



## Pastoral livestock husbandry and rural livelihoods in the forest-steppe of east Kazakhstan



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### ABSTRACT

The socio-economics and organization of pastoral livestock keeping in the forest-steppe region of East Kazakhstan is analyzed based on interviews with 50 rural households in the Saur Mountains and 65 households in the Kazakh Altai. Though almost all families keep livestock, its economic significance is more important in terms of household consumption than with respect to the sale of livestock or livestock products on the market. Livestock husbandry is usually combined with small-scale arable farming and both branches of agriculture are mostly run in addition to other sources of income, since salaries in rural East Kazakhstan are low (60% of national average) and many people have no regular jobs. Agricultural products are only sold on local markets with limited success, as almost all villagers produce their own agricultural products. Prospects for rural development are limited, because of limited space for pasture and arable land in the mountainous study regions, and thus the village population is aging. Only a few families (mostly those with larger herds) practice transhumance to bring their livestock to mountain pastures during the summer.

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### 1. Introduction

Livestock keeping in Central Asia west of the Altai Mountains was adopted more than 5500 years ago in the late Eneolithic/early Bronze Age (Frachetti, 2012). While the earliest herders, the Botai in what is today northern Kazakhstan, were specialized in horse breeding (Outram et al., 2009), mixed herds of sheep, goats and cattle were established throughout central and eastern Kazakhstan during the Bronze Age (Frachetti and Benecke, 2009; Outram et al., 2012). The Botai people switched from horse-dominated livestock husbandry to mixed herds about 4500 years ago (Frachetti, 2012). Likewise in the Bronze Age, around 2000 BCE, grain cultivation emerged among the mountain pastoralists of eastern Kazakhstan, allowing a mixed agriculture of mobile livestock husbandry and crop cultivation (Spengler et al., 2014a, b; Dounami et al., 2015).

Despite of considerable spatiotemporal variation in the details of herding practices, mobile pastoral livestock husbandry, combined with low-investment crop farming, remained the principle type of land use in Kazakhstan until the 20th century. Mobile

livestock husbandry involved seasonal movements of herder households from the more fertile, but snowrich steppes and forest-steppes in the north or in mountains to drier and less fertile grasslands in plains or to semideserts in the south. While distances in the annual movement cycles covered up to impressively 700–1000 km in western and central Kazakhstan, they were much shorter in the mountainous areas of eastern Kazakhstan (Olcott, 1995; Robinson and Milner-Gulland, 2003; Tazhibayev et al., 2014). Since even early pastoralists combined livestock husbandry with crop farming and built substantial villages out of stone (Dounami et al., 2015), most herders in Kazakhstan were probably never fully nomadic, but seasonally transhumant agropastoralists, who regularly returned to their fixed residences (Frachetti, 2008).

In modern times, Kazakhstan became increasingly influenced by the Russian Empire. This influence had its origin in the late 16th century when the Kalmyks, a pastoral Mongolian tribe, emerged as the dominant military power in the Central Asian steppes and started to invade eastern Kazakhstan (Olcott, 1995). The Russian Empire responded to the Kalmyks' growing military and economic force by erecting the Orenburg fortified line in southern Siberia in 1716–1718, which excluded Kazakh pastoralists from substantial parts of their traditional rangelands in the border region (Olcott,

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1995; Alimaev and Behnke, 2008). Much more significant, however, was the circumstance that massive land losses to the Kalmyks' urged the Kazakh Khan, Abu'l Khayr, to swear loyalty to the Russian Empire in 1731. This decision marked the end of an independent Kazakhstan and opened the door for the immigration of European Russians, who competed for land with the Kazakh herders (Olcott, 1995; Alimaev, 2003). The pressure on land was increased in 1893 by a government decree that enabled the seizure of 'excess' land by Russian colonialists and mostly resulted in the transfer of the best pastures to the immigrants (Olcott, 1995).

The foundation of the Soviet Union compounded the external influences on the Kazakh livestock sector, because herders were forced to form collectives and to become sedentary in the early 1930s (Olcott, 1981; Alimaev, 2003; Ohayon, 2006). Misgovernment and the herders' low acceptance of the collectivization strongly reduced the number of livestock. Approximately 80% of the total livestock perished from 1928 to 1932, resulting in the starvation of 1.1–1.5 million people, which was roughly 40% of the total Kazakh population (Olcott, 1981, 1995; Ohayon, 2006). Another 600,000 people fled from their country (Ohayon, 2006). Nomadic pastoralism was replaced by winter feeding in the collective farms and grazing on rangelands in the summer (Alimaev, 2003). During World War II, mobile livestock keeping was reintroduced because of the lack of workers and as the Soviet government felt that the political control of the Kazakh herders had been, from their point of view, sufficiently settled to admit more liberties (Olcott, 1995; Alimaev and Behnke, 2008). At that time, herding livestock on separate summer and winter pastures was reintroduced, but in contrast to the traditional customs, the diet of the animals was supplemented with hay during winter.

Livestock husbandry in Kazakhstan coexisted with crop farming during the Socialist period, but was spatially and, furthermore, ethnically separated from it, as livestock breeding was primarily done by the Kazakh in the south and arable farming was the preferred business of the Russians in the north of the country (Bremmer, 1994; Werner, 1994). The most productive rangelands were converted into cropland in the 1950s, increasing the grazing pressure on the remaining grasslands (Robinson et al., 2003). Well-building programs were carried out in dry grassland regions as a precondition for reduced livestock mobility (Robinson et al., 2016). Although Kazakhstan's total livestock population had just reached the pre-collectivization levels again at the moment of the breakdown of the Soviet Union (Robinson and Milner-Gulland, 2003; Robinson et al., 2003) and Kazakhstan notoriously missed its planned production targets, Kazakhstan was an important supplier of the other Soviet republics with livestock products (Werner, 1994). Seven percent of the total meat and 23% of the wool production in the last five-year plan of the Soviet Union were assigned to the Kazakh Autonomous Soviet Socialist Republic. A substantial proportion of Kazakhstan's agricultural production, however, derived from private production, which was allowed to a limited extent. In 1988, 31% of the meat and 43% of the milk production was from private animals (Werner, 1994).

The breakdown of the Soviet Union and the political independence of Kazakhstan in 1991 resulted in a strong decrease of livestock (Ellis and Lee, 2003). Among all countries of the former Soviet Union, the political transformation process from the planned to the market economy caused the most severe decline of the livestock sector in Kazakhstan (Suleimenov and Oram, 2000; World Bank, 2004; Kerven, 2006). The replacement of the ruble by the Kazakh national currency tenge (KZT) in 1993 was a turning point in livestock production (Fig. 1), as many livestock owners could not afford the fodder and other expenses necessary to fatten the animals. Though the downward trend in livestock numbers was stopped in the late 1990s, ambitious aims at retransforming Kazakhstan into

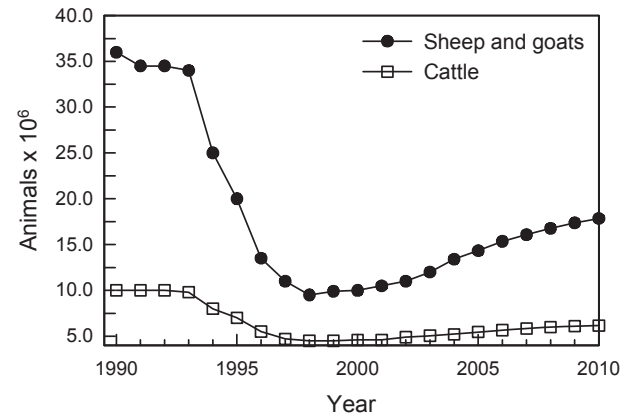


Fig. 1. Development of sheep, goat and cattle numbers in Kazakhstan since 1990 (data from World Bank, 2004; Embassy of the Kingdom of the Netherlands, 2011).

an export nation for livestock products (World Bank, 2004; Flake, 2011) have not been achieved so far.

Livestock productivity has declined in addition to livestock numbers, since many collectives broke up into small unviable units held by individual families and lacking capital for investments during privatization (Baydildina et al., 2000; Wright et al., 2003; Kerven et al., 2004). Small herds of livestock were assigned not only to agriculturalists, but even to other individuals who had worked in non-agricultural professions in the collectives (van Engelen, 2011). The livestock sector was privatized soon after Kazakhstan's independence resulting in the establishment of an uneven distribution of land and means of production (Baydildina et al., 2000; van Engelen, 2011). While pastures around villages, usually remained communal land, land ownership for distant pastures and hay meadows is often unsettled (Alimaev and Behnke, 2008). Theoretically, land was supposed to be leased to herders for 99 or later 49 years since the mid-1990s. However, while this worked well for cropland, there was not much demand for leasing of the economically less valuable rangelands. Registering for land was intricate and costly (Robinson et al., 2012) and competition for rangeland had been reduced due to the decline of livestock numbers after 1993. Therefore and to avoid full taxation, many herders did not register for land or only leased small areas around dwellings, barns, water points, and hay meadows (Behnke, 2003; Alimaev and Behnke, 2008).

In addition to land tenure, the few animals, which most smallholder pastoralists possess, do not justify the efforts that are necessary for seasonal migrations (Kerven et al., 2006). Therefore, the common pastures around villages are often subjected to overgrazing (Alimaev and Behnke, 2008). For smallholder pastoralists, opportunities and costs to prepare and store winter fodder are usually the key determinants of flock size (Milner-Gulland et al., 2006). Only owners of large herds have the means to distribute their livestock in optimal spatiotemporal patterns over the available rangeland in order to achieve maximum performance in the use of the available resources (Kerven et al., 2016a, b). Some herders with few animals keep their livestock mobile by entrusting their animals to the owners of bigger herds, who bring the animals themselves to distant summer pastures or hire herders to do so (Robinson et al., 2012). Kerven et al. (2016a), however, found a reduced willingness of the owners of large herd to accept other people's livestock or of villagers to work as shepherds because of increased economic wealth and alternative job opportunities.

At present, pastoral livestock husbandry in Kazakhstan has largely changed from mobile livestock keeping to sedentary animal

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