



Climate services for an urban area (Baia Mare City, Romania) with a focus on climate extremes

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The Baia Mare Urban System is located in the north-western part of Romania, with around 200,000 inhabitants and represents one of the most important former mining areas in the country, whose socioeconomic profile and environmental conditions have greatly changed over the last 20 years during the transition and post-transition period. Currently the mining is closed in the area, but the historical legacy of this activity has implications in terms of economic growth, social and cultural developments and environmental quality.

Baia Mare city lies in an extended depression, particularly sheltered by the mountain and hilly regions located in the north and respectively, in the south-south-eastern part of it, which explains the high frequency of calm conditions and low airstream channeling occurrences. This urban system has a typically moderate temperate-continental climate, subject to frequent westerly airflows (moist), which moderate the thermal regime (without depicting severe extremes, both positive and negative) and enhance the precipitation one (entailing a greater frequency of wet extremes). During the reference period (1971-2000), the climate change signal in the area is rather weak and not statistically significant. However, since the mid 1980s, the warming signal became more evident from the observational data (Baia Mare station), showing a higher frequency of dry spells and positive extremes.

The modelling experiments covering the 2021-2050 time horizon using regional (RM5.1/HadRM3Q0/RCA3) and global (ARPEGE/HadCM3Q0/BCM/ECHAM5) circulation models carried out within the ECLISE FP7 project suggest an ongoing temperature rise, associated to an intensification of temperature and precipitation extremes.

In this context, the aim of this study was to evaluate how the local authorities consider and include climate change in their activity, as well as in the development plans (e.g. territorial, economic and social development plans). Individual interviews have been undertaken with key institutions focusing on environmental, health and urban development issues. The survey was conducted in order to identify the local authorities' perception and needs on climate change information and the importance of climate services for the city and institution's activity.

Generally, the results suggest that the selected institutions are poorly aware of the potential impacts of climate change and associated extremes in the area, but they showed a real interest for future climate estimations necessary to undertake reliable adaptation measures. At institutional level, do not exist specialized departments (job positions) to tackle or manage climate information and climate-related aspects, this not being a pressing or priority issue for the city. The climate services aspects are seen with interest mainly in supplying climate scenarios and models for a relatively short term (next 10 or 15 years), the climate information being in this way included in the local planning strategies.