

EXECUTIVE SUMMARY OF THE INCEPTION REPORT OF THE “DEVELOPMENT OF THE TERRITORIAL DEVELOPMENT PLAN FOR SUKHBAATAR SOUM OF SUKHBAATAR AIMAG”

In the phase of the inception report for Sukhbaatar soum's territorial development plan, baseline studies on soum's natural conditions, current state of land management and socio-economic development, current land use studies and needs assessment, and disaster risk assessment were carried out, and the data processing was performed according to the approved guidelines.

1. Soum land management situation

The State Land Management Plan and the Sukhbaatar Aimag Land Management Plan include the following activities to be implemented in Sukhbaatar soum. These include:

- As part of the plan to establish a light food factory in Sukhbaatar aimag within the framework of the development plan for cities, villages, and other settlements, measures have been taken to improve the equipment of the soum's slaughterhouse and meat storage refrigeration plant and establish an integrated control system for slaughter and meat preparation.
- Water points will be explored and irrigated in areas with good pasture carrying capacities, such as In Naran Saran and Chigchiit areas of Sukhbaatar soum.
- 54.4 thousand hectares of hayfields in Sukhbaatar soum will be freed from pastures and fenced.
- Breeding and selection measures will be taken to turn at least 40% of cattle, sheep, and goats into high-yielding local breeds.
- The plan envisages measures to reduce and stop the negative impacts of each type of land use and protect vacant land not affected by any land use, including introducing soil erosion control technologies in agricultural production and establishing forest strips to preserve soil fertility from the wind.

The activities reflected in the state and aimag land management plans are being implemented following the planning period.

The first soum territorial development plan of Sukhbaatar soum was developed in 2018, the state land quality evaluation and monitoring of cities, villages, and other settlements were carried out in 2004, and the first general development plan for the soum center was developed in 2020.

2. Baseline indicators of soum surface and climate

Based on the information in the above plan documents, some preparations for the soum territorial development plan have been made.

Slope and elevation of the soum territory are derived using <https://earthexplorer.usgs.gov/>, 2015 and Mongolian Surface (SRTM-DEM)slope and elevation map of WGS 1984 Projection. The slope parameters are classified as 0-3 °, 3-5 °, 5-10 °, 10-12 °, 12 ° <, and the elevation parameters as 754-854 m, 854-954 m, 954-1054 m, 1054-1154 m, 1154 -1254 m, 1254-1354 m, 1354-1442 m above sea level.

According to the integrated engineering-geological and natural risk assessment, which considers the permafrost conditions, seismic risk, and flood frequency, the soum is in the most suitable category for urban development.

In Sukhbaatar soum, the long-term average air temperature was calculated based on the primary data of the climatic geotechnical conditions such as air temperature, precipitation, and average wind speed for the last 3 years provided by the NAMEM of Sukhbaatar aimag. As a result, the long-term average air temperature was calculated as -5.9 / - / -21.7 / Celsius degrees the cold season of Nov, Dec, Jan, Feb, and 5.1-21.5 Celsius degrees (Table 1) in the warm season. The absolute minimum value is cold as -20.6/-/-39.4/ degrees, while the absolute high value is 35.5-42.2 degrees. The average annual precipitation in the soum is 200-250 mm. The average rainfall in the cold season is 10-20 mm, and the snow lasts for 30 days. The average precipitation during the warm season is 100-200 mm, which is drier than in the Khangai, Khentii, and Khuvsgul mountains. The average wind speed is 2.9-5.6 m/s. According to the wind regime, the wind speed increases in spring and autumn and decreases in summer

and winter. We are working to develop warming and drought trends indicators and long-term series of climate change using Google earth Interface.

3. Soum social development situation and perspectives

The population indicators in this section are based on the statistics yearbook of 2010-2021 of Sukhbaatar aimag and the Mongolian Statistical Database.

As of the end of 2021, the population of Sukhbaatar soum has reached 3505, 32.4 percent of the total population is 35-59 years old, 30.9 percent is 15-34 years old, 30.6 percent is 0-14 years old, and 6.1 percent is 60 years old or older. Of these, 46.4 percent are women and 53.6 percent are men. The number of households reached 1,124, an increase of 4.6 percent from the previous year. Excluding the number of births from deaths in 2012-2021, the normal growth rate was the lowest in 2013 at 38 people and the highest in 2014 at 82 people. According to the statistical methodology, the population of the soum is expected to reach 3,894 in 2031 and 4,283 in 2041. The population is expected to increase by about 38 per year.

4. State of economic development of the soum

The soum's economic indicators focus on the livestock sector, industry, and agriculture.

In the last 5 years, a total of 438,397 livestock were counted in 1709 households and businesses. Out of the total number of households, 945 households with livestock and 761 herder households were registered. 1295 herders work in the livestock sector according to the agricultural census. At the soum level, the number of livestock increased by 57,285 (15.03%) from the previous year and reached 438,397, of which small livestock accounted for the majority of the total livestock.

According to the Unified land territory report 2021, 15955.06 hectares of mining lands of 23 enterprises were counted, and chemical and other mineral ore mining, production, and zinc mining and production were registered.

According to the Unified land territory report 2021, 9666.14 ha of arable land was counted. A total of 13 ha of land for potato and vegetable production is owned by the Governor's Office, of which 11.1 ha of land was irrigated, and 120.4 tons of crops were harvested. In vegetable production, ten individuals and enterprises are cultivating 3.35 hectares of land, and 11.7 tons of 9 types of crops have been harvested.

Dornod Shim Agro LLC, a grain producer in Sukhbaatar soum, planted 1,059 hectares and harvested a total of 598.5 tons.

5. Soum land degradation, biodiversity and disaster risk assessment

In terms of soil-geographical zoning, the territory of Sukhbaatar soum is included in the 18th Baruun-Urt district of the Khangai soil-bio-climatic region, which has a hollow zoning pattern. In the 18th district of Eastern Mongolian brown soils, the lowland areas are dominated by loamy dark brown, residual saline brown, and saline soils depending on the land surface, shape, climatic conditions, and vegetation patterns. While in relatively low hills and the area of hills, low-developed light brown and brown soil patterns with a thin layer of humus and high gravel content are dominated. Soum land degradation is being identified using the TrendsEarth menu of QGIS software, taking into account indicators such as land productivity dynamics, soil organic carbon, and land-use change.

Тус суманд хээрийн гал түймрийн давтамж бага, цаг уурын нөхцөл дунд зэрэг буюу чийгшил 40-70%, агаарын температур 5-15 (°C), ургамлын нөхцөл дунд, хуурайшилтын үзүүлэлт нь дунд буюу 0.05-0.2 үнэлэгдсэн байна.

The soum is dominated by more than 40 types of vegetation, including medium and low mountain pastures, steppe pastures, interregional river valleys, and lowland meadow pastures. A total of 24.2 percent of the soum's pastureland is shrubland, 18.7 percent is rocky pasture, and 0.9 percent is hilly pasture. Pure pastures cover 54.1 percent of the total area.

The soum's overall disaster risk assessment is being prepared based on baseline data of wildfires, droughts, and dzuds, and strong winds throughout the soum using the MNS ISO 31000: 2017 "Risk

Management Process" standard and "General Guidelines for Disaster Risk Assessment", which is approved by the 125th order of the Deputy Prime Minister of Mongolia. The frequency of wildfires in the soum is low, the weather conditions are moderate or humidity 40-70%, air temperature 5-15 (° C), vegetation conditions are medium, and the dryness index is medium or 0.05-0.2.

6. The need assessment of different land-use types

Adequacy of social infrastructure, drinking water needs, carrying capacity of pasture, and haymaking needs were calculated to create amenity and healthy living conditions for the population.

In terms of social infrastructure, the spatial coverage of Sukhbaatar soum hospitals is good enough, the spatial coverage of banks and secondary schools is average, and the spatial range of kindergartens and sports and fitness centers is insufficient. In addition, the supply for the ger and apartment plots in the eastern part of the soum is "poor".

In terms of drinking water demand, the daily drinking water demand of the population is 190671.36 liters per apartment household and 149543.7 liters per ger area household.

In terms of pasture carrying capacity in Sukhbaatar soum, camels have exceeded 0.1 percent, horses 11.8 percent, cattle 7.1 percent, sheep 19.9 percent, and goats 4.01 percent.

About haymaking needs, a total of 15024.4 tons of hay and 3278.9 tons of fodder are needed to keep the livestock weight and feed the emaciated animals.

The current land use status in the entire territory and existing land-use zones in the soum center are identified using data and basic information of the "Mapping and registration of state-owned land and entering it into the land cadastre database for verification" project and 1: 1000 scale address map from the address database.

Land-use zones in the soum center are identified as followings:

1. Public services and public areas
2. Apartment housing and public areas
3. Ger area
4. Engineering infrastructures and network zones
5. Special purpose zone
6. Industrial zone
7. Tourism and recreation zone
8. Gas station area

48.1 percent of the soum center is in the ger area, 21.3 percent in the special purpose zone, 11.2 percent in the industrial zone, 8.1 percent in the tourism and recreation zone, 5.1 percent in public services and public areas, and 2.6 percent in engineering infrastructures and networks zone, 1.9 percent in the apartment housing and public areas, and 1.8 percent in the gas station area.

According to the Unified land territory classification, 1.0 million or 78.5 percent of the total territory of the soum is used for agriculture, 21.0 thousand hectares or 1.6 percent for cities, villages, and other settlements, and 0.3 thousand hectares or 0.2 percent for roads and networks, 0.3 thousand hectares or 0.2 percent is a water body, and 247 thousand hectares or 19.4 percent is special needs land.

The largest share of agricultural land is used as pasture, crop, and agricultural land, and is divided into 11 pasture use units.

21.0 thousand hectares of land in cities, villages, and other settlements are used in 27 sub-categories of the Unified land territory classification.

Roads and engineering infrastructures cover a total area of 2.5 hectares. This land is used for national-level roads, local roads, dirt roads, power transmission lines, and its facilities.

2639.2 hectares of the soum's territory is covered by water, and there are 13 springs, streams, and mineral water, and 56 lakes and ponds registered.

246999.9 ha area of Sukhbaatar soum belongs to the state special needs land and according to the geo-database, 33 local special protected areas have been registered.

The location of historical and cultural monuments has been mapped, and according to the registration information of the Sukhbaatar Environmental Protection Department, two graves, four ruins, one sacred ovoo and one tourist camp have been registered in soum.