

It has been estimated that by 2025 up to 2.75 billion people worldwide will be exposed to the effects of sea level rise and other coastal threats posed by global warming. In Croatia, the preliminary analysis by Priority Actions Programme's Regional Activity Centre (PAP/RAC) shows that the impacts of sea-level rise will be substantial. In particular it is expected that the risk of coastal flooding will increase through 21st century if there are no adaptation measures in place. These may include the upgrading of existing traditional coastal flood protection schemes or building new schemes, which combine nature-based and structural measures. However, there are many challenges when designing and building these schemes, from uncertainties in the future predictions of sea-level and wave heights to uncertainties in the coastline response to these drivers. In my talk, I will address these challenges and opportunities for building natural resilience of coastline, drawing on examples from my research in the UK and collaborative research here at the Faculty of Civil Engineering, University of Rijeka. I will also briefly address my research in environmental aspects of ocean/hydro renewable energy, which is a rapidly developing technology that helps to reduce carbon emissions and to increase resilience to climate change.