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**СУУСАМЫР ӨРӨӨНҮНДӨГҮ ДЕГРАДАЦИЯГА ДУУШАР БОЛГОН
ЖАЙЫТТАРДЫ КАЛЫБЫНА КЕЛТИРҮҮ ҮЧҮН ЭКОЛОГИЯЛЫК ШАРТТАР**

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**ЭКОЛОГИЧЕСКИЕ УСЛОВИЯ ДЛЯ ВОССТАНОВЛЕНИЯ ДЕГРАДИРОВАННЫХ
ПАСТБИЦ В СУУСАМЫРСКОЙ ДОЛИНЕ**

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**ENVIRONMENTAL CONDITIONS FOR THE RESTORATION OF DEGRADED
PASTURES IN SUUSAMYR VALLEY**

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Адам баласынын жайыттарга болгон таасирлеринин бири катары – жайыт аянттарына ашыкча мал жайуу жана туура эмес колдонуу болуп саналат. Жайылып жаткан малдын таасири менен биологиялык ар түрдүүлүктүн азайышына жана жайыттардын азыктуулугунун төмөндөшүнө алып келиши мүмкүн. Бул таасир этүү жайыт дигрессиясы катары каралат. Акыркы жылдары, малдын санынын төмөндөгөнүнө карабастан Суусамыр өрөөнүндө чектелбеген баш аламан жол менен малды жайыттарда жайуу байкалууда. Чеге жок жайыттарды пайдалануу экологиялык жактан көп зыян алып келүүдө. Бул жайыт өсүмдүктөрүнүн жана топурактын механикалык түзүмүнүн бузулушуна, түшүмдүүлүктүн төмөндөшүнө жана эрозиянын күчөшүнө жол берет. Жайыттардын начарлашы жайыт тоют өсүмдүктөрүн запасынын азайышын кана эмес, айрым тышкы таасирге ийкемдүүлүгү томон өсүмдүктөрдүн жоголушуна коркунуч алып келет жана өсүмдүктөрдүн түрдүү курамынын төмөндөшүнө түрткү берет.

Негизги сөздөр: Суусамыр өрөөнү, дигрессия, деградация, жайыт, ашыкча мал жайуу, түшүмдүүлүгү, жайыттын сыйымдуулугу.

Одним из вариантов влияния хозяйственной деятельности человека на растительные сообщества является превышение пастбищной нагрузки. Воздействие пасущихся животных может привести к уменьшению биологического разнообразия, к снижению продуктивности пастбищ. Данное воздействие носит название пастбищной дигрессии. В последние годы, несмотря на снижение поголовья скота в Суусамырской долине, наблюдается бесконтрольный нерегулируемый выпас. Неурегулированное использование пастбищ наносит еще больший вред. Это приводит к разрушению дернины пастбищных растений и механической структуры почвы, снижению урожайности и к эрозии.

Ключевые слова: Суусамырская долина, дигрессия, деградация, пастбище, выпас скота, нагрузки, продуктивность, емкость пастбищ.

One of the options the impact of human activities on plant communities is the excess of the grazing pressure. The impact of grazing animals can lead to loss of biological diversity, to reduce the productivity of pastures. This impact is called pasture digression. In recent years, despite the decline in livestock numbers in the Suusamyr valley, there is

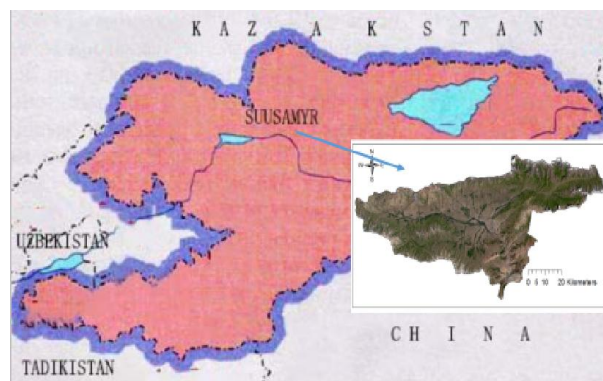
uncontrolled unregulated grazing. Outstanding use of pastures inflicts even greater damage. This leads to the destruction of the sod of the pasture plants and the mechanical structure of the soil, reduce crop yields and erosion. Deterioration of pastures is a hazard not only in terms of inventory reduction of pasture forages, but also leads to the disappearance of some most sensitive to grazing, plant species, depletion of species composition.

Key words: Suusamyr valley, digression, degradation, pasture, grazing, load, productivity, the capacity of pastures.

Introduction

Suusamyr is located in one of the intermountain basins of the Tien Shan, between Talas Ala-Too and Kyrgyz ridge to the north, ridges Susamyr Dzhumgal-Too and the south. Located at an altitude of over 2,000 meters above sea level [3]. The area of the valley is more than 4 km². In the subalpine meadows and steppes, located on the river terraces and gentle slopes of the mountains, the cattle graze residents of Chui, Talas, Jalal-Abad regions of the Kyrgyz Republic. The total area of pastures of the Kyrgyz Republic is 9.2 million hectares, or nearly 86%. Natural grasslands are used in mountainous areas as pastures and hay meadows. Pastures are about 30-35% of the territory of Kyrgyzstan: 5.6 million hectares are located in mountainous areas, and 2.1 million hectares at the villages (in the valleys) [2].

Fig. 1. Location of the Suusamyr valley



This maps shows the location of research and detailed views of mountain pastures Suusamyр Valley [Fig. 1,2].

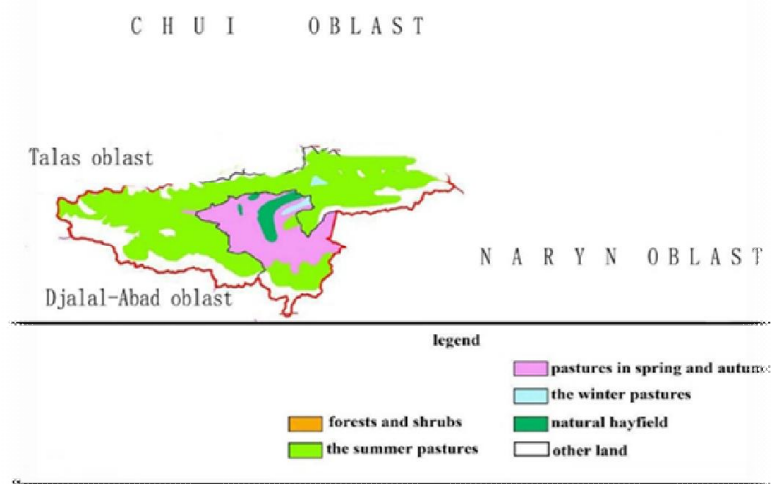


Fig. 2. The use of grazing lands in Suusamyр valley, source [Kyrgyziprozem 2010]

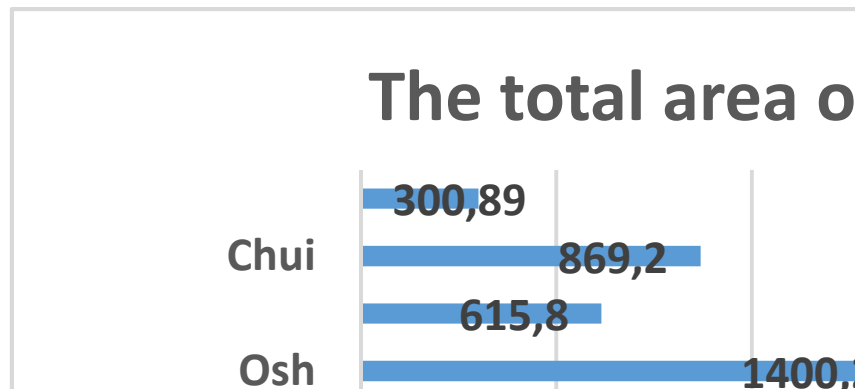


Fig. 3. Source: National Statistics Committee of the Kyrgyz Republic [NSC KR].

In recent years, sharply increased pressure on pastures. Increase the number of cattle, and the use of pastures was haphazard. The condition of pastures and affects climate change. Even today, in the valley of fodder shortage in spring and fall is approximately 20%. The income depends on food supply, efficient and economical use of pastures [3]. The study was able to return to the traditional practice of transhumance livestock. It was used for centuries and served as the rehabilitation of mountain pastures.

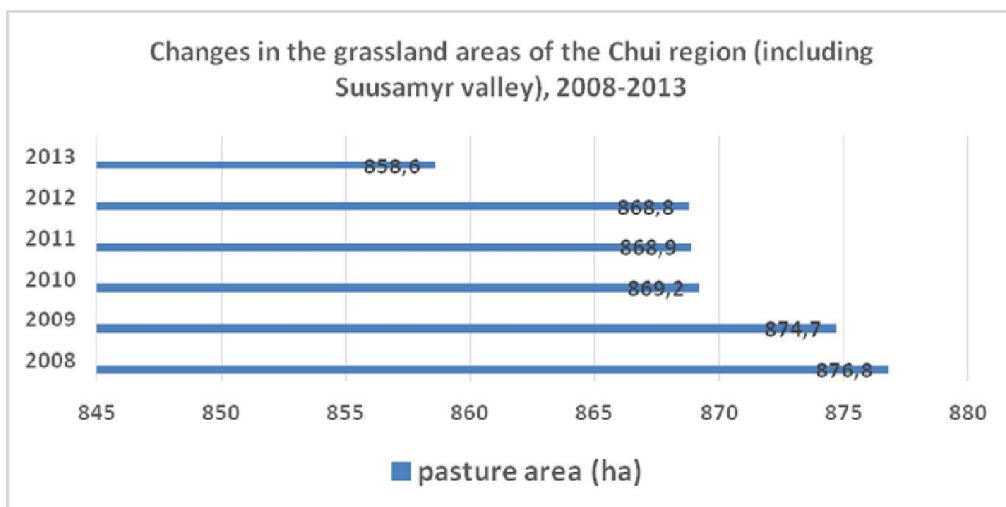


Fig. 4. Source: National Statistics Committee of the Kyrgyz Republic [NSC KR].

Return to the transhumance was preceded by an inventory of pasture resources. It is made throughout Susamyr. The inventory revealed that of more than four hundred thousand hectares of pastures were considered, only 300 890 hectares of pastures are in pure form [Fig. 3]

Methods

Data collection:

Experiment data needed for the study of grassland ecosystems have been received on the territory of farms located in the southern part of Chui oblast.

Field survey: pasture turnover, capacity and load of pastures; livestock's numbers, the total areas of pastures.

To compile key characteristics of farms and places used library materials, Meteorological data, Ministry of

Agriculture and Melioration (MAM), Kyrgyzhydromet, (NSC KR) National Statistics Committee of the Kyrgyz Republic, Kyrgyzgiprozem;

The definition of load per 1 ha of pastures:

$$N=Y: K L;$$

where *N* is the number cattle. on 1 ha, *Y*- the yield from 1 ha of land; *K* – day the need for 1 livestock in the feed; *L* – length of grazing period in days.

Example:

Grass - legume pasture crop with the 70 hectare;

The coefficient of palatability of 70%; the Daily rate for the head 7 kg; the period of grazing from may 15 to 30 days.

$N=4900:7 \times 30=23$ cattle 1 ha within 30 days or 690 cattle a 1 month.

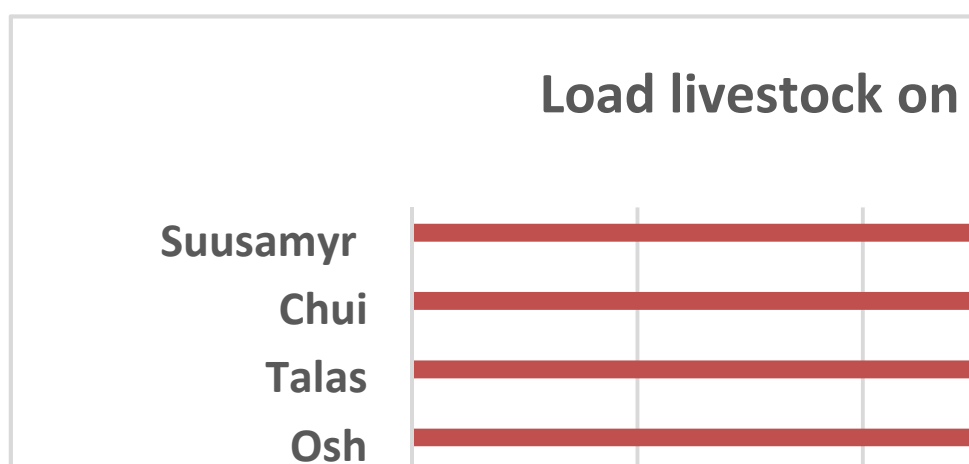


Fig. 5. Source: Kyrgyzgiprozem.

As a result of the overload of mountain pastures on the first and second stages of digression exempted ecological niches. On growth, development and productivity of crops used as fitomelioration mountain pastures, have the greatest influence the following factors: timing, seeding rate, sowing methods [Fig. 5].

The determination of the number of corrals on the pastures:

$$K=O/D+FR;$$

where *K* – number of corrals; *O* – the period of regrowth of the grass in days; *D* – the number of days of grazing in each paddock; *FR* – the number of corrals in this cycle of pasture rotation to rest.

Regularly monitor changes in the state of pastures, you can plan and implement measures to improve them, including by restricting admission to these lands, grazing and the introduction of the principle of environmentally sound loads [7].

One of the most pressing environmental issues of our time is the degression pastures. The scale, pace and

consequences of the destruction of pastures in Susamyr gets worse every year. Unsuitability for use areas occurs as a result of natural and anthropogenic reasons mainly (overgrazing, plowing grassland). Pastures are a unique resource for the mountain areas [4].

About 70% of these degraded pastures due to overgrazing and the depletion of prey species. Near village pastures (winter) for economic reasons, in fact, used throughout the year, leading to their degradation. This situation is extremely negative, as near village pastures should be used for a critical shortage of feed in the winter [1].

Conversely, distant pastures, located in the highlands - are underutilized. True, these pastures are in the process of recovery from the collapse of the stripping of livestock, but now they grow a large number of plant species are not eaten. People almost do not use these pastures because of the relatively high costs for moving cattle [7].

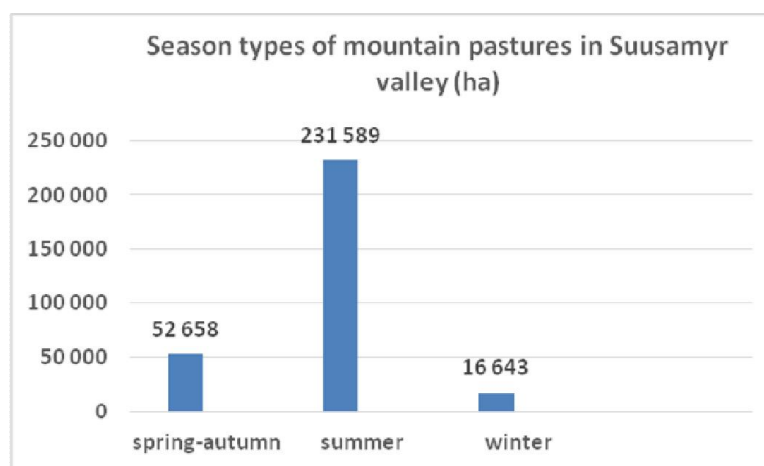


Fig. 6. Source: Ministry of Agriculture and Melioration [MAM].

The Suusamyр valley is the biggest place for summer pastures in KR. The total area of the valley is 472 thousand ha, in the valley itself, it is 435 thousand ha and 37 thousand ha are behind of Jungal-Too mountain range. The total pasture volume of the valley is 1 421 800 livestock and total area for pastures is 300 890 ha including 52 658 ha for spring-autumn, 231 589 ha for summer and 16 643 ha for winter pastures [Fig. 6].

So, in a valley Suusamyр number of livestock has increased in recent years, and changed the composition of the herd. Uncontrolled grazing pasture leads to soil erosion and degradation. The study of pasture conditions have revealed that a large concentration of livestock grazing has led to disruption of grass, there was a replacement of edible vegetation on inedible: poisonous, harmful. [4] A overgrown inedible plants leads to the fact that the mass falls productive animals and pasture forage dignity. To resolve grazing, you must first determine the total number of livestock, and then bring it in line with the statistical and factual data. The development of environmentally sustainable load on pastures Suusamyр Valley [7].

Each herbage on pastures has its biological productivity, which determines limiting the number of grazing livestock. To make these calculations, you need to clearly know what the yield of grasses [9].

Mowing is determined by the method of:

On 10 different places, each with an area of 1 square meter of the plants are cut at a height of 3-5 cm Cut grass immediately weighed and the number count per hectare. For example, if on average, 1 square meter will be released 50-60 kg of fresh grass in 1 hectare will yield approximately 70 centners.

In general, the successful management of the environmental situation in mountain areas need a clear awareness of the goals and objectives also need full scientific base of natural phenomena and the peculiarities of environmental objects. It is necessary to stick to the basics of sustainable development, environmental management [10].

Results

It was found that the main factors of degradation are pasture digression and deflation. Overgrazing cattle in the area leads to the loss of certain types of grass.

Analysis of all investigated places shows that for the selected field characteristic overgrazing, as these weeds are found throughout the grassland areas of the Suusamyр valley. Intensive pasture digression we observed over the near village areas. All this indicates the existence of a threat to rangeland phytocenosis. The increased number of thorny plants can be explained by the fact that animals in contrast to grain crops do not eat them.

Discussion

To achieve this, the following tasks:

- Identify digression series shifts of vegetation on the mountain pastures, taking place under the influence of grazing loads.
- Identify the available ecological niches in the pasture plant communities formed as a result of overgrazing.

The research results can be used in research, design and research institutions in developing recommendations for the use and restoration of degraded grassland.

The response of plant communities in the long-term and unsystematic grazing a pasture digression in which another attack of grass species adapted to the joint growth.

Conclusions

Pastures located near villages are experiencing significant congestion, which inevitably leads to loss of productivity and degradation of the grassland.

On intensively used pastures, especially fall and spring as well as in most of highland, formerly famous for its pasture herbage is severely depressed unsystematic grazing and largely broken [9].

Large thickets of weeds can be seen on the Southern slopes of the Kyrgyz Ala-Too. The reason is the under - use of remote summer pastures.

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