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COMPARISON OF CLIMATE CHARACTERISTICS OF THE SURKHANDARYA BASIN

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ABSTRACT

This article describes the changes in the climate characteristics of the Surkhandarya basin. For this purpose, based on the data of air temperature and atmospheric precipitation recorded at the Termiz, Sherabad and Shorchi meteorological stations in the basin, the indicators of the current climatic period were compared with the basic climatic period.

Reasoning of the topic and its relevance. One of the current global problems is climate change. According to researchers, the factors leading to such a change in climate are diverse, and there are a number of scientific hypotheses on the one hand that contradict each other and on the other hand complement each other. Taking into account these circumstances, it is of great importance from a scientific and practical point of view to study the changes in the regime of air temperature and atmospheric precipitation, which are the main climatic characteristics, and their influence on the changes in the flow of rivers located in the Surkhandarya basin.

Study of the topic. Central Asian climate and issues of its change N.N. Romanov, L.N. Babushkin,O.I. Subbotina, S.G. Chanysheva, I.S. Kim, G.N. Leukhina, O.A. Lyapina, T.L. Veremeeva, E.L. Ilinyak, S.P. Nikulina, E.N. Smirnova, V.E. It was reflected in the scientific works of representatives such as Chub.

Purpose, tasks. Based on the relevance of the topic, the purpose of this thesis is to study climate change and its scope by comparing the air temperature and atmospheric precipitation regimes in the current climatic period with the indicators of the basic climatic period in the Surkhandarya basin. The object of research is the climate of the Surkhandarya basin and its changes. The subject of research is air temperature, humidity and atmospheric precipitation regimes of the region.

Scientific news. The scientific novelty of this work is that until now, the extent to which the flow of rivers in the Surkhandarya basin has changed as a result of climate change has not been fully studied. At the same time, it is not clear to what extent the existing climatic conditions

in the basin have changed. Based on this, we can say that determining how the flow of rivers of the Surkhandarya basin has changed in recent years and the distribution of the contribution of climate change in these changes is the main scientific innovation.

Theoretical and practical significance of research results. From a scientific and practical point of view, climatic information is of special importance in providing meteorological services to national economy production in Uzbekistan. The results obtained at the end of the research can be used as climatic information in meteorological practice.

The rainy season in the Surkhandarya basin is mainly November-May. Most of the annual precipitation falls during this period. We can clarify this through the data recorded at the Termiz meteorological station (Table 1).

Table 1.

Long-term average monthly and annual atmospheric precipitation, mm

(1 – 1961-1990 years. [11], 2 – 1991-2016 years.)

Meteostation	Period	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Year
Termiz	1	23,4	20,2	37,7	26,2	9,3	0,8	0,1	0,0	0,1	3,3	8,8	17,4	147.3
	2	21,9	26,2	31,8	23,2	8,9	1,4	0,2	0,0	0,6	2,6	19,9	19,0	155.5
Sherabad	1	32,3	28,4	46,4	27,6	10,2	0,8	0,5	0,0	0,1	5,4	11,3	23,7	186,7
	2	32,8	29,3	46,4	27,5	11,9	2,6	0,2	0,7	0,3	4,3	17,7	22,4	196,3
Shorchi	1	44,7	39,9	68,7	43,4	16,1	0,8	0,2	0,0	0,5	9,7	18,9	33,9	276,8
	2	41,4	49,9	62,2	41,5	25,1	5,1	0,8	0,1	0,9	6,0	29,1	39,8	301,9

We can see that the increase in the amount of annual atmospheric precipitation in Termez was 8.2 mm, in Sherabad 9.6, and in Shorchi 25.1 mm. It was found that the contribution of the cold half-year to the increase of the amount of annual precipitation at all stations in the half-year section was significant.

Air temperature is one of the main meteorological quantities that describe the weather and climate conditions of a certain geographical location. It is characterized by a number of indicators (annual average, monthly average, decadal average, daily average, extreme temperatures, sum of temperatures, etc.) and is widely used in providing meteorological services to various branches of human activity.

We compare multi-year air temperatures for the current (1991-2016) climatic period with the indicators of the basic (1961-1990) period.

The multi-year average monthly indicators of the air temperature recorded in the current and base climatic periods at the stations located in the Surkhandarya region are presented in Figure 1.

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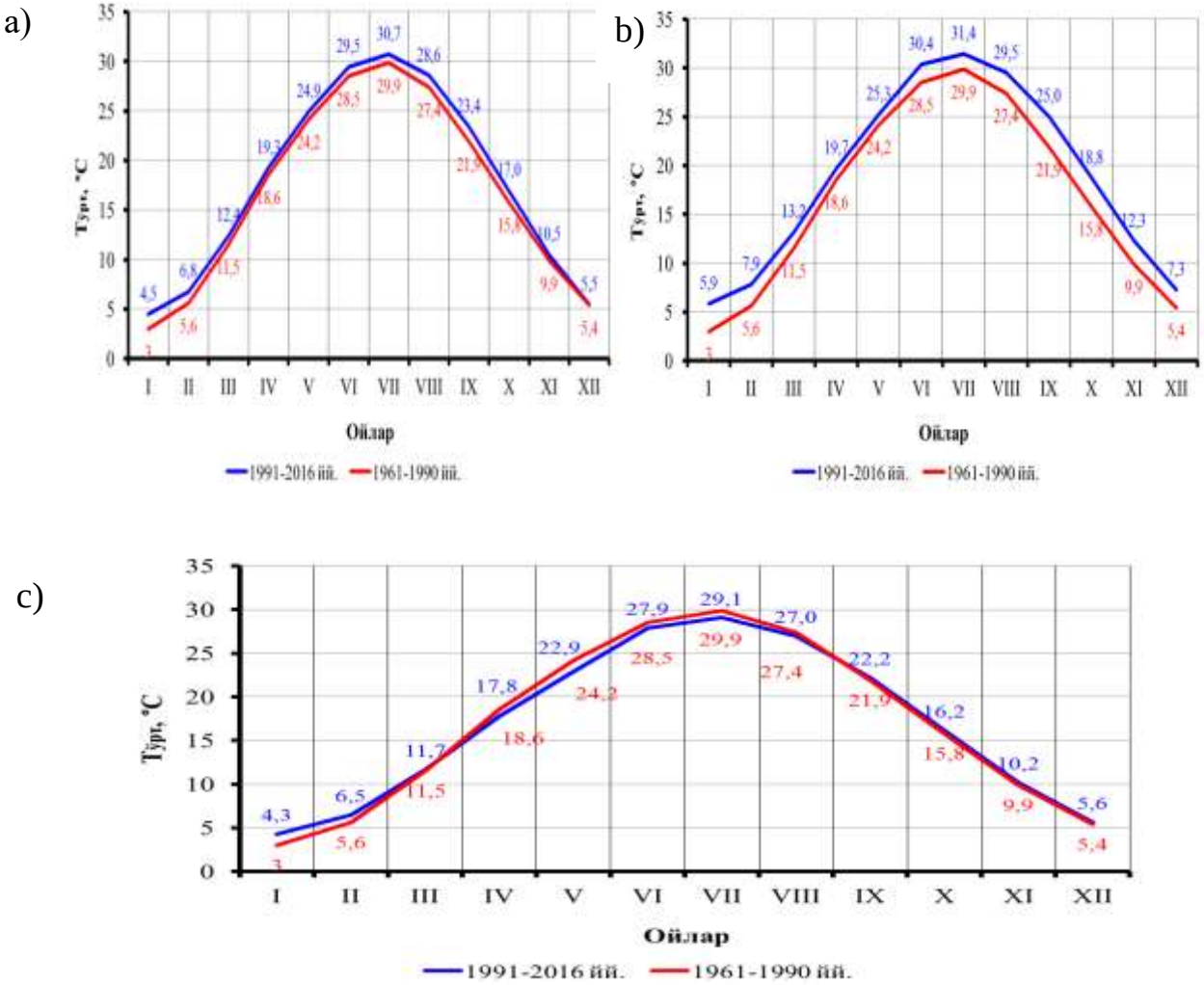

Figure 1. Annual variation of long-term average air temperatures in the base and current climate periods (a. Termiz, b. Sherabad, c. Shorchi).

As can be seen from the data of the picture, the indicators of the air temperatures in the current period have undergone various changes in the cross-section of months and do not differ significantly from the values in the base period.

Conclusion: Summarizing the above, in this study, the climate characteristics of the Surkhandarya basin, that is, the basic and current climatic period indicators of air temperature and atmospheric precipitation, were compared. The data of Termiz, Sherabad and Shorchi meteorological stations were used. Climate characteristics have been enriched with new data. In our next work, we will present the comparison results of this work and its calculations.

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