

Annual Project Progress Report

Project title: «Strengthening National Capacity for Seismic Risk Assessment, Prevention and Response to Potential Earthquakes».

Award ID: 102378

Project ID: 104475

Implementing partner: Institute of seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan

Period covered in this report: 01.01.2020 – 31.12.2020

Date of last Annual Report: 22.01.2020

Date of the last Project Board meeting: 20.12.2019

Date of last Quality Assurance and rating:

1. Project Performance

Please state the expected Output of the Project, set indicators and corresponding CP Outcome (as per project document/AWP):

Project Output 1:

A comprehensive assessment of the seismic risks of Ashgabat was carried out on the basis of modern scientific and technical approaches.

Output indicators:

- 1.1. The number of methodological recommendations and proposals for testing some modern methods of seismic micro-zoning and assessing the vulnerability of buildings.
- 1.2. The number of seismic maps of different zoning levels and directions developed (updated) for the city of Ashgabat.
- 1.3. The number of geospatial models of earthquake susceptibility of buildings in the target areas (housing and administrative buildings) based on the characteristics of buildings and soils.

Output targets:

- 1.1. Collection and analysis of existing methods and data, as well as development of a detailed project activity plan in cooperation with IGE RAS (E. M. Sergeev Institute of Geoecology of the Russian Academy of Sciences), CAIZ (Central Asian Institute for Applied Earth Research), GFZ (German Center for Earth Research) and national partners.
- 1.2. Carrying out practical works and seismic measurements necessary for high-quality development of documentation on forecasting and monitoring of seismic events together with CAIZ, GFZ (including analysis of exposure of buildings and assessment of seismic risk).
- 1.3. Supporting the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan in creating new and updating/supplementing existing seismic zoning maps.
- 1.4. Interpretation of the obtained results of research and observations, carrying out the necessary modeling (including the preparation of geospatial models of the exposure of buildings to earthquakes in the target areas (housing and administrative buildings). Preparation of a report on a comprehensive assessment of seismic risks in Ashgabat.

b) Were the indicators and output achieved? Yes No Partially

The indicators are defined and listed above. The results were partially achieved.

c) If no or partially, please explain why?

- 1) Implementation of Outcome 1 is planned for the entire project implementation period.
- 2) A long delay in financing the project caused all work to stop.

Project Output 2:

Scientific and technical and human capacities of the Institute of seismology are strengthened for more effective work in the field of seismic hazard assessment and earthquake monitoring, as well as seismic risk assessment.

Output indicators:

- 2.1. Number of laboratories of the Institute of Seismology equipped with the necessary and updated scientific and technical equipment.
- 2.2. Number of employees of research institutes (research institutes), ministries and departments who have passed trainings and courses on modern methods of seismic risk assessment.
- 2.3. The number of scientific, methodological and practical bases developed to improve the principles of existing preparation for emergency situations (ES), integrated monitoring and notification of seismic events.

Output targets:

- 2.1. Determination of parameters, purchase and delivery of the necessary set of equipment and office equipment for the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan.
- 2.2. Organization of training courses for personnel of scientific institutes working in the field of engineering seismology, as well as for specialists of relevant ministries working in the field of disaster risk reduction (DRR) on obtaining and controlling high-quality data for probabilistic assessment of seismic hazard using modern methodologies.
- 2.3. Development of scientific and methodological materials for further training of personnel of research institutes (research institutes).

b) Were the indicators and output achieved? Yes No Partially

The indicators are defined and listed above. The results were partially achieved.

c) If no or partially, please explain why?

- 1) Implementation of Outcome 2 is planned for the entire project implementation period.
- 2) A long delay in financing the project caused all work to stop.

Project Output 3:

Increase the level of preparedness for response and response to the threat and occurrence of disasters caused by earthquakes.

Output indicators:

- 3.1. Number of developed scenarios of occurrence and development of disasters under the influence of strong earthquakes in the target localities on the advanced scientific-methodological basis for example, the spatial bound of the scenario impacts for different time periods.

3.2. A number of training methods and materials for assessing earthquake risk, the associated risk of secondary and cascading disasters replicated and sent to the local Executive bodies for future use.

3.3. Number of recommendations to the Ministry of Education of Turkmenistan on the inclusion of modules on seismic hazard and risk assessment in the educational process of higher educational institutions (HEIs) for further involvement of young personnel in scientific activities.

Output targets:

3.1. Development of dynamic scenarios for the occurrence and development of disasters on a scientific and methodological basis on the example of a spatially linked scenario for the development of consequences for subsequent transfer to the Ministry of Defense of Turkmenistan and other state institutions as agreed.

3.2. Development of materials for assessing earthquake risks and taking these risks into account in municipal planning and other activities for subsequent recommendations to the relevant departments.

3.3. Preparation of recommendations for the inclusion of modules on seismic hazard and risk assessment in the educational programs of pilot universities.

3.4. Development of the DRR investment strategy at the macro level, based on the results of the project.

b) Were the indicators and output achieved? Yes No Partially

The indicators are defined and listed above. No results were achieved.

c) If no or partially, please explain why?

1) With the exception of two activities in 2020, the Annual Work Plan did not provide for the achievement of Result 3.

2) The above two activities were not implemented due to a long delay in funding the project.

2. Progress Reporting

Please summarize the main achievements during the project cycle:

Project Output 1:

1.1. A unified topographic and geodetic basis for the city of Ashgabat and its immediate environs (as objects of risk reduction work) has been prepared)

1.2. A critical review of existing techniques for mapping active tectonic fault zones is performed and a technique based on the geodynamic approach is proposed.

1.3. Completed a critical review of existing methods of seismic zoning and based on justified and the methodology for development of seismic zoning maps of the city of Ashgabat.

1.4. A critical review of existing methods and practices for assessing seismic risk has been carried out and methodological recommendations for their application have been prepared and agreed upon.

1.5. 4 stages of certification of buildings in Ashgabat were completed with the preparation of a single passport. This completes the preparation of passports. The 5th stage, which involves checking passports and writing a final report, has been postponed to 2021 due to a long delay in financing the project.

Project Output 2:

2.1. Topographic and geodetic maps and a map-plan of the territory of Ashgabat were purchased.

2.2. For 3 laboratories of the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan, state-of-the-art equipment was delivered for a total amount of \$ 239501.90.

2.3. All documents were prepared, a competition was held and a National Consultant was selected to compile a Russian-Turkmen and English-Turkmen explanatory dictionary on geology, geophysics, seismology, seismic hazard, seismic vulnerability and seismic risk. But due to lack of funding, the contract with the National Consultant was not concluded.

3. Project Risks and Issues

The project Risk Log is maintained throughout the project implementation to capture potential risks to the project and associated measures to mitigate risk. The Project Manager shall maintain and update the Risk Log and ensure that risks are identified, communicated and managed effectively.

A number of potential risks are listed below.

Description of risk	Type and category	Risk management actions	Current situation
Long delay in financing the project.	Financial	Patient and persistent repeated appeals to State bodies.	As a result of numerous requests starting from 14.02.2020, the 2nd installment for the project was received only on 20.11.2020.
There is a shortage of trained young personnel to master modern methods for assessing seismic hazard, vulnerability and risk.	Personnel	Search, search, and search again.	One trained young specialist was found for training and performing works on engineering survey of buildings.
The situation caused by COVID-19.	Epidemiology	Search for alternative ways to implement activities, primarily education	The format was defined, and a program was prepared with training materials for distance learning to work with equipment for engineering survey of buildings.

4. Lessons learned and follow-up steps (if applicable)

a) Please provide the lessons learned and further steps after the project's closure.

In cooperation with government agencies, it is necessary to keep in mind the real possibility of a very long-term solution of issues, especially in connection with financing.

5.Transfer of Assets or other related matter

a) Please state on any past or future transfer of assets made within the project cycle (Attach list of equipment, cooperation frameworks with beneficiaries, etc.)

Under the Agreement on the transfer of ownership of non - expendable material and equipment from the United Nations Development Programme office dated February 19, 2020, computer equipment was transferred to the National Partner and executor of the project-the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan for a total amount of 52541.00 US dollars (fifty-two thousand five hundred and forty-one US dollars and 00 cents). The agreement and the list of equipment are attached.

6.Financial management

Budget item	Total approved in 2020 (in USD)	Expenses + commitments	Budget utilization in % to planned
Component 1	61,800	28,794	% 46.59
Component 2	132,583	116,789	% 88.09
Component 3	3,000	-	-
Project management	68,249	52,261	% 76.57
Total delivery in 2020	265,633	197,843	% 74.48
In % to total project budget (\$ 2,027,329)	% 12.73	% 9.48	

**The report is prepared based on the Atlas Project Budget Balance report 2020*

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Date: 22.01.2021

Approved by: Rovshen Nurmuhamedov, **Programme Specialist**

Date:22.01.2021