3) ditch terraces of various profiles (trapezoidal, triangular, irregular section) for protective afforestation.

Without touching the technical side of the issue, we note that so far, terracing has been carried out mainly on separate sections of the slopes and was limited to any one way of modifying the relief. Now it is necessary to solve the problem of terracing the entire catchment with differentiated selection of techniques - the creation of stepped terraces of varying widths in the upper part of the slopes and ridge-shaped terraces in the lower part of the slopes and ridge-shaped terraces in the lower part of the slopes. In the channel and on the floodplain of sais, it is advisable to install dams and dams that reduce the speed of water flow and prevent erosion.

In mountain gardening, numerous varieties of walnut, pistachio, almond, apple, pear, hawthorn, cherry plum, cherry, apricot, sea buckthorn, goof, acacia, etc., as well as some introduced species, are used. Orchards and vineyards are placed on slopes with a steepness of no more than 25 ° C.

The contour organization of the catchment space provides an increase in biological productivity and the associated improvement in runoff regulation.Great effect is given to the cessation of random cattle grazing and the transition to pasture rotation.

The larger and more complex the drainage basin, the more varied the methods of agroforestry should be, the richer the spectrum of species of planted plants should be.

The main areas of the foothills (Western parts of the Turkestan, Zarafshan and Gissar ranges) of Uzbekistan are used mainly for pasture. However, the low productivity of natural pastures, large fluctuations in the yield of grasses over the years and seasons of the year, depending on weather conditions, often create a very tense situation in the forage balance of livestock. Long-term studies of the Institute of Astrakhan breeding in the foothills of the Zarafshan, Urkestan and Gissar ranges have shown that it is possible to significantly increase the productivity of natural pastures by crops of fodder plants and crops such as black saxaul*(Haloxyionaphyllum)*,isen*(Kochiaprostrata)*,Chogon*(Aelleniasubaphylla)*,Circassian, teresken, etc.

Among these plants, the most promising is black saxaul. Experiments have shown that with an annual amount of precipitation in the range of 100-200 mm, it is possible to grow black saxaul protective strips. For example, in the foothills of the western part of the Zarafshan ridge, forest bands from black saxaul, which have reached 4 m in 8 years, contribute to an increase in relative humidity, create mild microclimatic conditions to increase pasture productivity by 25%. Even in a lean year, the feed mass of the ephemera was 14-18% higher than in an open pasture. Thickets of saxaul bands have brought to themselves a peculiar ethnological fauna, avifauna, etc. And thus, creating a new type of biocenosis in the desert and semi-desert foothills.

Despite the obvious effectiveness of mountain agroforestry, “horses of orchards, vineyards and forests grow in Central Asia at an extremely slow pace. Under existing trends, one cannot talk about achieving the required forest cover standards even by the end of the 21st century. A review of the relationship to agroforestry is needed. For a radical change in the situation, it is important to fully consider and economically correctly evaluate the environment-forming functions of the mountains.

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GEOCHEMICAL FACTOR OF DESERTIFICATION

Abstract. The article discusses the natural types of landscape salinization in Central Asia. There are two types of salt accumulation – continental and Delta. In this work, based on the well-known geographical scheme of academician B. B. Polynov, the processes of continental type salinization of landscapes are described in detail. Further, the mechanisms of salinization of the Delite landscapes of the Bukhara and Karakul oases are covered in more detail. The author connects the formation of Delta landscapes and their geochemical features with tectonic structures on the basis of actual materials.

Keywords: Natural types of landscape salinization, continental, deltaic, geomorphological schemes, climate, aridity, migration of chemical elements

Desertification is a complex socio-geographical process caused and accelerated by both natural and anthropogenic factors. It leads to a reduction in the quantity and deterioration of the quality of re-use of natural resources. This in turn causes a decrease in the economic potential of arid ecosystems (landscape) and the deterioration of human living conditions.

Geochemical factors also play an important role in the emergence of desertification among natural factors.

The paper highlights the role of the geochemical factor in the occurrence of desertification in the conditions of the ancient deltas of the Zarafshan river valley.

In geography and Geochemistry, according to the degree of formation of saline soils, continental, coastal, deltovye, artesian cycles of salt accumulation are distinguished. In the conditions of Central Asia, there are 2 main natural types of salt accumulation-continental and deltovy.

The continental type is associated with the movement, redistribution, and accumulation of carbon dioxide, sulfuric acid, and chloride salts in the intramaterial drainless regions. To understand the mechanism of salt accumulation processes, consider weathering. According to A. N. Rozanov (1958), the weathering crust of the ostochno – carbonate – sialite type is formed on the watersheds of Central Asia. Formed eluvium is rich in primary aluminosilicates, bases and carbonates, there is a partial removal of sodium, calcium and silica, potassium and magnesium retention and accumulation of one and a half oxides of aluminum and iron. Mobile products of weathering carried out by surface and underground waters form carbonate and chloride - sulphate accumulations on the spaces adjacent to watersheds.

In accordance with the known scheme of B. B. Polynov (1956), these accumulation are to some tall posledovatelnosti in which the first sediment in a watershed layer saturated with carbonates, and next after him – sulfate and chlorides.

B. B. Polynov, who developed the main theoretical positions of migration and accumulation of mobile elements in the weathering crust, notes that chlorides are carried to the farthest distance from the place of origin, then sulfates and carbonates, and silica is the closest.

This chemical differentiation of weathering crust products is also characteristic of the territory of Central Asia. So, mountain ranges-areas of weathering, foothill plains-zones of accumulation of carbonates.

It should be emphasized, however, that the accumulation of carbonates is expressed in all zones, but, noticeably increasing when moving from top to bottom, it reaches its maximum in the zone of foothill plains. According To G. A. Mavlyanov (1958), carbonate loess-like rocks of the foothill plains of Central Asia has more than 25% of the weight of dry rock. In the peripheral part of the foothill plains of the studied territory, the areas of chloride – sulphate salinization received a significant predominance, which allowed V. A. Kovde (1946, 1947) to attribute this territory to the province of chloride – sulphate salinization.

Further, according to the scheme of B. B. Polynov, chloride-sulphate accumulations also occupy drainless depressions-closed depressions. Such areas are selenkoviene Sensicle, Togakushi, Dengizkulskoye and other saline basin, located within Central Asia.

Thus, chlorides, sulfates and carbonates of alkaline and alkaline earth elements are the main compounds that determine the geochemical conditions of the plains of the plains of the territory of Central Asia.

It should be noted that the presence of an extremely dry and hot climate is not enough for the beginning of salt accumulation and for the formation of saline soils. With deep groundwater, the actual evaporation of moisture from the soil does not exceed the amount of precipitation that falls on its surface. If the ground water lies deep (deeper than 10-20 m), then, despite the dryness of the climate, salinization of the soil does not occur in the conditions of arid climate, it is possible only in specific geomorphological conditions. In the orography of all deserts, including the deserts of Central Asia, which are areas of modern salt accumulation, there is one very important feature. These deserts are located in vast depressions, plains, semi-surrounded by mountain ranges and lying usually hundreds or thousands of meters below the surface of the mountains.

An ancient stream of deep underground water bearing soluble salts is directed from the surrounding mountain hills towards the depressions and plains of Central Asia. The age of this stream is equal to the geological age of mountains and depressions. The ground waters of the depressions themselves experience for a geologically long time a powerful hydrodynamic pressure of deep underground waters and their geochemical influence.

Ancient deep underground waters are sometimes characterized by high mineralization, sometimes they are fresh. In vast deep depressions, depressions, valleys, river deltas, and areas of fractured tectonics, the pressure of underground water, as it cleaves out or approaches the surface, becomes a very important factor in salinization of water, sedimentary deposits, and depressive soils.

Delta cycles of salt accumulation are very widespread and are characterized by a complex combination of processes of movement and accumulation of salts brought from the upper part of the river and the valley-Delta ground flow. These territories are usually called separately and belong to the types of landscapes that do not have natural drainage, where salinization is a permanent element.

These include, for example, Bukhara, Karakul, Kashkadarya and Shirabad dry deltas within Uzbekistan.

The upper parts of the dry deltas are folded on the surface or at a small depth of rough material, often with pebbles. In the middle part of the Delta may be dominated by sandy deposits, and in the lower parts (on the periphery) - loam and clay. At the same time, the

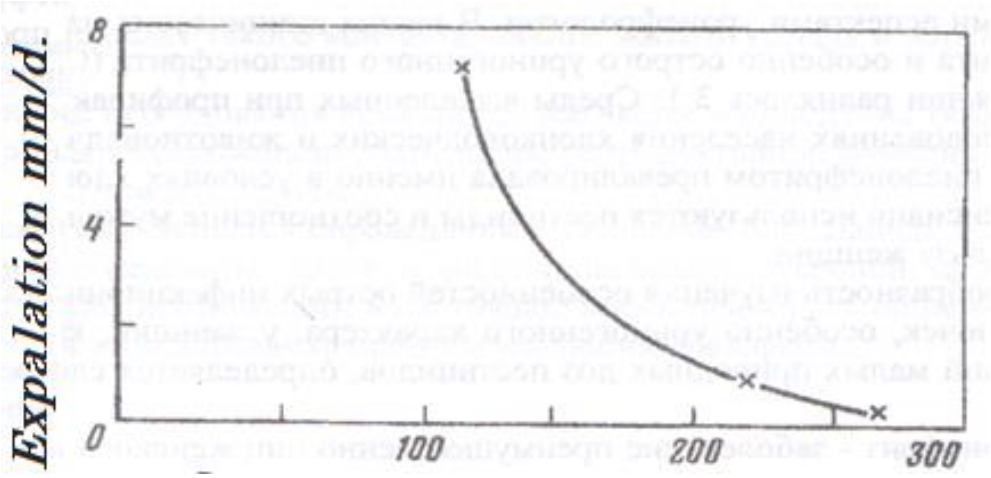
depth of occurrence and the composition of groundwater naturally change. In areas built with pebbles, ground water is easily replenished from the river and just as easily move down the slope. When changing pebbles to more fine-grained sediments, groundwater approaches the surface and often wedges in the form of fresh or poorly mineralized spring water.

Below the removal cone, ground water is dispersed over an increasing area of the cone and re-submerged. In the peripheral parts, due to the presence of loamy deposits, the flow of groundwater is delayed and almost completely spent on evaporation and transpiration.

Thus, the main mechanism that contributes to the development of desertification and leads to the accumulation of salts in the soil and the formation of salt marshes is the predominance of evaporation of groundwater over their outflow. Therefore, all the efforts and factors that increase the evaporation of groundwater with weak drainage will contribute to the processes of salt accumulation and the formation of saline soils. The water balance of the territory and especially the ratio of the amount of evaporating moisture to the amount of drainage water to a very large extent depends on climatic, geomorphological and hydrogeological conditions. At the same time, human economic activity is essential.

It should be noted that within Central Asia, the processes of salt accumulation are confined to certain types of terrain, geomorphological and hydrogeological conditions.

Thus, the most common and direct factors in the formation of modern saline soils in ancient dry deltas is the process of evaporation and transpiration of groundwater in conditions of wastelessness or slow outflow. The intensity of evaporation of ground water and the process of salt accumulation in both ground water and soil increases with the approach of the ground water level to the surface, and starting from a depth of 2-3 m or less, the processes of salt accumulation in arid climate reach their maximum expression. These features of the soils of the ancient deltas are one of the characteristic features that determine their tendency to desertification.



Despersion of groundwaters

Classical examples are the peripheral parts of the Karakul and Bukhara deltas, the Kashkadarya and Guzardarya deltas, which are represented by the most saline soils due to intensive evaporation over the steadily close-lying mineralized groundwater.

Potential total evaporation in the desert plains of Central Asia reaches 2-4 thousand mm per year, far exceeding the amount of precipitation.For example, the annual evaporation rate in Kagan is 2110mm, where for three months (June, July, August) it showed more than 1000mm.

The period during which the phenomena of air drought and dry weather usually develop is on average 110 days (from may 18 to October 5).

In the flat part of Central Asia in the conditions of sharply continental desert climate under ephemeral – sagebrush, solyankovoj rastitelnosju light serozems and gray – brown soils are formed.

Aridity of the climate, low precipitation (110-170mm) in the low foothill plains caused a non-washing regime of soils with hypnotic and carbonate horizons, so the soils are characterized by constant salinity, a large number of carbonate salts in the uppermost soil horizons and chloride-sulfate salts in a small depth, gypsum horizons in the form of layered and amorphous masses, often turning into a gypsum plate. Such features are associated with an acute shortage of moisture, a huge excess of evaporation over precipitation. In addition, high temperatures during the growing season and a negligible amount of precipitation in the desert areas of Central Asia limit the development of biological and soil processes. In this regard, in the desert zone of the studied region, the soils are characterized by extreme low power, insignificant humus content, lack of any noticeable leaching, and the presence of salts in the genetic horizons. These characteristics of the soils of the desert zone of Central Asia are one of the characteristic features that determine their tendency to desertification.

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РАЦИОНАЛЬНОЕ ИСПОЛЬЗОВАНИЕ МЕСТНЫХ ВОДНЫХ РЕСУРСОВ

Аннотация. В данной стате рассматривается временные водотоки, и их сбор, хранение и рациональное использование.

Abstract. This article provides for temporary watercourses and their collection, storage and rational use.

Ключевые слова: временное поверхностное сток, метод пластики рельефа, водные ресурсы, обводнение.

Key words: Temporary surface runoff, plastic method of relief, water resources, watering.

Введение В Стратегии действий Республики Узбекистан, по пяти приоритетным направлениям развития в качестве важных задач обозначены «предотвращение экологических проблем связанных со здоровьем и генетическим фондом населения, окружающей природной средой, улучшением снабжения его питьевой водой в сельских районах путем постепенного внедрения экономических и эффективных технологий…». В этой связи совершенствование методов накопления, хранения и использования местных водных ресурсов в Центральном Кызылкуме и предупреждение экологических проблем, таких как опустынивание, имеют важное научно-практическое значение.

Цель исследования. является научная разработка предложений и рекомендаций по рациональному использованию местных водных ресурсов в борьбе с опустыниванием в Центральных Кызылкумах.

Методика. Методы исследования местных водных ресурсов Центрального Кызылкума, проводились с использованием различных подходов. Сравнительный, метод географической аналогии, картографические и методы районирования имеют большое теоретико-методологическое значение. В настоящее время бассейновый и экологический подходы помогут прояснить научную перспективу будущих тенденций процессов опустынивания.

Результаты. Даны научно-практические предложения и рекомендации для формирования локальных и лиманных оросительных систем на основе использования местных водных ресурсов в борьбе с опустыниванием. Научная значимость результатов исследований определяется тем, что она служит для совершенствования методологических и методических основ использования местных водных ресурсов, в частности в выявлении бассейнов стока временных водотоков на базе системного анализа. Практическая значимость результатов исследования будет в первую очередь способствовать разработке стратегий и программ профилактики и развития опустынивания в Центральном Кызылкуме, а также эффективности образовательного процесса в соответствующих направлениях системы высшего образования республики Узбекистан.

С увеличением численности населения мира растет и спрос на водные ресурсы, что требует рационального их использования и разработки