

**Implications of rural settlement patterns for development:  
case study in central and eastern economic region of Mongolia**

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Under the three magnets law [1] the mechanism of pull-push the process of urbanization is rapidly increasing [2] and as result of it the role and function some settlement has changed. The increase of population of the big cities has effect on increases the radius of influence of the settlement to surrounding area [3, 4]. One of reasons of the migration among pastoral herder to settlement is increase of interested towards intensive farming systems [4]. Therefore there is urgent need to identify the proper planning of population of settlement. This research work has held at 9 provinces: Central and Eastern economic region of Mongolia.

The population of small settlements is decreased under the influence of bigger settlement with market and better infrastructure. The roles of these little settlements become to host agricultural production as well as to provide new opportunities to migrant herders. Nevertheless, many of them still lack access to the social services and infrastructure.

Before the 1990s much attention was paid in development of the urban areas, and territory was uniformly developed and each had a light and heavy industry. However, since the democratic revolution, created the agglomeration in few settlements, to attract the population, result as some of the settlements are essentially missing. Therefore, it is important to develop the specialization of enterprise of settlements, to refine the structure of the role and to create a multi-centered system.

**Keyword:** Rural settlement; urban-type settlement; functional types of settlement; population change; migration; social services.

***Introduction***

Mongolian millennium development goals are based on Comprehensive National Development Strategy regions and to develop the infrastructure and to reduce development disparities between urban and rural priorities was completed, but the first time to implement some of the measures are starting so. For the herders in countryside, one of reasons of the migration among pastoral herder to settlement is increase of interested towards intensive farming systems. Therefore there is urgent need to identify the proper planning of population of settlement.

The socio-economic functional types of small settlements is one indicator of the regional development [5, 6]. Therefore, it is necessary to detected changes in the number and quality of urban settlements that are changing during socioeconomic development. In connection with changes in the socio-political situation in the country, urban settlements development has been studied in three stages, until 1990, from 1990 to 2000, and since 2000.

This research work has held at 9 provinces: Central and Eastern economic region of Mongolia and their 125 small soums (figure 1).

These provinces' area is totally account for 38% of Mongolian total territory and there is better infrastructure systems such as the development of mining and other services and they have tar roads and railways as well as bordering China is also a key of the population attraction.

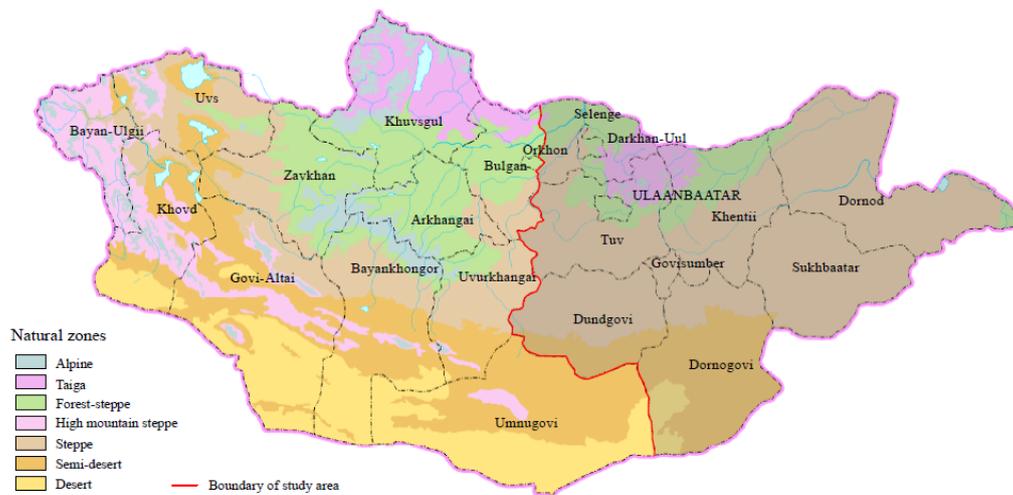


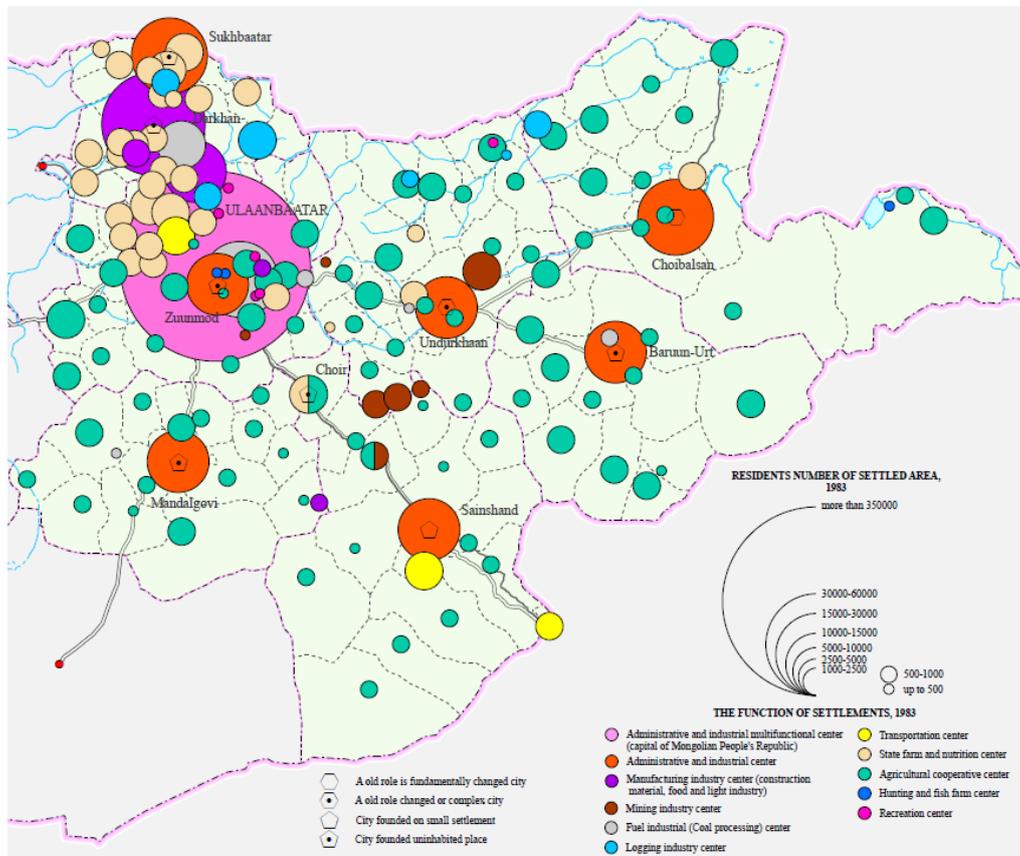
Figure 1. Study area (Source: Mongolian National Atlas)

### 1. *Urban development (The centrally planned economic or until 1990)*

Until the 1950s, the country was divided into 18 aimags based on its location, geographical features and economic conditions, its center was established in designated areas has resulted in many small settlements are becoming urban.

The Mongolian People's Revolutionary Party set a goal is to become a Industrial-agricultural country that combines the key sectors of the economy with the industrial structure and the processing industry, so cities are built developed a wide variety of branches heavy industry, such as fuel, energy, extraction of colored and rare metal, repair of machinery, construction and construction materials, in addition to the light and food industries processing for livestock and agricultural raw materials. Also, the Ulaanbaatar Railway, which links the neighboring countries, played an important role in establishing new urban and industrial roads along the railroad. For example, industrial centers are Darkhan, Dulaankhaan, railway stations Zuunharaa, Tunkhel, Maanit, Choir and Zamiin Uud. Since the 1960s, agricultural cooperatives and farms have been provided land and have been organized as administrative units which were totally new formed, as a result a significant number of urban settlements have emerged.

These are summarized, administrative reforms have played a key role in the development of urban settlements after the People's Revolution but in the 1940s, it was directly dependent for industry and transportation (picture 1) development. For example, the vast majority of newly established urban settlements follow the railways and are located in the central part of Mongolia, because with the dependent of geographic location and population settlement [7]. Extraction industrial centers are located far away from the railroad, but they are also directly within its direct (picture 1) gravity.



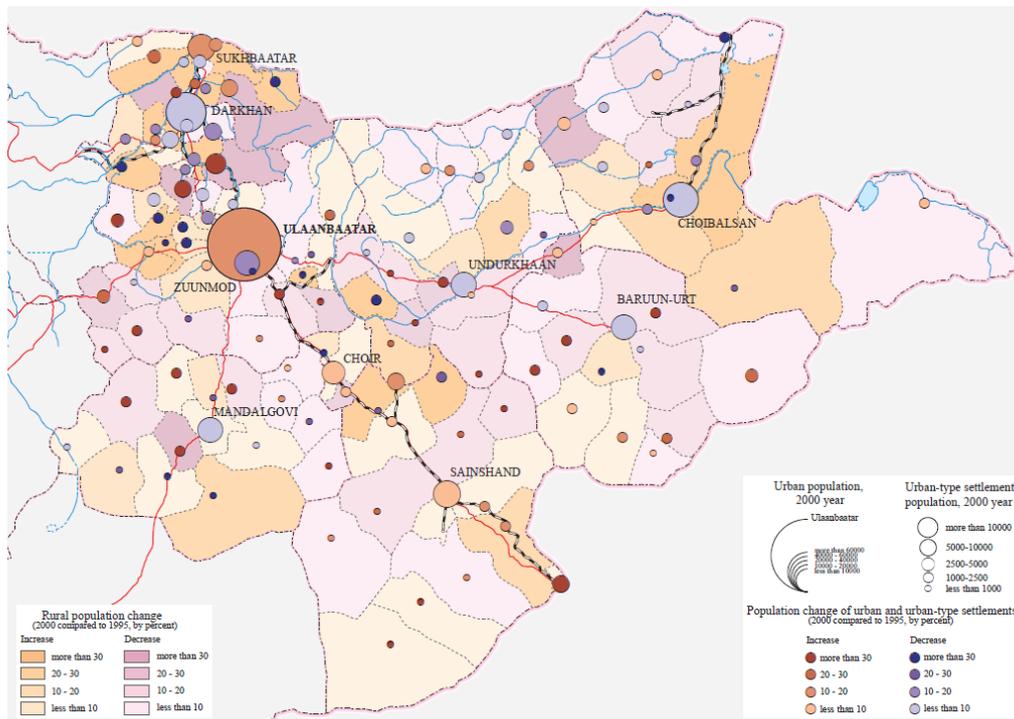
Picture 1. Functional types of settlements, 1983  
 Source: *National Atlas of Mongolian People's Republic, 1990*

## 2. Urban development (1990-2000s)

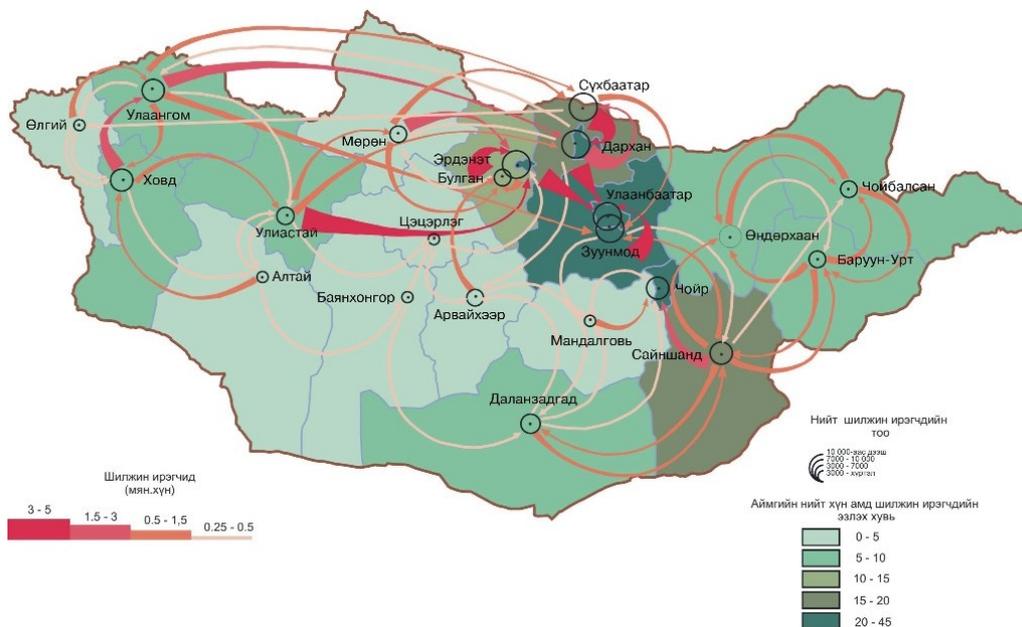
Due to privatization of livestock around 1990s, many urban residents who have lost their jobs moved to rural area and followed their herder relatives in the countryside for finding income source from livestock husbandry. Even pensioners tend to move suburb for acquirement of livestock [8]. In the centers of the provinces, there were non-manufacturing businesses such as kinder gardens, schools, hospitals, hotels, gas stations, banks, TV stations, shopping centers, which was played major role in servicing for herders.

Moreover, due to close its doors of numerous mining and other factories, which were built in socialist period dramatically influenced on people's movement to the towns where no administrative roles has as well as particularly dominated with production and services of mining, forestry, trade and infrastructure. For instance, because of lack fluorspar resources, majority of the population in Berkh and Khajuu-Ulaan, Khentii province had left their hometown and consequently, those settlements changed into places with no residents.

According to the "Law on the Legal Status of Cities and Villages" in 1993, a number of aimag centers and large settlements were not considered as town or city. Although the legal changes weaken provincial centers' town status, however, they were remarkably acted as economic, cultural and communication centers and attracted by people (picture 2).



Picture 2. Population change (1995-2000)



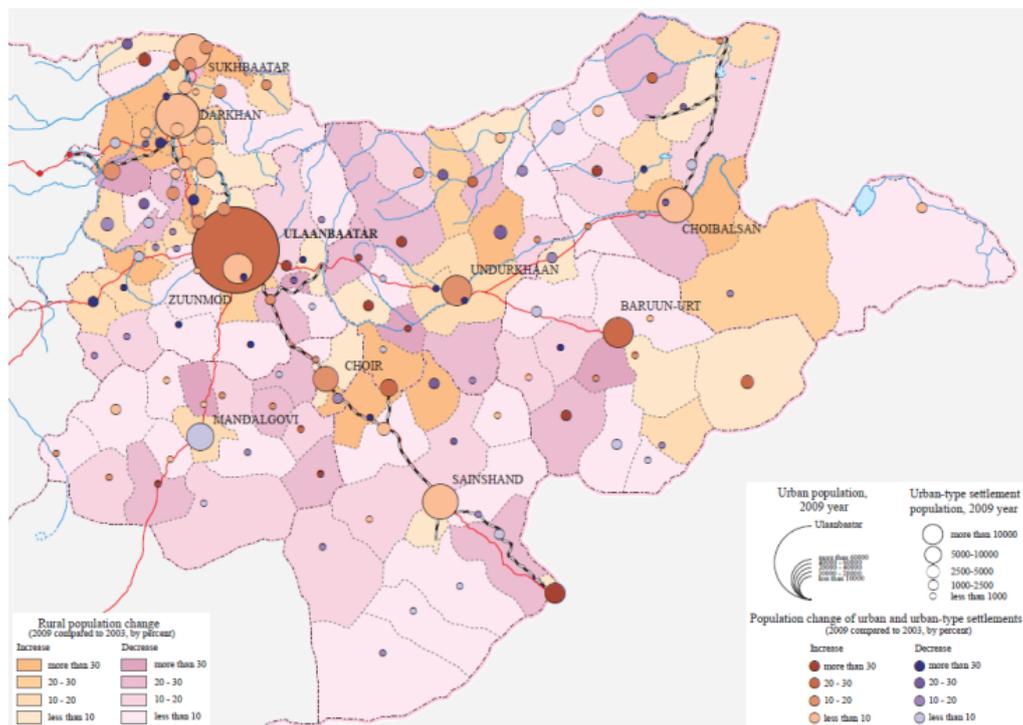
Picture 3. In-migrants (1991-2000)

Source: J. Oyungerel. Географические проблемы внутренней миграции населения в новых социально-экономических условиях Монголии. 2004

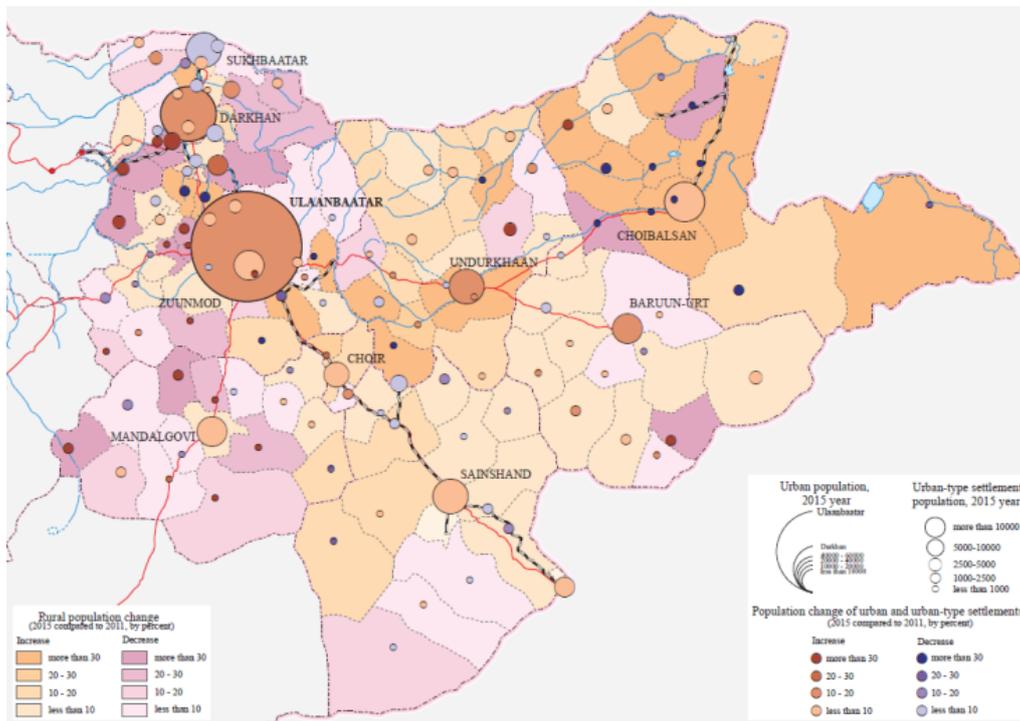
In the three cities of Ulaanbaatar, Darkhan and Erdenet which are good for sales of social infrastructure and agricultural products, good supply of consumer goods, cheap, more developed roads and easy to access the neighboring countries the has been created key location of population. During the above period, the population of urban areas looks like it grew up, but in fact the urban population in all aimags has decreased. In other words, as a result of the migrating from aimag centers and mining, crop and road communication centers to the capital city and industrial centers of Darkhan and Erdenet, is mechanically by increasing the population of large (Picture 3) cities.

### 3. Urban development (since 2000)

Migration is increasing that mongolia's urban and rural development opposition, difference in access to social services and market environment, and natural risks affecting livestock [9] breeding. For example, some soum centers do not play a role in the social and economic situation of the country, so residents of this soum center and nomadic herders in rural areas are moving to large cities. As a result, the concentration of population creating in a few settlements, negative ecological and social consequences. For instance, the number of poor households is increasing four times higher, air pollutants exceeding permissible limit, extent of soil and water pollution is also generated is causing difficulties in ecological and economic situation in urban settlements, so this problem has to needed resolved urgently



Picture 4. Population change (2003-2009)



Picture 4. Population change (2011-2015)

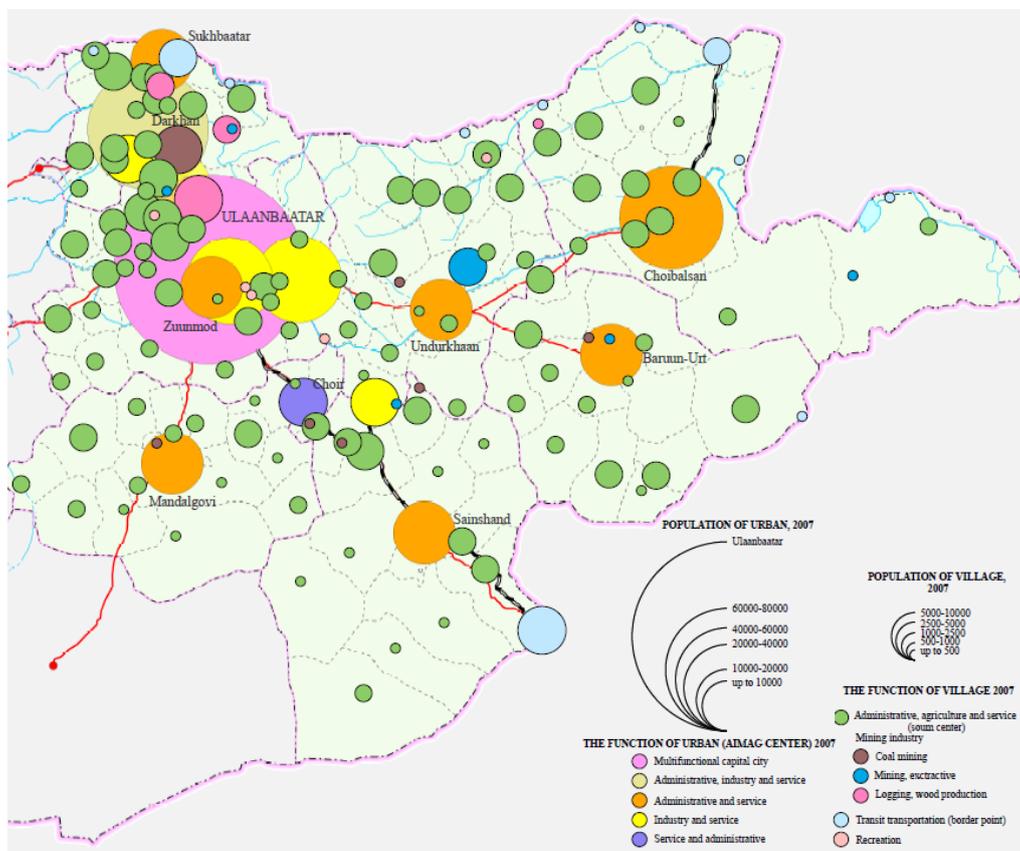
According to the economic development of our country, the number of residents in urban settlements is growing rapidly (picture 4). However, due to their socioeconomic factors such as urbanization, industrialization, economic and natural geographical conditions and the role of the country's economy, population growth is unbalanced distributed throughout the country [9] (picture 4). The population growth rate varies, because of that some classification of settlements are changing (table 1).

Table 1  
Changes number of settlement, by classification of settlement

Number population of settlement	1995		2000		2010		2015	
	Number of settlement	Percent						
Less than 500	2	1.6	7	5.6	20	16	21	16.8
501-1000	44	35.2	37	29.6	43	34.4	38	30.4
1001-2500	51	40.8	52	41.6	34	27.2	39	31.2
2501-5000	14	11.2	13	10.4	14	11.2	12	9.6
More than 5001	14	11.2	16	12.8	14	11.2	15	12
Total	125	100	125	100	125	100	125	100

Source: *Mongolian National Atlas, Statistical yearbook of provinces, 1995-2015*

The combination of the role of a settlement area is directly related to population growth, so the population of large settlements with more than 5000 population has increased, as result the role of larger settlements becomes complex and more diverse than the role of small settlements [10]. For example, the number of large settlements decreased by 1 in 2015 compared to 2000. If large settlements are classified according to their population size, the number of settlements with 10000-20000 population has decreased and the number of settlements with 20,000-30000 inhabitants is increasing. These settlements also serve multiple functions, including service, transport, and production [11]. As mentioned earlier, as a result of employment and access to health, social and cultural services, rural areas and small settlements [11] move to large settlements and increasing the role of the settlements (picture 5).



Picture 5. Functional types of settlements, 2007  
Source: *Mongolian National Atlas, 2009*

Few months after the dzud, herders experienced significant revenue shortfalls, where herders moved to urban areas, so mechanically growing urban populations and deteriorated social services of the this settlements [12].

The number of population in small soum center is increasing, as the number of middle soum centers with population of 1001-2500 is declining. The population of the middle settlements has moved to large soum centers and the capital city, therefore decreased population of middle soum center, it is changing to small soum center with

population of up to 1000 people. The number of smaller soum centers with up to 1,000 population increases with the percentage of residents in this settlements. Between 1995 and 2015, the percentage of residents of urban settlements in soum center with population of more than 5000 increased from 62 to 71, especially the percentage of residents in aimag centers (Figure 2).

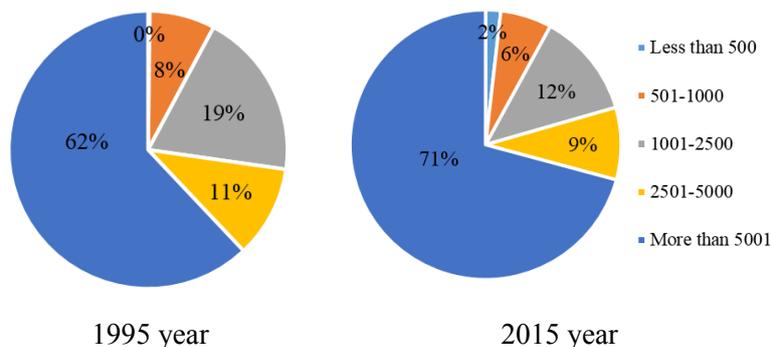


Figure 2. Percentage of population settlement in total population settlement (by classification settlement)

Source: *Statistical yearbook of provinces, 1995, 2015*

### **Discussion**

In urban areas, industries, services, schools, and cultural organizations developed, the majority of the residents were non-agricultural workers. So the process of moving migration is continuous, the number of residents has increased steadily, increasing the percentage of the population in all population. Although more than half of Mongolia's population lives in urban areas, it is related to population concentration in a few cities but not all aimags. It is enough to mention that more than 70 percent of Mongolia's urban population is living in the capital of Ulan Bator. Therefore, it is important to choose which advantages of geographic location, transportation, fuel, energy, and raw material resources in urban areas. It is necessary to develop industries, schools, cultures and services that are the main drivers of population migration [5].

### **Conclusion**

Before the 1990s much attention was paid in development of the urban areas, and territory was uniformly developed and each had a light and heavy industry. However, since the democratic revolution, created the agglomeration in few settlements, to attract the population, result as some of the settlements are essentially missing. Therefore, it is important to develop the specialization of enterprise of settlements, to refine the structure of the role and to create a multi-centered system.

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**Последствия структур сельских поселений для развития:  
тематическое исследование в центральном  
и восточном экономическом регионе Монголии**

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В соответствии с законом трех магнитов [1] механизм ускорения процесса урбанизации быстро возрастает [2], и в результате этого роль и функция изменились. Увеличение численности населения крупных городов оказывает влияние на увеличение радиуса влияния поселения на окружающий район [3, 4]. Одной из причин миграции пастырского пастуха к поселению является увеличение интереса к интенсивным системам ведения сельского хозяйства [4]. Поэтому необходимо срочно определить надлежащее планирование населения поселения. Эта исследовательская работа состоялась в 9 провинциях: Центральном и Восточном экономическом районах Монголии.

Население небольших поселений уменьшается под влиянием более крупных поселений с рынком и улучшенной инфраструктурой. Роль этих маленьких поселений ставит сельскохозяйственное производство, а также открывает новые возможности для пастухов-мигрантов. Тем не менее, многие из них по-прежнему не имеют доступа к социальным услугам и инфраструктуре.

До 1990-х годов большое внимание уделялось развитию городских районов, и территория была единообразно развита, и каждая из них имела легкую и тяжелую промышленность. Однако, поскольку демократическая революция создала агломерацию в немногих населенных пунктах, чтобы привлечь население, то как результат, некоторые из поселений практически отсутствуют. Поэтому важно разработать специальность предприятия поселений, уточнить структуру роли и создать многоцентровую систему.

**Ключевые слова:** сельское поселение; поселок городского типа; функциональные типы поселений; изменение населения; миграция; социальные службы.