Accounting for pastoralists in Mongolia

Photo: Enkhtur Dorjzovd

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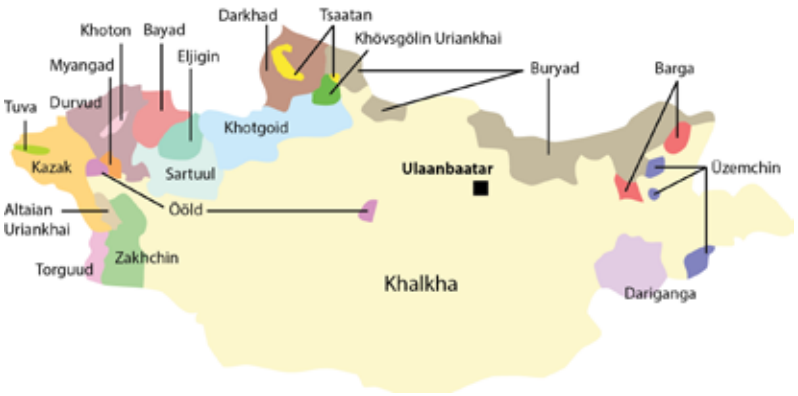
Pastoralism has thrived on the Mongolian Plateau for over 8,000 years, with origins tracing back to the Neolithic period around 6500 BCE. This endurance is shaped by the plateau's diverse geography and climate, with vast steppes in central and eastern Mongolia, semi-deserts in the south (Gobi), and the forested Altai, Khangai and Khentii mountains in the north with elevations from 1,000 to 3,000 metres. The continental climate brings extreme temperature swings, with winter lows of –20°C to –40°C and summer highs of 20°C to 30°C, necessitating mobile herding to exploit seasonal pastures. Low annual precipitation (200–350 mm, mostly June–August rain) varies from 50–150 mm in the drier west and Gobi to 350–500 mm in the northern forests. This fosters a nomadic lifestyle with transhumance between fixed camps (winter, summer, spring/autumn) to cope with resource scarcity. The "five animals" (*tavan khoshuu mal*) – sheep, goats, horses, cattle and Bactrian camels are found throughout the country. They reflect a millennia-old adaptation to ecological variability, and permit the optimal use of scarce resources across the plateau's drylands. High mountains and forests in the north, west and centre also sustain a million yaks, while around 2,800 reindeer are herded in the taiga in the north.

Rangelands (*belcheer*) cover 83% of Mongolia's 1.5 million km² and support over 250,000 households who manage 58 million livestock. Around 195,000 are herder households (*malchin urkh*) who manage livestock throughout the year as their main source of income. Most of the rest are absentee herders (*taviul maltai*

Key messages

- Rangelands cover 83% of Mongolia, and include steppes, deserts and mountain areas.
- Pastoralism supports over 250,000 herder households who herd 58 million livestock of five main species – Bactrian camels, cattle, goats, horses and sheep – plus some reindeer and yaks.
- Transhumant herders, predominantly Khalkha, account for 22.5% of the workforce and contribute around 7% of GDP.
- Harsh winters (*dzuds*) kill millions of animals. Some 70% of the country's rangelands are degraded.
- Mongolia has relatively good data on pastoralism and rangelands, with some indicators down to the subdistrict level. But project-supported datasets are not integrated into these official databases.
- Pastoralism is an important part of Mongolia's cultural identity. The government's long-term development strategy aims to build on pastoralism to modernize the country's economy and society.



Data: National Atlas of Mongolia

Photo: Enkhtur Dorjzovd

Ethnic groups in Mongolia

urkh), who entrust their animals to active herders (often relatives). Sheep and goats (*bog mal*) make up 82% of the national herd, while *bod mal*, including cattle (9%), horses (8%) and Bactrian camels (1%) make up most of the rest.

Ethnically, Mongolia is largely homogeneous, with 84% Khalkha. The remaining 16%, including Kazak (3.8%), Durvud (2.6%), Bayad (2%), Buryad (1.4%), and others (6.2%) are concentrated in the west, north and east. All these ethnic groups engage in pastoralism.

Mongolian pastoralism has adapted to historical shifts, from environmental to socioeconomic shocks. The 1930s saw the mass slaughter of livestock in protest against attempts to nationalize them. In the 1950s the formation of socialist collectives stripped herders of ownership and left numbers stagnant. The transition to a market economy in the 1990s privatized livestock, boosting the numbers of herders and animals, exceeding the carrying capacity of the land. *Dzuds* (harsh winters) and droughts in 2000–3 (11 million losses), 2009–10 (8–10 million) and 2023–24 (7–8.1 million) have challenged resilience, forcing herders to adapt their strategies amid economic pressures.

Pastoralism strategies

Mobility Transhumant herders moving between fixed seasonal camps across ecological zones to use the grazing and water available in the area. This varies by region. In the arid Gobi, herders undertake long seasonal migrations (100–200 km), moving camp 5–10 times a year. In the Khangai mountains, herders move 30–100 km, 2–4 times a year between seasonal camps.

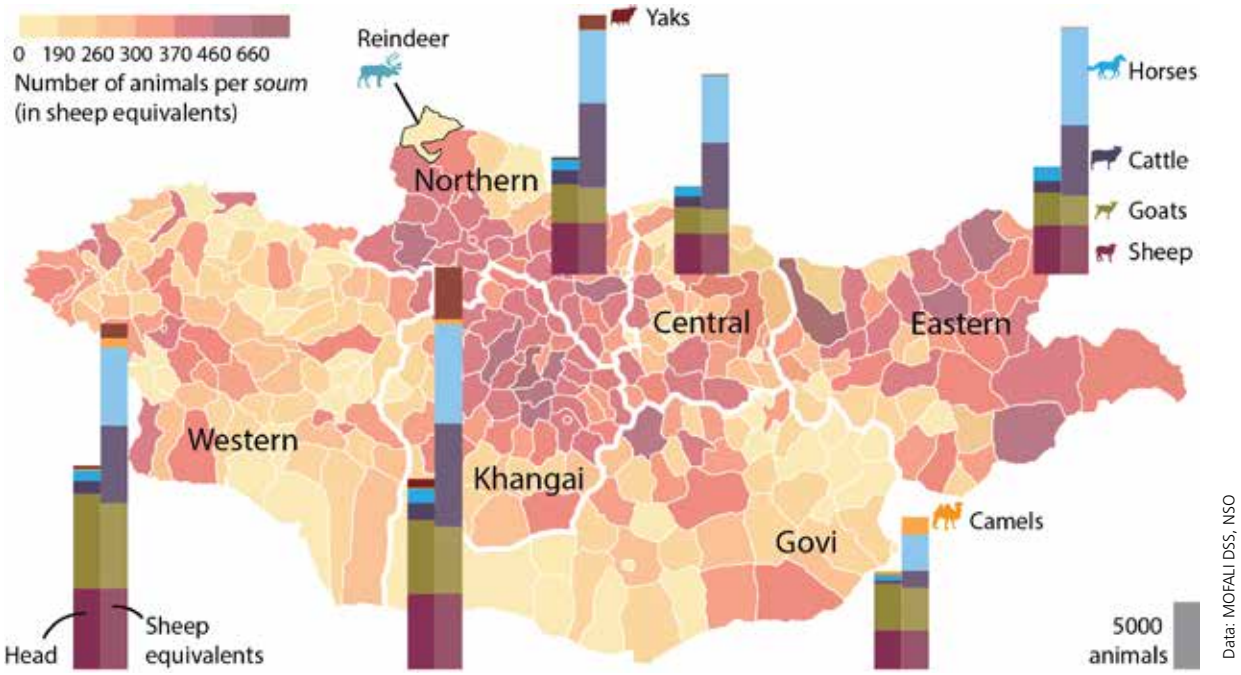
In theory, the local government coordinates the mobility, but in reality, the herders decide where and when to move, often relying on their relatives and other connections. If the forage is good, they generally stay within their own province or district, but in an emergency such as a drought or *dzud*, they may undertake an *otor*, a temporary migration for better pasture or water outside their usual routes.

Bog mal and cattle stay near camps, returning daily to the corrals to feed their young, to be milked, and to avoid predators. Horses and camels roam over longer distances, often unsupervised. Traditional yak, cattle and camel carts have largely been replaced by lorries and motor vehicles.

Herd diversification Herders manage the five main species, plus yaks and reindeer, to optimize resource use across ecological zones and to take advantage of each species' resilience to drought, *dzud*, disease and feed scarcity.

Livestock offtake November, in late autumn, is the *idesh* season for slaughtering surplus animals. Those unlikely to survive harsh winters are culled. The herders slaughter using traditional methods and preserve meat in their storage *ger* (usually an extra, unheated tent). Most of the meat is used for family consumption; some may be sold at the market. The meat is put into containers or hung around the walls to dry.

Storage Herd movements in the summer and during extended *otor* migrations fatten livestock as a form of storage. Herders store fodder (mainly hay cut with machinery or by hand), and they reserve grazing areas for winter, droughts or *dzuds*.



Livestock numbers in Mongolia, 2024

Communal pooling Herders share information on water, grazing and risks. They also pool livestock during *otor* migrations. For example, they may bring all the horses in the neighbourhood to be taken care of together rather than leaving them unattended. Families share labour for tasks such as shearing sheep and camels, combing goats for cashmere, and making hay.

Socioeconomic and ecological contributions

In 2024, the livestock sector contributed 7% to GDP and 5% of exports. It employed 22.5% of the workforce and supported over one-quarter of Mongolia's 3.5 million people. Production included 247,000 t of milk, 453,000 t of meat, 895,000 cattle hides, 1.5 million goat hides, over 8 million sheepskins, plus 8,688 t of combed cashmere and 1,147 t of washed wool. Per capita production reached 72.2 litres of milk and 132.5 kg of meat. Mongolia ranks second globally in cashmere production, contributing 25% of the world's supply.

In the same year, some 60% of Mongolia's 309,000 herders were aged 35–54; 77% had elementary education, 20% had secondary education or higher, while 3% had no formal education. Most (60%) herders are men, with girls and women increasingly moving to the urban areas for education and employment.

Most herders reside in isolated rural areas, up to 200 km from a town, with limited access to social and financial services. Their primary dwelling, the *ger*, is a portable shelter of wooden frames covered by felt and cotton canvas. This is easy to move, but many lack a floor or sanitation facilities. The nearest water may be under 1 km away in the Khangai but 15 km away in the Gobi. A typical family of 3–4 people manages an average of 269 livestock. A camp may be a single *ger* or a *khot ail* (with 2–4 households at the same camp). A *saakhalt ail* (a group of *khot ail* all within 2 km of each other) coordinates grazing and shares labour and resources.

The *myangat malchin* ("thousand herdsman") title from socialist times still rewards increasing herd sizes. But only 3% of herding households have more than 1000 animals, and another 13% have between 500 and 1000. The vast majority (84%) own less than this: 30% have between 200 and 500 head, and the remaining 54% have less than 200 and can be thought of as subsistence herders.

Herders preserve their nomadic heritage through traditional practices such as mobility, horse taming and training, and producing dairy, meat and skin products. Naadam is an annual midsummer festival featuring horse racing, archery, and wrestling. During Tsagaan Sar, the Lunar New Year festival,

Sources: Integrated Water Management National Assessment Report 2012; NSO 2024

Natural zones and approximate distribution of livestock species in Mongolia

people celebrate surviving the harsh winter and the arrival of the new year. Traditions such as the Ode to the Altai, the Epics of King Geser and Jangar, and shamanistic rituals connect them to their ancestral lands.

Pastoralism shares the rangelands with a rich wildlife: gazelles, asses, saiga antelopes and takhi horses. Overgrazing is a problem, with 70% of the rangelands thought to be degraded. Mobility is important to maintain the ecosystem, but so too is reducing livestock numbers to sustainable levels.

Definition

No official definition of pastoralism appears to exist. A draft law on agriculture includes a definition of "pastoral livestock husbandry" as "traditional livestock production gaining benefits by herding livestock that well adapted to the natural and climatic conditions on seasonal pastures throughout the year".

The National Statistics Office (NSO) recognizes pastoralism as a traditional livelihood, distinguishing herders (*malchin*) – those who herd for their primary source of income – from those where herding is secondary, or absentee herders without permanent rural presence. Official statistics track pastoral practices since 1924.

Photos: Enkhtur Dorjzovd

Sources of data on pastoralism in Mongolia

Institution	Parameters	Area covered	Years	Availability
National Statistics Office	No. of livestock by type, livestock mortality, households with livestock	Region, *aimag*[1]	Annual since 1970[2]	*https://www.1212.mn/mn/statcate/table-view/Regional%20development/Livestock*
	No. of herders and herding households, livestock ownership, household appliances and wells	Region, *aimag, soum, khoroo*	Annual since 1992[2]	*https://www.1212.mn/mn/statcate/table/Population,%20household/3_Herdsmen*
	Housing types (including *gers*)	Region, *aimag, soum*	2010, 2020	*https://www.1212.mn/en/statcate/table/Population,%20household/3_Infrastructure%2C%20housing*
	Value of livestock production	National Annual since 2000	2006	*https://www.1212.mn/en/statcate/table-view/Industry,%20service/Livestock*
MOFALI DSS[3]	Vegetation (NDVI), pasture condition, biomass, livestock numbers, snow cover, fodder quantities and prices. Data and intreractive maps	*Aimag, soum*	Every 10 days since Jan 2009	*https://dss-mongolia.org/en/home*
National Agency for Meteorology and Environmental Monitoring	Pasture condition, resilience, and degradation rates	National	Since 2015	*http://climate-service.mn/climateservice/index.php?menuitem=2&product=32*

1: *Aimag*: province; *soum*: district; *khoroo*: subdistrict; 2: Various start dates for different datasets; 3: Ministry of Food and Agriculture and Light Industry Sustainable Fodder Decision Support System

Data sources

The primary data source is the NSO, which conducts the decennial population and housing census and labour force surveys. It publishes the Mongolian Statistical Yearbook, as well as monthly bulletins on GDP, unemployment and livestock data. Its annual livestock census, household surveys and spatial datasets (www.1212.mn) offer consistent, standardized insights into livestock, herders and rangelands.

The Sustainable Fodder Decision Support System integrates NSO data with satellite imagery. It provides interactive maps and tables of vegetation, pasture condition, biomass, livestock numbers. snow cover and fodder.

The National Agency for Meteorology and Environmental Monitoring (NAMEM) and the Agency for Land Management, Geodesy, and Cartography (ALAMGaC) jointly monitor rangeland health at 5,000 monitoring spots around the country.

How to improve the data situation?

To improve the data situation, donor-funded studies should follow NSO methods and integrate their data into the national database; and the National Agency for Meteorology and the Environmental Monitoring's rangeland data should be linked to the NSO's database to create a comprehensive view of the grazing system.

Various internationally funded projects collect data on herders, livestock and rangelands, but these datasets are constrained by geographic scope, time coverage and standards. Such project-based data should be made publicly available and integrated into the NSO database.

The Partnership in Statistics for Development in the 21st Century (PARIS21) local data initiative aims to integrate satellite imagery and geotagged livestock data, reduce costs and improve accuracy across Mongolia's vast landscapes. Expanding and accelerating this initiative will better inform policy and address gaps in data on rangeland condition and carrying capacity.

NSO's branches across Mongolia's 21 provinces should integrate project-based data into regional statistics, aligning with national standards to ensure quality, fix fragmentation, and bolster a holistic, accessible framework.

Vision for the future

Pastoralism in Mongolia faces existential threats. Herding is threatened by overgrazing, mining concessions and climate extremes such as worsening *dzuds* and droughts. As young Mongolians migrate to urban jobs, the transmission of traditional knowledge is disrupted, leading to an ageing herder workforce and labour shortages. Intensified rangeland degradation, higher ecosystem emissions, and greater vulnerability also threaten the sustainability of pastoralism.

The government is active in supporting pastoralism and rangelands. Its Vision 2050 includes "Mongolia as a nomadic civilization" as one of its shared national values. The Vision provides a strategy to merge nomadic heritage with innovation and to foster resilient systems. It calls for meat and milk to be processed industrially rather than domestically, and aims to develop large numbers of technology parks to create rural jobs. Other goals are to improve the marketing of cashmere, prevent further land degradation, reduce greenhouse-gas emissions, increase the forest area, protect more land, conserve livestock breeds, educate rural youth, and promote tourism based on the nomadic culture.

Mongolia initiated the 2026 International Year of Rangelands and Pastoralists and will host the 17th session of the United Nations Convention to Combat Desertification's Conference of Parties in the same year. In 2029 it will host the International Rangelands Congress.

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