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SUPPORTING FINANCIAL INSTITUTIONS TO FACILITATE DIGITAL TRANSFORMATION IN THE BEEKEEPING INDUSTRY

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A R T I C L E I N F O.

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Abstract

The article describes the organizational and economic levers for promoting the transformation of digital technologies in the beekeeping industry. Proposals for subsidizing the implementation of digital technologies in the network are described. Also, in order to support structures that finance the implementation of digital technologies, the organization of the "Technological transfer in beekeeping" fund and the sources of its financing are disclosed.

Introduction

The experience of developed countries shows that activities related to the digitalization of agriculture are always carried out under state control and with the help of support mechanisms. In particular, in technologically developed countries such as the USA, Germany and Japan, where the share of the private sector is high and the quality of service is high, the issue of digitalization of agriculture is entrusted to the state.

Namely, the need for organization and economic stimulation of the industry is increasing, and the goal of obespecheniya is the need for the population of our country and natural and organic products, the development of beekeeping and the goal of increasing the productivity of agricultural culture and the establishment of modern innovative technologies.

Main part

Based on our research, we believe that organizational and economic levers should be widely used as ways to drive digital transformation in beekeeping. In particular, in the organizational direction it is advisable to implement the following tasks:

- organization of "Smart hives", conducting research and experiments related to adaptation to the climatic conditions of our country;
- improving the legal framework for the use of digital devices and remote controls and creating a system that is simple for everyone;
- holding seminars on popularization, propaganda and explanation of the use of digital devices;
- organization of bee farms equipped with intelligent devices for the targeted and orderly use of forest lands, etc.

We also believe that the following tasks must be completed as economic directions for promoting the introduction of digital technologies in beekeeping. Including:

- introduction of a system of preferential lending to farms that have fully implemented digital technologies and improvement of the insurance system;
- financial support for enterprises producing smart devices through cooperative relations with the economy;
- introduction of a system of stratified subsidies for farms that have implemented digital technologies for a certain percentage of the total number of bee colonies;
- organization, development, etc. funds helping to financially support the implementation of digital technologies in beekeeping.

The role of each of these organizational and economic levers in practice is incomparable, which is confirmed in monographic studies. It was noted that insurance, preferential lending, subsidies, and the formation of separate industry financing funds would have a positive effect.

Therefore, our research is based on a scientific proposal with special emphasis on subsidies, the creation of special funds and their financing. In particular, an analysis of questionnaires conducted in the regions shows that if one apiary contains an average of 1 pavilion (32 hives, 64 families), then at least 4 hives (12.5 percent) must be equipped with digital technology under constant monitoring. Only then will it be possible to monitor the daily condition of the bees in minimal real time.

Based on this, it is proposed to establish a minimum criterion for allocating subsidies for digitalization for beekeeping farms. It is advisable to introduce a stratified subsidy system for farmers who meet this criterion at a minimum level and are interested in increasing it in accordance with the number of cells in the pavilion (table 1).

Table 1. Subsidy system for beekeeping farms that have implemented digital technologies and its levels [1]

Amount of subsidy	Minimum criteria	Differentiated use		
		Completed the minimum requirement	introduced to 30 percent	introduced to 50 percent
In the amount of 5 times the amount of the basic calculation	Introduction of digital technology in 12.5% of the total number of hives	1,0	5,0	10,0
It is also possible to introduce coefficients by region and type of enterprise				
For mountain and sub-mountain beekeeping		1,0	5,0	10,0
For beekeeping in cotton		1,0	8,0	12,0
For desert and semi-desert beekeeping		1,5	6,5	11,0

When subsidizing beekeeping farms that have implemented digital technologies, it is proposed to allocate a subsidy in the amount of 5 billion cubic meters based on the actual assessment as of 2023.

This amount should be increased 5 times for farms that contributed it to 30% of the total number of nests on the farm, and if it was contributed to 50%, then it should be applied 10 times.

[1] Муаллиф томонидан таклиф этилган

At the same time, this amount is used for mountain and foothill beekeeping, given the high impact of chemicals for honey producing farms in cotton-growing areas, coefficients of 8 to 12 are proposed, respectively 30% and 50%.

The increasing role of the private sector in market relations is a natural process and at the initial stages of state subsidies serves to create enterprises and widely promote new technologies and in the future it should work with the help of market mechanisms.

For this purpose, it is advisable to create structures that finance the implementation of these technologies and support agencies. Therefore, we consider it necessary to create a fund "Technological transfer in beekeeping" in our research (Fig. 1).

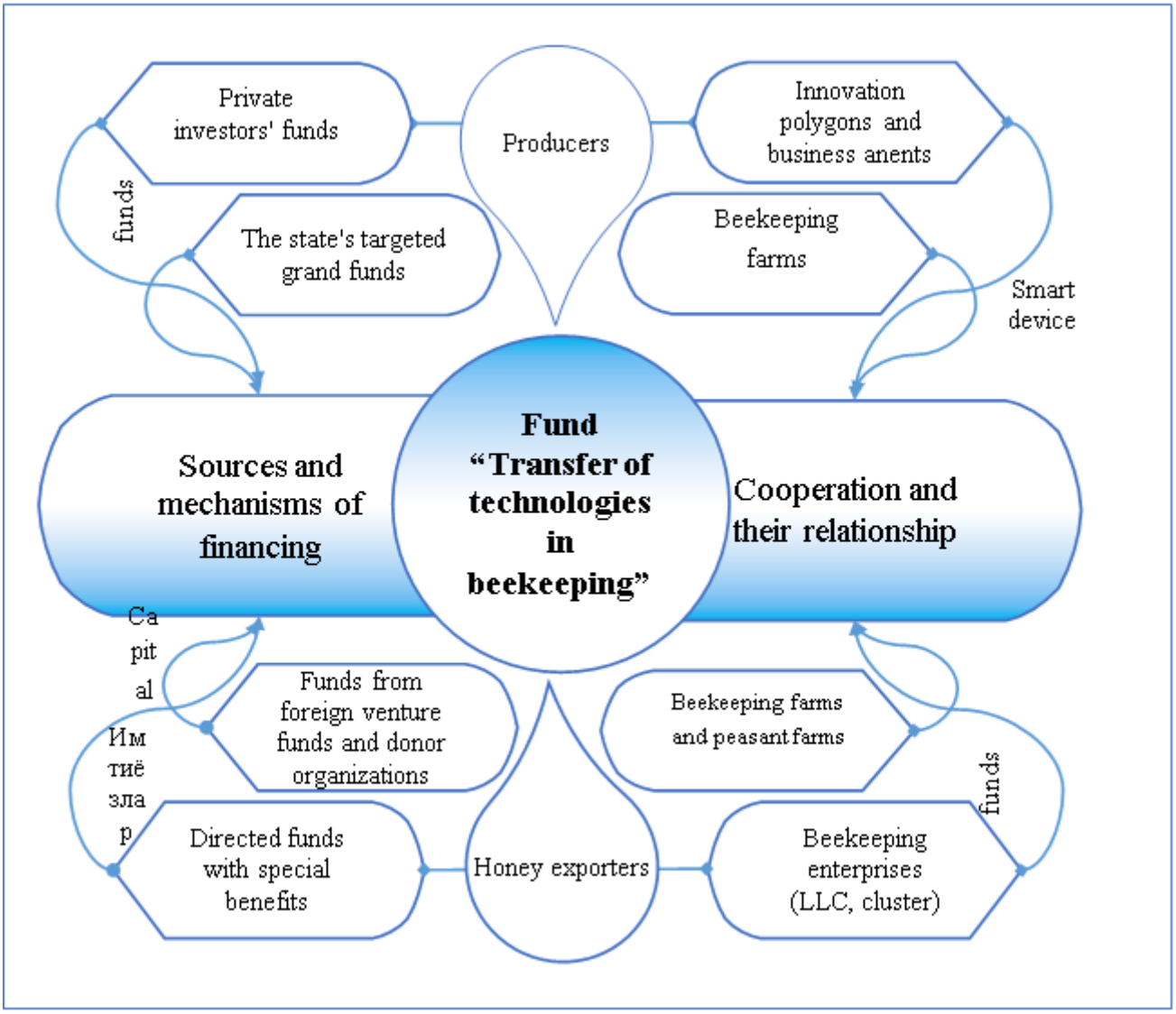

Figure 1. Technical and economic relations of the fund "Transfer of technologies in beekeeping". [2]

The purpose of creating the fund is to financially support the introduction of modern digital technologies in beekeeping farms, providing them with preferential loans, promoting the introduction of new technologies into practice, as well as increasing the interests and skills of beekeeping farms.

In the course of its activities, this fund performs the following tasks. In particular:

[2] Муаллифлар томонидан ишлаб чиқилган.

- strengthening the material and technical base of beekeeping farms, introducing digital technologies, allocating credit resources for training purposes and further expanding their use;
- financial support for the innovative activities of honey farmers, stimulation of the creation, production and implementation of modern devices;
- financing of targeted state, industry and regional programs, scientific and technical projects aimed at the development of beekeeping, as well as participation in the implementation of these events;
- support the activities of honey producers, processors and service providers in need of working capital when introducing digital technologies;
- establishing leasing activities in order to provide special vehicles, equipment, devices for transporting honey and beekeeping products, as well as cooperation with interested parties for these purposes.

Digital technologies in beekeeping not only increase production efficiency and improve product quality, but also contribute to more precise resource management, lower costs and improved sustainability of the entire industry. This trend is gaining momentum and digital technology is expected to continue to transform beekeeping in the future.

When forming the financial resources of this fund, together with target and donor funds of the state, sources for the formation of funds aimed at special and general benefits are proposed (Fig. 2).

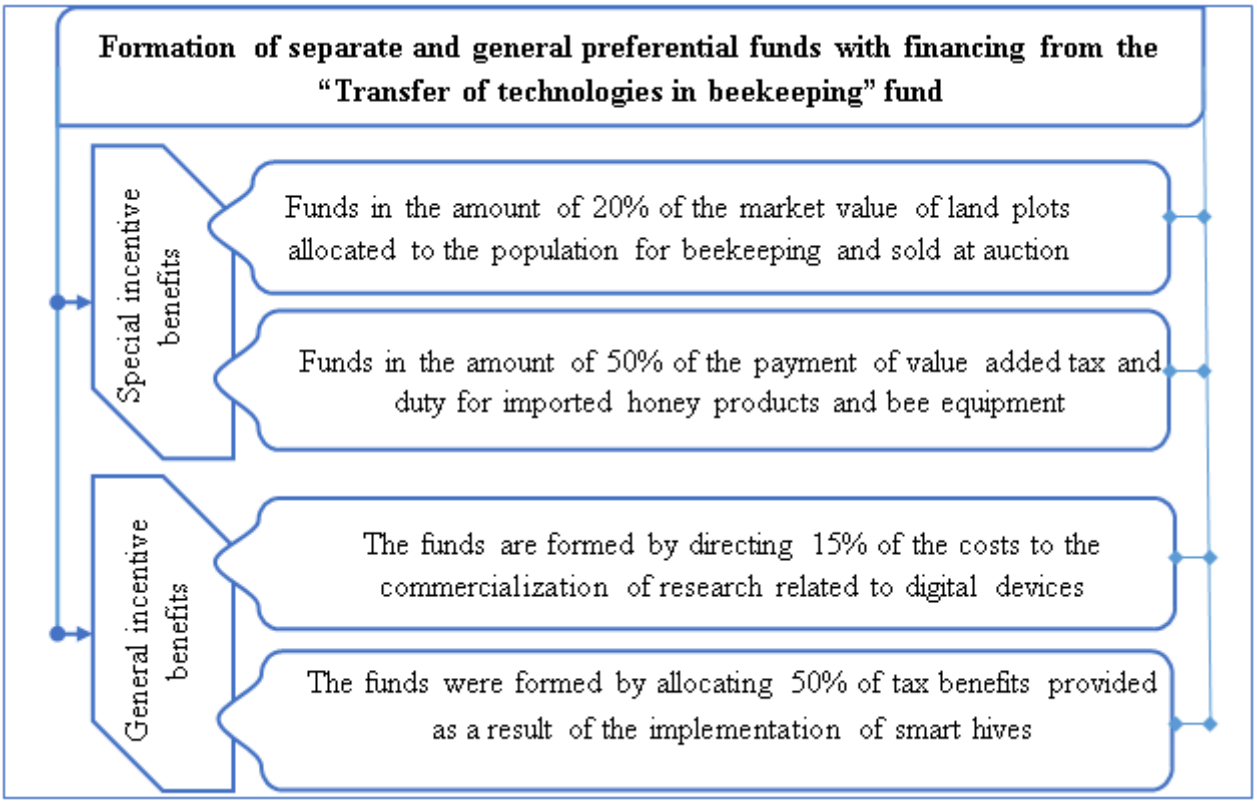

Figure 2. Formation of funds allocated with special benefits to finance the Fund "Transfer of technologies in beekeeping"[3]

According to it, as a special incentive, it is proposed to allocate funds to the population in the amount of 20% of the market value of land allocated for beekeeping and 50% of the value added tax and duty on imported honey products and bee equipment.

[3] Муаллифлар томонидан ишлаб чиқилган.

Also, as a general incentive, it is desirable to create funds formed by allocating 15% of the cost of commercialization of research related to digital devices, as well as by allocating 50% of the tax benefits provided as a result of the implementation of smart hives.

Conclusion and suggestions

By creating the "Technology transfer in beekeeping" fund we will achieve the following:

- ✓ digitalization of beekeeping;
- ✓ attracting the private sector to the implementation of "smart" hives;
- ✓ expand the scope of implementation of innovative projects carried out in the field;
- ✓ commercialization,
- ✓ create conditions for material, technical and financial stimulation of farms;
- ✓ on the other hand, it serves to create a number of effects, both social (food safety, development of science, technological weapons, skills formation) and economic (high profits, the presence of a competitive market segment, reduced unemployment).

Supporting financial institutions to facilitate digital transformation in the beekeeping industry is imperative for fostering innovation, enhancing productivity, and ensuring sustainability in beekeeping practices. This initiative holds the potential to revolutionize traditional beekeeping methods by integrating digital technologies, thereby addressing challenges and capitalizing on emerging opportunities in the sector.

In conclusion, supporting financial institutions to facilitate digital transformation in the beekeeping industry is essential for unlocking the full potential of digital technologies to enhance beekeeping practices, promote economic growth, and contribute to environmental sustainability. By implementing these suggestions, stakeholders can create an enabling environment for beekeepers to embrace digital innovation and thrive in the digital age.

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