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Causes Degradation of Summer Pastures and Ways to Solve Them

Abstract

Degradation of lands (and pastures) is the deterioration of the properties, fertility and productivity of lands as a result of economic activity. Summer pastures are usually represented by cereals and cereal-wormwood types. The vegetation of summer pastures develops more slowly than on spring pastures and reaches its maximum development in the early summer. Summer pastures are most productive and their feed is more nutritious in the first half of summer (May-June). By mid-summer, the vegetation on the pastures dries up and in the second half of summer, cattle use the dried feed mass to a large extent. The productivity of summer pastures is usually high and averages 3.1 c/ha of dry matter, or 1.8 c/ha of feed units (Dobrovolsky, 1997, p. 313-321). Summer pastures in the mountainous areas and winter pastures in the plains ofAzerbaijan are rich in biodiversity. Summer mountain pastures are complex coupled ecological and human systems. They provide vital forage for livestock during summer, and their traditional use is decisive for the maintenance of biodiversity, ecosystem services, and open landscapes, which benefit local populations and tourists.

Keywords: *efficiency increase, grazing rate, biodiversity, degradation, erosion, flooding, resalinization*

Introduction

Pastures are divided into spring, autumn, summer, winter, and distant pastures. Pastures are an important economic driver for many countries and define local culture.

Livestock productivity strongly depends on the productivity of pastures and, in general, on perennial forage grasses. Affects and carries risks: heat waves, spring frosts, floods, mudflows, etc. (Balamirzoyev, 2008, p. 15). Desertification of lands, in particular pastures, is an acute problem in our republic. The destruction of pastures is the main consequence of changing environmental conditions and irrational human economic activities. It manifests itself in the loss of valuable forage plant species from the grass stand and their replacement by weeds, inedible and annual species.

Pasture degradation is a decrease in the level of plant diversity in pastures, the disappearance of beneficial flora and the appearance of thorny and poisonous plants that are not edible for livestock. As a result, pastures become unsuitable for agricultural use (Bogolyubov, 2013, p. 5-10). Animal grazing has a strong impact on pastures – on their soil and plant cover, water regime and microclimate, fauna and microflora.

If pastures are used incorrectly, valuable plants are eaten away and replaced by poorly eaten grasses, low-growing animals, and low-yielding plants. This leads to a deterioration in the quality of the grass stand.

As a result of free (unregulated) grazing of soil by animals, soil compaction increases, its water-air regime is disrupted, and microbiological activity decreases.

First of all, excessive grazing of animals and an increase in livestock numbers. Shepherds use the same pastures every year for grazing, which is why the plants cannot recover by the next year, and this, naturally, leads to their complete destruction (Ogarkov, 2019, p. 59). Camel thorns and harmala, unsuitable for food, begin to take their place. An increase in livestock numbers leads to increased pressure on pastures. Let's say you previously grazed 20 sheep in a certain area, then, after a few years, the flock grows, and you already graze 100 sheep in this area.

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Currently, for example, our pasture loads are 4-5 times higher than normal. The next factor is anthropogenic. Thisis human extraction of mineral resources, the organization of various expeditions, the continuous movement of vehicles to deposits, the construction of facilities, which also leads to a decrease in pasture areas (Volkov, 2016, p. 57-56).

Despite the fact that summer and winter pastures are of great fodder importance in the development of animal husbandry, those pastures have been grazed almost unsystematically for a long time, and poor attention is paid to improvement works. Currently, excessive herds of cattle and sheep are kept in the pastures. This causes trampling of pastures and erosion processes on the slopes. Therefore, the vegetation groups of the grasslands are gradually changing. Instead of valuable fodder plants, plants of less importance for fodder begin to develop.

It is necessary to implement a number of cultural-technical, agrotechnical and reclamation measures in order to adapt the productivity of natural fodder areas to the potential opportunities of the area, to meet the demand for livestock feed. Taking into account the exceptional role of pastures and meadows in the development of animal husbandry, in order to ensure their preservation and increase in productivity, they should be constantly cared for, and less productive areas should be improved and managed continuously. Surface improvement should be carried out in all pasture areas to improve the forage quality and productivity of pastures. Thanks to such a measure, on the one hand, valuable fodder grasses are preserved in the pasture, and on the other hand, the botanical composition of the pasture is enriched with valuable fodder plants.

The system of surface improvement measures includes measures such as fertilizing, harrowing the soil surface, fighting poisonous and harmful plants, cleaning the pasture from stones, leveling the field and sowing valuable grass seeds on the surface of the grass cover.

As a result of the application of fertilizers, the productivity of each hectare of pastures can be increased by 40-50 %.

One of the important measures in the improvement of pastures is cleaning the pasture from stones and unnecessary residues. At this time, it is necessary to collect the stones in the pastures or pour them into ditches and ravines, cover them with soil as much as possible and sprinkle grass seeds. On eroded steep slopes, it is necessary to collect the stones in rows 5-10 meters apart from each other in the direction of the width of the slope and sow grass seeds in the areas between the rows. Such a measure prevents the process of erosion and increases the utilization ratio of the lands under pasture. As a result of the implementation of such measures in pastures, productivity can be increased by 1-1.5 centners. Wet and swampy areas can also be found in the grasslands of our republic. Such areas occur both in summer and in winter pastures located in the Kura-Araz plain. It is necessary to dry up and make it useful by carrying out melioration measures in these areas. Due to such dried areas, the forage area can be expanded, albeit in a small amount.

Substantial improvement

Substantial improvement is one of the most important measures in pastures for effective use of pasture lands, increasing productivity, and meeting livestock feed requirements. Substantial improvement is being done on less productive degraded grasslands.

During major improvement, the natural turf layer is completely plowed and seeds of valuable forage plants are sown. Sowing in winter pastures should be carried out in the fall under conditions of irrigation and irrigation.

During the fundamental improvement of the pastures, special attention should be paid to the preparation of the soil for sowing. Cultivation systems designed according to soil-climate conditions and terrain should be used in soil preparation (Poluektov, 2009).

In ground improvement, sowing a mixture of seeds of not one but several perennial grasses and semi-shrub grasses works best. When using one or more grass mixtures, in addition to receiving a high-quality fodder product, the use of the pasture is long-term. The sowing of grass mixtures has a ositive effect on the development of the grass cover at the same level and on the improvement of the agrochemical properties of the soil. Mixed sowing also plays a positive role in the prevention of the erosion process in pasture lands.

Improvement of pastures and meadows

The process of desertification in ecological terms is one of the reasons for the loss of biodiversity, loss of biomass and productivity, and in socio-economic terms this process is the main reason and mechanism for the loss of fertile lands, generates economic and political instability in the affected regions, leads to a drop in income and living standards of the population, a decrease in the number of jobs, which ultimately leads to migration of the population. The 'silent death' of vast grasslands threatens the climate, food and the well-being of billions: The degradation of the planet's vast, often vast, natural grasslands and other rangelands through overuse, misuse, climate change and loss of biodiversity poses a serious threat to human food security and the well-being or survival of billions of people (Dobrovolsky, 2002, p. 656).

Pasture degradation manifests itself in various forms, including reduced soil fertility, erosion, salinization and soil compaction. This leads to serious consequences such as drought, changes in precipitation and loss of biodiversity.

Summer mountain pastures are complex systems in which the human and ecological dimensions are closely linked. Composed of a mosaic of grazed ecosystems that forms a functional agricultural management entity, they are managed by human actors (eg herders, farmers, and park managers) within an environment made up of the geographical context, economic opportunities, and social network (Khitrov, 1998, p. 20-26).

In many places, sheep farming is the main source of income. However, uncontrolled livestock grazing, caused by the influence of climate change, leads to active soil degradation and desertification, every year of pastures in the Greater Caucasus. According to experts, the unsystematic exploitation of summer pastures led to the fact that after 50 years they simply disappeared. There are several direct and indirect drivers of land degradation. Main factors land degradation in summer pasture unsustainable agricultural practices, expanding agricultural production on vulnerable and marginal lands, inadequate maintenance of irrigation and drainage networks, overgrazing of pastures, and land conversion, urbanization and extractive industries.

Timely action to halt, reduce and prevent land degradation makes proven economic sense and will lead to, among other things, improved food and water security, increased employment, improved gender equality, significant contributions to climate change adaptation and mitigation, and the prevention of conflict and migration. The main factors of land degradation are unsustainable land use, including over-cultivation on mountain slopes, water and wind erosion, excessivegrazing and mining operations (Gerasimova, Karavayeva, 2000, p. 356).

First of all, you need to use pastures correctly. Use the so-called driven method. That is, graze cattle in one area for three or four days, then move to another, so that the cattle do not eat the roots of the plants. This way the first area will have time to recover. Pastures, meadows, forests are overloaded with herds of animals. It should be noted that the development of numerous farmers and other farms engaged in animal husbandry is mainly accompanied by the uncontrolled and excessive exploitation of pastures, rural meadows, forest lands and reserves belonging to the state land fund. According to experts, by developing animal husbandry in the country in more advanced ways, productivity can be increased, protection of summer and winter pastures and hayfields can be strengthened, the efficiency of their use can be increased, and biodiversity can be preserved. Since 2004, the "State Program on effective use of summer and winter pastures and hayfields and prevention of desertification in Azerbaijan" has been approved. It is also noted here that the structure of the fodder necessary to ensure the development of animal husbandry in the country does not comply with the norms, and the predominance of natural fodder in its composition leads to overloading of pastures and meadows, as well as forests with herds of animals. This, in turn, leads to the degradation of foothill slopes, water-retaining forest areas, the intensification of destructive floods, and the gradual depletion of underground and surface water resources. As it is known, pastures and meadows are state-owned land in Azerbaijan. However, due to the fact that the users of these areas do not take the necessary measures to restore soil fertility from time to time and do not follow agrotechnical rules in their operation, as well as do not fully comply with the requirements

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of existing standards and regulations in the field of soil protection, soil erosion, salinization, man-made exposure to violations, etc. things happen (Zalibekov, 2010).

Conclusion

When people talk about using pastures, people communicate meaning constructed within social interaction and interaction with the environment The results of this study suggest that past practices and value systems play an important role in people's descriptive comments about today's land use system (Dobrovolsky, 2002). On the one hand, the Soviet the practice of “pasture management”, which involved temporary overuse resources, but also their possible restoration in as a result of the introduction of large factors of production, shaped the point of view of people in terms of domination over nature. On the other hand, assigning responsibility for pastures on specialists only strengthened the opinion of local users that they are powerless to directly influence for resources. Consequently, many of them preferred remain simple observers, with their own indicators and approaches to assessing the quality of pastures. The subsequent separation of local livestock farmers from pastures was reinforced by a system that limited its criteria for assessing the quality of work to reproductive standards and physical condition of animals.

To solve problems related to degradation, you must follow this point:

1. Integrate climate change mitigation and adaptation strategies into sustainable rangeland management plans to increase carbon sequestration and storage while enhancing the resilience of pastoral and pastoral communities.
2. Avoid or reduce rangeland conversion and other land-use changes that reduce the diversity and multifunctionality of rangelands, particularly on indigenous and community lands.
3. Adopt and support pastoral policies and practices that help mitigate the impacts of climate change, overgrazing, soil erosion, invasive species, drought and wildfires.
4. Promote policies that support participatory processes and responsive management and governance systems to improve the services that rangelands and pastoralists provide to societies (Sulin, 2015, p. 320).

For the rapid restoration of degraded mountain forage lands and increasing soil fertility, it is of great importance to create a species structure of grass with a powerful root system of loose-bush grasses and leguminous grasses, which contribute to the creation of a fine-clumped soil structure and the ecological sustainability of agroecosystems.Therefore, the development and creation of a seeder for targeted seeding of grass mixtures in solving the problem that has arisen is relevant The quality of the livestock was and is an indicator of successful work and, therefore, successful use of pastures. This point of view is also reflected in today's approach to quality, which accepts the reduced number of livestock in as an indicator of pasture richness. The primacy of livestock quality over pasture quality in people's consciousness is also associated with the new meaning that is attributed to live stock today (12).

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