

**NOSOECOLOGICAL SITUATION AND GEOGRAPHICAL DIFFERENCES IN THE
INCIDENCE OF THE POPULATION
(ON THE EXAMPLE OF BAYAUT DISTRICT)**

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Abstract: The formation of the nosoecological situation of the district is influenced not only by the natural environment, natural and geographical factors, but also by the specialization of the economy. It is important to conduct scientific research in the field of identifying the causes of diseases occurring among the population of the Bayaut district, in connection with the environmental situation. There are 14 FMC, FP, MDCPs for the entire population carry out service activities in the district.

Key words: Nosoecological situation, ecological situation, population, morbidity, health care, MFY (mahalla gathering of citizens), ethnicity, area, vegetation, health insurance, SWOT analysis.

Аннотация: На формирование нозоэкологической ситуации района оказывают влияние не только природная среда, природно-географические факторы, но и специализация хозяйства. Важное значение имеет проведение научных исследований в области выявления причин заболеваний, встречающихся среди населения бойловутского района, в связи с экологической ситуацией. В районе для всего населения осуществляют сервисную деятельность 14 СВП, СП, МФЦП.

Ключевые слова: Нозоэкологическая ситуация, экологическая ситуация, население, заболеваемость, здравоохранение, МФЙ (махаллинский сход граждан), этническая принадлежность, район, растительность, медицинское страхование, SWOT-анализ.

In the XXI century, humanity is facing global problems, the solution of which must be found, including: global climate change, environmental degradation, deterioration of the ecological situation.

In the face of the entire world humanity, these problems lead to the development of diseases. I believe that to solve such problems, it is necessary that environmentalists, the World Health Organization, the entire public and all of us act together. Significant work is being carried out in this direction in our republic as well. The goal of the 56th of "The new development strategy of Uzbekistan for 2022-2026" is "To improve the quality of medical services provided to the population, the effective use of budget funds, the centralization of medical services and the introduction of the practice of medical insurance of the population". Tasks such as "The implementation of comprehensive measures aimed at the implementation of the program for the development of the healthcare system, public health protection and capacity building of medical workers for 2022-2023, as well as the strategy of digitalization of healthcare for 2022-2026"¹ are outlined. In particular, it is important to conduct scientific research in the field of identifying the causes of diseases occurring among the population of the Bayaut district, in connection with the environmental situation.

¹Decree of the President of the Republic of Uzbekistan "on the new development strategy of Uzbekistan for 2022-2026" dated January 28, 2022 No. PD-60. <http://lex.uz>

Bayaut district is located in the south-east of the Syrdarya region, is the most densely populated (ranks first in terms of population in the region) administrative unit with a high population density. Bayaut district was established on April 19, 1955 as part of the Tashkent region. It was added to the Yangier district in 1960. 1963. Reorganized as part of the Syrdarya region [2]. Bayaut district is located in the south-east of Syrdarya region, bordered on the east by Bekabad district of Tashkent region, on the southwest by Khavast district, on the north by Gulistan district, on the West by Mirzaabad district and on the south by the Republic of Tajikistan.

Table 1

General geographical definition of Bayaut district

| | |
|--|--|
| Date of formation of the district | February 5 , 1961 |
| Area (land area) | 522,6 sq. km |
| Population | 134 100 people |
| Border length | 145 km |
| - With the Bekabad district of the Tashkent region | 30 km |
| - With the Khavast district | 35 km |
| - With city of Shirin | 15 km |
| - With the city of Gulistan | 7 km |
| - With Gulistan district | 25 km |
| - With the city of Yangier | 28 km |
| - With Mirzaabad district | 5 km |
| Relief | It consists mainly of plains slowly rising (from 275 m to 310 m) from north to south |
| Some towns belonging to the district | Bayaut, Bekat, Markaz and etc. |
| Centre | Bayaut town |

Source: data from the statistics department of the Bayaut district

Nature. Soils-light chestnut, meadow-gray and irrigated meadow soils. Many areas are saline and saline. This is also influenced by the climatic conditions in the district. Bayaut district is located in the south of the Mirzachul steppe, the relief is flat, the surface is covered with alluvial deposits. The climate is continental. The average temperature in July is 26-28 ° C, in January -2 °C, -4 °C. On average, 200-300 mm of precipitation falls per year. There is a strong influence of the winds of Bekabad on the territory of the district. The Southern Mirzachul Canal runs through the territory of the district, and the Dustlik Canal runs along the border of the Bekabad district of the Tashkent region. The groundwater is brackish and brackish. Soils-various gray soils formed on loess. many lands are saline. From wild animals there are a fox, a roe deer, a wild cat, a hare, from reptiles-various snakes, and from aquatic and terrestrial inhabitants - a desert frog [3].

The rich area is insufficiently provided with mineral resources. Rational use of available natural resources is becoming important for the development of agriculture in the district.

To increase crop yields, it is necessary to create effective methods of soil reclamation. In areas where saline soils are common, it is possible to plant crops that are resistant to salinity or reduce the level of salinity. For example: planting trees such as mulberry, pomegranate, also gives good results. There are primary and secondary types of salinization. The occurrence of primary salinization can be caused by the evaporation of subsurface waters, the dissolution of salts in the subsurface water-forming parent rocks or the blowing of salt dust around reservoirs

by the wind, the biological accumulation of salts by plants. Most of the irrigated lands in the Bayaut district are saline to varying degrees. This is caused by an anthropogenic factor, a change in the state of groundwater. This leads to a decrease in productivity, a change in quality and other negative consequences in agriculture.

Salinization increases the tendency to form hard soils, which is another negative agricultural factor. After rain or irrigation, the surface of the Earth coagulates, liquefies and forms a solid layer when dried, and the surface of the Earth cracks. Layered soil slows down the development and growth of agricultural crops[4,5].

There is another natural factor affecting the decline in soil fertility, which is important for the development of agriculture, is the wind. In spring and autumn, the pressure in Mirzachul is high, and in the Fergana Valley, due to low pressure, the Kokand wind blows from Mirzachul to the valley, and in winter, when the pressure in the valley is high, the Bekabad wind blows in Mirzachul. Namely, the Bekabad wind causes huge material damage to many plants, trees and the national economy[3,4].

Factors such as the geological structure of the area, relief, climate, underground and surface waters contributed to the uniqueness of the nature of the Bayaut district. Due to the fact that most of its territory is flat, it accounts for a much larger amount of solar radiation throughout the year, as a result of which the temperature in summer directly affects the abundance of days with high temperatures. On the other hand, higher temperatures cause an increase in evaporation, the withdrawal of moisture from the soil, which is especially important for plants in the soil, as well as the death of plants. The openness of the northern side and the presence of plains determine the unhindered penetration here in winter of the cold Arctic air masses of Siberia from the north, at from the northeast. This leads to a sharp decrease in air temperature [2,3,4].

In addition, the high level of evaporation compared to the amount of precipitation in the area also aggravates the salinization process. To eliminate such negative consequences on saline soils, it is necessary to annually carry out high-quality washing, drainage work, and improve the condition of ditches. A good effect in this case is given by the use of the biological drainage method (evaporation of excess groundwater).

To implement the biological drainage method, it is necessary to plant more crops, such as willow, poplar, trees such as elm, alfalfa, which evaporate a lot of water through the leaves. For example, during the growing season, a willow or poplar bush evaporates up to 20-30 metric cubes of water. Thanks to these measures, soil condition is improved, dampness is removed and the groundwater level is lowered[4].

The natural conditions and the complex of resources of the territories of the Bayaut district, available for solving economic, environmental, and social problems, expressed in certain qualitative and quantitative indicators, determine the agrarian potential of the district.

The area is sufficiently provided with water resources. The Syrdarya river and Dustlik canal, as well as the Southern Mirzachul canals, are of great importance in carrying out irrigation works in the district. The Farkhad hydroelectric power station has been built on the Syrdarya River, which also contributes to the improvement of land irrigation. Dustlik Canal also plays an important role in irrigation of the lands of the Bayaut district, carrying out irrigation activities. The construction of this canal lasted from 1901 to 1915. The length of the canal is 117 km. Of these, 68.6 km passes through the territory of the Republic of Uzbekistan, 48.4 km - through the territory of the Republic of Kazakhstan. A special place is given to the Southern Mirzachul Canal in the water supply of agriculture in all districts of the Syrdarya

region. The length of this channel is 124 km, together with its networks -400 km[3]. Based on the natural conditions of the district, it is important to observe the rules for the placement of crops, crop rotation, autumn plowing, salting, and timely conduct agrotechnical measures. This includes the use of more organic fertilizers, the prevention of water and wind erosion, that is, the expansion of irrigated fields, especially ihot fields in areas adjacent to the desert oases. And on pastures, such measures as the regulation of livestock grazing, protection of soils from pollution, protection of fertile soils, flora and fauna, high-quality reclamation of lands with disturbed soil cover will become the basis for wider development of agriculture in the district.

The population is mainly Uzbeks; Russians, Tajiks, Tatars and representatives of other nationalities also live. On average, there are 256.6 people per 1 sq. m. km. Urban population - 29.6 thousand[8] people, rural-104.5 thousand people (2022) [3,4].

Table 2

MFYs of Bayaut district and its , FMC, FP, MDCPs

| № | Names of FMC, FP, MDCP | Name of MFY | Total population | Population | |
|---|--|----------------|------------------|------------|--------|
| | | | | Total | |
| | | | | Male | Female |
| 1 | MDCP (Multidisciplinary central polyclinic) | Ijodkor MFY | 3128 | 1574 | 1554 |
| | | Sokhil MFY | 2550 | 1283 | 1267 |
| | | Beruni MFY | 2213 | 1116 | 1097 |
| | | Olmazor MFY | 3501 | 1761 | 1740 |
| | | Madaniyat MFY | 3023 | 1520 | 1503 |
| | | Uchturgon MFY | 2995 | 1507 | 1488 |
| | | Sovotobod MFY | 1139 | 572 | 567 |
| | | Total MDCPs | 18549 | 9333 | 9216 |
| 2 | FP No.1 (family polyclinic) | Markaz MFY | 3536 | 1770 | 1766 |
| | | Istiklol MFY | 4478 | 2244 | 2234 |
| | | Mukimi MFY | 3148 | 1576 | 1572 |
| | | Boboyurt MFY | 3917 | 1965 | 1952 |
| | | Ozodlik MFY | 1993 | 995 | 998 |
| 3 | FP No.1 | Dustlik MFY | 4990 | 2550 | 2440 |
| | | S. Ayni MFY | 4050 | 2071 | 1979 |
| | | A. Temur MFY | 2795 | 1430 | 1365 |
| 4 | FP No.1 | Anorzor MFY | 5071 | 2632 | 2439 |
| | | Belat MFY | 3400 | 1766 | 1634 |
| | | Karapchi MFY | 3600 | 1868 | 1732 |
| | | Yangiavlod MFY | 4500 | 2340 | 2160 |
| 5 | FP No.1 | A.Navoi MFY | 4700 | 2363 | 2337 |
| | | Sarmich MFY | 3905 | 1965 | 1940 |
| | | Julangar MFY | 4310 | 2165 | 2145 |
| 6 | FP No.1 | Mirishkor MFY | 4710 | 2444 | 2266 |
| | | Khosilobod MFY | 3020 | 1566 | 1454 |
| | | Buyodkor MFY | 3060 | 1588 | 1472 |

| | | | | | |
|--------|---|-----------------|--------|-------|-------|
| 7 | FP No.1 | Farkhod MFY | 2538 | 1292 | 1246 |
| | | Navruz MFY | 3005 | 1525 | 1480 |
| | | Manaviyat MFY | 2830 | 1438 | 1392 |
| | | Navbakhor MFY | 2924 | 1486 | 1438 |
| 8 | FP No.1 | Uzbekistan MFY | 2570 | 1291 | 1279 |
| | | Gulbog MFY | 2546 | 1282 | 1264 |
| | | Iftikhor MFY | 5089 | 2559 | 2530 |
| | | Total FPs | 90685 | 46171 | 44514 |
| 9 | Buston FMC (Family medical center) | Yangibuston MFY | 3936 | 2073 | 1863 |
| 10 | Galaba FMC | Yangiabad MFY | 3845 | 1826 | 2019 |
| 11 | Dustlik FMC | Ziyokor MFY | 4870 | 2556 | 2314 |
| 12 | N. Makhmudov FMC | Tinchlik MFY | 2085 | 1080 | 1005 |
| 13 | Sh. Rashidov FMC | Laylakkul MFY | 3584 | 1810 | 1774 |
| 14 | 1 st Bayaut 9 th part FMC | Pakhtakor MFY | 1949 | 989 | 960 |
| | | Total FMCs | 20269 | 10334 | 9935 |
| Total: | | | 129503 | 65838 | 63665 |

Source: Compiled on the basis of data from the statistics department of Bayaut district[3,4]

Among all MFYs of the district Iftikhor MFY is considered as the most populous one and its population 5089 people. The total population in 2021 was 129,503[4] people. There are 14 functioning FMC, FP, and MDCPs for the people of the district. There are 7 MFYs attached to the MDCP and this indicator is higher than others. [3].

Household. The main branches of the economy of the district include cotton growing, animal husbandry, horticulture and grain growing. Consumer goods are produced at a local industrial enterprise in the district center. There are 2 cotton gins, brick and bread factories[2].

Agricultural irrigated lands amount to 29.7 thousand hectares, arable lands-29.2 thousand hectares, including cotton-16.7 thousand hectares, vegetables-126 thousand hectares, cereals-11.7 thousand hectares, fodder-787 hectares[4].

Let's take a look at the possibilities of the Bayaut district based on SWOT analysis:

Strengths. The working-age population is especially characterized by a high percentage of young people under 30 years of age. 850 m per second over the territory of the district.the cube passes 1 channel (South Mirzachul) with water permeability. In the burrow there are deposits of raw materials for the production of materials, including cement and bricks, tiles. The fruit and vegetable industry, including pomegranate farming, is developed, and the available land plots have high fertility.

Weaknesses. A high proportion of the informal sector of employment of the population. Industries with low added value have a higher level of employment, especially in agriculture (39% of the population). Low level of retail sales (924.7 per capita ming.so 11 places in the province). Low level of service (681.9 per capita ming.so 11 places in the province). Absence of fruit and vegetable processing enterprises. Limited opportunities for efficient use of the railway network.

The formation of the nosoecological situation of the district [5,6,7] is influenced not only by the natural environment, natural and geographical factors, but also by the specialization of its economy. Observations show that the total number of cases increased slightly from 63,193 people in 2016 to 69,026 people in 2021. But it should be noted that some diseases have

decreased. In particular, the total number of registered diseases in some FP and FMCs has decreased. While the diseases in the Eye-related diseases have increased slightly, and we can testify that the general diseases registered in FP No.1, FP No.3, FP No.6 have slightly increased.

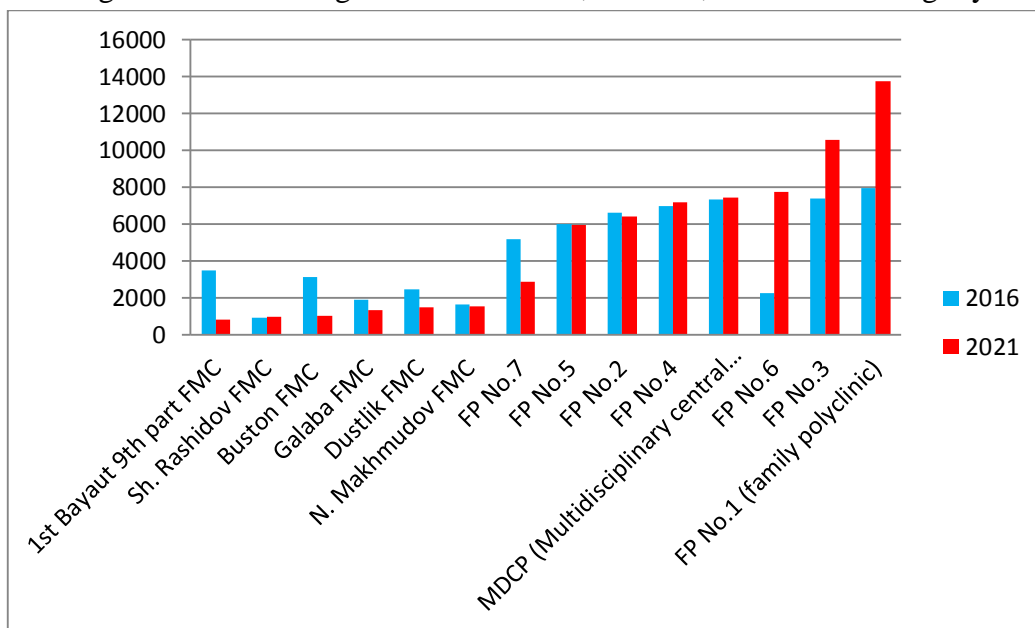


Figure 1. **The total number of cases among the population of rich areas (people)**
(the figure has been compiled by the author)

Bayaut District Medical Association is located in a new complex building built on the territory of the Uchturgon MFY of the Bayaut district, the Central Hospital is designed for 160 beds, 20 beds-ambulance, 10 beds-elective surgery, 45 beds-maternity hospital, 30 beds-infectious diseases, 20 beds-children's, 20 beds-internal diseases and 15 beds-cardiology, diagnostics-laboratory, consists of a pharmacy, sterilization department, pathological anatomy and laundry[3].

In accordance with the resolution, it was planned to create an ambulance department in 2 operations whose activities were suspended, currently 1 ambulance department has been created (1st ambulance department, 2nd department).

In total, 95 doctors worked to provide qualified medical care to the population of the district in 2020. And in 2021, 94 doctors worked. In 2020, there were 50 categories, bringing the total number of doctors to 52.6 percent. And in 2021, this figure was 46, which is 48.9 percent of the total number of doctors. Total doctors of the highest category-44 people - 95.6 percent, doctors of the 1st category-2.1 percent, doctors of the 2nd category-10 people-21.7 percent, doctors without categories-48 people-51.1 percent). 32 doctors were trained during the year. The provision of doctors per 10,000 residents of the district is 7.1.

In the multidisciplinary central polyclinic located in the Bayaut district, there are GP (general practitioner) – 26 people, pediatrician-4 people, therapist, ultrasound-7 people, laboratory assistant-5 people, obstetrician-gynecologist, dentist, pediatrician, occupational therapist, physiotherapists.

In 2020, the average medical staff was 886 people. However, in 2021, this number was 901. Of these, 411 people make up 45.6% of the total number of employees. Of these, the highest category-187 people-45.4%, the 1st category-33 people (8.0%), the 2nd category-191 people (46.4%). 592 nurses (65.7%) did not receive a category, And 138 young medical workers

did not receive a category. The number of qualified nurses - 449 people - is 49.8 percent. The provision of mid-level medical personnel in the district in 2020 amounted to 68.5 percent against 10,000 people in 2021 -68.4 percent.

In 2020, the total birth rate was 2,753 people with an indicator of natural growth index of 21.6 ppm, and in 2021 - 3,024 people with an indicator of natural growth index of -22.9 ppm. In the district, the natural growth of population in 2020 amounted to 17.1 ppm, in 2021-17.4 ppm. Infant mortality in 2020 was 42 cases with an intensity of 15.5 ppm, and in 2021 -28 cases with an intensity of 9.3. In 2020, 1 maternal death occurred in the district.

The total number of patients in the district was 614,409 in 2020 and 509,354 in 2021. Of the receipts in 2020, 322,628-72%, and in 2021, 238,228 came from the OP Lab. In the district in 2021, 1 central hospital provided medical care to aholi in inpatient conditions with 8 departments. In 2020, the provision of medical places in the district for every 10 thousand inhabitants amounted to 12.3 ppm, in 2021 -12.3 ppm. On average, this indicator is 35.0 ppm in the republic. In 2020, the mortality rate in hospitals was 46-0.4 ppm, and in 2021-38-0.3 ppm.

When organizing an ambulance service to the population of the district (131,691 people) [4], in the Bayaut district center and in each SIU (Association of Water Consumers), a total of 10 points consisting of 10 ambulance crews and 1 intensive care unit operate, all vehicles equipped with 11 vehicles are adapted to provide ambulance.

In addition, all ambulance crews in the district are currently supplied with medicines necessary for first aid of 34 different types. The total number of outpatient facilities in the district in 2020-2021 is 14, designed for 1150 visits. Of these, 1 multidisciplinary central polyclinic for 150 visits, 7 FPs for 700 visits and 6 canteens for 300 visits[3].

63 medical teams have been organized on the basis of MDCP, FP and FMCs in the district, a universal and progressive patronage system has been introduced, targeted and targeted work of patronage nurses has been established. This helps in the detection and treatment of diseases in the early stages.

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