

## Azerbaijan's water and land resources

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### ABSTRACT

The republic's total land area is 8641500 hectares, of which 55 percent, or 4756500 hectares, is suitable for agriculture. Irrigated land accounts for 16.6% of the total area, or 1,432,600 hectares. Arable land suitable for agriculture accounts for 1,804,800 hectares of the total land balance. It should be mentioned that second-hand Armenian aggressors have taken over 181600 acres of the possible total area of arable land. There are 224,700 hectares of arable land, permanent crops, 11,700 hectares of hayfields, pastures, 2,560.0 thousand hectares, and 45.7 hectares of fallow land. The nation of the yards has a total area of 258,100 hectares (227,600 hectares of arable land), with 1,038,800 hectares of forest plantations. As the population has grown to around 10 million people, land has been used outside of agricultural projects and allocated for the construction of individual buildings and

structures, severely frolicked individual types of soil erosion, and on the other hand, the rise in the groundwater table as a result of the rise in the population has severely frolicked individual types of soil erosion, and on the other hand, the rise in the groundwater table as a result of the rise in the population has severely frolicked individual types of soil erosion. Raising the sea level, mismanaging agro-restorative procedures, producing areas in individual farms, and violating ecologically safe cultivation rules.

**Key Words:** Groundwater; EROSION; Horticulture; Water Resources; Yellow silts

### PERSPECTIVE

The area of arable land per capita is reducing year after year thanks to Ulturn's technology and agricultural machinery. Currently, more than 42.8 per cent of the republic's total area is eroding, with 70-85 per cent in some parts suffering from varying degrees of erosion [5, 6]. One of the most significant causes of water and irrigation-related erosion. Agronomic practises, which dominate furrow irrigation and irrigation in the republic, induce soil erosion notwithstanding any protection of land, agriculture, horticulture, and cattle. However, the country is experiencing severe water shortages. Water resources in the country total 32.5 billion m<sup>3</sup>. M<sup>3</sup> reduces by 23.16 billion in low-water years. Only 30% of the country's water resources are contained within the country, with the remaining 70% flowing via neighbouring countries. It should be noted that despite the economic and environmentally effective irrigation of crops, the sharply RAE International Journal of Research Studies in Agricultural Sciences (IJRSAS) Page | 35 uneven distribution of water in the country is not primitive, traditional, or pouring carried

out by irrigation. The study's findings found that traditional irrigation methods (furrows and overlaps) are used to water up to 96% of irrigated land, with surface methods accounting for the remaining 5%, while irrigated fields are watered utilising progressive water-saving low-intensity irrigation systems. As a result, the level of groundwater in the fields is rising every day. Indeed, underground water and arable land sufficient for roughly 1000 thousand hectares were salinized in several regions, posing a serious threat to the country's ecological equilibrium. Currently, more than 53 thousand hectares of seeded areas in the Kura-Araks lowland are in grave danger of becoming extremely salty soils as a result of floods, with homestead plots of the inhabitants of these Azerbaijani regions abandoning the crop.

The findings of the monitoring studies revealed comparable indicators for water supply in three Transcaucasian states: Georgia, Armenia, and Azerbaijan, each with 70, 25, and 10 billion km<sup>3</sup> of water resources, respectively. These countries' yearly per capita water resources are 11000, 3000, and 1500 m<sup>3</sup> per person, respectively.

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According to the research, Azerbaijan's annual water resources per capita are 2 times lower than Armenia's and 7 times lower than Georgia's by 2020. Water resources are thought to be very significant in the growth of each country's economy, particularly in the industrial-production area, and agriculture is a vital part of existence. In Azerbaijan, the extent of soil degradation through erosion and the measures used to combat it Soil Erosion via Erosion Degrees: Degree 1 - weak erosion - manifests itself primarily as a surface washout that is not noticeable to the naked eye. Its traces, which take the shape of little ruts and sediments, are easily aligned throughout the agro-technical soil processing process. Moderate erosion, which presents itself in the form of ruts, alters the level of humus in the soil by reducing its amount, and deteriorates the physico-chemical properties of soils. The relief's creation is unaffected by this procedure. Degree 3 medium erosion - degrades the arable-humus layer extensively, even reaching the source rock. As a result of the ravens and grooves, which are many and deep, they cannot be repaired. resulting in the development of undulating slopes Degree 4 - severe erosion - damages the entire soil profile, forming ruts and grooves that are rapidly penetrating the parent rock layer. As a result, an erosion landscape emerges, with a distinctive breakdown of the soil cover and the creation of ravines. Degree 5 - severe erosion - obscures the entire soil profile, as well as a portion of the foot. This results in significant soil fragmentation, the formation of a complex network of gullies, and the conversion of agricultural areas to junk land. Wind Erosion's Degrees of Soil Destruction: Degree 1 a modest blowing from the soil of the best and most valuable colloidal, clay causes weak erosion. dust particles and clay.

In comparison to weak erosion, moderate erosion begins to limit, to some extent, the humus of the soil due to the blowing out of a large number of mineral and organic components Degree 2 moderate erosion begins to limit, to some extent, the humus of the soil due to the blowing out of a large number of mineral and organic components. Degree 3 due to a substantial number of mineral and organic particles, average erosion can considerably diminish humus content and cause crop damage. Severe erosion causes changes in the soil profile at degree. These wind-blown soils have a significantly reduced level of humus, which accumulates in wind deposits.

As a result, a map of erosion variables with the same name was created for the study area using topographic maps at a scale of 1: 50,000. The following gradations were used for generating a map of surface slopes.

With the determination of the excess watersheds above the riverbeds and their tributaries, as well as significant ravines and suhdalis, maps of the depths of local erosion bases were created. The following gradation was used to create this map: 0-50 metres, 50-100 metres, 100-150 metres, 150-200 metres, 200-250 metres, 250-300 metres, 300-400 metres, 400-500 metres, and more than 500 metres. The slope exposure map is divided into five categories based on topography: northern, north-eastern, north-western, eastern, southern, south-east, and south-west exposure. The classification of SS Sobolev was used in soil erosion research. The SS Sobolev classification (described in IF Sadovnikov's book) was utilized to conduct soil-erosion research.

Based on this classification, the soils were classified as follows in terms of degree of erosion: Undiluted soils all genetic horizons are

present, and no degradation is detected.

Weakly washed soils just half of the humus horizon A is washed away, resulting in jet erosion on the soil surface.

More than half of the genetic horizon A is missing in medium-washed soils.

Soils that have been heavily washed - the horizon A has been fully wiped away, and the horizon B has partially overlapped. Repairing degraded soils in Azerbaijani pastures. The Republic of Korea's territory Azerbaijani fields' deteriorated soils are being improved. The Republic of Azerbaijan's territory include the Greater and Lesser Caucasus regions, the Talysh zone, and the Kura depression in the eastern Transcaucasus.

The republic's overall size is 86.6 thousand km<sup>2</sup>, with plains accounting for around 40% of the land area and foothill and mountainous terrain accounting for the remaining 60%. The republic's climatic conditions are various. As a mountainous country, the republic also has huge plains and valleys, as well as a variable RAE due to the relief surface's diversity.

The system of superficial hayfield and pasture improvement is to enhance the water, air, and feeding regimes, care for the grass stand, and keep fodder in a state of economic value for the longest time possible. In meadows, when 20-25 percent of good forage grasses are kept in the grass stand, surface enhancement is recommended. A superficial improvement on hayfields and pastures with poor herbage will not have the desired effect, and a complete investigation should be conducted. The findings of the monitoring studies revealed comparable indicators for water supply in three Transcaucasian states: Georgia, Armenia, and Azerbaijan, each with 70, 25, and 10 billion km<sup>3</sup> of water resources, respectively. These countries' yearly per capita water resources are 11000, 3000, and 1500 m<sup>3</sup> per person, respectively. According to the research, Azerbaijan's annual water resources per capita are 2 times lower than Armenia's and 7 times lower than Georgia's by 2020. Water resources are thought to be very significant in the growth of each country's economy, particularly in the industrial-production area, and agriculture is a vital part of existence. In Azerbaijan, the extent of soil degradation through erosion and the measures used to combat it Soil Erosion via Erosion Degrees: Degree 1 weak erosion - manifests itself primarily as a surface washout that is not noticeable to the naked eye. Its traces, which take the shape of little ruts and sediments, are easily aligned throughout the agro-technical soil processing process. Moderate erosion, which presents itself in the form of ruts, alters the level of humus in the soil by reducing its amount, and deteriorates the physico-chemical properties of soils. The relief's creation is unaffected by this procedure. Degree 3 - medium erosion - degrades the arable-humus layer extensively, even reaching the source rock. As a result of the ravens and grooves, which are many and deep, they cannot be repaired. Ravens and grooves are plentiful, deep, and cannot be repaired throughout the processing process, resulting in undulating slopes.

One of the Program's sections is entirely dedicated to water policy concerns. At this time, ensuring the country's water security by enhancing water management and consumption efficiency is vital for the region's long-term growth. My goal in this study is to examine Azerbaijan's water management. The degree of effectiveness of the

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institutions and the tariff structure, in particular, are used to provide recommendations for future development. I believe that public policy should be focused on discovering the variables that lead to effective water resource management, uncovering various laws, and assuring long-term development. Furthermore, I consider that an integrated approach to urban water supply, irrigation demands, industry, water tariffs, and secondary uses, as well as the impact of water on export potential, is critical to achieving long-term management. Finally, I looked at transboundary water cooperation in the context of regional partnerships such as Azerbaijan, Russia, Georgia, Armenia, Iran, Azerbaijan-EU, and Azerbaijan-UN.