



## **TSUNAMI RESILIENT ISTANBUL-SuReIST**

Ahmet Tarih (1), Emin Yahya Mentеше (1), Osman Kılıç (1), Mahmut Baş (1), Sema Kara (1), Özge Uzunukol (1), Ahmet Cevdet Yalçiner (2), Mehmet Lütfi Süzen (3), Gözde Güney Doğan (2), and Duygu Tüfekçi Enginar (3)

(1) Istanbul Metropolitan Municipality, Directorate of Earthquake and Ground Research; Istanbul; Turkey; (ahmet.tarih@ibb.gov.tr), (2) Middle East Technical University, Department of Civil Engineering, Ocean Engineering Research Center; Ankara; Turkey; (yalciner@metu.edu.tr), (3) Middle East Technical University, Department of Geological Engineering; (suzen@metu.edu.tr)

It is widely acknowledged that Istanbul is exposed to earthquake hazard due to North Anatolian Fault's Marmara Sea segment and estimations show that such an earthquake will result as an unmanageable disaster in Istanbul by inducing multiple and cascading losses.

Although the seismic risk depends on a strike-slip fault, it is estimated that possibility of a tsunami due to activity of this mechanism is low. On the other hand, there are critical submarine landslides close to Istanbul coastline which may be triggered by the strike slip fault as observed in 28th September 2018 event in Sulawesi Palu Indonesia. In this regard, The "Simulation of Tsunami Impact and Vulnerability Analysis in Istanbul" was carried out by Istanbul Metropolitan Municipality (IMM) and OYO Inc. in 2007 under consultancy of Middle East Technical University (METU). Due to increase in the availability of data regarding Marmara Sea in last ten years and emergence of the new techniques in the field of tsunami simulation, IMM has established a new roadmap "Tsunami Resilient Istanbul- SuReIST" in 2017 and invested in detailed tsunami studies.

In the first phase of SuReIST, the "Updating of Istanbul's Tsunami Hazard and Vulnerability Analyses" has been completed by the end of October 2018 under consultation of METU. Initial outcome of the first phase is the need of identification of the gaps and fragilities of the current urban form against tsunami hazard and establishment of an action plan to define the measures to reduce risk caused by tsunami in Istanbul coastlines. Therefore, the second phase of the SuReIST, to develop the "Tsunami Action Plan" is planned for 2019 with the aim of the preparedness measures, mitigation strategies and proper actions to reduce the tsunami risk based on outputs of Phase 1. Eventually in the final step, it is a must to pursue those measures to ensure the coastal resiliency and safety of citizens and assets of Istanbul. Hence, this phase of the SuReIST comprises of actions and measures identified in action plan and it is an open ended process called "Risk Reduction Campaign" that is envisioned to include site specific structural and non-structural activities within a multi-stakeholder approach.

The project is divided into four main work packages; as the development of risk knowledge base, development of the action plan, establishing the structural measures and implementation of non-structural measures. Meanwhile three complimentary work packages will focus on consultation and communication within stakeholders; reporting and reviewing in order to enhance the implementation process and lastly coordination and management activities of the overall project duties are carried out.

As a result, SuReIST will brace up from a multi-stakeholder and multi-disciplinary approach in order to adopt the strategies and actions in a holistic way and produce the most efficient results that will be embraced by all stakeholders. SuReIST will be the starting point of an ongoing process and in long term; it will be the foundation of tsunami sourced risk reduction procedures and the outputs of the SuReIST will empower the climate change adaptation capacity of Istanbul.