



## **Tsunami Loss Assessment For Istanbul**

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Tsunami risk and loss assessment incorporating with the inundation mapping in Istanbul and the Marmara Sea region are presented in this study. The city of Istanbul is under the threat of earthquakes expected to originate from the Main Marmara branch of North Anatolian Fault System. In the Marmara region the earthquake hazard reached very high levels with 2% annual probability of occurrence of a magnitude 7+ earthquake on the Main Marmara Fault. Istanbul is the biggest city of Marmara region as well as of Turkey with its almost 12 million inhabitants. It is home to 40% of the industrial facilities in Turkey and operates as the financial and trade hub of the country. Past earthquakes have evidenced that the structural reliability of residential and industrial buildings, as well as that of lifelines including port and harbor structures in the country is questionable. These facts make the management of earthquake risks imperative for the reduction of physical and socio-economic losses. The level of expected tsunami hazard in Istanbul is low as compared to earthquake hazard. Yet the assets at risk along the shores of the city make a thorough assessment of tsunami risk imperative. Important residential and industrial centres exist along the shores of the Marmara Sea. Particularly along the northern and eastern shores we see an uninterrupted settlement pattern with industries, businesses, commercial centres and ports and harbours in between. Following the inundation maps resulting from deterministic and probabilistic tsunami hazard analyses, vulnerability and risk analyses are presented and the socio-economic losses are estimated. This study is part of EU-supported FP6 project 'TRANSFER'.