1

## **Interactive Relationship**

of

### **Port Development and Port City in**

Hambantota

Dissertation Submitted to the University of Sri Jayewardenepura as a Partial Fulfillment for the Requirements of the Final Examination of the M.Sc. in Real Estate Management & Valuation Degree

Full Name: Yaddehi Guruge Indika Saunam Kummara.Examination No: REMW/3772/84Registration No: GS/MS.c/REMV/3772/09Department: Department of Estate Management & Valuation.

University : Sri Jayewardenepura.

Date of Submission :: 211 NOV 2013

i

#### Supervisor's certification

Hereby I certify that, Mr. Yaddehi Guruge Indika Saman Kumara (Register No of GS/MS.c/REMV/3772/09) duly completed the research titled "Interactive Relationship of Port Development and Port City in Hambantota" under my supervision and recommended to submit to the final submission.

Signature of the supervisor

Yase

Signature of the 1st examiner

••••••

Signature of the 2<sup>nd</sup> examiner

Signature and the official stamp of the Head

දේපල කළමනාකරනා හා තන්සෙරා විදන
අධානයනාංශය
<b>ලී ජයවර්ධනපුර</b> විශ්චවිදුණලය ආපත්යභාධ.
2 2 MAY 2014
Department of Estate slaves cment &
Valuation University of Sri Jayewardenepura
Nugegoda

The work described in this dissertation was carried out under the supervision of Mrs. K.G.P.K.Weerakoon, Senior Lecturer of the Department of Estate Management and Valuation and any report on this has not been submitted in whole or in part to any university or any other institute for another degree / examination or any other purpose.

Full Name

#### : Yaddehi Guruge Indika Saman Kumara

**Examination** No

\_\_\_\_\_î : ..

Signature of the Candidate

Date

: 21.11.2013

: REMV / 84

#### Acknowledgements

First, I sincerely thank to my employer, the Urban Development Authority (UDA) and specially Mrs. I.S.Weerasoori, former Deputy Director General of the UDA who have arranged for me to undertake the M.Sc. in Real Estate Management and Valuation Degree course.

I wish to express my deep sense of gratitude to my Supervisor, and former Course Coordinator Mrs. K.G.P.K.Weerakoon, Senior Lecturer of Department of Real Estate Management & Valuation for her constant supervision and advice in completing the research study. Her exemplary guidance, monitoring and ideas in numerous discussions throughout the research process contributed immensely to the success of my dissertation. I am truly indebted for her commitment and support.

I would like to thank the Head of the Department of Estate Management & Valuation, University of Sri Jayewardenepura and being the Course Coordinator Professor R.G.Ariyawansa for his valuable comments and support to undertake the research.

I recorded my sincere gratitude and appreciate to Mr. H.M.S. Premasiri, Deputy Director, Mrs. G.Madiwake, Deputy Director (Project management Division), and Mr. Agil Hewageegange, Chef Engineer (Hambantota Harbor) also my colleagues and friends at the Urban Development Authority who kindly support me to collect most of data employed.

My colleagues and all other personal that have helped me in many ways in accomplishing my research study, I must express my sincere gratitude to them.

Last but not the least, words of deep gratitude goes to my parents, brother and sister for their love, their help, for always trusting and supporting me. The research was limited to selected key areas identified as the most relevant for city development and compromised functional activities of the city area. Further studies can be undertaken for the purpose of finding the total requirements of the urban area and for evaluating future land requirements for the city, which will be affective to decide the zoning system of the Urban Development Plan.

## **Table of Content**

Cor	ntent	Page No:
	Inner title page	i
	Supervisor's Declaration page	ii
	Student Declaration page	iii
	Acknowledgement	vii
	Abstract	ν
	Table of Contents	vii
	List of Table	xii
	List of Figures	xv
	List of Maps	xvii
	List of Annexure	xviii
	References	xix
СН	<b>IAPTER ONE – Introduction</b>	
1.1 I	Background of the Study	01
1.2 \$	Statement of the Problem	03
1.3 \$	Significance of the Study	05
1.4 (	Objectives	07

- 1.5 Methodology 07
  - 1.5.1 Type of data to be Collected

1.5.2 Data Collection

1.5.3 Data Analysis

1.0 Liningations of the brady	1.6	Limi	tations	of	the	Study
-------------------------------	-----	------	---------	----	-----	-------

1.6.1 Organization of Chapters of the Report

10

### **CHAPTER TWO - Literature Review**

2.1 Cities in the Urban form	13
2.2 Port-City Concepts and Perspectives	14
2.3 Port City Identification	17
2.4 Definitions for port Cities	18
2.5 Spatial Dysfunction of Port City	20
2.6 Functional Combination of Port Cities	21
2.7 Empirical works for port and city Relationship	22
2.7.1 Leading factors for port growth	
2.7.2 Behavioral Approach of Port City	
2.7.3 Governance Approach	
2.8 Port and Urban Surrounding	28
2.9 Study Evolution Methods of Port-City Interface	29
2.10 Transitions of Port-City Interface	30
2.11 Spatial Models of Port-City Interface	32
2.12 Renewal of Port-City Links	36
2.13 International case studies about Port Cities	37
CHAPTER THREE - Research Design	

3.1 Concept of Design	38
3.2 Conceptual plan for Interrelationship of each segment	40
3.3 Data collection Techniques	41

#### 3.3.1 Types of Data

3.4 Data collection

3.4.1 Data collecting from relevant organizations

3.4.2 Data collecting from existing data base

3.4.3 Data collection by observation

3.5 Data analysis

3.5.1 Qualitative Data Analysis

3.5.2 Quantitative Data Analysis

3.5.3 Land use Data Analysis

#### **CHAPTER FOUR - Case Study**

4.1 Regional Settings
4.1.1 Historical Overview
4.1.2. Geographical Location
4.1.3. Geographical & climatic condition
4.1.4. National Linkages
4.1.5. Regional and local Linkages
4.1.6. Future Urban Hierarchy of Sri Lanka
4.1.7. The existing Urban Hierarchy of Southern Province
4.1.8. The existing urban hierarchy of Hambantota District
4.1.9. Economical back ground Comparison of Sri Lanka & Hambantota
4.1.10. Traditional Economic base
4.2. Land use pattern of Hambantota District
4.3 District Population Data

45

62

63

4.4 Housing Stock	65
4.5 Selecting the study area	65
4.6 Justification of selecting the study Area	65
4.7 Major Development Potentials in Hambantota M.C area	66
4.8 Land use pattern of Study Area	67
4.9 Demographic Data	69
4.9.1 Population in gender vise of study Area	
4.9.2 Unemployment Population	
4.9.3 Number of House hold	
4.9.4 Housing Density of Study Area	
4.10 Project details of Study Area	73
4.10.1 Hambantota Port Construction project	
4.10.2 Other Type of Sub Projects	
4.11 The Overall progress of major Projects in Study Area	81
CHAPTER FIVE – Analysis Relationship Port and Port City	
5.1 Progress of Port Project and other key Infrastructure Project	84
5.1.1 Progress of Harbor Construction Project	
5.1.2 Road Constructions Projects	
5.1.3 Water Supply Projects	
5.2 The Relationship of selected Projects with Harbor Project	90
5.3 Test feasibility of Port project	91
5.4 Trend calculations of Operation Stage	93
5.5 Test Feasibility of Location factors Hambantota Port Project	93
5.5.1 Port Accessibility	

5.5.2 Size of Hinterland	
5.5.3 Closeness to high Import and Export area	
5.5.4 Closeness to main Navigation Routes	
5.5.5 Proximity of Competing Ports	
5.5.6 Proximity to feeder Ports	
5.5.7 Space Availability for future Expansion	
5.5.8 Good water Conditions	
5.6 Evaluation of Port Trends	100
5.7 Population projections with key Projects	103
5.8 Projections of Social Infrastructures	105
5.8.1 Quantitative guidelines - Educational facilities	
5.8.2 Quantitative guidelines - Health facilities	
5.8.3 Quantitative guidelines - Recreational facilities	
5.8.4 Quantitative guidelines - Cultural facilities	

5.8.5 Quantitative guidelines - Administrative facilities

5.8.6 Quantitative guidelines - Commercial, Housing & parking facilities

### **CHAPTER SIX - Conclusions & Recommendations**

6.1 Conclusions	114
6.2 Illustrating of Port trend figures	117
6.3 Interrelationship port trend and other infrastructures	117
6.4 Recommendations	118

## List of Table

Table	Page No:
2.1 Urban Definitions with Population Size and Other Criteria	14
3.1 Data sectors of taking in two Stages	41
3.2 Operation stage Data	42
3.3 Data sectors and sub sectors in Operation Stage	43
3.4 Physical Infrastructures Details	44
3.5 Data collecting from relevant Organizations	44
4.1 Economical Background of Hambantota and Sri Lanka	61
4.2 Land use pattern of Hambantota	62
4.3 Hambantota District population Data	64
4.4 Housing stock and type of housing in District	65
4.5 Land use pattern of Study Area	68
4.6 G.N wise Population	68
4.7 Population, Land Extent and density of study Area	69
4.8 Population in gender wise of study Area	69
4.9 Unemployment population Rate of study Area	71
4.10 Number of House hold in Study	72
4.11 Housing Density of Study Area	72
4.12 Port Project Details	74

4.13 Main parameters of Port project	74
4.14 progress of the Port project	76
4.15 Roads Project Details	78
4.16 Progress of Road Constructions	78
4.17 Progress of Electricity Projects	78
4.18 Details of Water Projects	79
4.19 Total Water Requirements	80
4.20 Details of Telecommunications projects	81
4.21 Progress of Telecommunication projects	81
4.22 Overall progress key projects of Hambantota	82
5.1 Progress of selected key Projects	89
5.2 Correlation of selected Projects	90
5.3 Project Progress of Key Projects	92
5.4 Evaluate Accessibility for Hambantota	95
5.5 Evaluate size of Hinterland for Hambantota	95
5.6 Evaluate closeness to High Import and Export area	96
5.7 Evaluate Competitors for Hambantota Port	98
5.8 Evaluation of Proximity to feeder Ports	99
5.9 Evaluation of Port Trends	100
5.10 Trends of Each Project with Port	101
5.11Correlation sea Port and selected key Projects	102
5.12 Population Projections	103
5.13 Correlation of Population with selected Projects	104
5.14 Quantitative guidelines - Educational facilities	106

5.15 Quantitative guidelines - Health facilities	107
5.16 Quantitative guidelines - Recreational facilities	108
5.17 Quantitative guidelines - Cultural facilities	108
5.18 Quantitative guidelines - Administrative facilities	109
5.19 Quantitative guidelines - Commercial, Housing & parking facilities	110

# List of Figures

Figures	Page No:
1.1 General Concept Plan for the Study	08
1.2 Conceptual Plan for Design of the Study	12
2.1 A matrix of port-city relationships	21
2.2 Different stages in the traditional Port-City Interface	30
2.3 Emergence of 'non-port' places or 'non-place' Ports	31
2.4 Port-city spatial structures at Different levels	33
2.5 A model of northern range port's situation in Europe	34
2.6 Spatial model of the European Port City	35
3.1 Conceptual plan for data collection	38
3.2 Identification of relationships each Institution	39
3.3 Conceptual plan for Inter Relationship	40
3.4 Formula for weighting Average figures	47
3.5 Flour chart for data collection	47
3.6 Formula for correlation	49
3.7 Conceptual plan for Data Analysis	50
4.1 Land use pattern	63
4.2 Population in gender wise	70
4.3 Unemployment Rate	71
4.4 Housing number of study area	73
4.5 progress of the port Project	77
4.6 Progress of water Projects	80
4.7 Overall progress of selected Projects	82
5.1 Progress of Harbor Project	85
5.2 Progress of Roads construction Projects	86
5.3 Progress of water supply Projects	87
5.4 Progress of Electricity supply Projects	88
5.5 Progress of selected key Projects	89
5.6 Correlation of selected each project with Harbor Project	91
5.7 Trend Line for Harbor Project in Construction Stage	92
5.8 Location factors affecting Port Attractiveness and competitions.	94

5.9 Trends of Each project with Port 5.10 Correlation Sea port and selected key Projects	101 103