



A multi-hazard assessment for European cities (Covenant of Mayors Initiative)

Jonathan Spinoni, Yeray Hernandez Gonzalez, Gustavo Naumann, Michalis Voudoukas, Francesco Dottori, Lorenzo Mentaschi, and Paulo Barbosa

European Commission - Joint Research Center (jonathan.spinoni@ec.europa.eu)

In a progressively warming World, it is fundamental to develop a common strategy between scientists, policy makers, and stakeholders from continental to local scale, in order to plan a more sustainable development. In Europe, the Covenant of Mayors was launched in 2008 goal to connect scientists and local governments to achieving the European Union climate and energy targets. With the support of the European Commission, this initiative now counts more than 8000 signatories and represents cities which include a total of more than 240 million inhabitants over Europe. In the last years, the Joint Research Centre (JRC) asked to a number of municipalities to provide feedback about the perception or the assessment of the recent changes in frequency and intensity of natural disasters as droughts, floods, sea level rise and coastal floods, storms, forest fires, and heat and cold waves. The general response was that most of the municipalities observed or perceived an increase in all the natural hazards in the last decades and they also expect a further increase over the 21st century. In this study, we analyzed the mentioned hazards over Europe using robust datasets based on observed data, models, and climate projections to estimate the past and future changes in droughts, storms, floods, forest fires, and climate extremes. The final goal of this study is to create a multi-hazard assessment for the municipalities that signed with the Covenant of Mayors project, also to investigate if and to what extent the local stakeholders correctly understand the changes in frequency and intensity of natural hazards. Moreover, we aim at providing the municipalities with robust projections of natural hazards, in order to help developing a better strategy to face a possible increase in climate-related disasters in the 21st century.