

**GEOLOGICAL EVOLUTION OF UZBEKISTAN AND THE IMPACT OF NATURAL-
ECONOMIC FACTORS ON HUMAN SETTLEMENT AND EARLY ECONOMIC-
CULTURAL PATTERNS**

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Abstract: This article explores the influence of Uzbekistan's geological and natural-economic conditions on early human settlements and the formation of economic-cultural types. Based on archaeological data, the study focuses on regions with natural resources, springs, mountains, and caves that supported human habitation during the Paleolithic period. Key archaeological sites such as Kolbulok, Selengur, Teshiktosh, and Jarkutan are examined to trace the lifestyle, migration, and environmental adaptation of ancient communities.

Keywords. Geology of Uzbekistan, natural geography, primitive society, archaeological sites, Kolbulok, Selengur, migration, anthropogenic landscape, economic-cultural types.

Introduction. The geological and natural-geographical conditions, natural-economic resources, and ecological potential of the territory of Uzbekistan have served as a favorable environment for human activity since ancient times. Publications from the 20th century, as well as scholarly literature published during the years of national independence, serve as important sources in illuminating the ethnic processes that took place within the anthropogenic landscapes of this region.

As a result of geological development—particularly the paleotectonic movements of the Quaternary period of the Cenozoic era—a complex relief formed, marked by a combination of mountainous and flat areas. These landscapes had a direct influence on the ancient settlement patterns, economic activity, and cultural development of humankind.

This research examines early ethnic processes of the Paleolithic and Mesolithic periods, settlement sites, tools, socio-economic models, and migration routes, based on archaeological monuments found in regions such as the Ustyurt Plateau, Tashkent, Fergana, Zarafshan Valley, Surkhandarya, and others.

Literature Review. In addressing this topic, the research of scholars such as A.S. Kes, M.R. Kosimov, and M.J. Jorakulov provides an essential theoretical foundation. They assessed ancient sites such as Kolbulok, Selengur, Teshiktosh, Jarkoton, Omonkoton, and Takalisoy—studied archaeologically—as the settlement zones of early ethnic groups in Uzbekistan.

Since the mid-20th century, archaeological excavations have scientifically substantiated the idea that the climate, flora, fauna, and natural resources of the territory directly influenced human settlement choices and socio-economic life. Notably, Kolbulok in the Tashkent region, Selengur in Fergana, and the Teshiktosh cave site in Surkhandarya are concrete evidences of this process.

Methodological Foundations. The methodological foundations of this research rely on the synthesis of archaeological, historical, and geological approaches. Based on historical-geographical conditions, archaeological layers, findings, and cultural markers, the study provides a scientific analysis of the habitats, movement, and cultural evolution of ancient human populations.

Through comparative and cross-cultural analysis, the similarities and differences between archaeological sites were identified, and a multidisciplinary approach was used to draw

comprehensive scientific conclusions. As a result, the specific characteristics of ancient settlement processes and the formation of economic-cultural types within the territory of Uzbekistan were thoroughly examined.

Analysis. Information recorded in 20th-century publications and scholarly literature from the period of national independence serves as a theoretical basis for analyzing this section. Due to geological development, the surface structure of Uzbekistan emerged distinctly in various regions—Tashkent, Fergana, Zarafshan, Ustyurt, Surkhandarya, and Khorezm—whose geographical locations and territorial boundaries do not intersect with one another. Their geographic coordinates do not align in a single direction, and their differences in natural environment, climate conditions, flora, and fauna are clearly reflected in the diverse panorama represented on the physical map of our homeland.

The geology of the Earth, particularly during the Quaternary period of the Cenozoic era, shaped Uzbekistan's landscape as a combination of mountainous and flat terrains. The territory of our homeland, comprising Ustyurt, Tashkent, Fergana, Zarafshan, Jizzakh, Surkhandarya, Khorezm, and the Republic of Karakalpakstan, presents a colorful geographical picture. Each of these regions differs in terms of geographic setting, natural-economic resources, climatic conditions, and settlement characteristics of the population.

The geographic and economic potential of these historical-geographical regions is directly connected to towering mountain systems and the natural endowments that sustain them. According to researchers, around 4–3 million years ago, the territory of Central Asia—including the Sarykamysh basin, the southern Aral Sea region, and the area between the Kyzylkum desert and the Aral Sea—was predominantly a flat plain [3, pp. 290–291].

Approximately 71% of Uzbekistan's territory consists of plains, while the remaining 29% comprises mountainous areas and steppes [1, p.7]. Although the plains may appear steppe-like in character, the flora and fauna of these zones have adapted to local conditions. The mountainous parts, in turn, are marked by unique landscapes, resulting in diverse natural scenery. Notably, during the Mindel stage of the Pleistocene glaciation of the Quaternary period, these plains were covered by glaciers.

According to A.S. Kes, the process of human settlement, the utilization of natural resources, and the development of economic models in Central Asia were significantly influenced by environmental factors. He correctly noted that nature played a decisive role in shaping the directions of human activity in this region [8, pp. 171–172].

It should be emphasized that the territories of our homeland differ in terms of geographic coordinates, natural environments, climatic conditions, and economic resource availability. Taking these factors into account, it becomes evident that the natural-economic regions of our country were not inhabited by human communities simultaneously or within a single historical chronology. Data recorded in academic publications confirm that settlements occurred in specific geographical zones at different times.

Undoubtedly, the geographical setting, climate, and anthropogenic landscape of a given territory influenced the daily life, as well as the development of the material and spiritual culture of the population. It can be stated that the natural and economic factors of a region played a defining role in shaping the historical fate of its inhabitants, and that the history that emerged from this context was deeply rooted in environmental conditions and resource potential.

It is reasonable to conclude that ancient communities settled in neighboring territories and gradually developed the economic foundations of their society. During the initial phase of the primitive communal system, particularly in the Early Paleolithic period, the mountains, ridges, and depressions of Uzbekistan—shaped by snow and rainwater—formed natural basins and

catchment areas. These hydrological conditions contributed to human settlement patterns, driven largely by economic necessity.

According to archaeological sources, the Shahpaxti Basin, located in the central part of the Ustyurt Plateau, is described as a region with distinctive geographical conditions. Despite the absence of rivers and reliance solely on natural water sources such as dried wells, it is noted that this area became a significant ethnic space occupied by humans during the Early Stone Age [2, pp. 8–21].

Indeed, the Ustyurt region, located in the northwestern part of Uzbekistan, spans an area of 200,000 km². Although it is an open, arid plain with no permanent rivers, and the terrain consists of depressions and cliffs that depend on natural water supply, the availability of favorable climatic and economic conditions made it possible for early humans to settle and conduct ethnic processes in this region. As a result, people adapted to the environment and sustained a gradual evolution of daily life.

Furthermore, the Ustyurt Plateau is not the only region where such open-type settlements existed. During this historical period, the geographical surroundings of mountains and their ridges, enriched with natural and economic resources, provided additional opportunities for human habitation and the continuation of ethnic development processes.

Results. According to data recorded in archaeological literature, in the northwestern regions of the Tashkent, Fergana, and Zarafshan valleys, populations settled in the vicinity of mountainous ridges and plains near freshwater springs. These areas offered favorable economic resources and ecological conditions, enabling early human communities to establish settlements and carry out initial ethnic interactions.

For instance, in Tashkent region, the Kolbulok open-air site is located in the Chatkal mountain system of the Ohangaron valley. In the Fergana Valley, near the Sokh River and Haydarkon village, in the area of Chashma village, the Selengur cave site was established at an elevation of 2000 meters above sea level, where humans settled permanently and conducted economic activities under challenging natural conditions [5, pp. 5–25].

In the Selengur cave settlement, people utilized the favorable natural-economic and climatic conditions of the surrounding area. Drawing upon the So‘x and Chashma springs, they skillfully adapted to the local microclimate, facilitating sustained ethnic development.

The glaciers that covered the upper mountain zones for thousands of years, along with the regulation of rainfall, contributed to the formation of an economic and ecological environment. Additionally, a unique feature of these mountains was their role in replenishing plains with water, which was crucial in the emergence of economic and ecological systems.

According to M.R. Kosimov, excavations conducted at the Kolbulok spring on the right bank of the Jarsoy, a tributary of the Ohangaron River, revealed 22 cultural layers, the lowest of which belong to the Lower Paleolithic period [7, pp. 7–25].

The perennial water supply in the Chatkal mountains, along with the organic environment and geographical features around Kolbulok, contributed to the long-term continuation of daily life at the site. Researchers have also noted that artifacts from the Uchtut, Ijond, and Vakhsh sites in the Koratog system of the Zarafshan Valley show close similarities to the stone tools used by the hunters of Selengur and Ko‘lbuloq [6, p. 20].

From the earliest stages of the Stone Age, geographical location, surrounding environment, anthropogenic landscape, and availability of tools determined settlement patterns and lifestyle. Consequently, areas located at elevations of 1500–2000 meters, including mountain ridges, caves, and plains with natural springs, were deliberately chosen for human habitation.

The hunters who lived in the settlement sites of the primitive communal system developed a wide variety of material and spiritual cultural forms in diverse natural-geographical environments. As they gradually migrated into neighboring regions, they contributed to the geographical expansion of economic-cultural types. This phenomenon is closely associated with the concepts of “historical-cultural,” “historical-ethnographic,” and the emergence of economic-cultural types as outcomes of human activity.

The hunter communities of the Early Stone Age, having adapted to the specific geographical zones and continuously utilized natural resources, eventually experienced resource depletion, prompting migration movements that intensified during the Mesolithic period.

For example, a group of Kolbulok hunter-gatherers from the Tashkent Valley, moved toward Chatkal Mountain, settling near Obirahmat, Khojakent, and in the Surkhan Basin around sites such as Teshiktosh and Amir Temur caves. These areas were rich in natural resources, possessed a favorable anthropogenic landscape, and offered suitable ecological conditions, which supported a self-contained lifestyle, surrounded on all sides.

Conclusion. In Fergana, as the population of the Selengur hunters increased, a group of individuals settled along the Shahrikhonsoy River, specifically in the Jarqo‘ton settlement, where they made use of local natural and economic resources for their subsistence.

According to M.J. Jorakulov, in the Middle Zarafshan region (present-day Samarkand province), ethnic processes were centered around Omonkoton and Takalisoy caves, as well as Kutirbulok and Zirabulok springs, which served the populations of the Mesolithic period [4, pp. 8–10].

However, the researcher does not provide detailed assumptions about the origin of the hunters who settled near these caves and springs. In our view, Vakhsh hunters residing in the Koratog foothills of the Zarafshan Valley likely migrated to the Middle Zarafshan region in response to population density and established themselves in caves and open sites that reflected the region’s ecological and anthropogenic landscapes.

There, they adapted to the new geographic environment, developed their traditional occupations, and thus contributed to the expansion of the economic-cultural geography. This broader regional system can also include the economic-cultural types of Obirahmat and Khojakent in the Chatkal mountain range, and Teshiktosh and Amir Temur in the Surkhan Basin.

It is worth noting that existing research rarely discusses which regional hunting groups transformed Teshiktosh cave into an ethnic space, and such observations are largely absent from scholarly discourse.

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