## Executive summary

The first stage of the SynUHI project (Enhancing cities' adaptation capacity to climate change impacts on linkages between urban heat islands and heat waves) included (1) a synthesis of the state-of-the-art, (2) data collection and project database design, and (3) dissemination of results.

(1) The state-of-the-art synthesis includes an analysis of over 900 scientific publications from Web of Science flows, published between 1992 and 2021, that addressed the links between heat waves and urban heat island.

(2) The design of the project database involved the gathering of climate and non-climate data, storage on the project's dedicated server, and preparation for processing through the following stages. Climate data was collected (I) in situ, from meteorological stations in the national weather monitoring network, and from satellite imagery (Landsat, MODIS, SEVIRI, and Sentinel). The collecting of data from sensors mounted on unmanned aerial systems was evaluated in the perspective of an acquisition mission for heat waves situations. Furthermore, the process of urban climate modelling was initiated using a numerical model for limited area forecast WRF (Weather Research and Forecasting). Non-climate variables, such as land use, urban structure, and building height, are also included in the project database. The data used for this research span the years 2001-2020, with a spatial resolution of 1 km and day-night differentiation.

(3) The dissemination was realised using the project dedicated site which include general aspects, project objectives, and an activity plan (Gantt diagram). In addition, a general presentation webinar was organised with 40 participants, the majority of them being students and researchers.