attempt to describe the way in which they would like to reduce a nation’s susceptibility to major incidents of all kind, by reducing their probability of occurring and their likely effects, and by building institutions and structures in such a way as to minimize any possible effect of disruption upon them. Community resilience is described as “the ability to maintain, renew or reorganize” (Varghese et al, 2006, p 508).

Urban resilience is a term that has grown to encompass a broad number of considerations – from economic robustness and social stability to the ability of a city to quickly recover from disasters. For the purpose of this initiative, UN-Habitat’s definition of resilience will be used:

“The ability of any urban system to absorb and recover quickly from the impact of any plausible hazards.” This definition encompasses elements of disaster risk reduction (DRR) as well as climate change adaptation/mitigation.

When we consider the above different definitions and explanation regarding the word of resilience, this term can be introduced as the ability or capacity to recovery or adjust from original form.

To what extent do you think it is an important aspect in Sri Lanka which needs more attention?

A predicted major effect of climate change is the increased frequency and intensity of extreme climate events which can result in an increase in large-scale natural disasters (Jentsch et al.2007). Therefore, there is an urgent need to build stronger communities with a greater degree of resilience to natural disasters. From the past disaster experience, it is evident that some communities recover at a relatively rapid rate, whereas certain other communities take years to recover (2010). Consequently, it is necessary to investigate and compare the resilience characteristics of different communities to identify qualities or attributes that facilitate or inhibit post-disaster recovery. This knowledge is essential to develop policies and programs for the enhancement of the

resilience of a community. In this context, it is important to develop reliable and consistent methodology to assess the resilience of a community (Mulligan & Nadarajah 2010)

Being an island, subject to tropical climate patterns, Sri Lanka is highly vulnerable to climate impacts. Extreme weather events such as high intensity rainfall followed by flash floods and landslides, and lengthy dry periods resulting in water scarcity are now becoming common problem in Sri Lanka.

Following climate data for Sri Lanka clearly indicates changes of rainfall and temperature throughout the country.

Increasing temperature¹⁸

- Air temperature in Sri Lanka has increased by 0.64 C over the past 40 years and 0.97 C over the last 72 years which revealed a trend of 0.14 C per decade. However, the assessment of a more recent time band of 22 years has shown a 0.45 C increase over the last 22 years. Suggesting a rate of 0.2 C per decade.
- Consecutive dry days are increasing in the Dry and intermediate Zones.
- Ambient temperature (both minimum and maximum) has increased.
- The number of warm days and warm nights has increased, while the number of cold days and cold nights has decreased.

Rainfall variability¹⁹

- The precipitation patterns have changed but conclusive trends are difficult to establish.

Any adverse changes in already volatile weather patterns are likely impact adversely on the socio-economic activities in the country. Therefore urgent action is necessary to take adaptive measures to build resilience of the country to face the adverse impacts of climate change.

Sri Lanka's urban future offers immense challenges and splendid opportunities both of which require immediate policy and planning attention.

What are the measures taken to protect a resilient future?

Sri Lanka is the country which prepared and implemented climate change policy, strategies and actions in advance to address the issues and protect the resilient future. Following paragraphs will explain the measures and steps taken by the government of Sri Lanka to ensure the resilience future.

Present Status of Government initiatives:

National Climate Change Adaptation Strategy for Sri Lanka

The National Climate Change Adaptation Strategy for Sri Lanka has been prepared based on these vulnerability profiles. This strategy lays out a prioritized framework for action

¹⁸ Source: The National Climate Change Adaptation Strategy for Sri Lanka, Ministry of Environment)

The National Climate Change Adaptation Strategy for Sri Lanka, Ministry of Environment)

for the 2011 to 2016 period aimed at systematically moving Sri Lanka and its people towards a climate-change resilient future. As indicated in the National Climate Change Policy and National Climate Change Adaptation Strategy, the following sectors were identified as the key sectors to be included in the national adaptation action plan.

1. Agriculture and Fisheries
2. Water
3. Health
4. Biodiversity and Ecosystem Services
5. Urban Development, Human Settlement and Economic Infrastructure
6. Coastal Resources

Disaster Management Information, Education and Communications Strategy

Information, Education and Communications Strategy for Climate Change Adaptation Strategy for Sri Lanka was also prepared to improving awareness and understanding of climate change, and creating solutions to facilitate access to information on climate change.

National Climate Change Policy of Sri Lanka (2012)

Considering the severity and identifying the gravity of climate change impacts to the country, Ministry of Environment and Renewable Energy has formulated the National Climate Change Policy of Sri Lanka to provide guidance and directions for all stakeholders to addressing the adaptation to the adverse impacts of climate change and mitigation with nationally appropriate measures. The National Climate Change Policy of Sri Lanka (NCCPSL) 2012 is aimed at mainstreaming climate change issues within the overall national efforts towards sustainable development and it creates the conditions necessary to overcome the major gaps existing at present.

National Climate Change Adaptation Action plan.

Preparation of National Climate Change Adaptation Action planes in progress will be prepared for the period of 2015-2020 indicating short term, medium term and long term actions with necessary budgets. (Source: Climate secretariat, Sri Lanka)

Guidance on how the society as a whole could undertake the responsibility to ensure a resilient future

One country, one city or one ministry, donors, professionals or community themselves alone cannot improve the resilience of a country. National governments, sub-regional government, local government, international civil society, donors, the private sector, academia and professional community, as well as every citizen needs to be engaged in reducing their risk to disasters and improve the resilience of each sector. All these stakeholders should play their role and duty contributing to building disaster resilient communities and resilient cities and countries. All these sectors/stakeholders should work together with a united forces and a shared sense of responsibility to improve disaster.

The Sendai Framework talks about an ‘all of society approach’, and this is very important for resilience building. Thus a multi-stakeholder approach is needed. This means all branches of government (including sectorial agencies etc) as well as at all

levels, national and local; the civil society; private sector and the communities themselves are important.

Government at all levels, have a significant role in strengthening the nation's resilience to disasters by developing and implementing effective, risk based and management and planning arrangements and other mitigations activities. Having clear and effective education and awareness system so community understand what options are available and what the best course of action is in responding to a hazards as it approaches is also prime responsibility of central government.

Resilience cannot be built only looking at the Disaster Risk Reduction (DRR) or Climate Change (CC) sectors, it needs to be looked at as a development issue. This means we should be making our systems, our infrastructure all too understanding risk and incorporate measures that will deal with the risk. It needs to build capacities of people and governance systems to ensure this.

Disaster resilience is based on individuals taking their share of responsibility for preventing, preparing for responding to and recovering from disasters. They can do this by drawing on guidance, resources and policies of government and other sources such as community organizations.

Non-government and community organizations are at the forefront of strengthening disaster resilience in the society. Government can have a strong partnership with these agencies to spread the disaster resilience message and to find out practical ways to strengthen disaster resilience in the communities they serve.

Business community can play a fundamental role in supporting community's resilience to disasters. Government can invite them to come and join with public sector and community. Business group can provide resource, expertise and many essential services on which the community depends.

What are the benefits for a country that may be received through ensuring resilient future?

Last two decades, government of Sri Lanka had to spent enormous resources to save lives, protect assets and property, and improve the resilience. If we improve the resilience, we could save the thousands of lives and the economy.

Stability of a state is a major benefit for the people, especially business community and financial institutions. This will lead to the strong economy and enhance the quality of life. Saving billions of rupees spent on post disaster relief, recovery and rehabilitation can use for development of the country.

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The Role of Valuer in Disaster Management

W. Christine E. Perera¹

¹Regional Valuer

Government Department of Valuation, Sri Lanka

christinep209@hotmail.com

Introduction

A disaster is a sudden unexpected incident or a serious disturbance to the functioning of community that impact losses on humans, materials or environment. There is no country that is free from disaster, and literature concludes four main types such as Natural disasters, Environmental emergencies, Complex emergencies and Pandemic emergencies (www.unisdr.org)

The Red Cross and Red Crescent Societies define disaster management as the organization and the management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disaster. (www.ifrc.org)

Disaster Risk Management is defined by The United Nations Office for Disaster Risk Reduction (UNISDR, 2009) as “the systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters”. (www.unisdr.org)

Thus Disaster Management is an effective management approach that contains prevention, mitigation and preparedness with emergency response and recovery in disaster situation. National and international organizations are involved in building a humanitarian response to disasters preparation of disaster management plans that cover prevention, preparedness, relief and recovery.

For an instance the Sendai Framework for Disaster Risk Reduction 2015-2030 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years. (Sendai Framework for Disaster Risk Reduction 2015 – 2030)

The vast majority of disasters are linked to high-impact weather and hydrological events as well as climate extremes including rapid-onset hazards such as tropical cyclones and slow-onset hazards such as droughts. Disaster risk reduction is, therefore, at the core of the mission of World Meteorological Organization (WMO) and the National Meteorological and Hydrological Services (NMHS) of its 191 Member States and Territories. (www.wmo.int)

Recent studies have revealed that the number of climatic natural disasters such as floods, storms, tropical cyclones, local storms, heat/cold waves, droughts, wildfires and geophysical natural disasters such as earthquakes, volcanoes, dry rock-falls, landslides, avalanches taking place all over the world in each year is noticeably skyrocketing. The

literature explains from 1980 to 2000 there was an 80 percent increase in the growth of climate-related disasters (borgenproject.org). According to 'The New England Journal of Medicine' (2013), since 1990, natural disasters have affected about 217 million people each year and there were three times as many natural disasters between 2000 and 2009 compared to 1980-1989.

Corresponding with the World Bank's "Natural Disaster Hotspots: A Global Risk Analysis" reports (2005) show that over 160 countries hold more than one-fourth of their population in regions of high mortality risks from one or more natural disasters.

World Disasters report (2010), United Nations Office for the Coordination of Humanitarian Affairs (OCHA) has identified the largest world disasters, from 2000-2011 are Japan earthquake and tsunami, Haiti earthquake, Sichuan earthquake, Cyclone Nargis, Java earthquake, Kashmir earthquake, Hurricane Katrina, Mumbai floods, South Asian tsunami, Bam earthquake, European heat wave, Dresden floods and Gujarat earthquake.

Sri Lanka is mostly affected by weather related hazards. Floods are mostly due to the monsoonal rain or effects of low pressure depression and droughts are due to the failure of monsoonal rain are the most common disasters. Based on information available, during the period of 1974-2004 floods, drought, tsunami, storm and landslides are the most common natural disasters in Sri Lanka.

Other than terroristic attacks, the most vulnerable disaster that was faced by the country was Tsunami in 2004. Almost two-third of the Sri Lankan coastal belt was affected by the Indian Ocean tsunami highlighting the country's vulnerability to low-frequency but high impact events. Fire and explosion of Sri Lanka Army camp at Salawa that is about 35 kilometers east of the capital, Colombo, was the recent vulnerable disaster experienced, setting off explosions and sent shrapnel and munitions flying into the surrounding residential area, damaging thousands of homes and commercials and forcing thousands of people to evacuate 5 kilometer radius around the site.

The Disaster Management divides its process into three phases such as Pre-disaster phase, Emergency response and Post-disaster phase that cover up activities of mitigation, prevention and recover in disaster environment. Land administration is a key element in Disaster Management situation that plays a vital role in all these phases to help protect the rights of the vulnerable and to help governors taking property related policies in all three phases. Most Disaster situations have remarked land administration as a potential role in disaster management.

Land administration comprises with three components like administration of land tenure, land value and land use that impact each on other. The value of land is an important element of the information required during much of the process of emergency response, recovery and reconstruction. It supports cost-benefit decisions during recovery planning, and helps to protect the rights of people being resettled due to the disaster.

Various papers such as UN-Habitat/FAO/CWGER/GLTN2010, Mitchell 2010 have also identified the valuers' requirement at land issues in disaster situation as assessing damages for loss of access and shelter, resettlement, legal and social legitimacy of their rights to land plays a vital role in disaster management.

There are very strong links between changes made under land use planning and resultant changes in land value that often made more insecure tenure (e.g. informal settlements) and also lower land values. Information on the value of land and buildings is critical for all property-related decisions. Decisions on land tenure, and land use planning controls are some of the major roles of land administration that dramatically interact with the land value.

Role of valuer is critical in all three stages of disaster management. Valuer's exposure into scientific education, professional training, and wider experience in local and global context as a member of a reputed professional body is the strength behind the valuer to hold such a responsibility.

In countries with market economy, property has a value and this is critical for all property related decisions. Valuer undertakes valuations according to accounting standards at the national and international levels and effective property valuation underwrites many aspects of a functioning market economy. A transparent approach of planning under valuers' intervention is essential when disasters have adverse effects on land value.

Valuer's involvement is necessary to undertake post-disaster assessments to determine the scope, scale and distribution of the impact of disaster and identifying issues that may affect the response. They provide information on the needs, possible intervention types and resource requirement including damages, shelter, livelihoods, agriculture, infrastructure and vulnerability assessment.

The World Bank Publication Safer Homes, Stronger Communities (Jha et al, 2010) states: 'accurate, comparable and appropriately scaled information provides the basis for damage and loss assessments and related decision making concerning recovery and reconstruction. Assessments are time and labour-intensive, must be conducted rapidly, and must meet quality standards. For these reasons, numerous initiatives have been launched to expand the use of technology to improve the timeliness, quantity, and quality of assessment results.'

Although the emergency phase is mostly about saving lives and getting basic temporary restoration of transport, communications networks, and preliminary repairs to critical public utilities, there is also need to do preliminary estimates of the loss of public and private property. In this phase valuer's role is to evaluate the economic value prior to the disaster and then in current condition in post-disaster. These valuations can be used for insurance, compensation purposes or allocation of limited resources in the disaster recovery.

As such, a valuer plays a vital role in emergency response, recovery and reconstruction in disaster situation providing estimates of damage and loss, land values on resettlement

and compensation, and for insurance purposes where the impact of natural disasters on property values as well as the relationship between land tenure, land value and land use. In Sri Lanka, Government Valuation Department is the sole authorized body empowered to provide valuation information and estimates to the government in disaster situations. The recent disaster experiences faced by the Department in valuing properties were unexpected fire and explosion in Sri Lanka Army camp's Armoury at Salawa-Kosgama, landslide at Polpitiya, Nuwara-Eliya as an impact of Broadland hydro power project and the disaster arisen due to adverse impacts of Uma Oya project etc.

Explosion at Salawa Armoury is the most vulnerable disaster that we faced in valuing properties and got involved in disaster management process providing estimates of damaged buildings, goods and equipment and vehicles. Government of Sri Lanka decided to compensate for any damage or injury, caused to any person or property due to the blast and made a request to valuation department to provide the estimate of all damaged buildings fully major or minor within very short period covering 12 numbers of affected Grama Niladari Divisions within Seethawaka Divisional Secretariat area. In Phase-I, approximately Rs. 800 million was reported as re-instatement cost of 2110 residential and commercial buildings which comprised of 778 fully damaged, 1210 major damages, and 122 minor damages.

In phase – II, 547 appeals were handled which referred to problems occurred on the expenses incurred by Sri Lankan Army on some major and minor damaged buildings, minor damages like wall and column cracks happened after inspecting, problems aroused on cost of building materials at existing condition and re-instatement situation and unsatisfactory compensation. However still there are about 37 unattended second appeals. Meanwhile we have carried out more than 500 clarification cases regarding land tenure as we have collected the condition of the buildings taking their tenure on occupation basis.

In phase-III, the Department started to report cost of damaged Vehicles, Goods and equipments including large scale business. We have submitted 1227 Nos. cost of damaged Goods and equipment and cost of damaged Vehicles 60Nos. 132 Nos appeals on damaged Goods and equipments and about 200Nos of cost of damaged Goods and equipments still in progress.

The aftermath experience in valuing properties at Salawa explosion disaster management situation was remarkable while undertaking the challenges such as; Emergency response in taking condition of the properties at pre and post disaster situation especially at fully damaged buildings, Inefficient co-ordination between responsible authorities, submitting compensation within limited timeline deviating from usual department procedure, the non-use of spatial analysis techniques, lack of experience in disaster situation, lack of reliable information, inadequate legal frameworks, external pressures and sometimes excessive or insufficient government interference.

Although there is guidance provided such as in FAO Voluntary Guidelines, World Bank Land Governance Assessment Framework there are no specific legal measures made to value the properties in disaster situation.

In January 2005, 168 Governments adopted a 10-year global plan for natural disaster risk reduction called the Hyogo Framework that offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities.

In Sri Lanka, there are no specific legal measures that directly affect a valuer's role in disaster risk management situation other than taking Government policies from time to time at each disaster situation whenever it occurs.

Valuer's role in disaster situation is deviated from the normal application at the context of emergency response in disaster situation. As the government authorized body, Department has to provide more reliable information on property values with a higher degree of transparency transparent to the government as well as to the effected bodies.

Traditional approaches or normal applications were inadequate for this kind of special performing situations in disaster management. Investigating the department application in disaster situations directly or indirectly Department has employed non-economic valuation methods such as Revealed Preference Method and Stated Preference Method, Cost Based Method and Derived Benefit Method.

Traditional approaches can be applied in pre-disaster phase where valuing properties for re-settlement, land acquisition or taxation purpose. In emergency phase and post-disaster phase mostly valuer has to deviate from his normal proceedings. Normally valuers value the interest of the property due to the special characteristics of the real estate. But in emergency response valuer have to address on estimates, reinstatement cost or reinstatement value mostly compensation completely on value to the owner concept.

Exploring the recent experience on 'Salawa explosion', instances like compensation on fully damaged buildings, and the description of building had to be determined from the debris and remains of the damaged building. The department applied cost based approach to derive re-instatement value as compensation of the damaged buildings.

Compensation of fully or partly damaged goods and equipments or residential and commercials in Salawa explosion department adopted completely or as a combination of Revealed Preference Method, Stated Preference Method and Derived Benefit Method as Government focused on the total satisfaction of the interested parties.

On the departmental experience it can be concluded that the role of the valuer or his application can vary depending on the expectations or policy decisions of the government in different disaster situations, until proper legal measures for disaster management are formulated.

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Affordable Houses in Sri Lanka

A.K.M.P Silva¹

¹Assistant Director (Construction Economics)
Construction Industry Development Authority, Sri Lanka
mpriyanvada1973@gmail.com

Abstract

A shelter and a house mean two different requirements of human being. Shelter comes as a very basic and also primary need to survive from the environment such as climate changes, animals etc. But, a house is a more sophisticated version of a shelter creating peace, physically and mentally of any human being. Moreover a significant percentage of world population lives in shelters, which may barely be called as houses due to many reasons. Low income, unemployment, land costs and shortage of land issues are some of the reasons. Many has faced lot of issues during the process of house construction. High land prices, illegal land transferring, legal issues, mortgage issues, loss of investment, delay in construction, partially completed houses, mortgage finance are some of the critical issues that house owners frequently facing. Therefore, owning a "house" has become a burden to many. This paper describes an appropriate mechanism to provide a house to each and every person according to their standard of living that fulfills the requirement, complying regulations.

1. Introduction

A housing demand of 700,000 in Sri Lanka was identified by the survey carried out in the year 2012 (Conference of World Habitat Day, 2014.) and is deemed to be increased by approximately 100,000 yearly. Lanka has 5.9 M housing units. From these 81.7% are permanent type, 17.6% are under repairing stage and 0.7% are slums and temporary shelters. Further, it is revealed that 83% of house owners live in their own house and 6.4% houses are used on rental basis. According to the survey carried out in the year 2012, new houses constructed in the period of 2000-2010 were 250,000. But, it is found that 318,884 housing units were constructed in the year 2011 indicating very high demand for houses.

Further, it is identified that 92% is having drinking water, 94% has electricity in their own houses. It is calculated that occupancy rate is 4 persons per house is available in Sri Lanka as an Index. (Conference of World Habitat Day, 2014). With compared to other countries of SAARC region, Sri Lanka has the highest number of permanent houses. Further, the minimum number of slums & temporary shelters as well. These figures reflect that Sri Lanka as a nation has achieved a significant target in housing sector with compared to SAARC Countries and also there is a considerable gap between housing demand and supply too.

The Middle Income Groups (MIGs) of Sri Lanka is the worst affected group facing the housing problem. They cannot afford to construct a house on their own, suit to their regular or irregular income due to high construction & land costs. Most Government and private sector parties implement housing programmes solely with the objective of profit generation. Most MIGs, who cannot afford to buy such a house, invest their income for day today life maintenance and postpone their plans of house construction.

The main reason for high land prices are due to new infrastructure and land developments. Secondly, high material prices, price variations due to inflation and high transport cost is also become significant reason that affect. Sri Lanka is an agricultural based country and raw materials for manufacturing industry is less. Therefore, high percentage of raw materials required to manufacture main construction materials such as Cement, Reinforced Steel, and Asbestos etc. to be imported. This situation creates high construction costs.

Thirty years of conflict left communities in the Northern & Eastern Provinces of Sri Lanka with their houses damaged or destroyed with severally, damaged physical infrastructure. War controlled livelihood opportunities and generate no productivity in those areas. Around 160,000 houses were affected only in Northern Province only (Indian Housing Project, 2015).

Another area of housing to be focused is Slums. According to the statistics 123,000 slums are found in Sri Lanka (Conference of World Habitat Day, 2014). People who cannot afford due to high land cost, non-availability of suitable lands, non-availability of regular income generation method, home based income generation methods, difficulties in obtain banking facilities etc. forced them to live in slums. As this problem can generate very complex issues drug distribution, poor education etc. As professionals who are engaged in this task, have to find solutions this issue locally as well as internationally.

2. Affordable Housing Concept

Affordable housing concept is proposed to overcome this issue. If person can afford to construct any house that suits to his income, fulfilling his requirements and also complying to the existing regulation governed in the relevant country is called an affordable house.

As a developing country, this concept had been applied for a long time by the Sri Lankan Governments and some of the statistics are provided below; since 2006, Government had spent millions of rupees for affordable housing construction in Sri Lanka.

Table 1: Government Investment for housing programmes (Conference of World Habitat Day, 2014)

	Programme (2006-2013)	Investment, Rs M
1	Housing programme by Ministry of Construction, Engineering Services, Housing and Common Amenities	6,009
2	Housing programme at Northern Province, Resettlement of war displaced people	24,193
3	Housing programme (For replacement of slums and temporary shelters)	20,701
4	Housing programme for slums at tea estates (Estate houses)	2,028
5	Refurbishment work at multi story housing schemes	4,130
	Total	57,061

It is known that affordable houses are more popular in Northern & Eastern areas of the country than in Colombo. Because, in Northern Province, many displaced families are returning to their places of origin continuously and temporary shelters were introduced as an immediate and temporary solution. With minimal security, limited facilities for education etc. Government is responsible to provide at least an affordable house to each family to continue their lives with security and other facilities.

From 2012 to 2015 UN- Habitat worked closely with the people in the Northern Province, Village Reconstruction Committees, the Government of Sri Lanka and the Indian High Commission to construct 17,945 conflict damaged houses in the districts of Jaffna, Killinochchi & Mullaitive. It was a participatory programme (Indian Housing Project, 2015) .

A grant of LKR 550, 000 was provided to each beneficiary family in four installments to construct a new house while a grant of LKR 250,000 was provided to repair a partially damaged house. All families built their homes according to Local Authority guidelines with a minimum area of 550 sqft. At present, similar housing programme can be seen under the Ministry of Housing and Construction as “Uda Gammanna” . This programme is for low income generation people who cant afford for a land. As such, lands will be provided to them through District Secretariat at no cost. This project consist of construction of affordable houses with a floor area of minimum 550 sqft. The cost of a house is estimated at Rs.575,000.

As per the information provided by National Housing Development Authority (NHDA), total construction cost of a house can be changed by Rs.100,000 according to the availability of materials. **e.g:-** bricks if easily found compared to cement block. In addition to that there is a housing project called “Visiri Niwasa” which the only difference is the house owner has his own land to construct the house.

In Sri Lanka, affordable housing would be Rs.1000 to Rs. 2000 per sqft without the land cost as per the year 2016. It is known that an affordable house includes all the facilities for minimum standard of living. It is constructed based on alternative materials and technologies to a minimum cost. Nevertheless, it is difficult to adjust the mindset of people to decide to go for an affordable house. From the point of view of Public, best house is constructed using conventional materials with more spaces with plastering and painting some good flooring method such as Tiling.

In Colombo, very few affordable houses are to be seen in the housing schemes. Some of such housing schemes are Sooriyapura housing scheme, Samapura housing scheme, Sucharitha Mawatha housing scheme

Government has implemented some housing programmes such as Gunasinghapura, Sucharitha Mawatha, Maligawaththa Housing Complex, Nawaloka Niwasa etc. Though, these houses for resettlement, several housing options were given according to applicant's income. Construction cost had born by them and had to be paid within 30 years.

3. Issues of promoting affordable houses

Resettlement in “Sahasapura”- Colombo programme was also taken place to offer the poorer at different locations to select housing type options. The cost of a housing unit was around Rs 1.5 Millions. Eventually 651 families moved, 161 families declined, 52 families use relocated elsewhere. Many poor families with high income /regular jobs preferred their new housing over the old, but dissatisfied due to some reasons.

Some of the reasons are:

1. Designs were insensitive to their culture
2. Difficult in expansions
3. Difficulties of using Paddy husk & firewood
4. Home base enterprise is difficult
5. Higher utility costs in urban areas.

By 2010, 100-150 families had sold their newly acquired apartments and had either moved to suburbs or back to their original settlements (The State of Asian and Pacific Cities,2015)

As such, Private developers are not much interested on this concept as middle level & low level income people are not affordable to access to these houses due to poor income. Therefore, private developers are more interesting towards luxury apartments than affordable housing as it has become a lucrative business.

4. Resilience in affordable houses

Sri Lanka, now prone to risk of landslides, floods, and droughts and high winds with the increasing chances of environmental pollution related hazard such as urban, rural and estate housing roads and highways, health, education. The situation is increasing in upward trend with the present work. Therefore, Sri Lanka needs to build resilience houses to ensure that its life can continue without interruption and to avoid repetitive investments.

National Building Research Organization plays a key role to build resilience society in Sri Lanka, They have published many manuals, guidelines for public use. These practices should be considered in all three stages of construction. Design, Orientation and planning stage and execution stages.

Therefore, it is required to think about designing, siting and planning of affordable houses. During the designing stage, the structure should not fall down under gravity and the building must be prevented from being pushed sideways and lifted off upwards when subjected cyclones, flooding and earthquakes. Some of the practices are to introduce 4 reinforced concrete columns at the four corners of the building. 150 mm x 150 mm with 4 no of steel bars at least 10 mm diameter with column stirrups can be 6 mm diameter of mild steel at 120 mm intervals can be introduced.

When consider the orientation of building the areas behind vegetation are preferred in order to provide natural shielding; however, dwelling should not be constructed too close to large trees, in case of uprooting of trees during a cyclone causes disproportionate damage. A house that is symmetrical about both axes with a compact plan form is more

stable than one with a zigzag plan and also can be oriented in such a manner that the shorter span length of the wall faces the sea. All external walls or wall panels must be designed to resist the out of plane lateral pressure adequately. A small house with property connected wall is the ideal. Raised foundations have enabled the families and their assets to be safe from prevailing Floods. A minimum external wall thickness of 150 mm and a ring beam at lintel level can be introduced. Anchor of the timber roof structure to the masonry super structure with stub columns. Steel anchors provided from high winds. Plaster hand on roof etc. (Guidelines for Building at risk from natural disasters).

Note: These are given without structural calculations

5. Proposal for promoting affordable houses

Following activities are proposed in order to make these affordable houses to popular among Sri Lankan community.

5.1 Awareness

Awareness on land and other resource shortage is one of the life threatening problem today. It is known that only 3% of fresh water for drinking is available in the world. Those facts and figures should be published and should be an indication of the scarcity of resources.

5.2 Introduction & promotion of low cost construction materials & technology to housing sector through contractors;

Unlike major projects that consultants are advising on materials and method statements, contractors recommends materials for domestic sector. Therefore, educating contractors on these materials is one of the methods available for promoting these materials. Some of the materials that can be promoted through contractors are mentioned below;

- **Cement stabilized soil blocks**

It is shown that the cost saving of cement stabilized soil block walls compared to cement sand block walls will be around 11% to 38%. It depends on availability of soil at site and labour for preparation and construction of walls (A.A.D.A.J. Perera, Cement stabilized earth blocks)

- **Manufactured sand**

Manufactured sand has been used for many years in all over the world in variety of construction applications. It is used from the crushed rock which has required properties to manufacture sand that suits for construction. Market approximate price of manufactured sand is Rs. 4000/per cube while, river sand is Rs. 12,000/cube.

- **Off-shore sand**

In Sri Lanka, the construction industry in Western Province is responsible for 40% of the total sand demand (Byrne, G. Nanayakkara, A. Alternatives for river sand, 2002). If this river sand is to be replaced by a reasonable amount of off-shore sand which is available in Western Province, the immediate pressures for

river sand mining could be mitigated. At present the price of Off-Shore sand varies between LKR 4800- 6400 per cube at Sri Lanka Land Reclamation and Development Co-operation outlets.

- **Construction and Demolition waste(C & D)**

Use of C & D waste in construction activities are not much popular in Sri Lanka. An awareness programme for specifics should be conducted on applications. It is required to disseminate the technology know-how for separating fine aggregates from C& D waste and the need as use of it.

- **Rammed earth construction for walls**

Building a rammed-earth wall involves compressing a damp mixture of earth that has suitable proportions of sand, gravel and clay into an externally supported frame or mould, creating either a solid wall of earth or individual blocks. Additives as lime, cement or asphalt emulsions also can be used.

- **Houses of monolithic concrete and plastic formwork**

This system is a new technology for Sri Lanka and constitutes the use of a removable, reusable, recyclable and lightweight plastic formwork mould which is filled with approved mortar to form the wall structure of a house. Each set of formwork panels can be reused 50 times making the technology cost effective due to its repetitive system produces durable and permanent structures, which have been subject to numerous tests and independent reports. (www.Moladi.lk)

5.3 Regulations, tax concessions and incentives for affordable housing materials and owners.

In India, use of C & Demolition waste for a project is a must depending on the Population of the area. Such contractors are given incentives and tax concessions. Sri Lanka also can implement such a regulation for identified construction materials such as reuse of concrete waste, tile pieces, use of green materials such as solar panels, Accessories and application of rain water harvesting systems also another issue.

5.4 Develop standards and specifications on affordable houses and alternatives.

It is highly required to publish standards and specifications on those to promote the usage of such materials. E.g. Cement stabilized soil blocks etc.

6. Recommendations

Therefore, it is required to find solutions to make these affordable houses popular among Sri Lankan community, The recommendations are,

1. Raising awareness of people on inadequate lands for housing.
2. Introduction & promotion of low cost construction materials & technology to housing sector through contractors.
3. Reduction in Land prices and fixed prices per area/per year.
4. Regulations, tax concessions and incentives for affordable housing materials and owners.

5. Develop standards and specifications on these affordable houses and on new materials and technologies generating confidence among public on fit to use.

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-Donald Trump-



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