

# Alternative water sources performance in Azerbaijan

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### ABSTRACT

Geographic location, geological-geomorphological, and soil-climatic characteristics of Ganja-Kazakh array coordinates, and kagrizs capabilities to deliver fresh water to the people are all discussed in this article. The need for graduate sensors to work as

artificial companions on the land. This necessitates the use of dependable overland express-methods and technical receiving facilities for data on ground moisture and temperature. Such facility approaches must provide for the reception of data in deep cut (though on the depth laid root system of the plants) and area agricultural fields.

**Key Words:** *Freshwater lakes; Groundwater; UKRNIGMI; Tunnel*

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### COMMENTARY

The significance of Freshwater makes up around 2.53% of the world's surface area, with the majority of people sharing rivers, freshwater lakes, glaciers, and groundwater. Given the shortage of fresh water in the tropical and subtropical zones, it was determined that alternate methods of providing crops and fresh water to the populace were necessary.

The Republic of Azerbaijan has a wide range of water resources, as well as education and distribution of those resources, all of which are hampered by the complexity of natural conditions on its land. The sedimentary rocks of the Mesozoic layers the current lithological epoch provide abundant resources of economic, kagrizy, drinking, and artesian waters in flat places. Underground waters can be discovered in contemporary sediments almost everywhere. These waters are slightly deeper in the foothill areas due to active water exchange. Their mineralization is 1 g/l, with a calcium bicarbonate chemical composition. Anthropogenic, Absheron, Akchag ancient rocks (Ganja, Gazakh, Guba-Khachmaz, Garabagh, Shirvan, etc.) and Sarmatian deposits include artesian basins with strong pressure on inclined portions (Nakhchivan Autonomous Republic). Their mineralization is around 1 g/l, and their chemical composition is calcium bicarbonate. They are employed in water delivery for cities and villages, as well as plot irrigation. The increasing population of the republic creates issues in terms of provisioning their needs, which includes agricultural output.

It is well known that irrigation-ameliorative construction has been

carried out on a large scale in Azerbaijan since the 1950s, with a large range after 70 years. Water economy construction rates have risen year after year.

As here's what's happened: - Irrigated area grew from 1200 thou ha to 1400 thou. ha; - total water withdrew increased to 9,8 mln. m<sup>3</sup>; an area enveloped collector-drainage by network bringing before 400 thou. ha; - total water withdrew increased to 9,8 mln. m<sup>3</sup>; total water withdrew increased to 9,8 mln. m<sup>3</sup>; (opening collector-drainage The harvest of agricultural cultures has increased noticeably, with pat reaching 30,8 c/ha, maize 24,7 c/ha, and vegetables 204 c/ha, for example. Along with the achievement of success in water economy construction, it is planned to carry out the following ameliorative actions: - reconstruction of irrigation networks in various regions of the republic; improvement of land conditions: increasing water supplies to agricultural cultures; land planning; construction of small pools; development and broad introduction of water protection systems. 204 degrees Celsius per hour along with the achievement of success in water economy construction, it is planned to carry out the following ameliorative actions.

Reconstruction of irrigation networks in various regions of the republic, improvement of land conditions, increasing water supplies to agricultural cultures, land planning, construction of small pools, development and broad introduction of water protection system. A reconstruction of the irrigation network in each region of the republic an improvement of the land's ameliorative conditions increasing water supplies to agricultural cultures a land planning the construction of small pools, a development and wide introduction of water protection systems for irrigation agricultural cultures a

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mastering (for agricultural production needs) of additional areas.

The problem of the reception to ecological clean product agricultural production emerges in connection with growing strategy pollution of surrounding environments since the production provisions of the ground-main natural facility. Moisture and temperature of the ground are two of the most important physical characteristics that define a ground's fertility. Agricultural cultures do not sprout in general without the presence of the necessary (needed) amount of water in the ground and temperature. Ground moisture has an impact on the dissolution, displacement, and efficiency of organic and mineral fertilisers, as well as the degree of contamination of ground pesticides and other product techniques of origin, and how much agricultural plants will adopt dangerous for human health chemicals. The current information on moisture and temperature of the ground in the managerial system by production to agricultural product is necessary, in the first place, for making operational decisions at development ecological clean technology irrigation under growing agricultural cultures to achieve the maximum harvest origins, on how much agricultural plants will adopt bad for the health of the people chemicals, on how much agricultural plants will adopt bad for the health of the people chemicals, on how much agricultural plants will adopt bad for the health of the people chemicals, on how much agricultural plants will adopt Current information on ground moisture and temperature in the managerial system by agricultural product is required, first and foremost, for making operational decisions at the development of ecological clean technology irrigation under growing agricultural cultures in order to achieve maximum harvest.

The Thermostat-Weight (TW) method is the most well-known way of receiving moisture from the ground's surfaces before a depth of 100-150 sm, layer by layer, through each 10 sm. He presents the ability to obtain information on ground moisture for the entire depth of lied cortex plants, making him incomparable to aerospace approaches if objective information in what, that specified point agricultural fields are required. However, if the issue is relative surface moistening of the entire field, the TW approach, like any other overland method, cannot compete with aircraft methods and facilities for receiving this information. Furthermore, the TW-method has a row flaw, which makes it unsuitable for use as a graduation overland and aerospace instrument.

Furthermore, the time interval between observations of ground moisture is 15 days -2 days. This causes a delay in making crucial technological judgments, especially in a significant environment such as a hot, dry breeze with moisture in the ground, which might cause the image to alter. Though considerable research was done for the measurement of ground moisture on her enhancement, improvements, and introduction of high-speed express-instrument. Moisture measurement at a high frequency because soil boer is used to choose soil samples, SVCH-5 is unable to entirely replace TW-method. The "Agro tester" and VPG-1 are the best adaptable to the conditions of use in agriculture. Both instruments have a portable sensor-boer to which the measuring block is connected, however the sensor and metre are removed from the field after measurements.

"Agro tester" does not undergo field testing and does not evaluate inaccurate measurements due to measurement inexactness, on the basis of which, the prescribed method of measuring the complex resistance of ground in a changeable electric field is used (so-called

conduct meter method). Here, the instrument's sensors are designed in such a way that two round spiral to blades serve as a submersion facility for the sensor at a particular depth and a measurement facility, i.e. a capacitor, in which the atmosphere between the cover and the blade is grounded. However, the instrument VPG-1 produces a fairly acceptable trail result and is recommended for use on hydro meteorological stations in the country C.I.S. as early as the 1980s. However, due to the other factors, he, too, has not received widespread acceptance. Several techniques are employed to determine the wetness of the ground on evidences VPG-1. Micro ampere measure is employed to indicate the instrument's evidences; nonetheless, the instrument is inexact and easily broken in field conditions. For widespread use of the VPG-1, it was required to greatly simplify the sensor's design, simplify the techniques of graduation and measurements, but in the measuring block, to employ more dependable and precise digital indication of the instrument's evidences. The third peculiarity is that distinct physical principles are required in the measurement's base overland and aeronautical facilities. Several methods of measuring parameter laying beneath land surfaces are employed in aerospace method and facility of measurement. This registration included reflected radiation in the visible part of the spectrum, in the infrared (IK) range, and in radio-frequency radio diapason, as well as natural gamma-radiation fixation to terrestrial surfaces. The conduct meter method of measurement to ground capacity in changing electric current is used in the instrument VPG-4C. The TW method is based on weight drying and calculating the amount of evaporated water. Each of the three ways mentioned above has its own set of benefits and drawbacks. As a result, the aeronautical approaches have the benefit of being faster and covering a larger area.

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The goal of removing the aforementioned defect in 2001 was to modify the given design on VPG-4C, which outperformed TW-method on all parameters, including power and accuracy offered regarding ground moisture on a distinct farm field (the land) shown in fig2. With the provided thermostat-weight of the procedure for VPG-4C, the standard deviation formed 1,5 percent. This is 0.5 percent more precise than VNP-1 and 1.0 percent more precise than VPG-1.

The findings of these research show that there is no unified thinking (the offers) comparatively principle for the construction of automated measuring systems in agro meteorology, as well as hydrometeorology in general. On our first glance, the most making, for methods and facilities of automatic checking hydro ameliorative parameter, is a finish company "Vaysal," which offers the consumer a specific automatic system for observation for condition many element weathers on the basis of specialised (meteorological) computer. However, the company's "Vaysal" technology is "locked," meaning that

it cannot be utilised without the company's proprietary meteorological computer sensors. Furthermore, for the purpose of making judgments on comparable issues, UKRNIGMI built an automatic system for verifying parameter ground, which dominates the same development of the company "Vaysal" in many ways.

Since the proposed UKRNIGMI system is open to any sensor and may be directly connected to a computer network via a normal relationship without the use of any additional connecting devices, it can be used with any sensor. The technology will allow simultaneous removal and transmission of data from large amount sensors over distances of up to 10 kilometres by cable and up to 100 kilometres by radio.

### **CONCLUSION**

The third peculiarity is that distinct physical principles are required in the measurement's base overland and aeronautical facilities. Several methods of measuring parameter laying beneath land surfaces are employed in aerospace method and facility of measurement. This registration included reflected radiation in the visible part of the spectrum, in the infrared (IK) range, and in radio-frequency radio diapason, as well as natural gamma-radiation fixation to terrestrial surfaces. The conduct metre method of measurement to ground capacity in changing electric current is used in the instrument VPG-4C. The TW method is based on weight drying and calculating the amount of evaporated water. Each of the three ways mentioned above has its own set of benefits and drawbacks. As a result, the aeronautical approaches have the benefit of being faster and covering a larger area.