	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.

Definition	In the conventional limit equilibrium methods, the Factor of Safety is intended as “the factor by which the shear strength of the soil would have to be divided to bring the slope into a state of barely stability equilibrium” (Duncan, 1996). This definition, called “the strength-reserving” definition, is the most familiar to engineers (Zheng et al., 2005).
Strengths and weaknesses	Safety Factor is widely adopted for slope instability estimation.
Measurement procedure and tool	Limit equilibrium methods are commonly used to evaluate the slope stability from which derive the reliable indication of stability as the Factor of Safety.
Scale of measurement	Dimensionless
Data source	
Required data	Geological and geotechnical information, topography (Model).
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	Duncan J.M. (1996). State of the art: limit equilibrium and finite element analysis of slopes. Journal of Geotechnical and Geoenvironmental Engineering (ASCE), 122(7), 577–596. DOI:10.1061/(ASCE)0733- 9410(1996)122:7(577) Zheng H., Liu D.F., Li C.G. (2005). Slope stability analysis based on elasto-plastic finite element method. International Journal For Numerical Methods In Engineering, 64(14), 1871–1888. DOI: 10.1002/nme.1406