

Р.С.Камалова маросимларнинг асосий элементларини аниқлаб, уларнинг рамзий ва ижтимоий аҳамиятини тушунтиришга ҳаракат қилган. Мақоланинг муҳим жиҳати – турли маросим ва удумларнинг қорақалпоқларнинг тарихий тараққиёти контекстида кўриб чиқилиши бўлиб, маълумотлар асосида ўқувчи вақт ўтиши билан маросимларда кузатишган ўзгаришлар, баъзи анъаналарнинг сакланиб қолганлигини кузатиш имконига эга бўлади. Агарда мақоладаги маълумотлар қўшни қозоқ, қирғиз, ўзбек ва туркманларнинг маросимлари билан кўпроқ қиёсий ўрганилганда, унинг илмий аҳамияти янада юқори бўлар эди.

1999 йилда қорақалпоқларнинг моддий ва маънавий маданиятига доир бир неча мақолалар чоп этилди. Улар қаторида Х.Е.Есбергеновнинг икки мақоласини [11:100-102], С.Х.Есбергенова [12:64-68] ва В.Н.Ягодиннинг [13:88-94] биттадан мақоласини кўриб чиқиш мумкин. Ушбу мақолаларда асосан қорақалпоқларнинг моддий маданияти ҳамда диний қарашларидаги турли тотемистик образлар таҳлилга тортилган. Умуман олганда биринчи ва иккинчи

даврда этнограф тадқиқотчиларнинг асосий эътибори бир неча йўналишларда кечди. Ушбу йўналишлар 1991 йилда қайта ташкил этилган Ўзбекистон Фанлар Академиясининг Қорақалпоқ филиали йўналишларига мос равишда ривожланган. Унга асосан:

- 1991-1993 йилларда – Қорақалпоқ шаҳарларидаги замонавий этномаданий жараёнлар;

- 1994-1996 йилларда – Қорақалпоғистонда истикомат қилган бошқа халқлар этнографияси тадқиқот объектига айланди;

- 1997-1999 йилларда – қорақалпоқларнинг маънавий маданияти асосий тадқиқот объекти сифатида ўрганилди [14:78, 82, 83].

Хуллас, 1995 йиллардан бошланган иккинчи босқичда тадқиқотчилар сони ва изланиш йўналишлари кенгайди, махсус дала тадқиқотлари асосида ёзилган янги тадқиқотлар чоп этилди, қиёсий таҳлилга эга илмий мақолалар нашр этилди. Лекин шунга қарамай, изланишлар сони халқ тарихи, этногенези, моддий ва маънавий ўзига хослигини тўлиқ очиб бериш учун етарли бўлмади.

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РЕЗЮМЕ. Ушбу мақолада қорақалпоқ этнографияси ривожининг иккинчи босқичининг бошланиши, бу даврда ижод қилган этнограф олимлар, уларнинг изланишлари таҳлили, шунингдек, Ўзбекистон Фанлар академияси Қорақалпоғистон филиали тарихий-этнографик тадқиқот йўналишлари ва натижалари ҳақида маълумот бериб ўтилган.

РЕЗЮМЕ. В статье даны сведения о начале второго этапа развития этнографических исследований каракалпаков, этнографах, творивших в этот период, анализ их исследований, а также направления и результаты историко-этнографических исследований Каракалпакского отделения Академии наук Узбекистана.

SUMMARY. This article provides information about the beginning of the second stage of Karakalpak ethnography development, the ethnographers who created during this period, the analysis of their research, as well as the directions and results of historical-ethnographic research of the Karakalpak branch of the Academy of Sciences of Uzbekistan.

ASSESSMENT OF GROUNDWATER MINERALIZATION IN THE AMU DARYA DELTA ON THE EXAMPLE OF THE XOJELI DISTRICT OF THE REPUBLIC OF KARAKALPAKSTAN

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Tayanch soʻzlar: yer osti suvlari, yer osti suvlarining shoʻrlanishi, GIS texnologiyasi, sxematik xarita.

Ключевые слова: подземные воды, засоление грунтовых вод, ГИС-технологии, схематическая карта.

Key words: groundwater, groundwater salinization, GIS technology, schematic map.

Introduction. It is known that the formation of groundwater in the delta originates from the Amu Darya River. Currently, the waters of the Amu Darya are mainly used in agriculture.

To develop the lands in the Amu Darya delta, numerous channels were dug into which its waters were diverted. Due to the expansion of irrigated areas and the irrational use of Amu Darya water, there is a shortage of water in the lower reaches of the river delta. One of the ways to reduce water scarcity is to use relatively fresh groundwater.

Materials and methods. To determine the location of freshwater lenses, maps of groundwater salinity in the Xojeli district were compiled. Data from archival materials of engineering-geological and hydrogeological survey organizations were used to compile the maps. The maps are compiled using the ArcGIS computer program. When making maps, the results of determining the salinity of groundwater from 59 workings were processed. The research covered 110 km² of the territory of the Xojeli district.

Results and discussion. The results of research on historical materials showed that for the first time the water body of the Amu Darya delta in the Xojeli district of Karakalpakstan was reflected in a painting that was painted in 1842 [1]. Figure 1 shows the work of the Russian artist N.N. Karazin, which depicts the bazaar in Xojeli (1886) [2]. The bazaar of that time resembles modern Venice (Italy). The waters of the Amu Darya's channels were fresh, as it feeds mainly on melted snow and glacial waters. Naturally, due to the infiltration of surface waters, lenses of fresh groundwater are formed along the channels. In other places, groundwater is more saline, since the analysis of the geological structure shows that under the alluvial rocks there are layers of rocks of earlier age, which contain a lot of water-soluble salts [5].



Fig. 1. The Amu Darya basin. The bazaar in Xojeli. N.N. Karazin's original drawing (Niva Magazine No. 3, 1886)



Fig.2. Modern view of the part of the city of Xojeli shown in Fig.3 (2023, photo by the authors)

The picture shows a photo taken in 2024 of the same place, according to which the painting shown in Fig.1. As a comparative analysis of the drawings shows, 1,2 the Amu Darya duct dried up in 2024, and houses were built on the site of the duct.

Figure 3.4 shows maps of the water bodies of the Amu Darya Delta, compiled in 1842 and 2024. In 1842, the Aral Sea was full-flowing, and there were many lakes and channels of the Amu Darya in the delta of the Amu Darya. In the western part of the Amu Darya delta there was a large lake "Aybugir", in the eastern part Lake Dau Kara, which was connected to the Aral Sea, numerous channels of the river in the lower reaches of the Amu Darya were used by the population for trade and farming (Fig.4). Due to changes in natural conditions and human economic activity, lakes and numerous river channels have dried up [10].



Fig. 3. Map of the water bodies of the Amu Darya River delta (1842)

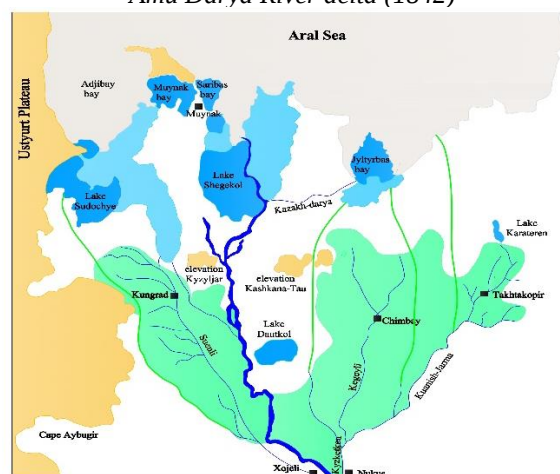


Fig. 4. Schematic map of the Amu Darya River delta (2023)

Regular monitoring of the groundwater level of the Xojeli district began in the early 1960s, when intensive development of land for growing crops began. Figure 5 shows a graph of changes in the groundwater level of the Xojeli district by year, a comparative analysis of which shows that compared to the 1960s, there was an increase in the groundwater level. This is primarily due to the inefficient use of irrigation water in agriculture. Under certain conditions, salts that occur at a depth in the composition of soil strata of earlier age migrate to the surface and increase the salinity of groundwater and soils. Near fresh water channels, the mineralization of groundwater decreases due to salt washing by water flows of the irrigation system.

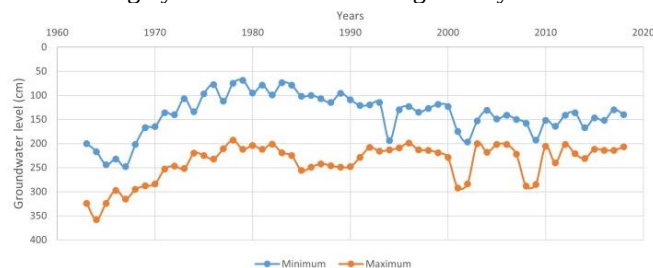


Fig.5 Dynamics of changes in the groundwater level of the Xojeli district

Figure 6 shows a schematic map of groundwater salinization with water-soluble salts [3; 6; 7; 8], the analysis of which shows that the salinity of groundwater depends on the sampling site [9]. For example, groundwater lenses with relatively low mineralization (0.5-2.5 g/l) were found in the central and northeastern parts of the research area. The

analysis showed that the most mineralized groundwater with a salt content of 6-25 g/l is located in the elevated part of the studied area. This indicates that there were no channels of the Amu Darya in these places [4].

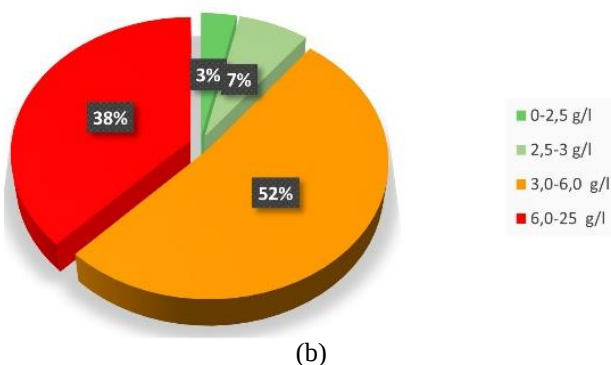
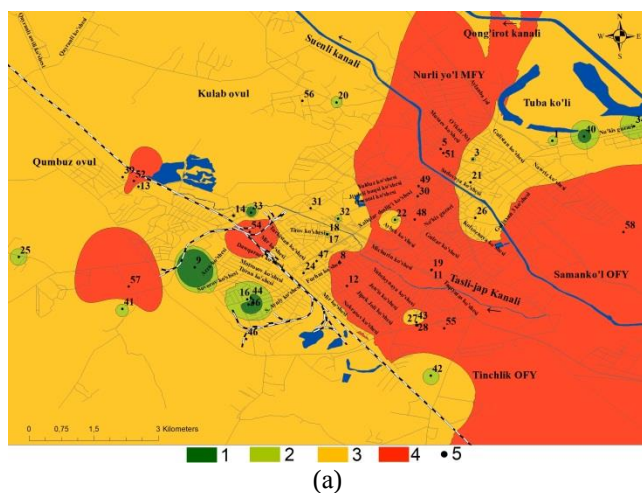


Fig.6. Schematic map (a) and percentage distribution (b) of groundwater salinity in the Xojeli district with water-soluble salts (by dense residue), g/l:
1- 0,5-2,5 g/l; 2- 2,5-3 g/l; 3- 3-6 g/l; 4- 6-25 g/l; 5- well.

Figure 7 shows a schematic map of the chemical classification of groundwater composition according to S.A.Shchukarev's classification, the analysis of which shows that groundwater in almost the entire territory belongs to group "B". Small areas of groundwater according to the chemical classification of S.A. Shchukarev belong to groups "A" and "C".

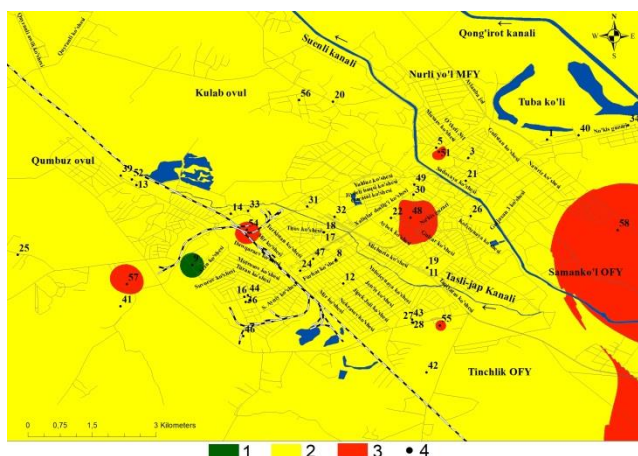


Fig.7. Schematic map of the chemical classification of the groundwater composition of the Xojeli district (compiled according to the classification of S.A.Shchukarev)
1-group "A"; 2- group "B"; 3- group "C"; 4- wells

Figure 8 shows a schematic map that shows the qualitative nature of groundwater salinization in the Xojeli district.

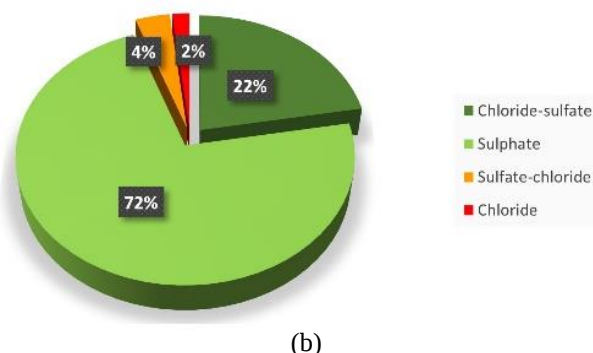
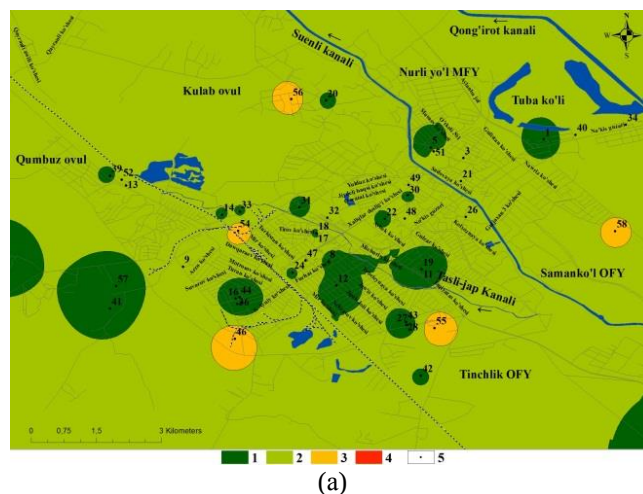


Figure 8. Schematic map (a) and percentage distribution (b) of the types of groundwater salinization in the Xojeli district with water-soluble salts (by dense residue):
1- chloride-sulfate; 2- sulfate; 3- sulfate-chloride; 4- chloride; 5- wells

As Figure 8 shows, the groundwater of the studied area belongs mainly to sulfate (72%) and chloride-sulfate (22%) types of salinization. According to S.A. Shchukarev's classification, groundwater mainly belongs to the sulfate and sulfate-chloride classes of salinity.

Conclusion

1. The results of studies on the salinity of groundwater in the Xojeli district of the Republic of Karakalpakstan showed that the mineralization of groundwater varies within 0.5-25 g/l, which is associated with the location of ancient channels of the Amu Darya. The lowest mineralization of groundwater is observed in those places where previously there were fresh water channels of the Amu Darya. According to S.A. Shchukarev's classification, groundwater mainly belongs to the sulfate and sulfate-chloride classes of salinity. According to the chemical classification of the composition, the groundwater of almost the entire territory belongs to group "B". Small areas of groundwater according to the chemical classification of S.A. Shchukarev belong to groups "A" and "C".

2. Groundwater can be used to reduce the shortage of water resources in the lower reaches of the Amu Darya. At the same time, for drilling exploratory hydrogeological wells, it is necessary to study historical materials that describe hydrological objects.

3. To use the groundwater of the Xojeli district, it is necessary to purify the water from salts, while selecting filters depending on the level of mineralization of the types of salts. The absence of industrial enterprises polluting groundwater allows the use of filters only to purify water from water-soluble salts.

4. The compiled schematic maps can be used in archaeological excavations of ancient cities and settlements of the Xojeli district.

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REZYUME. Maqolada Qoraqalpog'iston Respublikasi Xo'jayli tumanining gidrogeologik sharoitlarini o'rganish natijalari keltirilgan. Yer osti suvlarining mineralizatsiyasining sxematik xaritalari tuzildi. Qoraqalpog'iston Respublikasi Xo'jayli tumanida yer osti suvlarining sho'rlanishi bo'yicha olib borilgan tadqiqotlar natijalari shuni ko'rsatdiki, yer osti suvlarining minerallashuvi 0,5-25 g/l oralig'ida o'zgarib turadi. O'rganilayotgan hududning yer osti suvlari asosan sulfat (72%) va xlorid-sulfat (22%) sho'rlanish turlariga tegishli. Shchukarev tasnifiga ko'ra, yer osti suvlari asosan sho'rlanishning sulfat va sulfat-xlorid sinflariga kiradi. Xo'jayli tumanining yer osti suvlaridan foydalanish uchun suvni tuzlardan tozalash kerak. Tuzilgan sxematik xaritalardan Xo'jayli tumanining qadimiy shaharlari va aholi punktlarini arxeologik qazishmalarda foydalanish mumkin.

РЕЗЮМЕ. В статье представлены результаты исследований гидрогеологических условий Ходжейлийского района Республики Каракалпакстан. Построены схематические карты минерализации грунтовых вод. Результаты исследований засоленности грунтовых вод Ходжейлийского района Республики Каракалпакстан показали, что минерализация грунтовых вод изменяется в пределах 0,5-25 г/л. Наименьшая минерализация грунтовых вод наблюдается, где протекали протоки Амударьи. грунтовые воды исследованной территории относятся в основном сульфатному (72%) и хлоридно-сульфатному (22%) типам засоления. По классификации Щукарева грунтовые воды в основном относятся сульфатному и сульфатно-хлоридному классам засоления. Для использования грунтовых вод Ходжейлийского района необходимо осуществить очистку воды от солей. Составленные схематические карты можно использовать при археологических раскопках древних городов и поселений Ходжейлийского района.

SUMMARY. The article presents the results of studies of the hydrogeological conditions of the Xojeli district of the Republic of Karakalpakstan. Schematic maps of groundwater mineralization have been constructed. The results of studies on the salinity of groundwater in the Xojeli district of the Republic of Karakalpakstan showed that the mineralization of groundwater varies within 0.5-25 g/l. The lowest mineralization of groundwater is observed where the channels of the Amu Darya flowed. The groundwater of the studied area belongs mainly to sulfate (72%) and chloride-sulfate (22%) types of salinization. According to Shchukarev's classification, groundwater mainly belongs to the sulfate and sulfate-chloride classes of salinity. To use the groundwater of the Xojeli district, it is necessary to purify the water from salts. The compiled schematic maps can be used in archaeological excavations of ancient cities and settlements of the Xojeli district.

INFORMACIYALIQ JAMIYET HÁM SHAXS RUWXÍY DÚNYASÍNÍN QÁLIPLISIWINÍN ÓZ ARA BAYLANISLILÍGÍ

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Tayanch so'zlar: ma'naviyat, jamiyat, shaxs, dunyoqarash, bilim, tafakkur, huquq, madaniyat, g'oya, iqtisod, tafakkur, fan, texnika.

Ключевые слова: духовность, общество, личность, мировоззрение, знание, мышление, право, культура, идея, экономика, мысль, наука, технология.

Key words: spirituality, society, personality, world view, knowledge, thinking, law, culture, idea, economy, thought, science, technology.

Ózbekstan Respublikasınıń Birinshi Prezidenti I.Karimovtıń: «Bárshezimge ayan bolıwı kerek, qay jerde biygamlıq hám biyparwalıq húkım sürse, eń aktual máseleler ózi boladılıqqa taslap qoyılса, sol jerde mánawiyat eń soqır hám eń ázzi toshkaǵa aylanadı hám kerisinshe – qay jerde sergeklik hám jan kúyerlik, joqarı aql-oy hám oy-pikir húkımdar bolsa, sol jerde mánawiyat qúdiretli kúshke aylanadı», [1:33] degen pikiri házirgi dúnyanıń informaciyalıq, ideologiyalıq kátinasına, onıń insan mánawiyatı, ruwxıy dúnyası menen baylanıslılıǵına, qalıplesiwine berilgen shın baha desek boladı. Sebebi informaciyalıq texnologiyalardıń mazmunı, onıń ekonomikalıq hám sociallıq transformaciyası adamlar hám jámiyetshilikke bilimler hám ideyalardı qollana alıwında kórinedi.

Al, búgingi kúnde Prezidentimiz Sh.Mirziyoev [2] tárepinen qoyılıp atırǵan mámleketti rawajlandırıw strategiyasınıń baslı maqseti de jaslardıń mánawiyatın rawajlandırıw hám kámil insandı qalıplestiriw máselesi bolıp esaplanadı.

Informaciyalıq jámiyet, biziń pikirimizshe, adamlarǵa óz potencialların hám maqsetlerin keń túrde ámelge asırıwına imkan jaratadı. Buniń ushın, informaciyalıq texnologiyalar ekonomikalıq joqarılawǵa, jámiyetlik parawanlıqtıń ósiwine, demokratiyalıq principlerdi bekkemlep sociallıq kelisimdi stimullastırıwǵa, transparentlik hám juwapkershilikli basqarıwǵa, insan

huquqların qorǵawǵa, xalıqaralıq tınıshlıq hám turaqlılıqtı bekkemlep, mádeńiy kóp túrlilikti rawajlandırıwǵa xızmet etiwı kerek.

Bul maqsetke erisip hám mashqalalardı sheshiw ushın nátiyjeli milliy hám xalıqaralıq strategiyalar islep shıǵılmaqta.

Informaciyanıń tásirinde sociallıq strukturalardıń ózgeriw xarakterine alımlar tárepinen berilgen prognosdı kórip shıraqar: Social toparlardıń sanı ósedi, bul tabiiy rawishte olardıń orta kóleminiń kishireyiwine alıp keledi. Zamanagóy informaciyalıq texnologiyalar adamlardıń máplerin anıq, operativ esapqa alıp ámelge asıradı. Social toparlardıń tálim dárejesi, intellektuallıǵı h.t.b sıyaqlı parametrlerinıń sapalıq parametrleri jaqsılanadı. Social toparlar ortasındaǵı, hár qıylı kriteriyalar boyınsha jańa procentlik salıstırmalar qalıpleseidi.

1) intellektuallar – intellektual, aql miynetini menen shuǵıllanıwshı adamlardıń sanı kóbeyedi. Hátte ayırıqsha «intellektuallar» klasınıń payda bolıwı boljanbaqta. Intellekтуallıq aql miynetini menen shuǵıllanıwdı qálemewshiler, informaciyalıq xızmet kórsetiwshiler sferasında isleydi, bular informaciyalıq jámiyette 50% ten kóbiregin qurap, xızmet kórsetiw yaki materiallıq óndiris tarawında bánt boladı.

2) Miynetke jaramlı adamlardıń sanı kóbeyedi. Aldıńǵı áwlad adamları peńsiyaǵa shıqqannan keyinde jumıs isley aladı, sebebi jumısqa jaramlılıq jası sozıladı (dene miyden