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CLIMATE CHARACTERISTICS OF THE SAMARKAND REGION

Abstract : This in the article Samarkand region climate characteristics , their to the formation impact doer factors – geographical location , relief , weather masses , sea from the surface altitude , air temperature and precipitation amount based on analysis made . In the article of the area western and eastern in parts climate differences , mountain ranges and desert zones air temperature and to the rains impact open Also , like " Ilono'ti " local winds and their to crops impact more about information given . Graph and maps based on analytical approaches cited climate change human activity with related aspects are also highlighted .

Key words : Samarkand region , climate features , continental climate , weather temperature , precipitation , weather masses , winds , Ilono'ti , relief , mountains , Karnab , Zarafshan valley .

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ХАРАКТЕРИСТИКА КЛИМАТА САМАРКАНДСКОЙ ОБЛАСТИ

Аннотация: В статье на основе анализа сделаны климатические характеристики Самаркандской области, факторы, влияющие на ее формирование – географическое положение, рельеф, погодные массы, высота моря от поверхности, температура воздуха и количество осадков. В статье рассмотрены различия климата западной и восточной частей области, горные хребты и пустынные зоны, температура воздуха и воздействие дождей. Также, как и «Илоноти» местные ветры и их влияние на урожай, дана дополнительная информация. Графики и карты, основанные на аналитических подходах, приведены изменения климата, деятельность человека и связанные с ними аспекты.

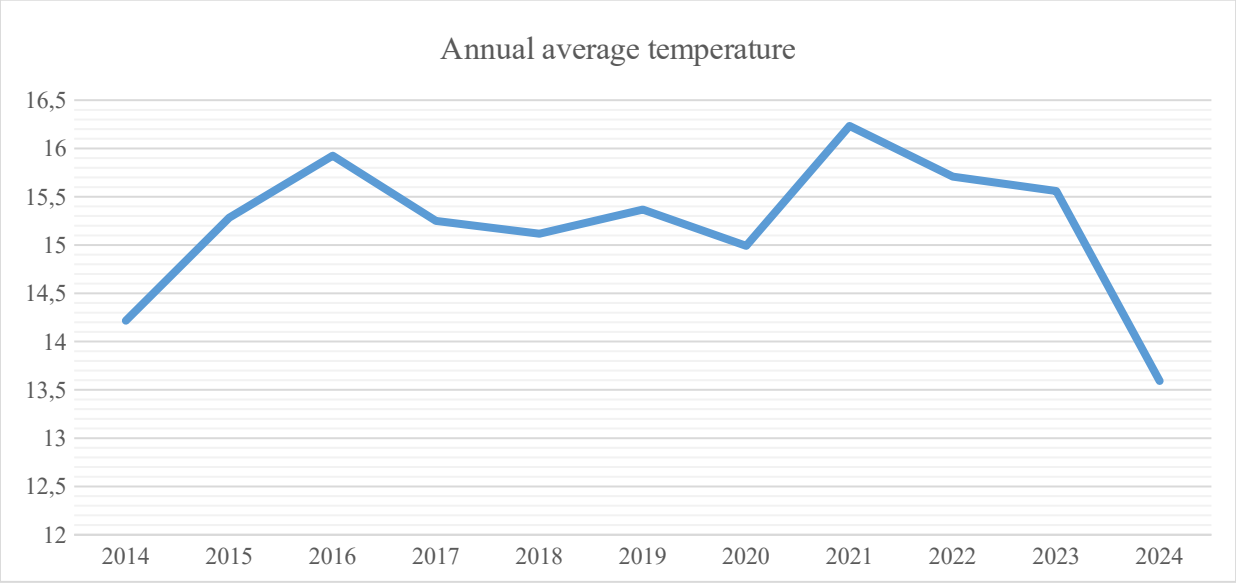
Ключевые слова: Самаркандская область , особенности климата , континентальный климат , температура воздуха , осадки , погодные массы , ветры , Илоноти , рельеф , горы , Карнаб , Зарафшанская долина .

The climate characteristic of the territory of Uzbekistan is formed by the geographical location of the Samarkand region, the geographical structure of the air masses, the height above sea level, etc. Since the Samarkand region is located in subtropical latitudes, the sun's rays fall relatively steeply. For this reason, the plain part of the region receives a lot of heat from the sun's rays. The average annual radiation is 150 kcal/cm $^{2.}$ [Balasheva et al., 1963]

Samarkand region has a continental climate due to its location in the center of the Eurasian continent, that is, its remoteness from the oceans. The annual and daily temperature amplitude in this region is large. In the winter months (January, February, December), there are cases of air temperature drops to -20-25 ^{o} . The average temperature in January in Navoi is -1.0 ^{0} . In Samarkand it is -0.2 $^{0.}$ The average temperature in July is +27, +28 ^{0} , and on the hottest days the temperature rises to +44, +45 $^{0.}$ So the annual temperature amplitude in Samarkand region is 28-30 ^{0} .

Samarkand region during 2014-2024 average air temperature 0 C

Graph 1

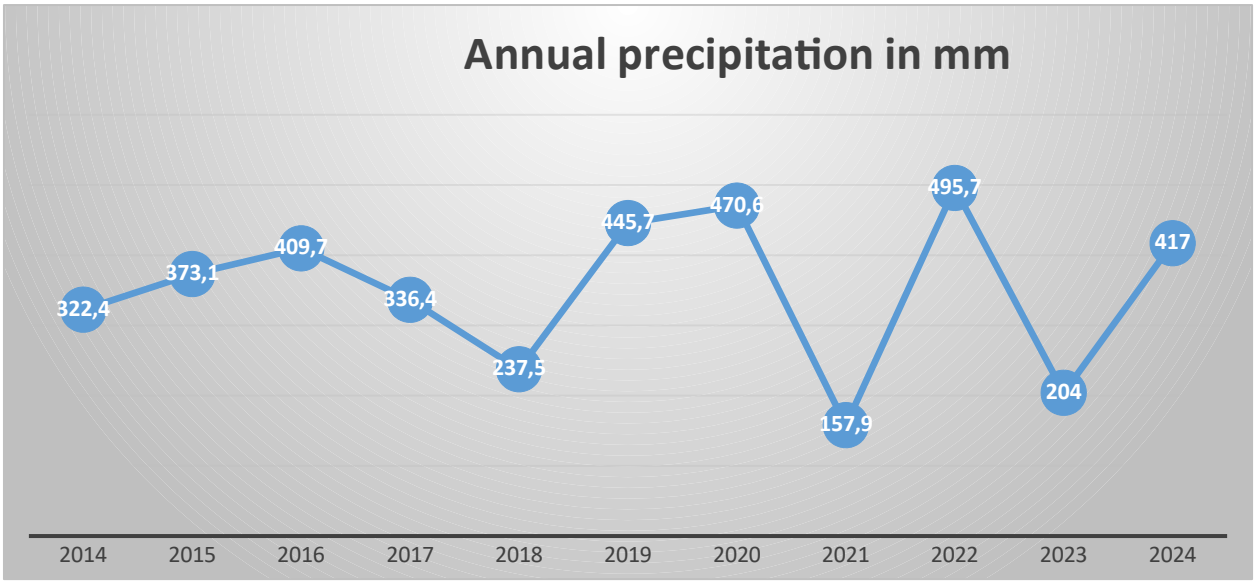


Graphic : Samarkand hydrometeorology center information based on authors by prepared .

The climate of Samarkand region is mainly formed under the influence of mid-latitude and tropical air masses. In the winter months, the region is completely under the influence of mid-latitude temperate air masses. During these months, cold arctic air also invades from the north and east. Thus in cases air temperature sharp decreasing one how many days air cool down goes. Winter sometimes months from the south tropical warm air also suppress enters. At such times, the air warms up and the temperature rises to +10 + 12 $^{0.}$ In the summer months, the territory of the Samarkand region is completely under the influence of tropical air masses. After the formation of hot dry tropical air, the mid-latitude air coming from the north also quickly warms up and changes under the influence of tropical air. Air humidity decreases. In the spring and autumn months, the territory of the Samarkand region is under the influence of the front line between two air masses. In the north average latitudes air mass, south tropical air mass each other side moving Due to the collision of these two different air masses, the weather becomes rapidly changeable, cloudy days become more frequent, and precipitation occurs.

Samarkand region during 2014-2024 average precipitation quantity . mm

Graph 2



Graphic : Samarkand hydrometeorology center information based on authors by prepared .

Samarkand the climate of the region in the formation relief impact large. The

fact that the territory of Samarkand region is surrounded by mountains on the north and south sides and is open to the Kyzylkum desert from the west and the altitude increases to the east has a great impact on the climate. The Kyzylkum desert located in the west gets very hot in the summer months, and the hot air has a great impact on the western parts of the middle Zarafshan. Due to this, the average temperature in July in Navoi is +28.3 ^{0}, and in the city of Urgut located in the east of the region, the average temperature in this month is +24.4 $^{0.\ It\ is\ visible}$ it is clear, the most hot per month two on point temperatures difference 4 ^{0} to enough.

Similarly, the openness of the Samarkand region to the west creates conditions for the inflow of cold air even in the winter months. Therefore, the average January temperature in Navoi is -1.0 $^{0\,C}$, and in Samarkand -0.2 $^{0\,C}$, that is, the difference is 0.8 0 $^{C.}$

Rain in Samarkand region amount also from the west to the east side increasingly The city of Navoi, located in the western part of the region, receives 177 mm of precipitation per year, while the eastern part of the region receives 485 mm. This means that the eastern part of the region receives 2.5 times more precipitation than the western part. This is because the altitude changes from west to east, the height of the mountains increases, and as a result, the rising air flow brings more precipitation.

Human economic activity also affects local climatic elements. The air temperature and humidity of the Zarafshan, Kattakurgan, and Karmana oases differ from the undeveloped desert and steppe landscapes around them. According to the results of observation and measurement, the air temperature over the oases is 3-4 ^{0} lower than in the surrounding deserts, and the air humidity is slightly higher.

Surrounding Samarkand region standing mountain ridges also area climate in the formation big plays a role . As you climb higher in the mountains, the air temperature decreases, and the amount of humidity and precipitation increases. Due to this, dry steppe landscapes have formed in the parts of the mountains above 1400-1500 meters, and mountain shrubs and trees have formed in the higher parts.

Mountains north from the side and south from the side coming air to the streams barrier task When incoming air flows pass over mountains, they form fogs and clouds on the mountain slopes, increasing the amount of precipitation. Between the mountains swamps and valleys air currents intensity with burning corridors This is why strong winds blowing from the Sanzor Valley towards the Samarkand oasis are frequent. The reason for this wind is that in the cool months of the year, air currents from the north first occupy the Mirzachul region. At this time, the Zarafshan Valley, which is located relatively south, is warmer. The pressure of the cold air occupying Mirzachul is greater, and this air moves rapidly south and hits the Nurota Mountains. The air moves through lowlands that pass quickly. The main path for this air flow is the Sanzor Valley.

The air moving rapidly through the valley creates a strong wind, and this wind is called “Ilono'ti” by the local people in the Bulung'ur district. The reason it is called Ilono'ti is because the strong dry wind in spring and winter has a negative effect on crops , quickly dries out the land, freezes the land quickly in autumn, blows away snow in winter, and causes the air to become even colder. That this aspects for local people this The wind is called " Ilano'ti " Similar, but weaker, winds are also observed in the Jam Desert, the Karnab Desert, and some passes in the western parts of the Zarafshan Valley. Weather pressure year during air to the temperature related without changing It stands. Relatively low air pressure the most hot for months right (June, July, August). These months in Navoi city are 967.9 mb, 965.3 mb, 967.8 mb. In the winter months (December, January, February), the wind speed is 981.9, 981.5, 980.5 mb.

Picture 1

Relief map of Samarkand region

Based on data from www.google.com/maps/place

conclusion , it should be noted that the climate of the S amarqand region is complex and unique, and its formation is influenced by geographical location, relief, air masses and human activity. The region's western and eastern parts between air temperature and precipitation in the amount of noticeable differences available . Desert regions and mountain ranges between differences and climatic zones various to develop reason It will be spring . and winter in the seasons blowing strong winds , especially " Ilono'ti ", village farm to the activity negative impact shows . Research this shows that the climate conditions with counted without working release and from nature use efficiency increase possible .

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