LOCATING THE POOR: SPATIAL POVERTY MAPPING OF HOUSEHOLD IN RAJSHAHI CITY, BANGLADESH

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LOCATING THE POOR: SPATIAL POVERTY MAPPING OF HOUSEHOLD IN RAJSHAHI CITY, BANGLADESH

BY

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Dedication

This work is dedicated to the memory of…

my departed father, Md Mahazon Moral, who guided me to the right path;

my active mother, Burizan Bebe for her love, prayers, pains and troubles

…….to the third inspiring men towards my study……

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Table of Contents

		Page no
Title page		ii
Dedication		iii
Acknowledgements		iv
Table of Contents		vii
List of Tables		xiii
List of Figures		xvii
List of Plates		xix
Abstrak		xx
Abstract		xxi
CHAPTER 1- INTRODUCTION		1
1.1	Background	1
1.2	Statements of the problem	4
1.3	Research questions	5
1.4	Objectives	6
1.5	Significance of the study	6
1.6	Study areas	8
1.7	Scope of the study	9
1.8	Limitations of the study	9
1.9	Thesis layout	10
1.10	Conclusion	10
CHAPTER 2- LITERATURE REVIEW		13
2.1	Introduction	13
2.2	Theoretical structure of poverty	13
2.2.1	Urban poverty	17
2.2.2	Concept of slums	19
2.2.3	Poverty and urbanization	22
2.2.4	Urban poverty and unemployment	23

2.2.5 Poverty, development and equity 23
2.2.6 Vulnerability and urban poverty 25
2.2.7 Poverty and logistic regression 26
2.3 Concept of poverty mapping 27
2.3.1 Urban poverty mapping 28
2.3.2 Poverty mapping functions 29
2.3.3 Applications of poverty mapping 30
2.3.3.1 Poverty mapping for poverty reduction strategic program 30
2.3.3.2 Poverty mapping for emergency response and food aid 31
2.3.3.3 Poverty mapping for state and local level decision making 32
2.4 Spatial disaggregate poverty mapping in Sri Lanka 32
2.5 Poverty mapping in Bangladesh 32
2.6 Poverty alleviation program in Bangladesh through microcredit 36
2.7 Literature gap for this study 36
2.8 Conclusion 37
CHAPTER 3- RESEARCH METHODOLOGY 38
3.1 Introduction 38
3.2 Measures of poverty 38
3.3 Poverty mapping 42
3.4 Methods of poverty mapping 43
3.4.1 Generic steps of poverty mapping 44
3.4.2 Poverty mapping based on household survey and census data 49
3.4.3 Poverty mapping based on household survey and area indicators 50
3.5 Methods of data collection 51
3.6 Sampling and sample size 52
3.7 Sources of data 53
3.7.1 Field data 53
3.7.2 Spatial data from Rajshahi Development Authority (RDA) office 54
3.7.3 Household income and expenditure survey (HIES) 54

3.7.4 Child nutrition survey (CNS) 55
3.7.5 Census, 2001 55
3.8 Logistic regression model of predicting poverty 55
3.9 Software's used in the study 58
3.10 Conclusion 58
CHAPTER 4- SPATIAL POVERTY MAPPING OF HOUSEHOLD 59
4.1 Introduction 59
4.2 Spatial disaggregate poverty mapping 59
4.3 Poverty mapping of household (HH) income 63
4.3.1 Household income group and mapping 65
4.3.2 Employment condition of the urban poor 73
4.4 Poverty mapping of household education 80
4.5 Poverty mapping of household housing 87
4.5.1 House tenure 88
4.5.2 Floor area and living period 90
4.5.3 Housing condition 92
4.5.4 Living rooms/ bedrooms 94
4.6 Poverty mapping of household health 101
4.6.1 Sources of water of the poor 104
4.6.2 Quality of drinking and living water of the poor 105
4.6.3 Health facilities of the urban poor 110
4.7 Discussion 114
4.8 Conclusion 118
CHAPTER 5- SURROUNDING LOCAL ENVIRONMENT AND THE POOR 119
5.1 Introduction 119
5.2 Spatial location of infrastructure and the urban poor 119
5.2.1 Spatial location of dustbin and the poor 119
5.2.2 Spatial pattern of electricity and the poor 126
5.2.3 Spatial pattern of water supply and the poor 131

5.3 Surrounding local services of the urban poor 141
5.3.1 Sanitation 141
5.3.2 Daily garbage 143
5.3.3 Sewerage 145
5.3.4 Road lighting and accessibility 147
5.3.5 Noise 148
5.3.6 Public security and cultural atmosphere 148
5.4 Vulnerability and urban poverty 150
5.4.1 Diversity of vulnerability 150
5.4.1.1 Environmental vulnerability 150
5.4.1.2 Market vulnerability 155
5.4.1.3 Political vulnerability 155
5.4.1.4 Social vulnerability 155
5.4.1.5 Health vulnerability 156
5.4.2 Association between vulnerability and urban poverty 156
5.4.3 Factors related to community vulnerability and urban poverty 158
5.5 Discussions 161
5.6 Conclusions 165
CHAPTER 6- DETERMINANTS OF POVERTY 166
6.1 Introduction 166
6.2 Factors affecting on urban poverty 166
6.2.1 Overpopulation with limited resources 167
6.2.2 Locational factors 167
6.2.3 Lack of education 168
6.2.4 Political causes of poverty 169
6.2.5 Inadequate social services 169
6.2.6 Environmental degradation 170
6.2.7 Disaster 170
6.3 Logistic regression model of identifying poverty 171

6.4 Univariate logistic regression of demographic variables 171

6.5 Stepwise multivariate logistic regression to determine influential demographic variables 174

6.6 Univariate logistic regression of socio-economic variables 175

6.7 Stepwise multivariate logistic regression to determine influential socio-economic variables 179

6.8 Univariate logistic regression of environmental variables 180

6.9 Stepwise multivariate logistic regression to determine the influential environmental variables 185

6.10 Stepwise multivariate logistic regression to determine the top most influential demographic, socio-economic and environmental variables 187

6.11 Comparison with other models 190

6.12 Implementation of the model 195

6.13 Conclusion 195

CHAPTER 7- SUMMARY AND CONCLUSIONS 197

7.1 Introduction 197

7.2 Summary of the findings 197

7.2.1 Spatial poverty mapping of household 197

7.2.2 Spatial infrastructure of the urban poor 199

7.2.3 Surrounding local environment of the urban poor 200

7.2.4 Vulnerability and the urban poverty 201

7.2.5 Determinants of the urban poverty 202

7.3 Conclusion 203

7.4 Contribution to Knowledge and Society 203

7.4.1 Model applications 203

7.4.2 Lessons related to strategic level 204

7.4.3 Spatial information support for action planning at household level for poverty alleviation 204

7.4.4 Spatial information support for managing the poor households 205

7.5 Proposed Future Research 205

7.6 Recommendations 205

7.6.1 Poverty reduction 205
7.6.2 Reduce vulnerability 206
Bibliography 207
Appendix A 220
Appendix B 223
Appendix C-Questionnaire 236
List of publications 241

List of Tables

		Page no
Table 2.1	Major components of poverty	16
Table 3.1	Classification of poverty by income	40
Table 3.2	Indicator of human well-being of poverty	42
Table 3.3	Distribution of sample size	53
Table 4.1	Deprivation of urban poor in the study areas	62
Table 4.2	Income poverty of household (%)	64
Table 4.3	Monthly total income and consumptions of the HHs	71
Table 4.4	Monthly total saving of the HHs	72
Table 4.5	Employment conditions of the head of household (HH)	74
Table 4.6	Employment condition of the poor at Meherchandi	74
Table 4.7	Employment condition of the poor at Keshubpur	74
Table 4.8	Employment sectors of the HH in the study areas	77
Table 4.9	Employment sectors of the poor at Meherchandi	78
Table 4.10	Employment sectors of the poor at Keshubpur	78
Table 4.11	Reasons of unemployment of the HH in the study areas	79
Table 4.12	Reasons of unemployment of the poor at Meherchandi	79
Table 4.13	Reasons of unemployment of the poor at Keshubpur	79
Table 4.14	Education level of the head of households (HH)	81
Table 4.15	Education level of the poor at Meherchandi	81
Table 4.16	Education level of the poor at Keshubpur	82
Table 4.17	House tenure of the respondents in the study areas	89
Table 4.18	House tenure of the poor at Meherchandi	89
Table 4.19	House tenure of the poor at Keshubpur	90
Table 4.20	Floor area of the houses of the respondents	90

Table 4.21	Living period of the respondents	91
Table 4.22	Living period of the poor at Meherchandi	91
Table 4.23	Living period of the poor at Keshubpur	91
Table 4.24	Housing condition of the respondents	93
Table 4.25	Housing condition of the poor at Meherchandi	93
Table 4.26	Housing condition of the poor at Keshubpur	93
Table 4.27	Living room of the respondent in study areas	97
Table 4.28	Living rooms of the poor at Meherchandi	97
Table 4.29	Living rooms of the poor at Keshubpur	97
Table 4.30	Sanitation conditions in the study areas	103
Table 4.31	Sanitation (toilet) condition of the poor at Meherchandi	103
Table 4.32	Sanitation (toilet) condition of the poor at Keshubpur	104
Table 4.33	Sources of drinking water in the study areas	105
Table 4.34	Sources of drinking water of the poor at Meherchandi	105
Table 4.35	Sources of drinking water of the poor at Keshubpur	105
Table 4.36	Quality of drinking water in the study areas	106
Table 4.37	Quality of drinking water of the poor at Meherchandi	106
Table 4.38	Quality of drinking water of the poor at Keshubpur	106
Table 4.39	Quality of bathing water in the study areas	106
Table 4.40	Quality of bathing water of the poor at Meherchandi	107
Table 4.41	Quality of bathing water of the poor at Keshubpur	107
Table 4.42	Health facilities in the study areas	110
Table 4.43	Health facilities of the poor at Meherchandi	111
Table 4.44	Health facilities of the poor at Keshubpur	111
Table 5.1	Distance of the poor household from dustbins	123

Table 5.2	Distance of household from hand pumps	134
Table 5.3	Types of toilet of the respondents in the study areas	141
Table 5.4	Types of toilet of the poor at Meherchandi	142
Table 5.5	Types of toilet of the poor at Keshubpur	142
Table 5.6	Daily garbage management in the study areas	144
Table 5.7	Garbage collection system in the study areas	144
Table 5.8	Garbage management condition in the study areas	144
Table 5.9	Garbage management of the poor at Meherchandi	144
Table 5.10	Garbage management of the poor at Keshubpur	145
Table 5.11	Sewerage condition of the respondents in the study areas	146
Table 5.12	Sewerage condition of the poor at Meherchandi	146
Table 5.13	Sewerage condition of the poor at Keshubpur	146
Table 5.14	Road accessibility	147
Table 5.15	Public security in the study areas	149
Table 4.16	Cultural Environment in the study areas	149
Table 5.17	Vulnerability scenario of the study areas	151
Table 5.18	Vulnerability scenarios of the poor at Meherchandi	152
Table 5.19	Vulnerability scenarios of the poor at Keshubpur	152
Table 5.20	Flood frequency of study areas	152
Table 5.21	Flood frequency of the poor at Meherchandi	153
Table 5.22	Flood frequency of the poor at Keshubpur	153
Table 5.23	Amount damaged by flood (BDTaka)	153
Table 5.24	Amount damaged by flood of the poor at Meherchandi	154
Table 5.25	Amount damaged by flood of the poor at Keshubpur	154
Table 5.26	Chi-Square result between vulnerability and the poor	156

Table 6.1	Logistic regression (LR) of demographic variables	173
Table 6.2	Stepwise multivariate logistic regression and the influential demographic variables	175
Table 6.3	Logistic regression (LR) of socio-economic variables.	178
Table 6.4	Stepwise logistic regression and the influential socio-economic variables	180
Table 6.5	Logistic regression (LR) of environmental variables	184
Table 6.6	Stepwise multivariate logistic regression and the influential environmental variables	186
Table 6.7	Showing R^2 value of model summary	188
Table 6.8	Classification table showing percentage of correct	189
Table 6.9	Stepwise multivariate logistic regression and top most influential indicators of poverty	190
Table 6.10	Logistic regression analyses done by some previous researchers	193

List of Figures

		Page no
Figure 1.1	Study areas	11
Figure 1.2	Layout of thesis	12
Figure 2.1	Individual explanation model of urban poverty	18
Figure 2.2	Structure explanation model for urban poverty	19
Figure 2.3	Slum definition	21
Figure 2.4	Conceptual framework of slum formation	21
Figure 2.5	Conceptual framework of urban poverty	22
Figure 2.6	Spatial variation of the percentage of the poor households	33
Figure 2.7	Poverty map of Bangladesh	34
Figure 2.8	Possibility of extreme poverty in Bangladesh	35
Figure 3.1	Research design of the study	47
Figure 3.2	Approaches of poverty mapping by using survey data	48
Figure 3.3	Data collection methods for poverty assessments	52
Figure 4.1	Poverty mapping of HH's income at Meherchandi	66
Figure 4.2	Poverty mapping of HH's income at Keshubpur	67
Figure 4.3	Income groups at households (HHs) level	70
Figure 4.4	Mapping of household income groups at Meherchandi	75
Figure 4.5	Mapping household income groups at Keshubpur	76
Figure 4.6	Poverty mapping of household education at Meherchandi	83
Figure 4.7	Poverty mapping of household education at Keshubpur	84
Figure 4.8	Comparative distributions between education and poverty at Meherchandi	85
Figure 4.9	Comparative distributions between education and poverty at Keshubpur	86
Figure 4.10	Poverty mapping of household housing at Meherchandi	95
Figure 4.11	Poverty mapping of household housing at Keshubpur	96
Figure 4.12	Comparative distributions between housing condition and poverty at Meherchandi	99
Figure 4.13	Comparative distributions between housing condition and poverty at Keshubpur	100
Figure 4.14	Cycles of poverty and sanitation	101
Figure 4.15	Poverty mapping of household sanitation at Meherchandi	108
Figure 4.16	Poverty mapping of household sanitation at Keshubpur	109
Figure 4.17	Comparative distributions between sanitation and poverty at Meherchandi	112

Figure 4.18	Comparative distributions between Sanitation and poverty at Keshubpur	113
Figure 5.1	Locations of wastebin and buffering zone at Meherchandi	121
Figure 5.2	Location of wastebin and buffering zone at Keshubpur	122
Figure 5.3	Locations of wastebin and the poor at Meherchandi	124
Figure 5.4	Locations of wastebin and the poor at Keshubpur	125
Figure 5.5	Patterns of electricity and different distance zones at Meherchandi	127
Figure 5.6	Patterns of electricity and different distance zones at Keshubpur	128
Figure 5.7	Spatial pattern of electricity and the poor at Meherchandi	129
Figure 5.8	Pattern of electricity and the poor at Keshubpur	130
Figure 5.9	Locations of hand pumps and buffering zones of at Meherchandi	132
Figure 5.10	Locations of hand pumps and buffering zones at Keshubpur	133
Figure 5.11	Location of hand pumps and the poor at Meherchandi	135
Figure 5.12	Location of hand pumps and the poor at Keshubpur	136
Figure 5.13	Locations of water supply lines and buffering zones at Meherchandi	137
Figure 5.14	Locations of water supply line and buffering zones at Keshubpur	138
Figure 5.15	Location of water supply line and the poor at Meherchandi	139
Figure 5.16	Location of water supply line and the poor at Keshubpur	140
Figure 5.17	Environmental scenario of the urban poor	142
Figure 5.18	Vulnerability of the investigated Mouzas	154
Figure 5.19	Casual relationships between poverty and vulnerability	157

List of Plates

		Page no
Plate 4.1	Houses on the flood protection barrage of the river Padma of the urban poor at Keshubpur	87
Plate 4.2	Horrific quality of house of the urban poor at Meherchandi	98
Plate 4.3	Bad quality of house of the urban poor at Meherchandi	98
Plate 5.1	Vulnerable places at Keshubpur	158
Plate 5.2	Vulnerable place and the houses of the poor at Keshubpur	159
Plate 6.1	Houses of the urban poor nearby rail lines at Meherchandi	168

MEMETAKAN GOLONGAN MISKIN: PEMETAAN KEMISKINAN RUANGAN DI BANDAR RAJSHAHI, BANGLADESH

Abstrak

Objektif utama dalam kajian ini ialah untuk menganalisis dan memetakan kemiskinan isi rumah secara ruangan, mengenalpasti infrastruktur dan perkhidmatan yang diperolehi oleh golongan ini serta mengkaji hubungan antara kerentanan dan kemiskinan. Kajian ini juga menggunakan analisis statstik regresi logistik untuk memperolehi petunjuk kemiskinan yang paling dominan. Maklumat ruangan dan bukan ruangan yang digunakan dalam kajian ini diperolehi daripada dokumen-dokumen penerbitan, pangkalan data Badan Pembangunan Rajshahi dan menggunakan borang soal selidik di lapangan. Petunjuk kemiskinan isi rumah secara ruangan seperti pendapatan, pendidikan, perumahan dan kesihatan adalah merupakan pembolehubah yang digunakan dalam kajian ini. Kepelbagaian ruangan kemiskinan isi rumah yang terdapat dalam kawasan kajian adalah dipengaruhi oleh faktor letakan, sosio-ekonomi dan persekitaran. Bagi kawasan Mehercandi, hampir 42% daripada isi rumah hidup di bawah paras kemiskinan dan 36% daripadanya berada di Keshubpur. Bagi kedua-dua kawasan kajian ini, sekitar 18% daripada ketua isi rumah tidak mendapat pendidikan formal. Keadaan rumah pula berada dalam kategori teruk dan sederhana bagi penduduk miskin. Kekurangan kemudahan kesihatan seperti bekalan air tidak terawat, kekurangan kemudahan rawatan dikenalpasti di kawasan kajian Mouzas (kampung). Golongan miskin tinggal dalam persekitaran yang teruk dengan kemudahan dan perkhidmatan yang tidak mencukupi. Kerentanan adalah merupakan masalah paling besar, yang mempengaruhi kehidupan mereka setiap hari. Petunjuk kemiskinan yang paling berpengaruh adalah kelemahan sanitasi, kesihatan, pendidikan, saiz keluarga dan simpanan yang ditentukan melalui analisis logistik regresi. Kajian ini memberi sumbangan terhadap usaha mengurangkan kadar kemiskinan di Bangladesh dengan menyediakan maklumat isi rumah miskin secara ruangan. Dengan menggunakan maklumat-maklumat ini pelbagai dasar strategik boleh dibangunkan untuk mengatasi masalah kemiskinan yang dihadapi.

LOCATING THE POOR: SPATIAL POVERTY MAPPING OF HOUSEHOLD IN RAJSHAHI CITY, BANGLADESH

Abstract

The main objectives of the study are to analyze the spatial poverty mapping of household, determine spatial infrastructure and services of the poor and to find out the association between vulnerability and poverty. The study also analyzes the application of logistic regression to determine the most influential indicators of poverty. The spatial and non-spatial information are used in the study which are assembled from the published documents, database of Rajshahi Development Authority (RDA) and field investigations using a structured questionnaire. The spatial household poverty mapping of income, education, housing and health are analyzed in the study. The spatial heterogeneous poverty mapping of household is found in the study areas, which is affected by locational, socio-economic and environmental factors. In Meherchandi and Keshubpur, nearly 42% and 36% of the households live below poverty respectively. In the study areas, around 18% of the head of household have no institutional education. Bad to moderate categories of houses are found among the poor. Inadequate health facilities including unhygienic bathing water, lack of treatment facilities are found in the investigated mouzas (villages). The poor are living in indecent environment with inadequate infrastructure and services. Vulnerability is a great problem, which effects on their daily life. The most influential indicators of poverty are sanitation, health, education, family member and saving, which are done by logistic regression. The research can contribute toward poverty reduction in Bangladesh by providing spatial household information of the poor. Strategic policy of poverty can be developed by using the spatial household poverty mapping information.

CHAPTER 1

INTRODUCTION

1.1 Background

Every day, 2.8 billion people in developing countries out of 6 billion overall global populations are fighting in order to earn money for a cup of tea of developed countries (Henninger and Snel, 2002). About 1.2 billion of the poor people live in severe poverty level and their income are below than a single dollar per day. It is a very difficult task to alleviate poverty since this is a global problem. In the Millennium summit, 189 countries are committed to reduce fifty percent poverty by 2015.

Historically, poverty concentrated in rural areas. But due to rural- urban migration of the poor, it became an urban problem. Since 1980, several factors including economics crisis, massive rural to urban migration had contributed to increase the quantity of urban poor (World Resource Institute, 1997). In 1988, about one quarter absolute poor in the developing world was living in urban areas (World Bank, 2001). The increasing number of the urban poor mainly come from two population groups. The first group consists of unemployed and laid-off urban people. The second kind comes from rural-to-urban migrants.

In the past few decades, owing to migration, urbanization has accelerated in the developing countries. In 1970, 37 percent of the world's population resided in cities. By 2025, the proportion will have increased to almost two thirds (World Resource Institute, 1997) of the total global populations. Today, the cities in the World are facing a serious poverty problem. Now, almost half of the total populations live in below poverty line and the most of them live in the cities of developing countries (Henninger and Snel, 2002, p.5).

Cities are the centers of industry and commerce as well as have the wealth and political power. Most national income comes from the cities. In the developing world, 80 percent of upcoming economic growth will be occurred in the cities at near future (Bartone, 1994, p.9-10). Besides, the contribution to economic development of urbanization also play vital role to increase household incomes, improvement of health, higher literacy, and better-quality living including access of information, diversity, creativity, and innovation (World Resource Institute, 1997). Urban poverty is one of the major problems in the cities of developing countries. The challenge of 21st century is how to improve the living condition of urban poor (UNCHS, 2003).

Local, national, and international decision-makers have been trying to ways to reduce such deep widespread poverty for long time. International development institutions increasingly emphasize on poverty reduction policies. For instance, in September 2000, during UN millennium summit, representatives of 189 countries approved Eight Millennium Development Goals. The first and second target was to reduce current poverty into halve from 1990 to 2015 (Henninger and Snel, 2002, p.5).

Many anti-poverty programs are implemented. But, still poverty level is very high in the world. In recent times, a new tool of poverty reduction is adapted known as poverty mapping. Poverty mapping is new concept for poverty alleviation, where maps are used as a powerful tool for presenting information of poverty (Henninger and Snel, 2002). By using poverty mapping, it is easy to identify the areas of development lags, where investments are needed. That is why poverty mapping is becoming an important tool for the integrated exploration of social, economic and environmental issues. The spatial indicators of human wellbeing are easily explored in poverty mapping (Davis 2002). It is very easy to understand the maps of poverty; even non-specialists are able to understand the exploration of mapping. Nowadays, many policy makers, non-governmental entities including civil society, academic institutions, and private businesses organization apply the tool of poverty mapping for their own investigation.

At present, the uses of poverty mapping are increasing due to i) availability of relevant data; ii) readily available mapping technologies, such as Geographic Information Systems (GIS) and mapping softwares; iii) statistical methods of poverty mapping based on econometric techniques (sometimes referred to as small area estimation); iv) and increasing stress on poverty reduction programs and policies in international and national development assistance organizations (Henninger and Snel, 2002). That is why, poverty mapping in developing countries has become an important tool to identify the ways of improving lives.

Bangladesh is one of the poor countries in the world. Out of 140 million total populations, around half of them live in deprivation (World Bank, 2003). Regional variations of poverty are visible in Bangladesh. The factors such as natural disasters, educational facilities, infrastructures and employment opportunities can make the boundary of poverty.

1.2 Statements of the Problem

In the 21st century, poverty reduction is a fundamental challenge for development. Many existing programs of poverty alleviation, initiated by different international organizations, have been continuing for long time. More than 1 billion people live in extreme poverty, whose income levels are less than US$ 1.00 per day. This figure of the poor people will be more than double if it is calculated by US$ 2.00 per day (OECD, 2001).

The extent of poverty varies from region to region or even country to country. Reflecting national priorities and local realities, developing countries need to prepare their own mix of policies to reduce poverty. The preferences will depend on economic, social, political, structural, and cultural content of the individual countries or household communities (World Bank, 2001, p.7).

Bangladesh is a poor country in the world. Around half of its total population (140 million) lives in deprivation. The highest intensity of absolute poverty (per sq. mile/km) is also seen. Near 47 million people suffer from moderate to severe starvation maximum period of the year. Only one third populations get enough food for their livelihood (Shafi, 1994).

Rajshahi city is one of the major divisional cities in Bangladesh. The total population of the city is near .64 million (2001) with a gross density of 7 persons/ acre. The city growth rate is around 1.73% slightly higher than national growth rate (1.47%). Majority of the households (61%) income are from US$ 35.00 to US$ 93.00 (BD taka 2500-6500) and 69.8% households' income from US$ 22.00 to US$ 65.00 (BD taka 1501 to 4500). If the current growth rate of the Labor force will continue then the labour force number will increase from 299,890 to 385670 from 2001-2021. In addition, about 27% of the labor force will not get any job (RDA 2004). The summary of the problem statements are as follows:

i. Poverty is a current global issue because almost half of the global populations live in poverty. The same situation present in Bangladesh.

ii. High intensity of poverty also present in the city of Rajshahi, where around one third of the labor will not get any job in future.

iii. Any research work on household poverty mapping in the city is not find yet.

1.3 Research Questions

The following research questions are investigated through the research.

Research Questions	Research tasks
• What is the spatial distribution of urban poor? Who are poor? Where they live? And why they are poor? • What are the factors affecting to the formation of urban poverty? • How much services they avail? • What are the associations between poverty and vulnerability?	• Analyze spatial household poverty mapping. • Explain the factors of urban poverty. • Spatial location of infrastructure and services and the urban poor. • Find out the casual association between poverty and vulnerability.

1.4 Objectives

In the poverty stricken city of Rajshahi, still there has no study on to highlight the spatial poverty mapping of household with finer resolution. The study is an attempt to fill up this gap. The overall main objectives of the study are to produce poverty mapping of household level to demonstrate policy intervention for poverty alleviation programs.

i. To analyze the spatial distribution of the poor households.
ii. To determine the spatial location of infrastructure and services and its relation with the urban poor.
iii. To analyze the vulnerability and its integration with urban poverty.
iv. To determine the most influential indicators of poverty using logistic regression.

1.5 Significance of the Study

The multidimensional wide spread deep poverty is a current issue not only in Bangladesh but also in many developing countries. Plenty of programs and tools are exploited to reduce such poverty. At the present time, spatial poverty mapping is used as a new tool of poverty reduction. Gradually, its significance has increased to alleviate poverty. The spatial mapping of poverty shows, where poverty is concentrated in a country or region, and where policies will have to be taken for the alleviation of poverty. Policymakers use poverty mapping for planning investments in education, health, sanitation, water, transport, and other sectors (World Bank, 1998).

Policy makers formulate the use of poverty mapping as an important tool. Firstly, it identifies the regional disparities of living standard and recognizes economically depressed areas. Secondly, it provides the information where different facilities targeting programmes such as education, health, credit and food aid have to be done. Thirdly**,** poverty associated factors such as topography, market access are highlighted. The highest food insecurity location or village for targeting aids is possible to find out to reduce food deficiency.

Household poverty mapping provides the information of the household poor along with surrounding local environmental dilemma. Household poverty maps can quickly provide information of spatial distribution of poverty at household level. So policy maker could easily target them for anti-poverty program. On that occasion, poverty mapping can help to find the exact needy household, where anti-poverty program should be implemented.

It provides the information of well being of a person in addition it highlights the spatial pattern or distribution of infrastructures and services as well as the availability of resources. It also shows the spatial distribution of transportation and communication facilities of the poor. It is more important as follows;

i. It provides quick information pertaining to spatial distribution of poverty for the development project.
ii. Non-specialist of GIS can easily understand the spatial analysis of poverty.
iii. It can help to identify the associated factors of poverty.
iv. It can help to improve the allocation system of resources. Poverty maps can help out, where and how the anti-poverty programs have to be taken.

v. It can facilitate to allocate the resources of anti-poverty programs to maximize among the poor and to minimize among the non-poor.
vi. Household poverty mapping promote subsidies among the poor people and cost recovery from the non poor people.

Currently, the significance of household poverty mapping is very high. Many international organizations are using poverty mapping for anti poverty program. For instance, World Food Program (WFP) is using poverty mapping for long time to ensure food distribution among the poor.

A new application of logistic regression is used to determine the most influential indicators of poverty. Through the analysis, it is possible to identify the indicators, which have great influences on poverty. The model can contribute to identify the most influential variables of poverty.

1.6 Study Areas

The fourth metropolitan Rajshahi city is taken as a case study. Rajshahi is a divisional and primate city in the northern region of the country. Day by day, the importance of the city as an urban centre is increased. Around .38 million populations live in the city (Bangladesh Population Census 2001). The city is located in the northern region of the country which known as an economically backward region. Economy and employment figures are not adequate as majority of the households (61%) income level are not enough for meeting up their family expenditure. If the current trends of poverty continue, then the living condition will be very terrible, a major portion of the population mayl not get job in the city (RDA, 2004). The highly poverty stricken two mouzas (Villages) from

the city are selected through purposively (Figure 1.1). One study area named Meherchandi is investigated from northern portion of the city and another named Keshubpur from southern part is explored for this study.

1.7 Scope of the research

The general aim of the study was to analyze the spatial poverty mapping of household in Rajshahi city. Therefore, the study addresses the issues such as poverty issue, association between poverty and vulnerability as well as finally develops the new application of logistic regression model to find out the top most influential variables of poverty. The city of Rajshahi is the second divisional city in Bangladesh. Many poor people live in the city. Many organizations such as UNDP, many NGOs and GO are working to reduce the current poverty level. The study provides the spatial poverty information of household. The study has wide scope to make strategic policy, planning and management of the urban poor not only in the study city but also in the whole country or even any other country in abroad.

1.8 Limitations of the Study

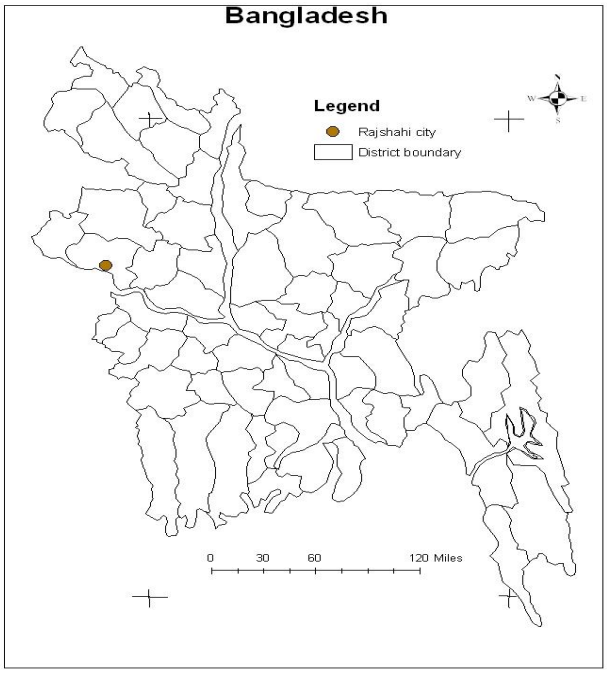
The research has some limitations. The poor respondents do not have any data of their regular income and expenditure. They provided all the data based on their assumptions. The poor people always busy to earn their daily income, they do not have enough time to provide data. The houses of the poor people are very close to each other; it is sometimes very difficult to differentiate from one house to another by used GPS receiver. Sometimes, GPS receiver gives the same reading of nearby two houses.

1.9 Thesis Layout

The whole thesis is subdivided into seven main chapters. First chapter highlights research background, motivation of study, problem statements, objectives and significance of the study. The second chapter reviews the existing literatures on poverty or poverty mapping or related topics. This chapter highlights the prior research work of poverty mapping as well as finally point out the literature gap for this study. Procedures of poverty mapping, sources of information, methods of data collection as well as analytical techniques of data are explored in the chapter three. The main findings and discussions of the thesis such as spatial poverty mapping of household, the surrounding local environment of the urban poor, the relationship between poverty and vulnerability, and determinants of the poverty are explained in details in the chapter four, five and six. Finally, the summary and Conclusion are highlighted in chapter seven (Figure 1.2).

1.10 Conclusion

The reasons for the interest of this study to the issue of spatial household poverty mapping along with the scope and objectives of this research work are demonstrated in this introductory chapter. The thesis outlines and study areas have also been highlighted in this division.



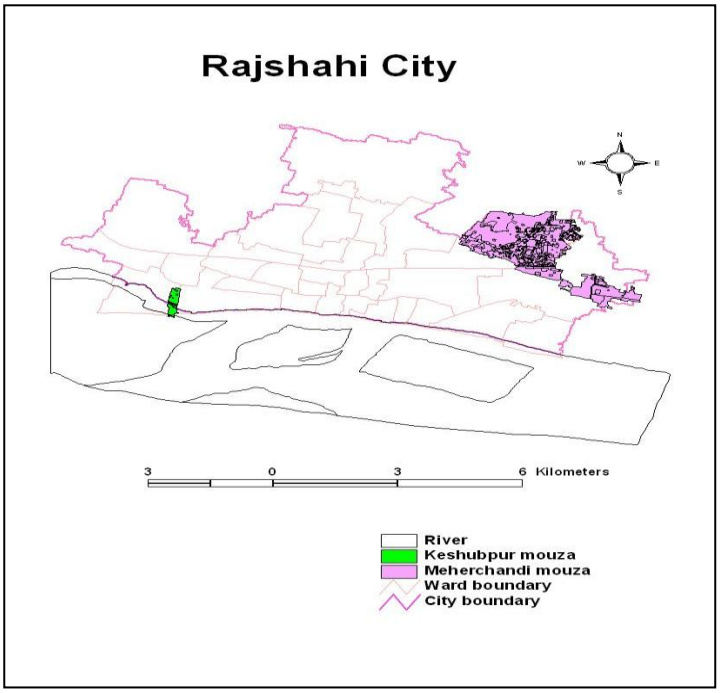


Figure 1.1 Study Areas

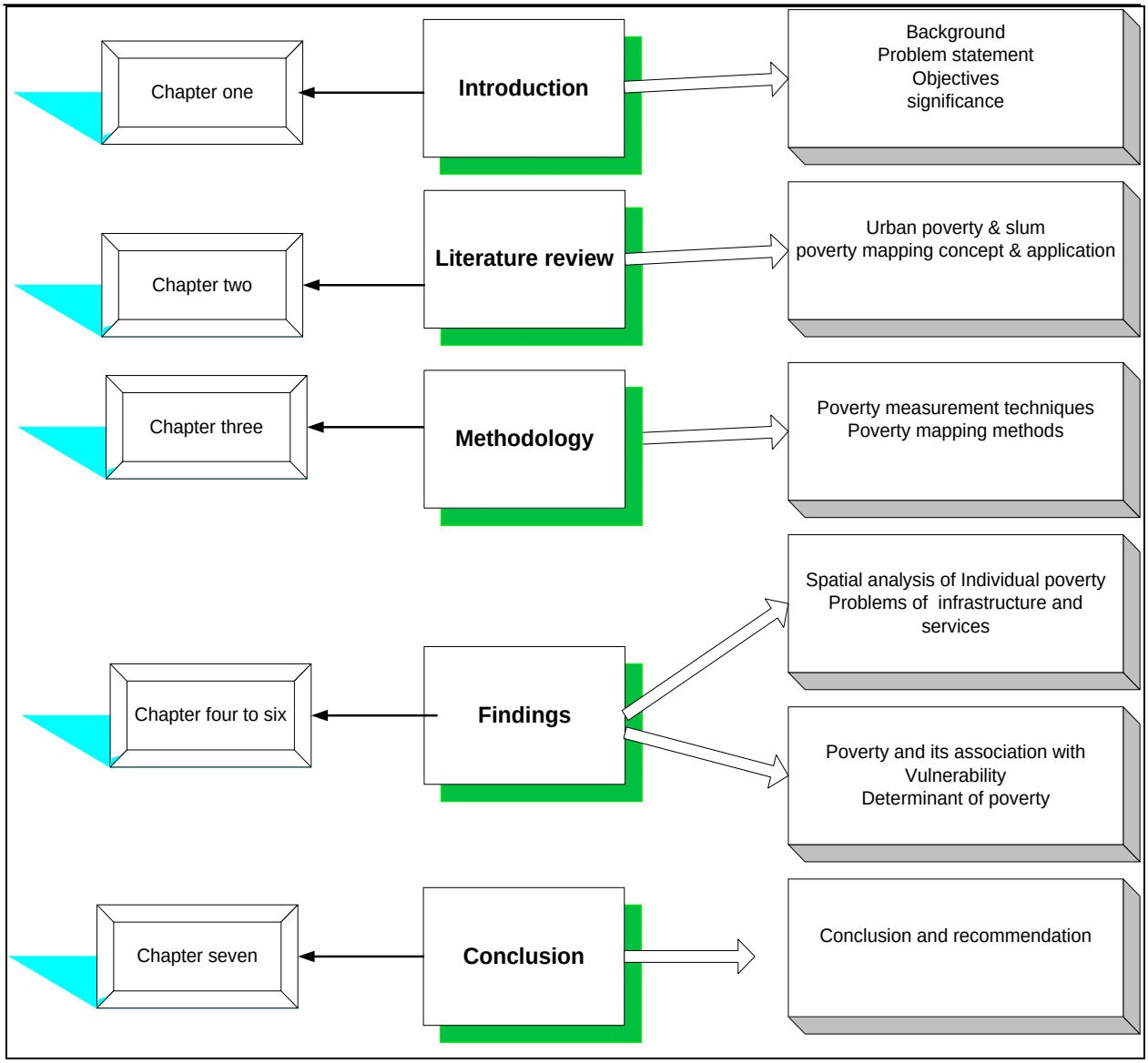


Figure 1.2 Layout of thesis

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter is developed from the interconnected lessons of prior research work for the development of theoretical background of the study. Related research articles and reports on poverty and poverty mapping from different national and international journals, different research reports of reputed organizations such as WHO, UNDP, FAO and so on, published and unpublished thesis's and related books are reviewed in the chapter. In the first section, the empirical recognitions of poverty concept and poverty mapping techniques in connection with development are depicted. In the last section, the applications of poverty mapping with some evidence are illustrated.

2.2 Theoretical structure of poverty

At first, the concept of poverty is explained before introducing urban poverty. The empirical identification of 'poverty' is interconnected with the words such as 'no money', 'lag', 'lack resources', 'illness', 'dirty', and the like. Scientific research exploration of poverty is necessary and as good to go beyond the empirical recognition. There are many definition of poverty.

In 2001, World Bank, one of the top most global organizations, defined the scientific definition of poverty. Lack of basic necessary requirements of human living standard is indicated as poverty. There are two main aspect of this definition. The first aspect is the necessary requirements and the second aspect is the standard of living condition. In addition poverty is defined as the deficiency of physiological needs such as food, clothing, housing and so on.

Many researchers defined poverty in different ways such as Reulinger and Selowsky (1976) defined poverty as people who are unable to meet the physical needs such as food, shelter, clothing and non-physical requirements such as health care, education, participation, identification requirements. Shiffman (1995) pointed six major fundamental aspect of poverty that is highlighted into as:

i. Basic survival materials such as enough food, clothes and housing
ii. Good quality infrastructure and services such as supply, health and education services respectively.
iii. Affection comprise avoiding dominate and misuse of people
iv. Access of education
v. Participation that means avoiding marginality, discrimination and lack of self-determination.
vi. Protection against crime, violence

In 2001, World Bank adds new dimensions in poverty definition known as “vulnerability”, “voicelessness” and “powerlessness”. The three most important dimensions is integrated for poverty definition which includes: (i) lack of income

and assets to attain basic necessarily food, shelter, clothing and acceptable levels of health and education; (ii) Sense of voicelessness and powerlessness in the institutions and society; (iii) Vulnerability; undesirable shocks and unable to cope.

Multidimensional poverty includes the following aspects:

i. Economic aspect includes income, consumption, savings and access to credits.
ii. Social aspect comprises health, education, the social relationship, several security, employment, and freedom of choice.
iii. Political aspect consists of decision-making power, participation in organization.
iv. Physical aspect takes account of food supply, house condition and infrastructure etc.
v. Environmental aspect includes clean air, water and avoiding natural hazards.
vi. Psychological aspect includes avoiding the sense of insecurity, isolation and despair.

In 1992, the International Fund for Agricultural Development (IFAD) identified eight broad components of poverty that are shown in the following table 2.1 (Jazairy & *et al*., 1992):

Table 2.1 Major components of poverty

Major components	Variables
Material deprivation	Inadequate food supplies, Poor nutritional status, Poor health, Poor education, Lack of clothing and housing, Fuel insecurity, Absence of provisions for emergencies.
Lack of assets	Material assets (land, agricultural inputs, etc.) Human capital (education, training, etc.).
Isolation	Social, political, and geographic marginalization Very limited access to transport, roads, markets, and communication links.
Alienation	isolation and exploitative social relations unemployed or underemployed, Lack marketable skills, Limited access to training and education.
Dependence	Skewed dependency relationships between landlord and tenant, employer and employee, creditor and debtor, buyer and seller, or patron and bonded laborer.
Lack of decision making power	Limited participation and freedom of choice.
Vulnerability to external shocks	External shocks natural (droughts, floods, cyclones etc.), Markets (collapse in commodity prices, labor supply and demand, etc.), demography (loss of a household's earning member, death, divorce, etc.), health (illness of earning member), and war
Insecurity	Risk of being exposed to physical violence.

Source: Jazairy & *et al*., 1992

The basic living standard of poor is divided in two types such as absolute poverty and relative poverty. The household, which unable to maintain the minimum basics needs, is known as absolute poverty. The calculation is done

by the cost of food, clothing and housing. A relative standard compares with living condition of social members. It sets a line as a percentage of average. For example, 20% of the lowest income households are called poor.

2.2.1 Urban poverty

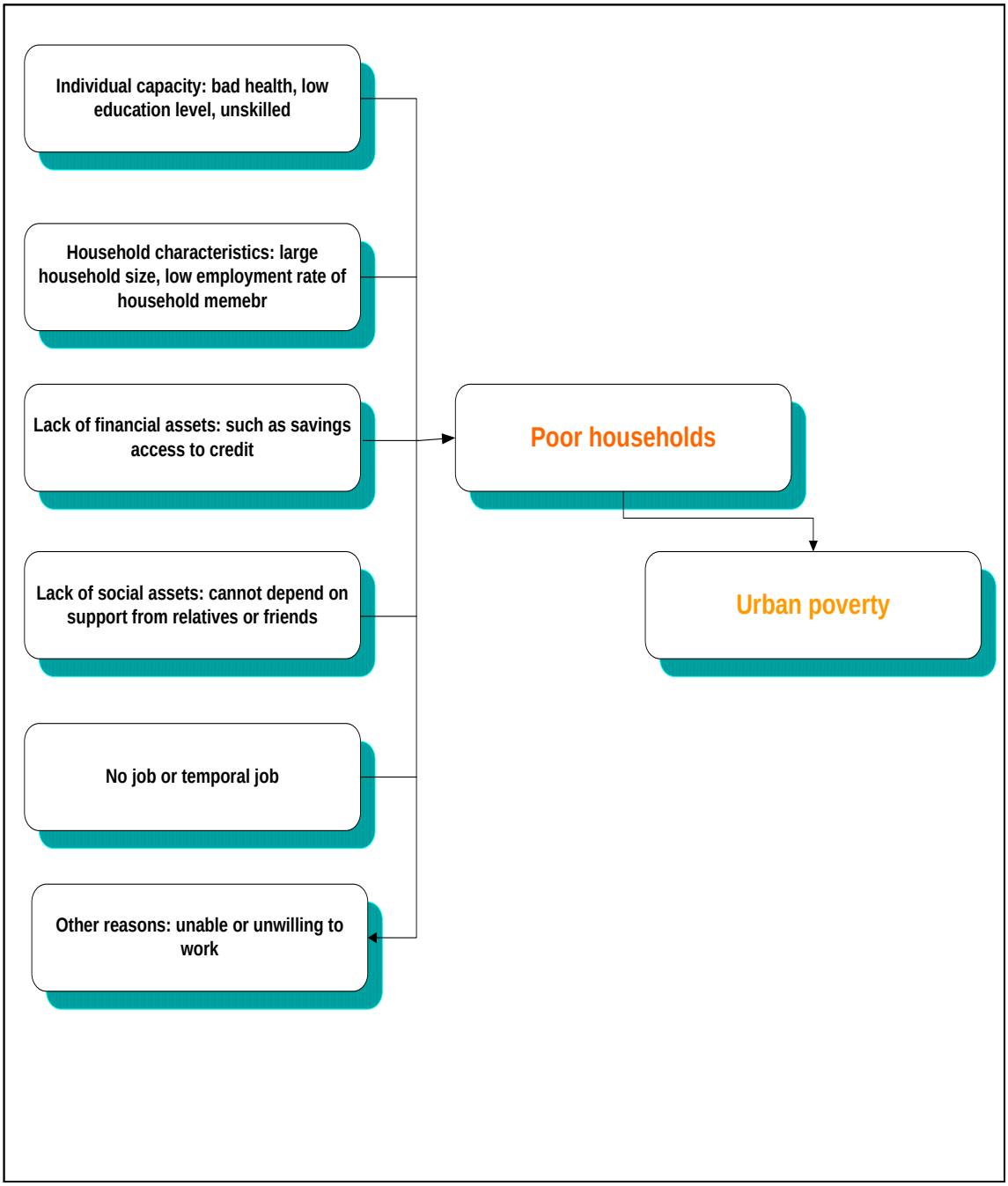
Urban poverty is happening in urban areas. Urban poverty has the same properties documented in the above sections. To understand urban poverty more clearly, we connect urban poverty with the concepts rural poverty, urbanization, and employment.

In 2001, Davis states that there are basic similarities between rural and urban poverty. For instance, the cause of poverty for a rural household that relies on a small landholding and that suffers from a low crop yield is not the same as for an urban household in a squatter shack community whose main income earner has lost a job due to recession or ill health or has suffered a drop in real income. Programs aimed at reducing rural and urban poverty need to recognize these differences.

In common, there are mainly two models in urban poverty i) individual explanation model that examines the micro level ii) structural explanation that observes macro level of poverty (Guan, 1999).

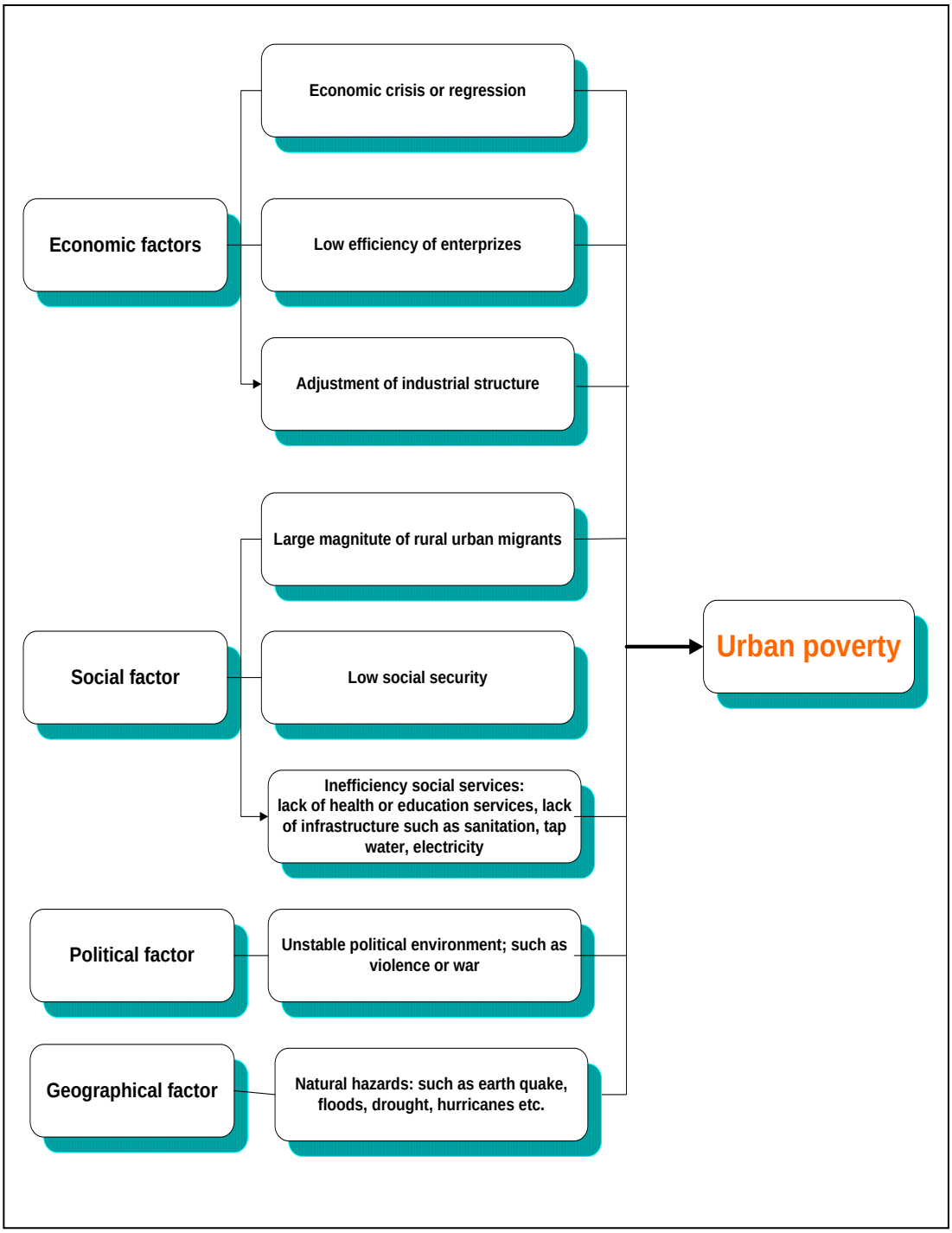
Individual explanation model explores the micro level factors and cause of household poverty or individual poverty such as health, education, job, household characteristics and so on (Figure 2.1). Structural explanation model

known as macro level model focuses on socio-economic policies, political factor and geographical environment that are associated with urban poverty. For example, economic crises, production structure change, low efficiency of enterprises, lack of social security, natural hazard are under them (Figure 2.2).



Source: Guan, 1999

Figure 2.1 Individual explanation model of urban poverty



Source: Guan, 1999

Figure 2.2 Structure explanations model for urban poverty

2.2.2 Concept of Slums

Urban poverty is very much related with the word slum. The place, where urban poor reside, is known as slum. Around 31.6% (924 million) of the world's urban population live in slum (UNHABITAT, 2003). Urban residents, who have limited

access to adequate housing, or lack of access to safe water, sanitation, durable housing and secured tenure, are known as slum dwellers. If the present growth of slum population will continue, slum population will increase from 924 million (2001) to 1262 million (2015).

In 2003, an expert group of UN-HABITAT defines slum households as a group of individual lives under the same roof with lack of one or more of the following conditions (Figure 2.3):

i. Access to get better water
ii. Access to better sanitation facilities
iii. Sufficient living area, not overcrowded
iv. Structural quality/durability of dwellings

Slum people live in overcrowded un-service places. The space is often located in marginal and hazardous land in the city. The dwellers don't have access to clean water. Their waste remains untreated surrounding of their houses, which are affected on their daily activities and also impact on their health, especially their children. On the basis of living standards and residential areas, the sub-standard living condition is labeled as slums. These slum areas with poor living environment have distinct characteristics including of fast growth, hazardous location, limited provision of social facilities, insecure land tenure and vulnerable to crime, diseases, social and environmental conflicts. "To prevent new slum formation" is a daunting task (UNHABITAT, 2003).

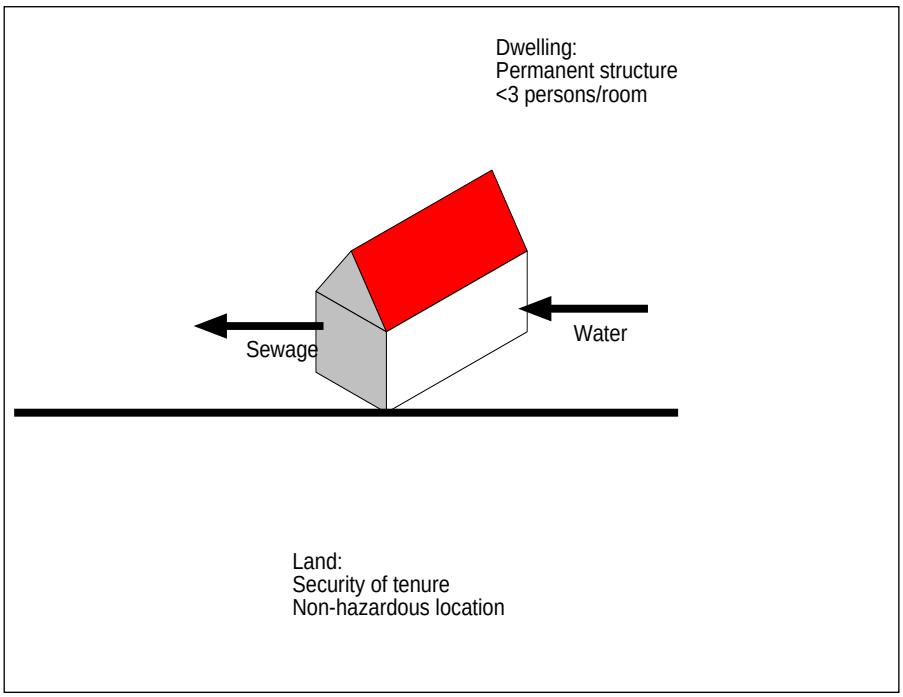
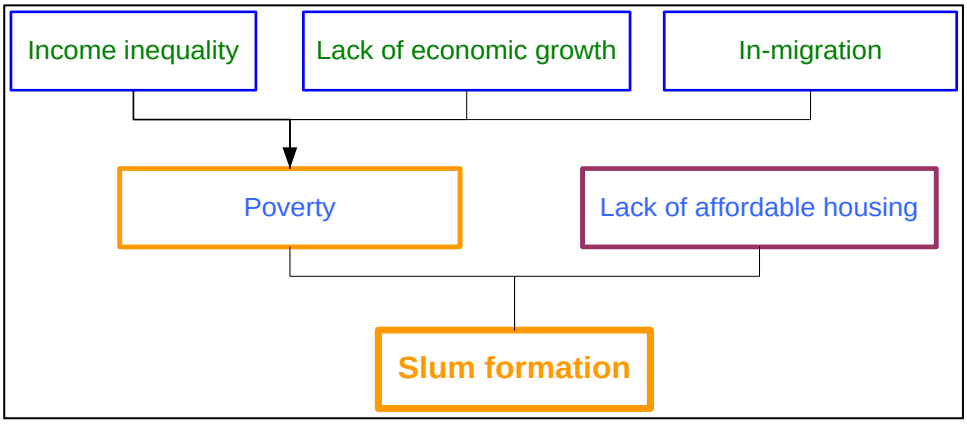


Figure 2.3 Slum definition

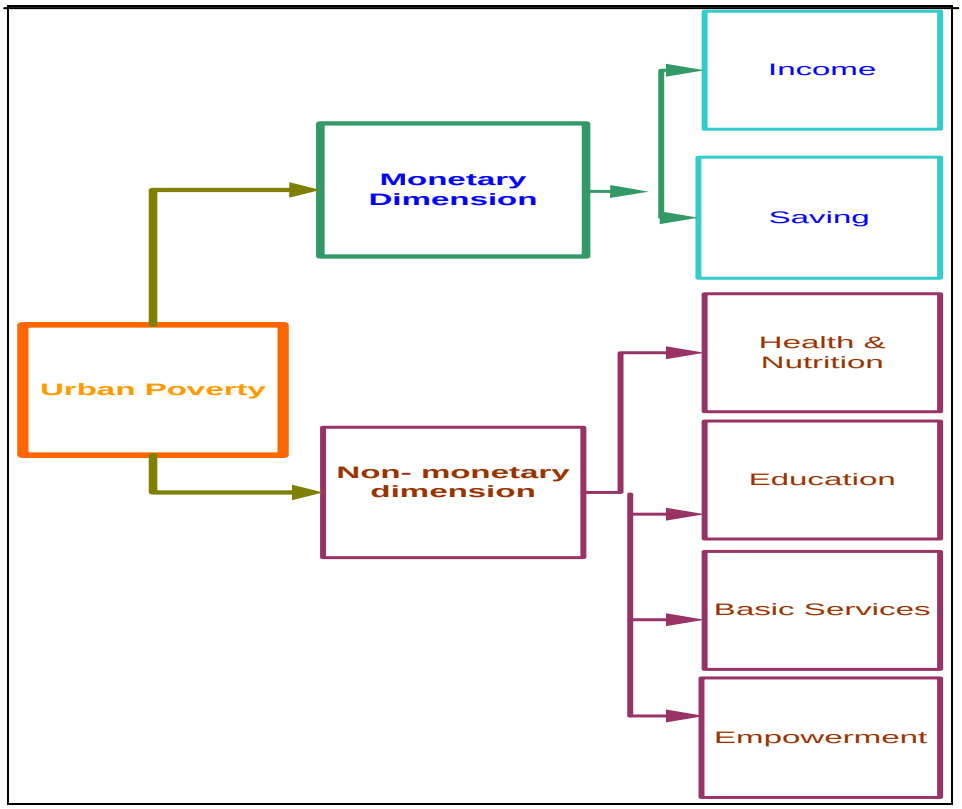
It is a major challenge to create an enable environment including of provision of land, services, and credits. Slums are not an isolated phenomenon. The two main factors such as poverty and lack of affordable housing lead to the formation of slums. Poor governance and inefficient management of resources are also correlated with them. Poverty is created from low incomes and being short of employment opportunities, constraints the financial capacity of households to afford a decent living place (Figure 2.4).



Source: Modified from UN-HABITAT, 2003 & UPA, 2006

Figure 2.4 Conceptual framework of slum formation

Poverty deprive of living conditions with including of poor diets, limited access to education and health facilities. Based on finance, the poverty is divided in two sub group such as monetary and non-monetary dimensions (Figure 2.5). The monetary dimensions include income and saving and the non-monetary dimensions include basic services, health, educations and others.



Source: Modified from Baharoglu and Kessides, 2002 & UPA, 2006

Figure 2.5 Conceptual framework of Urban Poverty

2.2.3 Poverty and urbanization

In developing countries, the poor mostly lives in rural areas in the earlier period. Nowadays, the poor are visible in urban areas because of rapid urbanization and rural-urban migration, which is one of the vital management problems in urban areas. Because, they guess, cities can offer them better employment opportunities to improve their living conditions. But many rural poor migrants are living in informal settlements with low income or without employment. Because,

‘the rapid growth of cities are not able to accompanied with a similar fast increase in stable employment, and the development of an enabling environment with access to housing, infrastructure and other basic services such as education and health care (State of The Environment And Policy Retrospective: 1972–2002 & Turkstra, 1998).

2.2.4 Urban poverty and unemployment

Employment is the key income source of urban dwellers. Employment rate is an important variable to find out the urban economic level. High unemployment rate indicates high intensity of poverty (Yong, 2003). Accessibility of job is the freedom of people to get their fundamental requirements in order to sustain their living standard. Workers are unrestricted to get a job to make their living finance and the failure of this right can happen because of job crisis (Sen, 1981). The difficulties of job accessibility of low-income workers are a major concern in urban areas (Helling, 1998; Shen, 2000; Transit Cooperative Research Program, 2000; and World Bank, 2001).

2.2.5 Poverty, development, and equity

Poverty intersects and overlaps particularly with development, equity and perceptions (Lok Dessallien 1995, Streeten 1994, and Boltvinik, 1994). The multidimensional poverty and development observed the community as a whole and measured different dimensions of well-being (United Nations Development Programme, 1997). Poverty may be focused and compared with different standard dimensions of human well-being. These standards are as absolute or relative form. An absolute standard could be all households that do not have

human survival. A relative standard suffer from the degree of different deprivation.

Poverty and development are associated and not to necessarily interchangeable measurements to identify poor households. For the evaluation of target approach based on measuring the indicator of basic needs, access to water and sanitation, waste removal, education, and household crowding, household consumption and expenditures are created the major differences in the ranking of households (Hentschel *et al*., 1997).

Poverty and equity is closely correlated. Poverty itself is usually the result of larger inequity. More sophisticated poverty measures usually incorporate with the distributional aspects of poverty.

Location is a powerful determinant of poverty. Spatial patterns of inequality between or within the countries have become an important focal point for community development. A research Group of the World Bank has done the estimation of poverty mapping at local level by combining census and household survey information. In order to make better policies and interventions, poverty mapping is used in Eastern Europe such as Albania and Bulgaria, Latin America such as Bolivia, Ecuador, and Mexico, East Asia such as Cambodia, China, Indonesia, Thailand, and Vietnam, North Africa such as Morocco, and South Asia such as Sri Lanka for long time (World Bank, 2007).

2.2.6 Vulnerability and urban poverty

Literally the meaning of vulnerability is damage' (Merriam-Webmaster Dictionary, 2009). The word has come from Latin, vulnerabilis [vulnero þ bilis], which means 'liable to be wounded' (Oxford Latin Dictionary).

The series of research work pertaining to the poor (Narayan, & et al., 2000; Narayan & et al., 2000) and the World Development Report 2000/2001 (World Bank, 2001) have publicized that the poor are always worried about their local surrounding environment. The concern of dynamic poverty and its effect of danger and insecurity have long been studied. There has long been anxiety about the effects of danger and insecurity on the dynamics of poverty. Many empirical research on poverty and its interconnection with vulnerability as well as its consequences are well documented in industrialized as well as in some developing countries (Duncan et al., 1993; Baulch and Hoddinott, 2000).

The recent events of vulnerability such as economic crisis of 1997 and the more recent natural catastrophes such as tsunami in Asia, Katrina in USA, and the earthquake in Pakistan, (sidor in Bangladesh) have increased the intensity of poverty. The concepts of soft and hard uncertainty are suggested for better access to different modalities of uncertainty. The other component of vulnerability, response, is referred to as the capacity to react to such threats by the management of risk before and after the realisation of the risky event. The response is the combination of arrangements and strategies utilized to manage