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The Role of Natural Geographical Factors in the Specialization and Development of Agriculture in Surkhandarya Region

The Role of Natural Geographical Factors in the Specialization and Development of Agriculture in Surkhandarya Region

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Abstract

This article describes the role and importance of agro-climatic factors of land and water resources in the specialization and development of agricultural sectors in Surkhandarya region.

Key words: agroclimate, land and water resources, solar radiation, positive total temperature, hydraulic structures.

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INTRODUCTION.

Natural resource factors, together with socio-economic resources, determine the location, development and level of specialization of productive forces in a country or region. These factors also have a different impact on the location and development of agricultural sectors in the country. In this regard, the agriculture of Surkhandarya region has its own characteristics.

THE MAIN PART.

It is known that Surkhandarya region is located in the southernmost part of the country. Such a geographical location of the region has an impact on the formation of its economy, including the sectoral and territorial structure of agriculture.

Surkhandarya is located in the relatively south, where it receives a large amount of annual total solar radiation (160 kl. Per 1 cm²), as well as high positive temperatures on sunny days. In addition, a peculiar dry subtropical climate has been formed here along with relief factors. To its west are Mount Kohitang (3137 m), a southwestern extension of Mount Boysun, Mount Boysun to the northwest, Hissar Ridge to the north, and Babatog Range to the east. The southern part of the province is flat and is bordered by the Amu Darya River to the Afghan state. The relief of the region is diverse and complex, which has a strong impact on the formation of soil cover, the use of agricultural machinery, the construction and placement of processing and intangible production facilities.

The relief of the region is morphologically divided into plains, valleys, rivers, hills, foothills and high ridges. They can be conditionally divided into mountainous and flat parts. The plain part of the region includes the Surkhan-Sherabad valley, the Sherabad steppe and numerous mountain river valleys. The Surkhan-Sherabad valley is more intensively developed than the mountain and foothill zone, where the productive forces are "denser".

The valley in question is surrounded on three sides by high mountain ranges. From these ridges begin wet rivers such as Topalangdarya, Sangardakdarya, Khojaipak, Sherabaddarya, which are the source of irrigation of agricultural crops in the region. The construction of a number of reservoirs in the valley, including the South Surkhan, Uchqizil, Oktepa, Topalang reservoirs, a number of main canals, has led to the rapid expansion of agricultural lands and the improvement of land reclamation. The mountainous part of the region is mountainous, with meridional orientations from north to south and several elevations of several parallel shapes. It is surrounded on the north by the Gissar ridge in the latitudinal direction. The highest peak of Uzbekistan - Hazrat Sultan (4643 m) is also located here. The Gissar ridge descends to the south-west and is divided into several branches. They run parallel to each other from north to south.

Mount Chakchar is located in the part of Surkhandarya connected with Kashkadarya region. The ridges to the east of Mount Boysun are relatively long ridges. Mount Boysun is separated from Mount Kohitang by the Iron Gate Corridor formed by the Sherabad River. Kohitang is a southwestern extension of the Boysun Mountain Range, which connects the Amu Darya River through Turkmenistan. To the east of the Kohitang ridge, parallel to it, in a wide area, there are strongly eroded hills (lowlands), i.e. the Kelif-Sherabad ridge. The Surkhandarya Mountains in the east of Mount Boysun extend in a southwesterly direction to the Sherabad River, and in the eastern direction it gradually descends and joins the plain of the Surkhandarya Valley.

In the eastern part of the region there is a waterless, low-lying Babatag ridge of the Gissar mountain range, which stretches from north to south. In general, 70% of the territory of Surkhandarya region is mountainous and mountainous. Here the "mountain coefficient" (in the words of A. Soliev) is much higher than in other regions of the country. For example, in Uzbekistan this figure is 0.21, while in Surkhandarya region it is 0.70. Based on this, the scientist T. Jumaev (1989), who studied the mountains of our country, divides the region into three parts:

"1. The foothill pasture zone is 0.7 mln. hectare or 34% of the total area of the region;

2. Mountain pasture zone occupies 103 thousand hectares or 5% of the total area of the region;
3. The high mountain zone is 144,000 hectares, covering 7% of the total area "[2].

The mountainous areas of Surkhandarya region are the main fodder base for the pastoral livestock sector, and the mountainous areas have favorable opportunities for the development of viticulture, fruit and vegetable growing, and partly cotton growing.

T. Jumaev also divides the administrative districts located in the mountainous part of Surkhandarya region into 2 groups. The first group, or districts consisting of mountains and plains, include Sariosiyo, Denov, Uzun, Oltinsoy, Sherabad, Shurchi. In the mountainous areas of these districts, many specialized horticulture, viticulture, pasture and other farms have been established. In particular, Altynsay district is the only district in the region specializing in viticulture. It accounts for 37% of the total vineyards in the region and 53% of the gross harvest.

Boysun district is included in the administrative districts of mountain and foothill type. The conditions here are favorable for the development of mountain-pastoral animal husbandry, grain-growing, horticulture and viticulture. The district covers 19% of the total fodder area of the region, 25% of sheep and goats.

In the plains of the region there are favorable conditions for the development of agricultural sectors, in particular, irrigated agriculture. For example, the Surkhan-Sherabad valley is surrounded by high mountains from the north, northwest and east, which led to the formation of a peculiar subtropical climate due to the inability of cold air masses to enter here. This made it possible to grow citrus fruits and fine-grained cotton with a relatively long growing season.

Table 1

Climatic indicators of Surkhandarya natural-geographical district

Name of indicators	Unit of measurement	Indicators
January average temperature	degree	14
The average temperature of July	-	28-32
Days when the temperature is below 0 degrees	-	0
Days when the temperature is above +5 degrees	-	290-320
Annual precipitation	mm	133-615
Sum of useful temperature (above 10 degrees)	degree	4700-5500
The sum of useful temperatures throughout the growth of the plant	degree	More than 1,500

The table is based on the data of L.N. Babushkin et al. (1985).

The climate of Surkhandarya region is characterized by low and short winter temperatures, hot and continuous summers. There is almost no precipitation in the region from May to November, sometimes until December. Plain areas, which are considered to be agricultural areas, are characterized by high air and soil temperatures. The average annual temperature here is 14.5-18.0°C. The thermal resources of the plains have made it possible to grow heat-loving agricultural crops, including cotton varieties with a long growing season. The period that creates conditions for the development of heat-loving agricultural crops in the region, ie cotton, lasts an average of 226 to 266 days.

"In the plains of the region, the total useful temperature is 55,000 degrees, and the total useful temperature during the entire growth of the plant is more than 15,000 degrees. The sum of useful temperatures is 4,700 degrees in Boysun, which is higher than 1,200 m, 3,421 degrees in Sherabad and 2,677 degrees in Denau." [1]

In addition to thermal resources, the amount of precipitation and their distribution by seasons are

also important in the cultivation of cotton. In Surkhandarya region, summers are hot and dry, and most of the precipitation falls in the spring. Precipitation falls much less on the flat part of the region. For example, 133 mm in Termez, 360 mm in Denau, 445 mm in the mountainous areas-Boys, 625 mm in the east.

LN Babushkin and NA Kogay divided Surkhandarya district into three natural geographical regions: Lower Surkhandarya, Middle Surkhandarya and Upper Surkhandarya.

The main agro-climatic indicators of the Lower or Southern Surkhandarya natural geographical region differ from the Middle (Central) and Upper (Northern) natural geographical regions. In particular, the average July temperature in Lower Surkhandarya is +31.5; +32 degrees, in other regions it does not exceed +29 degrees, the amount of precipitation is 1.5-2 times less than in other regions, and the total useful temperature is much higher.

Surkhandarya and Sherabaddarya are the largest rivers in the region, which are used to irrigate all arable lands in the region. According to the calculations of V.L.Shults and L.I.Shalatova (1965), the catchment area of Surkhandarya and Sherabaddarya is 8406 sq / km, and the flow modulus is 13.2 m / sec sq / km. All rivers of the region are hydrographically included in the Amudarya basin.

Surkhandarya is formed by the confluence of the Topalangdarya and Karatagdarya rivers. The Topalangdarya is more than twice as wet as the Karatagdarya, with an average perennial water consumption of 52 m³ / sec at the outlet and 23 m³ / sec on the Karatag.

While the region's rivers are experiencing a decline in water consumption in October-February, flooding occurs in March, with water peaks peaking, especially in May. By June, the water will begin to recede. The diversity of such river regimes makes them difficult to use for irrigation.

"By the end of the 1950s, the total capacity of the region's major rivers was estimated at 800 million cubic meters per year for the rational use of water in agriculture. The South Surkhandarya reservoir was put into operation in 1964. Its area is 65.0 sq. Km, the average depth is 12.3 m. a little earlier, that is, in 1960, the water capacity was 160 million. cube. m., area 10.0 sq.km. The Red Reservoir was built. In addition, the volume of 12.8 mln. cubic meters of Degrez and other reservoirs were also built "[3]. As a result, the area under irrigated crops has expanded due to the development of new lands, and the volume of cotton growing has grown on an extensive basis.

According to the use of soil resources for economic purposes, both mountain and foothill zones are divided into plain zone soils. Gray soils (light, simple, dark) are common from the foothills to high mountain areas. In the plains of the region, light gray soils with a humus content of 1-1.5% are more common, and in areas above 500 meters above sea level, ordinary gray soils with a humus content of 1.5-2% are more common. In the south-western districts there are also saline soils and bare gray soils.

In the southern part of the region, in the Khatinrabot and Kattakum massifs, sandy desert soils, alluvial meadow and meadow-swamp soils are distributed in the lower reaches of the Surkhandarya and Amudarya rivers. In the irrigated agricultural zone of the Surkhan-Sherabad valley, gray soils have changed their natural properties and become cultural soils.

CONCLUSION.

Thus, the natural conditions of the region have different effects on the location and development of agricultural sectors. For example, agro-climatic conditions here create favorable conditions for the cultivation of fine-fiber cotton, horticulture and viticulture, which have a longer growing season than thermophilic crops. At the same time, the Garmsel-local "Afghan" wind blowing from the south has a negative impact on the cultivation of agricultural crops and its ecology. Also, under the influence of wind erosion, the reclamation condition of lands deteriorates and accelerates the process of desertification.

It should be noted that the impact of geographical factors on the location and development of agricultural sectors varies. In particular, the role of climate, water and soil resources in the territorial organization of cotton, grain, melons and vegetables is primary, while the role of relief and vegetation in the development of fruit and viticulture, pastoralism.

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