6.22 Flooded area

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Flooded Area	Natural and Climate Hazards
Description and justification	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.
Definition	Area submerged by discharge during the flooding event.
Strengths and weaknesses	
Measurement procedure and tool	Susceptible flooding area maps are available, using different colours to mark out zones exposed to different level of risk from fluvial and tidal flooding. Alternative approaches are based on the implementation of numerical simulations, which combining GIS-based software and hydraulic solvers, are able to detected the flooding areas, as a function of the set forcing, through one-dimensional (e.g., HECRAS of the US Army Corps of Engineers), two-dimensional (e.g., FLO-2D of the FLO-2D software Inc.) or tri-dimensional (e.g., ANUGA Hydro developed by the Australian National University).
Scale of measurement	ha
Data source	
Required data	Floodable area maps, rainfall data, hydraulic, geological and geotechnical information, topography (Model/GIS).
Data input type	Quantitative
Data collection frequency	
Level of expertise required	High
Synergies with other indicators	

Connection with SDGs	13
Opportunities for participatory data collection	
Additional information	
References	

6.23 Height of flood peak and time to flood peak

Project Name: UNaLab (Grant Agreement no. 730052)

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Height of flood peak **Time to flood peak**	**Water Management** **Natural and Climate Hazards**
Description and justification	Rapid urbanisation and industrialisation have led to reduced vegetative cover and decreased water storage in the subsurface, as well as the concentration and accumulation of surface runoff in sewage systems due to reduced infiltration into the soil. As a result, the volume of surface runoff as well as the velocity and time to peak storm runoff and baseflow are all increased. Urbanisation also reduces the land coverage of forests and vegetation that help to dissipate the flow energy (Devi, Ganasri & Dwarakish, 2015; Liu, Gebremeskel, De Smedt, Hoffman & Pfister, 2004). The detrimental effects of urbanisation on hydrologic systems are expected to increase in the future due to both increasing urbanisation as well as changes to the global climate, including rising sea levels, glacial retreat, changing precipitation patterns and an increasing frequency of extreme events (Kiehl, 2011).
Definition	Flood peak height is the highest point of the rising limb of a flood hydrograph (describing discharge over time) (m^3/s, cfs, L/s or similar units) Time to flood peak (h)