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PLANNING AND DEVELOPMENT OF THE RAVAGED LANDS OF THE NAMANGAN ADYRS

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Abstract
Primary reclamation of ravine lands. We studied the totality of the agro-forest, reclamation and hydro-reclamation measures for the radical reclamation of the valley's ravine lands.

Keywords: Adyr, soil protection, against gully, event, agro-forest reclamation, economic, hydro reclamation measures.

Introduction

The use of reclamation anti-ravine methods in the moderately and heavily ravaged territories of the Namangan adyrs is ineffective due to their erosional dissection. Therefore, one of the non-alternative methods of agricultural use of ravaged lands is radical reclamation of ravines. It provides for a set of reclamation techniques for the reconstruction of eroded lands in order to create a cultural background on them [1].

As well as reclamation of ravaged lands, soil and water conservation agriculture on the area of the reclaimed surface should be comprehensive, combining agro-forests and hydro-reclamation methods for protecting soils from erosion [2].

According to the law of rectilinear movement of concentrated runoff of temporary water flows on heavily ravaged lands, the number of elongated ravines decreases to 9% over time [3].

In the ravine of the dangerous territories of the Namangan Adyrs, from organizational and economic measures into the practice of the agro-industrial complex, we introduced a complex of soil systems for conservation agriculture [4].

The development of ravines and the creation of a cultural background on them require a scientifically based approach to the technological stages of soil-water conservation agriculture [5].

We know that gully erosion is the erosion of soils and underlying rocks by temporary water flows in the modern non-anthropogenic period. As a result of this process, linear forms of erosion of the ravine are formed at various stages of its development [6].

Study the development and radical reclamation of ravaged lands. An important criterion for assessing gully erosion is the definition of the territory according to the categories of gully land hazard, which should form the basis for the design of anti-erosion measures. Ravine danger of land is a territory where the combination of natural conditions creates a danger of development of gully erosion during economic use [7].

Table 1 **Grouping of ravines according to the degree of damage to the territory**

Category ravine hazard Natural factors determining gully hazard	**I. No danger**	**II. Weak**	**III. Average**	**IV. Strong**	**V. catastrophic**
1.Erosion index of liquid precipitation	less than 1.0	1,1-2,0	2,1-4,0	4,1-6,0	more than 6,0
2. Soil erodibility, t/ha	less than 2,0	2,1-3,0	3,1-5,0	5,1-10,0	more than 10,0
3.DNS of rocks, m/s	more than 3.5	1,76-3,50	0,76-1,75	0,40-0,75	more than 0,40
4. Depth of local erosion base, m	less than 5	5,1-10,0	10,0-50,0	50,1-100,0	more than 100,0
5. Slope shape	horizontally flat	Concave	Complex	Straight	Convex
6. Soil protective ability of plants	more than 60	31-60	21-30	11-20	more than 11

And also to draw up a ravine - reclamation zoning, the following main components should be based on 1) maps of gully and ravine danger of lands.; 2) zoning of the territory according to relief types; 3) zoning of the territory according to types of agricultural use; 4) complexes and types of reclamation anti-erosion measures [8].

In general, the entire leveled soil-substrate surface has low fertility and minimal erosion resistance. Therefore, in the development of ravines for agricultural use, there is a need to solve these inseparable problems: preventing the manifestation of erosion processes and intensively increasing the fertility of planned lands [9]. Soil-water conservation agriculture on the area of the reclaimed surface should be comprehensive, combining agro-forests and hydro-reclamation methods for protecting soils from erosion [10].

To develop methods for radical reclamation of ravaged lands on the Adyrs, a key site was selected on the territory of the Karachukki farm in the Chartak massif. The typicality of the key site was determined: high density of the gully network, an area of massive agricultural development of ravines for agricultural production, variegated underlayment of loess-like loams with layers of crushed stone and sand, as well as their salinity. The tasks during the radical reclamation of ravines were to characterize the soils and underlying rocks of the ravaged lands, calculate excavation work, select a system of agro-hydromeliorative development methods, study erosion processes on the leveled surface and develop scientifically based methods for increasing the productivity of technogenic soils. Characteristics of the ravine calculation of the adyrs of Karachukki “Massive Chartak” in the following tables 2. [11].

Table 2.

№	**Density pcs/sq.**	**Density sq/km**	**Frequency, m**	**Area, thousand hectares**
1.	0,61-1,5	0,31-1,0	500-201	0,9
2.	1,51-5,0	1,01-3,0	200-101	1,5
3.	5,01-10,0	3,01-5,0	100-51	3,3
4.	more than 10.01	more than 5,01	lass than 51	1,1

Large-scale soil-geomorphological survey shows the possible transplantation of ravine soils and the choice of method for filling and leveling ravines with local soil. Because the degree of erosional dissection of the key area did not exceed 0.7 sq/km, the prevailing steepness was 5-7 degrees. The volume of excavation work was equal to 1864.8 cubic meters. m. Due to the close occurrence of the gypsum and saline layer of underlying

rocks and the impossibility of filling ravines with imported soil, there was a need to preserve a soil horizon with less than 1 percent humus content [12].

In the process of filling and leveling ravines, technogenic soils were formed on the reclaimed surface, which consisted of bare and bulk soils. They generally reflected the characteristics of parent loess-like loams, which are characterized by high dust content (content of fractions 0.05 - 0.01 mm in size from 59 to 65%), light mechanical composition (physical clay content 21-32%). In contrast to the ravine soils, (Fig. 1) technogenic soils had less compaction (1.1-1.3 g/cm3) and, accordingly, greater filtration capacity of the filled area. Based on the water permeability of the soil in these areas, which are the accepted options upon completion of the study, the wetting contour of typical sierozems on rain-fed soils and technogenic soils on ravine lands (A-B-heavy washout of typical sierozems B-technogenic disturbed soils) Fig 1.

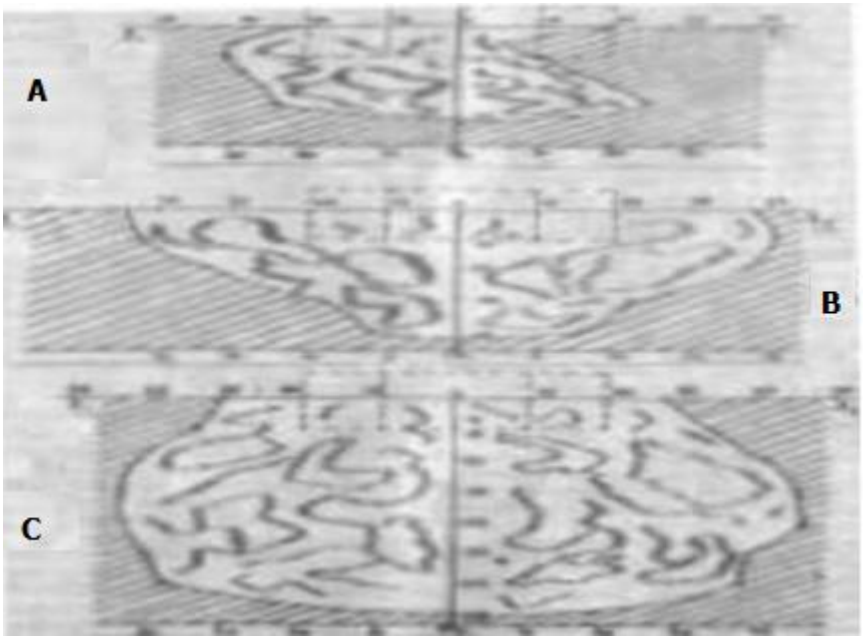

Fig 1. Wetting contour of typical gray soils and technogenic soils on ravine lands
(A-B-heavily washed away typical gray soils, C-technogenic - disturbed soils)

A high filtration coefficient (1.42) and the presence of easily eroding salts (0.460-0.528% of dry residue) created favorable conditions for the development of suffusion funnels. The leveled, flat surface (no more than 5-7 degrees) made it possible to carry out agro-reclamation work without creating special platforms and terraces. But the low humus content in technogenic soil (0.3-0.6%) and the poor supply of the upper root habitable horizons with forms of nitrogen, potassium and phosphorus accessible to plants dictated the need [13].

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