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CLIMATIC TYPES OF GEOGRAPHICAL REGIONS AND THEIR IMPACT ON SOIL

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Abstract: The relationship between climate and soil is one of the most important aspects of natural geography. Climate is one of the main factors determining the natural characteristics of Regions, which significantly affects the formation, composition, structure and fertility of the soil. Each geographical area has its own climatic conditions, which determine the characteristics of the soil and thus affect the area's Agriculture, plant world and natural environment in general.

Keywords: geographical regions, soil, meteorological elements, territory, climatic conditions, agriculture, soil properties.

Climate is the average state of air temperature, humidity, precipitation, wind and other meteorological elements observed in a given area over a long period of time. Climate types are mainly classified according to temperature and amount of precipitation. For example, there are types of tropical, subtropical, temperate, cold climates. Each type of climate creates specific conditions in the process of soil formation. Although soil formation depends on many factors, climate is one of the most important. Climate determines the chemical and physical properties of soil. For example, in tropical regions with high temperatures and high rainfall, the soil erodes rapidly, but there the organic matter decomposes rapidly and the soil is low in organic matter. In these conditions, laterite soils of red and yellow color are common. They are characterized by their hard and fuzzy layers. In temperate climates, however, the organic matter of the soil is more concentrated, as temperatures are lower and humidity is moderate. Under these conditions, soil fertility is high, and black soils or chernozems are formed. They are very suitable for agriculture and are suitable for crops such as wheat, corn, and cotton.[1]

In arid climatic regions, however, salinity is common in their composition due to the lack of moisture in the soil. Such areas are rich in saline soils, soils intended for growing melons, watermelons, and other salt-tolerant crops. Also, these areas are low in soil organic matter due

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to insufficient vegetation cover and slow down the activity of microorganisms. In order to more accurately understand the effects of climate on soil, it is necessary to consider climatic elements separately. Temperature speeds up or slows down the chemical reactions of the soil. High temperatures lead to rapid decomposition of organic matter in the soil, which can reduce soil fertility. Moisture, on the other hand, determines the physical condition of the soil, which affects whether the soil is muddy, sandy or porous, depending on the level of moisture. Precipitation can cause the soil to wash away, i.e. erosion. A lot of precipitation will wash away the superficial layers of the soil, which will cause a decrease in soil fertility. At the same time, low rainfall exacerbates soil moisture deficiency and salinization processes.[2]

Wind is also a climatic element that affects the soil. Wind causes soil erosion to occur by moving small particles on the surface of the Earth. Especially in dry and semi-arid regions, wind erosion leads to the loss of superficial layers of the soil. While the climatic types of geographical areas play an important role in the process of soil formation, soil types in turn adapt to the climate of the area. For example, in forested and wooded areas, the soil is richer in organic matter because the vegetation cover is dense and constantly renewed. These soils can often have high acidity levels, as acids form as plant residues decompose. Soil fertility is very important for agriculture. Through the influence of the climate on the soil, it is determined what crops can be grown in which area. For example, in temperate climatic regions, grain crops such as wheat, rye, corn provide good yields. In warm and humid tropical regions, tropical crops such as sugarcane, bananas, and coffee are grown. The geographical location and climatic conditions of Uzbekistan create a variety of soil types. Much of the country falls within temperate dry and semi-arid climate zones, with saline soils and gravelly soils common in these areas. On such soils, it is advisable to grow cotton, wheat and other agricultural crops. At the same time, forest soils and Mountain red soils are found in mountainous areas. Climate change also affects soils. Global warming is causing precipitation to decrease in some areas and increase in others. This condition changes the moisture regime of the soil, enhances the processes of salinity and erosion. As a result, there is a risk of a decrease in soil fertility and a decrease in the yield of agricultural products. In order to protect the soil and develop it sustainably, it is necessary to develop agricultural technologies and soil protection measures suitable for the area, taking into account climatic conditions. For example, methods such as increasing forest cover, properly managing agricultural land, and optimizing irrigation systems are used to reduce erosion.[3]

Conclusion:

In conclusion, the climatic types of geographical areas have a direct impact on the formation, composition and fertility of the soil. Climatic elements such as temperature, humidity, precipitation and wind determine the physical and chemical properties of the soil. This in turn shapes the agricultural opportunities and natural environment of the area. This complex relationship between climate and soil is important for deep understanding and consideration, effective soil management, and conservation. In particular, in the context of global climate change, the issues of sustainable use and protection of soil resources are of particular importance. Thus, studying the relationship between climate and soil is one of the main tasks in the fields of geography, agronomy, and ecology.

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