Zhanerke Sharapkhanova is a PhD student at Al-Farabi Kazakh National University. The topic of her dissertation research is "Assessment of the development of exogenous relief-formation processes in the Sharyn River basin." Her work involves the application of morphometric and geomorphological analysis, remote sensing methods, and geographic information systems (GIS) to identify risk zones and assess natural and anthropogenic factors influencing exomorphogenesis. She received her Bachelor's and Master's degrees in Natural Sciences from the same university. Zhanerke Sharapkhanova also works as a research fellow at the "Institute of Geography and Water Security" JSC, in the Laboratory of Geotourism and Geomorphology. Her main research areas include the study of exogenous relief-forming processes, geoinformation mapping, and spatial analysis of natural territories. Throughout her career, she has participated in more than 20 scientific research projects related to geoecological zoning, water security, monitoring of hazardous natural processes, and sustainable environmental management.

Project at IAS-STS: Geoinformation analysis and forecasting of activation of exogenous relief forming processes in the Sharyn River Basin under the impact of climatic and anthropogenic factors

In her dissertation, Zhanerke Sharapkhanova investigates the activation of exogenous reliefforming processes in the Sharyn River basin in order to identify their spatial patterns and driving factors. Special emphasis is placed on geoinformation analysis and forecasting using modern digital technologies such as remote sensing, geographic information systems, terrestrial laser scanning, and machine learning. These tools enable comprehensive monitoring of the area, identification of high-risk zones, and assessment of the impact of climatic and anthropogenic factors on process dynamics. The research focuses on processes such as erosion, landslides, mudflows, aeolian activity, karst, and suffosion. In the context of climate change and increasing human impact, there is a growing need for scientifically grounded forecasting and zoning of hazardous areas. The results of the study will serve as a basis for developing practical recommendations in the fields of environmental management, geomorphological risk assessment, and spatial planning. The project also contributes to the development of methodological approaches to spatial analysis of geomorphological processes using integrated digital technologies.

Selected Publications:

Laiskhanov S., Sharapkhanova Z., Myrzakhmetov A., Levin E., Taukebayev O., Nurmagambetuly Z., Kaster S. (2025). Geo-Ecological Analysis of the Causes and Consequences of Flooding in the Western Region of Kazakhstan. Urban Science, 9(1):20. <u>https://doi.org/10.3390/urbansci9010020</u>

Valeyev A.G., Medeu A.R., Zhakupova A.A., Yegemberdiyeva K.B., & Sharapkhanova Zh.M. (2024). Analysis of the social norm of recreational capacity and tourist satisfaction on the south western shore of lake Alakol. Geojournal of Tourism and Geosites, 56(4), 1504–1512. https://doi.org/10.30892/gtg.56407-1321

A.D. Abitbayeva, A. A. Bektursynova, Zh. M. Sharapkhanova, K. B. Yegemberdiyeva. Assessment and mapping of the dangerous geological and geomorphological processes of the Charyn SNNP. Geography and water resources, 3, 58-67 https://doi.org/10.55764/2957-9856/2024-3-58- 67.26

Zh.M. Sharapkhanova, Lyy Y.F., & Yegemberdiyeva K.B. (2024). Assessment and mapping of the mudflow phenomena intensity in Charyn state national natural park. Geojournal of Tourism and Geosites, 55(3), 1148–1155 https://doi.org/10.30892/gtg.55315-1287

Valeyev A.G., Zinabdin N.B., Sharapkhanova Zh.M., Abitbaeyeva A.D. (2023). Modern relief formation of the Northern Aral. Journal of Geography and Environmental Management, 1 (68). https://doi.org/10.26577/JGEM.2023.v68.i1.01