

Geospatial Approach and Social and Economic Cartography of Uzbekistan

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Abstract

- New processes while moving to the digital economy in Uzbekistan are examined from the perspective of the geospatial approach to social and economic mapping. Several models are suggested for retrieving a spatial data from the Government open data portals. These models are compared to assess their advantages and disadvantages. One of the criteria is assessment locational accuracy for mapping on the different spatial levels.
- Keywords: Uzbekistan, social, economic, cartography, geospatial approach

INTRODUCTION

- Development of the digital economy in Uzbekistan is based on the concept that focuses on digital and computing technologies to cover all business, economic, social, cultural and more activities
- The main requirement is that these activities are supported by the web and other digital communication technologies
- The geospatial approach is aiming to introduce the range of modern tools contributing to the geographic mapping and spatial analysis that refers to the discovery of trends or patterns in data pertaining to spatial or geographical aspects of the data
- The Spatial analysis tools are crucial for social and economic cartography because it is often based on techniques of annotation of data, such as Georeferencing or Named Entity Recognition, and may lead to visualization or modeling in the form of maps

MATERIALS

- Online open non-spatial statistical data through the government portal of the Republic of Uzbekistan are considered for web cartography
- The value of this open resource for mapping is underestimated and not well examined
- The thematic scale of them is a subject for this research
- The purpose of the study is the development of a method of integrating non-spatial and geospatial data from different sources for the online dynamic mapping at different spatial scales

METHODS

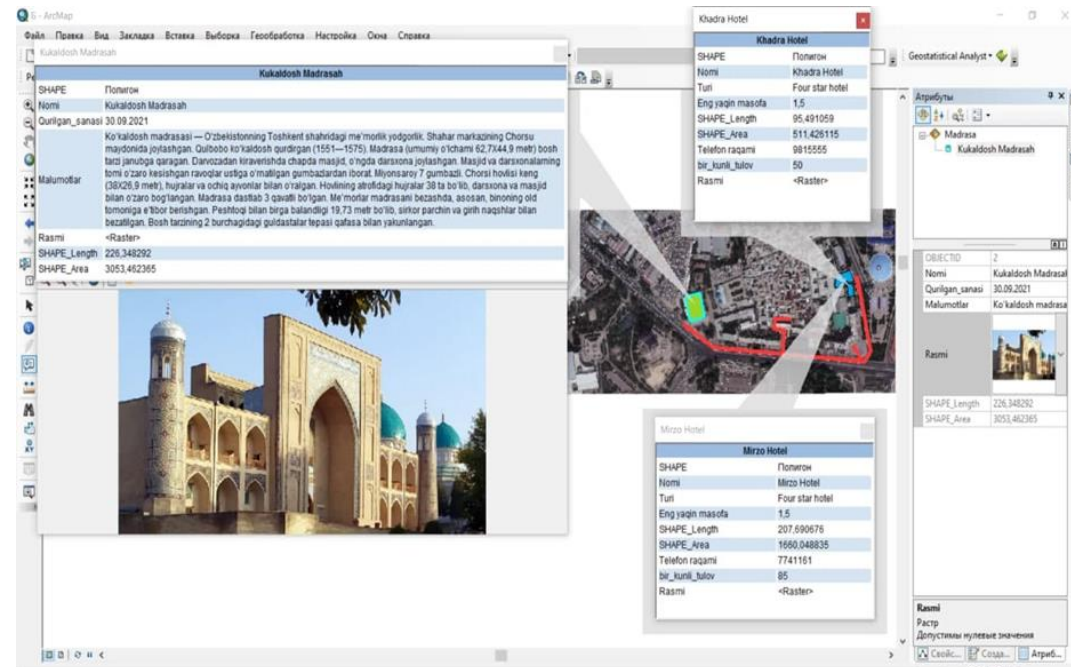
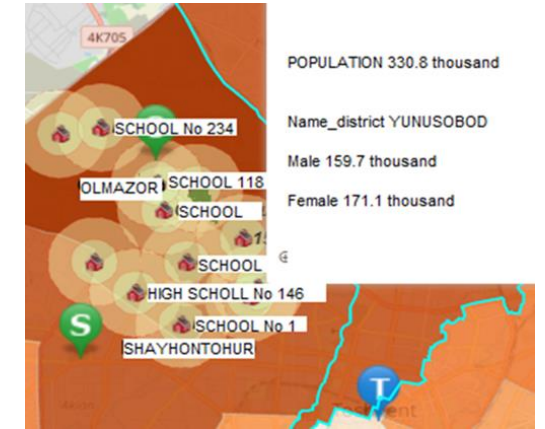
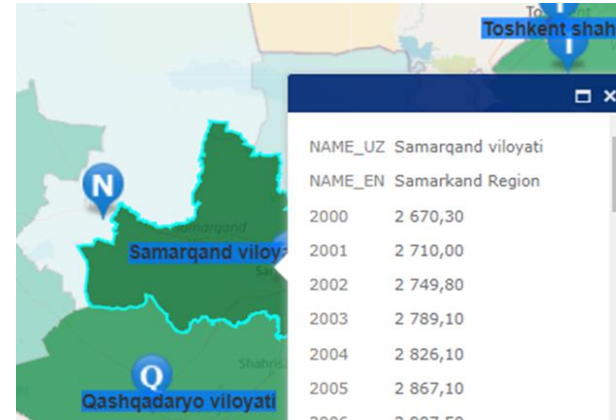
- The theoretical statement about the nature of “spatial data as any type of data that directly or indirectly references to geographical area or location” is fundamental in dealing with non-spatial data as well. This is complemented by a hypothesis that the combining the open resources like datasets of spatial data, online services and cloud computing tools provide the online mapping goals. Traditional social and economic mapping procedures are enriched by new options of Cloud-based software ArcGIS Online to create and share interactive web maps. This web-based mapping software gives an opportunity to interact with data.

METHODS

- The method is suggested for building a web-based spatial visualization tool and getting geographic information
- In a case when open geospatial data is not available a tool is suggested for retrieving the geospatial information by assigning statistical data to administrative units derived from OpenStreetMaps dataset and applying services of ESRI ArcGIS Online.
- For using new opportunities and tools of geospatial technologies a methodology of using open resources including open datasets, software with open code and cloud computing are widely used on all stages of map development.

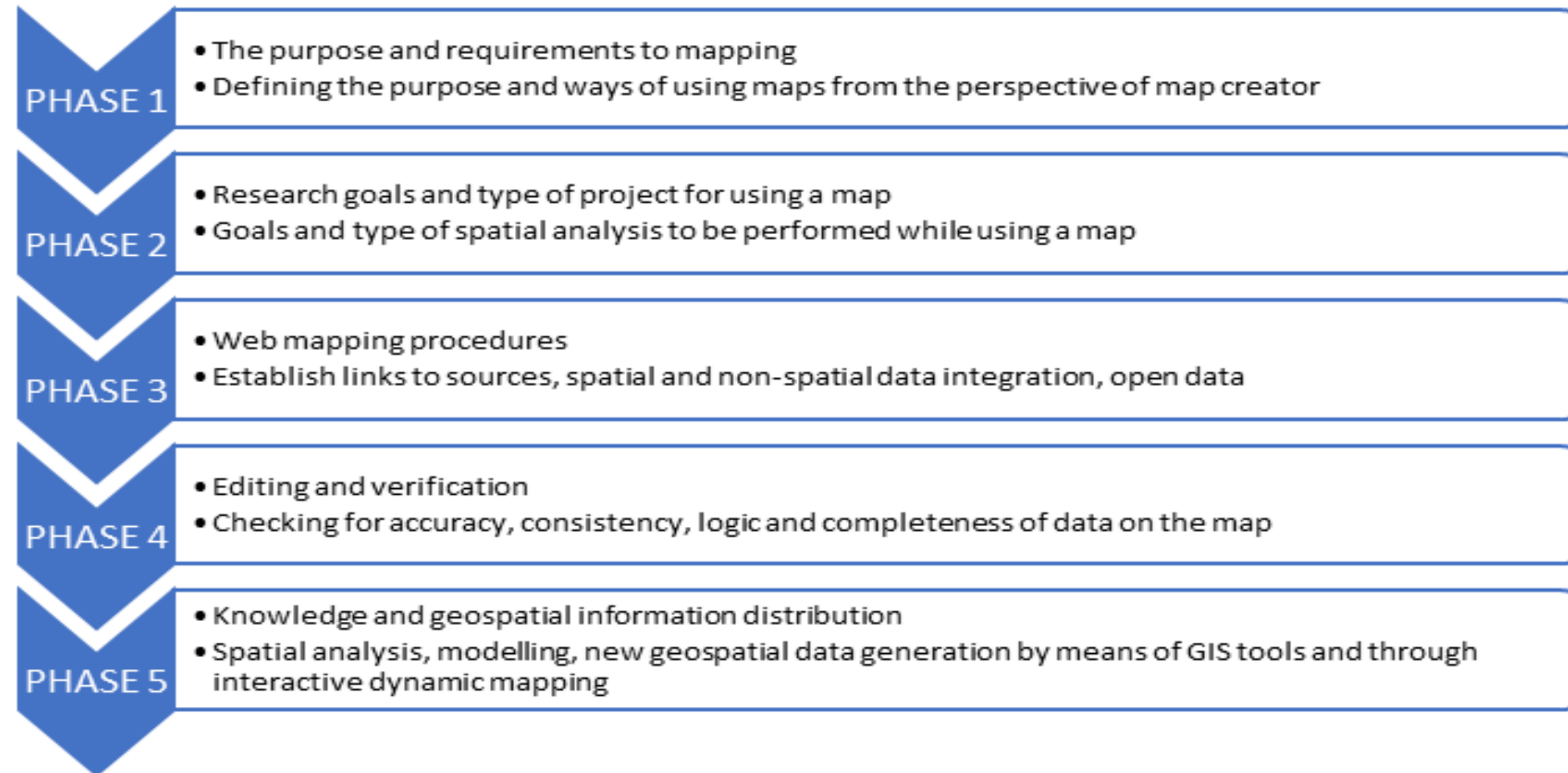
RESULTS

- It has been confirmed that this approach represents one of the valuable opportunities for geospatial modelling in developing countries.
- The benefits of integrating government open non-spatial statistics have been verified through an interactive social and economic web mapping at the national, regional, district, and city spatial scales.
- The use of open source data is expected to be effective in addressing policy and governance issues for decision-makers and practitioners.



DISCUSSION

The overall scheme of Web socio-economic mapping, consists of 5 phases



DISCUSSION

- Several options exist for mapping depending on type of the map to be compiled:
 - 1) Analytical static maps to depict state of an event or process.
 - 2) Dynamic mapping to depict dynamic spatial phenomena or to present spatial information in a dynamic way by means of incorporating the dimension of time into a map.
 - 3) Composite maps as the result of combining several mapping themes together by means of overlay operation and combining the geometry and attributes of the input data sets.
 - 4) Prediction maps based on modelling of further development

CONCLUSION

- A web mapping procedure is viewed from the perspective of establishing links to sources, performing spatial and non-spatial data integration with the help of ArcGIS Online, Open Street Map (OSM), and using standard web services and protocols.
- Using open sources provides sharing geographic information and knowledge by means of interactive dynamic mapping.
- These maps may be used for performing spatial analysis online and new geospatial data generation.