

**RELYEF FACTOR AND ITS IMPACT ON THE ECONOMY****Shodiyev Sanjar Ruzukulovich**Head of the Department of Navoi State University,  
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**Abstract:** This article analyzes the relief factor and its impact on the economy. It provides a detailed explanation of how relief affects the planning of human economic activities, as well as the location of the population, transport and infrastructure, and agricultural sectors.

**Key words:** relief, terraces, infrastructure, tectonic relief, erosive relief, Opex, STRM, ASTER, vertical

**Introduction**

The main relief forms on the Earth's surface consist of mountains, plains, ridges and valleys. Mountains are sharply raised, fragmented relief forms with a height of more than 200-500 meters, and examples of these include the Tien Shan and Hissar-Aloy mountains in Uzbekistan. Plains include relatively flat or wavy parts of the earth's surface with a low height (up to 0-200 m), for example, the Turan Lowland. As for ridges and hills, they are small elevations with a relative height of up to 200 meters. Valleys and depressions are lowlands between mountains or depressions formed along river beds. Types of origin of relief: tectonic relief, erosion relief, accumulative relief are divided into parts.

Tectonic relief is the surface features and structures formed by the internal (endogenous) forces of the Earth's crust, tectonic movements. This process creates large relief forms such as mountain ranges, plateaus, depressions, and faults.

Erosion is one of the main external (exogenous) processes that form relief, and is the erosion and reshaping of the earth's surface under the influence of water, wind, or glaciers. It has a significant impact on relief by flattening the relief (surface erosion) or cutting slopes into pieces, forming valleys and ravines (linear erosion).

We can see the impact of relief on agriculture in several areas:

-If we study the impact on agriculture, plains and lowlands are considered very favorable for farming, and in such areas it is easy to use machinery and build irrigation systems (canals, ditches). On the contrary, in the steep parts, it is necessary to build terraces for arable land. "

The Presidential Decree "On additional measures to ensure the continuity of agricultural production and increase the efficiency of land use" (PF-172, 12.09.2025) was adopted. According to the resolution, several procedures were introduced to improve the system of agricultural production on the edges of fields and in front of residential plots, apartments and apartment buildings, and on the internal streets of the neighborhood.

- Livestock farming is mainly suitable for mountainous and hilly areas. In the plains, agriculture is mainly developed, specializing in the creation of a fodder base.

- If we study the impact on industry and mining, 27% of the world's land area is mountainous. Mountainous regions are rich in minerals, and the mining industry is mainly developed in mountainous regions. For example, copper, iron, various precious stones are found in the Andes, Urals, and Himalayas, gold, silver, lead, zinc are found in the California and Tien Shan mountains, and mountains in Africa are mainly rich in diamonds and gold. The bulk of coal and iron ore around the world is located on ancient platforms (for example, the Australian and Russian plains), and 51% of the world's mining areas are accounted for by just 5 countries (China, Australia, the USA, Russia, and Chile). 15.5% of the world's mining production is accounted for by North America, and 5.6% by Latin America.

In mountainous areas, raw material processing accounts for up to 70% of total operating costs (OPEX). Currently, 70% of the world's copper reserves and 40% of bauxite are located in the complex geological and relief regions of developing countries.

- The relief also has an impact on the transport and infrastructure sector, for example, plains are considered very convenient and cheap for building highways, railways, airports, and on average, the cost of building 1 km of highway on a plain is from 1.1 million to 2.5 million worldwide. On the contrary, in mountainous regions, the construction of transport networks and industrial facilities (tunnels, bridges) is 2-3 times more expensive than on a plain and is quite expensive (from 4.2 million to 10 million), and in some European countries (for example, Germany and Austria) due to complex engineering work, costs 25-26 million euros, that is, the more complex the relief, the higher this figure will be. In addition, the risk of natural disasters (earthquakes, landslides, floods) is also higher in mountainous regions. A recent study shows that improving the condition of roads can increase GDP per capita by an average of 3%.

- If we pay attention to the location of the population, the bulk of the population of the Earth's surface lives in areas with favorable relief, such as plains, riverbanks, oases, and in mountainous regions, the density is low. Population settlements usually actively live at a certain altitude above sea level (in the conditions of Uzbekistan, in areas with favorable relief at an altitude of 350-400 m), for example, 65-70% of the world's population lives at an altitude of 0-200 meters. Although these areas do not cover a large part of the Earth's surface, the most densely populated regions (Indo-Gangetic Plain, Great China Plain), 6-7% of the world's population lives at an altitude of 200-500 meters, while 1500-2500 meters is considered to be a medium-altitude mountainous and hilly area, and this region accounts for 2.8-3% of the population. Approximately 80-90% of the world's population lives in areas with flat terrain.

Digital terrain models are recognized as a fundamental spatial dataset needed for many environmental applications. Open-source and global-scale digital terrain models, such as those from the Shuttle Radar Topography Mission (STRM) or the Advanced Terrestrial Radiometer for Terrestrial Emissivity and Reflectance (ASTER), exhibit large vertical errors in complex topography.

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