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ECOLOGICAL ANALYSIS OF THE MELIORATIVE STATE OF AGRICULTURAL FIELDS

Abstract: This article discusses ecological analysis of irrigable lands in Namangan, salinity of land and problems in fighting against it.

Key words: hydraulic constructions, meliorative state, salinity of soil, ditch, branches of irrigating.

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Introduction

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Many laws on improving the lands used in agriculture are being introduced in our country. In particular, in June 2019, the decree of the president of the Republic of Uzbekistan on measures for the effective use of agricultural land and water resources was published. The decree issues the implementation of important measures to increase the productivity of irrigated areas, solutions to improve the meliorative state and water supply [1].

The land, which is an integral part of nature, is truly universal property and the most basic and invaluable wealth of the people. This is the most important part of the national wealth of our country, the main means of agricultural production. The issue of productive, rational use of it is much more complicated, often it depends on how to approach the issue. Of course, the intensive use of it, getting harvest more than once a year, that is, repeated

sowing is cost-effective, which leads to an increase in the well-being of the population, receiving more benefits. However, if this issue is approached from an ecological point of view, it is also possible that the soil gets worse in the ecological state [2].

The quality, quantity of the products grown in agriculture depends on the state of their irrigated land in many terms. The effective use of land resources in particular, as well as the preservation and protection of its fertility, has a direct impact on the economic situation of any society and the development of its production forces.

To increase the efficiency of the use of irrigated land, salinity and re-salinity of fertile land also have a significant negative effect. "Soil salinity" means the accumulation of easily soluble mineral salts in water in the upper or lower layers of the soil [3]. As a result of it, useful microorganisms in the soil and the plant world lead to extinction.

In this case, primary salinity is the presence and evaporation of calcium, magnesium, sulphate,

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sodium, chlorine and similar salts in the composition of soil-forming native rocks, as well as the accumulation of salts on the surface of the Earth through Biogen and other natural processes; secondary salinity is the accumulation of salts in the upper layer of the earth as a result of attempts to improve water systems

By now, the area of strongly saline soils is increasing. Especially in the Fergana region, despite the fact that it is located at the very beginning of Dahana, 35% of land got saline.

Another major negative consequence of irrigation farming is the fact that the surface of the groundwater, which drains the degradation of the lands, is rising.

THE MAIN PART.

In Namangan region also the salinity of soil has a serious impact on the development of agriculture. Of

the 282,1 thousand hectares of land available in the region, 24,7 thousand hectares are considered to be saline lands of varying degrees, of which 6522 hectares are considered to be saline, 17,5 thousand hectares are less saline, 764 hectares are considered to be strongly saline lands. The land reclamation case of the ecological village of bad lands is spread in the Mingbulak, pop and Chust districts of the region, specializing mainly in agriculture. More than 24,7 thousand hectares of saline land of different sizes in the region corresponds to three districts. In the region, the state of soil salinity in the Mingbulak and pop districts constitutes more areas than in other districts and is also in the foreground, according to the level of supply of stream and trenches in these regions.

Table 1. The state of soil salinity in irrigated lands of Namangan region in 2018

№	Regions	Years	Areas in total	Salty lands in total		Including					
				Area (ra)	Samples (piece)	Less saline		Average saline		Strongly saline	
1	Mingbulak	2018	37737	15268,2	4401	11999,2	3255	3161,6	1104	107,4	42
2	Pap	2018	39542	7765,1	4167	5245,4	2847	1949,1	1047	570,6	273
3	Chust	2018	33317	627,0	198	367,4	105	238,9	81	20,7	12

Table: compiled on the basis of data from the melioration-expedition Department of the Department of Agriculture of Namangan region.

As can be seen in the table, the total irrigated land in the Mingbulak district is 37,7 thousand hectares. 22,4 thousand hectares of existing irrigated lands are not saline, 15,3 thousand hectares are saline at different levels, 3,8 thousand hectares are saline at average, 11,4 thousand hectares are saline at least, and 114,6 hectares are saline at strong levels. "Karakalpak", "Karashakhar", "Achchikkul" of mingbulak district, stream, trenches and observation wells in the regions are areas of ecological character in the district agriculture.

Of these, the total length of the Karakalpak system of stream and trenches is 422,2 km and serves the irrigated areas located in the regions of Gulbag, Gulistan, Gigant and Istiqbol water consumer associations of the district. In this area there is an area of 12712 hectares of irrigated land, of which 7550 cotton, 5082 hectares of grain is grown. The groundwater level rises to 0,9-1,5 meters, and 480 hectares of land in this area are low, 335 hectares of medium-25 hectares are strongly saline areas. In recent years, the yield from cotton to 17,0 TS/ha, from grain to 36,0 s/ha is estimated to passivity of the fertile layer of soil in ecological terms.

The total length of the Karashakhar stream and ditches in the district is 215,7 km and is located in the regions of the Mingbulak district Amir Temur, Gulbag and Gigant water consumer associations. In

this area there are 4357 hectares of irrigated land, of which 2590 hectares of cotton, 1700 hectares of grain are grown. In the system, the groundwater levels rose to 0,9-1,5 meters, with 380 hectares of land in this area poorly saline, an average of 135 hectares, and 15 hectares strongly saline. In the last years, Cotton is harvested up to 20.0 TS/ha, and wheat up to 35.0 TS/ha.

The total length of the "Achchikkul" "stream and ditches is 979.57 km, and is located in the regions of the district's "Namangan", "Khorezm", "Istikbal", "Fergana", "Gulistan" and "Gigant" water consumer associations. The system has an area of 17119 hectares, of which 10102 cotton, grain is sown to an area of 6910 hectares. The groundwater level rises to 0,9-1,5 meters, the land in this area is less than 2590 hectares, the average Saline Area of 925 hectares and corresponds to 50 hectares of strongly saline land. In the last years, the productivity obtained from cotton is 19.0 TS/ha, 34.0 TS/ha from the grain. "Karakalpak", "Karashakhar", "Achchikkul", "Yortepasoy", stream and Zaks, observation wells and yellow water for the repair of "Yellow Water" Reclamation pump last year 3 million. 202 thousand sums was spent.

The pop district is the most pre-populated district by the size of the irrigated land area in the region. The area of irrigated land in the district is 39.6 thousand hectares, and non-saline land is 31.8 thousand

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hectares. The most basic problems with irrigated land in the district are saline land of different degrees. Because, during the year, a lot of money is spent on washing the soil brine and repairing the stream-trenches. In the pop district, such saline lands account for 7,8 thousand hectares, low-saline lands 4,8 thousand hectares, on average saline lands 2,3 thousand, strong saline lands 609,6 hectares.

The total length of the Karakalpak and ditches is 321,5 km, serving the irrigated areas located in the regions of the water consumer associations "Namangan" and "Navbahor" of the Pop District. There are 6550 hectares of irrigated land in this area, which corresponds to 4010 cotton, 2390 hectares of grain fields.

In winter, as a result of a sharp rise in the water supply of the Sirdarya River, The Collector becomes turbid as a result of landslides on the shores of the steppes, as well as the stream and ditches, the seepage route of seepage of seepage of seepage of weeds will be closed. As a result, the ability of Collecturers to take out underground seepage waters decreases and loses its technical condition. In this system, the groundwater level rises to 1,0-1,5 meters, with 1100 hectares of land in this area less saline than 658,8 hectares average saline, and 111,8 hectares corresponds to strongly saline soils. In the last years, Cotton is harvested from 16,7 TS/ha, from gall to 28,7 TS/ha.

The total length of the Syrdarya stream and ditches of the pop district is 175.8 km and provides services to irrigated areas located in the regions of "Pungan", "Mashal", "Pop-Yakkatut" and "Union" Water consumer associations. There are 3215 hectares

of irrigated land in this area, of which 2115 cotton, 1210 hectares of grain fields are specialized.

Stream and trenches, which are included in the "Karakalpak" system of the pop district, are located in the "North-West" part of the Pop district, "Navahor" "Shamshad", "Azamat", "Abdukahhar MuhammadAli Shohsanam" there are 320 hectares of irrigated areas of the farmer's farms the groundwater levels of these regions are 0,5-1,0 meters during the growing season.

"Shamshad", "Azamat", Abdukakhur Mukhammadali Shakhshanam" farmer farms in Navbakhor region account for 320 hectares of irrigated areas. Another problem in this region is that in the Uchkoprik District of Fergana region, which borders the Army during the vegetation period, artificial lakes restored for fish farms are located at a height in terms of their reliefs, the underground sizot SATX is rising up to 0,5-0,1 meters, making it difficult to carry out agrotechnical activities.

The total length of the bitter "stream and ditches is 280,9 km, serving the irrigated areas located in the territory of the "Navruz" and "Navbakhor" Water Consumers Association of the Pop District. In the system, Cotton is sown to 5740 hectares of 3120 hectares of irrigated land, grain to 2320 hectares. Even in bitter stream and trenches, groundwater levels have risen to 0,6-1,0 meters, while the land in this area is 825 hectares less, 812 hectares are medium and 43 hectares are strongly saline.

The situation of salinity in 2019 year in the districts of the above-mentioned strains Binbulak, pop, Chust is shown in Table 2.

Table 2. Salinity of irrigated lands in Namangan region

(ha)

№	Regions	Irrigated lands in total	Salinity level				Salty lands in total
			Not saline	Less saline	Average saline	Strongly saline	
1	Мингбулоқ	37502,0	22275,0	12137,0	2988,0	102,0	15227,0
2	Поп	39510,0	31763,0	5325,0	1861,0	561,0	7747,0
3	Чуст	33320,0	32909,9	151,3	211,9	46,9	410,1

Table: compiled on the basis of data from the melioration-expedition Department of the Department of Agriculture of Namangan region.

According to the data, over the next 10 years in irrigated areas due to insufficient use of new techniques and technologies in leveling, plowing and other agrotechnical activities (the unevenness of irrigated lands is 3-10 cm according to the normative indicators. instead of practice 20-30 cm.) excessive water is spent on soaking the soil and the water reaches the root of the plant.

In the Namangan region, the irrigated areas are provided with stream-trenches to 135882, the total length of stream is 5070,7 km. Getting rid of dampness networks are 1813,8 km. farmhouses are

3227,31 km. the farm is 29,6 km inside[4]. There is no need to build stream-ditches, since 143294 hectares of the irrigated area are from the Adriatic and the Adriatic slopes, because the groundwater accumulates on these lands in the shadows and ravines.

One of the main tasks in the effective use of land resources in the region is to determine the soil salinity of irrigated crop areas and develop recommendations for all farmer farms for the timely quality of salt washing. In addition, it is required to monitor the quality of washing of brine, to identify bad land in the melioration state and to draw up drafts. In fact, the

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improvement of the land reclamation situation, the normalization of the sale of groundwater, the salinity of saline areas is due to the organization of washing on the basis of the recommendations given[5].

In this regard, in 2018, the total length of 940.0 km amounted to 12353.5 million. work is planned for a sum of \$ 12353.5 million in length (102.0 percent) of 961.7 km.sum (100.0 percent) repair and restoration work was carried out. For December 31, 2018, 9764.3 million tons of oil were exported to the state of the Republic of Azerbaijan. the sum was completed by 100 percent compared to the plan. To date, the following recommendations have been developed for the organization and implementation of soil saline washing on saline soils have a significant role. These are:

- To identify the areas that are found to be washed in the mud according to the recommendations of melioration expeditions;
- Selection of the type of brine washing according to each area where the brine is planned (on strongly saline lands-checks, on medium and low saline lands - implementation with the help of rows or racks);
- Cleaning the streams from sediments and plants
- 1000 M3/ hectare to unfertilized areas. (saltwater washing on yaxob water rags)

- 2000 m³/ h to weak saline areas. (salt wash on rags along with yaxob water)

When the use of land, which is considered the main means of production in agriculture, is organized correctly and rationally, it does not quit its work, but rather enriches the soil with crops, thereby creating a new natural fertility [6].

CONCLUSION.

From statistical analysis it is known that in order to improve the land reclamation situation in the region, it takes a considerable amount of cost and time each year. It is expedient to carry out quick measures before the completion of the problems, that is, all farmers in the region should regularly plan to clean the internal ditches in time. It is required to take water to the allocated land areas according to the plan, not to use it directly in irrigation, if the salinity of the ditch water is high. On the basis of the recommendations given, measures such as the washing of land saline and the expulsion of land at a depth of 40-45 CM, the qualitative conduct of the work of saltwater, the re-maintenance of irrigation networks, the control of the productive use of water, make it possible to effectively use existing land in agriculture.

References:

1. (2019). *The decree of the president of the Republic of Uzbekistan on measures for the effective use of agricultural land and Water Resources*. "Xalk Suzi" July 18.
2. (2017). *The lecture by SH.M.Mirziyayev, The president of Uzbekistan. Xalk Suzi, December 11*.
3. (2011). *The lecture book by U.N.Norkulov, X.Sh. Sheraliyev, S.S. Buriyev*.
4. (n.d.). *The Geography of agriculture by I.J.Hudoyev*.
5. Matkarimov, M.M. (n.d.). "Controlling the procedures of using technologies that economize and protect water use".
6. Siddikov, A., Abdurahimov, U., & Mamajonov, A. (n.d.). *The Ecology Department in Namangan region*.
7. (2019). The expeditional group of the Agriculture department in Namangan region.
8. (2019). Data from the committee of land resources and in Namangan.
9. (n.d.). Retrieved from www.lex.uz
10. (n.d.). Retrieved from www.stat.uz
11. (n.d.). Retrieved from www.ziyonet.uz
12. Xudoyberdiyeva, D. A. (2019). Management of the services sector and its classification. *Theoretical & Applied Science*, (10), 656-658.
13. Farxodjonova, N. (2019). Features of modernization and integration of national culture. *Scientific Bulletin of Namangan State University*, T. 1, №. 2, pp. 167-172.
14. Farhodjonovna, F. N. (2017). Spiritual education of young in the context of globalization. *Mir nauki i obrazovanija*, №. 1 (9).
15. Ergashev, I., & Farxodjonova, N. (2020). Integration of national culture in the process of globalization. *Journal of Critical Reviews*, T. 7, №. 2, pp. 477-479.