

# URBAN RESILIENCE IN YEREVAN, ARMENIA

## Case Study

November 2022



The goal of the ‘Yerevan City Urban Resilience’ initiative was to support the Yerevan Municipality in its purpose of building safe urban societies and environment that are resilient to multiple risks, with ecosystems that are managed sustainably, with climate smart solutions and inclusive infrastructures to live and work.

Within this pilot project, UNDP initiated a dialogue with the Yerevan municipality and relevant city stakeholders, based on which the Urban Risk Management and Resilience Strategy was translated into Armenian language and presented to the Municipality of Yerevan during a workshop organized jointly with the Ministry of Emergency Situations, Municipality and DRR National Platform. The Workshop inter-alia discussed the directions for its localization and mainstreaming.

The Strategy was also presented during a workshop organized within the UNDP “Mayors for Economic Development” project, as a result of which several DRM components were integrated into the named project interventions for further integration within the Yerevan community development cycle and relevant plans.

The integration of DRR into Yerevan’s urban development planning and population protection plans gained additional urgency following the COVID-19 and military escalation in the region.

Within the mentioned dialogue and with a view to facilitate systematic orientation towards urban resilience, the Yerevan municipality outlined 2 main directions for further improvement, which are Yerevan city’s 1) early warning systems with a multi-hazard and multi-risk emergency capability and 2) Geographic Information Systems. In this regard, a project focal point was nominated from the Municipality (Mr. Sargis Manukyan) for coordinating these directions.

**1) Strengthening Yerevan’s Early warning systems:** The municipality decided to modernize at least 205 early warning sirens located throughout the city and unify them within one integrated command center. Considering that such a command center did not exist, and that the technical specifications for the named EWS were not developed properly, the Municipality procurement tender did not take place. UNDP supported the municipality with contracting an expert for developing TOR and technical specifications both for hard and soft components of EWS, which were endorsed by the municipality and the Ministry of Emergency Situations, as a model for Technical Specifications (TS) for further utilization in EWS procurement. The municipality announced the 2<sup>nd</sup> tender, which was successfully conducted, and a local company was selected for modernization of Yerevan’s early warning system capabilities from a multi-hazard lens.

**One of the challenges identified** within the project was the shortcomings of the state law on early warning, which does not regulate early warnings for different type of disasters, such as in case of mudflow, hydrometeorological extremes, etc. In this regard UNDP was requested by MES to support with the development of a modern concept on **multi-hazard early warning regulation** which would also imply relevant changes in ongoing state regulations and sub-laws.

**2) Strengthening Yerevan’s Geographic Information Systems:** UNDP jointly with the Municipality of Yerevan organized a series of meetings with leading private companies in the sphere of GIS in Armenia and jointly a concept was developed on Prospects of GIS development and its outline. Based on the request from the Yerevan municipality, the Terms of Reference for GIS in Housing Sector has been developed as a part of the overall concept.

Currently the State cadaster is developing a unified GIS platform for the country, with initial 7 thematic directions/layers. It is proposed that the information for this platform will be provided by the relevant state authorities and also create additional thematic layers, as necessary. This means that the Yerevan Municipality will need to create such a thematic GIS layer, which can be integrated with the Cadaster GIS platform, that will further support the municipality, the Cadaster and other relevant state agencies, in decision making, urban planning and

DRR. In this regard, the **Municipality requested UNDP to support the strengthening of GIS capacities with obtaining necessary GIS software, hardware and professional capacity building, digitalization, remote sensing etc.**

Considering that UNDP has supported the development of Yerevan Smart and Resilient City Concept, the municipality is **interested in strengthening its digitalization and unified command/management capabilities.**

In this regard the **establishment of a unified command center** was discussed with the Yerevan municipality. It is important to note, that although Armenia has the 911 Crisis Management Center, but, considering that the Yerevan is hosting up to the 60% of Armenia's population, with all major state decision making entities with the majority of industrial capabilities and technological hazards also concentrated in the area, **there is a necessity to considerably strengthen the existing IT systems** of the Yerevan Municipality, which currently provides IT services and supports the municipal management and troubleshooting system. Such a command center would systemize and analyze the existing available information systems and report to Municipality and inform officials on the emergency situations and scenarios, take under control the emerging problems and provide solutions. Considering the urgency of the problem, **Yerevan municipality has expressed its interest not only in developing the Command Center, but also its readiness to invest up to USD 400,000-500,000.**

Another direction that the Yerevan municipality is considering as very urgent is the multi-risk assessment for the city. UNDP has similar experience and has conducted Seismic Risk GIS Modeling for 10 cities. The last assessment for Yerevan was conducted by JICA in 2011 and the **developed software needs to be updated and upgraded** considering the urbanization and the technological developments that are now used in GIS.

UNDP has established excellent partnership with UNDRR Brussels office, and several discussions were organized with the Municipality of Yerevan related to the implementation of Making Cities Resilient (MCR) 2030 initiative. **The municipality requested UNDP to support with this efforts and conduct assessment using the Resilience Score Card**, based on which the City Resilience Action Plan can be developed. Considering the archived results and identified challenges there is a need for long lasting expertise and support towards strengthening the urban resilience in Yerevan which can be utilized with the development and implementation of 2-3 year project using the co-financing modality.

## Looking ahead

Based on the developed partnerships and results achieved within the pilot project, UNDP is considering several directions for further supporting urban resilience in Armenia:

1) Development of joint project with the Yerevan Municipality on urban resilience tentatively called "Green and Resilient Yerevan". The concept has been already endorsed by the municipality and it stands ready to co-finance such a project for up to USD 400-500K, supporting, inter alia,

- strengthening of GIS capacities with obtaining necessary GIS software, hardware and professional capacity building, digitalization, remote sensing etc,
- improvement of legislation for multi-hazard EWS.
- establishment of a unified command center, which would systemize and analyze the existing available information systems and report to Municipality and inform officials on the emergency situations and scenarios.
- support with the conducting a science based multi-risk assessment for earthquakes, landslides and flashfloods, and provide the relevant information to the municipality and relevant decision-makers for strengthening resilience.
- Support the municipality in conducting of a comprehensive emergency preparedness and response capacity assessment for the Yerevan subway, development of relevant action plan for capacity development and support with risk mitigation activities.

2) The translated Urban resilience strategic guideline will be utilized by different UNDP projects in their support for utilization in Yerevan and other cities of Armenia.