

CONCEPTUAL RECOMMENDATIONS

on restoration of agricultural land and effective land management in the Republic of Armenia

Introduction

Pastures and meadows of the Republic of Armenia being 57.3% of the agricultural lands, which are a significant resource for economic development, especially for the livestock sector. In addition to economic importance, pastures also have an important environmental, ecological and biodiversity conservation value.

According to the RA government's decision "On approving the concept and program of measures for increasing the efficiency of agricultural land use", the government aims to reduce the area of unused arable land to 25% by 2030.

The development of agricultural cooperatives is one of the strategic tasks of the government, and the current policy adopted and implemented by the state fully reflects this. Cooperatives create an opportunity to effectively address issues, such as the fragmentation and small size of the agricultural land plots, limited resources and inadequacy of infrastructure, lack of access to quality agro-inputs and specialized agronomic services, difficulties with the production cycle, supply chains, and marketing, among other issues.

Taking into account the priorities listed above, as delegated by the Ministry of Economic Cooperation and Development of the Federal Republic of Germany (BMZ), the ECOserve environmental program of the German Society for International Cooperation (GIZ) supported Shen NGO in implementing "Fodder Production and Pasture Improvement as a COVID-19 Response Measure" project. Within the framework of the project, in Gegharkunik, Shirak and Lori marzes of the Republic of Armenia, innovative methods have been piloted to improve degraded pastures and arable lands uncultivated for decades.

The project aimed at presenting to the partner ministries the proven, effective methods of cultivating and increasing the efficiency of agricultural plots, which, by increasing the volume of fodder production, reduce the pressure on natural grasslands.

Problem statement

As a result of non-targeted and merciless exploitation of pastures and arable lands in the entire territory of Armenia, a number of problems arise that directly and indirectly affect the productivity of these plots of land. The inefficient use of land resources directly affects the standard of living of the land users. Incorrect, untargeted exploitation or general abandonment of arable lands and pastures is caused not only by uncontrolled anthropogenic influence, but also by a number of other factors, such as social-economic circumstances, lack of knowledge, technologies, and resources. Due to problems that are often



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insurmountable or very difficult for farmers to overcome, facts of non-targeted exploitation of privatized arable lands and community and state-owned pastures are evident in all marzes.

According to experts, at least 80% of Armenia's pastures are in various degrees of degradation, and 20% are subject to radical improvement.

According to the data of the Armenian Ministry of Economy, at least 45% of arable land is not used for its intended purpose.

The problem has become more acute in the period of 2020-2022, when not only remote, but also communal pastures of Gegharkunik, Vayots Dzor, Syunik became unsafe due to Azerbaijan's invasion of the territory of the Republic of Armenia. Under these conditions, the improvement and efficient management of existing pastures, combined with the development of field fodder production, are the urgently needed solutions for the livestock sector.

Proposed solution

It is recommended to implement such a toolkit for land improvement activities that will ensure maximum results with minimum costs: an effective combination of best practice and existing resources, thanks to which small farms will be able to independently restore and improve privatized or leased land. The proposed actions will also ensure that the capacity of "Pasture User Cooperatives" operating in the communities is improved and a better quality of services is offered. The proposed activities can be replicated in all marzes of Armenia, especially in communities with more or less established cooperatives.

The use of arable land for the purpose of field fodder production can have the following positive effects:

- Restoring the purpose of arable land,
- Preventing degradation,
- Food security,
- Reducing pressure on pastures,
- Additional income generation for at least 3-4 years,
- From ecological standpoint, additional carbon sequestration basins,
- Increasing the fertility and efficiency of the soil by cultivation of sainfoin and alfalfa,
- Increased climate adaptation, especially for dry and drought years.





Recommendations

Cultivation of arable lands for fodder production provides an opportunity to reduce pressure on pastures, excluding especially early spring and late fall grazing. Through the creation of an additional fodder base, it is possible to ensure this in case of defining and controlling a clear grazing period by local self-government bodies.

The following measures are recommended for the improvement of pastures and arable lands, and restoration of their purpose:

1. To develop and adopt a reform program that will enable the implementation of the "Annual Program for the Improvement of the Pastures of the Enlarged Communities" through the local government in all marzes of the Republic of Armenia.
 - Each enlarged community should include in its five-year plan a minimum of 20 ha/year pasture improvement for each settlement/village. Ensure supervision and reimburse costs on a postpaid basis only after the third year of monitoring.
 - There is a need for cartographic materials and their annual updates for the pastures and fodder production areas of the enlarged communities.
2. To implement the complete model of the tested and proposed technology, or individual activities of the model, in the beneficiary regions, as well as other regions of the Republic of Armenia.
 - In the support program for the partial compensation of grain sowing costs, include a subsidy component for sowing high-value fodder crops (perennial legumes, fodder beets, corn silage, rapeseed).
 - Subsidize exclusively the import of complex/combined fertilizers (NPK) and the use of organic fertilizers, thereby indirectly encouraging farmers to stop using single nitrogen fertilizers. The use of complex fertilizers will contribute to the improvement of the quality of privatized land resources.
 - Promote the use of extra-root fertilization in the improvement of pastures, grasslands and cultivation of fodder crops. This method of fertilization is more effective in terms of ensuring fast vegetative growth of plants, and is less harmful to the environment in terms of pollution of both soil, and groundwater.
 - Educate farmers on the purpose and application of flowering stimulants (of plant origin) for use in grassland, arable land and in open field conditions. The use of these stimulants makes it possible to increase the rates of flowering and pollination, and contributes to the ripening of quality seeds.
 - Support for the acquisition of modern agricultural machinery and equipment for farms,



such as soil tillers, hay mills, sprayers, stone collecting equipment, and improving the farmers' knowledge and skills to operate those.

3. Subsidize seed production of local valuable forage crops. Cooperation of scientific research centers and cooperatives in the form of a joint working group, to combine the scientific potential with the potential of the cooperative (land, technical and equipment).
4. Increase the minimum threshold of standards for fodder crop seeds imported with state support. Subsidize the import of only high-yielding, purebred and certified seeds.
5. To restore the intended purpose of arable land, foster the cooperatives' function of providing stone collection services by partly subsidizing the cost of 1 ha of stone collection for farms with up to 3 ha of arable land. This function can also be carried out by the enlarged community in the case of stony, machine-accessible pastures, with the possibility of state subsidies.
6. Inform farmers about the proposed innovative activities, and provide professional advice.
7. Based on the urgency of the pastures problem, in the coming years, subsidize a package for the improvement of the roads of remote pastures for Syunik, Gegharkunik, Tavush and Vayots Dzor. Collaborate with Ministry of Territorial Administration and Infrastructure Development to include greater coverage of pasture road rehabilitation in subsidy programs.

The implementation of the proposed measures will allow increasing the productivity of arable lands and pastures, as well as generating additional income for the farmers. The proposed improvement models are also less costly than the previously used traditional improvement model.

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