



MAIN INFRASTRUCTURES OF THE SYRDARYA REGION

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Abstract

The economic social development of Uzbekistan is striving for rapid growth, especially due to reforms implemented on the basis of innovative infrastructure. Infrastructure is a complex system covering many areas, such as the introduction of new technologies, the development of science and education, the expansion of the digital services sector. The development of innovative infrastructure includes, in particular, the development and implementation of high technologies, the creation of digital infrastructure includes, in particular, the development and implementation of high technologies, the creation of digital infrastructure, the commercialization of scientific and technical developments, as well as strengthening cooperation with the private sector economy.

Keywords: Innovation, infrastructure, infrastructure status, infrastructure development, infrastructure development factors.

Introduction

Syrdarya region is a small territorial unit in the central part of Uzbekistan, located along the left bank of the Syrdarya River. The region was founded in 1963 and covers an area of only 4.28 thousand km² (1% of the country's territory). The population density is high – 216 people on average for every 1 km². Geographically, the region borders Kazakhstan in the north, Tajikistan in the south, Tashkent in the east, and Jizzakh in the west. The Syr Darya River flows through the territory of the region, and a part of the Mirzachol (Kokand steppe) is located in this region. Below is an analysis of the infrastructure, natural resources of the Syrdarya region based on the data for the last eight years.



Provincial infrastructure

Transportation infrastructure

Transport communications of the Syrdarya region are developed regions. A highway of national importance passes through the territory, in particular, the highway M-34 on the direction Tashkent-Samarkand crosses the city of Gulistan, the regional center. The length of internal motor roads of the region is 3764 km, while the total length of motor roads makes 5214 km. Of these, about 1600 km are paved (paved) roads. In recent years, special attention has been paid to road repairs – for example, in 2021 alone, 503.6 km of internal roads were overhauled. The length of railway lines in the region is ~172 km. This railroad forms a part of the highway Tashkent-Khovos – Khojand, connects area with capital and adjacent states. At the station Gulistan of railway lines there is an exit to Tajikistan direction (via Khovos) and Kazakhstan direction.

Energy and Communications

In the Syrdarya region there is a strategic facility for the energy system of Uzbekistan - Syrdarya TPP (TPP), which is one of the largest thermal power plants with a capacity of over 3000 MW. This power plant produces a significant part (about 15%) of the republic's electricity. Also on the territory of the region is the Farkhad hydroelectric power plant (SPP). Farkhad SPP is located on the Syrdarya River border with Tajikistan and has a capacity of 126 MW. The energy infrastructure will serve to meet the needs of industry and residents not only in the province but throughout the country.

Communication and telecommunication infrastructure is also developing. In the region there is an access to fiber-optic Internet in all district centers and large settlements. 4G mobile coverage increased by more than 95% in 2023 (according to estimates). Public service centers were opened in Gulistan and the region within the framework of the "e-Government" system.

Water supply and irrigation

Water infrastructure plays an important role in the life and economy of the Syrdarya region. The main source of water is the Syrdarya River, from which **the main channels such as Sokh and Dalin** flow into the region . In recent years,



741 km of new water networks have been laid in the province to improve the drinking water system. As a result, the share of population with centralized drinking water reached 73% in 2020 (in 2016 it was 64%). Irrigation networks are also undergoing gradual reconstruction, as the sustainable yield of agricultural crops depends on the effective management of water resources. There is a problem of water shortage in the Syrdarya region – in the Mirzachol region, the level of grunt waters has decreased, and in recent years reclamation measures have been required. The pace of introduction of water-saving technologies (drip irrigation, etc.) is increasing.

Territorial division and infrastructure of settlements

Syrdarya region consists of 8 districts and 3 cities (Gulistan, Yangiyer, Shirin). Modern central hospitals, palaces of culture, and commercial infrastructure have been built in the center of each district. For example, in the regional center, the city of Gulistan, in 2017-2021, a large-scale improvement work was carried out and new service facilities were commissioned (bank branches, shopping malls, hotels, etc.). Within the framework of state programs for the development of rural infrastructure in 2018-2022, 120 km of internal roads were asphalted, 45 settlements were supplied with clean drinking water networks, more than 30 rural health centers were overhauled (from local government reports, sources:).

In general, in terms of the state of infrastructure, the Syrdarya region has average results in the Republic. The presence of strategic facilities in the transport and energy sector gives the region transit and industrial value, and promotes economic processes. At the same time, there are such problems as the quality of internal roads, losses in the water supply system, to which government programs are being implemented.

Natural resources.

Land and wealth. The main natural resource in the Syrdarya region is **land** resources, in particular, irrigated large fields. The total arable area of the region is ~245 thousand hectares. Of these, more than 115,000 hectares of cotton are grown, ~86,000 hectares are grain (data for early 2000s). The remaining areas are planted with vegetables and melons (4 thousand hectares), potatoes, fodder crops



and gardens. The region is one of the largest cotton growing bases in the Republic, and the share of the Syrdarya region in the total cotton production of Uzbekistan in the early 2020s was about 6-7% (calculations). Grain growing is also an important industry – the region's annual grain harvest is 350-400 thousand tons, ensuring the self-sufficiency of the region. In addition, in recent years, gardening and greenhouse farms have been developed (the warm climate of the Syrdarya and irrigated land allow).

In terms of mineral resources, the region is not so rich in underground resources. There are practically no industrial-scale minerals in the territory - naphtha, gas, hard mineral deposits are not discovered. However, non-metallic building materials (for example, a sand-gravel mixture) are mined from the Syrdarya River valley. In particular, on the banks of the Syrdarya and South Mirzachol canals there are deposits of construction sands, which meet the needs of the construction industry of the region. In addition, loess soil reserves, limestone and gypsum for the production of bricks, a raw material of local importance in the region are found (in small quantities).

Water resources. The main water resources of the region are the Syrdarya River. Part of the river water was collected through the Farkhad hydroelectric power plant dam and diverted to the Sardobinsky reservoir. Unfortunately, in May 2020, a major flood occurred as a result of the overflow of the dam of the Sardobinsky reservoir due to a man-made accident. This disaster led to the temporary evacuation of more than 90 thousand residents, about 21 thousand of cultivated lands were flooded. The damage suffered was quickly eliminated – by the end of 2020, most of the arable land was restored, and by 2021 the Sardobinsky reservoir was repaired and commissioned. The incident showed how important it is to ensure the safety of water infrastructure in the province.

At the moment, the Sardobinsky reservoir consists (volume ~ 922 million m³), as well as several small reservoirs that store water during the growing season and direct crops to irrigation. As noted above, there are problems regarding the efficient use of water resources – the years of water shortage in the Syrdarya River basin (for example, 2018) adversely affected the agriculture of the region. In this



regard, in the region the process of introducing water-saving technologies (drip irrigation, etc.) is underway.

Biological resources. Natural flora and fauna of the Syrdarya region consist mainly of modified landscapes. Instead of dry desert vegetation, there are cultivated areas and plantations in the developed part of the desert. However, in the Syr Darya and some meadows of the region, natural meadow ecosystems are found. In these areas there are reeds, shrub bushes that serve as a habitat for rare animals such as marmots, parrot cats, garlic (especially in the adjacent areas bordering Kazakhstan). There is no specially protected area in the region such as the Syrdarya State Reserve, but nearby - Arnasoy lakes in the Jizzakh region and adjacent swamps on the border with Tajikistan - are important sources of biological wealth.

In general, among the natural resources of the Syrdarya region, the most important are fertile **irrigated land** and **water** resources. These two factors determine agriculture, which is the backbone of the province's economy. Since mineral resources and fuel raw materials are almost nonexistent, industry in the region is less diversified (specializing mainly in the processing of agricultural products) compared to other regions.

The Syrdarya region has demonstrated a trend of socio-economic sustainable development over the past eight years. Although the presence of strategic energy and transport facilities in the infrastructure sector gives the region an important advantage, there are issues that need to be solved in areas such as drinking water supply and the quality of roads.

In regions with a lower share by the overall regional indicator, low per capita GDP is due to lower than average living standards of the population and the severity of the unemployment problem. All this in itself has a negative impact on the investment attractiveness of the territory, budget funds formed at the expense of taxes and other types of mandatory allocations.



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