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GEOGRAPHICAL ASPECTS OF EFFECTIVE USE OF WATER RESOURCES OF THE FERGANA VALLEY

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ANNOTATION

This article discusses water resources and their use in the Fergana Valley. Due to the high demand for water resources in the Fergana Valley, geographical methods and conclusions on the efficient use of water resources in the region are presented.

Keywords: Gocomplex, water resources, surface water, mineral water, agriculture, geographic methods.

INTRODUCTION

In the terrestrial part of the earth's surface - glaciers, snow cover, rivers, streams, temporary streams, lakes, reservoirs, swamps - are called surface waters. This article examines the surface water resources of the Fergana Valley - glaciers, rivers, lakes and their effective use. The Fergana Valley is richer in inland water resources than other regions of Central Asia and Uzbekistan. That is why the valley has long been one of the main centers of agriculture. Inland water resources adequately cover the river-proluvial plains of the Fergana Valley, conical sections, steep terraces, hilly and cross-sectional plains, the Central Fergana Desert, and even hills. irrigated oasis landscapes. Inland waters are an integral, most important part of geocomplexes, but they are actively involved in the formation and development of natural and anthropogenic landscapes. The existence of oasis landscapes and their functional status are also closely related to the internal water source. The geographical location of the Fergana Valley, the location of economic sectors in the valley in certain areas, the demographic situation complicate the ecological situation. Among inland waters, rivers are the most important for human life and economic activity.

LITERATURE AND ANALYSIS

Rivers

The Fergana Valley is rich in rivers and streams. Starting from the ridges surrounding the basin, they supply water not only to the valley, but also to much of Uzbekistan and Kazakhstan. According to I.A.Il (1959), the total number of large and small rivers and streams flowing from the mountain slopes around the basin exceeds 6,500, of which 356 are more than 10 km long; 16 of them are 100-200 km, 14 are 50-100 km, 326 are 10-50 km. Most of these rivers and

streams are in the Alay Mountains, and very few in the Kurama Mountains. All rivers and streams in the valley are divided into two different groups: rivers with a constant flow and rivers with a periodic flow. Rivers with a constant flow are located in the eastern and south-eastern part of the valley, while temporary rivers are located in the western and north-western parts. Such a sharp difference between rivers and streams is due to the climatic conditions of the Fergana basin and the uneven distribution of atmospheric deposits. All rivers in Central Asia, including the Fergana Valley, fall into the category of snow-saturated rivers. The existing water resources of the Fergana Valley are widely used in irrigation and electricity generation. Large hydropower plants (Norin and Kamirobot) have been built in Naryn and Karadarya. Lakes. There are 60 lakes with a total area of 8.2 km2 in the Fergana Valley. Of these lakes, 30 are located at an altitude of 2,500 m, the largest of which are Akhsikentkol and Damkol.

Groundwater

The Fergana Valley has huge reserves of groundwater, which are located in layers between different rocks. These aquifers are located at a depth of several meters to 100-150 m, sometimes up to 300-350 m and even 450-500 m, depending on the relief of the valley, the thickness of the reservoirs. Even from a depth of 500-600 m, quality water is now being produced. In particular, Central Fergana is rich in groundwater and they have strong pressure. Therefore, if there is drilling, it can explode on its own. According to hydrogeologists, the dynamic reserves of groundwater in the Fergana Valley are large - 257 m3 per second. But so far only 13.0 m3 per second has been used. Due to the fact that the groundwater is located in the Fergana Valley (the central part of the Fergana Valley), the depth is up to 500 meters (mountainous and foothill). Groundwater pressure is 1.3 m3 sec. 10-15 m3 per second. For example, the total area of the fresh groundwater zone "Chimgan-Avval" is 17,036 hectares, including 12,247 hectares in Fergana region and 4,609 hectares in Quvasay. It is located in the First Depression, bordered on the north by the Chimgan, Akbilol, Avval and Tolmazor hills, on the south by the foothills of the Alay ridge, and on the west by the Burbalik hill. Its width is 15 km in the center, 6-9 km in the west and 60 km in the northeast. The basin has porous sedimentary layers of Sokh, Tashkent, Mirzachul and partly Syrdarya complexes. The passage of Shahimardon, Isfayram and their many branches through these rocks, as well as irrigation systems and rainwater, created a large reserve of groundwater. The different layers that fill the pool form a single water complex. The largest groundwater occurs in strata up to 100 m thick, including the Mirzachul, Tashkent and partly the Sokh complex. In the Margilansay Valley, especially near the First Village, hundreds of hot and streaming groundwater streams are blocked by shifting from south to north in the mountains and their foothills, as well as in the plains behind the hills. Near the springs there are beautiful, beautiful gardens and parks. And first of all, it is important to create a protection zone to store groundwater. However, the presence of living quarters, teahouses, recreation areas of private plots, etc. in this zone can negatively affect the quality of water resources. Therefore, it is necessary to relocate residential buildings from the groundwater zone, build recreation areas, plant greenery, prevent pollution of spring water and take other measures. most of the groundwater is potable. Therefore, in recent years, large industrial centers, from large settlements to small villages, have been widely used as primary

drinking water and in irrigation. For this purpose, about 2,000 artesian wells were dug and used in the Fergana Valley.

Hot Mineral Waters

Hot mineral waters come from the depths of 1500-3000 m in the Fergana Valley: Chimgan, Polvontash, Khojaabad, Shursu, North Sokh, Andijan, Chartak, Chust, Gortepa, Kyzyltepa. The temperature of thermal groundwater here reaches 40-75 ° C. The amount of minerals is very large (variety). It also contains iodine (Chartak), hydrogen sulfide waters (Chimgan, Polvontash), bromine, sulfide, radon and other substances.

Reservoirs

For the rational use of water resources, a number of reservoirs have been built in the valley: the large Karakum (3.51 billion m3), Andijan (1.75 billion m3), Karkidon (22.5 million m3) surrounding the valley. Reservoirs such as Naiman (39.5 million m3), Kosonsoy (150 million m3), Turtkul (100 million m3), Paan, Bazarkurgan, Nanay, Eski Er, Chortak, Chodak, Varzik. These reservoirs play an important role in river water regulation and irrigated agriculture. However, due to the fact that the Fergana Valley is a closed basin, in recent years the reservoirs have had a serious negative impact on the geo-ecological and general agro-climatic situation.

Channels

The rapid development of land resources available in all regions of the Fergana Valley over the past 50 years has been associated with the construction of large irrigation systems - main canals. Today, the canals surround the Fergana Valley like a spider's web. The Great Fergana Canal (370 km long, water consumption 200 m3 / sec) is of interstate importance (Uzbekistan and Tajikistan). North Fergana canal (length 260 km, water consumption 50 m3 / sec), South Fergana canal (length 93 km, water consumption 93 m3 / sec), Big Andijan canal (length 120 km, water consumption 200 m3 / sec)) sec.), the first stage of the Big Namangan canal (length 62 km, water consumption 61 m3 / sec), dozens of canals named Chust, Akhunboboev, Sox, Shohimardon, Logan form the basis of irrigated agriculture in Fergana. Also, in order to improve the reclamation of the central part of the Fergana Valley, a large collector drainage system - Sox-Isfara (length 36 km, water consumption 48 m3 / sec), Yellow Water (length 52 km, water consumption) was used. created. 50 m3 / sec), middle Kyzyltey (length 49 km, water flow 40.3 m3 / sec), Akhchikkol (length 82 km, water flow 166 m3 / sec) and other large collectors. The rise of irrigated agriculture in the foothills (the waters of the Naryn and Syrdarya rivers are gradually drawn four times), the development of industry in the cities, the arrival of "small industry" in the countryside for domestic needs. As a result of the increasing use of available water resources, the Fergana Valley regions, despite being at the forefront of water resources, are currently experiencing serious water shortages. In conclusion, it should be noted that the area of the Fergana Valley is 1849.0 (100%) hectares: then the lands of the water fund - 52.2 (2.9%) thousand hectares, agricultural lands - 1514.9 (81.9%) thousand hectares. , population lands 46.6 (2.5%) thousand hectares, industrial, transport, communications, defense and other lands 111.8 (6%) thousand hectares, nature protection, health and historical and

cultural significance 1.2 (0.06%) thousand hectares of lands, forests - 73.9 (4%) thousand hectares of fund lands and 48.4 (2.6%) thousand hectares of reserve lands. Transboundary pollution of the valley's water resources occurs in the Isfayramsay River and the Fergana-Margilan industrial network. The main reason for this is the uncontrolled flow of wastewater into the Isfayramsay River, the pollution of groundwater as a result of industrial enterprises, irrigation of lands and the use of various mineral fertilizers. The population of the Fergana Valley as of January 1, 2018 is 9 million 331 thousand people. If a person needs 2 liters of water per day, the population of the valley consumes 18662 thousand liters per day, 559,860 thousand liters per month, 6718320 thousand liters per year. Negative change in the quality of drinking water due to its chemical composition. For example, groundwater pollution occurs in the formation zones of Isfara and Sokh. Groundwater salinity increased from 1.5 g / l to 2.3 g / l. As a result of agricultural activities, the salinity of groundwater increases to 1.4-1.7 g / l, and the hardness to 17.2 meq/l.

CONCLUSION

Rivers, canals, reservoirs and groundwater are dependent on human activities, which reduces their reserves (especially drinking water), increasing their salinity and pollution. It is necessary to determine the average daily consumption of industrial wastewater on the basis of technological data of industrial and agricultural enterprises and their unevenness coefficients. It is necessary to take into account the use of low-water technological processes, the reuse of recycled water, and the efficient use of water due to something like that.

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