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Implementation of GIS in Mingachevir city

Aliyeva Seyidnisa Xoshbext^{1b}

Azerbaijan State Pedagogical University, Department of General Geography, Azerbaijan

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Abstract

Geographic information systems (GIS) are a special type of information systems that serve to collect, store and process data consisting of certain information about certain areas of the earth's surface. In modern times, maps are more necessary for studying, systematizing, analyzing the current situation in the environment and protecting the fragile balance between people and the environment than for the purpose of describing geographical objects. Forecasts provide us with ample opportunities to plan the future and model human and environmental relations. . CIS has an important role in the development of all administrative regions included in the Central Aran economic region. Mingachevir is the fourth largest city of Azerbaijan. From GIS in almost all fields is used. We can say that GIS was used for the first time in the preparation of a city map. Research is conducted there, aerial photographs are taken, etc., maps are prepared. The city was built in connection with the construction of a hydroelectric power station on the Kura River November 11. It received city status in 1948. The city of Mingachevir is 17 km away from the Baku-Tbilisi sea road is located at a distance. 30 km from the national airport located in Yevlakh district, 8 km from the international airport located in the city of Ganja it is far away.

1. Introduction

Looking at all this, we see that the development of the CIS in our country is important. Many GIS companies operate in the Republic of Azerbaijan. They use modern methods and technologies for the future development of the Republic of Azerbaijan. It is no coincidence that a number of state structures and departments in the Republic of Azerbaijan already use GIS.



Figure 1. Location map of the study area

These include the State Land and Mapping Committee, the State Registry Service of Real Estate, the

State Committee for Real Estate Issues, the Ministry of Emergency Situations, etc. an example can be given. About 10 GIS companies are already operating in the Republic of Azerbaijan.

2. Method

Many studies on Geographical Information Systems have been conducted in Mingachevir, located in the Central Aran, and these systems have been used for planning, territorial management, productivity growth, etc. It has been found to be useful in some areas.

Many changes have been observed in the infrastructure of the city in the field of Geographic information systems applied in the city of Mingachevir. Many projects related to the application of geographic information systems have been developed, and thanks to these projects, many benefits have been achieved in urban planning and development.

One of the biggest benefits of applying Geographic Information Systems in Central Aran, especially in Mingachevir, is the management and development of the infrastructure of the area. In the field of these systems, it is possible to evaluate, strengthen and plan the environment, architecture and infrastructure in Mingachevir.

* Corresponding Author

¹(e-mail) ORCID ID xxxx – xxxx – xxxx – xxxx

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2.1. The importance of implementing GIS in Mingachevir

In this area, development plans are implemented more appropriately and the City's layout and infrastructure are made more efficient. Another benefit of applying Geographical Information systems in Mingachevir is its use for territorial planning.

One of the most important components of GIS is "data". GIS can combine spatial data with other data sources. In this way, information related to many organizations and structures is organized, local information is clarified. Although experts recognize data as a key element for GIS, it appears to be the most difficult component to obtain. Data sources are aggregated, multifaceted and have different structures, and data collection takes a lot of time and money. Necessary funds have been allocated to this field in recent years in the city of Mingachevir. The fact that the city is developing day by day is a clear proof of this.

2.2. Fields of application of GIS in Mingachevir

Geographic Information Systems (GIS) are widely used in a variety of sectors. The following are the fields where GIS is used in Central Aran:

~ **Urban planning and construction:** Aranda Geographic Information Systems are used in urban planning and construction, such as building location, road and bridge planning and construction.

~ **Urban and rural planning:** Agriculture, external road planning, construction of internal ring roads and power lines, etc. from Central Aran Geographical Information Systems. It is used for carrying out work in the fields of village and settlement planning.

~ **Urban and rural planning:** planning of agriculture, external roads, construction of internal ring roads and power lines, etc. from Geographical Information Systems in the Central Aran economic region. It is used for carrying out work in the fields of village and settlement planning.

~ **Water management:** Geographic Information Systems are used in water management, water resource protection, water level measurement and water quality management.

~ **Culture and tourism:** In the Central Aran economic region, Geographic Information Systems are used in the fields of culture and tourism, such as planning and management of museum and tourism sites, tourism statistics and data analysis.

~ **Security and defense:** Security planning, threat assessment, military power, etc. from GIS in the Central Aran economic region. It is used for work in security and defense fields.

~ **Urban economics and marketing:** Urban planning, investment and development evaluation, finding the most popular commercial locations in the Central Region from Geographical Information Systems, etc. It is used for business in urban economy and marketing.

3. Results

The Center for Geographic Information Systems facilitates the provision of geographic information to both internal and external customers in Aran. This allows us to serve customers faster and more efficiently. Geographic Information Systems, when implemented, can lead to changes in the business processes of a company, institution or organization.

Through GIS, opportunities such as more efficient production, efficient use of supplies, or better customer service can be achieved. If a company, institution or organization does all the steps correctly when implementing GIS, it can be more successful in achieving its goal.

However, the results of the application will not always be positive, as there may be problems such as incorrect data entry, incorrect data analysis, application usage or outdated requirements.

4. Discussion

In addition to these fields, Geographical Information Systems are used for public relations of citizens of Zardab district and presentation of information of organizations in relevant fields. Zardab district creates a solid economic base for its population with the land it owns. Due to its proximity to the capital Baku, this region has areas suitable for use in military, construction, petrochemical, and agricultural fields. For this reason, the territory of the district is suitable for the use of Geographical Information Systems (GIS). These systems help monitor and manage planting, irrigation, crop storage and transportation. However, GIS systems are also used in central administration bodies, project preparation and development areas.

5. Conclusion

Looking at all this, we see that the development of the CIS in our country is important. Many GIS companies operate in the Republic of Azerbaijan. They use modern methods and technologies for the future development of the Republic of Azerbaijan. It is no coincidence that a number of state structures and departments in the Republic of Azerbaijan already use GIS. These include the State Land and Mapping Committee, the State Registry Service of Real Estate, the State Committee for Real Estate Issues, the Ministry of Emergency Situations, etc. an example can be given. About 10 GIS companies are already operating in the Republic of Azerbaijan.

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