



## GEOINFORMATICS – GI 2024

### 6th Annual International Scientific Conference

*"Sustainable Geospatial Solutions for a Changing World"*

19-20 November, 2024

online/onsite

Tashkent, Uzbekistan

Organized by:



**“Tashkent Institute of Irrigation and Agricultural Mechanization Engineers”  
National Research University ( “TIAME” NRU)**

## PREFACE

The 6th Annual International Scientific Conference on Geoinformatics – GI 2024, scheduled for November 19-20, 2024, at the “Tashkent Institute of Irrigation and Agricultural Mechanization Engineers” National Research University (“TIAME” NRU). This conference coincides with GIS Day and is dedicated to the UN SDGs, with the theme "Sustainable Geospatial Solutions for a Changing World." The main objectives of the conference are:

- to facilitate knowledge exchange and collaboration among researchers, scholars, and practitioners in the field of geoinformatics;
- to showcase the latest advancements, innovations, and research findings in geoinformatics and related disciplines;
- to provide a platform for discussing current challenges, trends, and opportunities in the application of geospatial technologies;
- to promote interdisciplinary research and collaboration across various sectors, including environmental science, urban planning, agriculture, and disaster management;
- to foster international partnerships and networking opportunities for researchers, institutions, and industry stakeholders;
- to contribute to the development and implementation of sustainable geospatial solutions for addressing global challenges and societal needs;
- to support capacity building and skill development among students, early-career researchers, and professionals in the field of geoinformatics;
- to encourage the integration of geospatial technologies into decision-making processes for informed policy development and resource management;
- to raise awareness about the importance of geoinformatics in addressing pressing environmental, social, and economic issues;
- to promote the use of geospatial data and tools for achieving the United Nations Sustainable Development Goals (SDGs) and advancing societal well-being.

The GI2024 have a broad range of topics including GIS for regional sustainable development; development of Geospatial Infrastructures and Ecosystems; GIS for management in the field of environmental protection, the prevention and elimination of emergency situations & public health; agriculture, water resources management and other application domains; new trends and technologies in geodesy, cadastre, cartography and land management; cultural and natural heritage; professional and continuing education in the field of geoinformatics; in agriculture and water resources management: precision agriculture, sensors, remote sensing; agricultural machinery; ecosystems and water resources management; agricultural economics, economics of precision farming; sustainable development of land use and land cover; geology, hydrology, hydrogeology, and hydrotechnical facilities.

The world countries have adopted the global Sustainable Development Goals (SDGs) Action Agenda. In 2024, GI 2024 is focused on the theme "Sustainable Geospatial Solutions for a Changing World" towards the achievement of SDGs, especially SDG2, SDG6, SDG11, SDG13, SDG15, and SDG17. Geographic Information Science as a conceptual foundation, Geoinformatics as the methodology, and GIS as software technologies are powerful instruments for linking information across different sources by location. This is exactly what is needed to successfully manage our environments and natural resources, our economies, and ultimately our societies.

In total, 139 submitted papers have been received, while 28 submitted papers were rejected due to irrelevant topics, low quality of research, and content concerns. The rest 111 papers have been sent for review, and a total of 59 papers have been accepted by the reviewers. Selected papers were compiled into the proceeding after being reviewed rigorously.

The peer-reviewed selected papers were distributed to the following main topics/sessions:

- GIS in Agriculture
- GIS in Water Resources Management
- GIS in Geodesy and Cartography
- GIS in Land Use and Management, and Cadaster
- GIS in ecology, ecosystem services, heritage
- Agricultural economics, the economics of precision farming;
- Geology, hydrology, hydrogeology, hydrotechnical facilities.

The event is organized by the "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers" National Research University ("TIAME" NRU) within the international applied research project "Supporting organic and conventional farming with Geospatial methods" ("SOCFarm") jointly with the following partners:

- Budapest University of Economics and Technology, Hungary;
- Obuda University, Hungary;
- University of Nyiregyhaza, Hungary;
- Czech University of Life Sciences Prague, Czech Republic;
- Agricultural University Plovdiv, Bulgaria;
- University North, Croatia;
- Paris-Lodron University of Salzburg, Austria;
- Eurasia-Pacific Uninet, Austria;
- The Austria-Central Asia Center for GIScience (ACA\*GIScience);
- Lund University, Sweden;
- S.Seifullin Kazakh Agrotechnical Research University, Kazakhstan;

- Sh. Ualikhanov Kokshetau University, Kazakhstan;
- University of Business and Science, Uzbekistan;
- Conference Sponsors:
- State scientific-design institute “Uzdavyerloyiha” under the Ministry of Agriculture, Uzbekistan;
- Cadastre Agency under the Under the Ministry of Economy and Finance of the Republic of Uzbekistan;
- Data+ International | Esri Official Distributor.

We would like to thank the organizing committee, the reviewers, the editors, and the publisher for their immense contribution to the GI2024 Conference. We are expecting more experts and scholars from all over the world to join the next GI in 2025.

Sincerely yours,

**Prof. Dr. Lorant Foldvary, D.Sc.,**  
Chief Editor of the GI2024

**Dr. Ilhom Abdurahmanov, PhD,**  
Co-Chief Editor of the GI2024