

Evaluation of Irrigated Soils

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ABSTRACT

This article discusses the main purpose of the assessment of irrigated soils, the methods used to determine crop yields based on the characteristics of soil fertility and its properties, and their advantages. Procedures for scientifically substantiating the yield of irrigated soils corresponding to one quality score are also described.

KEYWORDS: *Irrigated soil, evaluation, salinity, reclamation, fertility, centner, class, soil properties, old irrigated, district.*

Soil valuation is a comparative assessment of soil quality and level of natural fertility, which is carried out taking into account the properties and characteristics of the soil, which in many respects are related to crop yields, and the result is expressed in points.

Qualitative assessment of irrigated soils takes into account its mechanical composition, salinity and types, salinity, gypsum, erosion, humus, nutrient content and a number of other properties, and soils are evaluated on a 100-point scale [1]. The assessment of the fertility and quality of irrigated agricultural lands in the district was carried out in 2010 and repeated in 2020, and the average score for the district is 60 points. They are grouped into ten classes of quality, five cadastral groups, taking into account the potential of soil fertility in terms of productivity of irrigated lands suitable for agriculture in the district. The total area of irrigated land in the district is 19114.3 hectares, which are grouped into three cadastral groups in terms of quality.

The first cadastral zone (group) includes lands belonging to 3-4 classes.

These lands are less irrigated lands and are actively cultivated and cultivated by agriculture. The properties of soils belonging to this group are relatively stable and are all suitable for irrigation. However, the types of crops grown on these lands are limited. The soils of the lands in this cadastral zone (group) are saline, subject to wind erosion. The quality of the soils is below average and is 21-40 points. The total area of irrigated lands belonging to classes 3 and 4 is 1663.4 ha.

This class of soils is distributed in all massifs of Dangara district, especially below average (III-V), the largest areas of such lands are located in Naymancha 652.3 ha, Khudoiberdiev 628.8 ha, Syrdarya 333 ha.

The second cadastral zone (group) includes lands of 6th and 5th classes. These lands are sufficiently cultivated, newly irrigated, and partially irrigated from old. In terms of quality, the soils of these lands have an average quality score of 41-60. In modern agriculture, along with cultural-reclamation, current reclamation measures, drying, desalination, anti-erosion reclamation and agro-technical

measures, it is possible to achieve new soil qualities through long-term land use technology. If soils of this class are misused (even) the process of cultivating is temporarily stopped, soil degradation begins, the amount of humus and nutrients decreases, leading to erosion processes on sloping lands and a decrease in soil fertility [2]. The total area of 5th and 6th class lands is 574.3 hectares of irrigated agricultural lands. The lands of this class make up the main land area of Dangara district. , 2 ha) occupy a large part of the irrigated area.

The third cadastral zone (group) is rated on 61-80 points, cultivated (old irrigated and newly irrigated mainly moderately cultured), good lands in terms of quality [2]. Due to the fact that these lands have been irrigated or cultivated for a long time, the soil properties have improved and the level of fertility has increased significantly. The fields are well leveled and easy to improve using technical tools. In these groups, the negative factors that reduce soil fertility and production capacity, i.e. low humus content, nutrient deficiencies, wind erosion, the impact of secondary salinization processes are very small. Suitable for planting all types of agriculture, only agrotechnical and reclamation measures are required [3]. The cost of land shows its results quickly. The average normative yield of cotton is 28 quintals, which is less expensive than on low-quality soils. The area of 7-8 class lands is 11709.6 hectares of irrigated agricultural lands. These lands are located on the old irrigated lands of the district. The largest areas of good (7-8) lands were identified in the Syrdarya (2683.7 ha), Naimancha (2629.5 ha), Ishonch (1899.3 ha), Mulkobod (1001.1 ha) massifs.

The lands of the fourth cadastral zone (group) include soils around ancient urban villages. These lands have high fertility and their properties are almost stable. Negative factors have almost no effect on soil quality. The yield of agricultural crops does not change [4]. The estimated irrigated agricultural land area in the district is 19,114.3 hectares, with an average grade point average of 60 points.

Table 1. Soil quality assessment data of farms and other land users of Dangara district of Fergana region

№	Массивлар номи	Ёмон ерлар		Ўртачада паст		Ўртача ерлар		Яхши ерлар		Энг яхши ерлар		Суғориладиган ерлар	Ўртача балл бонитети
		1-клас	2-клас	3-клас	4-клас	5-клас	6-клас	7-клас	8-клас	9-клас	10-клас		
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	8-90	90-100		
1	Сирдарё				333,0	1028	372,2	2683,7				4416,9	57,4
2	Найманча				652,3	599,1	131,9	755,3	1874,2			40128	61,7
3	Ишонч					649,7		1128,3	771,0			2549,0	62,8
4	Мулқобод				49,3		803,9	1001,1				1854,3	61,7
5	Истикбол					376,8	406,1	274,3	452,9			1510,1	61,1
6	Данғара					131,4	233,7	1175,1	444,6			1984,8	66,0
7	Х.Худойбердиев				628,8	698,0	73,0	460,2	688,9			2548,9	54,3
8	Ўрмон хўжалиги жами					220,4	17,1					237,5	44,0
9	Жами				1663,4	3703,40	2037,9	7478,0	4231,6			19114,3	60

The corresponding value is multiplied by the score quality of the place. To determine the value of one point corresponding to the yield, the average maximum crop yield in the country (40 quintals per hectare) is divided by the indicator of the most fertile soil) divided by 100 points (the most fertile soil). 70 балли тупроқлар учун ғўза ҳосилини ҳисоблаш қуйдагича бўлади.

$$70 * 0.40 = 0.28 \text{ cents / ha}$$

The calculation of wheat yield for 80-point soils is as follows.

$70 * 0.60 = 48 \text{ cents / ha}$ In the best soils, the indicators of crop yields and the value of one point are given in the table [5].

2-жадвал. Энг яхши тупроқларда қишлоқ хўжалик экинларнинг ҳосилдорлиги ва бир баллнинг қиймат кўрсаткичлари.

Экин тури	Республикада ўртача максимал ҳосилдорлик	1-баллнинг ҳосилга мувофиқ қиймати
Пахта	40	0,40
Буғдой	60	0,60
Арпа	75	0,75
Дон учун маккажўхори	80	0,80
Бошоқли донлар соф ҳолда	60	0,60
Бошоқли донлар қоплама ҳолда	25	0,25
Силос учун маккажўхори	650	6,50
Илдизли озиқбоп экинлар	950	9,50
Бир йиллик ўтлар (кўк масса)	300	3,00
Оралик экинлар (кўк масса)	250	2,50
Картошка	125	1,25
Сабзавотлар	350	3,50

The following recommendations should be followed to improve the reclamation condition and maintain the fertility of the district's irrigated lands. Soil leaching was considered an important measure to improve soil reclamation. In this regard, washing of soil salinity by flooding the checks obtained in well-leveled areas, before carrying out this operation to make all existing collector-drainage networks operational (cleaning), taking into account the salinity of the soil, the mechanical composition of salts, water permeability it is important to set washing standards [6]. It is advisable to carry out saline washing in autumn and winter. In soils with light mechanical content, salts are more easily washed away than in soils with naturally heavy mechanical content. Taking into account the above conditions, the optimal values of saline leaching norms should be set at 8-10 (12-15) thousand m^3 in soils with weak mechanical salinity and heavy mechanical content. Improving the reclamation of gypsum soils in the district and increasing their productivity requires a separate set of measures. In such heavily reclaimed soils, deep plowing of lands, application of organic fertilizers and high-quality saline washing give good results. Land reclamation of soils with high density of cemented and highly fertile, 40-60% carbonate compounds and 20-30% to 70% gypsum in the upper layers is mainly carried out by deep excavation of the topsoil layers.

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