

PROSPECTS FOR RESTORING TOKAI FORESTS IN THE KARADARYA VALLEY

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Annotation: The Tokai forests in the Karadarya Valley represent a unique and vital component of the region's ecological landscape, providing biodiversity support, soil stabilization, and climate regulation. Over recent decades, these forests have experienced significant degradation due to overexploitation, agricultural expansion, and water scarcity, leading to diminished tree cover and habitat loss. This study examines current environmental conditions, historical land-use patterns, and socio-economic challenges influencing forest decline. It evaluates restoration prospects by analyzing reforestation feasibility, water resource availability, species selection suitable for arid conditions, and community engagement in sustainable land management.

Keywords: Tokai forests, Karadarya Valley, forest restoration, reforestation prospects, ecological rehabilitation, biodiversity conservation, water resource challenges.

Introduction. The central part of the Fergana Valley—Katlavina—is located at an altitude of 250–300 meters above sea level, and numerous small rivers and streams flow into the Black River from the surrounding mountains. Central Fergana was previously covered with sand dunes. Short-term winds quickly coated the lands west of cities such as Kokand, Shakhrikhan, and Andijan with sand dust. Most of the kumliks served as pastures for livestock in the winter and summer for residents of surrounding villages and districts [1].

The Andijan region, located in the eastern Fergana Valley, is rich in water resources compared to other regions of our republic. The rivers receive their water mainly from rainfall, and there is a lot of annual snowfall. The water from the glaciers occupies. The largest river is the Karadarya.

The Karadarya -Fergana and Eloy ridges are the starting point, and the Blackberry River will yield a harvest from the accession. Therefore, after it, there are only two large tributaries: the flat right tributary and the left tributary, which surrounds the rivers.

Water from the Aravon River, which are further tributaries of the Karadarya, such as the Kogart, Karautur, and Maylisoy on the right and the Akbora on the left, does not reach the Karadarya for a long time because it is used for irrigation. Only excess water from irrigation is discharged into the Karadarya River [1, 2].

The average annual water flow of the Karadarya River near the village of Balykchi is 123 m³/sec, of which 46.4% occurs in March-June, 14.4% in July-September, and 39.2% in March-June. October-February is approaching.

It's known that the Andijan province has humid air, with currents primarily westward from the Karadarya River. The water collection basin was located near Fergana Mountain, and this cross-flow arrangement is expected to reach 500-700 mm. Some years, this will be even greater. That's all. For the Karadarya River, the water collector basin is located every 1 km², with a field flowing at 10 meters per second. More water is coming in [1.3].

The Karadarya river water is full of leaks, on average, it starts around March 18th, most of the water is until June, the full leak ends and on September 18th the correct one is coming.

Karadarya water channels are being used for irrigation. As a result, from Kuyganyor in the past, the harvest was the most heavily irrigated during this period, and water is declining. But despite this, Norin, with the connection in place, has quite a lot of water flows, and this water comes from the land below to the river, and the water temperature in Karadarya is $-1-7^{\circ}\text{C}$ in winter and $+15-20^{\circ}\text{C}$ in summer. The hottest months are July and August.

Karadarya water average annual turbidity is 1.7 kg/m^3 , some years even 4.2 kg/m^3 .

Blur is the most a lot April, August in months flows will pass.

The river's importance in irrigation is great. Water from the resources of the Greater Andijan and Greater Fergana basins is productively used for this purpose. The Andijan River reservoir (water) collection capacity is 1 billion 750 million km^3 . Construction [4].

The current at that time province from the territory of the past Karadarya, Katta Fergana, Katta Andijan canals, Andijansay, Tentaksai and Shakhrikhansay and other flows through 6 billion 753 million m^3 of water per year arrived, of which 3.6 million m^3 of water our own need is spent.

The region's temperate climate, with intermittent periods of precipitation, fosters a high diversity of plant species in the river valley soils. If there are enough producers, the number of consumer species will also be high. This high biodiversity protected the region's climate from becoming too cold or too hot. This created favorable conditions for the growth and development of surrounding agricultural crops[3,5].

Unfortunately, due to the current high level of anthropogenic impact, the last remnants of riverine forests disappeared in 2008.

Given that the negative impacts of climate change, a pressing global problem, are caused by the dramatic decline of forests, the disappearance of the Tokaj forests of the Black Sea also reflects the negative impacts of global climate change in the region and hinders the growth and development of agricultural crops in the region. Restoring the Tokaj forests of Karadarya will help mitigate, if not completely eliminate, the negative impacts of global climate change.

Research is needed on this issue. What results can be achieved?

- it is possible to prevent sudden overheating of the atmospheric air in the region during the hottest period of summer by maintaining the humidity level;
- CO₂ and O₂ gases in the atmospheric air makes it normal;
- air pollution is prevented by capturing dust generated as a result of climate change;
- radically prevents the spread of pathogenic bacteria in the air;
- prevention of degradation and erosion of river valley soils;
- as a result of the increase in the species diversity of plants and animals, the possibility of preserving species listed in the Red Book increases;
- Enriching the forest with medicinal, honey, construction and other raw material plants will expand the opportunities for the development of pharmaceuticals, agriculture, construction and other industries;

The creation of river ecotourism and recreation facilities in the region will create jobs, especially for residents of the coastal zone, which bears the greatest anthropogenic impact.

- creation of conditions for increasing the biodiversity of aquatic organisms.

Anthropogenic impact affects not only the flora and fauna of the Karadarya valley, but also the flora and fauna living in the river basin.

The less negative impacts of climate change in the region, the less permanent snow and ice will melt in the valley's mountains. Desertification in the valley will also slow down.

In conclusion, it should be noted that the restoration of Tokay forests in the Fergana Valley will create an opportunity to mitigate the negative impacts of global climate change in the region and achieve economic benefits.

The most important thing is that reforestation in river valleys is more effective than in other environmental conditions.

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