

## GEFF Tajikistan Podcast #5: Water storage

### *GEFF Tajikistan marketing expert:*

Hello and welcome to the fifth episode of the GEFF Tajikistan Podcast Series! We continue to highlight the climate change impacts and green solutions that are applicable for Tajikistan.

Over 1,000 small glaciers have disappeared in Tajikistan over the past thirty years, noted Deputy Director of the Hydrometeorology Agency of Tajikistan, Karimjon Abduhalimov, at the two-day Central Asia Climate Change Conference 2019 (CACCC-2019) that held in the Tashkent on April 3 this year. According to him, climate change poses a serious threat to the process of providing favorable living conditions for the population and protecting water resources in the region.

“From 14,000 glaciers presented in Tajikistan, which has a vital significance for the whole region, more than 1,000 small glaciers have disappeared over the past thirty years” noted Abduhalimov.

GEFF Tajikistan invests in high performing green technologies that aim to scale up Tajikistan’s climate financing. It has a direct impact on investors – through reduced expenses, increased competitiveness and improved life quality. GEFF partners with its network of financial institutions to reach small businesses and individuals.

I’m Aziz Gafarov, the GEFF Tajikistan Marketing Expert. In the last episode, we discussed Orchards on the hill slopes. That podcast is already available for download on our website [www.ebrdgeff.com/tajikistan](http://www.ebrdgeff.com/tajikistan). The GEFF Tajikistan Podcast series are focused on agri-business and agricultural value chains. It features conversations with local experts as well as agronomists and engineers.

Today we are going to talk about water storages / reservoirs for domestic use, as well as for agro purposes. Although our country is quite rich for fresh water, it is not widely available everywhere. Some areas of Tajikistan have a lack of water and the value of water is so high, that water is not only a luxury for irrigation purposes, but it is difficult to obtain drinking water. But despite all the difficulties, residents of the remote regions of the country manage to find suitable sources, store water in a variety of ways, and even use it for agricultural needs. Our expert, Mr. Jamshed Boboaliev, will share his thoughts about the benefits of the technologies of water storing, following challenges and solutions that can enhance competitiveness of the agricultural value chains and improve climate resilience in Tajikistan.

Mr. Jamshed Boboaliev, could you please tell us why we should take care about storing water, when we never feel shortage of the water both in summer and in winter?

### *GEFF Tajikistan agri-finance expert:*

Thank you, you probably wanted to say that certain segments of the population do not feel a lack of water, but not all of them. You see, we have several rural districts where you can feel a lack of even drinking water and the population of those areas understand the real value of pure drinking water. Primarily it is connected, of course, to climate change patterns in the country, the drought season is being prolonged, rivers are depleted due to the development of new lands, precipitation is going less and less, groundwaters are also depleting. Of course, sudden and massive changes in river flows are extremely rare, but changes are stable & noticeable from year to year.

### *GEFF Tajikistan marketing expert:*

Given that, how does the population live in those regions with that negative changes? What kind of

adaptation measures do they take?

***GEFF Tajikistan agri-finance expert:***

The answer is - water storing. Yes, storing water is the best option that everyone knows. This is not something unique for Tajikistan. This is an old method of securing water-sufficiency for domestic and agro purposes. In terms of adaptation, well the locals tend to build more and more water reservoirs of various sizes. Collection and storage of the rainwater become more popular in some parts of southern Tajikistan, restoration and construction of new wells are often used as adaptation measures in the northern part of the country. Each region focuses on its own effective measure. People see negative changes in weather patterns, but they would rather adapt, than leave the place that is near and dear to them.

***GEFF Tajikistan marketing expert:***

And could you tell about water storages and reservoirs, what is the main purpose of their use and what types are usually applied?

***GEFF Tajikistan agri-finance expert:***

Well, it is a combination of different purposes, for drinking, domestic use, livestock feeding and irrigation. Types of water storages differ when it comes to drinking purpose storages. The most advanced one are currently prefabricated, plastic storages, which is mainly imported from Iran, China and Russia. They come in white, blue or black colours and various volumes, 100 litres, 500 litres, 1 ton, 5 tons. etc.

Then there are also second-hand prefabricated metal storages. They are usually quite big in volume, above 10 tons. Rarely used for drinking, more for feeding the livestock or other domestic use.

Another commonly used type of storage is a constructed one, reinforced with metal and concrete. That type of storage is mainly used for its durability and robustness, in comparison with the other two types. Such storages are usually multi-purpose and hygiene level is accordingly low. Last but not least, farmers are using another method of storing water by excavating a portion of a land and covering that space with a plastic foil (thick polyethylene) or a geo-membrane. That methodology also serves its purpose for a season or two, not more

***GEFF Tajikistan marketing expert:***

I am sure these explanations are very interesting for our listeners. Please tell us what problems the installers of such systems may usually face?

***GEFF Tajikistan agri-finance expert:***

The users may face many challenges and here are the most common:

For drinking water: under the influence of heat and light, an optimal environment for the formation of algae is formed inside tanks, thereby provoking a need for constant maintenance (cleaning) of the water tank. As an exception in this situation, according to general practice, black tanks or closed ones, also concrete tanks can be considered. Due to its low transmission capacity of UV rays, today these are one of the most optimal solutions for intermediate storage of water. Compared to models, the black and concrete reservoirs do not need constant cleaning maintenance, while other tanks need to be cleaned several times a season. It is necessary that the water storage tanks have a UV protection

layer which protects the water from development of different types of bacteria.

For irrigation: the location of the reservoir is a noticeable problem. One needs to thoroughly assess an optimal space for the reservoir (should it be underground, suspended state or in the rooftop), where it can easily be accessed. On the other hand, a farmer needs to think about the area of the irrigated land. The larger size of the land, the bigger reservoir should be installed, so the bigger space is needed for the reservoir or a tank. The best option is to put or build a reservoir on the hill in order to use gravity, for irrigation.

***GEFF Tajikistan marketing expert:***

In order to help our listeners understand better, as an example, how can a farmer understand the amount of water needed for irrigation of a land?

***GEFF Tajikistan agri-finance expert:***

Usually farmers are very much familiar with the needed water volume, but roughly speaking, on average it is about 5000 cubic meters of water per year per 1 hectare of the irrigated land. This is, so to speak, crude, furrow irrigation. We can provide an average watering table for each crop by request. In water-scarce areas, we highly recommend farmers to connect their reservoirs and water tanks to efficient irrigation systems, such as drip irrigation and sprinklers, which use up to 50% less water during the irrigation process. Installation of such systems have their own nuances and each case needs to be assessed individually, but this is all a matter of technicality, at the end of the day, upon installation, a farmer would be in a win situation.

***GEFF Tajikistan marketing expert:***

Thank you for sharing this information. Could you shed a light on the price ranges of storages and tanks?

***GEFF Tajikistan agri-finance expert:***

Each of the technologies applied requires investment. For prefabricated storages, an average price would be 0.5 - 1.0 TJS per litre of storage, as for concrete reservoirs, varies from place to place, but generally 10,000 TJS - 15,000 TJS for a 20-tonne reservoir. Again, the price is indicative and may vary from district to district and preferences of the farmer.

***GEFF Tajikistan marketing expert:***

It is worth noting, that GEFF Tajikistan supports all types of water storages above 200 liters, by providing expertise and helping to obtain green financing. How can farmers find suppliers of water tanks?

***GEFF Tajikistan agri-finance expert:***

Well the water tanks of various sizes and shapes are widely available in local markets like Sultoni Kabir, Kushoniyon or any other hardware store throughout the country. As for the metal storages, they are mainly second-hand (some firms sell them online or by the word of mouth). The metal-concrete reservoir is relatively easy to construct, each city, town or a village has a specialist who can construct one on a decent price. But since the reservoir is designed to store water, we recommend using advanced materials and good quality cement to prevent any water leakages.

***GEFF Tajikistan marketing expert:***

Thank you! And now, I would like to invite my colleague to share a success story of a Tajik resident invested in a water storage solution which saves the water, while supplying a critical source of portable water to villagers. Mr. Aliakbar Murodaliev lives in a large family of 7 members in a village named Hayoti Nav located in Yovon district. And now Zamira will tell us more about this success story.

***GEFF Tajikistan marketing expert:***

Yes, Hayoti Nav village faced challenges in obtaining suitable sources for drinking water. Water sources in the village were salty. Mr. Murodaliev wanted to look for a solution for his own consumption as well as to support the village in daily activities. Mr. Murodaliev approached one of the EBRD's partner banks for a loan of US \$2,270 and invested in a 4000-liter tank. He planned to transport the water from suitable sources using his tractor. Mr. Murodaliev invested in a tank which can save up to 75 m<sup>3</sup> of portable water annually.

Water storage is a sustainable way to increase water use efficiency with particular importance for end users who have no reliable water supply for living, production and irrigation through their fields.

It is important to mention that the delivery of portable water to the village ensures that the villagers can meet their daily water needs, making this village a suitable place for living.

***GEFF Tajikistan marketing expert:***

Thank you, that is a really interesting and inspiring story.

I would also like to share on how the Green Economy Financing Facility Tajikistan is 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. GEFF Tajikistan supports various innovative green technologies. The program supports gender activities that aim to enhance women and men's equal opportunity to access finance for green technologies. For more information, please visit [www.ebrdgeff.com/tajikistan](http://www.ebrdgeff.com/tajikistan) or find us on Facebook.

This is the fifth episode of the GEFF Tajikistan podcast series that are held on a biweekly basis, thank you to our listeners for the attention.

Lastly, in this difficult time, we would like to encourage everyone to take care, to adhere to the social distancing rules and personal hygiene. Good bye!