Synergies with other indicators	Soil strength, soil type, aggregate stability, soil matric suction, plant evapotranspiration
Connection with SDGs	11, 13, 15, 17
Opportunities for participatory data collection	Yes.
Additional information	
References	Gonzalez-Ollauri, A. and Mickovski, S.B., 2017. Hydrological effect of vegetation against rainfall-induced landslides. Journal of Hydrology, 549 (374–387) White, B., Ogilvie, J., Campbell, D.M.H., Hiltz, D., Gauthier, B., Chisholm, H.K.H., Wen, H.K., Murphy, N.C., Arp, P.A., 2012. Using the cartographic depth-to-water index to locate small streams and associated wet areas across landscapes. Can. Water Resour. J. 37 (4), 333–347.

6.33 Shallow landslide risk – slope stability factor of safety

Project Name: OPERANDUM (Grant Agreement no. 776848)

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Slope instability risk (factor of safety)	**Natural and Climate Hazards**
Description and justification	The engineering stability of slopes is based on calculation of a factor of safety, where FoS=1 denotes a failing slope, FoS<1 unstable slope, while FoS>1 a stable slope. The calculation is based on Limit Equilibrium of forces and overturning moments acting on a limited mass of soil.
Definition	A ratio between the stabilising and destabilising forces/moments acting on a limited mass of soil.
Strengths and weaknesses	+: number of standardised methods and approaches exist; software for calculation exists -: the factor is based on a 2D analysis of a cross-section of a slope and potential local variations in the soil/water properties can affect it.
Measurement procedure and tool	Soil and water parameters need to be derived before entering a closed mathematical solution for computation. Commercial and free software exists for calculation and visualisation of the FoS based on methods and approaches

	standardised, among others, with the European Standards (Eurocodes)
Scale of measurement	Meso-scale (slope scale)
Data source	
Required data	Soil strength/physical parameters, ground water parameters, vegetation parameters
Data input type	Numerical, quantitative data input into a software package
Data collection frequency	Ideally continuous
Level of expertise required	High
Synergies with other indicators	Soil strength, Soil matric suction, water retention, soil type, vegetation coverage, vegetation cover, ground water table level
Connection with SDGs	11,13,15,17
Opportunities for participatory data collection	Yes, through continuous sampling and monitoring
Additional information	
References	EN ISO 1997 parts 1 and 2

6.34 Landslide safety factor

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Landslide Safety Factor	**Natural and Climate Hazards**
Description and justification	Indicators of Landslide Risk Resilience sub-criterion will assess the site response to landslide phenomena based on susceptibility indicators: slope angle, pore water pressure, groundwater depth, soil properties, land use, land cover.