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UMEP - A user-friendly, integrated tool for city-based climate services

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Scientists and practitioners from a wide range of disciplines including architecture, climatology, planning, engineering and geography have long been interested in how weather and climate affect the environment and people within urban areas. However, the development of climate knowledge and climate services for the operation of cities, urban planning and building design is not straightforward. Communication between key stakeholders, academics and practitioners to develop and deliver such services may be poor. To communicate spatial variability, maps and other images are a 'language' used by both research and practitioner communities.

Here, the city-based climate service tool UMEP (Urban Multi-scale Environmental Predictor) is introduced. UMEP combines "state of the art" 1-D and 2-D models with processes essential for urban climate assessments. The QGIS extension (or plug-in) can be used for a variety of applications related to outdoor thermal comfort, climate change mitigation, etc. UMEP allows users to integrate atmospheric and surface data from multiple sources; to 'urbanise' data; and to compare and visualise scenarios of operational plans for different climate elements (and combinations of these) of particular concern (heat indices, intense precipitations, water/energy demand) at a range of spatial scales.