

## GEFF Tajikistan Radio Interview #3: Drip irrigation systems for traditional orchards on hill slopes

### ***Moderator:***

Hello, this is Subhon Jalilov and I'm glad to be on air with you again. You are listening to Radio Vatan.

As you already know, this is our bi-weekly radio interview session with experts on agri-value chains. Invited experts will share their opinions on green technology solutions as well as their vision on how Tajik farmers and agribusinesses can adapt to climate changes in the country. Today, we will talk about drip irrigation systems for traditional orchards, in particular on hill slopes.

I would like to remind you that the program has a Question and Answer session. Direct your questions to the experts via phone at 2231106, or simply use Direct Messaging on our Facebook page - @radiovatan. Our invited experts will be glad to answer your questions.

Our guests today are Mr. Usmonkul Boturov, GEFF Tajikistan Deputy Team Leader and Mr. Jamshed Sanginov, an expert on drip irrigation systems from Dushanbe, who has more than 8 years of experience. Welcome, it is a pleasure to have you both on the air today. First of all, I would like to ask Mr. Boturov to share with us briefly about the GEFF Tajikistan project.

### ***GEFF Tajikistan expert:***

Thank you. The Green Economy Financing Facility Tajikistan was officially launched in November 2019 as a product of the European Bank for Reconstruction and Development, working in cooperation with the European Union, the Green Climate Fund and the Republic of Korea. The Facility operates through Participating Financial Institutions in Tajikistan, supporting its green economy transition with \$25 million of financing for energy and resource efficiency investments. Since, the credit line was activated with its first GEFF Partner Financial Institution Humo, where a total of \$1 million has been disbursed to nearly 200 beneficiaries.

GEFF Tajikistan supports various innovative green technologies, and today we are going to talk about the drip irrigation technology which is used in traditional orchards on hill slopes. Tajikistan is a mountainous country with 93% of the country's territory comprising of mountainous landscapes. That is why it is necessary to use the hills to grow various crops, and drip irrigation is suitable for irrigation on the slopes. Drip irrigation or precise irrigation is a new technology on water saving and best way to supply the crops with good quality water and nutrition.

### ***Moderator:***

Thank you! Now, Mr. Jamshed Sanginov, could you please tell us about your experience with drip irrigation systems. What are some of the benefits that you have experienced when using this technology?

### ***Invited Expert:***

Thank you a lot for inviting me to this program. I have been engaged in the drip irrigation business since 2013. I had designed and installed different drip irrigation projects for orchards on hill slopes, from the 0.3 hectares up to 5 hectares. I had installed drip irrigation projects in many districts of Tajikistan, both for traditional and intensive orchards on hill slopes. My first project was in the Iskich village at Gissar district, and the size of the plot was 5 hectares. Also, I had installed drip irrigation systems in Kulob, Dangara, Norak, Ayni and Kuhistoni Mastchoh districts.

Drip irrigation delivers water and nutrients straight to the roots of each plant in its required doses that keep the root zone at optimal moisture levels. Since there is no excessive watering and the flow rate is moderate, drip irrigation eliminates surface run-off and deep percolation. The design of the drip irrigation system is done according to the soil's ability to absorb water at a particular spot and depends on the plant's water consumption, ensuring that water will stay in the active root zone and will be used by crop. As a result, trees grow higher, farmers get better harvests and use less water than before.

In summary,

- It helps to reuse water;
- It reduces evaporation;
- It improves soil conditions;
- And the most important it saves water, human resources and provides the water on time to the crop.

***Moderator:***

Thanks, it would be interesting to know the approximate cost for installing a drip irrigation system, say for 1 hectare of an orchard on a hill slope.

***Invited Expert:***

It is quite difficult to reply to this question because the price depends on various factors and needs a more detailed assessment.

We need to take into account the quality and the source of the water, type of the soil, planting scheme and much more. For a simple drip irrigation system, a farmer will need something about 1,100 – 1,500 USD per hectare, excluding the cost of labour. It also depends on the kind of drip irrigation system that the farmer wants to install. There is a fully automatic system available, which will go up to 7000-8000 USD per hectare, and the size of such project should be more than 10 hectares. I think the best choice for small Tajik farmers would be the simplest system where the investment would break even in 1-2 years.

***Moderator:***

Thank you. And another question, why should Tajik farmers invest in such irrigation systems in the first place?

***Invited Expert:***

With limited water resources and growing water consumption due to an increasing amount of agricultural activity, efficiency is key. Drip irrigation systems are one of the most water-efficient systems in agriculture as of today.

It is also resource efficient. Just one person who can manage irrigation of up to 50-60 hectares of land. And he can irrigate the trees or crops when it's needed. Also, he could provide nutrition and pesticides to the plants by himself, through the drip-irrigation system.

All these factors will bring the farmer better harvests with high-quality crops. That is why I will recommend all Tajik farmers to install drip irrigation systems in their farms. Maybe not immediately,

but gradually.

***Moderator:***

Thank you Mr. Jamshed Sanginov for your interesting points. Now I would like to know, Mr. Boturov, your expert opinion on drip irrigation.

***GEFF Tajikistan expert:***

The main challenge is the high cost of purchasing specialized equipment, as well as the lack of additional knowledge and skills of farmers, that are in pursuit of using such technology. This is why we are supporting our farmers.

***Moderator:***

Dear listeners we have received several questions already.

***Q&A session***

***GEFF Tajikistan expert:***

Today, we discussed the drip irrigation systems. Irrigation is a critical activity in farming, be it an orchard or field, and drip irrigation is one of the most interesting options to consider. However, to make the best choice for your operations, you'll need to consider the advantages and disadvantages of drip irrigation, and if it's the right irrigation method for your crops or not.

*Advantages:* Drip irrigation offers many benefits as mentioned previously. In addition, I would add that drip irrigation systems can also be configured to irregularly-shaped fields and they require much less water pressure than other types of irrigation. Drip irrigation systems could be automated and paired with other technologies like water sensors. There is also a reduced risk of soil erosion.

*Disadvantages:* The most important disadvantage is the high cost of system installation, but the payback period is relatively short. The second disadvantage is the poor water quality and poor quality of the filters. Over time the use of old drip irrigation emitters could result in the clogging of pipes. Drip irrigation requires very clean water when used otherwise, any mud particles may attach to the tubes and affect its integrity. A higher maintenance cost is therefore expected.

Hope you found the session useful. If you have any questions regarding the technology we discussed today or about the GEFF Tajikistan project, please call +992 93 433 90 01 or visit our Facebook page.

***Moderator:***

We have reached the end of today's program. As always, it was very interesting and I hope you found it useful. Let me thank you for your participation in the discussion. Let me also thank the GEFF Tajikistan team for sharing their experiences and supporting modern, resource efficiency technologies in Tajikistan. The upcoming session will take place after two weeks, at the same time, on innovative apricot drying. Thank you for your attention.