

Brief information about the project

Name of the project	AP19677682-KC-23 «Comprehensive geographical assessment of sustainable development of large cities of the Republic of Kazakhstan»
Relevance	<p>In this study, based on two scientific approaches - the triune concept of sustainable development and a comprehensive geographical assessment, economic, socio-demographic and environmental indicators of sustainable development of 20 large cities of Kazakhstan will be considered. An objective (based on statistical data) and subjective assessment (based on a sociological survey) of the level of sustainable development of large cities will be carried out.</p> <p>The significance of the project on a national and global scale lies in the creation of a Web application and a spatial geodatabase on key indicators of SDC for monitoring, managing and developing predictive indicators of the sustainability of the cities of the republic.</p>
Purpose	Assessment of the level of sustainable development of large cities of Kazakhstan using GIS technologies based on a comprehensive geographical analysis of socio-demographic, economic and environmental indicators.
Objectives	<ol style="list-style-type: none">1. To make an analysis of the theoretical and methodological basis for the research of urban sustainability. It is necessary to research the world experience, the works of foreign and Kazakh scientists, economists, sociologists and geographers in the field of population geography, urbanization and sustainable development.2. To explore the methods and methodological approaches to the research of sustainable urban development. An analysis of existing methods, methodological research approaches will contribute to identify key indicators for the sustainable development of large cities in Kazakhstan and creation of a universal author's methodology for assessing sustainable urban development of Kazakhstan.3. To substantiate the choice of key socio-demographic, economic and environmental indicators of the sustainable urban development of Kazakhstan and the collection of statistical data.4. To give an economic and geographical assessment of the 3 cities of republican significance and 17 regional centers in dynamics for 2000-2022.5. To make an objective integral assessment of the level of sustainable development of large cities of Kazakhstan based on three-dimensional model for assessing sustainable urban development.6. To conduct a subjective assessment of the level of sustainable development of large cities of Kazakhstan based on the developed questionnaire of sociological survey of the population of the cities under research.

	<p>7. To develop and create thematic digital maps for three blocks of sustainability indicators of twenty cities of the republic on the ArcGIS Desktop platform based on the created spatial geodatabase on key indicators of the development of large cities of Kazakhstan.</p> <p>8. To make a comprehensive geographical assessment of the level of sustainable development of large cities of Kazakhstan based on cartographic analysis and the results of an objective and subjective assessment in dynamics for 2000-2022.</p> <p>9. To develop a typology of the level of sustainability of large cities of Kazakhstan based on the calculated integral indices of key indicators.</p> <p>10. To develop recommendations and propose a set of measures to improve the sustainability of large cities in Kazakhstan.</p> <p>11. To develop a Web application for the sustainable development of large cities of Kazakhstan. The web application will contain the created information-spatial database on cities with thematic maps developed on the basis of GIS applications.</p> <p>12. Prepare and publish 1 article or review in a peer-reviewed scientific publication indexed in the Scopus database at least 35. Publish at least 2 articles or reviews in peer-reviewed foreign or domestic publications recommended by the CQASE.</p>
<p>Expected and achieved results</p>	<p>According to the expected result of the contract schedule: Key indicators of sustainable development of large cities in Kazakhstan will be selected and primary statistical data on them will be collected.</p> <p>An objective integral assessment of the level of SDC in the Republic of Kazakhstan will be made based on a three-dimensional model for assessing SDC for 2000-2022.</p> <p>A subjective assessment of the level of SDC of the Republic of Kazakhstan will be carried out based on a developed questionnaire for a sociological survey of the population of the cities under study.</p> <p>Thematic digital maps will be created for three blocks of sustainability indicators for 20 cities of the republic on the ArcGIS Desktop platform.</p> <p>A comprehensive geographical assessment will be carried out based on data from objective and subjective assessments of the level of SDC in Kazakhstan in dynamics for 2000-2022. and their typology was developed. An international scientific conference “City Sustainability: Challenges and Solutions” will be organized and held.</p> <p>Recommendations and a set of measures will be developed for the socio-demographic, economic and environmental development of large cities in Kazakhstan.</p> <p>A collective monograph “Comprehensive Geographical Assessment of the Sustainable Development of Large</p>

	<p>Cities of Kazakhstan” will be prepared and published, and a copyright certificate will be received.</p> <p>A Web-application for the sustainable development of large cities of the Republic of Kazakhstan will be developed and created based on the created information-spatial database of cities.</p> <p>One article or review will be published in a peer-reviewed scientific journal that is indexed in CiteScore percentile in the Scopus database of at least 35 (thirty-five). At least 2 (two) articles and (or) reviews will be published in domestic publications recommended by the CQASE.</p> <p>Achieved results according to the contract schedule for 2023:</p> <ol style="list-style-type: none"> 1. Foreign and domestic works of scientists on research into sustainable urban development have been studied and an analysis of the content of the category “city sustainability” has been made. 2. The main research methods and key indicators of urban sustainability are identified to create the author’s methodology for assessing the sustainable development of large cities in Kazakhstan. 3. Key socio-demographic, economic and environmental indicators of sustainable development of large cities in Kazakhstan were selected and primary statistical data on them was collected. Work was carried out on an economic and geographical assessment of 3 cities of republican significance and 17 regional centers of the republic in dynamics for 2000-2022.
<p>Research team members with their identifiers (Scopus Author ID, Researcher ID, ORCID, if available) and links to relevant profiles</p>	<ol style="list-style-type: none"> 1. Nyussupova Gulnara Doctor of Geographical Sciences, Professor, h- index Scopus 4, Researcher ID O-2263-2014, ORCID 0000-0001-5294-2671, Scopus Author ID 54382275400. 2. Alibekova Gulnaz, PhD, h- index Scopus 5, ResearcherID FYM-6954-2022, ORCID 0000-0003-3498-7926, Scopus Author ID 57190415127. 3. Nadyrov Sheripzhan Doctor of Geographical Sciences, Professor, h- index Scopus 2, Researcher ID DJA- 6801-2022, ORCID 0000-0003-0099-2161, Scopus Author ID 6508089352. 4. Tokbergenova Aigul, Candidate of Geographical Sciences, Associate Professor, h- index Scopus 3, ResearcherID O-2205-2014, ORCID 0000-0002-0776-7242, Scopus Author ID 57202334262. 5. Temerbayev Ilyas, Director of LLP Design Institute “KAZGIPROGRAD” 1. 6. Kelinbayeva Roza, PhD, h- index Scopus 2, ORCID 0000-0001-6922-1205, Scopus Author ID57195229747. 7. Mussagaliyeva Aizhan, PhD, h- index Scopus - 1, Web of Science – 2, Researcher ID: AAG-9050-2019,ORCID: http://orcid.org/0000-0001-8041-9247. 8. Kenespayeva Laura, h- index Scopus 1

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List of publications with links to them	<p>L.B. Kenespayeva, T.K. Rafikov, A.N. Mussagaliyeva. Analysis of the transport infrastructure of Almaty city using GIS-technologies. Bulletin of KazNU. Geographical Series. 2023; 70(3): 34-44. https://doi.org/10.26577/JGEM.2023.v70.i3.03 2. Anessova A.G., Zhumagulov Ch.B., Alibekova G.Zh., Doszhan R.D. Comparative Assessment of Regional Differences in the Dynamics of Key Economic Indicators Kazakhstan. Economics: the strategy and practice. 2023;18(4):147-169. (In Kazakh) https://doi.org/10.51176/1997-9967-2023-4-147-169</p>
Patents	-

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