

SCIENTIFIC CONCEPTIONS OF DECISION OF DIFFERENT AGRO PROBLEMS ARE IN AZERBAIJAN

Prof. RANS Z.H. Aliyev

Institute of Soil Science and Agrochemistry of NAS of Azerbaijan

Email: zakirakademik@mail.ru

1. AN ESTIMATION IS THE STATE OF WATER-LAND RESOURCES OF AZERBAIJAN

The general area of republic makes 8641500 hectares of earth, from that 55 percents him т.е 4756500 ha, made suitable for agriculture. or a 16,6 percent from a general area or that 1432600 ha, makes irrigable earth.

1808400 hectares from general balance of earth behave to the number of croplands suitable for agriculture. It should be noted that 181600 ha from that present general area of croplands are under occupation used by the Armenian aggressors. 224700 ha of croplands, long-term cultures, 117600 ha of haymakings, pastures 2560,0 thousand, 45,7 hectares of bed districts hectares. There is 258100 ha (227 600 ha arable) on the country of courts, 1038800 ha is included in stakes districts of forest

In connection with the increase of population, now that is counted near 10-и million persons, earth using under out of agricultural projects and distinguished under building of separate building and building, strongly developing separate types of erosion of soil, and on the other hand, getting up water-table as a result of getting up in the increase of sea level, not correct conduct of agromelioration events floorspaces in separate economies, applications with violation of rules ecologically without dangerous technology of till of cultures, and agricultural technique, area arable per capita year-to-year grows short.[1,2,4]

If distinguished on the stake of one man in 1959 made 0,36 ha of croplands, this index was in 1970 0,23 ha, in 1979 0,21 ha, at the same time it in 2006 went down to 0,155 ha [3].

60% territories of all territory are located to mountain part of republic. From by influence of natural and anthropogenic factors here, it is possible to meet in all types of erosion [5]. On results conducted by us numerous, research in area of study of conformity to law of development of problems of degradation of earth, and ландшафта it was set in separate regions,, that process of erosion very wide widespread (especially in mountain locality) in a country.

Presently, more than 42,8% to all territory of republic, 70-85% in some regions suffer from the different degrees of erosion [5,6]. One of the greatest factors of water and irrigational erosion.

Dominant in republics by duration полива on furrows and by a fall-over, agrotechnical measures, regardless of some defence of earth, agriculture, gardening and stock-raising cause erosion of soil [2,7].

At the same time in a country, runs into sharp terms of shortage of water.

The water resources of country are made by 32,5 млрд.м3. In shallow years, this number diminishes to the amount of 23,16млрд. м3.

Volume of water resources in a country to conduct only 30%, and other 70% stream through nearby countries [4]. It should be noted that in the conditions of permanent shortages of water, uneven distribution of water is sharp in a country, in spite of economic and ecologically effective irrigation of agricultural cultures, not primitive, traditional or driving comes true by the method of irrigation.

By research results, it is educed, that to 96 % to all territory of republic, 70-85% in some regions suffer from the different degrees of erosion [5,6]. One of the greatest factors of water and irrigational erosion.

Dominant in republics by duration полива on furrows and by a fall-over, agrotechnical measures, regardless of some defence of earth, agriculture, gardening and stock-raising cause erosion of soil [2,7].

At the same time in a country, runs into sharp terms of shortage of water.

The water resources of country are made by 32,5 млрд.м3. In shallow years, this number diminishes to the amount of 23,16млрд. м3.

Volume of water resources in a country to conduct only 30%, and other 70% stream through nearby countries [4]. It should be noted that in the conditions of permanent shortages of water, uneven distribution of water is sharp in a country, in spite of economic and ecologically effective irrigation of agricultural cultures, not primitive, traditional or driving comes true by the method of irrigation.

By research results, it is educed, that to 96% of the irrigated land is watered mainly by traditional irrigation methods (furrows and inlet) by surface methods and the rest up to 5% - while in the irrigated fields it is watered using progressive water-saving low-intensity irrigation systems. Therefore, in the fields, the groundwater level rises every day. In fact, in a number of areas, groundwater, arable land, suitable about 1000 thousand hectares were subjected to salinization, which caused a particular danger in violation of the country's ecological balance.

Currently, over 53 thousand hectares of cultivated areas of the Kura-Araksin lowland endured great danger as highly saline soils according to the flood results, where household plots of the population of these regions of Azerbaijan left the crop rotation, where a thorough washing of those soils from life-threatening salts of various kinds is required. [2,4,6].

The results of monitoring studies revealed comparative indicators for water availability, of 3 Transcaucasian states: Georgia, Armenia and Azerbaijan, a follower of water resources of 70, 25 and 10 billion km³, respectively.

The annual per capita water resources in these countries are as consistent 11,000, 3,000, and 1,500m³ / person. According to a study in 2020, annual water resources per capita of Azerbaijan are in turn 2 times less than in Armenia and 7 times less than in Georgia.

It is believed that water resources are very important in the development of the economy of each country, especially in the industrial-production sphere, and in agriculture is a key element of life.

2. DEGREES OF SOIL DESTRUCTION BY EROSION AND METHODS FOR ITS CONTROL IN AZERBAIJAN

Degree of soil erosion destruction:

Grade 1 - slight erosion - occurs mainly in the form of a surface wash invisible to the eyes. ITS traces, in the form of small potholes and sediments, are easily aligned in the process of agrotechnical processing of soils.

Grade 2 - moderate erosion - manifests itself in the form of potholes, changes the level of humus in the soil, reducing its amount, and worsens the physicochemical properties of soils. This process does not affect the formation of the relief.

Grade 3 - medium erosion - intensively destroys the passive-humus layer, reaching even the parent rock. Potholes and grooves are numerous, deep and not amenable to correction as a result of the processing process, resulting in the formation of undulations of the slopes.

Grade 4 - severe erosion - destroys the entire soil profile, potholes and grooves are formed, entering more and more deeply into the layer of the parent rock. As a result, the so-called erosion landscape appears with a characteristic dissection of the soil cover and the formation of ravines.

Grade 5 - very strong erosion - erodes the entire soil profile, along with part of the foot. This leads to severe fragmentation of the soil cover, the creation of a dense network of ravines, and to the transformation of agricultural land into waste land.

Degree of soil destruction by wind erosion:

Grade 1 - slight erosion is caused by slight blowing from the soil of the best and most valuable colloidal, clay and dust particles. Blowing it practically does not affect the condition of the soil;

Degree 2 - moderate erosion already begins, to some extent, to limit soil humus due to the blowing of a large number of mineral and organic components, compared with weak erosion.

Grade 3 - medium erosion can significantly reduce the humus content due to the significant amount of mineral and organic particles and cause damage to crops.

Grade 4 - severe erosion leads to changes in soil profile. These soils are subject to strong blowing, have a clearly reduced level of humus, which accumulates in wind deposits.

Grade 5 - very strong erosion leads to the formation of dunes. Heavily eroded lands must be completely covered by forests.

Such ideas became the basis for the development of a program to protect land from erosion degradation for the whole country. Large-scale accounting was carried out only in those places for which plans or projects for the development and organization of the economy are being developed. This model does not account.

RESEARCH METHODOLOGY

Degree of soil destruction by wind erosion:

In order to study the areas of distribution and the intensity of the development of erosion processes, we used field and laboratory research methods.

The phenomenon of soil erosion and the areas of its distribution are comparatively geographic, stationary and semi-stationary methods.

The decisive role of the terrain in the manifestation and development of soil erosion is well known. The most pronounced factors of the nature of mountain regions are the surface slope, the depth of local bases and the exposure of the slopes. Therefore, on the basis of topographic maps on a scale of 1: 50,000, a map of the same name erosion factors for the study area was compiled.

When compiling a map of surface slopes, the following gradations were adopted: 0-30; 3-50; 5-70; 7-100; 10-150; 15-200; 20-250; 25-300; 30-450; and more than 450.

For the distribution of land on slopes over the figures used the indicators of the average weighted value of the slopes proposed by M.N. Zaslavsky (1979)

$$Z_{hsr.vzv} =$$

where $Z_{hsr.vzv}$ - average weighted value of slopes

$i_1; i_2; i_n$ - the slope of the selected contours,

$s_1; s_2; s_n$ - area of the selected contours, % of the total area.

A depth map of local erosion bases was compiled to determine the excess of watersheds over river beds and their tributaries, as well as large ravines and depressions. To compile this map, the following gradation was adopted: 0-50; 50-100; 100-150; 150-200; 200-250; 250-300; 300-400; 400-500 and more than 500 m. [5]

The map of the slope exposition was compiled on a topographic basis and highlighted: north, northeast, northwest, east, south, south-east, south-west exposure.

When conducting soil erosion studies, the classification of S.S.Sobolev was used (a description of which is given in the book of I.F.Sadovnikov 1954). Given this classification, soils according to degree of erosion were distinguished as follows:

- a) Unwashed soils - there are all genetic horizons, destruction is not observed;
- b) Weakly washed soils - no more than half of the humus horizon A is washed out, formation of streaky erosion is observed on the soil surface.
- c) Medium-washed soils - more than half of genetic horizon A is absent.
- d) Highly washed away soils - horizon A is completely washed away, and horizon B partially passes.

3. IMPROVING THE ERODED SOILS OF PASTURES IN AZERBAIJAN

The territory of the Azerbaijan Republic is located in the eastern part of Transcaucasia, this includes the regions of the Greater and Lesser Caucasus, the Talysh zone, and the Kurinsky Depression. The total area of the republic is 86.6 thousand km², about 40% of the land area is plains, the remaining 60% is foothill and mountainous territories.

The climatic conditions of the republic are diverse being a mountainous country, the republic at the same time has vast lowlands, valleys and, due to the diversity of the relief surface, has a diverse climate. The main Caucasian ridge protects the republic from the invasion of cold air masses from the north.

Depending on the altitude, climatic conditions vary. With the rise in the mountains, the average air temperature drops. Of the 11 under the types of climate established on the Globe, we have 9 under the types of climate, there is no savannah climate and tropical rainforest climate.

Typical soil types are mountain meadow soddy soils, further mountain forest soils, gray-brown in the foothills and foothill plains are common in the arid zone, gray-brown, in the Talysh zone of yellow earth.

Despite the small area, the republic has a variety of natural conditions and rich natural resources. One of the natural resources in Azerbaijan is pasture. The area of pastures in the republic is 22.3% of the total area.

Summer pastures make up 621 thousand hectares, winter pastures 1.5 million hectares, village pastures and hayfields make up about 1 million hectares.

It is known that the Republic of Azerbaijan has long been distinguished by the livestock industry.

Our land with rich natural pastures and pastures located in the alpine zones is a natural resource. However, due to various circumstances, including soil erosion, these natural fodder resources lose their potential fertility. One such circumstance is soil erosion.

Erosion is destruction, erosion, as the geological term is destruction of the upper fertile soil layer under the influence of wind and water.

The upper layer of the earth's crust as a result of processes occurring in nature, undergoes various changes. This process can proceed as a normal natural phenomenon, also intensively as a result of anthropogenic stress. In any of 2 cases, the topsoil is washed away.

Regardless of the type of erosion, the most developed fertile upper accumulative horizon is carried away.

Together with water flows and the solid phase of the soil, nutrients with a finely dispersed fraction are carried away and, depending on the degree of washing, the damage caused by erosion is different. It should also be noted that along with water erosion, the manifestation of wind erosion — deflation — is also great.

Wind erosion is intensively manifested in the arid zone, where a dry climate, enhanced wind regime, and insignificant precipitation contribute to the degradation of vegetation.

The intensity of the development of wind erosion compared to water is low. However, the damage caused by wind erosion to agriculture is colossal.

Wind erosion, on the one hand, contributes to the blowing of the soil, on the other hand, the accumulation of particles in the form of a hill, moving sands cover vegetable and melon crops, roads, construction sites, squally winds tear off the roofs of houses.

Natural fodder land located on eroded slopes has low productivity.

Scientific concept of solving various problems in Azerbaijan Agro The system of surface improvement of natural hayfields and pastures is to improve one, air and food regimes, care of the grass, the longest time to keep the fodder land in a state of economic value.

Surface improvement is advisable in meadows, where 20-25% of valuable forage grasses are preserved in the grass. In connection with the increase of population, now that is counted near 10-11 million persons, earth using under out of agricultural projects and distinguished under building of separate building and building, one, air and food regimes, care of the grass, the longest time to keep the fodder land in a state of economic value.

Surface improvement is advisable in meadows, where 20-25% of valuable forage grasses are preserved in the grass.

On hayfields and pastures with the worst grass stand, surface improvement does not give the desired effect, and a radical study should be carried out on them.

On hayfields and pastures with the worst grass stand, surface improvement does not give the desired effect, and a radical study should be carried out on them.

Literary Sources

- 1) Aliyev Z.H. Aerospace monitoring of soil cover dynamics // Aerospace methods in soil science and their use in agriculture. - M.: Nauka, 1990. -- S. 55-60.
- 2) Aliyev B.H., Aliyev Z.H., Aliyev I.N. and. Problems erosion in Azerbaijan and Said Russian ways of its solution. IZD-vo Zia-CPI "Nurlan". Baki 2003. 80 səh.
- 3) A.B. Jafarov Agroecological assessment and grouping of pasture lands of Azerbaijan, Sat. scientific papers of the Research Institute of GTiM 29th volume of Iflu-2009 p. 133-139
- 4) Vinogradov B.V. Aerospace monitoring of ecosystems // M.: Nauka, 1984. 320
- 5) V.E. Flint, etc.-conservation and restoration of biodiversity. M.: IZD. Scientific and educational-methodical Center, 2002, 282 p.
- 6) Zaslavsky M.N. Erosiography, Moscow, Higher School Publishing House, 1963 p. 212.
- 7) Mamedov G.Sh. Land reform in Azerbaijan: legal and scientific-environmental issues. Elm Publishing House, Baku-2000, p. 372.