

Number	AD9
Indicator name	Proportion of the number of inhabitants living in the area at risk of floods from torrential rains from the total population
Area	A
Indicator definition	Proportion of the number of inhabitants living in the risk area who are endangered by torrential rains from the total number of inhabitants of the administrative (cadastral) territory of the municipality. The risk area is determined on the basis of precipitation runoff models with higher intensities in the area, resp. expert estimation on the basis of previous damage in connection with pluvial floods, experience and morphology of the area (if a runoff model is not available).
Indicator unit	%
Key words	torrential rains, endangerment of the population
Reason for tracking and usability	Torrential rains present a risk to built-up areas, especially those parts of the area that remain flooded or damaged after extreme rainfall events. In addition, if people live in the affected area, they become particularly dangerous because of their speed. Most flash floods break out within six hours or less, which significantly shortens the time for residents to prepare for or leave such a place.

Completeness, representativeness, validity

The indicator partially represents the given area and the reason for monitoring. The problem arises in the accurate identification of vulnerable populations. Spatial analyses and modelling make it possible to locate the directions of concentrated runoff of extreme rainwater and its depth over the entire analysed area, but so far there is no key to the identification of really endangered inhabitants.

The risk area endangered by torrential rainfall is, under ideal conditions, obtained by means of hydrological GIS modelling, the quality of which depends on the input data and on the accuracy of the model used. The limit may be the absence of a runoff model. Then it is necessary to select the risk area by expert estimation, in which there is a risk that not all potentially endangered (flooded) places will be identified. Also, the population can be determined mostly only by a qualified estimate.

Description of data processing

Penetration of rainfall runoff maps and population records at address points. If the registration of the number of inhabitants at the address points is not available, it is possible to use the layer of family and apartment houses, when the number of inhabitants is obtained by the average occupancy of flats in the given city/city district/municipality.

Spatial analysis needs to be created in GIS.

Data source

Rainfall runoff map – based on hydrological modelling; layer of population registration at address points – based on data on population registration in the city/city district/municipality (e.g. registry office); layer of family and apartment houses (for example, for selected cities also from the Copernicus Land Monitoring Service).

Tracking frequency

Depending on changes in the physical structure of the area (new construction, etc.) – 1 x 2 years (or according to the frequency of monitoring Klimasken).

Urban influence

The city/city district/municipality has the opportunity to apply various measures in its territory, which both slow down the runoff and increase the retention capacity of the area. It also has tools to support such measures for private owners.

Presentation method

The results will be presented in a uniform Klimasken framework through a five-point scale:

Responsibility

Processor Klimasken, city/city district/municipality
