Urban Land Development Model

Chinzorig Batbileg
February 2010

Urban Land Development Model

by

Chinzorig Batbileg

Thesis submitted to the Faculty of Geo-information Science and Earth Observation, University of Twente, in partial fulfillment of the requirements for the degree of Master of Science in Geo-information Science and Earth Observation, Specialization: Land Administration

Thesis Assessment Board:

Chairman: Prof. Dr. J.A. Zevenbergen
External examiner: Dr. Ing. M. Klaus
Supervisor: Drs. J.C. de Meijere
Second supervisor: Mr. C.M.J. Paresi

FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION
UNIVERSITY OF TWENTE
ENSCHEDE, THE NETHERLANDS

Disclaimer

This document describes work undertaken as part of a program of study at the Faculty of Geo-information Science and Earth Observation, University of Twente. All views and opinions expressed therein remain the sole responsibility of the author, and do not necessarily represent those of the institute.

Abstract

There is dilemma related to the issues around the potential of the property rights. One opinion is that the legalization of properties that exist in extralegal environment, accompanied with smooth and proper registration systems, will benefit greatly the owners of these extralegal properties and help them to improve their livelihood. The other opinion is that legalization and registration does not make much difference in improving the livelihood of the concerned poor people. Despite these debates, there is no concrete answer to a question if the security of tenure and formal property rights are not enough for improvement of the livelihood of the poor people, then what is enough?

In search of an answer to this question a hypothesis is formulated. It advocates a thought that formal and registered land tenure will make a little difference in the livelihood of the poorer people, if there is no public investment made in the basic infrastructure and services, except the improvements of the private houses. It means, that in addition to formal land tenure and registration, there must be public investment to improve the livelihood of the poor. The essence of the proposition is that an adequate neighborhood is the function of the public and private investment. In addition to this basic proposition, a more contextual and framework suggestions are made. These are i) investments have multiplier effect and ii) the whole process of creating urban area, in this case urban neighborhood, is the process of generating capital. The hypothesis and the concepts are integrated and put in a model, Urban land development model (ULDM).

This study tests the ULDM with empirical evidences from case studies, specifically the hypothesis that adequate neighborhood is the function of private and public investment and evaluates the validity of the ULDM as a land development model. As the results of the study, the empirical evidences confirm the hypothesis that adequate neighborhood is the function of private and public investment, and the evaluation of ULDM asserts that the model is valid, as long as the model accurately and appropriately addresses and serves its purpose.

Although the study fulfilled its objectives, the results and discussions have identified more issues that need to be addressed and generated more ideas for potential future studies that will support further empirical validation and theoretical strengthening of ULDM.

Acknowledgements

I would like to sincerely thank the people of the Netherlands and their Government, and specifically ITC, for their good will, expressed through the scholarship programs, that enabled my studies at ITC.

I am very grateful to Professor Paul van der Molen, for all his efforts that allowed my studies at ITC, to Johan de Meijere, for his very provocative critical thinking and encouragement to think out of the box, to Kees Bronsveld, for all his understanding of my personal concerns and support.

Furthermore, I am greatly thankful to my supervisors, all the lecturers, my classmates, fellow students, all the people from the course secretariat, education affairs, library, IIH. Also, I am very thankful to all the good people from Hanoi and Ulaanbaatar, who willingly participated and supported my field studies, the colleagues from the Hanoi University of Science and all other involved people and organizations from Hanoi, and the colleagues from the Land Administration Department of Ulaanbaatar city, Construction and Urban Development Department of Ulaanbaatar city, Administration of Land Affairs, Construction, Geodesy and Cartography of Mongolia. Without all the support and involvement of all these people, my studies would not have been as good as it is and as easy and joyful as it was.

Finally, I am very much thankful to my family for all the patience and sacrifice that made my studies possible.

Table of contents

List of figures

List of tables

List of Boxes

Abbreviations and Acronyms

ALAGaC	Administration of Land Affairs, Construction, Geodesy & Cartography of Mongolia, before 2008 it did not have the construction related activities under its umbrella so it was Administration of Land Affairs, Geodesy & Cartography
AN	Adequate neighborhood
Dd	Dated
GDP	Gross Domestic Product
Ger	Traditional Mongolian dwelling suitable for nomadic life style, it consists of wooden frame and floor, and covers made of felt and other cloths, it is easily built and un-built, three adults can put it together and disassemble in about one hour
ger area	Residential area of poor quality, consisting of fenced parcels with gers, or wooden or brick etc. houses, or combination of these. This type of areas usually does not have any access to basic infrastructure, except electricity
GIS	Geographic Information System
HUS	Hanoi University of Science
JSC	Joint stock company
MCE	Multi-criteria evaluation
Min	Minute
NGO	Non Governmental Organization
NRED	District Natural Resources and Environment Department, Hanoi
Off-site infrastructure	Main lines of infrastructure, such as main roads, water pipes, electricity lines, sewage systems, heating systems around neighborhoods
On-site infrastructure	Infrastructure such as roads, water pipers, electricity lines, sewage systems, heating systems inside neighborhoods, these lines are connected to the main infrastructure outside, that is off-site infrastructure, the neighborhood
UB	Ulaanbaatar City, Mongolia
UB CUD	Construction and Urban Development Department of Ulaanbaatar city
UB LAD	Land Administration Department of Ulaanbaatar city
ULDM	Urban Land Development Model
UN-HABITAT	United Nations Human Settlements Program

1. Introduction

In land sector, much of the work and studies by the international development organizations and researchers focused on issues related to security of tenure and land titling and registration, as well as good land governance, pro-poor land policy and management, and the important role of land administration in sustainable development (Dale and McLaughlin 2000; Deininger 2003; UNECE 2005; FAO 2007). These authors emphasize that security of tenure and land registration are very important for good land management and administration that form a foundation for socio-economic development and sustainability of the environment. Very influential work by de Soto (2003), Mystery of Capital, has given a regained momentum for the importance of property rights, hence re-focus on 'legalization' of property rights. This meant more attention on land titling and registration by politicians and land administration professionals. The impressive magnitude of de Soto's influence can be clearly seen from the web page of ILD[1], an NGO in Peru, headed by de Soto, where very positive attitude and impressions of politicians, academics and the press can be seen. However, for many involved in land management and administration, the important role of the 'formal' property rights was not really a new thing. Many authors inform that the 'issues' around property rights were already on agenda for many years and warns the danger of high expectations from legalization of property rights. For instance, Gilbert (2002), asserts that granting legal title to poor has made very little difference. He states that what de Soto promoting is dangerous delusion and criticizes that he is influencing the policy makers and persuading them that what they need to do is little more than offer title deeds and then leave the market to do the rest, including provision of services and infrastructure, and formal credit. Similarly, recent studies carried out by Payne, Durand-Lasserve et al (2009) confirm that land titling programs did not increase investment in land and housing, access to formal credit, and increased infrastructure and services provision more than under other tenure regimes. Woodruff (2001) argues that land titling will not make much difference, but also there must be number of politically challenging activities such as improving the efficiency of judicial systems, improving the legislation related to bankruptcy and financial market and similar reforms that entail much more efforts. He states "Land titling is made to sound like a free lunch. But without a broad set of complementary reforms, property titling and registration systems area likely to have a more limited effect ….". In response to his criticisms de Soto, in general, replies that he is not saying that the other reforms are not necessary, but the property rights system is a principal reform, without which other reforms are difficult to manage, de Soto in Clift (2003). In any case, de Soto has managed to create a lot of enthusiasm and debate.

1.1. Motivation

The politicians in Mongolia are very much influenced by the work of de Soto (2003). The Minister for Construction and Urban Development (2004 ~2007) and, in the meantime, the member of the Parliament (2004-2008) of Mongolia, has been enthusiastically promoting his book, Mystery of Capital. He sent a copy of this book to all 76 members of the parliament and recommended all the employees of the ministry and the Administration of land affairs, geodesy and cartography (ALAGaC), which is an agency under the ministry, to read this book. I was working with ALAGaC, and I already red the book, before it became a big thing in Mongolia. My first impressions, without knowing how de Soto was very popular or criticized in western world, were rather indifferent. My reaction was like 'yes, I know from the land administration perspective and literature that formally recognized property rights are very important and we, Mongolia as a country, are on right track by starting the land privatization and improvement of the land registration system (before this program

[1] http://ild.org.pe/recognition

all land belonged to state, people had leasehold rights)'. Yet, after having met the minister and other politicians few times, I started to become kind of obsessed with de Soto's idea. I did not really think about it more carefully and did not try to understand the essence of the idea, because my position was not involved directly in land related issues, I was more involved in the organizational and economic issues of ALAGaC. Later, I start to think about the idea more carefully, because of the following incident related to land privatization in Mongolia. Around 2007-2008, after the land privatization, the politicians wanted to propagate that they have done a good job by privatizing land to the people and now the land is put into economic process, i.e. the land is now capitalized. They asked ALAGaC to find and show them good examples, cases where the people are benefiting and capitalizing from their 'privatized' land. Well, it was difficult to find such cases, because there were almost no such cases. The land parcels, with a ger or some houses on it, was exactly the same as it was before the land privatization, people did not use them as capital. I remember the director general of ALAGaC asking me if I know any good cases. After a while of consideration, I replied that there are cases that the property is mortgaged or there were some improvements on the parcel, but these are not the results of the land privatization and registration. The land is mortgaged, because of the good quality of the house (the house and the leasehold certificate would have been accepted by banks, even before the land was under the ownership title considering the quality of the house). The improvements are made because the land owners earned more money or they have been planning and saving money for improvements for years. These were just my immediate answers based on my observations, not backed by a scientific research, though. Hilariously, sometime later on TV news, I saw the president speaking about the benefits of land privatization, and afterwards showing a family who is benefiting from the land privatization. The family established an underground vegetable storage on their 'privatized' parcel and benefiting from it because they rent some space in it and they can store their overproduced vegetables from autumn for consumption and sale later in spring. So, how did the land privatization benefit or trigger the establishment of the storage place? The family could do it easily even before the land was privatized, under the leasehold tenure. Now, this was not funny, at all. No doubt, those families who have recently migrated to Ulaanbaatar (UB) or to the other two major cities in Mongolia, and settled in the suburb and received their titles for land ownership have benefited greatly by obtaining the security of land tenure as the result of the land privatization. Unfortunately, these cases were not the cases which the politicians wanted to show, because what they had in mind is, I guess, that it must be something like a grand capitalization effect, like just after people get the ownership title they rush to use it as collateral and obtain mortgage loan to start a business or improve their houses.

All this made me think thoroughly about the phenomena of property rights and issues surrounding them. At ITC, I had the possibilities to read the literature and learn about the criticisms of de Soto. Also, I was lucky enough to get chances to talk to number of officials of the land administration organizations and meet some academicians in land administration sector from different countries to discuss on this matter. In general, these people say that formalization or legalization and registration of property rights is not enough for the poor to capitalize on their land or improve their livelihood. My opinion is that, land titling and registration systems reform should be part of or implemented in close connection with more broader reforms, such as the reforms of the legislative and financial systems. But, still I was looking for some down to earth and pragmatic solutions or answers to question 'Ok, then what is enough?'. The quest to answer this question is the motivation for this study.

1.2. Research problem

There is dilemma related to the issues around the potential of the property rights. One opinion is that the legalization of properties that exist in extralegal environment, accompanied with smooth and proper registration systems, will benefit greatly the owners of these extralegal properties and help them to capitalize on their legalized property and improve their livelihood (de Soto 2003). The other opinion is that legalization and registration does not make much difference in improving the livelihood of the concerned poor people, it does not lead to increased investment in land and housing,

increased access to formal credit and increased provision of infrastructure and services (Woodruff 2001; Gilbert 2002; Payne, Durand-Lasserve et al. 2009). Then the problem is to try to find out what is it that makes a difference and what is enough if the land titling is not enough, or maybe land titling is in fact enough. In search of an answer to this question a hypothesis is formulated. It advocates a thought that formal and registered land tenure will make a little difference in the livelihood of the poorer people, if there is no public investment made in the basic infrastructure and services, except the improvements of the private houses. It means, that in addition to formal land tenure and registration, there must be public investment to improve the livelihood of the poor.

The essence of the proposition is that an adequate neighborhood (AN), is the function of the public and private investment. In addition to this basic proposition, a more contextual and framework suggestions are made. These are i) investments have multiplier effect and ii) the whole process of creating urban area, in this case urban neighborhood, is the process of generating capital. The hypothesis and the concept is integrated and put in a model, Urban land development model (ULDM). This study will concentrate on the ULDM. More elaborated explanation of the model, and the concerns of this study regarding this model, are provided in the next section.

1.3. Urban Land Development Model

Considering the socio-economic and political context and discussions around the property rights and registration, capital and development, a generic model of urban land development is devised. The urban land development model (ULDM) is built on assumption that the land tenure is secure and the rights in land are registered. The model suggests that the urban area, in all its diversity such as residential, industrial, commercial etc., is the result of the development of land, from bare or agricultural, when the public and private sector invest in it. This can be compared with an internal-combustion engine. To function properly it must work on all cylinders. If one of the cylinders fails, then the entire engine is malfunctioning. This means the public and private cylinders must be working simultaneously, so that the result is the desired urban area. In addition, it is proposed that the process of investment, the public and private, has an immediate multiplier effect on the development related business, for instance construction sector. The construction company in the process of building houses creates employment, it stimulates construction materials suppliers, service sector provides services to the employees working in the construction company and so on. Furthermore, this entire development process creates wealth in the form of urban areas. The wealth of urban areas, in the form of profits, industries and businesses, plus the public income from taxes, is then again used for more investment. This creates a repeated continuous cycle, a cycle of capital generation. This generic model is depicted in the Figure 1.1.

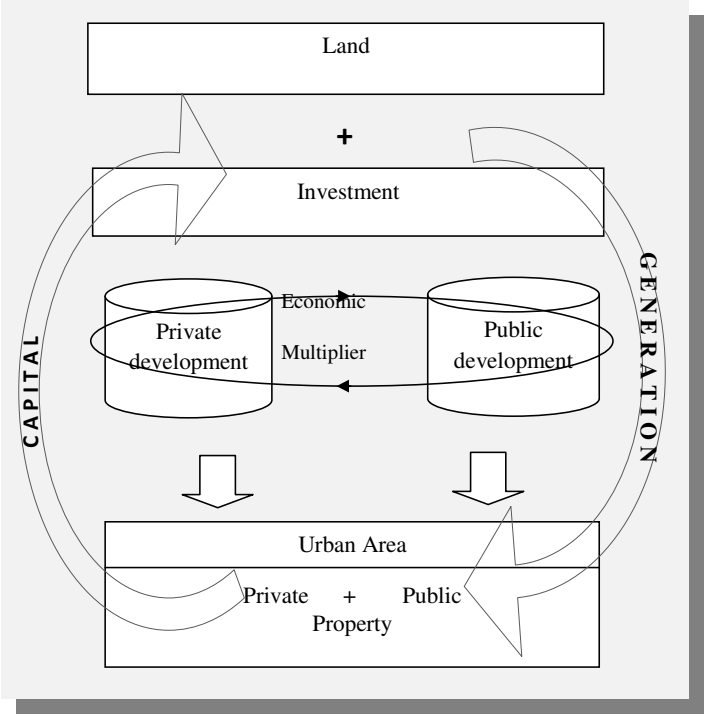


Figure 1.1 Urban land development model

1.3.1. ULDM in the context of this study

Closer and detailed exploration and study of this model is possible, however, it is considered that the model is too generic and broad in scope for this current research, given the time period allocated. Hence, bearing in mind the original discussion about the property rights and registration and livelihood of the people, the model is zoomed in to extract more feasible research agenda. Thus the field of interest is defined as the urban housing area. Based on ULDM, urban housing area is the function of private and public investment. Further narrowing down the area of interest, it comes down to an urban neighborhood. Based on UN-HABITAT's (1996) adequate shelter notion, it is defined that the focus of the study shall be an adequate neighborhood (AN). Hence, the research agenda is defined that adequate neighborhood is the function of public and private investment. The context in which the study is carried out is in economies in transition from centrally planned to market, and the cases are from Vietnam and Mongolia.

1.4. Research Objectives & Questions

This study has two objectives:

1. Test the ULDM with empirical evidences from case studies, specifically the hypothesis that AN is the function of private and public investment will be tested.
2. Evaluate the validity of the ULDM as a land development model.

To achieve the objectives of the study number of questions need to be answered. For the objective 1, the following questions need to be answered:

1. *What is the appropriate object of the study?*
   The answer to this question will provide the 'study object' that is feasible to investigate in order to test the validity of the hypothesis. To answer this question the field of urban studies need to be explored to understand the theories and concepts, and the variety of urban analysis.

2. *What kind of study areas need to be studied?*
   The answer to this question will provide the 'study areas' that are feasible to investigate and accommodates relevant study object.

3. *What approaches should be utilized to investigate the study objects?*
   The answer to this question will provide the relevant approaches for collecting evidences to test the validity of the hypothesis.

For the objective 2, the following questions need to be answered:

4. *What kind of land development models exist?*
   The answer to this question will enable to theorize ULDM in the context of land development models. To answer this question the literature on urban and land development needs to be reviewed to understand the scope and key concepts of the land development paradigm and its modeling.

5. *How feasible is ULDM?*
   The answer to this question will provide a theoretical underpinning to ULDM.

6. *Does ULDM address appropriately the complexities of the land development process?*
   The answer to this question will provide insights into how complete and effective is the model.

1.5. Research Methods

As the research objectives imply the study is twofold. One relies on the empirical evidences and the other one is reliant on concepts and theories. The former is an attempt to explore the real world situation with systematic observation. This is done by proposing a model and analyzing the results of the observations based on the model. The latter is conceptualization or seeking theoretical grounds for a suggested notion, in this case a model. This is done by studying existing concepts and comparison of these concepts with the suggested model.

Literature review was done for both studies. It provided all the necessary overall theoretical and conceptual understandings, and the required details of knowledge of urban studies and land development models, that were essential for this study. Case studies were conducted for the collection of empirical data. For data collection activities field observation, interview and graphical data analysis approaches were utilized. The full details of the methodology used for the study is elaborated in Chapter 4. Methodology.

1.6. Conceptual Framework

In trying to understand the effects of the formalization of the property rights and how it affects the livelihood of the poorer people, a model, ULDM, is constructed with a hypothesis that AN is the function of the private and public investment, see section 1.3. The validity of the hypothesis is tested with empirical data, and methodologies drawn from the urban studies and adequate shelter notion. The soundness of the ULDM is evaluated based on the theories and concepts of urban studies and land development models. In a nutshell, this short description of the research can be depicted as shown in figure 1.2 The conceptual framework of the research.

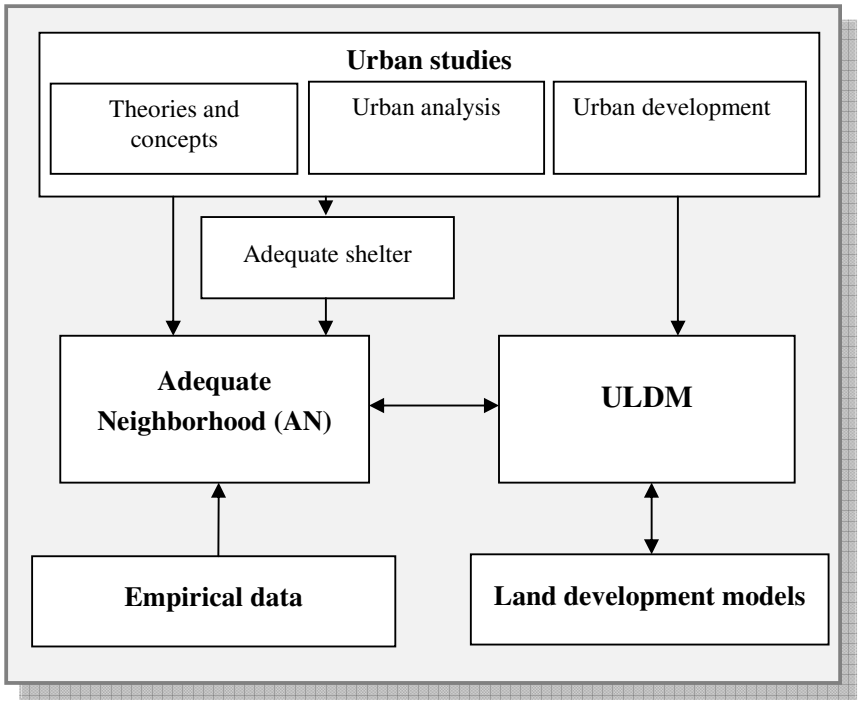


Figure 1.2 The conceptual framework of the research

1.7. Thesis Structure

The thesis is organized in eight chapters. Below, the content of each chapter is described briefly.

Chapter 1. Introduction
Provides the research context, explanation why the research was carried out, and the objectives, methods, the research framework within which the study was executed.

Chapter 2. Urban studies
In order to define a feasible study object and methodologies for observation and data collection, it was necessary to explore the field of urban studies. This chapter explored the basic notions, theories and concepts, the types and levels of analysis in urban studies and the phenomena of urban development.

Chapter 3. Land development
This chapter provides the key concepts of land development and explores extensively the existing land development models for further utilization in the conceptualization of the ULDM.

Chapter 4. Methodology
The elaborated details of the methods and approaches used for the conceptualization of the ULDM, and for the execution of the case studies, and the way how the analysis carried out, are given in this chapter.

Chapter 5. Case study
All the details of the case studies from Hanoi and UB, complemented with some highlights of the interviews, and the results from these cases are provided in this chapter.

Chapter 6. Analysis
First the analysis of the ULDM is performed. It is done by comparing ULDM with a land development model, which provides an exhaustive list of aspects that need to be considered when exploring the complex process of land development. Then the case studies and the results of the cases are analyzed in context of the hypothesis of the research.

Chapter 7. Discussions
The findings from the case studies, including some of the shortcomings and omissions of this study is discussed. Also, the reflections on the ULDM and its possible improvements are elaborated. Based on the findings from the case studies and the suggested improvements of the ULDM, a potential for a further more extensive study is proposed.

Chapter 8. Conclusions and recommendations
Overall conclusions and recommendations reflecting back to the research context is made in this chapter.

2. Urban Studies

In addition to the knowledge of land administration it was necessary to study urban literature as the research is concerned with land development in urban areas. Urban theories and concepts provided the overall understanding of urban studies, which helped to identify urban analysis and urban development as areas that need to be explored further to support the research. Urban analysis study provided theoretical background for selection of the research method, level of study and the determination of the object of study – neighborhood. Urban development reading supported the understanding of land and property development and provided a good foundation for further detailed exploration of the models of land development.

2.1. Theories and Concepts

Text Urban studies is inter-disciplinary field concerned with social, economic, political and environmental issues in cities and towns. It includes, among others, economy, geography, sociology, demographics, history, statistics, planning, architecture, politics, design and so on. Considering the nature and purpose of this research urban geography will underpin the theoretical background due to its i) enabling characteristics to integrate the findings and knowledge of different disciplines beyond geography and ii) distinct characteristics for centrality of spatial perspective when performing urban analysis. Urban geography deals with urban analysis from the socio-spatial perspectives and gives insights into the complex phenomena of urban places and provides understanding of the urban living environments (Pacione 2005, p. 20-21). The concepts of space, place, area and meaning of urban are central to the urban studies, inasmuch as the notion of neighborhood is central to this study. Therefore these concepts will be introduced in the following sections.

2.1.1. The meaning of “urban”

Text Urban means as relating to, characteristic of, taking place in, forming, exercising authority over, residing in, having a property in a city or town (OED 2009). Pacione (2005, p. 20-24) stresses the importance of distinction between urban as a physical entity and as an abstract social entity, because this helps to recognize the complexity of and define the different approaches to the “urban” phenomena. Urban as physical entity, with its artifacts, is identified based on the size of the population – an area is considered as urban when it has more than certain number of inhabitants; economic structure – certain percentage of the population must be engaged in activities other than agriculture in addition to the population size; administrative boundary – this base is more for the government purpose and it is not really appropriate, most of the time, for research purpose; functional definitions – this defines the urban area based on the extent of its influence. Urban as abstract social entity deals with the people’s subjective perception of cities and their social relations and activities. For the study of this latter entity cognitive mapping and urbanism as way of life are the two main approaches. Cognitive mapping is a mental mapping techniques to study the city in relation to human behavior and quality of life. The second approach includes different perspectives to study the influence of urban on the lives of those who live in it. For instance how the change in size, density and heterogeneity affects the economy and society, or how the capitalist system of production affects the cities. The concepts discussed in this section are rather closely related or even interfused to the concept to be introduced in the next section – the notion of space.

2.1.2. Urban space

Altough the definition of space is one of the most controversial, open philosophical debates, for this study the space is understood as objective, physical space with its social and psychological dimensions with dynamic aspects of time. The urban space is the space which is occupied by cities

and towns or space which is created, i.e. built environment, compared to natural space (Madanipour 1996, p. 28-30). Space is ubiquitous, but in the urban sense it is limited to the physical and influential extent of the cities and towns.

2.1.3. Urban place

Place is a unique and special location embedded in space, it is not to be understood just as a physical location, but to be recognized, also, with its social, psychological and dynamic (time) aspects. Place as the location of human activities is important as the basis for the sense of identity as well as sense of community. As such place is central concept in urban analysis of how urban areas are constructed and what meaning the built environment has to its inhabitants. Further place is emphasized that cities are places, i.e. conglomerations of overlapping and interrelated places where social relations occur. Individuals, households, communities, companies and public agencies with their social, economic and political relations, exist and operate in particular places (Pacione 2005, p. 25-26).

2.1.4. Neighborhood

Pacione (2005, p. 672) defines neighborhood as "an urban district, in a strict sense defined as one in which there is an identifiable subculture to which the majority of residents conform". Further he states the five principles of neighborhood development in new urbanism as follows:

- "Neighborhoods should be compact, pedestrian friendly and mixed-use.
- Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.
- Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.
- Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transport to become a viable alternative to the automobile.
- Concentrations of civic, institutional and commercial activity should be embedded in neighborhoods and districts, not isolated in remote, single-use complexes".

Based on the above principles the concept of neighborhood unit, which "has clear boundaries, contains a pedestrian-circulation network that connects residences to an elementary school, recreation facilities, and limited local retail opportunities, and incorporates an open space network, all within a walkable circumference" (Berke 2006, p. 388) was widely accepted and implemented in the physical/land use planning. Johnston (1981, p. 231) defines neighborhood as, similarly to Pacione, a district, usually in urban area, where people have face-to-face relationships, within a limited area and where there exists separate subculture shaping the ideas and activities of those living there. However it argues that in contemporary cities this type of clearly determined, both in terms of community and space, neighborhoods barely exist, because "work, shops and friends are often located outside the neighborhood and attachment to it reflects individuals feeling at home among people with similar backgrounds who are potentially available for social interaction. Precise geographical delimitation is difficult but relatively unimportant to residents." The concept of "neighborhood" is identified as relevant object for the purpose of this study, because this object is relevant to investigate considering the objectives and feasibility of this research. It will be further discussed and how it is understood for this study is determined in Chapter 4.

2.2. Urban Analysis

The different approaches, types and level of urban analysis, notion of urban development and informal urban development have been studied to support the choice of the methods to be applied when testing the ULDM.

2.2.1. Different approaches

There are two basic approaches that frame the urban analysis, one is the study of systems of cities and the other is the study of the city as a system. The former is concerned with the distribution of cities and their relationship, whereas the latter deals with the internal structure of the city itself or the urban places. Some scholars argue whether cities can be objects of analysis due to the fact that the society is urban, in the developed countries context, no matter where people live or concept of urban as conglomerations of overlapping and interrelated places does not have meaning due to the technological advances such as the telecommunications. On the other hand, cities as places of social, economic, political and cultural life, and physical interactions remain of fundamental importance as the objects of the analysis (Pacione 2005, p. 20-26).

The scope of the urban geography is expanding as time goes by and due to social, technological and economic development. The systems of cities approach started with the studies of urban origins and growth in the beginning of 1900 and expanded to regional level settlements and their classification, central place theory, population movements, migration, urban and regional planning, role of cities in the political economy, edge cities, counter-urbanization, rural-urban migration in the third world countries, globalization and cities, megacities and lately technopoles. The city as a system approach began dealing with site and situation of settlements, also since around 1900, and expanded with urban morphology and ecology, townscape and social area analysis, factorial ecology, delimitation of central business district, residential movement, retailing and consumer behavior, power and politics, access to services, urban problems in structural context, economic restructuring, poverty and deprivation, housing and property market, traffic and transport problems, urban physical environment, housing, health and economy in third word cities, globalization impact, social justice, urban livability, sustainable cities and future urban form (Pacione 2005, p. 27-28). All these different approaches have their underpinning philosophical perspectives - theories, which are summarized in table 2.1.

Madanipour (1996, p. 87-88) summarizes three notions in his review of different approaches in urban analysis. “The first notion is that urban space is the material space with its social and psychological dimensions, and urban form is the geometry of this space”. This notion is explained further that the understanding of the city should be the overlap of its physical, social and psychological geometry at the same time and show the dynamic interrelationship of these aspects. The second notion highlights two perspectives, one is the importance of political economy with its market and policy aspects and scientific approach, and the other is the importance of everyday life, i.e. to understand the urban space as participant, not an observer, and take account of experience and inquires the validity of the political-economic analysis if it sufficiently explains the social life. The last notion is that it is necessary to follow the processes of urban development while taking into account the social, political, physical and psychological dimensions. When looking on these notions it is clear that they are actually the same as the theoretical perspectives listed in the table 2.1 except that they are not explicitly classified as in the table.

Each of the approaches, discussed in the preceding two paragraphs, supports the understanding of and provides explanation to some urban phenomena. However, any of these different approaches, for the urban analysis cannot fully explain the complex dynamics and structure of the city. Therefore, it is necessary to utilize multi-layered realist perspective considering the local and global, social structure and human agency, and the theory and empirical investigations for better understanding of the urban phenomena (Pacione 2005, p. 32).

THEORETICAL PERSPECTIVE	INSTANCES OF STUDIES
Environmentalism – reflects the more general geographical interest in the relationship between people and environment.	Urban origins and growth, Regional patterns of settlement, Central place theory, Urban sites and situation, Urban morphology, Urban ecology
Positivism – is characterized by adherence to the scientific method of investigation based on hypothesis testing, statistical inference and theory construction.	Settlement classification, Factorial ecology, Urban structure, Trip generation and travel patterns
Behavoralism – seeks to overcome the limitations of the spatial analysis by emphasizing the role of human behavior in urban environment	Migration, Consumer behavior, Residential mobility, Residential preferences, Perceived neighborhood areas, Images of the city
Humanism – gives central importance to human awareness, agency, consciousness and creativity and it aims to understand human social behavior based on people's subjective experience of the world. It uses specific case studies using methods such as ethnography and applies logical inference principle rather than statistical.	Human social behavior in cities, the social construction of urban space
Structuralism – is characterized by a set of principles and procedures designed to expose the underlying causes of revealed patterns of human behavior, i.e. the explanations for observed phenomena cannot be found through empirical study alone but must be revealed by examining prevailing social, economic and political structures. It is primarily based on Marxian or political economy approach.	Cities are studied as integral part of the capitalist mode of production, changing urban land market, suburbanization, gentrification, redevelopment, urban problems in structural context, power and politics, land and housing markets, residential patterns
Managerialism – concept of social closure – a process by which social groups seek to maximize their benefits by restricting access to resources and opportunities to a limited circle of "eligibles".	Power of urban managers and their influence on the socio-spatial structure of cities, exclusionary zoning, power and conflict in society, differential access to services
Postmodernism – is characterized by the rejection of grand theory and an emphasis on human difference. It recognizes the diversity and stresses the need for multiple viewpoints of diverse individuals and groups.	Difference, uniqueness and individuality in cities, studies of gender differences in urban labor markets and spaces of exclusion occupied by minority groups defined by class, marital status, sexuality, race, age and disability, cultural diversity in cities
Moral philosophy – seeks to critically examine the moral or ethical bases of society, central to ethical perspective is the concept of normative judgment that focuses on what should be rather than what is.	Equity in the distribution of welfare services, employment opportunities and decent housing for variety of social groups, interpretation of inner-city poverty, social acceptability of existing urban conditions such as air pollution or infant mortality

Table 2.1 Underpinning philosophical perspectives – theories in urban geography and instances of studies (created based on Pacione 2005, p. 27-33)

2.2.2. Urban morphology

Based on the review of the different approaches and theoretical perspectives of urban studies, and considering the objectives of ULDM, urban morphology is selected to understand more about the urban areas and support to determine the object of study of this research. Urban morphology is "the systematic study of the form, shape, plan, structure and functions of the built fabric of towns and cities, and of the origin and the way in which this fabric has evolved over time", (Clark, Small and Witherick and Goodall in Madanipour (1996)). Moudon (1997) asserts that urban morphological studies focus on the tangible results of the socio-economic forces, i.e. they study the outcomes of ideas and intentions as they take shape on the ground and form form the cities. Buildings, gardens, streets, parks, and monuments, among others, are the objects of the study. Urban morphological analysis is based on three principles:

1. Buildings and their related open spaces, plots and streets are the three fundamental physical elements that define the urban form.
2. Commonly four levels of resolution are defined to study the urban form. These are: i) building/lot, ii) the street/block, iii) the city and iv) the region.
3. The temporal aspect must be considered because urban form can only be understood historically due to continuous transformation and replacement of the urban elements.

Thus form, resolution and time are the three fundamental components in urban morphological research. 'Land parcel and buildings on it' and 'open spaces' are considered as the smallest cell of the city. The attributes of the cell and its elements are the reflections of the time period and socio-economic conditions that were present at the time of land development. Another focus of study is so called "plan unit", that is groups of buildings, open spaces, plots, and streets, "which form a cohesive whole either because they were all built at the same time or within the same constraints, or because they underwent a common process of transformation". The plan unit is an useful notion to be considered when deciding to define the object of study for this research.

2.2.3. Levels of analysis

Even though urban factors and processes analyzed are not strictly bounded to a certain spatial extent, the "level of analysis" concept is introduced for organizing framework to simplify the complex real world and demonstrate the object of study at different, or rather appropriate, spatial scale. There are five levels of analysis (Pacione 2005, p. 32-34) as shown in the table 2.2.

LEVELS OF ANALYSIS	DESCRIPTION
Neighborhood	It is the area immediately around one's home, its characteristics usually include homogeneity in housing type, ethnicity or socio-cultural values, issues of relevance include: processes of local economic decline or revitalization, residential segregation, levels of service provision and use of neighborhood political organization to control urban space etc. More detailed description is found in section 2.1.4.
City	Cities are centers of social, political, cultural, administrative and economic activities. Urban studies analyze the role of a city in the regional, national and international economy, and how city's socio-spatial form is influenced by its role, distribution power in the city, public and private interests' influence on government decisions etc.
Region	Spread of urban influences to its neighboring rural areas, especially as spatial expansion of cities, has introduced the concept of urban region. Analysis includes the ecological footprint of the city, land-use conflict on urban fringe, growth management and forms of governance.
National system of cities	Nationally defined goals have impacts on cities. Scholars have to understand national policies and their influences and impacts on inter- and intra-urban places to understand different aspects of urban change processes and patterns.
World system of cities	The global political economy exerts interdependence among countries and cities. World cities are of interest due to their role as political and financial control centers. World cities perspectives helps the researcher to reframe the issues at global level drawing upon the concepts defined in the context of cities and regions.

Table 2.2 Levels of urban analysis (created based on Pacione 2005, p. 32-34)

The neighborhood level of analysis should be further considered for the purpose of this study, because this level is relevant to investigate considering the objectives and feasibility of this research.

2.3. Urban Development

In a broader sense urban development can be defined as the changing patterns of urban areas as the results of i) urbanization, an increase in the proportion of total number of people living in urban areas; ii) urban growth, an increase in the population of towns and cities; iii) urbanism, the extension of the social and behavioral characteristics of urban living across society as a whole (Pacione 2005, p. 71). Williamson, Enemark et. al. (2010, p. 200-201) defines urban development in general as wide range of activities of different scales, from establishing new urban area or town, such as new residential areas, commercial or business center, industrial complex, down to just building a new house or its extension. On a level of city the urban development can be understood as the process of production of urban places. A simple model expresses this process as the creation of built environment, with its physical, social and psychological features, as the results of the operation of the development agents, public and private sector organizations, using physical and social environment through their development factors such as resources, rules and ideas (Madanipour 1996, p. 135-137). It can be depicted as shown in Figure 2.1.

No matter how simple is this model, it presents an excellent framework for further discussion on land development and development models to be discussed in the next sections and underlines the theoretical concept for the suggested ULDM, which is introduced in Chapter 5.

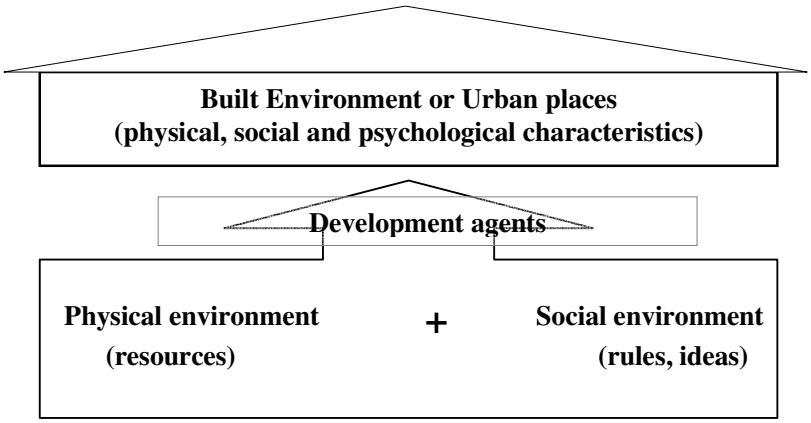


Figure 2.1. Urban development process (created based on Madanipour 1996, p. 135-137)

2.3.1. Informal urban development

It is important to recognize that urban development, as the word *development* suggests, is not always a positive development. Half of the people of the developing countries' cities live in slums considered as informal or even illegal development and without access to basic services and infrastructure such as water, roads, sanitation and sewage (UN-HABITAT 2004). "Generally, urban development that comes within the purview of a state land administration system and complies with its legal and regulatory requirements is labeled "formal" and all development that does not comply with one or another requirement is considered "informal". Informal urban developments usually occur in areas which are not suitable for development due to natural or other hazards, or on protected or restricted or reserved for future development areas. However, there are informalities in the development of middle and upper income residential neighborhoods as well. This happens through obtaining land and building permission in areas not planned for development or in planned areas, but often the development does not meet the requirements (UN-HABITAT 2009a). It should be noted that there are also "formal"

areas that have no adequate access to basic services and infrastructure and some of these type of areas will be looked closely in the case studies in Chapter 6.

2.4. Adequate shelter – adequate neighborhood

UN-HABITAT (2009b) warns unless substantial measures are taken for provision of affordable housing options and legal and secure land, the number of slum-dwellers will increase to 2 billion in 2020. To address this and other urban problems UN-HABITAT defined its mission in the following way: " ... promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all". Subsequently, it clarifies the meaning of 'adequate shelter' as not just a roof over one's head, but "It means adequate privacy, adequate space, physical accessibility, adequate security, security of tenure, structural stability and durability, adequate lighting, heating and ventilation, adequate basic infrastructure, such as water supply, sanitation and waste-management facilities, sustainable environmental quality and health related factors and adequate and accessible location with regard to work and basic facilities". Another aspect, this organization emphasized is that these 'adequacies' should be available at affordable costs and be determined together with the people concerned and considering prospect for gradual development. The characteristics of the adequate shelter promoted by UN-HABITAT are relevant for the purpose of this study, taking into account the objectives of ULDM and in relation to neighborhood. However, these 'adequacies' need to be scrutinized so that it will be useful at the level of neighborhood and for the purpose of this study. This will be discussed later in Chapter 4.

2.5. Conclusion

Urban studies is multidisciplinary and it is concerned with all aspects of the society and city, i.e. social, economic, environmental, physical and political aspects. Considering the nature of the ULDM, and after looking into the theoretical perspectives and related specific studies, the research shall utilize urban morphology and 'adequate shelter' principle to study 'neighborhood' in urban areas.

3. Land development

In this chapter land development, models in urban studies, land development models, which are explored extensively to be compared with the ULDM later, and the link between land development and land administration, are studied. An early definition of land development utters that land development is an activity whereby the infrastructure and services are established and the land is made ready for development, i.e. for construction of buildings (Abrams 1971). Land development is a process through which new urban areas, for instance residential neighborhoods, commercial districts and industrial complexes, and new physical infrastructure, for instance electricity lines, roads and sewage system, are established by implementing land use or development plans. Also, this process can be defined as the management of change in existing urban or rural land use by regulatory mechanisms such as planning or land use permissions. It is a multidisciplinary activity and based on the scope and nature of the development, the process includes activities like land acquisition, subdivision, legal assessment and planning consent, project design, construction works, distribution of development incentives and costs. It involves actors such as landowners, developers and speculators, architects, marketing agents, public organizations, building contractors, third parties, such as NGOs, and financial institutions. Another definition of land development is that it is considered as the process of converting undeveloped land into developed land and in the process the value of land is affected, i.e. the value is usually increased as shown in Figure 3.1.

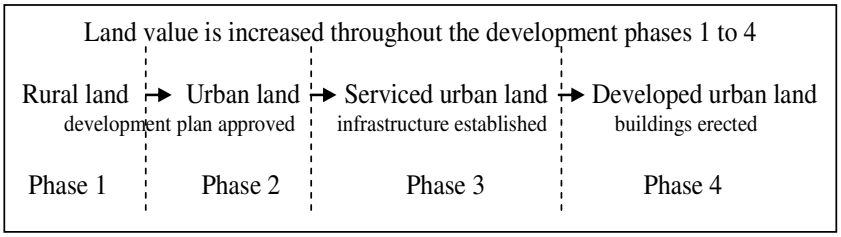


Figure 3.1 Land development process and incremental increase in land value
(created based on Williamson, Enemark et. al, 2010, p. 196-197)

The figure above shows that the development process has four phases for land status, namely rural, urban, serviced urban and developed urban. The land price and its physical status is affected by the decisions and actions such as initiation of development plan and its approval, and the construction of the infrastructure and buildings. Here it is important to note the increase in land value from phase 1 to 2 is the result of the decision to transform rural land to urban, i.e. the result of societal development, but not the result of any physical development (Williamson, Enemark et al 2010). Healey gives the following definition for the development process Healey (1992) as “the transformation of the physical form, bundle of rights, and material and symbolic value of land and buildings from one state to another, through the effort of agents with interests and purposes in acquiring and using resources, operating rules and applying and developing ideas and values”. This definition is rather very detailed and narrowed down for land and property development research. Before start exploring the land and property development models, it is worthy to briefly mention the urban related models studied in Urban Geography by Pacione.

3.1. Urban land use versus land and property development models

For clear understanding of models this study is concerned with, it is necessary to discuss shortly about the urban growth models. The main comment on Pacione is that he has introduced urban growth or models of the city or models of the urban land use together with the model of the circulation of

capital. The former models, to be referred further as urban land use models, are concerned with the growth of the population and the spatial extent of the city, primarily. They deal with issues such as patterns of city growth like fringe belt and burgage cycle, concentric-zone and the growth outwards around it, sectoral outwards grow from the center, multiple center growth rather than around one center and so on. These issues form the classical thesis for the urban land use models and the other models build upon these ones to improve or expand the previous. These models are for instance Burgess's concentric-zone model of urban land use, Hoyt's sector model of urban land use, Harris and Ullman's multiple-nuclei model of urban land use. The other models which are built upon above models are Mann's model of a typical medium-size British city, Kearley's modified Burgess model, Vance's urban-realms model and so on. The latter one, Harvey's model of circulation of capital, focuses on the place of the city, or urban place, and sees it as capitalist mode of production (Pacione 2005, p. 139-153). Here this model will be not be discussed as it will be explained later in section 3.2. Nevertheless, it is observed that there is clear distinction in the scope and nature of the two types of models and for purpose of this study the latter type of models are of importance, but not the former ones. Another observation is that some models are of generic character so that, when viewed from one angle or another, its scope and nature can fit to explain different phenomena at different scale, as in this case the model of the circulation of capital demonstrates.

It can be seen that both urban and land development phenomena are processes involving different events, activities, actors and complex relations. Often different models are created, at least, to explain and describe and thereby understand the processes and the nature of the development and its causes. The next section will review the existing land and property development models.

3.2. Land and property development models

The development and land development processes, see Figure 2.1. and 3.1, and different models in urban studies discussed earlier in this chapter provide a comprehensive insight into the phenomena of development and models in urban context. This section deals with models – representations of real the world, i.e. land and property development models. In land and property development literature the terms development, land development or property development are used interchangeably (Healey and Barrett 1990; Gore and Nicholson 1991; Guy and Henneberry 2000; Williamson, Enemark et al 2010), so will this study, unless it specifically defines a term. In order to explore the land development models available review studies were utilized to grasp the scope and key concepts of the land development paradigm. Two reviews, Gore and Nicholson (1991) and Healey (1991) and a model from Harvey (1985), are studied as the entry point to explore the development models. Later, some other models will be briefly studied, as they all can be, in general, framed into the modeling approaches reviewed by above mentioned studies. Both reviews identify different models and put them into four groups according to similarities in their approach to the development processes. Their groupings and descriptions are shown in Table 3.1.

It can be observed that the definitions given by the two reviews on sequential or descriptive and event-sequence models, behavioral or decision-making and agency models, structure of provision and structure models are reasonably comparable and can be regarded, in a broader sense, roughly as same groupings. As for the production-based and equilibrium models, as defined by the authors, they do not have much in common except that they can be put under an umbrella of economics. The modeling approaches and groupings as identified by these two reviews will be studied and discussed in the following paragraphs.

GROUPINGS OF MODELLING APPROACHES	
Gore & Nicholson (1991)	**Healey (1991)**
Sequential or descriptive models depict the development process as a chronological sequence of stages, at each of which certain events occur.	**Event-sequence models** focus on the management of stages in the development process. These derive primarily from an estate management preoccupation with managing the development process.
Behavioral or decision-making models emphasize the roles of different actors in the process and the importance of the decisions they make in ensuring its smooth operation. Although they often retain a sequential format, events are generally presented as secondary to decisions.	**Agency models** focus on actors in the development process and their relationships. These have been developed primarily by academics seeking to describe the development process from a behavioral or institutional point of view.
Production-based models portray the development process as a specialized form of productive economic activity, and tend to view it from the perspective of the economy as whole – that is, they tend to be macroeconomic in flavor.	**Equilibrium models** assume that development activity is structured by economic signals about effective demand, as reflected in rents, yields, etc. These derive directly from the neo-classical tradition in economics.
Structures of provision models contend that different types of development are characterized by different institutional, financial, and legislative frameworks, and as such the search for a generally applicable model of the development process is futile. Instead, each type of development is seen to have its own distinctive "structure of provision", whose features may be built into a separate model. This implies that eventually there will not be just one model of the development process, but a comprehensive set of specific models.	**Structure models** focus on the forces which organize the relationships of the development process and which drive its dynamics. These are grounded in urban political economy.

Table 3.1 Land development models' groupings and
their descriptions by Gore & Nicholson (1991) and Healey (1991)

Gore and Nicholson (1991) intended to provide comprehensive entry point for the new comers in land development study field and introduce the ways in which development process operates and the key components and attributes of that process from variety of sources of very focused and technically oriented literature. The authors contend that models were created for their own specific purposes, with different theoretical backgrounds and forms. Yet they also look for a model which is applicable to all the different circumstances and situation of the complex development process. Essentially all models represent the same phenomena, but from different angles based on their objectives and context. The models were evaluated based on the following criteria – inaccuracy, internal consistency, comprehensiveness, clarity of exposition, extent of applicability and relative merits of theoretical underpinnings. Healey (1991) reviews the models of the development process "to assess their capacity to analyze the detail of agency relationships in the negotiation of development projects, while at the same time offering ways of generalizing about the significance of actors and events in the development process under different conditions". Her review is more intended for development professionals and looks for a model fit to the suggested analytical frame and in the meantime generally applicable to all circumstances of the development process. The paragraph below starts the review of the different approaches with sequential or descriptive and event-sequence models.

3.2.1. Sequential or descriptive and event-sequence models

Sequential or descriptive and event-sequence models, further to be referred as "sequence" models, can be as simple as describing the four phases of the development, which are evaluation, preparation, implementation and disposal. Popular type of such a model is flow diagram, it can be showing the generic, see Appendix 3.1, or specific, see Appendix 3.2, processes of the development, where linear sequence of events and decisions described. The process of development is not always a simple sequence of event, even not necessarily strictly ordered sequence. Flow diagrams have limited possibilities to show the dynamic aspect, i.e. cyclical nature of the development, isolates development from the rest of the built environment and other external factors such as policy, financing and demographic change (Gore and Nicholson 1991). Although, the sequence models provide good insight into the activities carried out throughout development process, they do not give specification of actors and interests and thus is of little help for explaining why the development process is shaped in a particular way under particular situations (Healey 1991). The complex nature of the development process and its modeling can be understood by how it is grouped by these two reviews. Healey (1991) has used the Goodchild and Munton model "A descriptive model of the land development process" to explain the sequence type models, whereas Gore and Nicholson (1991) used the same model to describe behavioral or decision-making models. Both explaining from their point of views and rightly, because the model both describes the sequences, like Healey (1991) citing Goodchild and Munton:

> The development process begins when a parcel of land is considered suitable for a different or more intensive use, and is completed when the necessary changes have taken place and land re-occupied …
> 1) the "maturing of circumstances" that makes possible a change in the use of land, for example the construction of a new road or the selection of a settlement for expansion.
> 2) purchase of the land by a person prepared to develop it. …
> 7) its occupation by either the developer, a new owner or a tenant.

and behaviors or decisions as Gore and Nicholson state that Goodchild and Munton based their model on "two key decision points, namely:

> 1 the identification of land as being suitable for development;
> 2 the initiation of construction work upon that land".

For clarity and better understanding, and demonstration purpose different models, are found in Appendix 3.3 Example of sequential or descriptive model – development pipeline and 3.4. Example of sequential or descriptive model – descriptive model, which is "A descriptive model of the land development process" devised by Goodchild and Munton, grouped under sequence approach by Gore and Nicholson (1991) and under agency approach by Healey (1991). Next, the behavioral or decision-making and agency models are discussed.

3.2.2. Behavioural or decision-making and agency models

Behavioral or decision-making and agency models further will be referred to as agency models. These are models where actors, their roles, decisions, relations and interests take the central stage. Models of this approach can be divided into two categories, one is individualist approach which sees the actors as independent actors without relations to other actors in the process, the other is interactive, i.e. the interactions and relations between actors are modeled. Good glimpse of the individualist approach can be seen from Bryant and others' land conversion process, see Appendix 3.5, which reflects the transition from rural land to urban and shows the different stages with participating actors. An example of interactive model is one from Drewett which is presented in graphical form and its associated table, see Appendix 3.6, where it gives more information on the stages of the development, description of events, related decisions, actors and possible source of the financing. In this model the developer is seen as the main player (Gore and Nicholson 1991). According to Healey (Healey 1991), analysts tried to develop agency models in three ways, the first one relating to key actors', developer,

landowner and planner, roles, and to two key events, identification and initiation (see Appendix 3.4). The second one emphasizes the diversity of actor-event relations. It accommodates parallel events and dynamicity of the process. An example of this approach is shown in Appendix 3.3 (as informed in the previous paragraph this approach is considered as sequence model by Gore and Nicholson (1991). The last approach is one which builds on the interests of agents. These interests are linked to the social relations of the actors within the mode of production and the socio-political system. Here the development is seen as production process, where actors act based on their interests, see Appendix 3.7 Example of agency model – actor's interest based. The essence of the agency models is rather pluralistic and they just give the methods to describe the complex relations of the development process, and therefore lack the dynamic perspectives that drive the development (Healey 1991). Much attention given to the actors, their decisions, roles and relationship, weakens the importance of forces or factors triggering and driving the decisions and behaviors (Gore and Nicholson 1991). The following paragraph will study the structure of provision or structure models that are considered to provide more insights, compared to the previous models, into the development process.

3.2.3. Structure of provision or structure models

Structure of provision or structure models further will be termed as structure models. The production and consumption, that is the provision, of the built environment is not merely a physical process, but also a socio-economic process, therefore structure models try to accommodate institutional and other structures and the social agents which are within the structures. Propositions for these models are the i) social relations, legal framework and financial arrangements, ii) social agents are defined by their economic relationship to the provision, iii) different types of building provision have different combinations of the elements and relations specific to them, iv) the content of structures of provisions can be identified only by studying the real world with focus on social agents and their relations, and v) the structure of provision is dynamic due to the changes in the social relations. Appendix 3.8 shows the example of structure model on owner-occupied housing provision and example of the structure of council-housing provision. These model can be modified, in accordance with the propositions above, to analyze other types of provisions, say industrial buildings, by modifying the elements such as relations, agents and interests (Gore and Nicholson 1991). The structure models mainly derive from Marxist source and they are concerned with "the analysis of the processes of the production of the built environment". The structure models place these processes of production in general model of a capitalist economy. One model is somehow mix of the agency and structure models. It links the state, construction and finance sectors and depicts the relations and some factors, see Appendix 3.9 example of agency-structure model – UK case (this example model is considered as agency model by Gore and Nicholson). Some of the structure models are directly based on the Marxist economics, for instance the one from Boddy which is built on Marx's circuits of capital[2] – industrial, commercial and interest bearing (this model is considered as production based model by Gore and Nicholson) and claims event-sequence development processes involve all these three forms of capital, see Appendix 3.10 example of production based and structure model. Healey (1991) indentifies the model "Built environment in the structure of relations between primary, secondary and tertiary circuits of capital"

[2] Marx identified three Circuits of Capital, i) commodity, in which the surplus value in products is realized in money form by the commercial capitalist, and then reinvested in more commodities; ii) money, in which money is invested in commodities in order to realize surplus value returned to the finance capitalist in the form of money with interest; and iii) productive, in which the owner of means of production and labor produces a product and puts it into the market in order to realize the surplus value, which is re-invested in means of production and labor. As capital circulates and passes through the production process, it undergoes metamorphosis M – C – M' and passes between these three interconnecting circuits, which are the components, supporting each other, of the total social capital. The Metamorphosis of Capital is the transformation of capital from commodity form (C) to the Money form (M) and back again, in the course of circulation. Marx represents this metamorphosis as M – C – M', indicating that the metamorphosis brings about an increase in the magnitude of the capital when its value is realized again in Money at the completion of the cycle. Source http://www.marx.org/archive/marx/works/1885-c2/guide/index.htm.

by Harvey as the most significant contribution for analyzing and understanding property production in capitalist economy, see Appendix 3.11 Example of production based and structure model – Harvey. Based on Marx's circuits of capital Harvey (1985) developed model which puts the production of built environment, in the context of three circuits, i) the primary or production circuit, where commodities are produced and consumed, and the surplus value from this circuit is then invested to two different areas, the first one is fixed capital, like machinery and/or buildings etc. used for production, and the second one is consumption fund, i.e. consumer goods and residential houses etc. This surplus value or investment is channeled through capital market facilitated by the financial and state intermediaries to the secondary circuit, ii) the secondary circuit is the investment arena of the fixed capital and consumption fund and it results in the establishment and also changes in the natural and built environment where the socio-economic activities occur, iii) the tertiary circuit falls in the sphere of public affairs, where taxes from the first and second circuits are invested in the technologic and scientific development and social welfare. Importantly, the model shows the complex relationship among production capital, which is land and property for use, capital market (land and property for investment) and the state with its role for socio-economic and technologic-scientific development. Both reviews see the Harvey model as very important, but rather broad and all embracing thus lacking the characteristics for empirical applications (Gore and Nicholson 1991; Healey 1991). Now, the remaining approaches, first the production based from Gore and Nicholson and at last the equilibrium model from Healey will be discussed.

3.2.4. Production based models

Gore and Nicholson (1991) argue that production based models build, almost exclusively, their theoretical underpinnings on Marxist thoughts of production in capitalism, as did Healey (1991). They identify the models by Boddy and Harvey, see Appendix 3.10 and 3.11, as the two main examples of this approach. Since the details of these two models are already discussed in the previous paragraph, they will not be discussed here. However, it is notable, that the two reviews have identified these models as representing different approaches. Healey classified them as structure models and Gore and Nicholson as production based. Again, it cannot be really said that one is right and the other wrong. This is due to the fact that these models can be said as production based, because the analysis emphasizes how the production of built environment is carried out, but also they can be grouped under the structure models, because they concern the institutions involved like public affairs, financial market etc. and their relationship and put them in a broader perspective of societal development. And both these set of elements can be observed from the underlying theory of capital circuit. Both authors look on these models from their perspective. For the purpose of this research they can be seen as socio-economic models and be considered from the perspective of the suggested ULDM.

3.2.5. Equilibrium models

Healey explains (1991) that these models are based on supply and demand and assumes that the driving factor for development is demand for land. The equilibrium models see development activities as the processes of the market supply and demand. However they do not address properly different forms of demand such as user's or investor's, non-economic interests such as the authorities concern with social and environment issues. Also they do not consider the complex nature of the development process, since these models are not considering the different sets of events, significant time period spent for development implementation, and all the different actors. These models are more relevant for analyzing standard types of development projects in relatively stable conditions with active property market which is not dominated by a few large actors. Any illustrative depiction or formulas for this approach were not included in her review.

At the end both authors conclude that there is no generic or universal development model that accommodates the complexities of the process. Gore and Nicholson (1991) consider that the models presented were good enough in their purpose such that they provide good introductory notion to the

intricate processes of the development, but by no means able to provide in depth knowledge, as they do not appropriately address all the necessary aspects of the socio-economic and legal perspectives, the actors and their interrelationships, driving forces and so on. Simply put, familiarity with a series of diagrammatic depictions or stylized models are not good enough, therefore, in order to fully understand the process, it is necessary to conduct "detailed investigations of the organizations, operations, financial mechanisms, personnel, and hardware involved, of the operating frameworks in which they work, and of the ways in which all these fit together". They state that the structure models approach, see appendix 3.8, is the most appropriate one to conduct such an investigation. This investigation is a huge task, thus it would require a program of research in which investigators shall work within the structure model framework and use the results for more complete understanding of the development. In her conclusion Healey (Healey 1991) puts all the approaches in the context of economics and assert that the models are theoretically underpinned either by Marxist, for instance models illustrated in Appendices 3.8-11, or neo-classical, for instance models depicted in Appendices 3.3, 3.4 and 3.6, teachings and that these two schools tend to end up discussing similar issues. Then she claims that the structure model with enhanced institutional perspective, underpinned by its Marxist and related political economy foundation, is most suitable to try to develop a descriptive model for the analysis of the complexities of the development phenomenon. Next, an institutional model suggested by Healey and some other paper on the land development will be briefly reviewed in the next section.

3.2.6. Additional literature on land development models

After having been acquainted with the framework of the development models and different approaches from the reviews above, it was considered necessary to obtain more information and perspectives on land development and its models, and to look for possible link between the land administration and land development. Therefore, number of articles on land development, mostly with focus on its research framework, are reviewed, while considering their possible support to this research.

Healey (1991) has reviewed the models of the development process, see sections 3.2 and 3.2.1-3.2.5, and suggested a descriptive institutional model of the development process, with the aim to try to offer model which is able to show the details of the events and agents involved in the process and the diverse forms of the processes as the results of different circumstances, and in the meantime be able to link the processes within the frame of broader socio-economic and political forces. The model is a faceted model consisting of four levels i) description of the development process events and the actors who carry out these processes, ii) identification of the actors' roles and power relations between them, iii) an assessment of the strategies and interests which shape these roles, and the way these are shaped by resources, rules and ideas, and iv) the relation between these resources, rules and ideas and the wider society. She claims that the model fulfills its objectives set, however the research is very demanding when carrying out the investigations through the level one to three. Even though the investigations or data collections from these levels are very demanding, in the meantime, they are of invaluable importance, because they provide very detailed and crucial data for the research to understand the different forms of the development and prevent the oversimplified pictures of the development activities. Another claim made by her is that the model adds value to both practice and theory. The level of detail of the investigation provides good in depth knowledge about the events and actors for the researchers, who usually lack detailed knowledge, and the overall framework within broader socio-economic and political context gives the local officials and professionals the possibilities to place and understand the wider aspects and forces of the development (Healey 1992), see Appendix 3.12 example of institutional model of the development process. This model places emphasis on the events, actors, their relations and the environment, socio-economic and political context, in which the process occurs, and it integrates the characteristic features of all the models, i.e. sequence, agency, structure and economic models. Another aspect, of this model that is relevant for the ULDM model is the outputs and impacts element. The outputs and impacts are concerned with the

profits gained by the land development and construction companies, and construction materials suppliers and jobs created etc. in the process of land development. This is relevant link for the multiplier effect of the ULDM, and shows that there can be found some theoretical and empirical evidences of this effect. Certainly, the multiplier effect matter is worth to be explored further. However, the study must limit its scope given the timeframe, thus this will not be further dealt in this study. It shall be noted that in the analysis of the development models or processes, the details as well as overall framework of the phenomenon is important.

Ball (Ball 1998) reviews the approaches in land development from the perspective of institutions, as this approach became widely researched. The reason for attention in institutions is that wide variety of academic specializations were involved in land and property education, and also because of less interests and criticisms in competitive markets and the economic modeling of the markets. This decrease in interests and increase in criticism is due to, to some extent, lack of city-level property market data and oversimplified economic models of very complex processes that are influenced by the local and historic aspects, and powers and behaviors of the participants of the processes. However, the author argues that the economics of property market and institutions should be seen as a continuum of issues rather than an opposition. Further he claims that there is rather bigger differences in seeing what is an institutionalist analysis, so the review will focus to see these differences. First he reviews the mainstream economics[3], then behavioral or power, structure-agency and finally structure of provision approaches to the institutions. Surprisingly a definite definition of institution was not found. For many studies it meant the firms, public bodies and other agencies associated with land development. Some others taken the property rights as the framework for institutional definition. Urban literature did not make any distinction between the organizations or the players and institutions or the rules, as distinguished by institutionalist literature. For the ease and no greater explanation value added by using the property rights route, Ball used the first definition, i.e. actors associated with land development, for his review. After having reviewed the four approaches he concludes that due to the theoretical foundations and methods applied the approaches are different, but they do not really argue if institutional perspectives should be part of the research or not. On the other hand, it became evident that determining how important is the institutions in property development process still needs to be researched. This is due to confusion and uncertainties over institutional analysis and insufficient empirical work. There is need for much more research to decide which institutional approach is relevant and also to understand when and under what circumstances, if at all, this can be applied. Basically, from this review it can be understood that institutions should be recognized for any research, but it is necessary to consider and decide to which extent to study them, when carrying out an analysis of land development process.

Guy and Henneberry (2000) see that the studies of the land development or the production of urban built environment have been carried out essentially from the economics perspective, which can be divided in two broad groups, the mainstream economics and Marxist approaches. However, this has been changing as scholars criticized the economic approaches as giving inappropriate attention to the agencies and their interrelations. It was argued for the need to analyze the development process from a wider angle in the institutional context. The authors critically reviews the suggested analytical frameworks, mainly the ones by Healey (Healey 1992) and Ball (Ball 1998), and propose that the economic and social analysis should by applied. While economic analysis significantly enhances the

[3] Mainstream economics is a loose term and it is most closely associated with neoclassical economics, which combines neoclassical approach to microeconomics with Keynesian approach to macroeconomics. Neoclassical economics is a term used for approaches to economics focusing on the determination of prices, outputs, and income distributions in markets through supply and demand, often as mediated through a hypothesized maximization of income-constrained utility by individuals and of cost-constrained profits of firms employing available information and factors of production, in accordance with rational choice theory. Keynesian economics is a macroeconomic theory that argues that private sector decisions sometimes lead to inefficient macroeconomic outcomes and therefore advocates active policy responses by the public sector, including monetary policy actions by the central bank and fiscal policy actions by the government to stabilize output over the business cycle. Source: http://en.wikipedia.org/wiki/Mainstream_economics

understanding of how the built environment is produced and how the supply and demand affects the development processes, the social analysis enriches the understanding the social contexts, agents, their behaviors and interrelations and how these affect the development process. The social aspects of the studies should address the changing nature or dynamics of the processes and actors, the interrelationships of the actors and groups, level of analysis – if on an individual or group of individuals or wider social level and their cultural aspects.

A study by Doak and Karadimitriou (2007) suggests complex systems/network approach as a conceptual framework to study the development processes. The authors focus their studies on real estate investors and commercial space which was previously developed, but they claim that their approach can be used in any type of land development. Their study is in line with the previous studies in that more focus should be given to the structure and agencies, and consequently institutions (Gore and Nicholson 1991; Healey 1992; Ball 1998; Guy and Henneberry 2000). The main concern of this study is the actor and networks formed by the actors and their relations and interrelations as complex system, while considering the contemporary concerns for sustainable development, i.e. the economic, social, environmental and ethical issues. These actors and the networks are seen as parts of structures that perform complex processes, while producing and consuming built environment in time and space. Then the structures interact with other structures and this way create more complex structures or systems and networks which are to be studied. For the study the authors used the case of Paddington Waterside Development which involved many different actors and their networks interacting with other networks. In this study the authors agree with the concerns and study perspectives suggested by Guy and Henneberry (2000) as follows: They seek perspectives that are able to

- handle the dynamic processes involved;
- examine contextually situated and contingent sets of actor interrelationships;
- recursively link agency and structure;
- map such processes across spatial scales, from the local to the global and back again; and
- take into account the cultural frames through which these processes are negotiated and put into practice.

The authors believe that their studies have helped them to “reconceptualize property (re)development as a process of space transformation, through the interaction of actor networks and their different spatio-temporal realities”, which was not addressed before. However, the suggested framework is in fact, as the authors themselves acknowledged, more deeper studies for the economic and social aspects as suggested by Guy and Henneberry (2000), while taking consideration of the contemporary concerns of sustainable development.

Samsura, van der Krabben et al. (2010) have addressed the land development processes from a game theory approach. Development process is seen as social situation where its actors and groups of actors interaction is one of the main elements. The actors’ strategies and decisions, and impact of decisions on each others and resultant outcomes are studied. The authors base their theoretical framework on Ball (Ball 1998), who suggested the game theory approach within the mainstream economics from institutionalist perspective as one way of studying the development process. Game theory stems from decision theory and it is “a theory of interdependent decision-making in which the decision-makers involved have conflicting preferences and the outcome of their decisions cannot be determined by one party or actor only”. This approach itself is not an framework conceptual model, but it is a modeling technique that supports rationalizing decision-making. The model was applied to a green field residential development case. The stakeholders, their strategies and decisions, preferences were modeled and the model was used to find out the situation where all stakeholders are satisfied, i.e. equilibrium situation. This modeling technique proved to be a good decision support tool to understand what the ideal situation can be when all stakeholders are rational and have all necessary information. The authors believe that the model is a promising approach to address the complexity of the development process and the assumptions made in model can be validated empirically. However, it is important to note the model is generalization of the real world and it does not consider the specifics, odds, unpredictability and details that can be found in actors.

Based on the studies discussed in this section, it can be observed that the focus of the models of land development have been shifting over time from essentially economic to socio-economic and institutional aspects. Lately, there has been some attempts to use the game theory approach, which falls within the institutional economic approach (Ball 1998; Samsura, van der Krabben et al. 2010), to model the development process in equilibrium, i.e. where all stakeholders are better off, to support decision making. Further it is observed that land development is itself a multidisciplinary subject which falls mainly under the real property economics and planning subjects, but now more and more integrating the social studies. In general, i.e. not exactly in a very strict time sequence, the chronological flow of the development in the land development study shows that simple descriptive model in the form of activity diagram evolved into description of the events, processes and stakeholders from the economic point of view, and then attention shifted to structures embracing the processes and stakeholders, and consequently complemented with more complex social studies that look at behaviors, decision making and power relations, and finally to add more complexities scholars recognize the importance of the dynamics or temporal aspects. This is very much in line with one of the basic concepts of urban studies – urban place, which emphasizes that the studies should not only look on the physical characteristics, but also at its social, psychological and temporal aspects. At last, it is concluded that there is no general model of land development that can be applied to all kinds of different situations in the producing the built environment, despite the efforts made by scholars, however the models can be modified and applied for particular cases like ULDM and contribute to its explanation. This will be done in Chapter 6.

3.3. Land development and land administration

While studying the literature on land development models there was no literature found which discusses explicitly relationship between land development and land administration or cases similar to this research. Thus, some more literature was reviewed to see the relationship between land development and land administration.

First some literature on land administration is reviewed. Dale and McLaughlin (2000, p. 2-11) consider that the regulatory component of the land administration functions involve the control of the land use and its compliance with the plans in land and property development. They also assert that assured and publicly recorded land or property rights are crucial for their use as collateral and transfer and improvements to the land. UNECE (2005) defines land administration as the processes of recording and disseminating information about the ownership, value and use of land and its associated resources. In general, land administration is concerned with urban development only as far as it concerns the compilation and maintenance of land records. However, “an understanding of the broader aspects of land management and land reform is essential to proper land administration but is not its essence’. From this document it can be understand that the secure tenure and its registration is the central or starting point for land administration. In terms of land development secure tenure, be it ownership or leasehold right, operating in efficient land administration system, will ensure rights to the land and serve as proof of ownership, open the possibilities to use the land or the ownership rights as collateral for financing, support speedy, smooth and low cost transactions, and support urban development and planning with land ownership, use, value information in combination with socio-economic and environmental data. Williamson, Enemark et al. (2010) state that land administration is involved in land development by controlling the development proposals and change of land use within the planning regulations and land-use laws, including the determination of the property boundaries for development site. Further, the following paragraph provides some more insights where there is link between land administration and land development.

Buitelaar (2004) carried out studies on transactions costs that incur during the implementation of development projects. He introduced institutional arrangements framework by focusing on user rights regime, which he claims is very important for land use planning and development. He explains that

user rights regime, see Figure 3.2, is a set of formal rules that defines and regulates the right to use land. It consists of property rights, which is meant to facilitate exchange of land, and spatial planning regime, which provides means to restrict the property rights for public interests via zoning or land use plans.

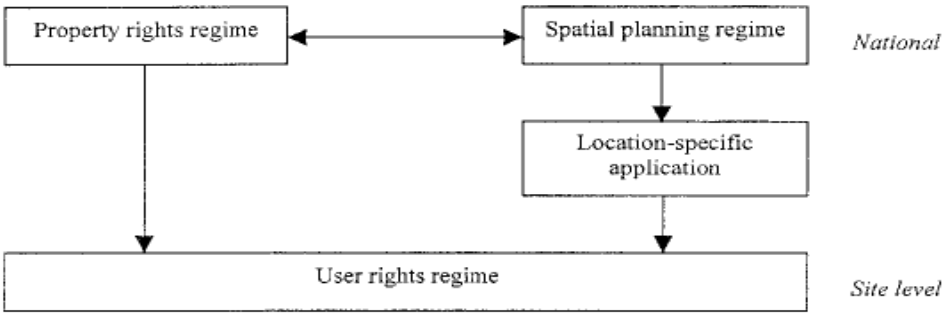


Figure 3.2 The user rights regime by Buitelaar (2004)

It can be seen that the property rights, one of the central elements of the land administration system as discussed in the previous paragraph, are important institutional foundations for the land development process. The studies by Gore and Nicholson (1991) and Healey (1991; Healey 1992) presented many different types of models, but in these models there are any explicit talks about the land administration. This is natural because their concern is land development not land administration. However upon looking closely on these models, it can be revealed that most of the models incorporate property rights or ownership issues and importantly it can be deduced that all these models are built on assumption that the transactions in property rights work normally without problems.

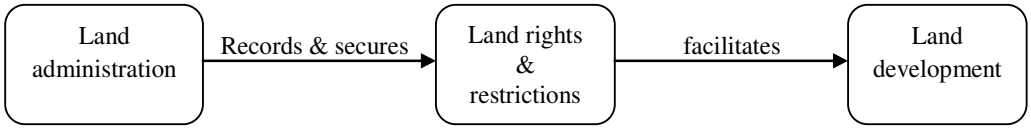


Figure 3.3 The nexus between land administration and land development

Property rights or the land tenure, be it ownership or leasehold rights, with its rights and restrictions constitute the nexus between land administration and land development, see Figure 3.3. While land tenure is at the very heart of the land administration, it is an important element for smooth functioning of the land development.

3.4. Conclusion

There are many different types of land development models, each devised to address a particular case, but also there are attempts to create a general model that will embrace all the different situations in land development and in the meantime be applicable for empirical studies. However, this is very difficult due to the very complex nature of the land development process. One approach could be identifying a model that appropriately fits the objectives of the case in question and modify it to support to carry out the analysis and explain the case. Another approach could be to utilize the institutional model suggested by Healey (1992), because this model provides an exhaustive list of aspects that need to be considered when analyzing land development process. Although it might be very demanding, these aspects can be used as parameters that can be used to analyze a specific development process or, perhaps more easily, they can be used to compare with another model to determine how completely the model addresses the complexities of the development process, and how effectively the model fulfills its objectives. The latter approach will be utilized for the purpose of this research. An important finding is the Harvey's (1985), see Appendix 3.11, work on the urbanization

of the capital and its model presented as the primary, secondary, and tertiary circuits of capital. This model may offer useful insights and theoretical underpinning for the ULDM and its capital generation thought. Another important finding is from Healey's (1992) institutional model. She discussed about the outcomes and impacts in her model that provide relevant considerations for the multiplier effect of ULDM. However, these two aspects will be not be dealt with in this study, given the timeframe and as it will lead to another study, but certainly they need more attention and discussion in the context of ULDM. Land administration and land development are linked through land tenure. Land tenure, with its rights and restrictions, is central to land administration, whereas secure and effective land tenure institutions underpin smooth land development.

4. Methodology

This chapter describes the methods used, activities carried out, and data required to test the validity of the suggested ULDM. First, the theoretical feasibility of the model was investigated based on an existing conceptual framework – institutional model of land development model. Then case studies from Hanoi, Vietnam and Ulaanbaatar, Mongolia were used to perceive the empirical applicability of the model. At last, the results of the comparison with the institutional model and empirical findings were integrated and analyzed against the objectives of ULDM. The overall research flow is shown in Figure 4.1.

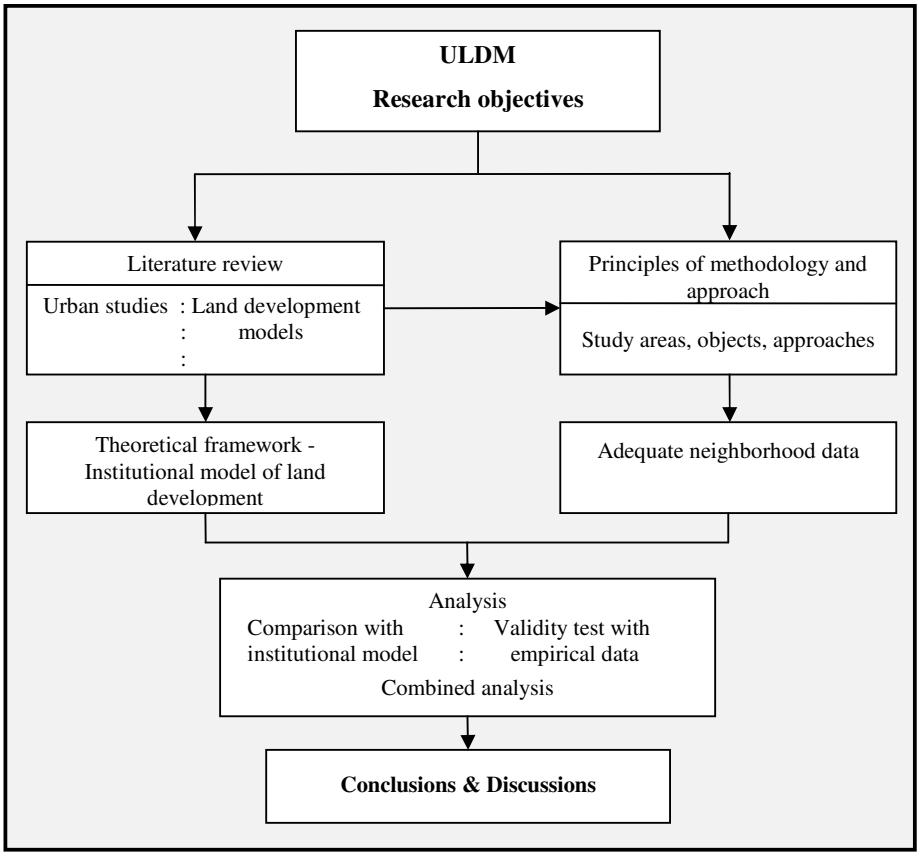


Figure 4.1. Generalized research flow diagram

4.1. Institutional model framing the ULDM

Based on the literature reviewed, the institutional model of development process, namely "a consolidated model of the development process", further this model is termed as institutional model, proposed by Healey (Healey 1992) is selected to analyze ULDM, because this model provides a proper ground to check the completeness of ULDM. As the name suggests this model has consolidated or integrated the characteristic features of the sequence, agency, structure and economic models described in section 3.2 and provides exhaustive list of aspects and elements to be considered when examining a development process. The elements to be investigated are based on the four level of the institutional model i) events and stakeholders, ii) roles and power relations, iii) strategies and interests with regards to the roles and resources, rules and ideas, and iv) relation between the resources, rules and ideas and the wider society. First, the institutional model is described more detail

to explain the levels and aspects considered in it. Second, the elements of ULDM is systematized and put in the frame of the institutional model. Then, the analysis will try to determine how completely the model addresses the complexities of the development process and how effectively the model can fulfill its objectives. At the end, an evaluation is made on how relevant is the institutional model for ULDM.

4.2. Case studies

Case studies in Hanoi, Vietnam and Ulaanbaatar, Mongolia were carried out to test the ULDM empirically. Prior to deciding to choose these cities contacts were made with the Hanoi University of Science (HUS) and Land Administration Department of Ulaanbaatar city (UB LAD) to find out the feasibility of the field work, in terms of availability of areas to test ULDM, logistics and administrative support. After these contacts, it was identified that the cities offer i) variety of land development patterns with secure land tenure that can be used to test ULDM, and the contact organizations in these cities will provide the necessary ii) administrative and logistics supports that are crucial for successful case study. Moreover, the choice of these cities was influenced by the cooperation program between ITC and HUS, and fair knowledge of Ulaanbaatar city.

4.2.1. Study areas

After deciding to organize field work in Hanoi and Ulaanbaatar, further discussions were held with HUS and UB LAD to finalize the type of areas to be investigated. The main criteria for selection of the type of areas were i) secure tenure and ii) development pattern and iii) residential land use. Area with secure tenure means, be it ownership or leasehold, that the area is not an informal area, refer to section 2.4, it should not be suffering from lack of security of tenure. As far as the development pattern is concerned, there are different types of development. These types of developments were discussed with HUS and UB LAD based on the ULDM objectives and hence the following potential types of areas were identified as suitable for this study:

1. *Spontaneous development complemented with support* – this will be a case of area initially developed spontaneously by families or individuals, but at a later stage of development public planning or development support is provided. For instance, this can be an area where people started to build various quality dwellings and small businesses without plans and possibly without permissions. Then the public authorities intervened with plans and supported with some basic infrastructure such as road, electricity, water and social services such as school. It is possible that some of these could have been provided by the private sector as well.
2. *Spontaneous development without support* – this will be a case of development without any planning, no basic infrastructure and services, but with secure tenure. It is supposed that public sector did not make any plans or supported with investments in basic infrastructure and social services. The private sector has built dwellings of varying type and quality, some small businesses are established.
3. *Planned and developed to certain degree* – this will be a case where the land use was planned and the area is provided with some basic infrastructure (road, electricity, water etc.) and social services (kindergartens, schools). The development of residential houses could have been carried out either by households themselves or private developers.
4. *Well planned and developed* – this will be a case where development was realized fully and formally in accordance with the plans. The area shall have adequate basic infrastructure and social services. Usually these types of areas are for high income people and the developer builds all including the basic infrastructure.

No.	STEPS	DESCRIPTION
1.	Definition of criteria for selection of study area	Secure tenure, residential land use and development pattern, conforming to one of the four types defined in No. 2 below, were the main selection criteria for a study area.
2.	Definition of development pattern of interest	In consultation with HUS and UB LAD, four different types of development patterns were identified. These are: i) spontaneous development complemented with support, ii) spontaneous development without support, iii) planned and developed to certain degree, and iv) well planned and developed. This step was taken simultaneously with step 1.
3.	Preliminary investigation and identification of potential study areas	Google Earth and its historic imagery and layer function, which provides satellite images from different years and photos, in some cases, of the area, were used to preliminarily identify possible areas of interest, this method was especially helpful in the case of Hanoi as it provided reasonable understanding of the area and city for the researcher who had no idea about the city, as it provided photos of some areas as well. Number of potential study areas were selected with this method and presented to HUS and UB LAD for consultation.
4.	On-site visits and interviews	After consultation with HUS and UB LAD, some areas with overlapping characteristics were excluded from about ten areas from each city to six in Ulaanbaatar and eight in Hanoi. These preliminarily selected areas were visited on site to check their feasibility for the purpose of this study. They were inspected by observation and quick, short interviews of couple of inhabitants in these areas were conducted.
5.	Final selection of the study areas	Based on the activities carried out in No. 4 above, four sites were selected based on the area's compliance with the criteria set in No. 1 above, and practical arrangements such as easier access to appropriate local authorities and travel distance, especially in the case of Hanoi.

Table 4.1 Procedures for selection of study areas

The actual final selection of the study areas was made based on observation of satellite images, consultation with HUS and UB LAD, and on-site visits and interviews. Historical imagery function of Google Earth[4] provided images from different years and was very useful to see the change on the ground. After identifying number of potential areas on satellite images, these areas were discussed with HUS and UB LAD for their potential to fit in one of 4 types of development patterns described above. Then on-site visits and couple of short interviews were made in these areas to make final selection in accordance with the development pattern types. The detailed activities conducted for the selection of the study areas is summarized in the Table 4.1 above. The defining of the 'object of study' was done simultaneously while carrying out the first three steps for the selection of study areas. The next section will describe how the object of study was determined.

4.2.2. Object of study

Before the fieldwork, whilst considering the criteria for the and preliminary choice of study areas, in the meantime it was necessary to determine the object of study and its attributes in timely manner to properly prepare for the fieldwork. Hence in view of the objectives of the ULDM, the urban studies literature and feasibility, neighborhood was chosen as the object of study based on the level of analysis in urban geography. Plan unit notion of urban morphology supported to determine the confines of the neighborhood to be investigated. Based on 'adequate shelter' principal the indicators for 'adequate neighborhood' are defined and elaborated in Table 4.2., see sections 2.1.4., 2.2.1. –

[4] Google Earth is free software and it can be downloaded from http://earth.google.com/. As Google advertises it "Google Earth lets you fly anywhere on Earth to view satellite imagery, maps, terrain, 3D buildings, from galaxies in outer space to the canyons of the ocean. You can explore rich geographical content, save your toured places, and share with others".

2.2.3 and 2.4.1. for reference. It is difficult to determine what is 'adequate' as UN-HABITAT did not give the exact level or standard for its definition. However, for the purpose of this research the exact level is not important. This study will be concerned if the indicators of the 'adequacy' are present in the study areas and how these indicators are perceived by the residents, i.e. is it good or bad or any other perception the residents may have. These indicators will support the overall evaluation of the study areas in terms of the input by the private and public sectors and try to see how they affect the neighborhood.

No.	ADEQUATE NEIGHBORHOOD	
	INDICATORS	**ATTRIBUTES TO BE COLLECTED**
all indicators to be described in terms of its development history, i.e. how the neighborhood has developed over time		
1.	House and parcel quality	General physical, qualitative and structural description, who and how they were built, where did the financing come from, renovation
2.	Electricity	If the neighborhood has electricity, its quality, how and by who it was set up, how was it financed, maintenance
3.	Water supply	If the neighborhood has water supply, its quality, how and by who it was set up, how was it financed, maintenance
4.	Sewage	If the neighborhood has sewage system, its quality, how and by who it was set up, how was it financed, maintenance
5.	Heating	If the neighborhood has heating system, its quality, how and by who it was set up, how was it financed, maintenance
6.	Garbage collection	If the garbage is collected, by whom, its quality, how it is financed
7.	Street cleaning	If the streets are cleaned, by whom, its quality, how it is financed
8.	Lighting	If the streets have lighting, its quality, how and by who it was set up, how was it financed, maintenance
9.	Safety	How safe is the neighborhood, if not safe reasons
10.	Physical accessibility	Does streets provide proper accessibility, in terms of space and quality, to the houses and beyond the confines of the neighborhood
11.	Streets	The structure and quality of the streets, the pedestrian and traffic spaces, how and by who it was set up, how it was financed, maintenance
12.	Parks or recreation areas	Does the neighborhood have some parks or recreation areas, how and by who it was set up, how was it financed
13.	Playground	Does the neighborhood have playground for children, its quality, how and by who it was set up, how it was financed
14.	School	Does the neighborhood have schools for the children, how and by who it was set up, how it was financed
15.	Availability basic services	Grocery and other basic needs shops and services
16.	Land tenure	The security of tenure, type of tenure, the process how it was obtained
17.	Plans	If there are any plans, such as development plan when the settlement has started and for future, land use etc.
18.	Development dynamics	How the neighborhood was developed, how it started and how it gradually improved or degraded

Table 4.2 The indicators and the attributes of 'adequate neighborhood' to be collected

Two case studies from ITC MSc thesis dealing with neighborhood were checked for their methodology for possible ideas and improvement of the current research. One of them is dealing with so called "distressed neighborhood", which are urban areas characterized by narrow roads, crowded and poorly equipped houses, low income citizens and rural migrants, unclear land tenure – state or peasant collectives. However, these areas look decent and public services such as school, clinic and other facilities are present. This study looked on these urban neighborhoods from a renewal perspective considering the physical, social, economic and legal perspectives. For the physical perspectives it developed indices for physical conditions based on the "Norm of neighborhood design" issued by the Ministry of Construction of China and regulations from local authorities. This is helpful to see the prescribed ratio of land use, for instance how much residential land, commercial, road etc., and also the ratio for details such as floor ration to plot ration, which is regulated by the local authority's relevant organization. This study used these levels of details and developed indices

for further use and processing using GIS and MCE technique for analysis of the physical conditions for urban renewal purposes (Rui 2003). The other one is a thesis dealing with streets and their development in the selected neighborhoods. This study identified the different phases, rural-transformation-urban, of the street development and collected data on its characteristics. It included data such as land tenure and use, reasons, planning, rate of change in the transformation phase, housing type, infrastructure and services availability, safety, community organization, taxation and so on. The study was performed through field work observation, investigation, interviews and questionnaire (Inoka Suranganie 2009). This study is similar to this ongoing research in that both are involving extensive on-site field investigations and interviews, and type of primary data collected. However, the difference is in their objectives, one concerns with streets, and theirs details such as length and width, and their 'birth', the other one concentrates on neighborhood evaluation and renewal using GIS and MCE methods. This latter thesis provided useful thoughts when defining the neighborhood attributes to be collected.

Now, after it was decided how to select the study areas and what to study in them, it was necessary to establish the methods of how to study. The following section will describe the methods used.

4.3. Study approach

Three types of study approaches or methods were identified, i) field observation, ii) interviews, and iii) graphical data analysis. The first two approaches are primary data collected directly, and the latter one is secondary data collected from internet sources, local authorities and residents. Each of these approaches are described below in the following sections.

4.3.1. Field observation

Study areas were visited and thoroughly investigated and examined, while walking along the streets, for their physical characteristics to collect primary data in accordance with the list of indicators, refer to table 4.2. The list of indicators served as checklist for data collection. Not all indicators, such as Nos 16-18 in table 4.2, were relevant for field observation. Satellite images from Google Earth were used for orientation, identification of objects and discussion with residents and officials. Video taping and photographing of the typical parts of each study areas were made for possible future reference. The field observation went smoothly without any problems.

4.3.2. Interviews

Interviews were held with the residents, local officials and representatives of development companies. The list of indicators, table 4.2, served as checklist for questions. From each area 2-5 residents were interviewed, depending on the data obtained from other interviewees, field observation and graphical data, and their compliance with each other. Local land and urban development offices, and local government officials were interviewed based on their availability. One representative of the development companies who developed the well planned and developed areas, one each in Hanoi and Ulaanbaatar, was interviewed as well. Residents–Interviewees were selected based on the duration of their residence in the study area, in all study areas, except one from Ulaanbaatar, at least one original resident was interviewed. In Hanoi in each study area a community leader was identified and interviewed. All interviews were done on face to face basis, except one in Ulaanbaatar, which was made using telephone. All interviews are noted down using checklist of indicators of adequate neighborhood. The interviews in Ulaanbaatar went without any problem as the language is the mother tongue of the interviewer. The interviews in Hanoi were translated by an interpreter, and it is admitted that certain parts of the answers were omitted. However, these interviews provided sufficient quality data, because the data obtained from interviews could be compared with what is on the ground, maps and images, and where possible or necessary combined with these data. The interviews with the

residents went smoothly, they were mostly found on the streets or in their home. The interviews took from 15 minutes to just over 2 hours. Usually the interviews with officials and community leaders took longer, with residents maximum 1 hour, but in average around 20 minutes. It was easy and more open to interview the residents from Hanoi compared to Ulaanbaatar. One reason is maybe that the houses of study areas, except the well planned and developed, in Hanoi were easily accessible, their doors, in most cases, were open and immediately facing the street, whereas the dwellings in study areas of Ulaanbaatar were fenced around blocking any view into the plot and disabling immediate access and contact with people.

4.3.3. Graphical data analysis

Satellite images, cadastral and sketch maps, aerial images and land use and development plans were obtained to support the study. The former images were freely available on the internet. The cadastral maps, land use and development plans were obtained from the local land and/or urban development agencies, sketch maps were obtained from the community leaders in Hanoi. Aerial photos of Hanoi city for the study areas for relevant years were not available. Aerial photos of study areas of Ulaanbaatar city were obtained from the archives of ALAGaC. The satellite images for Hanoi were available for 2000 to 2008 and for Ulaanbaatar for 2004 to 2009. The satellite images were used most of the time. They were used to track changes and use for orientation and discussion. Where necessary cadastral and sketch maps, aerial images and land use and development plans were used to compare with the satellite images and the situation on the ground, and for consultation and discussion purpose. There were no computer aided processing of the graphical data. All analysis were manual, visual comparative analysis.

4.4. Principles for deciding the methodology

Two basic principles were applied in deciding the methodologies and approaches used in this study. The first one is that the methodologies and approaches described in sections 4.2. and 4.3. were decided strictly based on their potential to contribute to this study. The requirement that was taken into account was asking the question for each methodology and approach: ‘how this particular method or approach will add value to find out what effect do the private and public inputs have on urban land development’. Bearing in mind this question rather simple and the most straight forward, but sometimes extensive and demanding, methods and approaches were selected. Considerations were made for more detailed studies like multi-criteria evaluation based on the ratio between prescribed land uses, for instance ratio of residential land compared to overall land use in the neighborhood or floor area to plot area ratio for quality of housing, or the width and length of streets, social status, income level of the residents, or use of GIS technology for image processing to detect change over time and so on. However, it was decided that such details and types of analysis will make no difference in achieving the objective of this research. The second principle is simplicity. Due to lack or scarcity of exercises with similar objectives, which could have been utilized for guidance and direction, it was decided to utilize simple methods and approaches that will certainly provide reasonable data that can be analyzed and enable discussions that can provide firm grounds for more systematic and quantitative methods.

4.5. Conclusion

In this study two broader approaches are applied. First the theoretical validity of ULDM will be tested against existing conceptual framework – an institutional model of land development. This comparison will assist to determine how completely the model addresses the complexities of the development process, and how effectively the model can fulfills its objectives. The other approach is case studies. Case studies will be conducted to test the validity of the model empirically. Study areas, study objects, and the methodologies and approaches for the case studies were selected based on two principles, i)

the most simple and straight forward methodologies and approaches were selected by asking ‘how this particular method or approach will add value to find out what effect do the private and public inputs have on urban land development’, and ii) simplicity, i.e. the chosen methods and approaches are the most simplest, however they are counted on for sufficient data provision for analysis.

5. Case study

This chapter describes the study areas, the case study processes and results. Case studies were conducted in Hanoi, Vietnam, from October 3 – 24, 2009 and in Ulaanbaatar, Mongolia, November 23 – December 14, 2009, see Appendix 5.1 and 5.2 for the location of study areas in each city. Brief information about the countries and cities are provided. All case study areas were selected in accordance with the methodologies and principles, and studied in conformity with approaches presented in Chapter 4. A subsection is dedicated to each study area, i.e. neighborhood, and it provides general description, stakeholders involved, field observation, graphical data acquired, the pace of interviews and the results.

5.1. Case study in Hanoi

Vietnam is located south-east Asia, has tropical climate, has 86.25 million people, of which ~28% (2008) lives in urban areas, adult literacy rate is 90.3% (1999), total area is 0.33 million km2. Vietnam has been rapidly developing during the last two decades with annual growth of GDP 7.4% during 1989-2008, economic growth combined with improved social safety nets contributed to the decline of poverty from 58.1% in 1993 to 16.0% in 2006, and reaching USD835 income per capita, the country is in transition from centrally planned to a market economy. Reforms include partial privatization of state-owned enterprises, liberalization of markets and recognition of private property rights, these resulted in vibrant private sector emergence. Hanoi is the capital and second biggest city, it has ~6.5 inhabitants. It is located in the northern part of the country on the Red river bank and covers an area of 3,344.7 km2 (ADB 2010b; WB 2010b; Wikipedia 2010b).

5.1.1. Study areas in Hanoi

From initial ten neighborhoods in consideration, eight were selected for further examination after consultation with the HUS. Quick field observation and short interviews of couple of residents helped to decide which neighborhoods to select. All were suitable, but four were finally selected due to time constraint and development pattern. The reasons for selecting neighborhoods 1 and 2 in Nhan Chinh sub-district of Thanh Xuan District were the availability of administrative support, i.e. support by the district and sub-district land and urban development authorities for providing the necessary data and arranging all interviews, except the ones conducted with the residents, and the practical arrangement because these two neighborhoods were close to each other and travel time and distance to these areas. The decision to select Neighborhoods 3 in Lang Yen Xa of Ha Dong District and 4 in Trieu Khuc of Thanh Tri Sub-urban District were made after there were couple of interviews in the neighborhood 1 and 2 were made, see Appendix 5.1 for the location of study areas in Hanoi. It was apparent that from these interviews of residents and the community leaders, there could be enough data gathered, when combined with field observation. Thus, even though there was no administrative support in these latter two neighborhoods, it was decided to choose them to study. They were close to each other, easy to access, and provided interesting cases. The interviews with the officials, arranged through administrative support, served rather as double checking of what was found on the ground. In general the study areas in Hanoi provided sufficient data. The data collection process from each neighborhood is presented below. The field observation and interviews were done by using the 'adequate neighborhood' indicators as checklist for observing or interviewing. Graphical data were used to check the development pace, compare the images and maps, and compare the graphical data with what is on the ground. The availability of aerial photography over the selected neighborhoods was checked with the authority that provides aerial photography, however relevant aerial photography was not found, due to either the period the photos were taken or absence of appropriate coverage. The fieldwork worked out well, there were no problems, except minor translation difficulties and failed

attempt to meet the Urban Development Authority of Hanoi, with field observation and interviews, all respondents were very friendly, open and willing to help. HUS did its best to facilitate the fieldwork.

5.1.2. Neighborhood 1, Nhan Chinh

Neighborhood 1 is located in Nhan Chinh, Thanh Xuan District in the south western part of Hanoi which is just outside the bigger central part of the city. This neighborhood is well planned and implemented area. It is located in an area where there are a lot of development activities are going on. The area is flat, has no water bodies, is surrounded by main roads in its north, west, and south sides and in the east is separated by a smaller road from the neighboring area. The plan was strictly followed and implemented, except that some building shapes were different on the ground from the plan, see Appendix 5.3 Neighborhood 1 and 2, Nhan Chinh. Originally the land was rice field, the development approval was obtained in 2000 and the development started in 2002 and finished by 2007. The confines of this neighborhood was determined based on the development plan. Off-site infrastructure is provided by the state. All on-site infrastructure was developed by the developer. The development was carried out by a big group of companies, including investment, construction and maintenance and services companies. All maintenance and services are provided by a service and maintenance company, belonging to the group as well. The group is joint stock company with state owning 51% of the shares (Vinaconex – parent company, investment, Vinahud – construction, Vinasinco – services and maintenance). The neighborhood consists of big, high rise apartments as well as 3-5 story fancy houses of high quality. All basic infrastructure, services and maintenance is good quality. The service company even provided security service, on every corner a security officer was present. The apartments and houses are for very high income people. Even a school and kindergarten were built by the developer, but they were private and only the ones who can afford can send their children their. The ground floors of the big apartments were rented out for all kinds of commercial activities, bank, shop, grocery, fitness, restaurant, beauty salon and so on. Although, it was well planned and developed area it lacked park and playground, which were something clearly missed by the residents, as the children and adults with babies come out to this square to spend some time. For elderly this place is their meeting point to spend some time together. The square is just paved area to serve as square facing directly the main road, and not really suitable to be used as playground or recreation area/park. The streets were clean, had enough space and trees. For this development the inputs by the state were overall development plan, main off-site infrastructure in accordance with the overall development plan, and the land. The inputs by the private sector, i.e. the inputs through the residents' payment for their house or apartment, were all on-site infrastructure and all other developments like the apartments, houses, trees and so on.

Field observation – went without any problems, except one small incident where the security officer in one of the corners of the neighborhood prohibited to video taping. The neighborhood was visited four times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped. All the developments in the neighborhood were finished, except one fenced area.

Interviews – community leader, two residents, representative of the development company, Nhan Chinh sub-district and Thanh Xuan district officials were

Box 5.1 Community Leader

Community leader is a public servant responsible for the lowest level of (kind of) administrative unit the city - community. Her/his responsibilities include keep record of the inhabitants of the community, this include number of persons, their education, date of birth, employment, origins (where they lived before coming to that particular community), encourage people to live happy and good lives and fulfill their duties of citizens. S/he is the one who is in charge to connect the people with the authorities regarding their complaints such as improvement of their living conditions. The size of community both in terms of area and population vary, this particular community has ~500 inhabitants, the spatially is consists of one big apartment building.

Community leader of Neighborhood 1. Nhan Chinh, Thanh Xuan District, Hanoi, October 13, 2009

interviewed. The interviews took from 15 minutes to 2 hours 10 minutes. The interviews of the residents were shorter, and the ones with the community leader and officials took longer. List of adequate neighborhood indicators were used for checklist of the questions. Interviews and meetings, except with the residents, were arranged by the by the Nhan Chinh sub-district Chairman in charge of the urban development and land administration after instructions were given by Thanh Xuan district Natural Resources and Environment Department (NRED). All interviews went smoothly, the sub-district chairman, together with HUS, has arranged all requested meetings with related people. Some graphical data such as development plan and cadastral map were acquired during the interviews, in either paper format or their photos were taken. Table 5.1 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Community leader	55	Provided very detailed information on the neighborhood
2	Resident 1	15	He came in 2004 when his apartment was built, satisfied with the neighborhood, security and services, not complaint, does not have small children
3	Resident 2	15	She came in 2004, when her apartment was built, satisfied with the security and services, complains about lack of playground and parks, school and kindergarten not enough, the existing ones are private and expensive, has small child
4	Cadastral officer, NRED	20	Provided cadastral map, information on district development plan, land use plan
5	Head of Security Department, Vinasinco	85	appointment made through sub-district Chairman, although he was in charge of the security in the area, he participated in the development of the areas from 2003 and had good knowledge of the development pace and the neighborhood
6	Chairman in charge of Urban development and land administration, Nhan Chinh	130	Interviewees listed in 6, 7and 8 were interviewed together. Provided cadastral map, information on the public investments and plans, land use plan, land tenure, general info about the sub-district, building permission. Also very open discussions were held about the governance, poverty and corruption.
7	Chairman in charge of finance and investment, Nhan Chinh	See 6 above	See 6 above
8	Cadastral officer, Nhan Chinh	See 6 above	See 6 above

Table 5.1 List of interviewees, Neighborhood 1, Hanoi

Graphical data analysis – Google earth satellite images from 2000 to 2008, cadastral map of Nhan Chinh from 1994, land use plan from 2006 and development plan from 2002 were used. The cadastral map, land use and development plans were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.2 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2000-2008, Google earth provided some photos of the area as well. The photos were useful to get an idea about the neighborhood before going there
2	Cadastral map	NRED and Nhan Chinh sub-district	From 1994
3	Land use plan	NRED	From 2006, overview of district land use in 2006
4	Development plan	Community leader	From Jun 2002, useful to compare with satellite image to see how the plan was implemented

Table 5.2 List of graphical data and their details, Neighborhood 1, Hanoi

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.3 provides the summary.

No.	NEIGHBORHOOD 1, HANOI	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	New houses and apartments, high quality, first apartments were in use since 2003 and the last ones in 2007, some houses are fenced around
2.	Electricity	good quality, each building in the neighborhood has its own power generator operated by fuel or gas in case of electric blackout, developer installed and paid when the development started, good maintenance by company
3.	Water supply	good quality, developer installed and paid when the development started, good maintenance by company
4.	Sewage	good quality, developer installed and paid when the development started, good maintenance by company
5.	Heating	Heating system not required as Hanoi is located in warm tropical zone
6.	Garbage collection	Good quality, service company provides, fee paid by residents
7.	Street cleaning	streets are cleaned and maintained well, by company, fee paid by residents
8.	Lighting	Good lighting, maintained well, developer installed and paid during the development,
9.	Safety	No problems, a security company looks after safety in the entire neighborhood
10.	Physical accessibility	Has proper accessibility to the houses and apartments and to main roads, good quality
11.	Streets	Streets have enough space for roads and pedestrian side walks, good quality, developer built and paid during the development, maintained well
12.	Parks or recreation areas	No
13.	Playground	No
14.	School and kindergarten	Private school and kindergarten, expensive
15.	Availability basic services	All basic services, including grocery and services
16.	Land tenure	Secure tenure, registered and obtained when purchased the apartments or houses
17.	Plans	Land use plan, development plan from 2002 when the development started
18.	Development details and dynamics	State allocated land via negotiations to the developer, Vinaconex JSC with 51% share by the state, in 2000, the development started in 2002, was completely developed in 2007, two big apartments were given to state for compensation for some displaced people as results of expropriation, all on-site infrastructure was developed and financed by the developer, off-site infrastructure by the government. For this development the inputs by the state were overall development plan, main off-site infrastructure in accordance with the overall development plan, and the land. The inputs by the private sector, i.e. the inputs through the residents' payment for their house or apartment, were all on-site infrastructure and all other developments like the apartments, houses, trees and so on.

Table 5.3 Results of data acquisition, Neighborhood 1, Hanoi

5.1.3. Neighborhood 2, Nhan Chinh

Neighborhood 2 is located in Nhan Chinh, Thanh Xuan District in the south western part of Hanoi which is just outside the bigger central part of the city. This neighborhood located to the south east of the Neighborhood 1. This area is considered as one with spontaneous development without support, but only in the beginning stage of the development. This neighborhood was initially a village surrounded by rice field, but around 1991 the village started to transform into housing area and is being developed gradually until now. Farmers sub-divided their land and sold to outsiders, without any planning or regulations and permissions. The developments nowadays are either vertical or in improvements of the infrastructure. The neighborhood is chosen within the confines of the area under the community leader responsibility, see Appendix 5.3 Neighborhood 1 and 2, Nhan Chinh. This neighborhood is overcrowded with residential buildings, has very narrow streets, not fit for cars, only motorbikes and pedestrians can use them, but together, i.e. there exists no separate sidewalks. It falls within a greater area of the same characteristics, surrounded by smaller roads to its east, west and north, and a major road in the south (slightly west). The terrain is flat, no water bodies inside. The

houses are of widely differing quality, some are built recently, very nice up to five floor high houses, and some few are very old one-story houses. There is almost no open space for a parcel, only few houses has a small open space in front of it. For the rest the narrow streets are their open space. The neighborhood has electricity, water supply and sewage, which are good enough, there are some complaints regarding the quality of these items. There infrastructure is being improved bit by bit by the local government. For some time a government owned company has been providing electricity with poor quality and high prices, but in 2004 state took over and start to provide better quality at low cost. The electricity lines are off the ground on poles and thousands of wires chaotically connects the houses with the hub. Water was initially provided by wells on the plots, but now centralized supply from the state. The majority of streets are clean, garbage is collected, has small lights. In total the neighborhood has tree streets inside and one street on the bigger road, still this road is only for motorbikes, leading the way to outside roads. Along this road, there is a very busy street with market. Safety is not very problematic, but is an issue, due to drug and theft related problems. The basic service such as grocery is not a problem due to the market. Every house facing the bigger road has some small business, for instance sale of food, clothing or tailor shop and so on. The area lacks playground and recreation area, has enough schools, not enough kindergarten – discussion held at the authority level to build new one by the reclamation of the nearby lake. There is a plan for a new road going through this neighborhood, thus some residents have an expectation or rather a 'wish' for expropriation. There were no inputs by the government until 1997, except electricity. The situation improved since 1997 as Thanh Xuan district was established and the neighborhood became part of it. There were gradual inputs, which are ongoing, in the form of improvements in the infrastructure since 1997, and regulations for subdivision and building since 2002, from the state. The inputs by the private sector, i.e. the residents, were their houses, also gradually improving.

Box 5.2 Development regulations, No or Yes?

Land sub-division, building, demolishing old house to build new ones were not regulated until recently in the Nhan Chinh sub-district. The table below shows the % of enforcement of the development regulations compared to the total development in the sub-district, since its establishment in 1997:

Year	% of development control
1997 – 2002	0
2003 – 2004	50-60
2005 – 2007	90
2007 – 2009	95

Cadastral officer, October 14, 2009

When I demolished the old houses and built new one in 1997, I had to obtain approval from the authorities.

Elderly man, Octorber 21, 2009

Nhan Chinh, Thanh Xuan District, Hanoi,

Field observation – went without any problems, The neighborhood was visited five times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Box 5.3 Expropriation expectation

There is a plan to build a new road in this area, and our house is on the plan, we really hope the road will be built, so that our land will be expropriated and in exchange given an apartment.

Old couple who live in a poor quality house built in 1987, October 21, 2009

The market should be moved from this street and the road widened by expropriation and the residents compensated accordingly.

Elderly women, who live in fairly good quality house on the street where the market is located, October 21, 2009

Nhan Chinh, Thanh Xuan District, Hanoi,

Interviews – community leader, two residents and one married couple, representative of the development company, Nhan Chinh sub-district and Thanh Xuan district officials were interviewed. The interviews took from 20 minutes to 2 hours 10 minutes. The interviews of the residents were shorter, and the ones with the community leader and officials took longer. List of adequate neighborhood indicators were used for checklist of the questions. Interviews and meetings, except with the residents, were arranged by the by the Nhan Chinh sub-district Chairman in charge of the urban development and land administration after instructions were given by NRED. All interviews went smoothly, the sub-district chairman, together

with HUS, has arranged all requested meetings with related people. Some graphical data such as development plan, sketch map and cadastral map were acquired during the interviews, in either paper format or their photos were taken. Table 5.4 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Community leader	110	Provided very detailed information on the neighborhood, lives since before 1997, arranged interviews with two of the residents
2	Resident 1	35	He came in 1997, bought a plot with two small houses, demolished them and built new house throughout 1997-1999, needed to obtain permission to build form architecture of the district, the drainage/sewage system needs to be improved, it floods when it rains a lot
3	Resident 2	30	Lives since before 1997, she had bigger parcel subdivided the parcel and the income from the sale was used to reconstruct the old house in 1997. She obtained permission to build/improve from district government. The drainage/sewage system and road needs to be improved.
4	Residents, married couple	25	Came to this area in 1969, was rice field land with few houses, no infrastructure available, built their house in 1987, is gradually improving, sewage/drainage is problem
5	Cadastral officer, NRED	20	Provided cadastral map, information on district development plan, land use plan
6	Chairman in charge of Urban development and land administration, Nhan Chinh	130	Interviewees listed in 6, 7and 8 were interviewed together. Provided cadastral map, information on the public investments and plans, land use plan, land tenure, general info about the sub-district, building permission. Also very open discussions were held about the governance, poverty and corruption.
7	Chairman in charge of finance and investment, Nhan Chinh	See 6 above	See 6 above
8	Cadastral officer, Nhan Chinh	See 6 above	See 6 above

Table 5.4 List of interviewees, Neighborhood 2, Hanoi

Graphical data analysis – Google earth satellite images from 2000 to 2008, cadastral map of Nhan Chinh from 1994, land use plan from 2006 and sketch map of the neighborhood from December 2008 were used. The cadastral map, land use and development plans were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images aided orientation, discussion with the interviewees, and identifying objects of interest. However, due to unavailability of images, both satellite and aerial, from the early years, and the very dense houses and vertical development, it was difficult to detect any changes using the available images. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.5 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2000-2008
2	Cadastral map	NRED and Nhan Chinh sub-district	From 1994
3	Land use plan	NRED	From 2006, overview of district land use in 2006
4	Sketch map	Community leader	From Dec 2008, provided good overview of the house locations and streets, used for the community leaders daily work

Table 5.5 List of graphical data and their details, Neighborhood 2, Hanoi

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.6 provides the summary.

No.	NEIGHBORHOOD 2, HANOI	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	Houses are of very different quality. Few are of old, one-story style in poor condition, some are of decent quality, and some new very good quality nice houses, the houses are up to five floor height, in most cases parcel boundary is the house boundary, some inner street houses have small front yard ~3x3 meters, quite a number of new houses are being built by demolishing the older ones
2.	Electricity	There were no electricity before 1980s, after that electricity was provided by an agency, since 2004 the state provides better quality at lower cost, electric blackout from time to time, when necessary district government maintains, electricity lines are off the ground on poles and thousands of wires chaotically connects the houses with the hub, the houses connect to the main hub somewhere in the inner streets, main hub is installed and paid by state
3.	Water supply	no complains, until 2006 the water from wells on the plots were used, but since then state provided water, when necessary district government maintains, water pipes are provided in the inner streets and paid by the state, from streets the houses connect their pipes
4.	Sewage	Although improved in 2006, it needs to be improved more, it floods when it is raining heavily, initially installed by the state in 1975, when necessary district government maintains, sewage lines are provided in the inner streets and paid by the state, from streets the houses connect their sewage lines
5.	Heating	Heating system not required as Hanoi is located in warm tropical zone
6.	Garbage collection	no complains, collected by the district government, fee is paid by residents
7.	Street cleaning	Streets are cleaning is done by a company, fee is paid by residents, no complains
8.	Lighting	Small street lights are provided by state
9.	Safety	Not very big problem, but there are issues due to drug and theft, improved since 2007
10.	Physical accessibility	Access by motorbike or on foot, difficult in rush hours due to overcrowding, the road quality is quite good inside the neighborhood, outside access roads in bad condition
11.	Streets	Do not have enough space, pedestrians, bikers and motorcyclists are all on the same road, no trees, except fee in the front yard of the parcels, very narrow and crowded, overcrowded with electricity wires
12.	Parks or recreation areas	No
13.	Playground	No
14.	School and kindergarten	Schools are enough, kindergarten not enough discussions to build new kindergarten by land reclamation from a nearby lake
15.	Availability basic services	All basic services, including grocery and services
16.	Land tenure	Secure tenure, parcels are registered
17.	Plans	Land use plan, no details, the area is only mapped as residential area together with its surrounding neighborhoods with same characteristics
18.	Development details and dynamics	The neighborhood was an small village surrounded by rice field as early as in 1969 – no infrastructure, more houses were built by 1987, sewage/drainage system built in 1975, electricity after 1980s, centralized water supply started in 1997 and finished completely in 2003, roads are gradually being improved since 1997 and still going on, only some roads were paved until 1997 and the pavement of all roads is completed in 2009, all basic infrastructure are being gradually improved since around 1997, when the district was established. Upgrade of electricity lines were done in 2000 – lasted for three months, sewage system upgrade in 2007 – done in 4 days. All these initial installations and subsequent improvements were made and paid by the state, the infrastructure lines were provided up to the inner streets, from streets the residents connected to their houses, from street to the houses it is not more than 2-3 meters. The houses gradually improved from one-story smaller houses to up to five story big houses. Residents pay for the improvement of the house or new house building themselves. This area can be characterized as initially spontaneous development without any support, but since it became part of the newly established district, state started to improve and provide inputs like investments and regulations. There were gradual inputs, which are ongoing, in the form of improvements in the infrastructure since 1997, and regulations for subdivision and building since 2002, from the state. The inputs by the private sector, i.e. the residents, were their houses, also gradually improving.

Table 5.6 Results of data acquisition, Neighborhood 2, Hanoi

5.1.4. Neighborhood 3, Lang Yen Xa

Neighborhood 3 is located in Lang Yen Xa of Ha Dong District, which is further to the south western part of Hanoi compared to the previous two neighborhoods. This area is a neighborhood which is planned and developed to certain degree. The area is flat, some water bodies to its south, to its north an older settlement, and to the north a newly developing area. The rest of the area is surrounded by rice fields. The area was rice field until 2005, but already in 2003 this neighborhood was planned for development. Since 2005 the area was developed to certain degree, and the residential parcels were allocated to the farmers from this area. Farmers paid less than one thousand USD as a fee for the development. There is no plan to expand this neighborhood, because to its south a special use land and object (a broadcasting or similar station) is located, so the land can be used only as farmland. The confines of this neighborhood were chosen based on the land allocated for the farmers, see Appendix 5.4 Neighborhood 3, Lang Yen Xa, and 4, Trieu Khuc. The farmers have their original houses in the village Lang Yen Xa, to the south west from this newly developed neighborhood, in less than 1 km. Some farmers sold their land, some built houses themselves, and some kept the land empty for future or because they do not have money to build. Some farmers sell their house in their original village and build a new house in the newly allocated parcel. The neighborhood is being intensively developed with nice big houses up to five story. The houses have no open spaces, they directly face the street, the boundary of the parcel is the boundary of the house. All basic infrastructure is provided, electricity – off the ground, from electric poles/hubs crowded with wires, water, sewage – the sub-system of the sewage in the neighborhood is not connected to the main off-site sewage system, hence flooding occurs when it rains. Most of the houses' ground floors were used for commercial purposes like grocery shop, restaurant, workshop. They are operated either by the house owners or rented. Services such as garbage collection and street cleaning is provided by district government, but not regularized yet. Lighting is not present in the inner streets, however the neighborhood across the street has good lighting. The neighborhood has good accessibility from outside and houses have appropriate accessibility from the streets. The streets are good quality, paved, enough space for the traffic and sidewalks. There are no parks, recreation areas, or playground. However, residents say that in the neighboring areas these facilities are available. There are enough schools and kindergartens around. Land tenure is secure, land was allocated by plan. The input by state is the plan or decision to develop and allocation of land to farmers, the state invested in both the off-site and on-site basic infrastructure. The private sector's, i.e. the residents, input is their houses, they connect their houses to the on-site infrastructure.

Box 5.4 Side effect of a bigger development?

The area, which was rice field of the farmers, to the north west of this neighborhood, across the road, was developed by governmental decision since 2003. As side effect of this new development, the farmers, whose land was expropriated, were compensated with residential land on the other side of the new development. The land was planned, parcels allocated and all basic infrastructures provided by the state.

Field observation – went without any problems, the neighborhood was visited three times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Interviews – community leader and tree residents were interviewed. The interviews took from 20 minutes to 1 hour 20 minutes. The interviews with the residents were shorter, and the one with the community leader took longer. List of adequate neighborhood indicators were used for checklist of the questions. The community leader, who lives in the village next to the neighborhood, was found for a meeting after an insignificant search effort. The previous two interviews with the community leaders proved that interview with them are very important to obtain insights into the neighborhood and its development pace. The new neighborhood, together with the village where the farmers are originally coming from, is under the responsibilities of one community leader, who was interviewed. All interviews were made without any problem. The interviews from this neighborhood were the last ones. No attempts were made to contact any government offices to interview. Some graphical data

such as map showing the different communities, and sketch map of the neighborhood, were acquired during the interview with the community leader, in either paper format or their photos were taken. Table 5.7 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Community leader	80	Provided very detailed information on the neighborhood, lives in the area since before the land allocation and development started
2	Resident 1	40	Originally farmer whose land was expropriated for development across the road. She received her parcel in 2005 and built new house in 2008, the internal works of house building has not been finished yet. She kept her old house in her original village, complains about flooding due to on-site sewage system not connected to the off-site system, street cleaning and garbage collection irregular
3	Resident 2	35	Originally farmer whose land was expropriated for development across the road. She received her parcel in 2003 and the building of the new house was completed in 2008. She still has a small farmland, to the south of neighborhood in the area with special use land, complains about flooding due to sewage system malfunction
4	Resident 3	20	Her family bought land in 2004 and built their house. She is satisfied with the neighborhood, the neighborhood is pretty safe, when compared to the old neighborhood (which is neighborhood 4 of this study) which is some 50 meters away, there the problem is theft

Table 5.7 List of interviewees, Neighborhood 3, Hanoi

Graphical data analysis – Google earth satellite images from 2000 to 2008, map showing the different communities, and sketch map of the neighborhood were used. The communities map and sketch map were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. In this case the satellite images showed the development progress from agricultural to built-up area. These graphical data, mostly the satellite images aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.8 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2000-2008, were very useful to detect changes and the development over time.
2	Communities map	Community leader	This is a plotted map showing the community 9, in which the study neighborhood is located. It showed all the land parcels of the neighborhood 3. From this map it can be seen that community 9, unlike the other 11 continuum communities belonging to the same administrative unit as community 9, consists of two separate areas, the new neighborhood and the old village.
3	Sketch map	Community leader	From Dec 2008, provided good overview of the houses, built until then, locations and streets, used for the community leaders daily work

Table 5.8 List of graphical data and their details, Neighborhood 3, Hanoi

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.9 provides the summary.

No.	NEIGHBORHOOD 3, HANOI	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	Houses are bright new houses of good quality and very good look. All the houses were built since 2006. The building are 4-5 stories. Many houses' ground floors are used for commercial purpose, like small shop, restaurant. Some of these are operated by the owners, and some owners rent their ground floor and live on the upper floors. The houses have not open parcel land, the house boundary is the parcel boundary.
2.	Electricity	Is provided by the state, both off-site and on-site, when the land was developed, the connection from inner streets to the houses is done by the residents, quality is good, but still provided in similar way as in neighborhood 2, off-ground hubs and each house obtain their electricity through the wires to their houses, though not as crowded as in the neighborhood 2, no complains.
3.	Water supply	Is provided by the state, both off-site and on-site in the inner streets, when the land was developed, the connection from inner streets to the houses is done by the residents, quality is good, no complains.
4.	Sewage	Is provided by the state, both off-site and on-site in the inner streets, when the land was developed, the connection from inner streets to the houses is done by the residents, the sewage system is malfunctioning, when it rains, because the on-site system is not connected to the off-site system.
5.	Heating	Heating system not required as Hanoi is located in warm tropical zone
6.	Garbage collection	collected by the district government, fee is paid by residents, complains regarding irregular collection
7.	Street cleaning	cleaning is done by district government, fee is paid by residents, complains regarding irregular cleaning
8.	Lighting	no street lights in the inner streets, the main access road has lights, but on the side of the new development across the road, this new area across the road has lights in its inner streets as well
9.	Safety	Not a problem, but just about 50-60 meters from this neighborhood there is another neighborhood, which is the neighborhood 4 of this study, which has quite a problem with theft issues.
10.	Physical accessibility	the accessibility is good, good quality, appropriate width road is accessible to the main road, inner roads are good quality, appropriate width with sidewalk. Good access from the roads/streets to the houses
11.	Streets	Have enough space for the traffic and pedestrians, sidewalk, some trees on the main road outside the neighborhood, no trees in the inner streets, some electricity wires on air between the houses and electricity distribution hubs on a pole
12.	Parks or recreation areas	No, but residents claim they can be accessed in the neighboring areas
13.	Playground	No, but residents claim they can be accessed in the neighboring areas
14.	School and kindergarten	Neighborhood has enough schools and kindergartens
15.	Availability basic services	All basic services are available, but the garbage collection and cleaning are not regular
16.	Land tenure	Secure tenure, parcels are registered
17.	Plans	No plans for expansion or further development
18.	Development details and dynamics	The area was rice field, in 2003 development decision made and plan established. Farmers' land were expropriated and compensated with residential land, plus some money for quitting farming. The land allocation plan was drawn and allocated to the farmers. The land was developed to certain degree, i.e. the water, electricity, sewage lines and road, both off-site and on-site, were established and provided by the state. The land owners paid less than one thousand USD as fee for the land development. Farmers who were compensated with residential land for their farmland already had their houses in the original village about 1 km away from the new site. Thus some sold their old house to build new one in the new site, some kept the old house and built new one in the new site, and some just kept of the bare land for future use or for their children. Houses were built since 2006 by the residents, by October 2009 on more than 2/3 of the parcels, buildings were erected and the development is still going on intensively. This neighborhood is a good instance of an area which is planned and developed to certain degree. The input by state is the plan or decision to develop and allocation of land to farmers, the state invested in both the off-site and on-site basic infrastructure. The private sector's, i.e. the residents, input is their houses, they connect their houses to the on-site infrastructure.

Table 5.9 Results of data acquisition, Neighborhood 3, Hanoi

5.1.5. Neighborhood 4, Trieu Khuc

Neighborhood 4 is located in Trieu Khuc of Thanh Tri sub-urban District, just next to the neighborhood 3, which are in the southwestern part of Hanoi. The area is flat, small rice field lies to its northeast. The rest of the area is surrounded by residential areas, new developments in its west and south, the parent village, Trieu Khuc from which this neighborhood was derived, to its east separated by the rice field and a school. This neighborhood is considered to be as a spontaneous development complemented with support, see Appendix 5.4 Neighborhood 3, Lang Yen Xa, and 4, Trieu Khuc. By the end of 1980s, when the population of the old historic village Trieu Khuc has been increasing, hence the village administration decided to allocate land for the next generation of the village inhabitants. The area to its west, where there were some crop storage places, rice drying squares, and a small textile manufacturing workshops and animal shelters, was allocated in 1990 for a small fee, which was less than fifty USD. The land had any basic infrastructure, but only electricity was there. The village administration sub-divided land parcels, around 120m2 each parcel, and allocated to those in need. Before 2000 people did not obtain any permission to build, but after 2000, if any improvement or change is made on the parcel, it is necessary to obtain approval from the authorities. The on-site basic infrastructure, except the electricity, was built gradually by the residents. Initially all houses were one-story, gradually improved, three to five story big houses were built since 2000. Electricity was already installed in this area when the settlement started in 1990. Water was provided from wells on the parcels and then connected to centralized supply provided by the government. Nowadays the water and electricity are provided by an agency, the quality is poor. Sewage and roads were built by the residents themselves or hiring somebody gradually through 19993-1996. The basic services, such as garbage collection and street cleaning is carried out by district government, the quality is good. Streets has lighting, but poor quality, safety is an issue, due to theft problems. The neighborhood has good quality, but very narrow inner streets leading the way to the main road which is very poor on its south, and good newly built road on its west. It lacks parks and green areas, the inhabitants built a playground themselves in 2000. Schools and kindergartens are sufficient. The land tenure is secure and registered. There are some plans to improve the sewage system as it gets flooded often when it rains, and to improve the road which is in very bad condition. For this neighborhood the input from the public sector is the land and electricity. The input from the private sector, i.e. the residents, is the inner street roads, sewage system and water supply.

Box 5.5 Main road deterioration and compensation

The main road to the south of the neighborhood was in good condition even in 1999, because there was a rice field next to the road so no rain water was accumulated on the roads, the water flew into the rice fields, but ever since the rice fields disappeared there was problem with flooding as there was no drainage along the road. There is plan to improve and widen the road by the government since three years ago, but the amount of compensation suggested to those who are affected is not enough at all.

Mid aged women, whose house will be affected if the road will be improved and widened.

Trieu Khuc, Thanh Tri, Hanoi, October 22, 2009

Field observation – went without any problems, the neighborhood was visited four times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Interviews – community leader and tree residents were interviewed. The interviews took from 30 minutes to 1 hour 20 minutes. The interviews with the residents were shorter, and the one with the community leader took longer. List of adequate neighborhood indicators were used for checklist of the questions. The community leader, who lives in the parent village, Trieu Khuc was very helpful. He contacted the sub-district office and obtained the plan for the sewage system improvement. The community leader is in charge of both the original, Trieu Khuc, and new settlement, neighborhood 4. All interviews were made without any problem. District land and urban development office was contacted via HUS, however no interviews were made with them as there was no time, but the cadastral map of the area was obtained. Table 5.10 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Community leader	80	Provided very detailed information on the neighborhood, lives in the area since before the land allocation to the next generation in the new area
2	Resident 1	40	Came to this area in 1999, bought the land and house, her house is affected by the plan to improve and widen the road, not happy with the compensation being proposed
3	Resident 2	40	Originally from Trieu Khuc, got the land from the sub-district administration, was very happy to obtain the land almost free of charge, the fee was less then fifty USD, to build his house, gradually improved his house from small house to bigger one, last time improvement took place in 1998
4	Resident 3	30	Originally from Trieu Khuc, got the land from the sub-district administration, first he had a small one-story house, worked very hard to improve it to very nice big 4 story house finally in 2009

Table 5.10 List of interviewees, Neighborhood 4, Hanoi

Graphical data analysis – Google earth satellite images from 2000 to 2008, cadastral map, sewage system improvement plan were used. The densely built houses and mostly vertical developments did not allow detect changes using the satellite images. The graphical data were mainly used for reference, orientation and discussion. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.11 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2000-2008, not very useful to detect changes and the development over time.
2	Sewage improvement plan	Sub-district government via community leader	The plan was based on the cadastral map and shows the details of the planned improvements for the entire village, including the neighborhood.
3	Cadastral map	District land administration and urban development authority	This map was obtained via electronic means towards the end of the fieldwork. It was not utilized.

Table 5.11 List of graphical data and their details, Neighborhood 4, Hanoi

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.12 provides the summary.

No.	NEIGHBORHOOD 4, HANOI	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	The houses were of varying quality, some are old one-story from 1990 and some were bright new ones from 2009. The houses were continuously improving. Most houses had a small open area in front of it, approximately 4x4 meters. The houses facing main roads on the south and west did not have any open spaces, they were built up to the road or sidewalk and all of them had small business on their ground floors.
2.	Electricity	Is provided by agency, it was there since the beginning in 1990, the electricity lines/hubs are installed in the inner streets, from inner streets the residents bring the electricity to their houses
3.	Water supply	Initially water was taken from wells inside the parcels, since between 2000-2003 water station established nearby and provided by agency, the quality is not good, both off-site and on-site lines are provided by agency, residents connected their houses with the pipes that were installed on the inner streets
4.	Sewage	built by the residents through 1993-1996, the sewage system is malfunctioning, when it rains, last time it was improved in 2007 by the residents, still flooding occurs, complained to the district, plan for improvement, this time the state may pay for the improvement

Continued from previous page		
No.	NEIGHBORHOOD 4, HANOI	
	INDICATORS	ATTRIBUTES
5.	Heating	Heating system not required as Hanoi is located in warm tropical zone
6.	Garbage collection	collected by agency, fee is paid by residents, no complains
7.	Street cleaning	cleaning is done by agency, fee is paid by residents, no complains
8.	Lighting	Small street lights in the inner streets, the main access road has lights, both poor quality
9.	Safety	Is quite a big issue due to theft
10.	Physical accessibility	the accessibility is decent, from two bigger roads the narrow inner streets are accessed. One of the major roads is very poor quality and it connects the neighborhood with the parent village, the other one is newly built, good quality road and it connects the neighborhood to a main road, the access from the bigger roads to the houses inner streets are good enough, and every house has access to the narrow inner streets.
11.	Streets	Two bigger streets. The one on the west of the neighborhood is good quality has sidewalk and trees, has enough space. The one on the south is not good quality the road is heavily destroyed, flooded, narrow in some parts, and has no sidewalks, some trees. The inner streets are very narrow, just enough or even not enough for two motorbikes to pass each other, but the quality is good, and clean.
12.	Parks or recreation areas	No
13.	Playground	Yes, the residents themselves built one
14.	School and kindergarten	Neighborhood has enough schools and kindergartens
15.	Availability basic services	All basic services are available
16.	Land tenure	Secure tenure, parcels are registered
17.	Plans	plans exist for road and sewage improvements
18.	Development details and dynamics	The neighborhood originally was storage place, animal shelter and rice drying squares, but due to population growth pressure authorities decided to transform the use into residential. The eligible village dwellers were allocated land for residential purpose in 1990, around 120m2 for each family. The area had only electricity available in the beginning from an agency, the residents throughout 1993-1996 paved the inner streets, built the sewage system, the water was provided from wells in the neighborhood. All houses were initially small one-story houses, they were improved gradually, continuously, the basic infrastructure improved gradually and continuously as well. All these investments so far have been made by the residents, except electricity which was there from the beginning. Lately in 2003, centralized water supply was arranged by an agency. Last improvement was for instance in 2007, when the residents improved the inner streets' pavement. As initially perceived, after interviews it is difficult to decide that this neighborhood is a spontaneous development with support, because the development was rather regulated by the authorities by the decision to transform the area to residential and by allocation of the land. However the case is very much relevant for this study. The input by state is the plan or decision to transform agriculture to residential land and allocation of land to the eligible ones, and the electricity from the beginning and water at a later stage . The private sector's, i.e. the residents, input is their houses, inner streets and sewage system, and in the beginning water as well.

Table 5.12 Results of data acquisition, Neighborhood 4, Hanoi

5.2. Case study in Ulaanbaatar

Mongolia is located in central-eastern Asia, has harsh continental climate with extreme temperature fluctuations, has 2.7 million people, of which 57% (2008) lives in urban areas, adult literacy rate is 97.3% (2007), total area is 1.56 million km2. Mongolia is transforming into a market economy, the GDP growth was 9.6% in average during 2003-2008, reaching USD 1,800 per capita, largely due to increase in minerals price. Despite growth, poverty levels remain high at 32.5%. Ulaanbaatar is the capital and the biggest city, it has 1.1 million inhabitants. It is located in the central north eastern part of the country, covers an area of 4,704.4 km2 (ADB 2010a; WB 2010a; Wikipedia 2010a).

5.2.1. Study areas in Ulaanbaatar

From initial ten neighborhoods in consideration, six were selected for further examination after consultation with the UB LAD. Quick field observation and short interviews of couple of residents helped to decide which neighborhoods to select. All six were suitable, but four were finally selected due to time constraint and development pattern. Two of the neighborhoods were selected from Bayanzurkh district in central eastern part of Ulaanbaatar (UB), one from Sukhbaatar District in the northern part of UB and another one from Songinokhairkhan district in the very western part of UB, see Appendix 5.2 for the location of study areas in UB. The main reasons for the selection of the neighborhoods were that these neighborhoods offered wide diversity of development types from different periods. There were no constraints in terms of practical and administrative support, except neighborhood 1, this neighborhood was chosen due to the access and travel time and its closeness to the neighborhood 2. The study was supported by each neighborhood's local land administration offices, overall planning and other necessary information could be obtained from the UB LAD and Construction and Urban Development Department of Ulaanbaatar (UB CUD). The interviews involved residents and related officials of local land administration offices and other officials identified to be providing more information. From each neighborhood 2-5 persons were interviewed. Field observations and interviews were carried out by using the 'adequate neighborhood' indicators as checklist for observing and interviewing. Graphical data such as cadastral maps, aerial images, urban development plans, and satellite images were obtained. Graphical data were used to check the development pace, compare the images and maps, and compare the graphical data with what is on the ground. Mainly the satellite images from Google Earth were utilized. The fieldwork worked out well, there were no problems, with field observation and interviews. The researcher's overall familiarity with the situation in Ulaanbaatar (UB) and the previous recent experience from Hanoi greatly facilitated this study. UB LAD did its best to support the fieldwork.

5.2.2. Neighborhood 1, Bayanzurkh

Neighborhood 1 is located in the central south eastern part of the city, in Bayanzurkh district. This neighborhood is well planned and developed type. Some of the development is still going on. The area is flat, belongs to a residential block of buildings of different types consisting of big apartments, fancy houses and gers. It is surrounded by main roads in the east and south, the other sides are confined with smaller roads. Across the main road in the east there is the busiest and biggest market in the city, and across the main road to its south, the only railway connecting the north and south of the country passes. From this neighborhood, two sub-blocks of apartments were chosen for closer investigation, see Appendix 5.5 Neighborhood 1 and 2, Bayanzurkh. There was a development plan for residential area from 1986, and it was implemented until early 1990s. The planned development stopped, after the collapse of communist regime. During the transition period after 1990s, the area was occupied by informal settlers which was formalized later. The developer bought the land from the informal settlers at a lower price, before there was a decision to formalize the settlement, and few parcels after the land was formalized and privatized, at a higher price. In addition, the developer

Box 5.6 Development plan – informal and formal settlement – development

Municipal officials requested the land office to keep clear the area from informal settlement, due to the development plan from 1995, which is actually based on the one from 1986, but we could do nothing except informing and giving official requests to clear the area to the settlers. Because of these efforts, the informal settlers were prepared, mentally, to move in case the development started. However, politicians with their lobbying and pressure on the municipal organizations, managed to formalize the informal settlements and eventually privatize the land to these informal settlers. All this in exchange for or to make sure them being elected in the parliament. The developer acquired land first from the informal settlers, the informal settlers were just glad that somebody could pay for their informal land, so this way some part of the land was acquired at low price. Then also, the developer bought some more land after it was formalized and privatized, naturally, this time at higher price. This way the developer acquired quite a piece of land for a very reasonable price.

Former head of district land office, 1997-2006, currently head of division at ALAGaC. Ulaanbaatar, December 14, 2009

had its own land in the area, used as storage and for different support purposes. There are two types of apartment houses, one is smaller five story apartments built in around 2003, with medium quality from outside and without any major complains inside, except minor complains about water leakage. The other type is newly built big apartments, operational since 2008. It looks good from outside, the residents have no complains about the quality of the housing. All basic infrastructure is of satisfactory quality, the on-site ones built by the developer and off-site built by the state. Basic services such as street cleaning and garbage collection are provided by the developer's daughter company, service and maintenance, in the latter block, and by another private company in the former block. The streets lacks lighting, safety is not a problem. The neighborhood has good accessibility both to the blocks and houses from the main roads. In the area there are no schools nearby, one small kindergarten is located in one of the apartments. The streets have enough space, both for the traffic and pedestrians. It lacks parks and recreation areas, it has some sort of playground, under which there are garages. Some small trees on green land are present. Land tenure is secure and registered, it was developed in accordance with approved detailed plan. The input by the state is the off-site infrastructure, overall development plan. The input by the private sector, i.e. the input through the residents' payment for their apartment, was all on-site infrastructure and all other developments like the apartments, garages, trees and so on.

Field observation – went without any problems. The neighborhood was visited twice for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped. This area was a part of a bigger development, which is still to be completed.

Interviews – two residents, a group of residents, representative of service and maintenance company, former head of district land office, UB CUD, UB LAD officials were interviewed. The interviews took from 15 to 60 minutes. The interviews of the residents were shorter, and the ones with the officials took longer. List of adequate neighborhood indicators were used for checklist of the questions. All interviews went smoothly, graphical data such as development plan and cadastral map were acquired during the interviews, in digital format. Table 5.13 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Resident 1	15	Lives in the new apartment since it was operational in 2008, no complains
2	Resident 2	15	Lives in the older apartments built in around 2002, minor complains in her apartment on water leakage
3	Group of residents	30	Live in the new apartments since it was operational in 2008, have small children complain about lack of small child friendly areas like small park with playground
4	General manager, service and maintenance company of the older apartments	35	Provided information about land acquisition and beginning of the development in the neighborhood, as he took part in the development from its initial stage
5	Former head of district land office	25	The officials of district land office directed to her as the most relevant person to answer the questions regarding the land development. She is still working in the sector, she works as the head of a division at ALAGaC, the interview was made via telephone
6	Head of Urban Planning Information Division, UB CUD	60	She provided general overview of current urban development and planning in UB and the related neighborhood, and some new and older development plans in digital format
7	Deputy head, UB LAD	50	He provided overall land administration and planning issues of the city, and difficulties encountered for expropriation of land for building roads in the neighborhood as results of the formalization of informal settlers in planned area.

Table 5.13 List of interviewees, Neighborhood 1, UB

Graphical data analysis – Google earth satellite images from 2004 to 2009, cadastral map, land development plan from 1986 were used. The cadastral map, land development plan were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images, aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.14 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2004-2009
2	Cadastral map	UB LAD	update is done on continuous base, initially around 2002
3	Development plan	UB CUD	Plan from 1986, showing the development plan for the area in which the neighborhood is located

Table 5.14 List of graphical data and their details, Neighborhood 1, UB

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.15 provides the summary.

No.	NEIGHBORHOOD 1, UB	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	New apartments from 2008 good quality, the older ones from around 2003 are good quality, as well, houses have enough spaces outside, there are underground garages
2.	Electricity	good quality, developer installed and paid when the development started, good maintenance by company
3.	Water supply	good quality, developer installed and paid when the development started, good maintenance by company
4.	Sewage	good quality, developer installed and paid when the development started, good maintenance by company
5.	Heating	good quality, developer installed and paid when the development started, good maintenance by company
6.	Garbage collection	Good quality, service company provides, fee paid by residents
7.	Street cleaning	streets are cleaned and maintained well, by company, fee paid by residents
8.	Lighting	No street lighting
9.	Safety	No complains
10.	Physical accessibility	Has proper accessibility to the apartments and to main roads, good quality
11.	Streets	Streets have enough space for roads and pedestrian side walks, good quality, developer built and paid during the development, maintained well
12.	Parks or recreation areas	No
13.	Playground	Yes, however for older children to ice skating, for basketball etc.
14.	School and kindergarten	No school in the nearby areas, one small kindergarten in one of the apartments
15.	Availability basic services	All basic services, including grocery and services
16.	Land tenure	Secure tenure, registered and obtained when purchased the apartments
17.	Plans	Detailed development plan for each apartment blocks
18.	Development details and dynamics	The developer, Gangar Invest, acquired land through purchase from private individuals and used its own land stock, then used as storage and support place. Originally the area was planned to be an residential neighborhood, the plan is from 1986, this plan was partly implemented which can be traced in the areas to the north of the neighborhood across the road. This plan was still considered by the authorities. During 1998-1999, the area was informally settled by migrants, and then formalized and privatized around 2003. The developer acquired land both from the informal settlers earlier and from formal settlers later. The development took piece by piece, first one part, the one with smaller apartments were built, and then the one with bigger apartments. All off-site infrastructure is provided by the state and on-site is developed by the developer. The input by the state is the off-site infrastructure, overall development plan. The input by the private sector, i.e. the input through the residents' payment for their apartment, was all on-site infrastructure and all other developments like the apartments, garages, trees and so on.

Table 5.15 Results of data acquisition, Neighborhood 1, UB

5.2.3. Neighborhood 2, Bayanzurkh

Neighborhood 2 is located in the central northeastern part of the city, in Bayanzurkh district. This neighborhood is considered to be planned and developed to certain degree type of development. The area is slightly up hills, but the neighborhood of interest lies in relatively flat area. The neighborhood borders with a large ger area to its north and to its other sides it is surrounded by police and military facilities. Big main road lies in its south side, see Appendix 5.5 Neighborhood 1 and 2, Bayanzurkh. Originally, the area was given for Soviet Union military base since around 1960s and then since 1990s the area was given to the Mongolian military and police authorities, after the Soviet Union troops left. By the decision of the Mayor of UB, around 1998, the open spaces within this area were given to the military and police authorities' disposal, allowing them to allocate land to its employees for residential purpose free of charge. In the decision, it was directed that land allocation be conducted in cooperation with the district land office, however, the allocation process was carried out without the participation of the district land office. Attempt to find plans of land allocation or similar document and meet persons who were involved in the land allocation process failed. The neighborhood has different types of dwellings, bigger apartments, big houses and gers. The quality varies, but most apartments were built recently about three years ago, houses were built around 2000, some are still being built, and are connected to basic infrastructure, the gers were present since the land was allocated, they are not connected to any infrastructure. There are some small businesses such as food producers and different kinds of workshops. The basic infrastructure is available, but the residents have to connect to the main lines themselves. Therefore, only the apartments, built for further sale, and houses, that belong to higher income people are connected to these basic infrastructure. Garbage is collected, but no street maintenance and cleaning are provided. It does not have any lighting except the individual lighting in the plots. The accessibility is difficult due to bad road conditions and unclear road scheme. It does not have any parks, recreation areas, or playground. The land tenure is secure, all parcels are privatized. There are recent plans for basic infrastructure improvement and building roads. However the interviewed residents were not aware at all, only one resident knew that there was a plan 'long time ago' to build a road. For this neighborhood, the input by the state is the off-site infrastructure and land where the off-site infrastructure is not too far away from the parcels. The input by the private sector, i.e. the input by the residents, is the houses, apartments and gers. For apartments and some of the houses, the connection between the off-site and on-site infrastructure is the residents' input as well. The initial assumption, that the neighborhood was planned or at least some kind of land allocation scheme existed, did not prove, as the search for a plan did not succeed.

Box 5.7 Land allocation in the hands of 'high ranking officers'

Some land was allocated to the employees of the military and police authorities, but significant amount of land was kept by the 'high ranking officers' for sale and rent. I came here in 2000, when I was transferred from a military unit in the countryside to UB, and purchased the land from one of these officers and built my house. They, also, still keep some of this land and rent them.

After purchase of the land, I had to apply for registration, because the military authority does not provide any documentation to prove possession, i.e. long term leasehold, at that time land privatization did not start. When applying for registration, I was told to change the fenced area, because there was a plan to build a road right next to my parcel. So I did, but later another family settled next to my parcel and they just filled the gap, which I left for the road. I do not know how they managed to do so and escape from the controls of the land office. Now they have ownership title with the land parcel, blocking the supposed road. I do not really know if there was any plan or not, anyway, even if there was one, it seems that the plan will not be implemented.

When I started building my house I talked to my neighbors, some 10 families, that we seek assistance from the sub-district to connect our homes to the off-site infrastructure, the sub-district can help us to do so financially or arrange administratively, so that we can pay the amount on monthly basis. This will be of great help to us to live in a decent condition, but also, even though it is only ten families, we will stop contributing to the extreme air pollution by burning coals (because the houses will be connected to heating system as well). Unfortunately, our request was not taken seriously, and nothing changed.

Mid aged man, resident in neighborhood 2, Bayanzukh, UB
Ulaanbaatar, December 4, 2009

Field observation – went without any problems. The neighborhood was visited tree times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were

observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Interviews – four residents, two of them for long, in depth interview and two of them just for double checking purpose, former head of district land office, UB CUD and UB LAD officials were interviewed. The interviews took from 5 to 60 minutes. List of adequate neighborhood indicators were used for checklist of the questions. All interviews went smoothly, graphical data such as development plan and cadastral map were acquired during the interviews, in digital format. Table 5.16 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Resident 1	40	Lives in the neighborhood since 2000, he is interested in connecting his house to the basic infrastructure, but cannot due to financial constraint
2	Resident 2	35	Lives in the neighborhood since 2004, purchased the land from a person who is or was an officer in the military authority next to the neighborhood. He connected his house to the basic infrastructure, but not the heating. He wants to connect to the heating, however it is difficult and costly, as on the way to his house there are two other parcels, thus he would need ask for permission these people or connect to the line via a detour
3	Resident 3	5	Lives in the area for 1 year, rented land and put his ger, not sure if the land owner is a military person
4	Resident 4	5	Lives in the area for 3 years, rented land from a military person
5	Former head of district land office	25	The officials of district land office directed to her as the most relevant person to answer the questions regarding the land development in this neighborhood, as well as neighborhood 1. She is still working in the sector, she works as the head of a division at ALAGaC, the interview was made via telephone
6	Head of Urban Planning Information Division, UB CUD	60	She provided general overview of current urban development and planning in UB and the related neighborhood, and new development plan for this neighborhood in digital format
7	Deputy head, UB LAD	50	He provided overall land administration and planning issues of the city, and plans and expropriation, expressed his worries about expropriation in the neighborhood due to the new plan

Table 5.16 List of interviewees, Neighborhood 2, UB

Graphical data analysis – Google earth satellite images from 2004 to 2009, cadastral map, newly issued land development plan were used. The cadastral map, land development plan were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images, aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.17 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2004-2009
2	Cadastral map	UB LAD	update is done on continuous base, initially from 2002
3	Development plan	UB CUD	New plan showing the development plan for the area in which the neighborhood is located

Table 5.17 List of graphical data and their details, Neighborhood 2, UB

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.18 provides the summary.

No.	NEIGHBORHOOD 2, UB	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	bigger apartments, big houses and gers, the quality varies, but most apartments were built recently about three years ago, houses were built around 2000, some are still being built
2.	Electricity	No complains, off-site is provided by the state, maintained by the electricity company
3.	Water supply	Off-site is provided by the state, apartments and some of the houses have connected individually, the quality is good, maintained by residents inside their houses and up to the off-site connection hub. But, most parcels, both with houses and gers are not connected, they get water from a nearby water supplier.
4.	Sewage	Off-site is provided by the state, apartments and some of the houses have connected individually, the quality is good, maintained by residents inside their houses and up to the off-site connection hub. But, most parcels, both with houses and gers are not connected, they have sewage/sanitation on their plots, mostly a hole in the ground covered with small wooden structure.
5.	Heating	Off-site is provided by the state, apartments and some of the houses have connected individually, the quality is good, maintained by residents inside their houses and up to the off-site connection hub. But, most parcels, both with houses and gers are not connected, they burn coal to survive the extremely cold winter, thus pollute the air
6.	Garbage collection	Service company provides, fee paid by residents
7.	Street cleaning	streets are not cleaned and maintained
8.	Lighting	No street lighting
9.	Safety	No complains
10.	Physical accessibility	Has poor accessibility to the main road and houses, difficult to get there and explain the access for a stranger
11.	Streets	Streets have just enough space for roads, no pedestrian side walks, very poor quality, no body takes care of the streets
12.	Parks or recreation areas	No
13.	Playground	No
14.	School and kindergarten	No school and kindergarten in the nearby areas
15.	Availability basic services	No basic services except garbage collection
16.	Land tenure	Secure tenure – ownership, registered
17.	Plans	Development plan for improvement and building a road, residents are not aware of it
18.	Development details and dynamics	Originally since 1960s, military base for Soviet Union army, since 1990s belongs to Mongolian military and police, land allocation rights were given to the officials of the military and police authorities. Land was allocated around 1998 to the employees of the military and police authorities. Gers were present since then. Houses were built since around 2000, and big apartments are built around 2006-2007. Possible land speculation by the high ranking military officers, by misusing their positions. For this neighborhood, the input by the state is the off-site infrastructure, decision for land allocation and land. The input by the private sector, i.e. the input by the residents, is the houses, apartments and gers. For apartments and some of the houses, the connection between the off-site and on-site infrastructure is the residents' input as well. The initial assumption, that the neighborhood was planned or at least some kind of land allocation scheme existed, was not proven.

Table 5.18 Results of data acquisition, Neighborhood 2, UB

5.2.4. Neighborhood 3, Sukhbaatar

Neighborhood 3 is located in the northern part of the city, in Sukhbaatar district. This neighborhood is considered to be spontaneous development complemented with support, later it showed that it was not really an spontaneous development, but rather regulated one. The area is slightly sloppy, gradually flattening towards the river, which runs to its northeast, has a big main road on its west, in its south and northeast, a dam surrounds the area. The neighborhood is in the middle of residential ger areas. The neighborhood is an old one, established in the early 1970s. When people settled, it was necessary to obtain approval for settlement, then land was allocated in accordance with parcel layouts and registered with the sub-district administration office. Initially, there were few parcels, but by 1990s

the area was fully occupied. A disastrous flood hit the area in early 1980s, consequently, a dam was constructed by the state, see Appendix 5.6 Neighborhood 3, Sukhbaatar and 4, Songinokhairkhan. The area was provided with electricity and radio lines from the beginning. There were no other improvements until around 2006, when the electricity company renovated the electricity transmission lines in order to be able to precisely determine the electricity consumption and charge the appropriate amount. The older lines and related equipment was not able to handle it accurately, hence causing loss of profits to the company. In general, the houses are of very different quality, some big new ones, older well maintained, old poor quality houses, and gers as well. Many parcels have both gers and houses. Some families rent land in a parcel and put their gers. The open space in the parcel is usually bare land without vegetation, but some families have planted trees and have small garden for vegetables, the parcels are in general roughly 20x20 meters. Except electricity, the neighborhood does not have any basic infrastructure. Water is supplied from a water station quite far away, the old water station in the neighborhood was destroyed during early 1990s, it was never recovered. For a while it was kind of waste dumping site, finally it was cleared in 2008, when one of the candidates for the parliament elections cleaned the area. Garbage is collected regularly, there is no cleaning or maintaining of the area. Some families have wells in their parcels, but the water is not for drinking, it is used for washing and other household purposes. It is quite safe area, although there are no lighting. The area is accessible from the main road, each parcel has access, the quality of the roads are too bad. Streets are of poor quality, it has no pavement and vegetation, has enough space. There was a small aid project, for one street, in 2009, to place small paved pedestrian road, so it will be easier to push or pull a cart loaded with water. The area has no parks, recreation areas, nor playground. It has school and kindergarten originally built for this and other neighboring areas. Land tenure is secure, people have privatized their land and holds the ownership. A recent plan for redevelopment exists, though the residents are unaware of its existence. The public input in this case is the land, settlement regulation, and electricity, and educational facilities. The input by the private sector, i.e. the input by the residents, is the houses of different quality. The initial assumption, that the neighborhood was spontaneous development complemented with support was not totally correct, the settlement in the neighborhood was regulated and controlled, within the rules and regulations of the society extant at the time of its initial development.

Box 5.8 Land use planning and land allocation before 1990s

Before 1990s land was allocated strictly following the rules and regulations. Ger areas were considered as temporary settlements, and there were development plans for these ger areas either to be removed or transformed into apartment housing or family housing. Although these were considered temporary settlements, there was a law for land allocation. Ger areas were planned to certain extent, the parcel, street layouts were surveyed and drawn for allocation, the land for public services such as schools, kindergartens, water stations, public baths, shops, administration buildings like local government, police, medical stations, and bus stations etc. were all planned and reserved, and in most cases built as well. It is only after 1990s when the chaotic way of settlement in the UB started. This was of course the result of big changes, both positive and negative, and new Constitution allowing people to move freely and live wherever they want, which was not the case previously.

Senior land management officer, UB LAD (former deputy head of UB LAD), Ulaanbaatar, December 4, 2009

Field observation – went without any problems. The neighborhood was visited two times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Interviews – four residents, district land office, UB CUD and UB LAD officials were interviewed. The interviews took from 15 to 60 minutes. List of adequate neighborhood indicators were used for checklist of the questions. All interviews went smoothly, graphical data such as development plan and cadastral map were acquired during the interviews, in digital format. Table 5.19 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Resident 1	35	Lives in the neighborhood since 1973, nothing has changed since then, except the improved electricity line, and some bigger houses, former water station which became dump site was cleaned by a candidate for parliament elections in 2008
2	Resident 2	25	Lived in the neighborhood since 1980s, then left the area around 1995, and came back in 2005, she rents part of his parcel for a migrant family from the countryside
3	Resident 3	15	Lives in the area for since early 1990s, she found open space in the eastern part of the neighborhood and settled there, gradually obtained land possession certificate, and then private ownership in 2004
4	Resident 4	20	Lives in the area for 4 years, her son-in-law had the parcel and house, she has her ger on the plot
5	Land management officer, district land office	25	Provided information on the neighborhoods land tenure and plan for re-development
6	Head of Urban Planning Information Division, UB CUD	60	She provided general overview of current urban development and planning in UB and the related neighborhood, and new development plan for this neighborhood in digital format
7	Senior land management officer, UB LAD	50	She provided overall land administration and planning related information before and after 1990s, former deputy head of UB LAD

Table 5.19 List of interviewees, Neighborhood 3, UB

Graphical data analysis – Google earth satellite images from 2004 to 2009, cadastral map, newly issued land development plan were used. The cadastral map, land development plan were used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images, aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.20 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2004-2009
2	Cadastral map	UB LAD	update is done on continuous base, initially from 2002
3	Development plan	UB CUD	New plan showing the development plan for the area in which the neighborhood is located

Table 5.20 List of graphical data and their details, Neighborhood 1, UB

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.21 provides the summary.

No.	**NEIGHBORHOOD 3, UB**	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	different types and quality, some big new ones, older well maintained, old poor quality houses, and gers as well, open space in the parcel is usually bare land without vegetation, but some families have planted trees and have small garden for vegetables, in general the parcels are poor quality, no vegetation and pavements
2.	Electricity	Electricity was there since the beginning, off-site and on-site provided by the state, residents have to connect themselves to the lines in their street, provided and maintained by the electricity company, was renovated around 2006, not really for improving the quality for the residents, but to prevent loss of profits due to old lines and equipment
3.	Water supply	Water station, quite far away from this area

Continued from previous page		
No.	**NEIGHBORHOOD 3, UB**	
	INDICATORS	**ATTRIBUTES**
4.	Sewage	No sewage system, they have sewage/sanitation on their plots, a hole in the ground covered with small wooden structure.
5.	Heating	No centralized heating, they burn coal to survive the extremely cold winter, thus pollute the air
6.	Garbage collection	Service company provides, fee paid by residents
7.	Street cleaning	streets are not cleaned and maintained, there was once in 2008 when there was the parliamentary elections, one of the candidates cleaned a dump site.
8.	Lighting	No street lighting
9.	Safety	No complains
10.	Physical accessibility	Has poor accessibility to the main road and houses, difficult to get there and explain the access for a stranger
11.	Streets	Streets have enough space for roads, no pedestrian side walks, very poor quality, no body takes care of the streets, a small aid project was implemented for one street, in 2009, to place small paved pedestrian road, so it will be easier to push or pull a cart loaded with water and built steps to access the main road
12.	Parks or recreation areas	No
13.	Playground	No
14.	School and kindergarten	school and kindergarten are in the nearby areas
15.	Availability basic services	No basic services except garbage collection, groceries are available
16.	Land tenure	Secure tenure – ownership, registered
17.	Plans	Development plan for improvement and building a road, residents are not aware of it
18.	Development details and dynamics	The neighborhood settlement started around 1970s. The land was allocated by pre-prepared allocation scheme. There were some improvements in the areas, one is the construction of a dam to protect from flooding sometime in 1980s, another one is the renewal of electricity lines around 2006. Any other improvements were made by the public. The residents have been maintaining or improving their dwellings, some original residents rent their land for migrants to put their ger on their plots. So, there are more gers, then it used to be before 1990s. The public input in this case is the land, settlement regulation, and electricity, and educational facilities. The input by the private sector, i.e. the input by the residents, is the houses of different quality. The initial assumption, that the neighborhood was spontaneous development complemented with support was not totally correct, the settlement in the neighborhood was regulated and controlled, within the rules and regulations of the society extant at the time of its initial development.

Table 5.21 Results of data acquisition, Neighborhood 3, UB

5.2.5. Neighborhood 4, Songinokhairkhan

Box 5.9 The first settler

I came here in July 2002, the head of the sub-district administration allowed to settle down here. The water was taken from a nearby spring, we had no electricity, it was provided in 2004. In the autumn in 2002, after we settled here, there were new fences erected, but no families inside. We felt somehow quite strange being in the middle of empty fences. The next spring all the fences were occupied. These developments like the electricity and road, they were promised by the parliamentary elections campaign, and built.

Elderly woman, Songinokhairkhan, Ulaanbaatar, December 1, 2009

Neighborhood 4 is located in one of the very western part of the city, in Songinokhairkhan district. This neighborhood is considered to be spontaneous development without support, however the studies showed that there were some support lately. The area is hilly area between bigger mountains, some flatter areas in the narrow valley between the mountains, then the topography is gradually lifted up hills. It is quite far away from the central part of the city. There is a brick factory to its north, which stops further expansion in flatter areas, to east and west the mountains, and to its south big ger area. This neighborhood is the result of expansion the ger area in its south, see Appendix 5.6 Neighborhood 3, Sukhbaatar and 4, Songinokhairkhan. The settlement in the neighborhood started in 2002 in totally undeveloped and

unsettled area, electricity was provided in 2004, since 2006 the number of families settled here increased. In 2009 in August, many families came to this area. They were given this land from the municipality, because they were settled in flood danger zone and they suffered severely in the summer of 2009 due to heavy rains and flooding. A main road is built in 2009. The houses are of different types and quality. Although it is relatively new area, there are many new houses, but the are many gers as well. The parcels are around 25x30 meters, bare land without any development except houses or gers. The electricity is provided to the families around and closer to the main road, but the new settlers from summer 2009, still do not have any electricity, they are waiting for the electricity company to put more poles and bring the electricity to their streets. Some people are connected to electricity, but from other families who have it and pay them fees. Basically, except electricity, the neighborhood does not have any basic infrastructure. Water is supplied from an underground water well from one of the families, they charge for the water. Garbage used to be collected regularly for fee, but since the winter has started the garbage collection truck cannot access the up hill areas, so no garbage collection in some areas. There are street lighting in some streets, but they do not work, or worked only during the elections time, and also occasionally during some national celebration days. There are lights along the newly built main road, but they were not operational, since they were built in the autumn of 2009. The flatter area in the valley is rather easily accessible, the up hill areas are difficult to access in winter when there is snow and when it is wet from rain. The streets are wide enough, the shapes are sometimes regular and in some areas irregular, due to mainly the uneven terrain. There is a school and kindergarten further in the south, in the older settlement in about 1.7 km. The land tenure is secure, the earlier settlements already have their ownership title, the newer ones are in the process of obtaining one, but it is subject to payment for the surveying and check by district land office for suitability for settlement. No plans exist, except that the area is classified as residential ger area in the general development plans. The input by the public is land, electricity and main access road, and educational facilities. The private input is the houses and gers, and water supply. The neighborhood is not really an area without any support. It developed without support initially, but received it gradually.

Box 5.10 Unbelievable, horror… incident and politics

In the neighborhood closer to this neighborhood, there was a very terrible incident, a child, walking in the early dark morning in the winter from his home, which is over the hill to the school, was killed by a wolf. This incident was not publicized, the district officials and politicians managed to keep it secret …

This part of the city is very much affected by migrants coming to UB mostly from western parts of the country, we had to deal with about 3000-3500 families every year who came to settle down. We do what we can, but we cannot handle all of them, we simply do not have enough employees. So what happens is that they settle down without permission, then politicians come and run for their election campaigns. First, the politicians, promise title to the land and force us, the land office, to issue them. Then they promise electricity, roads, schools and so on. All the hard work comes to us, they instruct now you clear the way for road, or make space for schools... and so on … Also, consider the financial burden for expropriation, a lot of money is spent for paying the families to clear the land for development.

Senior land management officer, UB LAD (former head of district land office), Ulaanbaatar, December 4, 2009

Box 5.11 Migrants lack information

The head of the sub-district administration was removed recently. This person used to tell migrants to go to a specific cadastral survey company to have their parcel, which was roughly indicated by him to the migrants, surveyed. He made the migrants understood that by this survey they secure their title to land. This is not right, he should have sent them to us, to the district land office, where we handle these issues. Of course, now we have problem with people who think they have their title, but what they have is only a piece of paper with coordinates. That person did it, because he was getting shares from the survey fee paid to the company.

Land management officer, District land office, Songinokhairkhan, Ulaanbaatar, December 1, 2009

Field observation – went without any problems. The neighborhood was visited two times for observation and interviews. The streets, buildings, people, infrastructure and other facilities were observed according to the list of indicators for adequate neighborhood. Photos of the neighborhood were taken and the neighborhood was video taped.

Interviews – five residents, district land office, UB LAD officials were interviewed. The interviews took from 15 to 60 minutes. List of adequate neighborhood indicators were used for checklist of the

questions. All interviews went smoothly, cadastral map was acquired during the interviews, in digital format. Table 5.22 gives the list of interviewees and some details.

No.	Interviewee	Duration (min)	Remarks
1	Resident 1	40	Lives in the neighborhood since 2002, the first one to settle here
2	Resident 2	30	Moved in Aug 2009, flood victim in another area, was given the land by authorities
3	Resident 3	15	Moved in Sept 2009, purchased the land with a house
4	Resident 4	10	Settled 3 years ago, purchased empty land surrounded by fences
5	Resident 5	25	Settled 5 years ago on empty land
6	Land management officer, district land office	35	Provided information on the neighborhoods land tenure and land allocation situation
7	Senior land management officer, UB LAD	60	He provided overall land administration and settlement related information in the neighborhood and district, former head of district land office

Table 5.22 List of interviewees, Neighborhood 4, UB

Graphical data analysis – Google earth satellite images from 2004 to 2009, and cadastral map were used. The cadastral map was used as reference and compared with the satellite images. The satellite images were analyzed for change detection and comparison of ground situation with what was found out by interviews. These graphical data, mostly the satellite images, aided orientation, discussion with the interviewees, and identifying objects of interest. All the data analysis were manual, visual analysis without any use of specific software and hardware. Table 5.23 provides the details on the graphical data.

No.	Type of data	Provided by	Details
1	Satellite images	Google Earth	Images from 2004-2009
2	Cadastral map	UB LAD	update is done on continuous base, initially from 2002

Table 5.23 List of graphical data and their details, Neighborhood 1, UB

The results – the data acquisition outcomes, through field observations interviews and graphical data analysis, are summarized in tabular form based on the 'adequate neighborhood' indicators. Table 5.24 provides the summary.

No.	**NEIGHBORHOOD 4, UB**	
	INDICATORS	**ATTRIBUTES**
1.	House and parcel quality	houses are of different types and quality. Although it is relatively new area, there are many new houses, but the are many gers as well. The parcels are around 25x30 meters, bare land without any development except houses or gers.
2.	Electricity	electricity is accessible to the families around and closer to the main road, but the new settlers from summer 2009, still do not have any electricity, they are waiting for the electricity company to put more poles and bring the electricity to their streets. Some people are connected to electricity, but from other families who have it and pay them fees
3.	Water supply	Water from underground well, one of the families provide it for a charge
4.	Sewage	No sewage system, they have sewage/sanitation on their plots, a hole in the ground covered with small wooden structure.
5.	Heating	No centralized heating, they burn coal to survive the extremely cold winter, thus pollute the air
6.	Garbage collection	Service company provides, fee paid by residents, but in the winter in the new areas up hill, the trucks cannot reach so the garbage is not collected in some areas in the winter

Continued from previous page		
No.	**NEIGHBORHOOD 4, UB**	
	INDICATORS	**ATTRIBUTES**
7.	Street cleaning	streets are not cleaned and maintained
8.	Lighting	street lighting exists, the older ones work only during some national holidays and elections, the new ones established in 2009 along the new road are not yet operational
9.	Safety	No complains
10.	Physical accessibility	Newly built new main road connects the area with the central part of the western part of the city, decent accessibility to the parcels along the main road, very poor accessibility to parcels further away from the main road up hills
11.	Streets	Streets have enough space for roads, very poor quality, no body takes care of the streets
12.	Parks or recreation areas	No
13.	Playground	No
14.	School and kindergarten	school and kindergarten are in the nearby areas
15.	Availability basic services	No basic services except garbage collection to some extent, groceries are available
16.	Land tenure	Secure tenure – ownership, registered, the tenure is secure, but not all families have registered title, because they just moved in, or they did not made efforts yet. For registration they have to have their land surveyed by a surveying company and then checked the survey and on-site by an official form district land office. Land is allocated without much complication, if the parcel is not hindering public interests and not too dangerous for the residents.
17.	Plans	Planned/considered as residential ger area land in the overall land use planning
18.	Development details and dynamics	The settlement in the neighborhood started in 2002 in totally undeveloped and unsettled area, electricity was provided in 2004, since 2006 the number of families settled here increased. In 2009 in August, many families came to this area, due to displacement as the results of flooding, main road was built in 2009. The input by the public is land, electricity and main road, and educational facilities. The private input is the houses and gers, and water supply. The neighborhood is not really an area without any support. It developed without support initially, but received it gradually. Its start for settlement as spontaneous is doubtful, it might have subject to speculation by some powerful, which is visible even today, because there were some unoccupied plots for sale, these were located in decent terrain, not necessarily up hills

Table 5.24 Results of data acquisition, Neighborhood 4, UB

6. Analysis

This chapter provides first the analysis of the comparison of ULDM with institutional model, see section 4.1, and secondly the summarized analysis of the case studies' results. At last, the results of the comparison of ULDM with the institutional model and empirical findings were integrated and analyzed reflecting on the objectives of ULDM in section 7.3.

6.1. Institutional model and ULDM

First, the institutional model is described more in detail to explain the elements and aspects of it. Second, the elements of ULDM is put in the frame of the institutional model. This will allow a systematic analysis of the ULDM in comparison with the institutional model. By comparing the two models an attempt is made to determine how completely the model addresses the complexities of the development process, and how effectively the model can fulfill its objectives. At last, evaluation is made on how relevant is the institutional model for ULDM.

6.1.1. A more closer look at the institutional model

Healey (1992) attempted to create a descriptive institutional model, which is all embracing and universally applicable, when trying to understand fully the complex nature and processes of the development, see section 3.2.6 and Appendix 3.12. There are criticisms of this model. Ball (1998) reviews the model and identifies that the model's emphasis is on the structure-agency institution, but no precise description is given what is structure, agency and an institution, structure seems to be the broader frame within which the agents operate, and agents seem to be key people working in institutions, and institutions might be the various organizations or broader social rules and regulations. His consequent criticisms are all grounded on the ambiguities arising out the lack of precise explanation and definitions of these key aspects. He states that the model "has several problems, but, to an extent, the difficulties depend on what is attempted with the model … It is also likely that the approach is most successful when used in locally based studies …". Then Guy and Henneberry (2000) have reviewed the model and identifies two major problems. One is the attempt to create an all embracing and universal model, which is in the meantime able to accommodate and handle the specifics of all kinds of different local circumstances, and state that this is due to Healey using the political economy approach to frame her model. The other one is the lack of more attention to the institutions that may lead to considering the institutions as mere link between structure and agency, and they cite Hooper, 1992, as follows "… danger that 'institutions' may be conceived simply as the mediating link between structure and agency, requiring theorizing only in terms of social relations and then reconnected with the material world through a link with production". They continue to discuss further some shortcomings of the model, but they are all coming out of the two problems which are mentioned here. However, they recognize that Healey reveals the potential alternative ways (compared to mainstream economics) to understand the processes of the land development by using different approaches outside property field, these approaches include geography, economy, planning and sociology. In addition to the recognition by Ball (1998) and Guy and Henneberry (2000) that the Healey's model is appropriate for use when analyzing local or specific studies and using different perspective approaches respectively, the main reason for the selection of this model is that this model has integrated all the characteristics of the different types of models in land development and hence provides an exhaustive list of aspects to be considered when analyzing a land development model. The elements of the model is explained below, based on the theoretical concepts and case study performed by Healey, in Table 6.1, see Appendix 3.12 for the full depiction of the consolidated model and its example. It should be noted that the example of the model in the fore mentioned appendix does not include the neither the agents nor the agents in the example provided, but they are provided in the textual part.

Elements	Description
Events	These are the list of activities, in a sequential order, carried out throughout the development process. It is difficult and controversial to agree upon the minimal list of events, therefore careful research is needed for each case to identify the events significant to transformation and their order.
Inputs: Factors of production	These are the material resources used in the development or production process, and they include land rights, labor, finance capital, information and expertise. Healey stresses that the nature of the resources available will express the economic structures surrounding production and exchange relations in general and property production specifically. She refers to the Harvey's model of circuits of capital, see Appendix 3.11, and states that this model offers valuable general theorization of the flows of material resources, but reflecting the situations in capitalist economy.
Outputs and impacts: Products and outcomes	Outputs are the products of the development process like the buildings which have material values (for consumption – house to live in, production and investment – buildings used for production and further investments like factories, offices etc.), abstract values like bundles of property rights, and a physical tangible structure with symbolic and aesthetic values. Impacts are the outcomes and effects of the production or development process. This can be the profits from the land exchange, development and construction, or it can be the jobs created in the production process and resultant services and construction work, the impact of a developed area can affect other areas. In other words, the outcomes and impacts of the entire development process can generate demand for other products and services.
Roles in production	These are the roles of the agents in the production and they can be grouped based on the factors of production. Land rights – the role can be the controller of the ownership rights or controller of the development rights. Labor – the role can be the land clearance company, the building materials producer or the contraction company, infrastructure supplier, sales agent, expert adviser etc. Capital – the role can be the provider of capital from family savings and personal wealth, production capital, commercial capital, finance capital, public investor like from taxation revenues, and provider of the machinery.
Roles in consumption	These are the roles of the agents in the outcomes or products' consumption and their respective values. Material values – the roles can be the consumption of the material values in production process like industrial, commercial etc., or in consumption/use process like housing, services and leisure facilities, and in investment processes. Abstract values (land rights) – the roles can be the owner of the house, leasehold of the house, mortgagor etc. The consumption roles can be also related to the environment, for instance guardian of environmental quality, like pressure groups, planning agencies, specific conservation agencies etc.
Roles and relationships	The roles in production and consumption are examined and their mutual relationships are examined. It is important to identify the power relations among and between producers and consumers. The sorting out of the roles gives indications of the interests of the agents.
Strategies and interests	It is necessary to identify the strategies and interests of actors, particularly with respect to the most significant sets of relationships within the development process. This will help to find out what were the reasons for the different roles played and relationships developed. After the reasons found (if it is possible to find out), assessment can be related to the resources, rules and ideas governing the development.
Rules- resources-ideas	Rules are the rules of institutional organization and political regulation that govern the way the resources are used. These can be formalized in law and administrative procedure or exist as custom and practice. Important rules are the ones governing the ownership and control of resources. Ideas trigger the deployment of resources and rules, and inform the interests and strategies of actors. These ideas carry assumptions about the nature of cities, economic future and social organization, about environmental values, about appropriate relations between public and private domains. All these have critical structuring effect on the way agents perceive their interests and devise their strategies. For resources see the material resources in second column – Inputs: Factors of production.
Mode of production Mode of regulation Ideology	This is the last level of the analysis and it involves theorization of the nature of modes of production and regulation, of ideology and of the relations between them and description of the particular societal circumstances. This should allow to explore the extents to which development processes have different forms in that particular economy and society. This theorization of the social relations consisting of the strategies and interests of actors, and the resources, rules and ideas available to them thus becomes the framework within which to observe and describe how actors reproduce, reinforce and transform the social relations themselves

Table 6.1 The elements of the consolidated model (created based on Healey 1992)

Below, in the next section the elements of ULDM is described in the framework of the institutional model.

6.1.2. ULDM and institutional model

The elements and the theorization of ULDM is compared with the institutional model. The table created in the previous section, Table 6.1, is used for this comparison. In addition to the elements of this table one more element, the stakeholder, is added.

Elements	Description
Events	1. Provision of land. The land is obtained by the private sector 2. Investment in land. Private sector invests in buildings and in parcels, on-site investments. Public sector invests in off-site infrastructure and public facilities, such as education and basic services, parks etc. 3. Creation of desired urban area. The simultaneous efforts made by the public and private sector result in sustainable urban areas, that is able to generate more wealth.
Stakeholders	1. Private sector, there is a vast number of private sector stakeholders, for instance the individual land owner who is investing, building their houses, construction companies, financial organizations etc. However, for ULDM, unless specifically stated, the private sector will be understood as the individual land owner who invests and builds his house. 2. Public sector, again there can be vast number of public sector stakeholders, for instance the state with its housing policy, the local governments who are implementing the policies, different public organizations such as planning, registration, cadastre and so on. However, for ULDM, unless specifically stated, the public sector will be understood as the government including all its functions and organizations.
Inputs: Factors of production	1. Land in its physical form and abstract form – the land rights, provided both by the private and public sectors 2. Labor – by the private sector in construction, it can be both the private individuals building themselves, or a construction company. The public labor such as the efforts made in planning, control over the developments etc. 3. Capital – the money investments by private individuals and companies, and the public sector
Outputs and impacts: Products and outcomes	1. Desired urban area, including an adequate neighborhood 2. Property rights, more secure and with higher value due to the development 3. Impacts on the society as a whole is quite big. Primarily, the effects are the benefits to the immediate stakeholders such as the private sector – the residents enjoy adequate livelihood in terms of quality of life, education, and added value properties. Another immediate stakeholders are the participants in the development such as construction companies, and the beneficiaries of the multiplier effect such as construction materials producers. Then the effect of the whole process is the continuous cycle of capital generation. Urban areas are the major producers of the wealth, and the profits and tax income are invested again to the development to generate more wealth and capital.
Roles in production	1. The private sector plays many roles in production. Private individuals are the controllers or holders of the land rights, the investors in and builders of their houses. The construction companies are the builders/the labor. 2. The public sector also plays many roles. It is the investor or the finance capital provider, controller or holder of the land rights in public facilities, the employer of the construction companies to build the public facilities.
Roles in consumption	1. Private sector – house owners - the individuals with improved houses and amenities, i.e. adequate neighborhood, these individuals are also the users of the public facilities and services provided in the adequate neighborhood. 2. Public sector – has the role of consumer of public facilities for the production of education and providing its basic services. Also it has the role of maintainer and guardian of the public facilities, like the streets, parks, schools etc.
Roles and relationships	ULDM considers that there is good relations between the private and public sectors, they mutually support each other to reach the development, though there might be pressure, if it is not there, by the private sector for off-site infrastructure, public facilities and services from the public sector, this can be exercised by the pressure or liaison with politicians
Strategies and interests	The interests of the private sector is to be provided with off-site infrastructure, public facilities and services from the public sector, and the public sector's strategy is to provide off-site infrastructure, public facilities and services from the public sector as efficiently as possible at the lowest cost

Continued from previous page	
Elements	**Description**
Rules- resources-ideas	In ULDM one rule or assumption is considered. It is considered that the land in the hands of the private sector has secure tenure and the land is registered. The mode of tenure can be both ownership and leasehold, and the holders of the tenure enjoy the freedom of disposal and transfer of their rights without any restrictions. The commonly accepted norms and standards are governing regulations, like for instance the principles of sustainable development
Mode of production Mode of regulation Ideology	The underlying theorization of ULDM is the public and private sector investing simultaneously for the urban land development, driven by their interest to achieve adequate livelihood for the private sector and sustainable development for the public, i.e. society. In this case the mode of production, regulations and ideologies are not really considered, but the overall socio-economic frame within which the study is carried out is the economies in transition from centrally planned to market economy.

Table 6.2 The elements and aspects considered in ULDM in the framework of institutional model

It can be observed that all the elements of the land development suggested by institutional model can be found in the ULDM. Some elements of ULDM can be seen clearly from its depiction, and some are rather implicit and hidden, but can be found in its description, refer to section 1.2. Below the elements are discussed one by one.

Events in ULDM is present, but rather generic, it only shows the overarching development process from bare or agriculture land to developed land in a similar manner as depicted in Figure 3.1 in Chapter 3. In the context of the research, it shows that there is investment from public and private sector in land and it results in an adequate neighborhood. Stakeholders, again, only the most important two stakeholders, the public sector, meaning government including all its functions and organizations, and the private sector, meaning the individual land owner who invests and builds his/her house. Implicitly, the ULDM, especially when it considers the economic multiplier effect, considers vast number of private stakeholders such as the construction companies and supplier of construction materials and so on. Inputs are the factors of production, and the model clearly shows the land and investment as the inputs, but implicitly the production capital such as the buildings and equipment used by the construction sector. Outputs and impacts, the outputs are clearly shown, these are the urban areas, and in the context of the study it is the adequate neighborhood. Implicitly, the multiplier effect of public and private investments and the more general effect of capital generation out of the urban areas are the impacts of ULDM. Roles of the stakeholders, both in production and consumption, are not much reflected in the ULDM, but their roles can be deduced, based on the institutional model, Their roles can identified as the investors, the land owners, the users and guardians in and of the neighborhood and its qualities. The relationships between the public and private cannot really be seen from ULDM, but it is assumed that there is good and appropriate relationship between them so that it results in adequate neighborhood. Strategies and interests, also, cannot be explicitly seen from the model, again, an assumption is made that both public and private interests are common so they strive for adequate neighborhood. Although their strategies can be different or rather common in the way that both public and private sectors are willing to spend minimum amount of investment to achieve the adequate neighborhood, i.e. public's strategy is to place as much investment burden on the private sector and private sector's strategy is to let the public to invest as much as possible. The rules-resources-ideas is the assumption that the land tenure is secure and registered, and, the development occurs within the commonly accepted ideology of sustainable development. The modes of production, regulation and ideology are considered to be in the frame of overall economies in transition from centrally planned to market oriented, and in this is in the context of the study as well.

6.2. Case study analysis

In this section the case studies are summarized in a tabular form to try to see their development pace and pattern and perceive how the cases support or dismiss the hypothesis that adequate neighborhood is the function of private and public investment.

Initial situation and triggers for change	Public investment	Private investment	Situation in October 2009 and remarks
Neighborhood 1, Nhan Chinh, Hanoi – Well planned and implemented			
Rice field until the start of the development in 2002, government decision to develop the area	Off-site infrastructure at once, land	On-site infrastructure, apartments and houses, and other public facilities at once,	Fully developed already by 2007. lacks playground and park.
Neighborhood 2, Nhan Chinh, Hanoi – Spontaneous development without support			
Small settlement surrounded by rice fields as early as 1969, in 1997 the neighborhood became part of the newly established Thanh Xuan district, which started to invest in the development of its sub-districts	Off-site infrastructure up to the inner streets of the neighborhood, the basic infrastructure provision was gradual since 1975 up to 2009	Investment in on-site infrastructure from the inner streets to their houses, and houses, which are gradually improving,	Partially developed, sewage system needs improvement, serious lack of street space, lacks playground and park, houses are varying quality and still in the process of house improvements
Neighborhood 3, Land Yen Xa, Hanoi – Planned and developed to certain degree			
Rice field until 2006, since then the housing development started, in 2003 urban development decision was made by the government	Off-site infrastructure up to the inner streets of the neighborhood provided at once, land, public education facilities	Investment in on-site infrastructure from the inner streets to their houses, and houses are being built gradually	Well developed, some few plots are still empty, the sewage system is not fully operational, lacks playground and park.
Neighborhood 4, Trieu Khuc, Hanoi – Spontaneous development complemented with support			
Agricultural facilities until 1990, in 1990 the village administration made decision to transform this area to housing area and allocated land	Electricity from the beginning, water since 2003, off-site roads, public education facilities, and land	Investment in on-site and inner street roads and sewage system, and houses, which are being upgraded gradually, playground	Partially developed, sewage system and main road needs improvement, serious lack of street space, lacks park,
Neighborhood 1, Bayanzurkh, UB – Well planned and developed			
Site acquisition and clearance before 2003, the first cluster of apartments built since 2003, and the next cluster between 2004 and 2008	Off-site infrastructure, which existed already	On-site infrastructure, apartments and houses, and other public facilities, land by purchase	Fully developed, lacks playground and park, and public education facilities.
Neighborhood 2, Bayanzurkh, UB – Planned and developed to certain degree			
In 1960s open space within a military base, land allocation around 1998 for housing by the military authorities	Off-site infrastructure in a distance from the inner streets of the neighborhood, land, main road	on-site infrastructure to their houses, the infrastructure is taken from the off-site infrastructure in a distance, and houses are being built or improved gradually or just gers are built	Partly, but mostly poorly, developed, some houses and apartments have basic infrastructure, but most houses and all gers have no connection to the basic infrastructure. streets have just enough spaces but not development at all, lacks playground, parks and educational facilities
Neighborhood 3, Sukhbaatar, UB – spontaneous development complemented with support			
Settlement on bare land started around 1970s, land was allocated based on pre-surveyed allocation scheme	Electricity, land, education facilities, dam, main road, water station	Houses and gers	Poorly developed area, the streets are spacious enough, all plots have just enough spaces and houses of different quality, except the new houses the area did not develop at all since it was established

Continued from previous page			
Initial situation and triggers for change	**Public investment**	**Private investment**	**Situation in October 2009 and remarks**
Neighborhood 4, Songinokhairkhan, UB - Spontaneous development without support			
Settlement on bare land since 2002, informal permission to settle by local governor	Electricity, land, main road, education facilities are provided gradually	Houses and gers, underground water supply	Poorly developed area, the streets are spacious enough, all plots have just enough spaces. Some recently established plots have only gers, some earlier plots have houses

Table 6.3 The summary public and private investment and their impacts on land development

Based on the case studies, Chapter 5, and the summary provided above in Table 6.4 it can be observed that except the neighborhoods 1 in Hanoi and UB, where the private sector has enough money to buy adequate housing, the quality of the neighborhood is heavily dependent on the public investment. If the public does not invest, the neighborhood does not develop.

6.3. Conclusion

6.3.1. ULDM and institutional model

The comparison of the elements of ULDM with the institutional model shows that ULDM does not explicitly include details that are dealing with the roles, relationships, strategies and interests, and partly the rules-resources-ideas, and modes of production and regulation and ideology. All these elements, which are addressed weakly or partly in ULDM, are arising out of Healey's (1992) emphasis on the agents and structures and institutions. Institutional model was useful to find out what is not considered in detail in ULDM. The exhaustive list of elements and aspects offered by institutional model is helpful to consider ULDM more thoroughly and determine what phenomena shall be observed and what data to collect, when performing and empirical fieldwork. However, as a model ULDM still completely addresses the research agenda and its objectives. The model is good enough to conceptualize the urban land development as the function of private and public investment. As for the appropriateness of the institutional model for ULDM, it is good support to ULDM in the way that it fills some of the gaps of ULDM. The list of elements and their functions, and the example of the case of the institutional model, provide excellent illustration of what is necessary to take into account when studying a development process. At last it is concluded that every model, including ULDM and institutional, as the name implies its purpose is to focus on institutions, is devised for a specific purpose in mind and within a broader socio-economic and political or any other social context and they try to as accurately address the issues in mind as possible. This can be expressed by the words of Gore and Nicholson (1991) "Although it is apparent that the different types of model do offer different levels of understanding, there is no reason to dismiss any of them out of hand". So the models serve their specific purpose, and, it is considered that ULDM, serves its objectives just right.

6.3.2. Case studies

All the case studies show that for the development of housing areas there is always investment from both the public and private sector. This is valid even in the case of neighborhoods 1 in Hanoi and UB, where the residents are wealthy enough and can afford to buy houses and apartments in relatively high quality areas. In these two cases, the public invested in the off-site infrastructure. One case, neighborhood 4 in Hanoi, showed an interesting pattern. It was a case where the private sector invested in the inner street pavement and sewage system, and playground. There can be assumptions that building the sewage system is relatively easy considering the climate conditions, and the pavement of narrow streets is relatively cheap, and that there was very urgent demand for playground and it was rather cheap to build it. Whatever is the case, this type of cases needs to be explored further

more in detail to understand such development. The other cases show that the neighborhoods reached their current state as the results of the public investment. The two cases, neighborhood 1 from both Hanoi and UB, are examples of cases when the private sector has enough money, it can buy adequate housing, but still it shows that public investment is necessary in the form of off-site infrastructure. Also, these two cases show the need for public interference in the detailed planning and implementation of development plans. Public shall serve as the guardians of the people's well being, in this case by enforcing the building of public areas such as playground and a small park or green area, which are lacking in this two neighborhoods. The next paragraphs will not deal with these two areas, unless it is stated explicitly.

Case studies from Hanoi, including neighborhood 4, where they eventually received centralized water supply from the public and where the residents built the playground themselves, have showed that the neighborhoods are in reasonably acceptable level, although they seriously lack public space on the streets, parks and playgrounds. This reasonably acceptable level is attributed to the quality of the houses, provision of basic infrastructure (water supply, electricity, sewage system and roads both on inner and outer street). This level is achieved, as the results of the public investment in the basic infrastructure and the private investments in the houses. One notable observation is that all the neighborhoods are undergoing extensive improvements. As the public provided better basic infrastructure, the private sector started to improve their houses.

Cases from UB, showed that the neighborhoods are below acceptable level. All neighborhoods lack basic infrastructure except electricity and main road. Even in the neighborhood 2 in UB, where there was the basic infrastructure available in the vicinity, only few families could afford to connect to them. Unlike in the case of Hanoi where the residents had the basic infrastructure available in their inner streets, in this neighborhood the residents had to bring the infrastructure to their inner streets and houses. The neighborhoods are in serious lack of the basic infrastructure, street maintenance, playground and parks or green areas. The education facilities are not available in the neighborhoods 1 and 2. In these neighborhoods, it is visible that the private sector is investing in their dwellings and improving gradually, however there were no public investment, except the initial electricity and main road) and this resulted in the neighborhood below acceptable level. The cases of the neighborhood 2 and 3 in UB are excellent instances of this. In the neighborhood 2, there were good quality, big, new houses with the basic infrastructure, however the streets are in very bad condition, so these houses did not really make sense in the area. The case of neighborhood 3 shows, that there were no changes in the neighborhood in the course of at least last 25 years, nothing has changed except the bigger and newer houses on the plots, the street is in the same bad condition.

The overall pattern of the land development cases observed in Hanoi and UB confirm the hypothesis that adequate neighborhood is the function of public and private investment. It shows that if the public does not invest, the neighborhood does not develop. This evaluation is a qualitative assessment reliant on intelligent judgment. There is need to complement and confirm this evaluation with more systematic quantitative evaluation. In addition, it became evident, that in addressing the immediate concern of the study, i.e. to test the hypothesis, there are much more aspects to consider. These are questions such as how to handle the differences and local specifics of different countries, the role of public planning and control in the land development, the impacts of political interferences, the wide variety of development patterns, conceptualization of the adequate neighborhood notion, application of the case studies in the context of developed countries.

7. Discussion

Although the research did answer all the questions set to reach the objectives of the study, the results have triggered number of concerns that need to be addressed and studied further in order to fully validate and theoretically strengthen the ULDM. These discussions can be put in two broader groups. One is the reflections on the case study and the other one is on the ULDM.

7.1. Reflections on case studies

As the results of the case studies number of issues were identified for further exploration or improvement. These are the need for qualitative study combined with systematized quantitative methods and conceptualization of the adequate neighborhood notion, to define precisely what is understood under the land tenure and land registration and how is the situation concerning this matters are in the study case areas, selection of study areas and different development patterns, public regulatory role in the land development, the impact of political interference, the specifics of the local situations and comparability of the cases from different countries. The last three items are in fact the less addressed issues in the ULDM, it became apparent not only from the case studies, but also from the institutional model, see section 6.3.1., that these items have important impacts on the land development. They need to be addressed and dealt with and this concern is discussed in separate sections.

7.1.1. Improvement of the methodology for case studies

The current evaluation is reliant on qualitative evaluation and intelligent interpretation of the results of the case studies, and it did not provide a direct and easily recognizable evaluation whether the adequate neighborhood is the function of private and public investment. Therefore, it is necessary to work out a methodology, which complements the qualitative evaluation. This shall start, first of all, with the conceptualization of the notion 'adequate neighborhood'. The present study was sufficed with the neighborhood concept (Johnston 1981; Pacione 2005) found in the urban literature and adequate shelter notion as defined by the UN-HABITAT (1996). UN-HABITAT (2009b) defined adequate shelter in detail as "… adequate privacy, adequate space, physical accessibility, adequate security, security of tenure, structural stability and durability, adequate lighting, heating and ventilation, adequate basic infrastructure, such as water supply, sanitation and waste-management facilities, sustainable environmental quality and health-related factors and adequate and accessible location with regard to work and basic facilities ….". Based on the above list and the indicators used for this study, a list of indicators for the adequate neighborhood should be finalized. Then, using existing norms, for instance the Norm of Neighborhood Design used by Rui (2003) in her studies, or preferably other international standards, determine the acceptable level or quality of the indicators. This level or quality shall form the concept of 'adequate neighborhood' and serve as the benchmark against which the ground situation is compared and evaluated. However, this acceptability level and quality shall be only a generic benchmark, which should be adjusted to the local conditions based on the local norms and those who are concerned as recommended by UN-HABITAT (2009b). It recommends "Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development". In the meantime, it will be necessary to establish indices for each indicators to enable quantitative evaluation. This, for instance, can be done using the principles, like assigning weights or setting criteria and scoring, applied in multi-criteria evaluation methods. This is not an easy task, but once such a methodology is developed, hopefully, it will provide more systematic, direct and easily recognizable evaluation of the physical conditions of the neighborhood, one example of such an evaluation can be found in the methodology used by Rui (2003), when evaluating the physical conditions at an neighborhood level. After the physical conditions are evaluated, it will be necessary to see how the present physical conditions were formed as the results of

the public and private investment. It implies there will be a need for accurate calculations of how much is spent for what and by whom, this, hopefully, can be done with the methods from the construction industry and by data collection from the relevant organizations, and the considerations of the socio-economic, political and environmental context. This implies a conceptual framework for another study, which is depicted in the upper part of the figure 7.1.

There should be a question that why all these matters were not handled in the present study. Initially, there were considerations for many different kinds of evaluation to assess accurately the amount of the public and private investment, the spatial ratio of the public and private investment, use of multi-criteria evaluation. However, considering the need to explore relatively new subjects of urban study and land development models to support the research, and the case studies, it was decided to use qualitative descriptive analysis and collect extensive field data to make evaluation. This enabled the collection of sufficient data for qualitative evaluation and deeper understanding of the land development process. Nevertheless, throughout the research work, all these aspects were kept in mind and given proper thoughts for further development and discussions.

7.1.2. Land tenure and registration

As stated in the introduction in Chapter 1, this research is motivated by the overwhelming interest of Mongolian politicians in the de Soto's Mystery of Capital, especially the formalization of the property rights and ownership as the key to unlock the dead capital that are owned by the poor (de Soto 2003). Recently de Soto was invited to Mongolia and his team has done a study. The following were said by de Soto in one of his speeches to the public in February 2010 in UB:

" They (his team that conducted survey in Mongolia) spent three weeks working here, which is a very short period. They surveyed 850 companies and households. This revealed that only 15 percent of the households had their property registered according to legal norms. The other 85 percent had some kind of provisional documents. We assumed there is a non-official property ownership system in your country. The team also concluded that only 20 percent of the total organizations operate officially and that around USD7.1 billion is circulated in the parallel economy." (News 2009).

The fact that de Soto was invited to Mongolia and his statement above, emphasizes the need to pay much more attention to the land tenure and registration, and the need for a theoretical and empiric underpinning of the ULDM assumption that the land tenure is secure and the rights in land are registered. This shall be done for both the ownership and leasehold mode of holding rights in land. Also, the existing land registration and its securing the land tenure or titles need to be compared with what de Soto is saying should be enough. Only after this is done the study can be useful, let's say to pursue the politicians. Therefore, there is a need to conduct more studies to support the assumption of the ULDM, for instance confirm that leasehold, for instance like the ones in Vietnam which is infinite in leasing period and transferable, is just as good as the ownership, i.e de jure it is leasehold, but de facto it is ownership, and to prove that the land registration and the titles provided in Mongolia are good enough to be considered formal in the context of the concepts contended by de Soto. This implies another bigger study.

7.1.3. Study areas and development patterns

In Chapter 4 Methodology, there were four different types of areas suggested to be selected and studied. The types of the study areas based on the initially discussed 'development pattern' did not prove to be exact match to the assumed pattern. However, the initial discussions with the counterparts in Hanoi and UB provided firm ground for selection of relevant cases. Therefore, the case studies were not hindered and affected negatively by later findings that the neighborhoods did not exactly match the initial assumptions of the development pattern. On the contrary, it helped to understand how widely can vary development patterns, and that there are always some different driving forces

and elements that influence the development of the areas. For future, it could be very interesting to find two or more similar areas, which have started to develop around the same time, in a similar socio-economic, environmental, and political situation. This will be an ideal case to study. On the other hand, if there will be improved methodology and conceptualization of the adequate neighborhood and the resultant concept of 'the ratio of public and private expenditure and the neighborhood situation', see figure 7.1, to test the ULDM, then it will be rather straightforward to test any neighborhood, there will be no need to look for an ideal cases.

7.1.4. Public regulatory role in the land development

It was evident that the neighborhoods 2 and 4 in Hanoi, clearly lacked initial public regulations for the development control. As the result, the neighborhoods end up extremely crowded and lacking any public space on the streets. Neighborhood 3 showed a good example of the planned, at least a parcel level, development and showed a good pattern on the street level. It was evident, the lack of public regulations even in the well developed and implemented neighborhood 1 in Hanoi, as the private sector did no plan any space for playground and park or green area. The same was with the neighborhood 1 in UB. The neighborhoods 3 and 4 in UB showed some kind of public regulation as the parcels were laid out in quite an orderly way, especially neighborhood 3 as this area was settled down in a time when there were strict rules for settlements enforced. It is apparent in its access to school and other public service facilities. However, this spaciousness and orderly layout can be the function of the population density and availability of land. The case of the neighborhood 2 in UB, also, asserts the lack of public regulations, apparently the military officials did not bother to orderly lay out the parcels, the chaotic settlement pattern is evidence. It is observed that if the public do not enforce regulations on behalf of the public interest, the neighborhood will be lacking some facilities such as decent street space, lay out and accessibility, playground and green areas. Another important observation is that the lack of public regulations in the form of planning and its enforcement, and future development vision, creates future burden on the public, as the instances from Hanoi and UB show the expropriation and compensation issues related to building new or improving existing roads.

7.1.5. Political interference

The political interference or impacts on the land development were observed in the cases from UB. In the cases of Hanoi, it was not observed, perhaps due to the inability to communicate with the interviewees directly, but it could be due to the political system as well. Although there were some very open and frank discussions on the society and corruption, no cases of political interference on the land development were reported. Contrary to this, all cases from UB reported political interference. The land tenure situation before the land acquisition and the process of transformation from planned area to informal and then formal and finally the developed status is an interesting case showing the politicians power, see Box 5.6. Neighborhood 2, also has some political flavor, it would be interesting to know how the military officials could get the approval of the mayor to allocate land for the employees and then managed the allocation without the participation of the land office, see section 5.2.3. In neighborhood 3, there was not much discussions on political interference, but it was interesting, even funny, to hear the case how the candidate for the parliament election have cleaned the streets in his campaigning efforts, see section 5.2.4. According to the interviews, it can be almost concluded that neighborhood 4 is the result of political promise, see section 5.2.5. The cases show that political interference plays an important role in the land development process and that they need to be taken into account.

7.1.6. Local specifics and comparison of cases from different countries

The cases from Hanoi and UB show that it is difficult to compare the cases of two different countries, or areas with different situations. For instance the climate has a big impact on land development. In

Hanoi the sewage system is built just under the pedestrian road, a whole of 30-40 cm was excavated in the middle of the road and covered with some rectangular shaped cement. In UB, due to permafrost it is necessary to dig at 1.7 meters for the pipes so that the water and sewage system is not frozen in the winter. A heating system needs to be installed in similar way, whereas in Hanoi no need for heating system. Does this imply that the installation of the basic infrastructure is cheaper in Hanoi than in UB, and therefore, in general the neighborhoods in Hanoi are in somewhat better condition? Or is this due to the dynamic development of Hanoi? Then what about UB, it is also very dynamic and developing fast? Another example is, for instance, the political system. Does the multi-party system in Mongolia trigger the political campaigning and making all kinds of promises, and how about the Vietnam situation with one party system? These are just couple of examples to consider, when trying to understand the processes of the land development. So, how these differences should be dealt with? An answer might be found, again, in the improved methodology and conceptualization of the adequate neighborhood and the resultant concept of 'the ratio of public and private expenditure and the neighborhood situation', see figure 7.1. If the concept and methodology of 'the ratio of public and private expenditure and the neighborhood situation' can be developed, then it can be used to compare the cases from different area, if there need be. This concept and methodology can be used in a case of a developed country, why such a case could be of interest is that it will be good to see how is the ratio of the public and private investment in developed countries. Do the majority of the people of these countries can afford to buy a dwelling in adequate neighborhoods, or still the public invests significant amount of money to achieve adequate neighborhood?

7.1.7. Some more reflections for discussion

The case of a child who died due to the lack of school in the neighborhood, see Box 5.10, is an extreme case showing how important are the public investment and planning for the interest of the public. The adequate neighborhood indicators that were used in this study need to be reviewed to double check, if any other important indicators are not missed. Always, there can be found very reasonable justifications, if not extreme, behind every indicator that was used. There can be extreme cases found in UB. For instance, sewage system involves both health and sanitation, and environmental concerns. The toilets, a hole, covered with wooden structure, in the ground on the parcels, cause health and sanitation problems, and pollutes the soil and underground water. Another example is the heating, due to the extremely cold winter and lack of heating systems, families burn coal for heating. This causes disastrous amount of smoke, which in turn causes different types of diseases. One of the daily internet news site, which posts the daily news from different national news agencies and news papers, informed that the smoke is the reason for the worsened situation of diseases of respiratory system, worsened immunity of the young children and elderly people, causes health problems for new born babies, causes mortality of infants, and may cause impotency for children who grew up in such a smoke … The smoke is threatening the national security…(Sonin 2010). Perhaps a researcher may question how reliable is the source and 'who said so', but in these type of circumstances one should ask 'who did not say so', perhaps. In any case, all this confirm that there must be public investment and regulation.

Another reflection is that related to the neighborhood 4 and political interference in UB. It is interesting to observe that the politicians somehow find money to fulfill their promises, in this case the provision of electricity and later main road. Then the question is why there is money afterwards, not before, i.e. after the settlement starts some of the basic infrastructure development catches up, but with political misuse of power.

7.2. Reflections on ULDM

The ULDM in its essence is a model sufficient enough to address the hypothesis that adequate neighborhood is the function of public and private investment. However, as the results of the study cases, as discussed in section 7.1, and literature review on land development models, there are more

issues that need to be addressed by the model. These are two issues, one is the capital generation and the other one is multiplier effect.

7.2.1. Capital generation

The explanation of the overall structure of the relations in the circulation of capital among the primary, secondary and tertiary circuits provided by Harvey (1985) is an excellent model for support of the concept the capital generation in ULDM, see section 1.2 for ULDM capital generation concept, and sections 3.2.3-4, Appendix 3.11 for capital circuits model. Harvey provides sufficiently well defined and explained model for the capital generation part of the ULDM, however, it will be necessary to further explore this model and investigate what further works were done in this direction, and find out if there are sufficient empiric evidences to support this model. If these can be found, it can serve efficiently to justify the capital generation part of ULDM. If there will not be found enough literature and empirical evidences to support the capital circuits model, then there could be some bigger studies carried out to test the capital circuits model. Another aspect is that, if there will be sufficient evidences to prove the capital circuits model, then it will be necessary to carry out studies how the urban residential area takes part in the capital generation. This is due to the fact that capital circuits model only shows that the secondary circuit, which is on the consumption side, contributes with labor for the primary circuit and taxes for the tertiary circuit. Then the question is that is urban residential area only used for consumption and does not contribute to the production or the generation of further capital, except with labor and taxes. In any case, further study of Harvey's model will be a motivating research to carry out.

7.2.2. Multiplier effect

The multiplier effect of ULDM is concerned with those fields of activities that are directly involved in the construction business as the result of the public and private investment. These can be construction companies, construction material suppliers, labor force in the construction sector. This multiplier effect is discussed in Healey's (1992) institutional model. She does not call it a multiplier effect, but it is seen as the output or the impact of the production process, i.e. the development process to install the infrastructure and construct buildings, where the concerned parties such as the original land owner who made a profit on the land sale, developer company, who installs the infrastructure, and construction company that erects the buildings, and the workers in the construction sector get a job. Her case study provides instances of these cases. Johnston (1981) provides a good overview on the multiplier and its effect. He explains that it is recognized that a new economic activity, such as mining or construction of industrial complex, serves as impetus for other economic activities. For instance the local service sector is stimulated by providing services to either the new industry or its employees and their families. This effect is defined as the multiplier effect. Economic geography is concerned with this study and the most common areas of study is the analysis of the multiplier effects concerning the opening, expansion, reduction, or closure of a particular firm. The effects can be intended and unintended, and can have both positive and negative consequences. With this introduction to this subject, there could be made further explorations and studies of the multiplier effects and how it relates or fits in the frame of ULDM.

7.3. An extended study

The discussions from the sections 7.1 and 7.2 are summarized and placed in a conceptual framework for possible further study in figure 7.1. In a nutshell, it can be said the there is need for improved methodology for the adequate neighborhood to be able to determine the ratio of public and private expenditure and the neighborhood situation. This shall be achieved by using qualitative, quantitative methods. First the AN indicators should be finalized based on urban studies and definitions from UN-HABITAT. Then a generic 'adequate neighborhood concept' shall be determined based on

international norms and standards. This concept shall be exposed to the principles of multi-criteria evaluation, so that it will be possible to express the indicators in the concept in both qualitative and quantitative terms. Then for the specific case studies this concept shall be adjusted by the local norms and standards and considering the demand, needs and opinion of the people who are concerned. This will give an locally adjusted neighborhood definition. This then shall be combined with accurate calculation methods to determine the investments by public and private sector. Also, the local socio-economic, environmental, local and political contexts need to be integrated into this. If all these can be done successfully, then the studies can provide with accurate ratio of public and private investments, and accurate ground situation of the neighborhood as the construct of the overall societal context. Further ULDM shall be strengthened with empirical and theoretical underpinnings of the capital circuits, multiplier effect and land tenure and registration. If all this can be addressed appropriately, the model can serve a political economy purpose to solve social issues. Political in a way that it involves the public decision for investment, and bigger societal impacts such as the capital generation and multiplier effect due to both the public and private decision for investment, and economic in a way that it involves investment decisions, capital generation and economic multipliers. Another speculation is that if the model can prove to be valid, then it can contribute to the discussion that formalization of the property rights is not enough to unlock the dead capital, especially in the cases of the lower income families who have decent housing. Can there be some answer found in ULDM to unlock the dead capital? Figure 7.1 below provides the depiction of the conceptual framework as the results of the discussions. At last, it must be noted that these discussions are only the reflections of the findings from the case studies and literature review and should be exposed to more open and critical discussions.

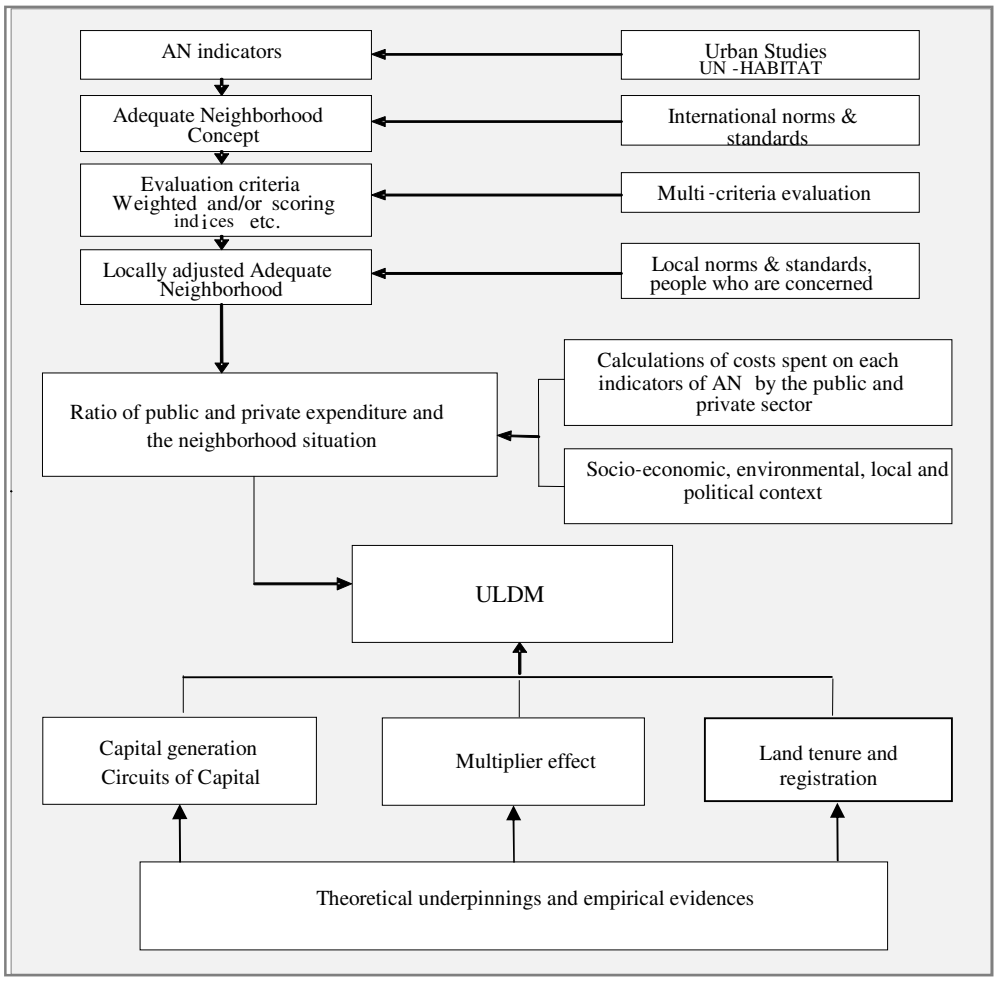


Figure 7.1 Conceptual framework for a possible extended study

8. Conclusions and Recommendations

8.1. Conclusions

The empirical evidences from case studies show that, even when the land tenure is secure and land rights are registered, the neighborhoods do not develop and improve, if the public sector does not invest in basic infrastructure and services. This confirms the hypothesis that adequate neighborhood is the function of private and public investment.

The evaluation of ULDM, based on literature review and comparison with existing land development models, asserts that theoretically the model can be considered as fully valid, as long as the model accurately and appropriately addresses and serves its purpose.

A critical view at the study may reveal one major shortcoming. The study lack a proper methodology, which would have offered an approach, for instance a multi-criteria analysis and evaluation, able to provide analysis and evaluation that combines qualitative, quantitative data and benchmark criteria, in the case of the study cases. Such a methodology was considered in the beginning of this study, but it was abandoned considering the need for an extensive studies of relatively new (to the researcher of this study) fields, namely urban studies and land development models, and the time allocated to complete the study.

Although the study fulfilled its objectives, the results and discussions have identified more issues that need to be addressed and generated more ideas for potential future studies that will support further empirical validation and theoretical strengthening of ULDM.

8.2. Recommendations

It is recommended to carry out further studies to advance the empirical validation and theoretical strengthening of ULDM, see section 7.3 and figure 7.1 for the details of the potential further study. It is hoped that the results of such study will bear a reasonable potential to contribute to the discussions around the property rights and that the validated and strengthened ULDM could provide some answers to ‘what is enough’ to unlock the dead capital.

`

Reference

Abrams, C. (1971). Language of cities : a glossary of terms. New York, The Viking Press.

ADB (2010a). "Mongolia Fact Sheet." Retrieved February 2, 2010, from http://www.adb.org/Documents/Fact_Sheets/MON.pdf.

ADB (2010b). "Vietnam Fact Sheet." Retrieved February 2, 2010, from http://www.adb.org/Documents/Fact_Sheets/VIE.pdf.

Ball, M. (1998). "Institutions in British property research: A review." Urban Studies **35**(9): 1501-1517.

Berke, P. R., Godschalk, D.R., Kaiser E.J., Rodriguez D. A. (2006). Urban land use planning. Urbana etc., University of Illinois Press.

Buitelaar, E. (2004). "A transaction-cost analysis of the land development process." Urban Studies **41**(13): 2539-2553.

Clift, J. (2003). "Hearing the dogs bark." Retrieved Feb 12, 2010, from http://www.imf.org/external/pubs/ft/fandd/2003/12/pdf/people.pdf.

Dale, P. F. and J. McLaughlin (2000). Land administration. Oxford, Oxford University Press.

de Soto, H. (2003). Mystery of capital : why capitalism triumphs in the west and fails everywhere else. New York, Basic Books.

Deininger, K. W. (2003). Land policies for growth and poverty reduction. Oxford etc.
Washington, D.C., Oxford University Press
The World Bank.

Doak, J. and N. Karadimitriou (2007). "(Re)development, Complexity and Networks: A Framework for Research." Urban Studies **44**(2): 209 - 229.

FAO (2007). Good governance in land tenure and administration. Rome, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.

Gilbert, A. (2002). "On the mystery of capital and the myths of Hernando de Soto : what difference does legal title make?" In: International Development Planning Review, 24(2002)1, pp. 1-19.

Gore, T. and D. Nicholson (1991). "Models of the land development process - a critical review." Environment and Planning A **23**(5): 705-730.

Guy, S. and J. Henneberry (2000a). "Understanding Urban Development Processes: Integrating the Economic and the Social in Property Research." Urban Stud **37**(13): 2399-2416.

Guy, S. and J. Henneberry (2000b). "Understanding urban development processes: Integrating the economic and the social in property research." Urban Studies **37**(13): 2399-2416.

Harvey, D. (1985). Urbanization of capital. Oxford, Blackwell.

Healey, P. (1991). "Models of the development process: A review." Journal of Property Research **8**(3): 219 - 238.

Healey, P. (1992). "An institutional model of the development process." Journal of Property Research **9**(1): 33 - 44.

Healey, P. and S. M. Barrett (1990). "Structure and Agency in Land and Property Development Processes: Some Ideas for Research." Urban Stud **27**(1): 89-103.

Inoka Suranganie, K. L. B. (2009). Birth and development of streets : street layout in land subdivision. Enschede, ITC**:** 69.

Johnston, R. J. e. (1981). The dictionary of human geography. Oxford, Blackwell.

Madanipour, A. (1996). Design of urban space : an inquiry into a socio - spatial process. Chichester etc., Wiley & Sons.

Moudon, A. V. (1997) Urban morphology as an emerging interdisciplinary field. Urban Morphology 3-10

News (2009). "Hernando De Soto stresses need for capital registration ". Retrieved February 14, 2010, from http://en.news.mn/news/4385.

OED (2009). "Oxford English Dictionary." Retrieved January 14, 2010, from www.oed.com.

Pacione, M. (2005). Urban geography : a global perspective. London etc., Routledge.

Payne, G., A. Durand-Lasserve, et al. (2009). "The limits of land titling and home ownership." Environment and Urbanization **21**(2): 443-462.

Rui, L. (2003). Urban renewal at neighborhood level : a case study of Huangjiadun neighborhood in Wuhan city. Enschede, ITC**:** 84.

Samsura, D. A. A., E. van der Krabben, et al. (2010). "A game theory approach to the analysis of land and property development processes." Land Use Policy **27**(2): 564-578.

Sonin (2010). "Should we let the smoke take our children (in mongolian)." Retrieved February 14, 2010, from http://sonin.mn/2010/01/07/%d1%83%d1%82%d0%b0%d0%b0%d0%bd%d0%b4-%d2%af%d1%80-%d1%83%d0%b4%d0%bc%d0%b0%d0%b0-%d1%82%d0%b0%d1%81%d0%bb%d1%83%d1%83%d0%bb%d0%b0%d1%85-%d1%83%d1%83/.

UN-HABITAT (1996). "The Habitat Agenda." Retrieved February 12, 2010, from http://www.unhabitat.org/content.asp?ID=1176&catid=10&typeid=24&subMenuId=0.

UN-HABITAT (2004). Pro Poor Land Management - Integrating slums into city planning approaches. Nairobi, Kenya, United Nations Settlements Program.

UN-HABITAT (2009a). Planning Sustainable Cities: Policy Directions, Global Report on Human Settlements 2009. London, Sterling VA, United Nations Human Settlements Program.

UN-HABITAT (2009b). Pro-poor land and housing International tripartite conference on urbanization challenges and poverty reduction in African, Caribbean and Pacific countries. Nairobi, Kenya, UN-Habitat. **HSP/EC/ACP.1/6**.

UNECE (2005). Land administration in the UNECE region : development trends and main principles. Economic Commission for Europe : publications on human settlements;140. Geneva etc., United Nations Economic Commission for Europe (UNECE)**:** 104.

WB (2010a). "Mongolia Country Brief." Retrieved February 2, 2010, from http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/MONGOLIAEXTN/0,,contentMDK:20190297~pagePK:1497618~piPK:217854~theSitePK:327708,00.html.

WB (2010b). "Vietnam Country Brief." Retrieved February 2, 2010, from http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/VIETNAMEXTN/0,,menuPK:387575~pagePK:141132~piPK:141107~theSitePK:387565,00.html.

Wikipedia (2010a). "Mongolia." Retrieved February 2, 2010, from http://en.wikipedia.org/wiki/Mongolia.

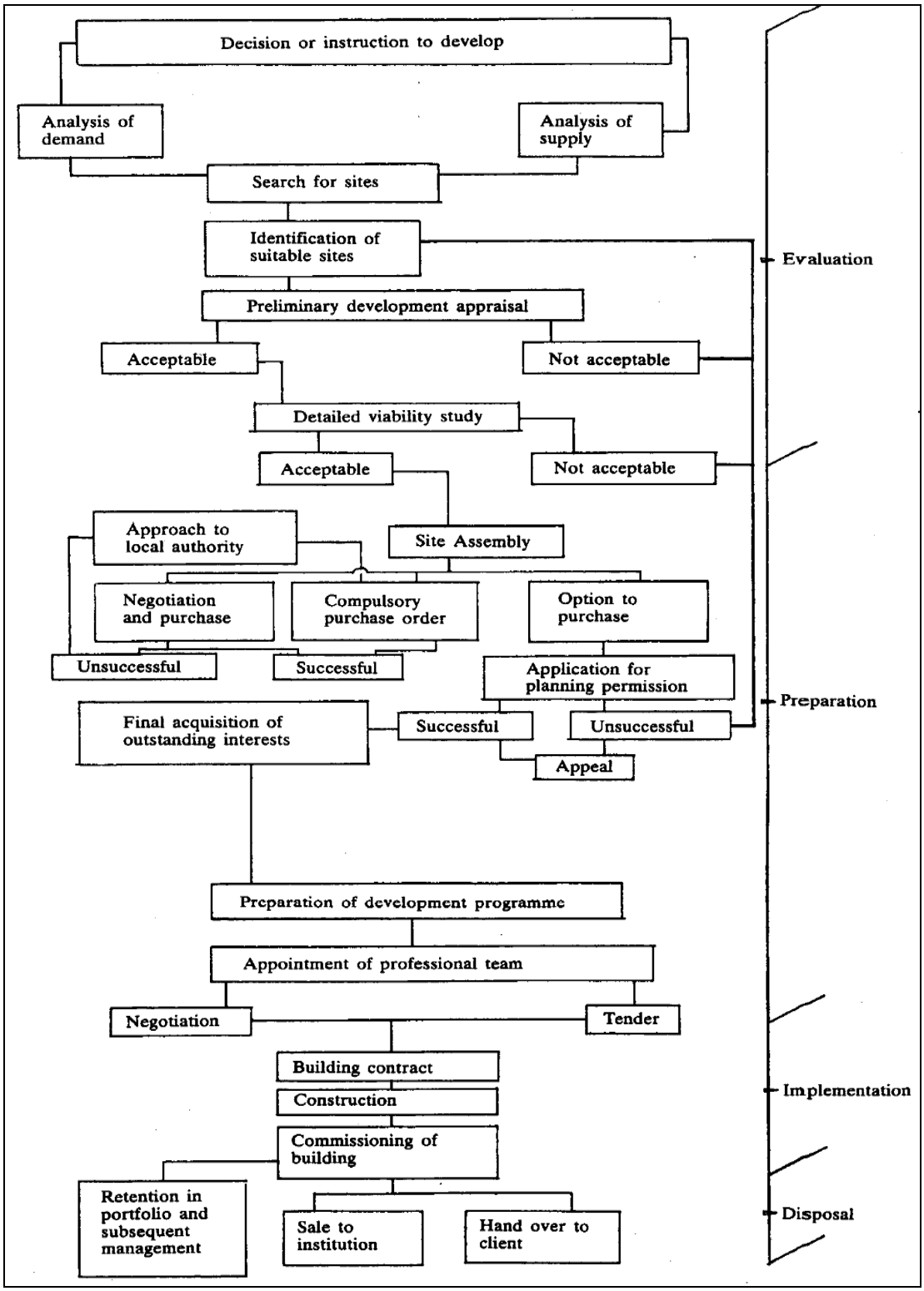
Wikipedia (2010b). "Vietnam." Retrieved February 2, 2010, from http://en.wikipedia.org/wiki/Vietnam.

Williamson, I., Enemark, S., Wallace, J., Rajabifard, A. (2010). Land Administration for Sustainable Development. Redlands, California, ESRI Press Academic.

Woodruff, C. (2001). "Review: Review of de Soto's "The Mystery of Capital"." Journal of Economic Literature **39**(4): 1215-1223.

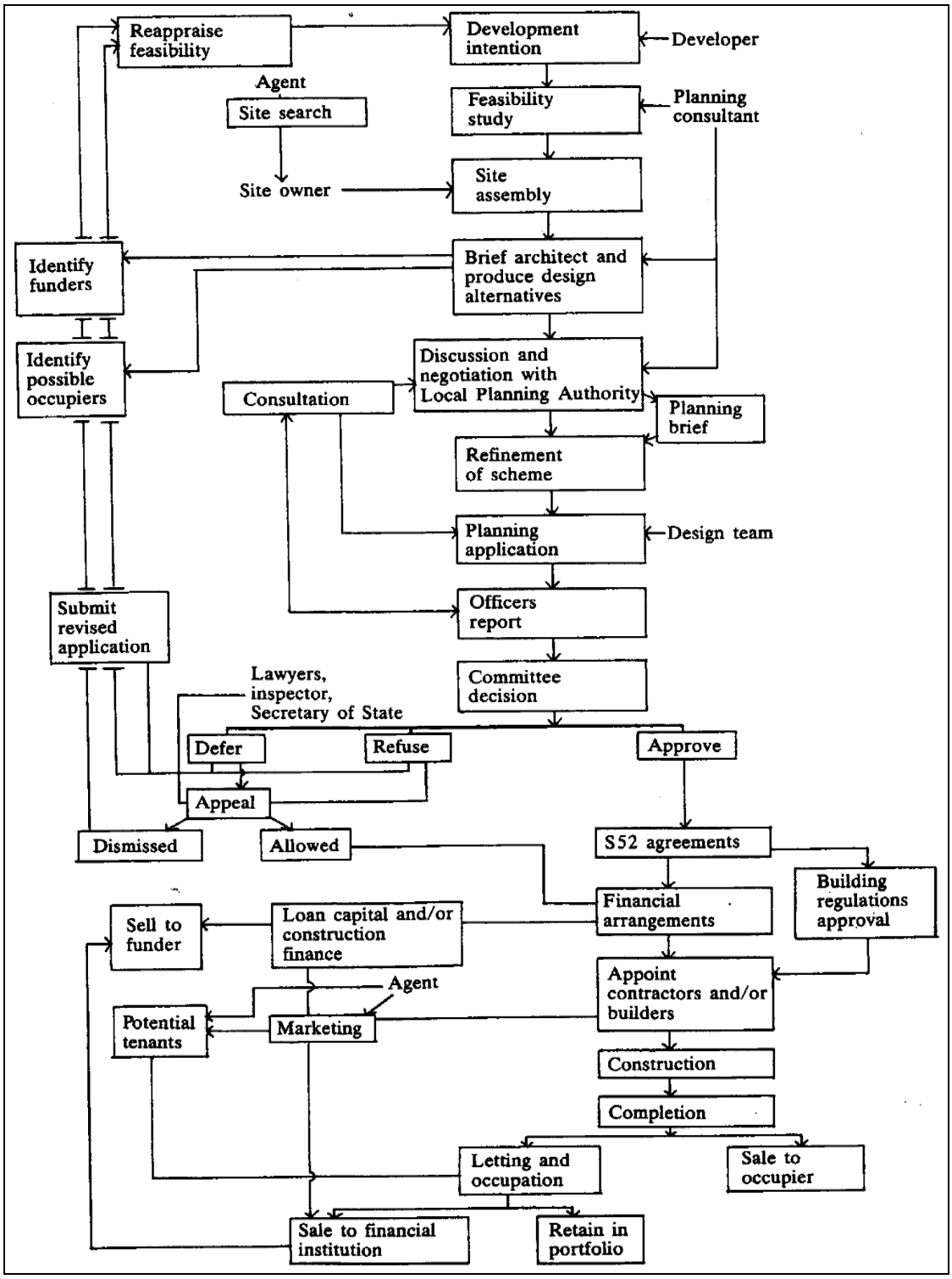
Appendices

Appendix 3.1 Example of sequential or descriptive model – generic



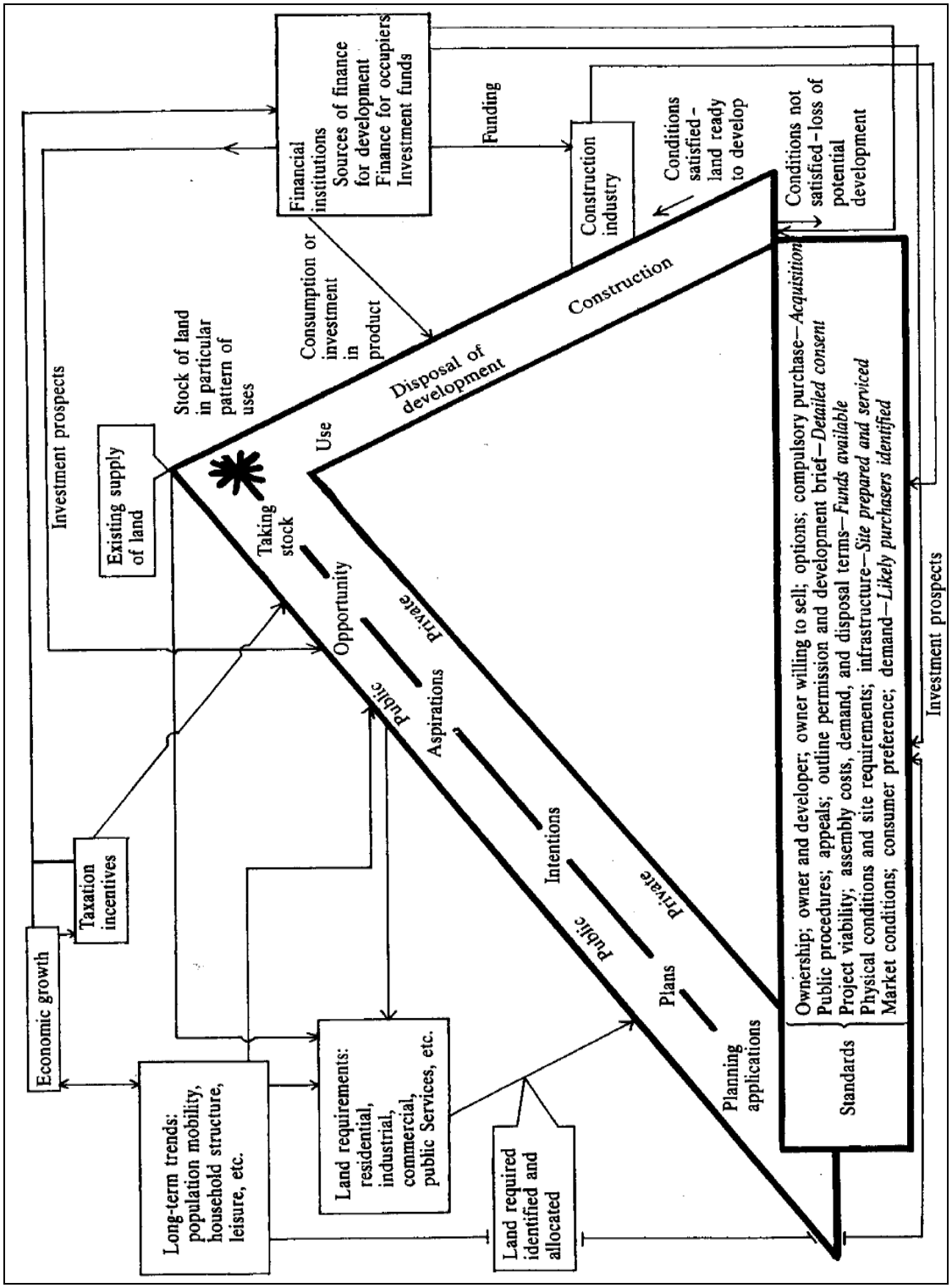
Linear model of the development process. Source Ratcliffe, 1978 in Gore and Nicholson (1991)

Appendix 3.2 Example of sequential or descriptive model – specific



The development process: speculative office. Source: Punter, 1985. Note: S52 relates to section 52 of the Town and Country Planning act 1971. in Gore and Nicholson (1991)

Appendix 3.3 Example of sequential or descriptive and agency model – development pipeline



The development-pipeline model. Source Barrett et. al, 1978 Note: * links both "Stock of land in particular pattern of uses" in Gore and Nicholson (1991) and Healey (1991)

Appendix 3.4 Example of sequential or descriptive and agency model – descriptive model

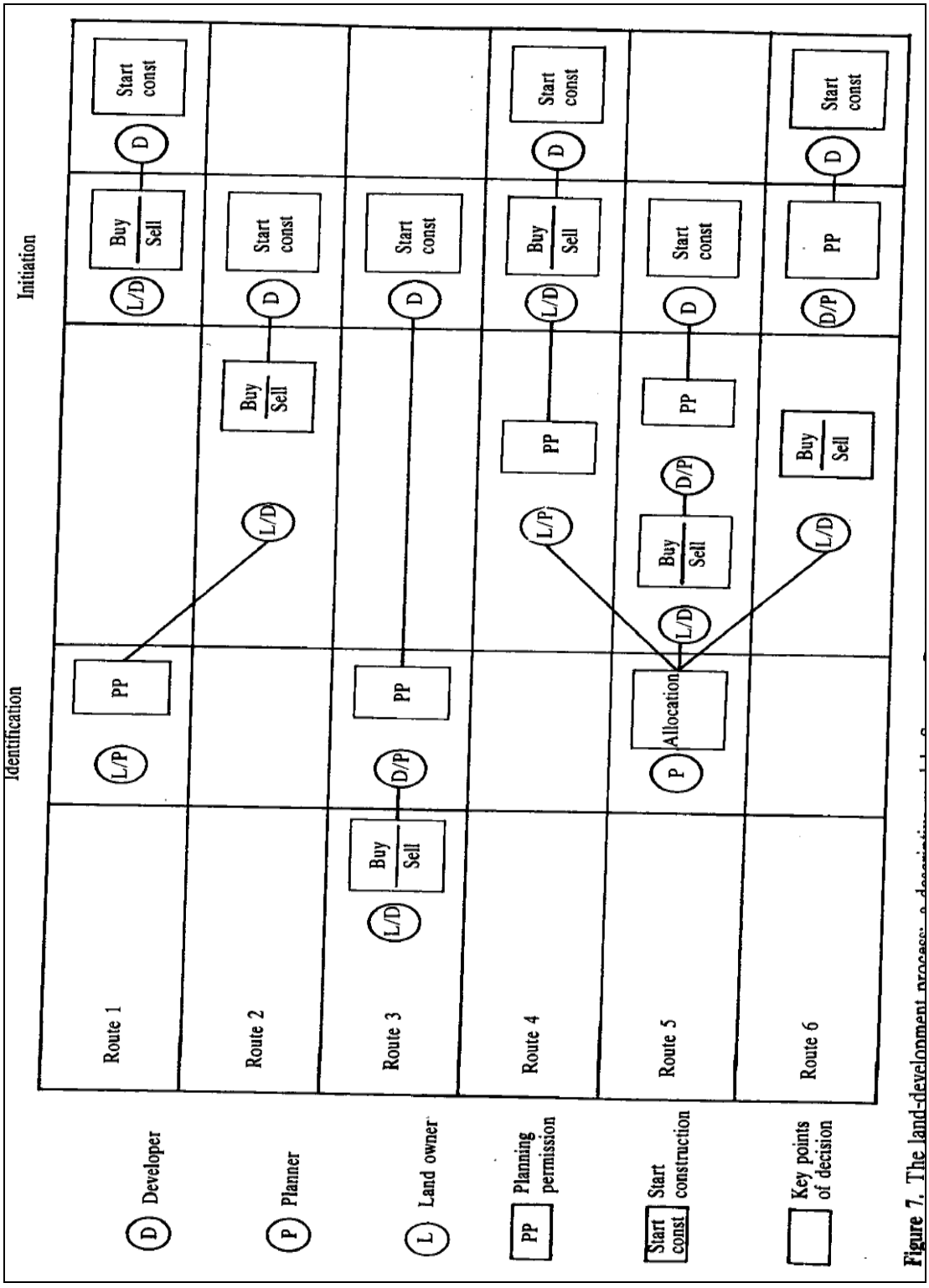


Figure 7. The land-development process: a descriptive model

A descriptive model of the land development process by Goodchild and Munton in in Gore and Nicholson (1991) and Healey (1991)

Appendix 3.5 Example of agency model – individualist approach

	Nonurban use	Nonurban use with pressures for change	Urban interest seen in land purchases; land use is transitional	Active pruchase of raw land	Active development	Active purchase of developed land
Primary decision agents	Farmer	Farmer Land dealer	Farmer Land dealer Developer	Developer	Developer Builder	Builder Households Industries Firms
Secondary decision agents		Financier	Financier	Financier Lawyer Realtor Planner Politician	Financier Lawyer Planner Politician	Financier Lawyer Realtor

Figure 5. The land-conversion process. Source: Bryant et al, 1982.

The land conversion process by Bryant et. al in Gore and Nicholson (1991) and Healey (1991)

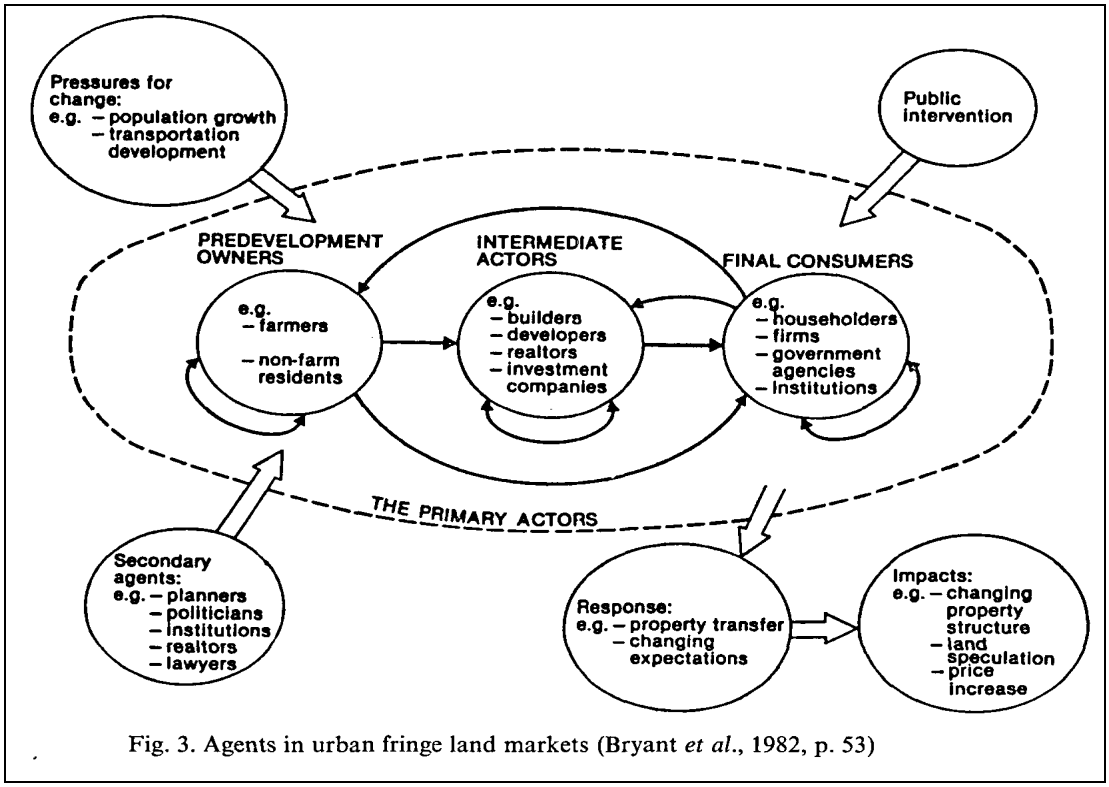
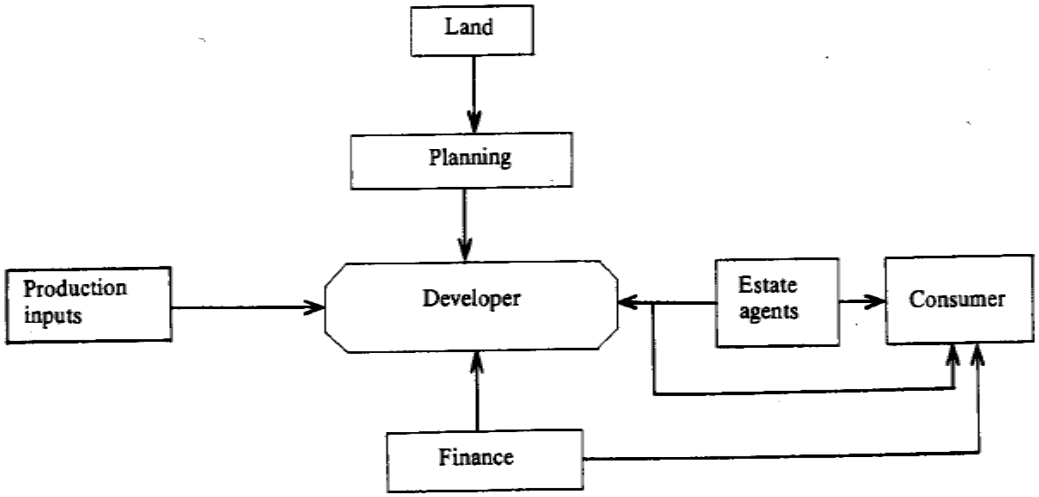


Fig. 3. Agents in urban fringe land markets (Bryant *et al*., 1982, p. 53)

Agents in urban fringe land markets, Bryant et. al., 1982, in Healey (1991)

Appendix 3.6 Example of agency model – interactive approach



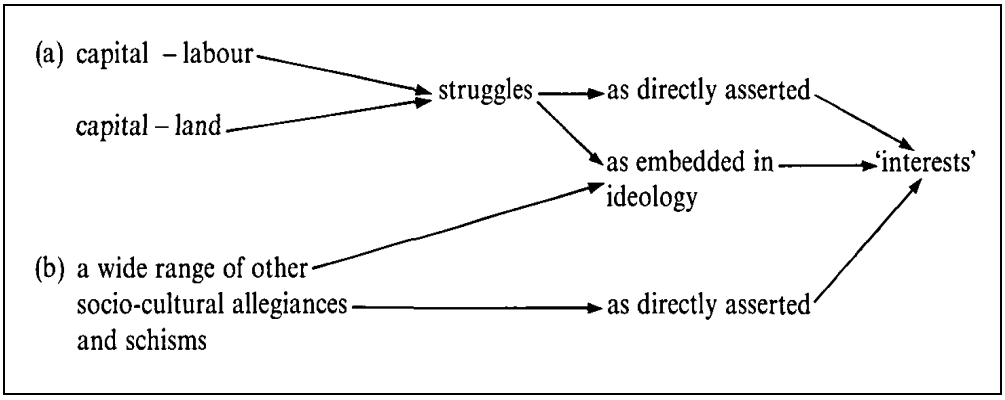
Relationships between decision agents in the land-development process, Drewett 1973, in Gore and Nicholson (1991) and Healey (1991)

Table 1. The land-development process. Source: Drewett, 1973.

Stages of development	Description	Decisions	Decision agent	Financial support
Nonurban use	In agriculture, or woodland, or other nonurban use; possibly idle	Opportunity costs are lower than present use	Landowner, speculator, devloper	Unchanged
Nonurban use, under urban shadow	Changed use: greater intensity of use, multiple use, recreation, idle	Relative location change or pressure of opportunity costs	Landowner, developer, speculator	Agricultural mortgage corporation
Urban interest	Decision agent recognises land has potential for a time period	Decision to consider land	Planner, developer, landowner, speculator	Preliminary arrangement of financing
Active consideration: planning permission	Agent contacts planning authority and/or government for development permission	Decision to purchase land	Developer, planner	Preliminary arrangement of financing
purchase of land	Agent contacts another agent re possible land sale	Decision to purchase land	Developer, planner	loan for purchase of raw land
Active development	Physical development of land	Decision to develop land	Developer, planner	Construction loan
Purchase of development	Purchase of property and occupation	Decision to purchase	Consumer	Mortgage, local authority

The land development process, Drewett 1973, in Gore & Nicholson (1991)

Appendix 3.7 Example of agency model – actor's interest based



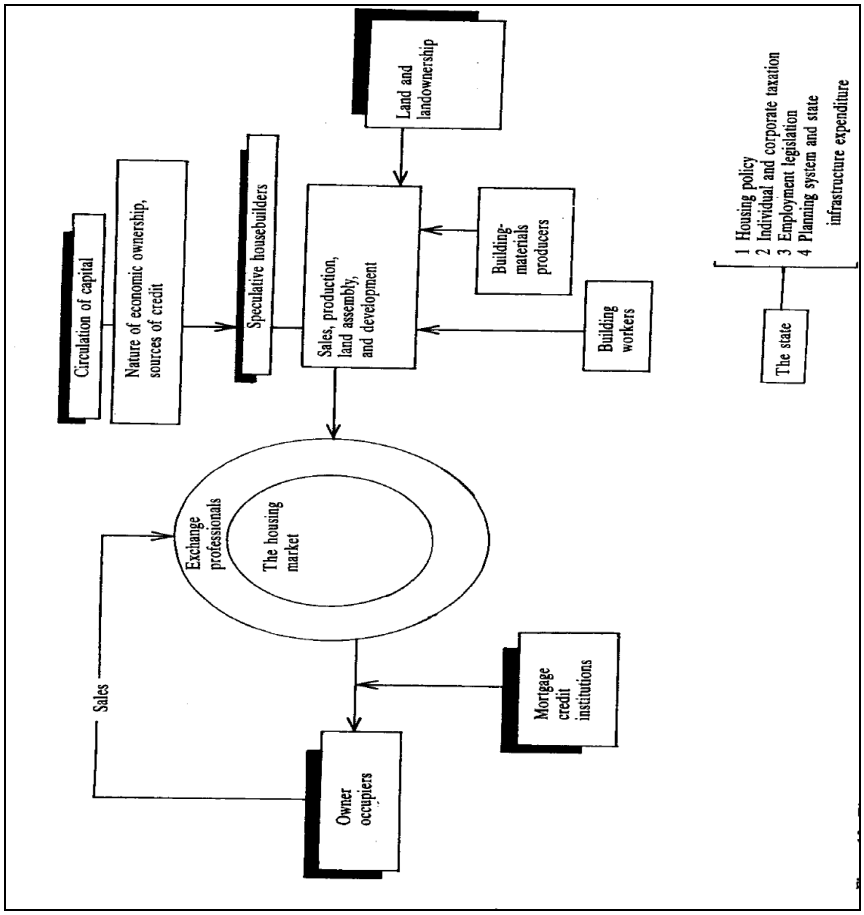
The generation of interests in land, McNamara, 1988, in Healey (1991)

Table 2. A classification of developers by purpose of development (McNamara, 1983)

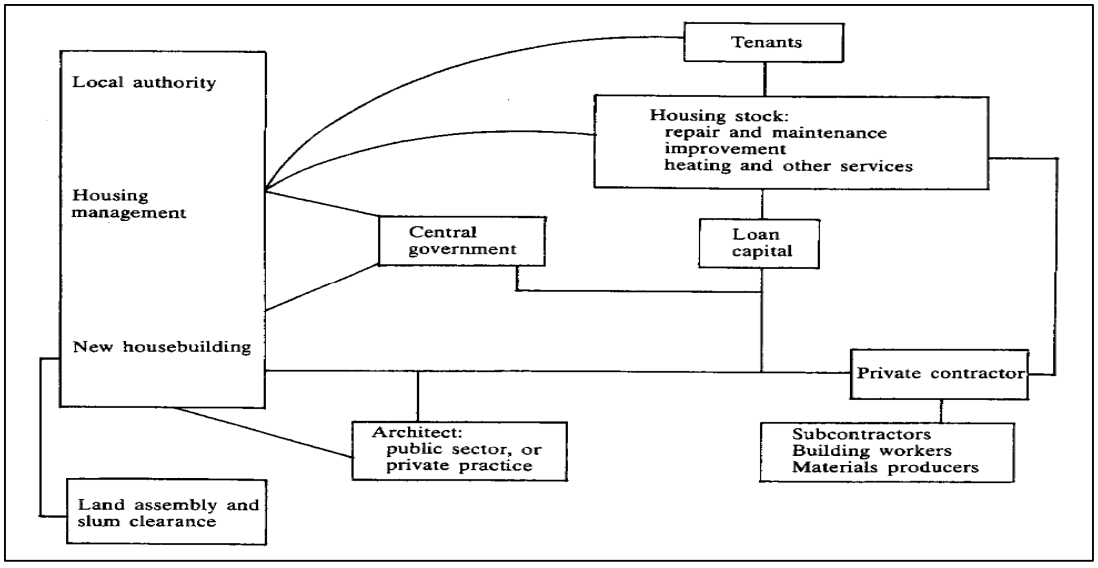
	After development		
Before development	Short term	Long term (leasing out)	Long term (owning & occupying)
Short term	Entrepreneurial builder	Land Developer–investor	Developer–user
Long term (leasing out)	Asset clearing, probably investment switch	Property improver/ rentier	Expanding developer–user
Long term (owning & occupying)	Capitalizing assets	Change in returns from property	Owner-occupier/ developer

Developer - actors interests' classification according to timescale of their involvement in the development process, McNamara, 1983, in Healey (1991)

Appendix 3.8 Example of structure model

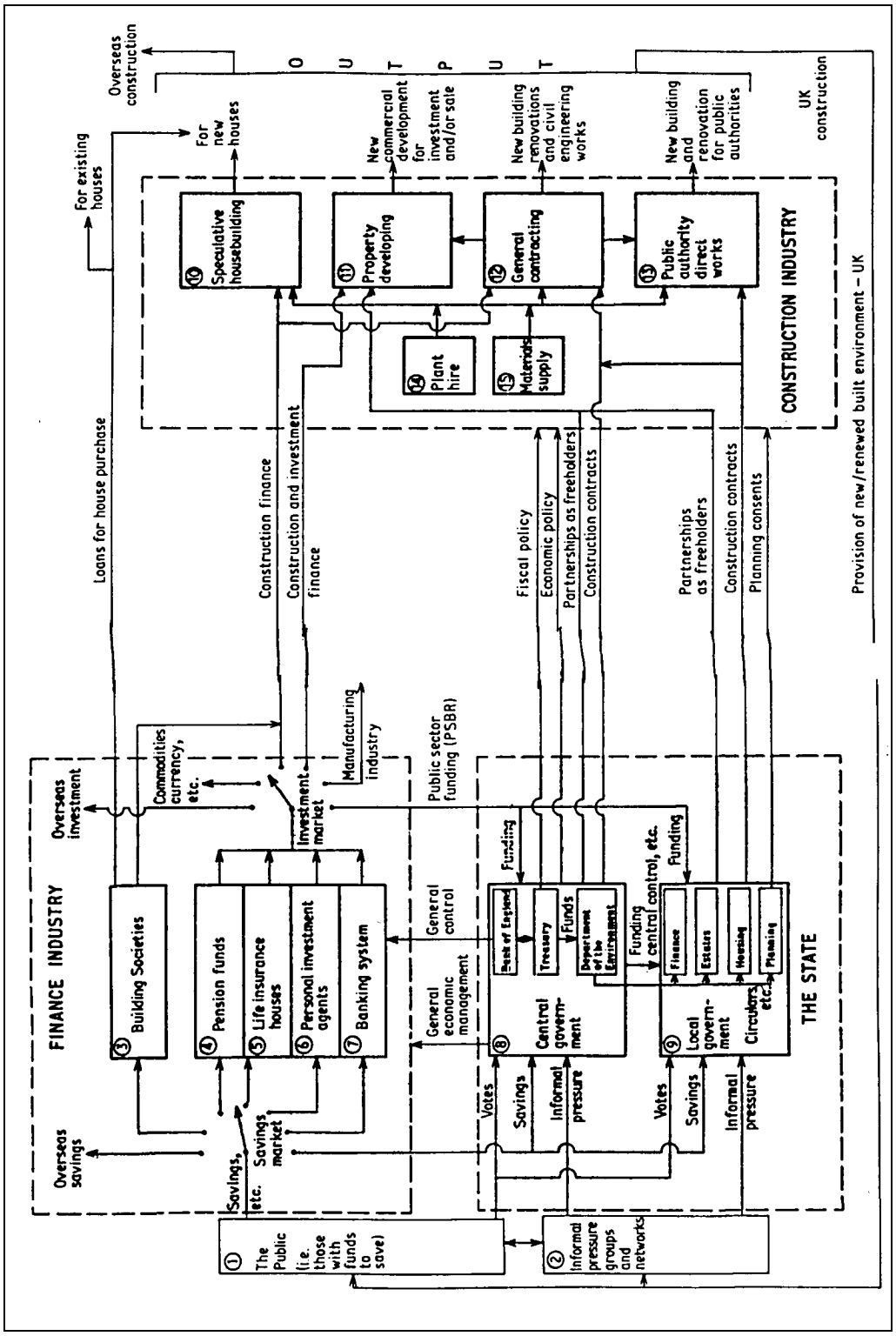


Example of the structure of owner-occupied provision , Ball 1986, in Gore and Nicholson (1996)



Example of the structure of council-housing provision , Ball 1986, in Gore and Nicholson (1996)

Appendix 3.9 Example of agency-structure model – UK case



The development system in the UK, Ambrose 1986, in Healey (1991) and Gore and Nicholson (1991), the model is consider as agency model by Gore and Nicholson and as midway between agency and structure model by Healey.

Appendix 3.10 Example of production based and structure model

Boddy (1981) accomplishes this by reference to the three basic Marxist circuits of capital, namely industrial, commercial, and interest-bearing. In the circuit of industrial capital [circuit (1)], money capital (M) is exchanged for commodity inputs (C), including labour power (l) and means of production (p), leading (via productive capital, P) to the production of commodities (C') which are then sold for a given sum (M'), providing a profit of ($M' - M$):

$$M \text{ —— } C \left\{ \begin{matrix} l \\ p \end{matrix} \right. \text{ ..... } P \text{ ..... } C' \text{ —— } M'. \qquad (1)$$

The commercial capital circuit (2) involves the use of money capital (M) to purchase commodities (C) for resale to consumers, again realising a profit of ($M' - M$):

$$M \text{ —— } C \text{ —— } M'. \qquad (2)$$

This circuit allows the value inherent in a commodity to be realised as money capital in the industrial circuit before it is sold to the final customer [circuit (3)]— and hence to provide a more rapid return to the producer:

$$\begin{matrix} M_i \text{ —— } C_i \text{ ..... } P_i \text{ ..... } C_i' \text{ —— } M_i' \\ \qquad\qquad\qquad\qquad\quad \searrow \\ \qquad\qquad\qquad\qquad M_c \text{ —— } C_c \text{ —— } M_c' \end{matrix} \qquad (3)$$

where the subscripts i and c denote industrial and commercial capital, respectively.

Last, the circuit of interest-bearing capital [circuit (4)] simply involves the advance of money capital (M), to be subsequently repaid with interest (M'):

$$M \text{ —— } M' \qquad (4)$$

Again, this circuit may interact with the others: for example, to initiate the circuits of industrial and commercial capital, or to advance consumer credit to facilitate the sale and purchase of commodities.

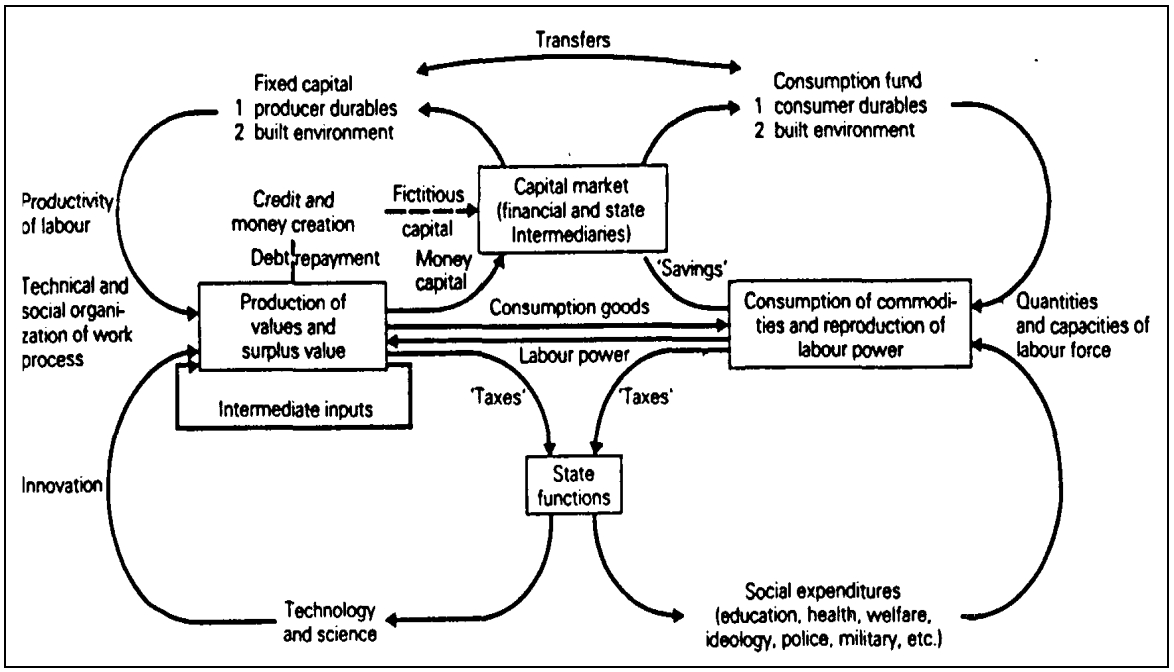
Boddy emphasises that these principles could be used to examine any branch of production. However, the precise ways in which the three circuits are constituted in any given sector are seen as being historically determined. Possible configurations "tell us little about changing structures and processes but serve, rather, as an analytic framework through which to interrogate the empirical, observable level" (Boddy, 1981, page 271). He then goes on to examine the operation of these circuits in promoting "the massive scale of commercial and industrial property development" in postwar Britain (page 267), with particular reference to office blocks. The chief ways in which the different circuits interlock in this development process are presented in circuit (5):

$$\begin{matrix} M_{bf} \text{ - } M_{bf}' \\ \downarrow \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \uparrow \\ M_i \text{ —— } C_i \text{ ..... } P_i \text{ ..... } C_i' \text{ —— } M_i' \\ \qquad\qquad\qquad\qquad\quad \searrow \\ \qquad\qquad\qquad\qquad M_c \text{ —— } C_c \text{ —— } M_c' \\ \qquad\qquad\qquad\qquad\quad \uparrow \qquad\qquad\quad \downarrow \\ \qquad\qquad\qquad\qquad M_{pf} \text{ —————— } M_{pf}' \end{matrix} \qquad \left\{ \begin{matrix} \text{interest-bearing capital loaned to builder,} \\ \text{industrial capital directed by builder,} \\ \text{commercial capital directed by property company} \\ \text{interest-bearing capital loaned to property company,} \end{matrix} \right. \quad (5)$$

where the subscripts bf and pf indicate the capital is building or property finance, respectively.

The development process as circuit of industrial, commercial and interest-bearing capital, Boddy 1981, in Gore and Nicholson (1991) as production based model and in Healey (1991) as structure model.

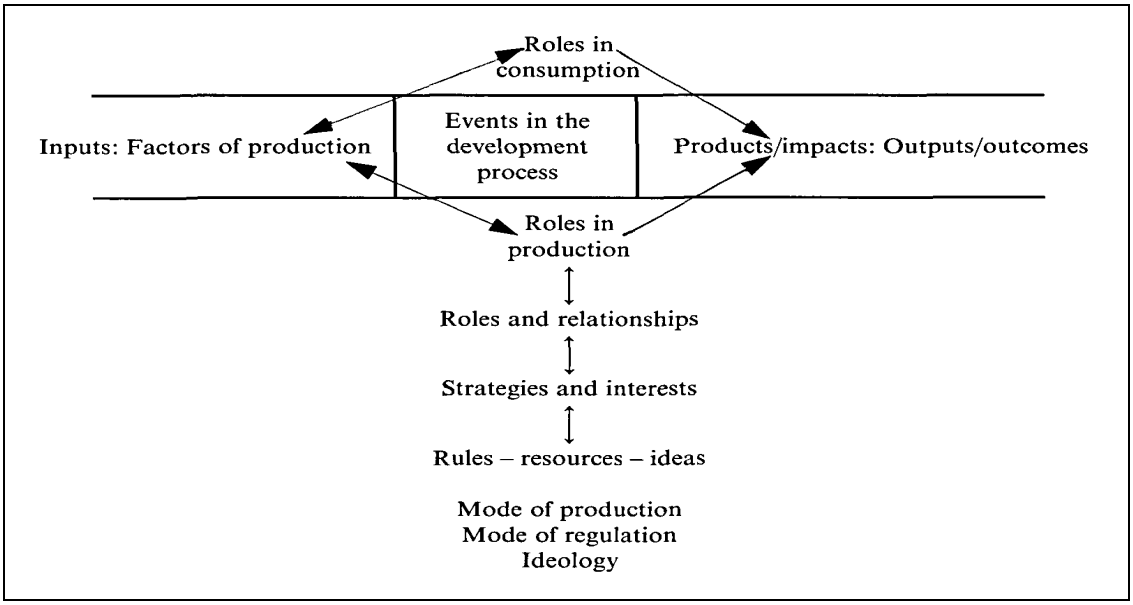
Appendix 3.11 Example of production based and structure model – Harvey



The built environment in the structure of relations between primary, secondary and tertiary circuits of capital, Harvey (1985)

This model is considered as production based model by Gore and Nicholson (1991) and structure model by Healey (1991).

Appendix 3.12 Example of institutional model of the development process



A consolidated model of the development process in Healey 1992

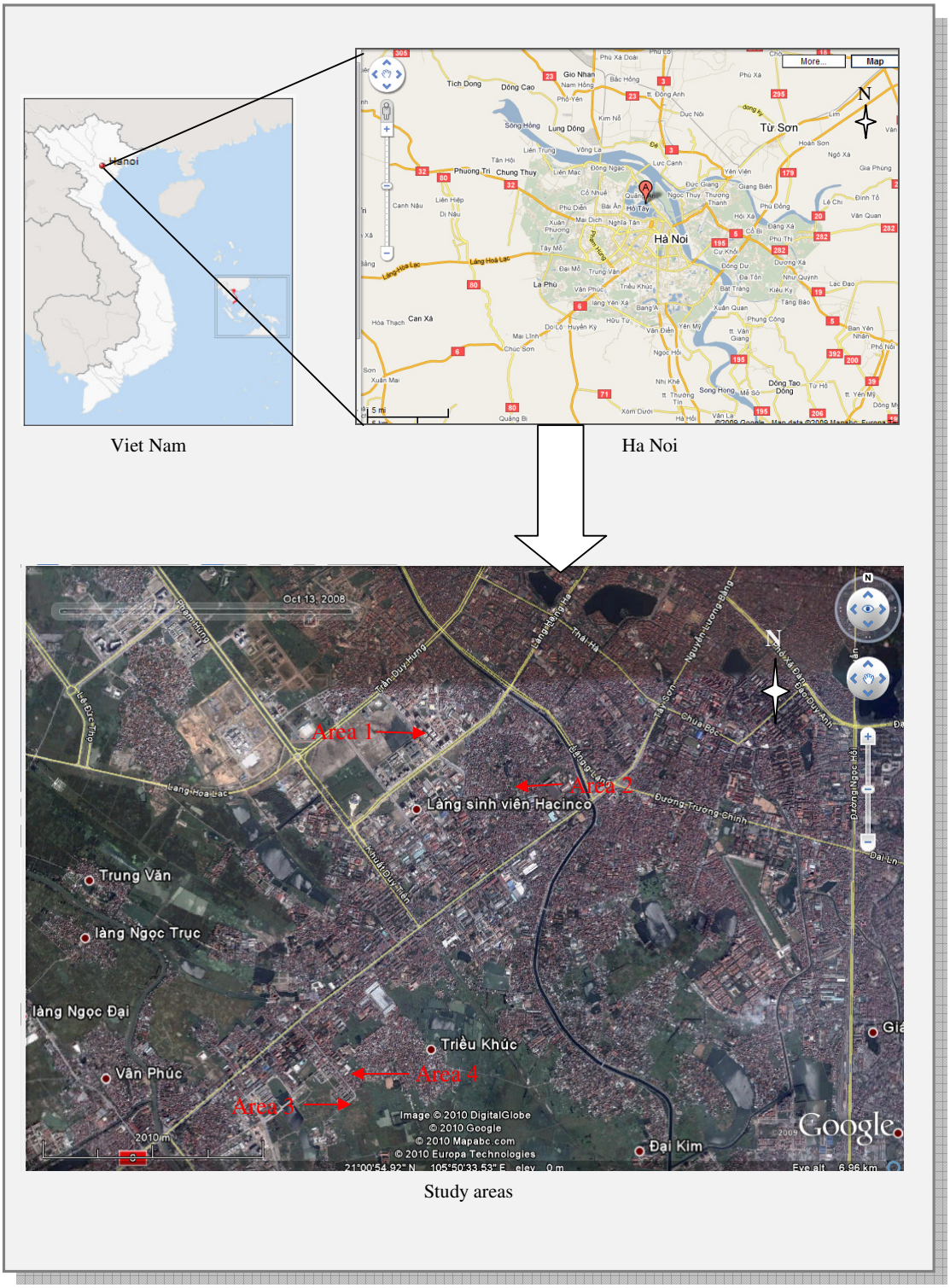
Roles in consumption
1. Material Values: production, consumption, investment.
2. Property rights
3. Guardian of environmental quality:

Factors of production	*Events in the development process*	*Products/outputs*
1. Land 2. Labour 3. Capital	e.g. Identification of development opportunities Land assembly Project development Site clearance Acquisition of finance Organization of construction Organization of infrastructure Marketing/managing the end product	*– in the Buildings* 1. Material values 2. Bundles of property rights 3. Symbolic/aesthetic values *– in the production process* 1. Profits 2. Jobs 3. Demand for related goods/services *Impacts* Wider economic, political, environmental, sociocultural effects

Roles in production
1. Land: ownership rights; use/development rights.
2. Labour: physical production; supplier organization.
3. Capital: money; raw materials/machinery.

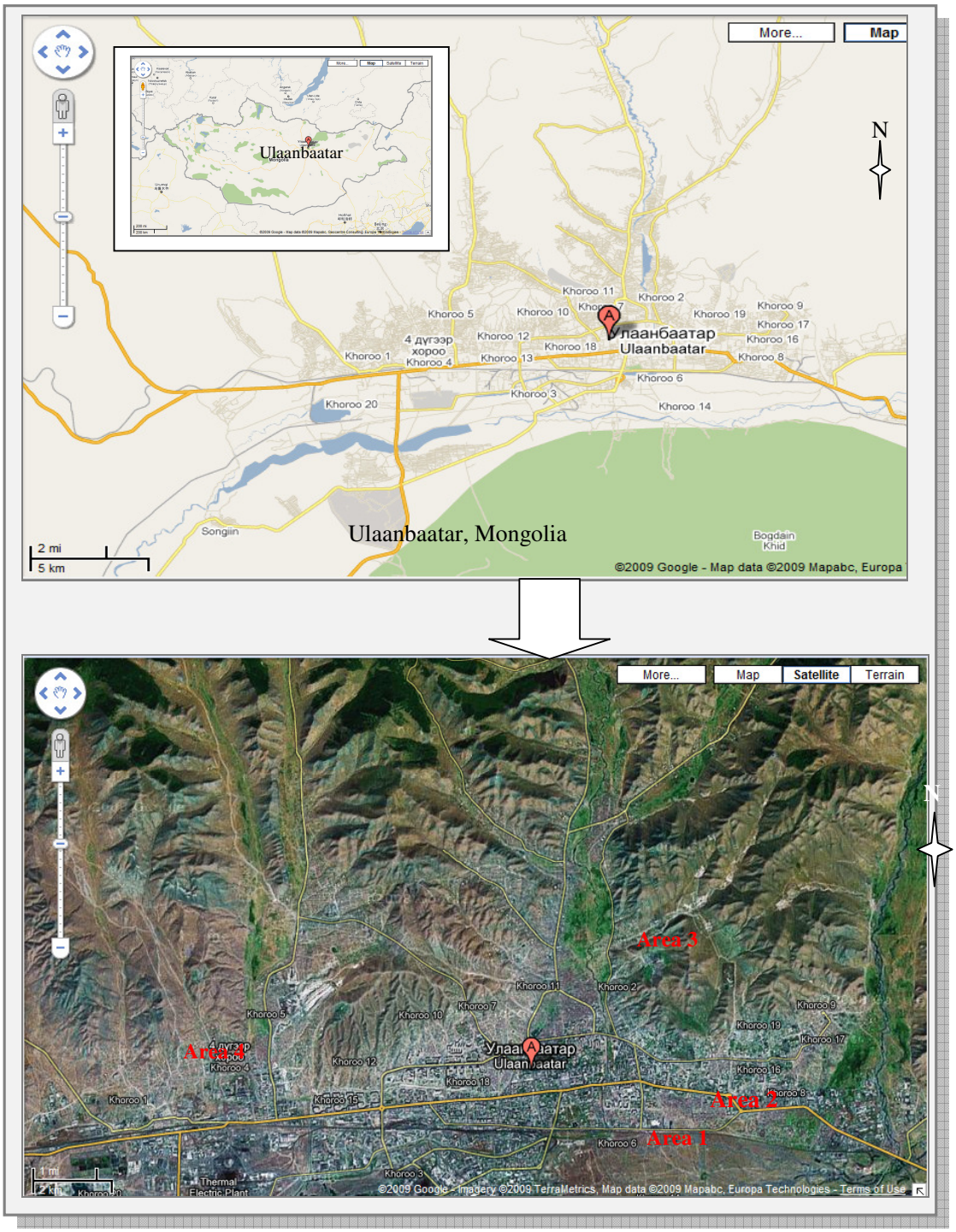
Elements of the development process in accordance with institutional model

Appendix 5.1 Study areas in Hanoi, Vietnam



Sources of Images: Vietnam – from Wikipedia, retrieved on February 2, 2009, http://en.wikipedia.org/wiki/Hanoi, Hanoi and Study Areas – from Google Map, retrieved on February 2, 2009, http://maps.google.com/

Appendix 5.2 Study areas in Ulaanbaatar, Mongolia



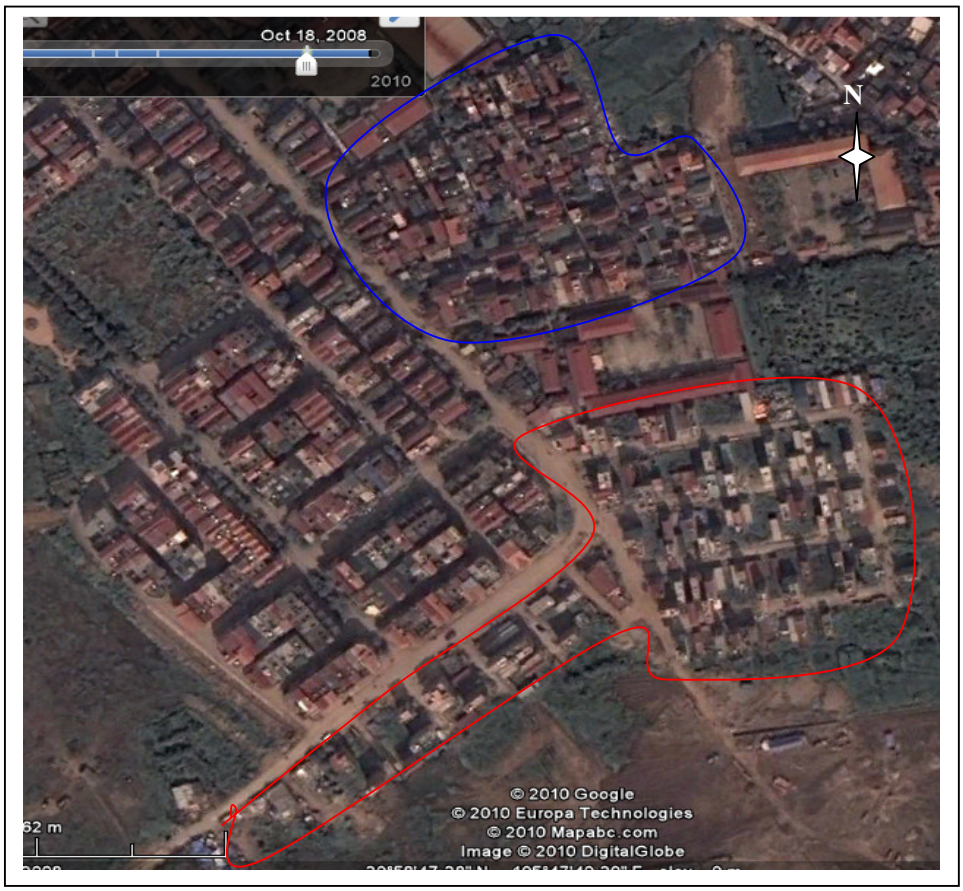
Study areas
Source of Images: Google Maps, retrieved on February 2, 2009,
http://maps.google.com/

Appendix 5.3 Neighborhood 1 and 2, Nhan Chinh

Satellite image of Neighborhood 1, dd Oct 13, 2008, left, (source Google Earth retrieved on Feb 3, 2010) compared with development plan by the developer from June 2002, right, (source: obtained from the community leader)

Satellite image of Neighborhood 2 dd Oct 13, 08, left, (source Google Earth retrieved on Feb 3, 2010) compared with parcel map of 1996, right, (source: obtained from the community leader and cadastral specialist of Nhan Chinh). The red squares on the images show the crossroads for reference. The blue square on the right image show the confine of area investigated, which is under the responsibility of the community leader who was interviewed.

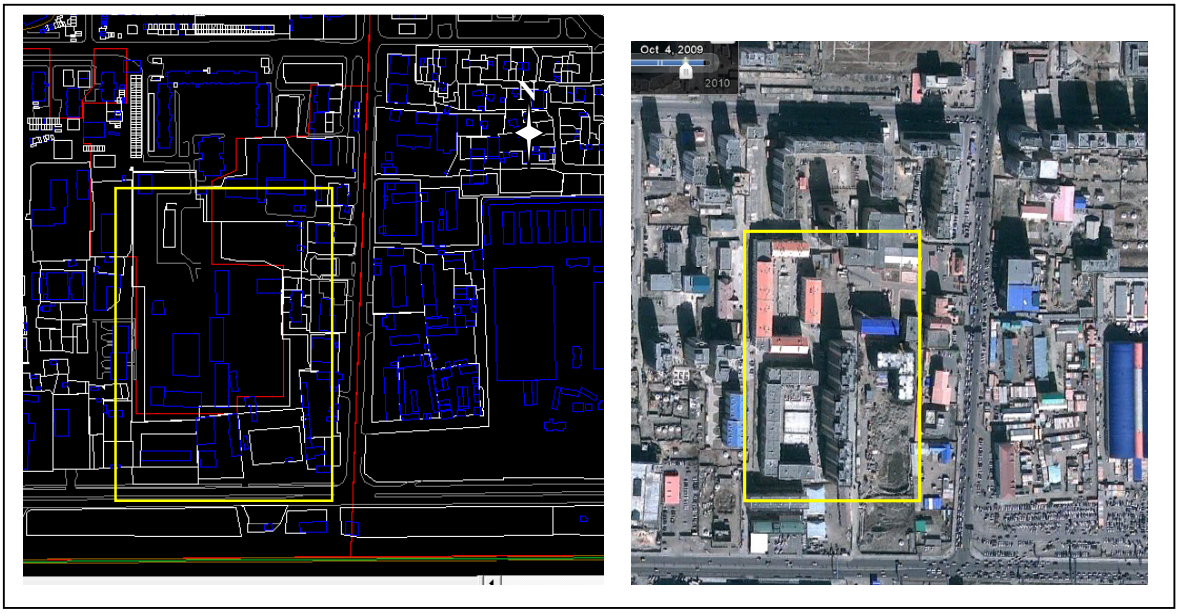
Appendix 5.4 Neighborhood 3, Lang Yen Xa, and 4, Trieu Khuc



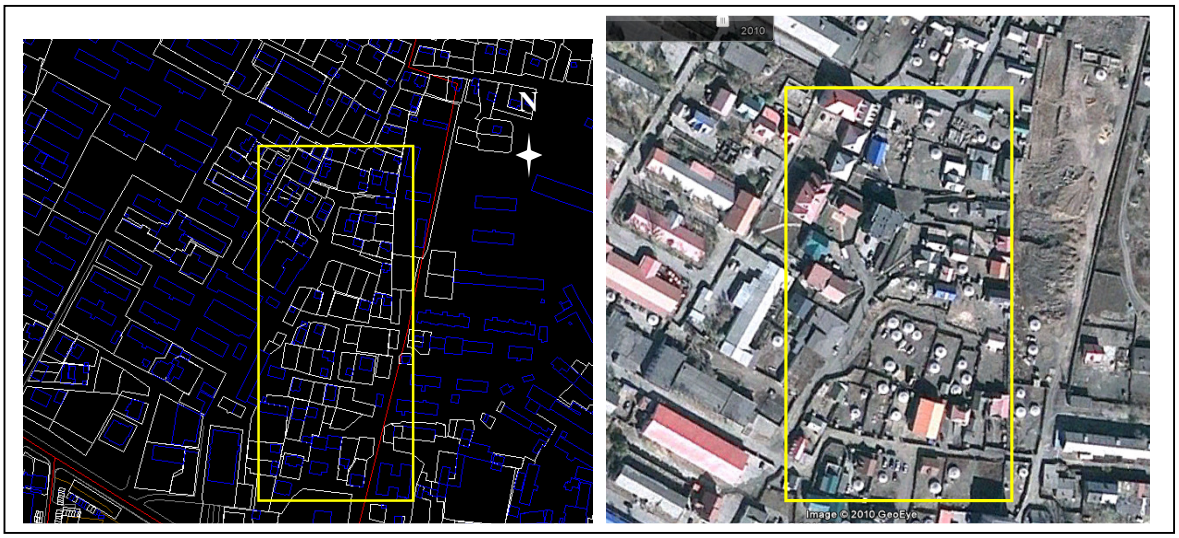
Neighborhood 3, confined by red line, Lang Yen Xa, bottom, and 4, Trieu Khuc, confined by blue line, top, Oct 13, 2008 (source: Google Earth retrieved on Feb 3, 2010)

Neighborhood 3, plots with buildings are sketched for the community leader's activities from 2008, left, (source: community leader) and Neighborhood 4, sewage system improvement plan by the Trieu Khuc village administration (source Trieu Khuc village administration, via community leader).

Appendix 5.5 Neighborhood 1 and 2, Bayanzurkh



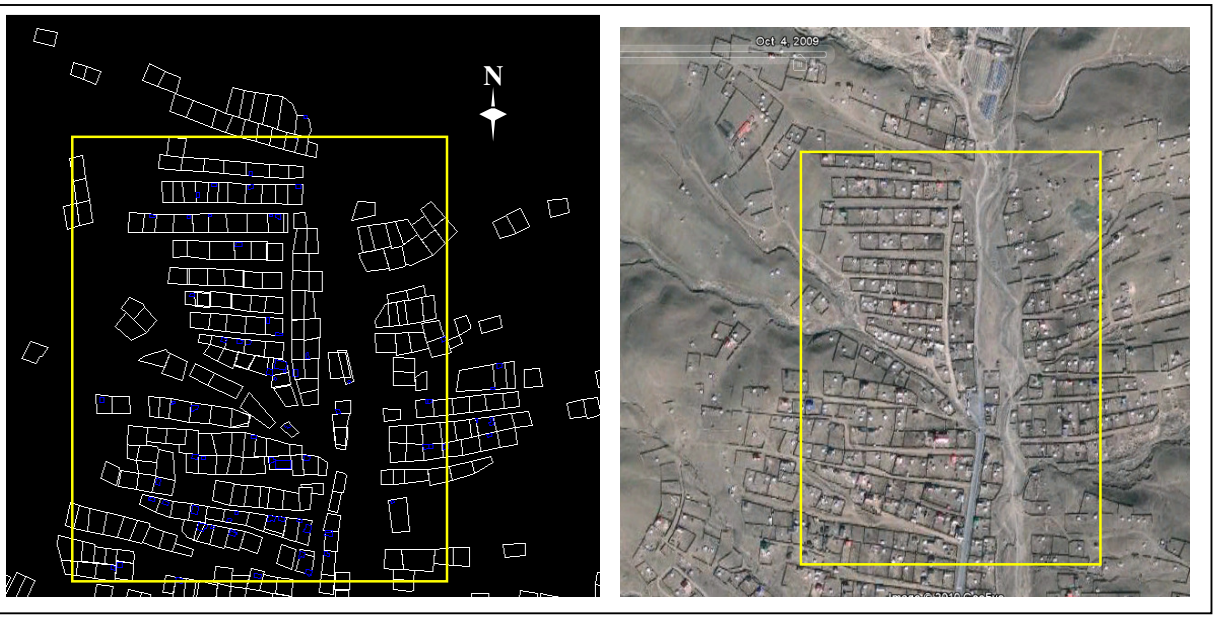
Neighborhood 1 in Bayanzurkh, cadastral map (source: UB LAD, obtained on November 12, 2009), left, and satellite image showing the real situation, right, (source: Google Earth, image from October 4, 2009, retrieved on February 6, 2010), the confines of the neighborhood is shown roughly within the yellow lines.



Neighborhood 2 in Bayanzurkh, cadastral map (source: UB LAD, obtained on November 12, 2009), left, and satellite image showing the real situation, right, (source: Google Earth, image from October 4, 2009, retrieved on February 6, 2010), the confines of the neighborhood is shown roughly within the yellow lines.

Appendix 5.6 Neighborhood 3, Sukhbaatar and 4, Songinokhairkhan

Neighborhood 3 in Sukhbaatar, cadastral map (source: UB LAD, obtained on November 12, 2009), left, and satellite image showing the ground situation, right, (source: Google Earth, image from October 4, 2009, retrieved on February 6, 2010), the confines of the neighborhood is clearly visible, it is surrounded by a dam and a main road on its west.



Neighborhood 4 in Songinokhairkhan, cadastral map (source: UB LAD, obtained on November 12, 2009), left, and satellite image showing the ground situation, right, (source: Google Earth, image from October 4, 2009, retrieved on February 6, 2010), the confines of the neighborhood is shown roughly within the yellow lines.