

<b>Scale of measurement</b>	m <sup>3</sup> /s
<b>Data source</b>	
<b>Required data</b>	Rainfall data, hydraulic, geological and geotechnical information, topography (Model/Survey).
<b>Data input type</b>	Quantitative
<b>Data collection frequency</b>	
<b>Level of expertise required</b>	High
<b>Synergies with other indicators</b>	
<b>Connection with SDGs</b>	13
<b>Opportunities for participatory data collection</b>	
<b>Additional information</b>	
<b>References</b>	

## 6.25 Peak flood volume

**Project Name:** PHUSICOS (Grant Agreement no. 776681)

**Author/s and affiliations:** Gerardo Caroppi<sup>1,2</sup>, Carlo Gerundo<sup>2</sup>, Francesco Pugliese<sup>2</sup>, Maurizio Giugni<sup>2</sup>, Marialuce Stanganelli<sup>2</sup>, Farrokh Nadim<sup>3</sup>, Amy Oen<sup>3</sup>

<sup>1</sup> Aalto University, Department of Built Environment, Espoo, Finland (gerardo.caroppi@aalto.fi)

<sup>2</sup> University of Naples Federico II (UNINA), Department of Civil, Architectural and Environmental Engineering, Naples, Italy

<sup>3</sup> Norwegian Geotechnical Institute (NGI), Oslo, Norway

Peak flood volume		Natural and Climate Hazards
<b>Description and justification</b>	Indicators of Flooding Risk Resilience sub-criterion will assess the site response to Flooding phenomena based on susceptibility indicators: land use cover, run-off coefficient, rainfall intensity and duration.	
<b>Definition</b>	Represents the volume of water corresponding to the peak flow. Flood volumes are related to 1) the time scales of the meteorological inputs (rainfall, snowmelt) and 2) the time	

	scales of the storage and delay of this input in the catchment (Gaàl et al., 2015).
<b>Strengths and weaknesses</b>	
<b>Measurement procedure and tool</b>	The flood volume is intended as the total volume between the time of the apparent sudden rise of the hydrograph and the time when the descending limb again reached the initial discharge (Kovács, 1978).
<b>Scale of measurement</b>	m <sup>3</sup>
<b>Data source</b>	
<b>Required data</b>	Rainfall data, hydraulic, geological and geotechnical information, topography (Model).
<b>Data input type</b>	Quantitative
<b>Data collection frequency</b>	
<b>Level of expertise required</b>	High
<b>Synergies with other indicators</b>	The volumes are strictly related to the peak flow, depending on the catchment properties, the rainfall durations and the catchment processes.
<b>Connection with SDGs</b>	13
<b>Opportunities for participatory data collection</b>	
<b>Additional information</b>	
<b>References</b>	<p>Gaàl L., Szolgay J., Kohnová S., Hlavčová, Parajka J., Viglione A., Merz R., Blöschl G. (2015). Dependence between flood peaks and volumes: a case study on climate and hydrological controls. <i>Hydrological Sciences Journal</i>, 60(6), 968-984. DOI: 10.1080/02626667.2014.951361</p> <p>Kovács Z.P.S.J. (1978). Documentation of the January, 1978 floods in Pretoria and in the Crocodile River catchment. Technical Report No. TR 88. Department of Water Affairs, Private Bag X313 Pretoria (SA).</p>