

The Institute of Seismology and Atmospheric Physics of Turkmenistan is a leading research center focused on earthquake studies, geophysics, and geodynamics. Svetlana Akhmedova, the scientific secretary of this Institute, in her article, published by Neutral Turkmenistan Newspaper, told about the work of Turkmen seismologists at the national level and about the main events from the international collaboration.

The Institute maintains strong scientific ties with countries including the UK, USA, Russia, Armenia, Azerbaijan, Uzbekistan, and Japan. Recent years have seen increased collaboration, with Turkmen scientists participating in workshops and training programs in countries like Austria, China, Tajikistan, and Belarus. For example, in Vienna, the capital of Austria, within the framework of strategic cooperation for 2023-2024, young specialists of the Institute, taking part in targeted training events, received certificates.

A significant milestone was the signing of a Memorandum of Understanding with Tajikistan's Institute of Geology, Earthquake-Resistant Construction, and Seismology. This agreement lays the groundwork for joint research on earthquakes, active geological processes, seismic hazard assessment, and early warning systems.

An agreement on scientific and technical cooperation between the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan and the Institute of Seismology of the Earthquake Administration of China is at the signing stage. The two sides intend to develop partnership in such areas as microseismic zoning of promising construction areas and an early warning system for a strong earthquake.

The Institute is currently preparing a Memorandum of Cooperation with Uzbekistan's Institute of Seismology to jointly analyze seismic hazards in their shared border region.

Simultaneously, the Institute is making significant progress on the Japan-funded project to modernize the seismological observation system in Ashgabat. The project is aimed at modernizing the system of seismological observations, simultaneously creating an appropriate information network, as well as engineering and geological study of the seismic assessment of the territory of the city of Ashgabat. One of the results of the Project will be the commissioning of a digital seismological monitoring system in real time. To ensure effective utilization of the new system, Turkmen scientists will undergo training in Japan on data processing and interpretation.

The Institute is actively involved in the Project "Strengthening national capacity of Turkmenistan for seismic risk assessment, prevention and response to potential earthquakes" together with UNDP in Turkmenistan. The project provides for a

comprehensive assessment of the seismic hazard of the city of Ashgabat by applying the latest research methodology. At the final stage of the project, a seismic risk map for Ashgabat will be developed.

The Institute of Seismology and Atmospheric Physics participated in realization of the national State Program for Seismic Risk Reduction. This comprehensive initiative aims to identify earthquake-prone areas and assess potential seismic hazards across Turkmenistan.

The Institute's research delves into the underlying geophysical processes that precede earthquakes. By understanding these patterns, scientists hope to develop models for predicting earthquake occurrence, magnitude, and impact, ultimately improving disaster preparedness.

Turkmenistan has also adopted a State Program for the Integrated Development of Seismological Science. Key objectives include fostering international collaboration, establishing seismology and computational seismology programs in universities, and developing advanced methods for seismic microzoning in urban areas.