



6th Intercontinental Geoinformation Days

igd.mersin.edu.tr



The importance of using GIS technology in conducting geographic research in the Republic of Azerbaijan

Zakir Eminov^{ID}

Institute of Geography, Ministry of Science and Education, Baku, Azerbaijan

Keywords

Geographic maps
Electronic maps
Electronic databases
Atlas
GIS

Abstract

As there is a lot of information in modern times, the sources from which they are obtained are also wide and numerous. Maps which are considered one of the important scientific sources in geography are important among them. At present, maps prepared based on the use of GIS technology are of greater importance, and since they have a high level of information load, there are opportunities to continuously update the information. At the same time, the creation of electronic databases is an important source for the preparation of maps, as well as for the implementation of other socio-economic analyzes and measures.

1. Introduction

In modern times, there are quite a lot of information sources used in geographical research. The information collected in them is diverse and multi-disciplinary. The use of GIS tools and the preparation of maps based on them are of particular importance in the systematic collection, storage, and use of these data for various purposes.

In addition to complex indicators, most of the thematic maps are made based on information related to a field on the basis of modern technologies, electronic maps also have geographic components. At the same time, electronic databases prepared for countries or regions are also important. They can be continuously updated.

2. Method

It is very important to prepare maps and databases for various purposes using GIS technology. Methods such as statistics, historical-geographic analysis, cartography, comparison, analysis and comparison are used for activities in this field. Effective use of various software of computer technology is the basis of the conducted research. As the demands on databases and maps increase in modern times, it is necessary to use more methods.

3. Results and Discussions

In addition to physical-geographical components, objects and events with economic-geographical content can also be used in the prepared electronic maps. Collection and analysis of the information given on maps, and grouping. It is possible and relatively easy to enter and update new data every year, although providing regional analyzes has presented challenges. Such a situation creates opportunities to prepare electronic maps both for the country and at the level of regions and administrative areas. At the same time, it is possible to draw up maps in this direction and place information there in most areas of the economy.

The given data is subject to change in a short period in the maps on the use of population and labour resources. Every year, new information is published in the form of a report on births, deaths, natural growth of the population, migration, marriages and divorces, and employment structure by the State Statistics Committee. There are significant differences in their distribution across regions, and these differences are subject to change from year to year. Therefore, there is a need to change the information about the population in these types of maps.

Demographic indicators are presented in the form of groups in electronic population maps. First of all, it is

* Corresponding Author

^{*}(zakir_eminov@mail.ru) ORCID ID 0000-0002-5967-0063

Cite this study

Eminov, Z. (2023). The importance of using GIS technology in conducting geographic research in the Republic of Azerbaijan. Intercontinental Geoinformation Days (IGD), 6, 238-240, Baku, Azerbaijan

possible to determine the distribution of the population by regions. Demographic indicators are prepared by groups in advance on the maps. It is possible to create databases on all the information the State Statistics Committee provides. In the population section, you can get information about its total number, as well as indicators such as gender composition, age composition, and the working-age population.

At the same time, the information given in the electronic maps shows one-year indicators and figures for 5-year periods or consecutive data of the last 5 years.

The number of salaried employees, employed population, economically active population, and the number of employees in separate economic fields are included in the data on the use of labour resources. The distribution of labour resources by administrative areas is given here, and the differences in the use of labour resources in regions are visible. Monitoring the distribution of information on the existing administrative-territorial units in Azerbaijan refers to the advantages of using electronic maps.

Electronic databases (EDBs) are one of the most important resources in conducting geographic research. Their grouping is required by the excessive amount of data in the system of geographical sciences. A variety of information and cartographic materials are required to prepare the physical-geographical and economic-geographical characteristics of each country.

Recently, research has been given a large place within the framework of administrative regions, provinces, and economic regions covering smaller territories. Analyses in economic-geographical research are conducted in the directions of historical-geographical development, current situation and prospective development. For this purpose, the EDB is established primarily for the use of numerous information in the process of population settlement, demographic development, use of labour resources, and analysis of the development dynamics of separate areas of the economy. Information is obtained based on a survey from the SSC, individual ministries, other state institutions, and local government bodies. At the same time, it is important to compare data from different years. Therefore, it is important to collect data covering the last 20-30 years for each region, country and thematic direction.

In this regard, it is important to note the collection of information and the creation of a geographical base related to the East Zangezur economic regions of Karabakh.

Currently, the database is of great importance in the process of restoration and construction works carried out in both economic regions, the beginning of village, town and city restoration, the planning of cities and villages, how many people can be accommodated in each of them, and the determination of their number in the coming years and decades. At the same time, information in the appropriate directions is important for creating jobs, building social and cultural service facilities, how many people they serve, and meeting the demand for food and non-food products.

It should be noted that there have been problems in collecting data about these areas for many years. Since there is no permanent population, only the number of

registered population in administrative areas was determined, there was no information about the activity of economic areas.

The physical and geographical conditions of Karabakh have completely changed. Because there was no population during the occupied period, there were no anthropogenic effects, and the environment was untouched by nature. At the same time, military operations have had a serious impact on the natural environment, soil, water, vegetation, animal world, and biodiversity. Long-term observations and data collection are required for their determination.

Atlas is a source of information of special importance in geography. Maps are carriers of important information, as well as the "second language" of geography. Although the preparation of the atlas is a time-consuming process, it is considered a very important scientific resource. Because general geographic atlases are compiled on the basis of information that covers all physical-geographical and economic-geographical processes and includes data from many years. Some of the collected information plays the role of the archive at the same time in the.

maps given here. It is always possible to compare new information with them. The maps that are included in the atlas and reflect the physical-geographical components reflect the situation at a specific time.

The Atlas published in Azerbaijan in 1963 is still used as an important source. First of all, there are maps of physical-geographical components here. A lot of rich information is reflected in the maps compiled on the basis of data collected over many years. Geological, geomorphological, climate, hydrographic network, land-vegetation, and Caspian Sea maps are the main sections.

The section of the Atlas that is still of great importance is the provision of maps of economic regions. On the basis of very rich data, the general geographical maps reflecting the industrial, agricultural and transport networks in economic regions are distinguished by their high scientific capacity.

It should be noted with great regret that the Atlas published in 2014 after a gap of many years does not include maps of economic regions. In addition, the Atlas contains numerous maps that take into account the results of recent research. It is possible to obtain geographical information based on the use of the Atlas, which is a collection of global physical-geographical and economic-geographical maps.

The information given in the atlases becomes obsolete in a very short time, and there is a need to update the figures. That's why the electronic version of the Atlases has recently been preferred. There are opportunities to continuously add new information to them. Therefore, new maps are acquired, their use becomes easier and their importance as a source of information increases.

4. Conclusion

- Maps are prepared as a result of all the studies conducted in the field of geography in the modern era. There are opportunities to continuously update data on existing maps using modern GIS technology. At the same

time, modern technical means allow for continuous updating of new maps.

- Electronic databases have important scientific and practical importance in modern times. They are also important sources in the preparation of maps, as there is always an opportunity to enter new information.

- Electronic maps can be prepared for most geographic components. The help of GIS technology is great in their design.

References

Demographic indicators of Azerbaijan (2018). Statistical yearbook. Baku: SSC, 2019.509 p.

Eminov, Z. N. (2005). Population of Azerbaijan (in Azerbaijani). Baku: Chirag, 560 p.

Eminov, Z., Imrani, Z., & Jafarov, S. The Current State of Foreign Trade Relations of the Republic of Azerbaijan. *Proceedings E-Book*, 52.

Geography of the Republic of Azerbaijan (in Azerbaijani) (2015). II volume. Baku: Europe, 327 p.

Industry of Azerbaijan – (2018). Statistical Yearbook, SSC AR. Baku: MP - 9, 349 p.

On the path of independence (2016). 25. ANAS. Baku: East-West, 382-486.

Population of Azerbaijan (2019). Statistical Yearbook. SSC AR. Baku: MP - 9, 140 p.

Regions of Azerbaijan – (2018). SSC AR. Baku: MP - 9, 786 p.