



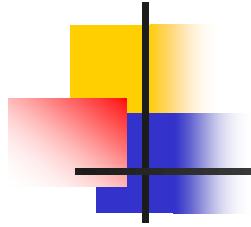
UNIVERSITY OF TSUKUBA
GRADUATE SCHOOL OF LIFE AND ENVIRONMENTAL SCIENCES

Violation of urban planning norms in Ulaanbaatar city, Mongolia

Galdnaa Munkhzul

Supervisor: Akinobu Murakami

1. Introduction
2. Objectives
3. Methodology
4. Results
5. Conclusion
6. Future work



Urban planning problems in Mongolia

The changes towards new economic and social relations starting in 1990 in Mongolia deteriorated urban planning policies and migration, thus negatively affecting urban areas.



Urban planning problems in Mongolia

Social and Economic Impacts

- Population growth
- Health and safety issues
- Infrastructure availability issues
- Increase of land needs for housing
- Lack of schools and kindergarten
- Increase in the number of vehicles
- Road congestion
- Parking availability issues

Environmental Impacts

- Soil, water and air pollution
- Dust
- Decrease of green areas



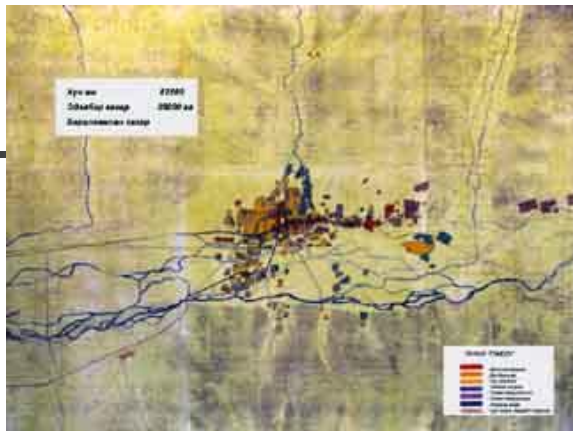
Status of the capital city relative to the entire country

- Capital city area: 0.3% (470,000 ha)
- City center area: 6.2% (**29,605.8** ha)
- Population: 40.6% (1,200,000)
- Gross Domestic Product: 50.5%
- Vehicles: 58.6%
- Number of companies: 70.2%
- Trade and service: 75.1%
- Number of universities: 79.2%
- University students living in capital city: 87.4%
- Hospital beds: 44%

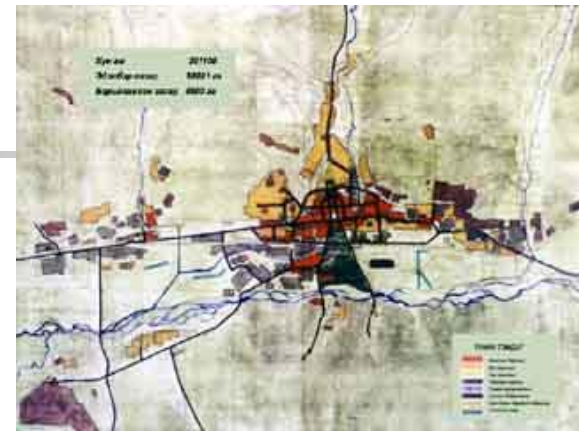
(Agency of Statistic in Capital city)

General plan and amendments

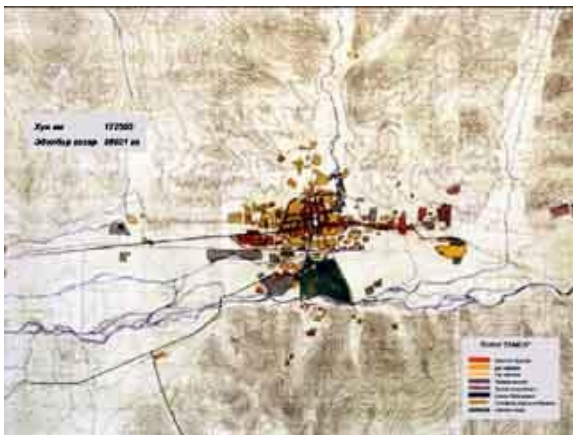
(specialists of the former Soviet Union)



1954 (125000)



1975 (348700)



1961 (180000)



1986 (492200)

5th master plan (specialist of national)

Introduction

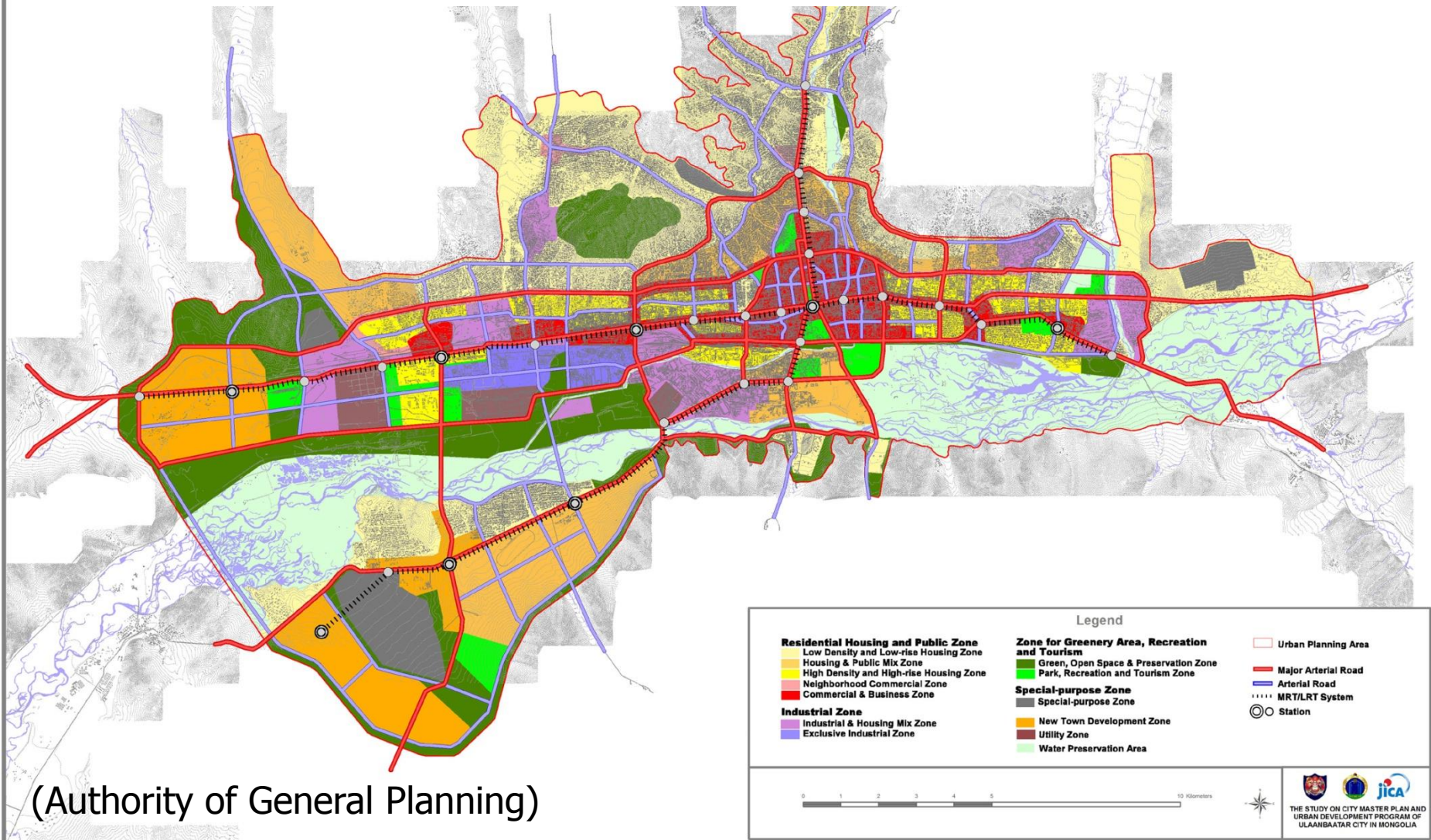
Master plan of Ulaanbaatar city up to 2020



Шинэ төв

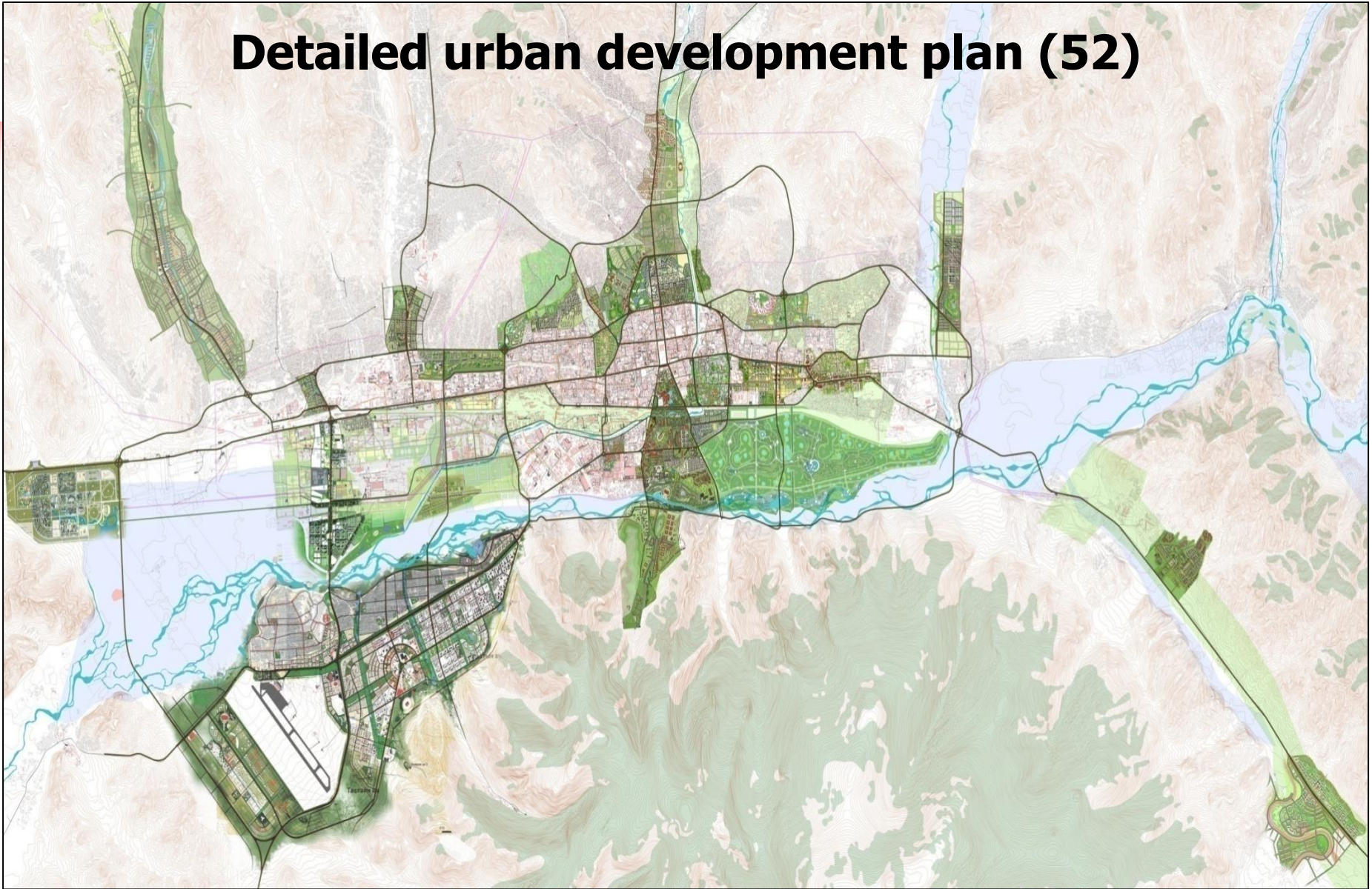
(Urban development and Construction Design institute)

Improvement in Master plan of Ulaanbaatar city up to 2020 and Development Concepts up to 2030



(Authority of General Planning)

Detailed urban development plan (52)



(Authority of General Planning)



Current urban development policy

Land law (2002)

- Allocation of land ownership to Mongolian citizens (2002)
- Cadastral survey and land cadastre (1999)
- Geodesy and cartography (1997)
- Land fee (1997)

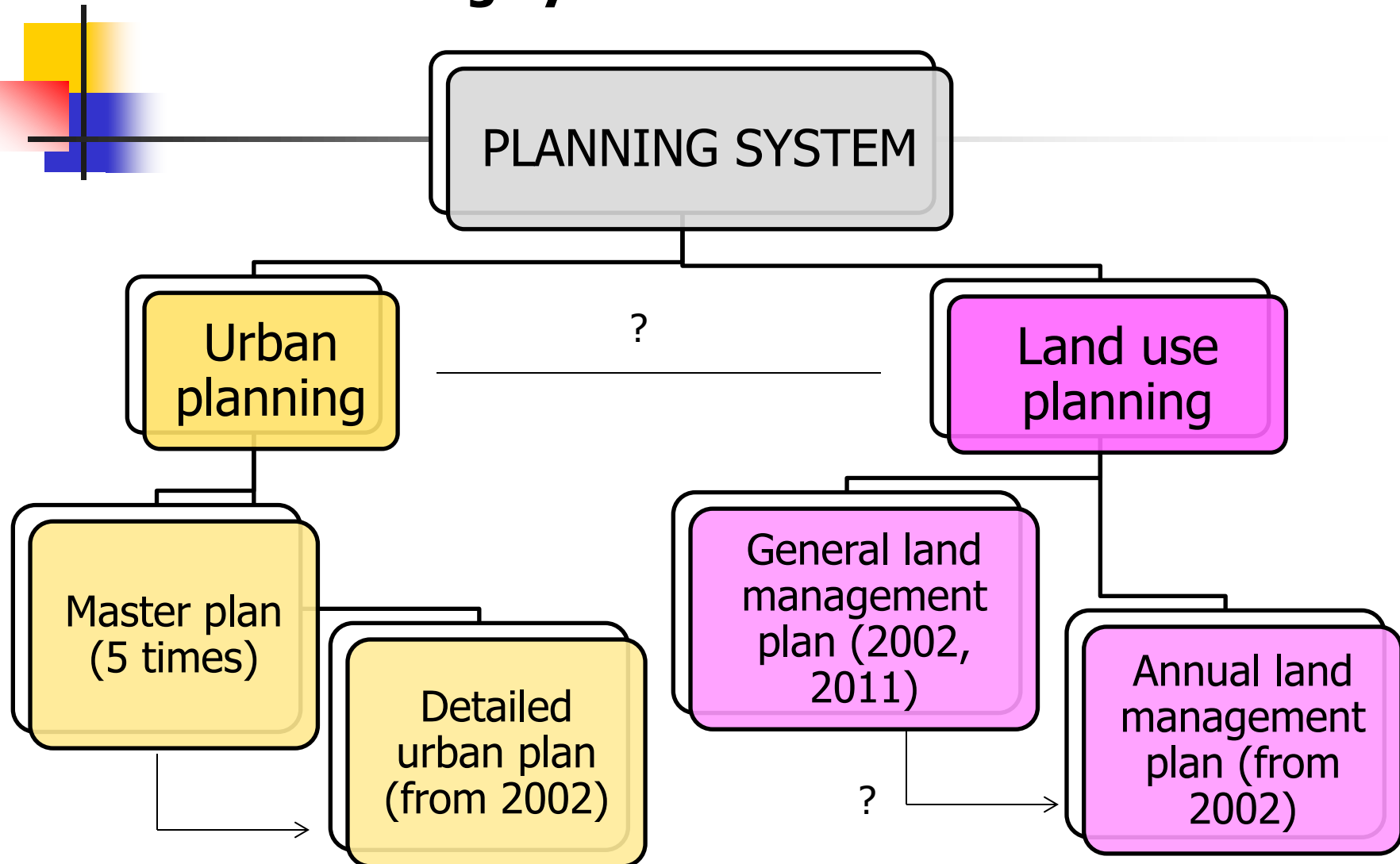
Regulation of law on land

Urban development law (2008)

- Legal status of the Capital city
- Construction (2008)
- Housing (1999)
- Utilization of urban water supply and Sanitation (2011)
- Roads (1998)
- Energy (2001)
- Telecommunications (2001)

In addition to these laws, technical guidelines for design and construction are regulated by several “norms” and “standards”.

Planning system in Ulaanbaatar





Mongolia's urban planning norm

“Norm” is a technical document adopted by the Ministry of Construction and Urban Development, and is only used in urban planning.

According to the Urban development law of 2008, it is mandatory to follow the general requirements and dimensions for urban planning.

(Urban Development Law, 2008)

Types of norms in Mongolia

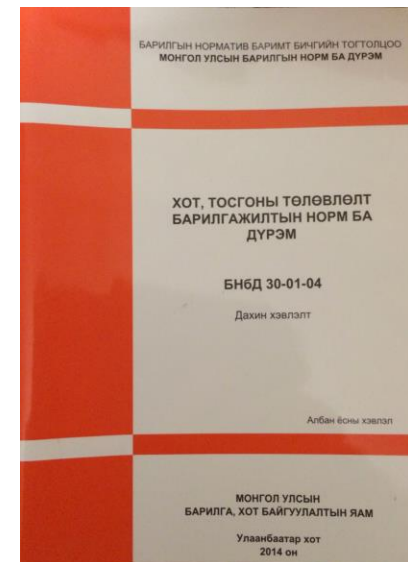
1. Country

2. Industry sector

- a. Mongolia's construction norms and regulations (BNbD)
(Mandatory)
- b. National construction standards (MNS)
(Recommendation)
- c. Construction, construction design rules, and materials production for construction (BD)
(Recommendation)
- d. Management system document (UBB)
(Recommendation)

a. Organizational standard

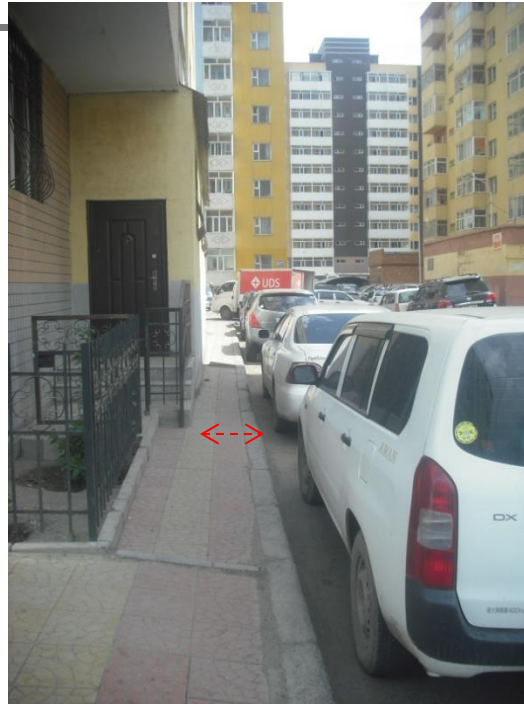
City and settlement planning, and building construction (2004)



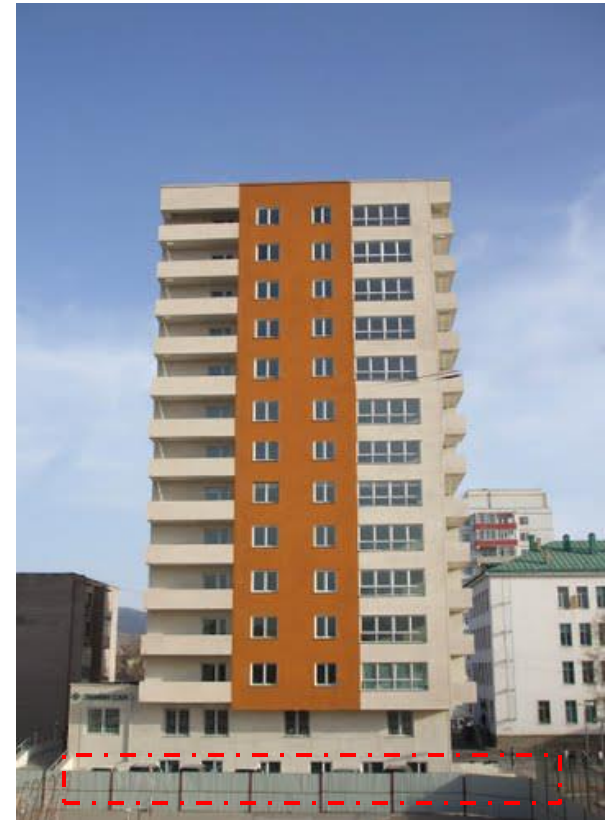
The distance between buildings should be 15 m



Narrow sidewalks - should be 1.5 m



No car park in apartment buildings

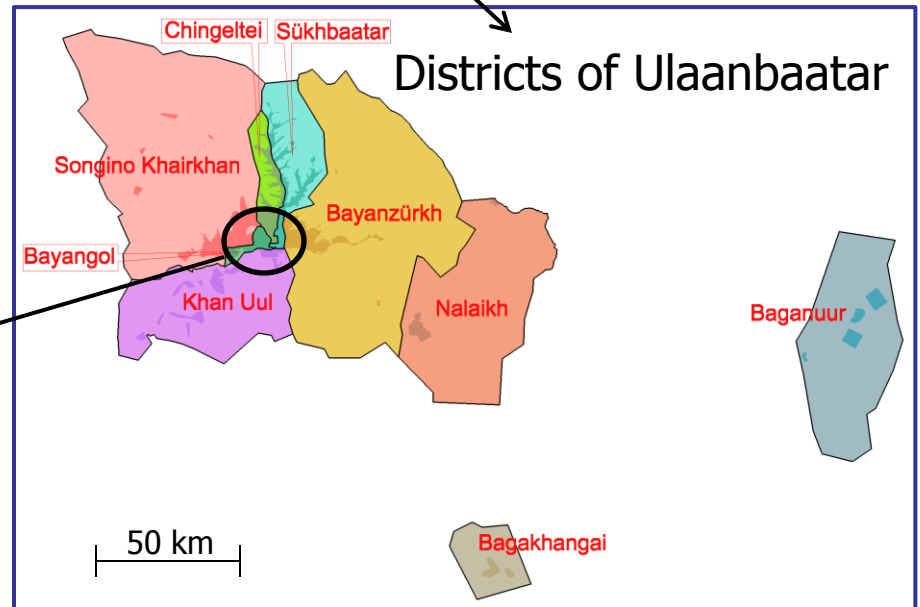


Parking spaces for 25% of the resident families in an apartment building

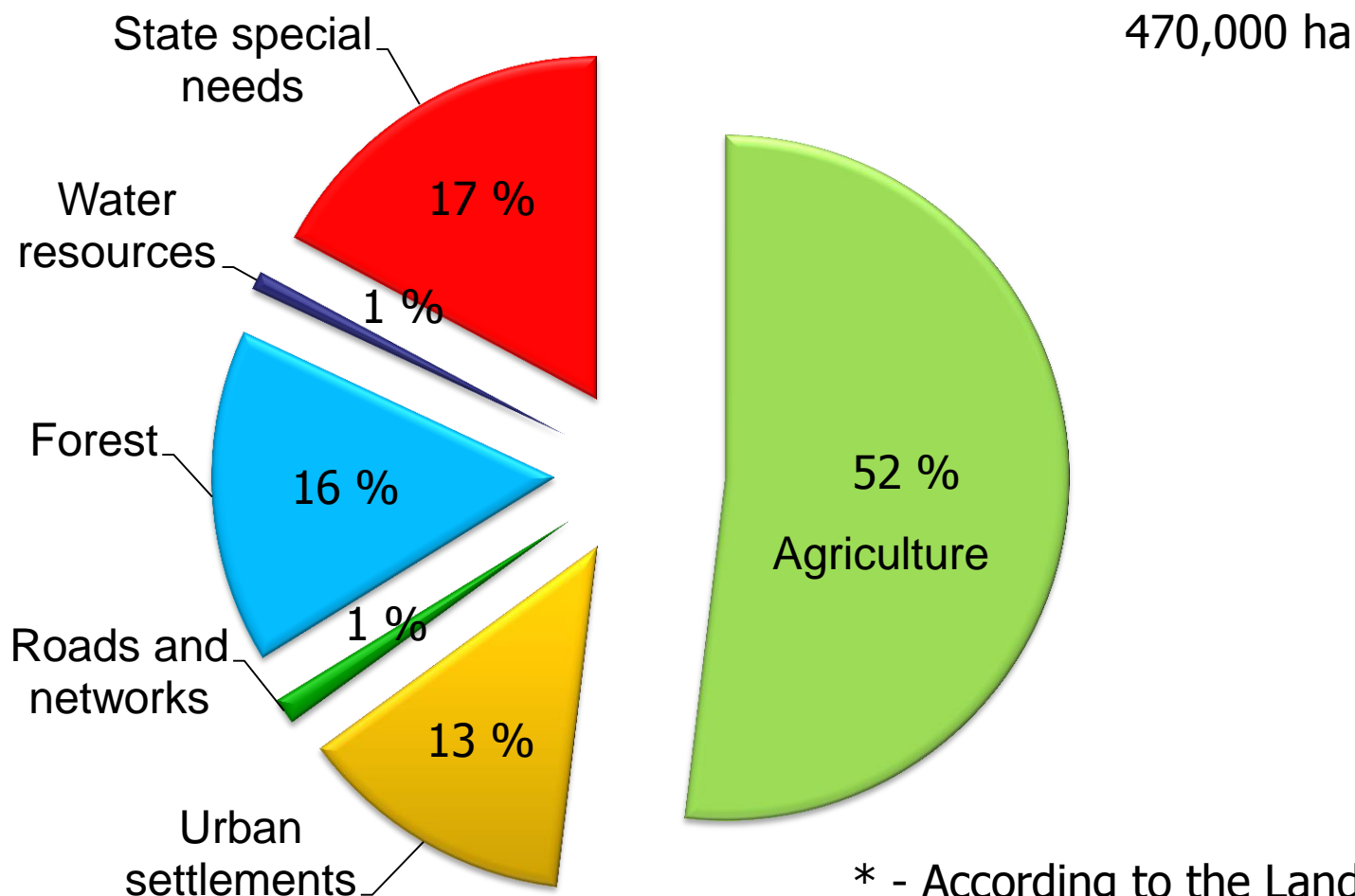


Objectives

- To analyze the condition of the violation of urban planning norms
- To analyze the reasons for violating urban planning norms
- To propose a better management and enforcement system for urban planning in Ulaanbaatar city



The unified land territory and classification * of Ulaanbaatar city



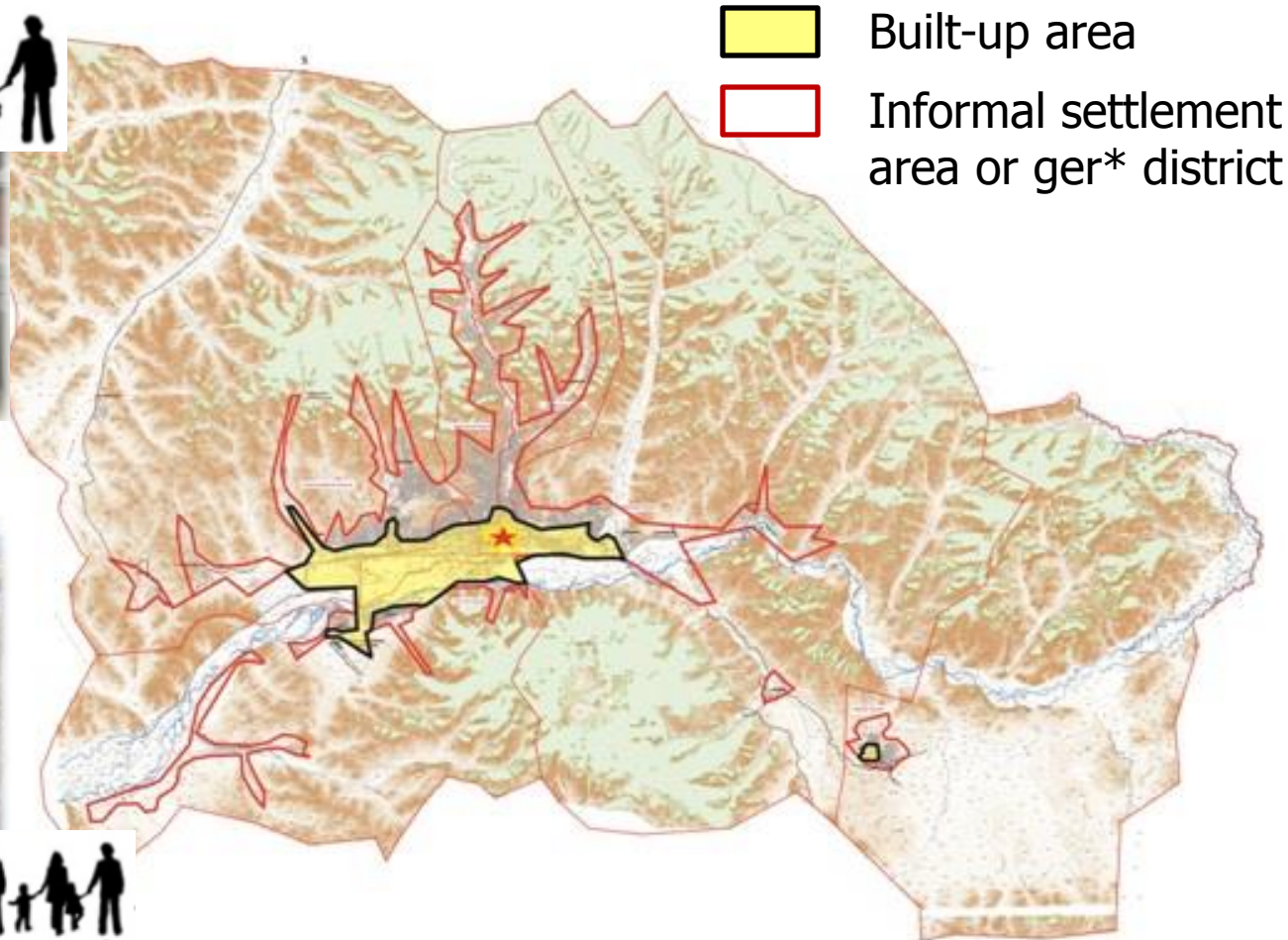
Settlement and built-up zone of city





33 people per ha



270 people per ha

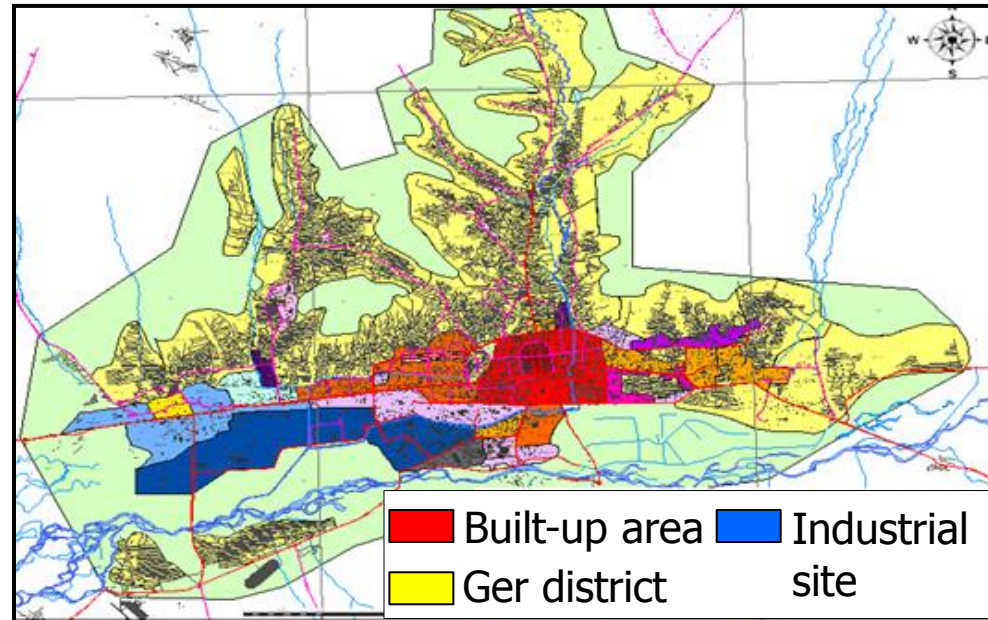
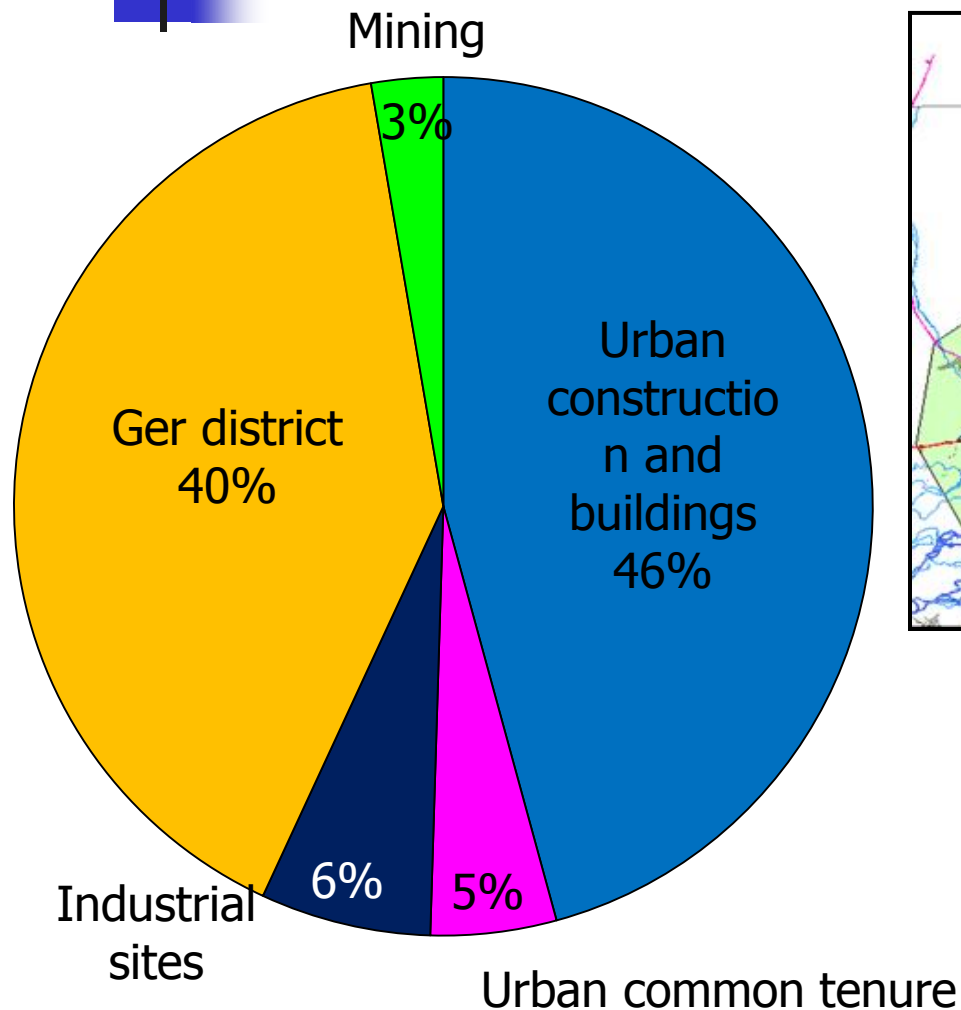


-  Built-up area
-  Informal settlement area or ger* district

*Ger is a Mongolian traditional house

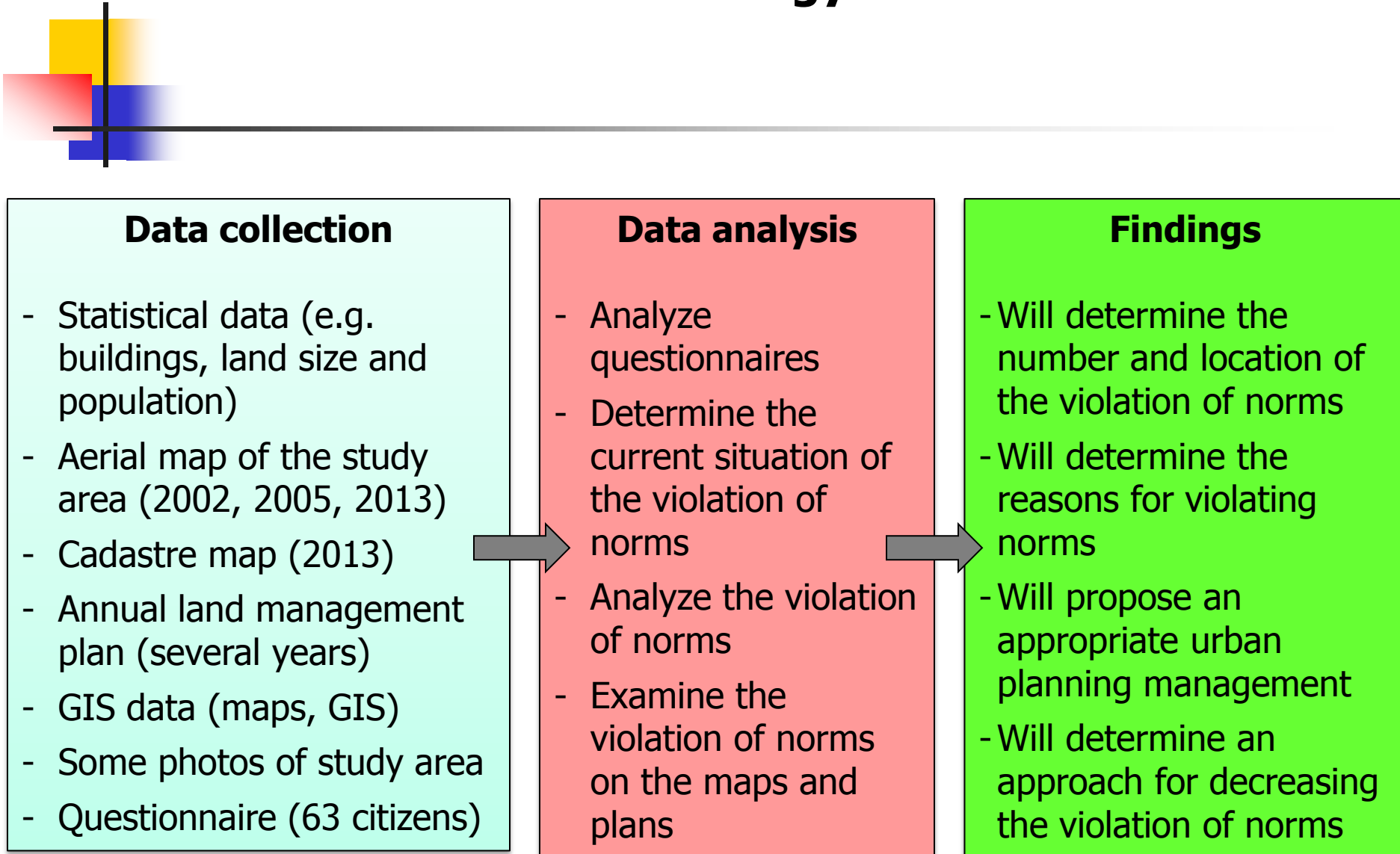
Structure of the built-up area

- Focus on the built-up area of the city center.
- Built-up area: 29,506.8 ha (Unified Land territory Report of the Capital City, 2013).



(Chinbat, 2004)

Methodology



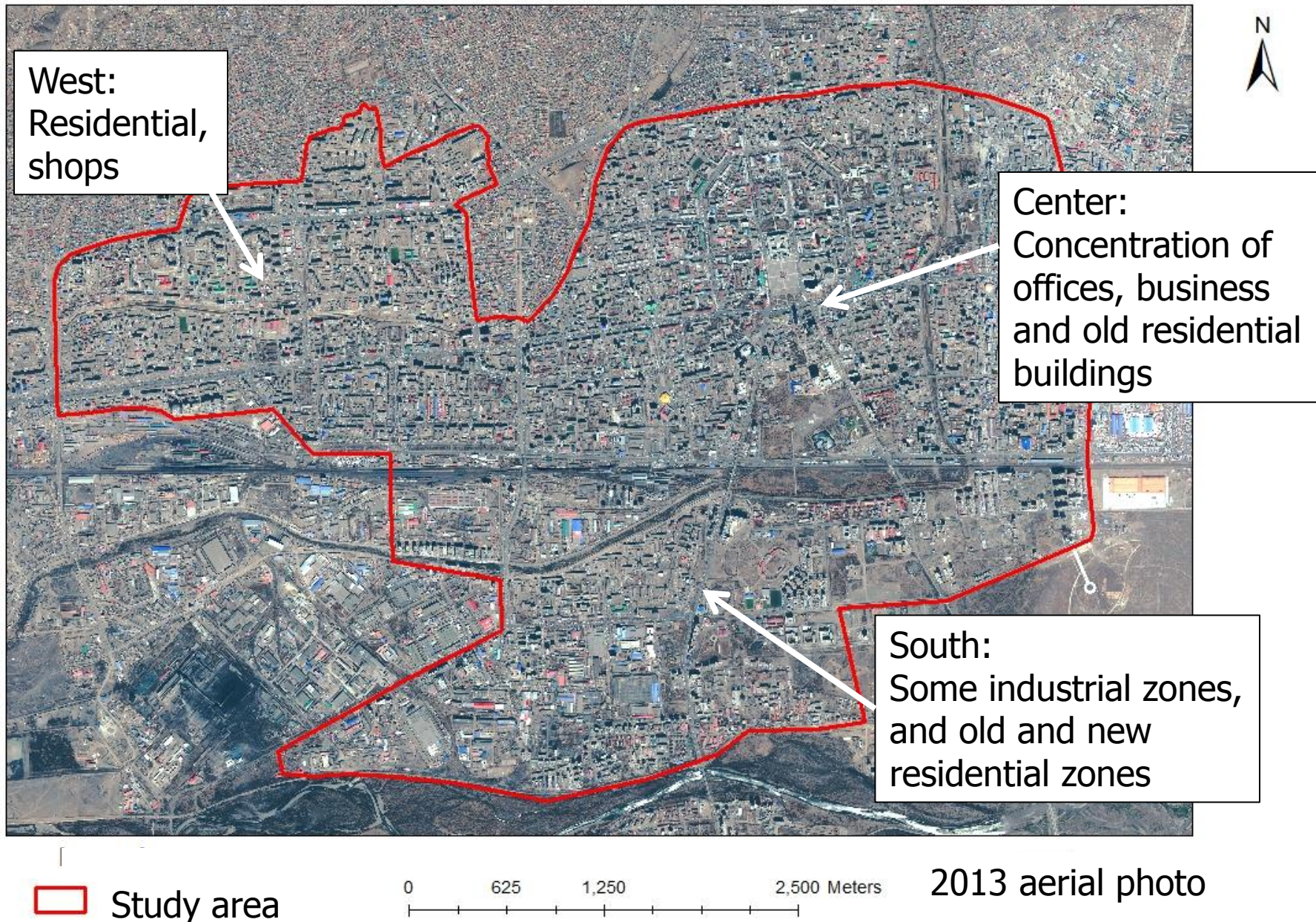
Selected norms

	Name of Norm	Size	Norm Indicant*
1	Distance between buildings	15-20 m.	4.18 – MCRB. Decree No.418 by the Minister of Infrastructure 2.11 - CSPBC
2	Distance between gasoline station and buildings	50 m. from the building	6.39 - CSPBC
3	Protection zone for underground water and heat line	5 m. from the building 2 m. from the road	7.10 - CSPBC
4	Apartment building car park (i.e. not for other buildings, organizations, and public services)	Parking spaces for 25% of the resident families in an apartment building.	4.16 – MCRB. Decree No.418 by the former Minister of Infrastructure 6.30 - CSPBC
5	Sidewalk width	1.5 m.	6.18 - CSPBC
6	Distance between buildings and roads	15-20 m.	6.18 - CSBC

*MCRB - Multi compartment residential buildings.

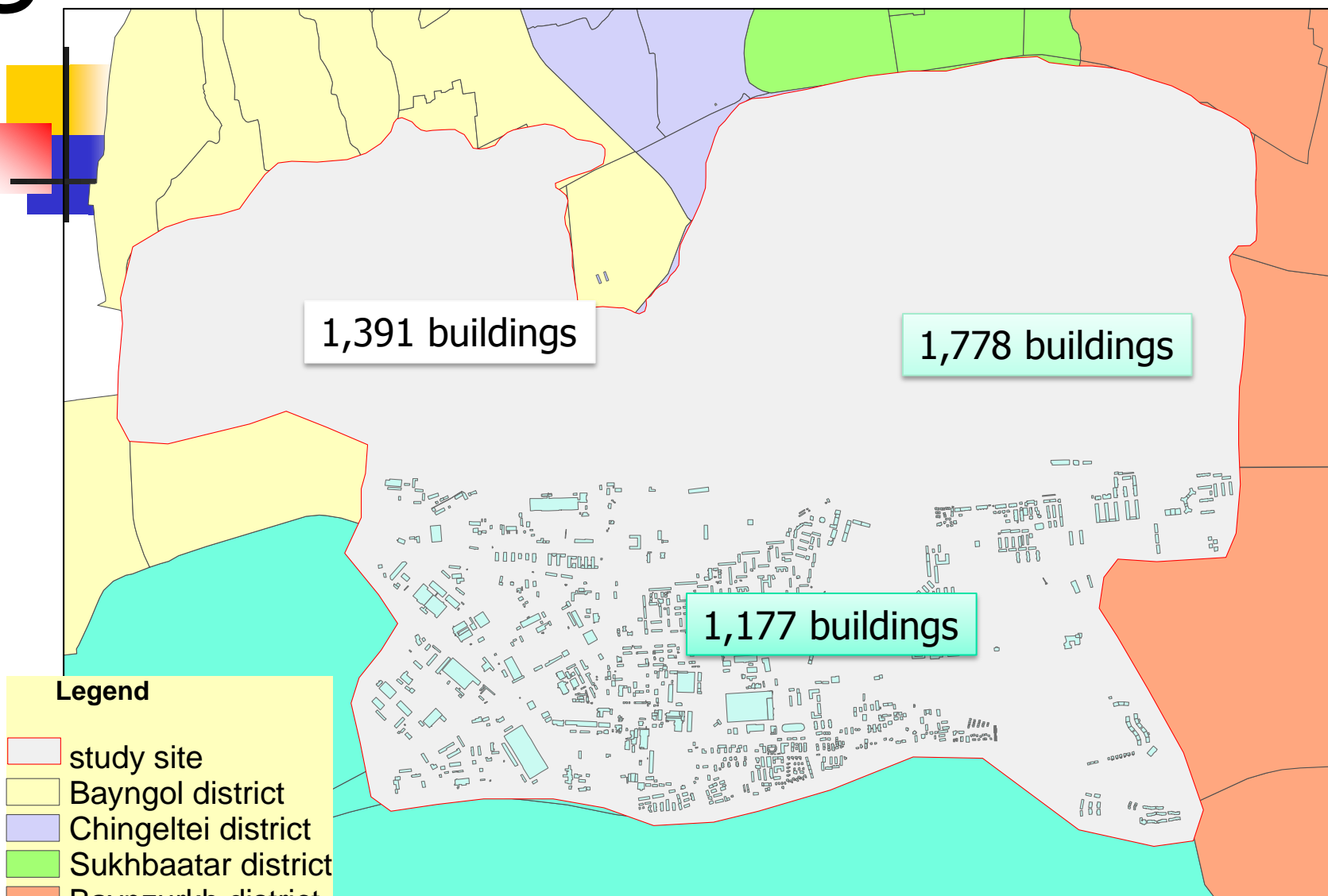
*CSPBC - City and settlement planning, and building construction

Study area (1920 ha)



Ü

Study area and district area

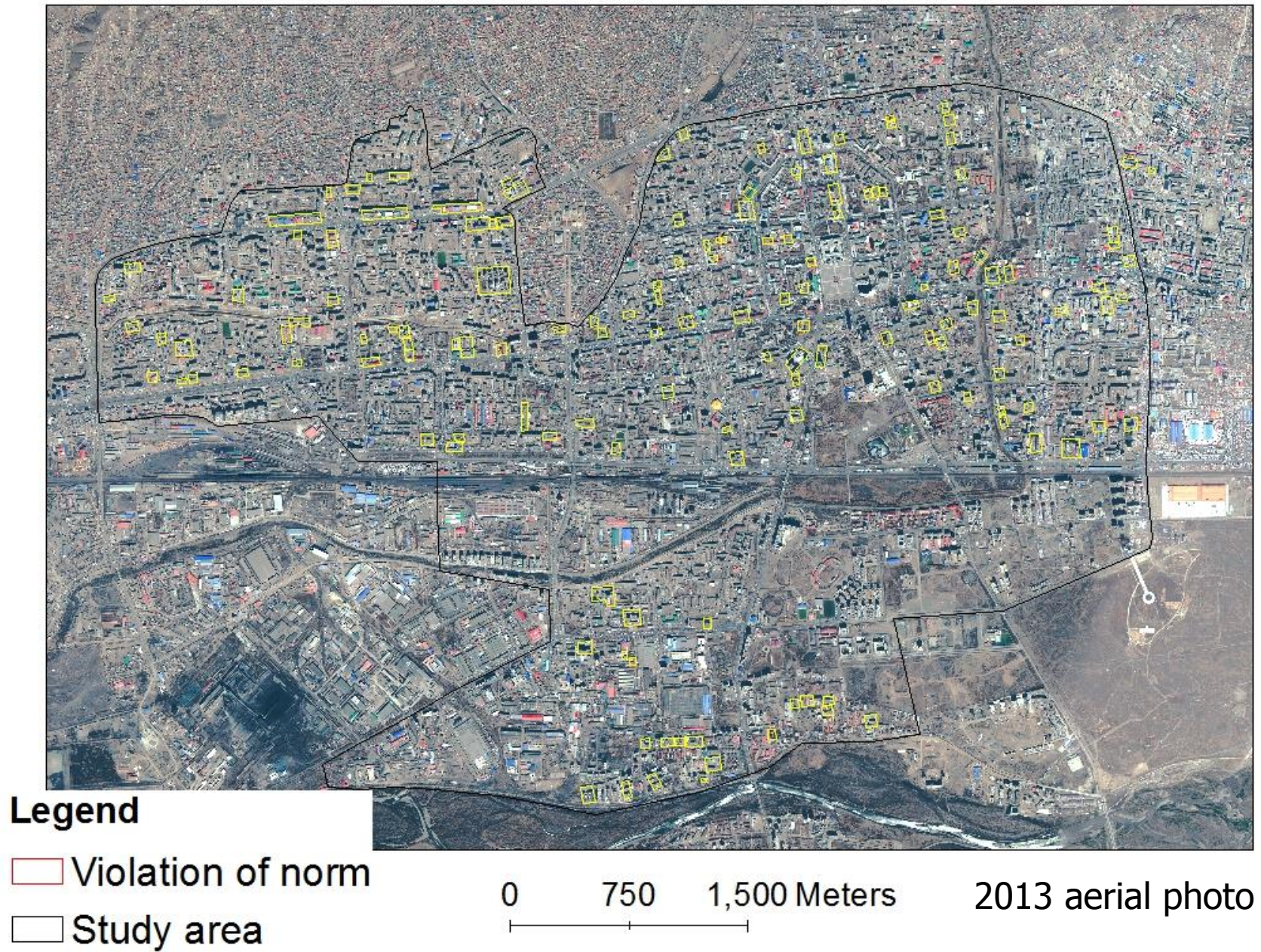


Total 4,886

300 m

The number of buildings is increasing by approx. 400 per year


Map of the violation of norms





Violation of the norm on distance between buildings

Year	Number of building	According to norm	Violating the norm
1930-1994	718	714	4
1994-2004	279	266	13
2004-2014	1180	1075	105
Total	2177	2055	122



(By year of construct)



Violation of the norm on distance between buildings

Distance between buildings	According to norm	Number of violations
0-5 m	15-20 m	46
5-10 m		84
10-15 m		45
Total		175

(By distance)

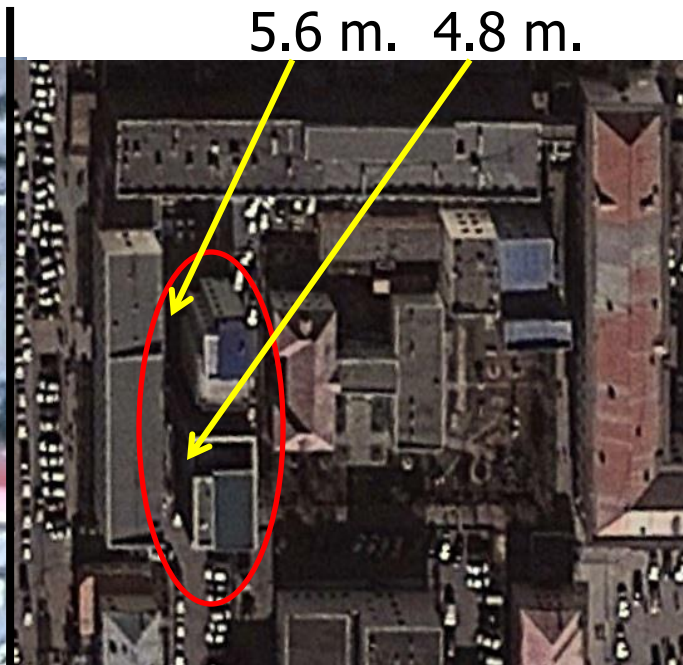
The building's green area was reduced, thus violating the norm on distance between buildings

Before



24.08.2004

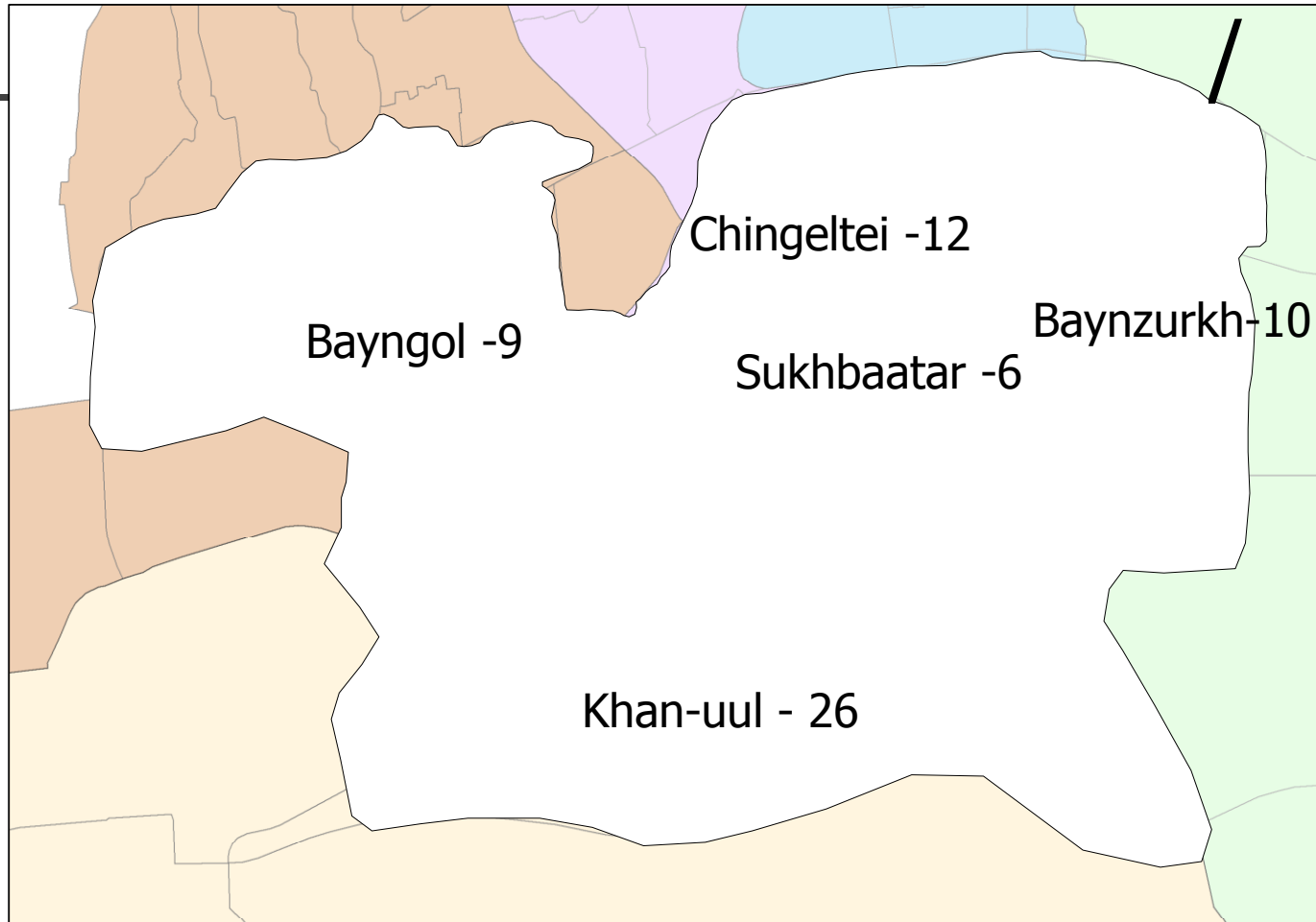
After 9 years



17.10.2013

(Google maps, 2014)

Number of people answering the questionnaire



Total 63 citizens

300 m



Questionnaire

1	Do you live in an apartment?
2	Do you know the content of urban planning norms?
3	Were urban planning norms violated in your apartment building?
4	Do such violations affect your living environment?
5	What are the consequences of these violations?

6	What is the main type of violation?
7	Why are these violations happening?
8	What approach is needed to limit these violations?
9	What do you recommend to stop the violation of norm?



Questionnaire results

1. Most people have insufficient knowledge of urban planning and no longer feel comfortable in their surroundings.
2. There are consequences for health and safety, and a decrease in the quality of their surroundings:
 - Decrease of green space, parking, and children's playground area
 - Obstacle for sunlight to the buildings
 - Insufficient schools and kindergartens
3. The **main violations** are:
 - distances between buildings, and buildings and roads, are too small
 - lack of common areas, squares, gardens and children's playgrounds
 - narrow sidewalks and roads
 - lack of car parking areas



Questionnaire results

4. The reasons are related to 5 issues: control, interest, responsibility, planning, and relationships.
5. The source of the problem is related to 4 issues: lawlessness, authority, citizens' and legal entity and inadequate infrastructure.
6. Norm violations can be reduced by: tightening control, to provide participation of public in the planning, optimizing urban planning norms, and avoiding the construction of buildings in the city center.
7. Norm violations can be eliminated by: strengthening responsibility, making the law more specific, regulating, and demolishing.



Conclusions

- The current framework has no system that coordinates the various interrelating laws, i.e., the laws on land, urban development.
- There is an increase of new buildings in the city, and an increase in the violation of urban planning norms.
- The main violation is the reduction of the distance between buildings.
- Most people have insufficient knowledge of urban planning and no longer feel comfortable in their surroundings.
- The violation of norms depends on control, responsibility, the legal framework, and relationships with public organizations.



Future work

- Literature review
- To analyze the violation of some norms
- To analyze the factors influencing the violation of norms
- To formulate recommendations for improving urban planning



Thank you for attention