

Initiative to create of Digital Atlas of Transboundary Hazards of Central Asian countries

Central Asia is experiencing some climate change impacts and environmental issues that seriously affect its population, ecosystems, and economy. Moreover, global warming increases the risk of disasters, while the territory of Central Asia is subject to almost all types of natural and man-made hazards including earthquakes, floods, landslides, mudslides, avalanches, droughts, extreme temperatures, epidemics, dam breaks and emissions of hazardous substances.

The emerging threats are transboundary in nature and their aftermaths can affect the territories of several states at once, and such occurrences, unfortunately, have been recorded in the region's history. Thus, the future may bring powerful earthquakes, dam breaks releasing significant volumes of water (*potential breakthrough of the Sarez Lake with a volume of more than 17 billion m³*), aggravating threats from moraine lakes located in border areas, etc.

Central Asian countries have different national atlases of natural and man-made hazards, moreover, each CA emergency agency maintains internal information systems in the form of automated dispatcher workstations and automated information systems to record and control emergencies.

However, the region lacks a unified geoinformation system that would include a digital Atlas of transboundary hazards reflecting basic data on existing transboundary risks.

Developing a unified geoinformation system by integrating existing information systems, reflecting interactive maps of CA countries and mapping layers of information on existing risks will enable emergency management entities to obtain reliable information on potential sources and causes of transboundary emergencies, ensure control over the state of emergency sources, early forecasting of possible transboundary disasters and their management.

In addition, the Digital Atlas of Transboundary Hazards of the CA countries will allow addressing the following tasks:

- risk assessment for trans-border hazards of Central Asian countries;
- assessment of possible consequences of cross-border emergencies;
- identifying zones of proliferation of trans-border emergencies;
- improvement of mechanisms of mutual information and notification of the CA countries' population in the zone of transboundary emergencies risk;
- effective joint planning for prevention and response to trans-border disasters;
- other objectives to protect the population, facilities, and territories of CA countries from transboundary natural disasters, accidents, and catastrophes.

Taking the necessary steps to create a Regional Digital Hazard Atlas will require significant investment. In this regard, CESDRR together with MapAction, a British non-governmental organization with extensive experience in developing geo-information solutions, is planning to

prepare a project proposal to attract funds from international donors and development partners for the implementation of the regional project.

Along with that, on October 20, 2023, during the Asian Conference on Disaster Reduction in Dushanbe, the Center briefed the participants on the measures taken to combat transboundary disasters using innovative digital technologies, which resulted in the adoption of the Conference Summary commending the Center's initiative to create interactive maps and digital safety passports to enhance regional climate resilience, as well as the creation of a regional atlas of transboundary hazards.

Thus, creating a Digital Atlas of Transboundary Hazards of the Central Asian countries will open access to information on risks (including transboundary ones) in the respective territory to the public and all stakeholders, while the functionality of the system will allow bringing the risk management system to a new level to become a tool for analyzing sources of transboundary hazards, informing decision-making and emergency forecasting.

This regional initiative is in line with **Priority 1 of the Sendai Framework for Disaster Risk Reduction 2015-2030** formulated as *"To promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data and information, as appropriate, communications and geospatial and space-based technologies and related services"*, as well as paragraphs 1, 3, 6 and 8 of the **Action Plan 2023-2024 related to the implementation of innovative information and communication technologies for disaster risk reduction in Central Asian countries**, as approved by the Regional Forum - Meeting of the Heads of Emergency Authorities of Central Asia (*Protocol dated October 6, 2022*).