Theoretical and methodological issues of creating the “ECO FERGANA” mobile application of tourist objects and resources of Fergana region

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Abstract In this article, based on the creation, grouping and classification of a database of tourist sites and resources of the Fergana region in the ArcGIS program, an electronic map of ecotourism in the Fergana region was created, as well as issues of creation, design and methodology. A cartographic basis for managing tourism in the region according to its territorial structure has been developed. Tourist resources, development factors and objects of the Fergana region, identified on a cartographic basis, have been identified. A mobile application “Eco Fergana” has been developed, which evaluates the possibilities of using these components and forms the basis of the regional tourism organization. The appendix evaluates the bioclimatic level of tourist conditions in the region (plain, mountain and foothill areas). The map serves to determine the economic and geographical opportunities for tourism development, divide them into regions, develop new tourist routes, and attract a flow of tourists to these objects. Based on the application, the geographical location of the Fergana region, specialization, and convenience of transport routes for transferring excursion routes are shown. Based on an assessment of the potential of tourism resources (high, medium, low), the boundaries of tourist regions are identified. Based on new tourist routes of a complex type (ecological, agricultural, business, pilgrimage, historical, archaeological, extreme, recreational, gastronomic, industrial) at the regional level, these directions are highlighted on the map.

1 Introduction

In the world, ecotourism has become a global activity that does not know any political, ideological, geographical and cultural boundaries. Today, special attention is being paid to scientific research on the use of recreational-tourist, resources and recreational-tourist potential of the region, as well as territorial organization, creation of prospective programs for the development of ecotourism based on comprehensive assessment. In this regard, it is important to assess the natural and economic-social geographical conditions for the purpose...
2 Materials and Methods

Based on geoinformation systems and technologies, the following methods have been developed: studying the development and current state of ecotourism, analyzing and classifying its geographical aspects; territorial organization of ecotourism and its use in the Fergana region were studied geographically; from the natural, natural-historical, socio-economic opportunities of the Fergana region, the ecotourism map shows the location of settlements and route directions; recommendations for the development of the mobile application of the ecotourism digital card of the Fergana region and the prospects for its development are described. [3]

Creation of an ecotourism electronic map of the Fergana region based on the creation, grouping and classification of a database of tourist objects and resources in the ArcGIS program; development of new touristic routes of complex (eco, agro, business, pilgrimage, historical, archeological, extreme, recreation, gastronomic, industrial and medical) type on the regional level and the content of their interactive map; touristic conditions of the region (plains, mountains and foothills), bioclimatic health facilities (liver, kidney, high blood pressure, rheumatism, stomach) treatment and prevention of these diseases were assessed and routes for diversification of tourism types were evaluated; development of the "Eco Fergana" mobile application; the balance method of assessing the ecotourism potential is based on the natural (relief, climate, inland waters), historical-cultural (monuments, shrines, handicrafts), socio-economic (economic and tourist infrastructure), ecological (climatic discomfort, reference water pollution index) characteristics of the area. Mapping based on GIS, 2023 E3S Web of Conferences 452, 05025 (2023) IPFA 2023 https://doi.org/10.1051/e3sconf/202345205025 25 452 25
3 Result

Result

Tourism conditions of Fergana region (plains, mountain and sub-mountain areas), bioclimatic health facilities (liver, kidney, high blood pressure, rheumatism, stomach) treatment and prevention of these diseases. "Eco Fergana" mobile application has been developed.

Fig. 1. "Eco Fergana" mobile application.
The mobile application is filled with information, location and pictures of ecotourism places in the Fergana region. The application shows the direction and location map of the entered places. A short route for various types of transport is drawn and shown using Google Maps. Users can leave their opinions about the object and rate it with 5 stars. This makes it easier for future tourists to choose a place. The weather information and function shows the weather analysis of the past 1 week for each selected destination, which helps the tourist to plan the day of travel. Other important social facilities: the nearest police station, hospital and other facilities around the kitchen, toilet, emergency shelter, hospital and other facilities are shown on the free and open platform map on the basis of conventional signs. Under the control of the admin, any user can list his hotel, kitchen or other eco-space. This increases competition and choice. The location information entered separately as a mobile map via Google Maps API provides detailed information lists and images of ecotourism and other attractions for convenience in our app, which is different and informative from the usual location tags.

The Flutter cross-platform framework was used to develop the mobile application and the Laravel framework was used for the backend. This makes it possible to present and serve the application on both Android and iOS platforms with the same convenience at a low cost.

4 Discussion

Today, we can say that a new phenomenon has appeared in cartography - "computer cartography". It combines various directions based on the use of computer techniques and technologies: geoinformation mapping, digital mapping, three-dimensional modeling, Internet technologies, publishing systems, etc. These areas provide significant improvements over conventional technology available today.

One of the urgent issues of today is to determine the ecotourism opportunities of the Fergana region and to develop suggestions and recommendations and methodology for improving the method of creating maps based on geoinformation systems.

Getz was able to integrate concepts and ideas from his book, Event Management and Event Tourism, as well as current research to raise awareness of the importance of events in the successful development of tourism.
5 Results analysis

Virtual reality tours of the development of mixed (complex) type of tourism designed to effectively use natural, cultural-historical, industrial, business, handicraft, agricultural and other resources to create a complex tourist product based on the division of Fergana region into tourist regions - virtual reality using technology, the application has developed a geoportal for users in the direction of ecotourism. Also, the process of creating digital maps of ecotourism through geoinformation systems involves the use of advanced technologies to collect and analyze information about natural areas and tourist destinations, such as the environment, attractions, wildlife, local communities, cultural heritage sites and made it possible to show information about other factors affecting ecotourism.

Gamification - The app can use gamification techniques to make the process of exploring an ecotourism destination more interesting and engaging. For example, users can help earn points by collecting virtual badges for completing tasks or visiting certain locations. Digital mapping allows for more accurate data collection and analysis, leading to more accurate information about ecotourism destinations.

6 Conclusion

Digital mapping of ecotourism through geoinformation systems can improve the tourist experience by providing more complete and accurate information about destinations, while promoting sustainable tourism practices that protect the environment and local communities.

References

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