6.35 Landslide risk – History of instability on site

Project Name: OPERANDUM (Grant Agreement no. 776848)

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History of instability on site	Natural and Climate Hazards
Description and justification	Recording the different instability events on/adjacent to a site helps in assessing the possibility of future instability. Slopes that have historically failed are more likely to fail again.
Definition	Failures include erosion, landslides, rockfalls, flooding or any other natural hazard
Strengths and weaknesses	+: provides a timeline and frequency of events that can be mitigated; mapping can be undertaken using historical aerial photographs; new digital mapping approaches can be used to identify zones subjected to past failures; large body of statistical models available to detect past events on the basis of rainfall intensity. -: qualitative measurement which may under/over estimate the true type or frequency of instability events; need for a standardised way of recording.
Measurement procedure and tool	Usually surveys/interviews focus groups with local residents but also review of local press/media articles and historic maps/photos.
Scale of measurement	Local and regional
Data source	
Required data	Dates of events
Data input type	Qualitative
Data collection frequency	Once as a baseline, sporadic afterwards (to record any new instability episode)
Level of expertise required	Intermediate
Synergies with other indicators	Soil strength, Soil stability (factor of safety), Erosion (soil loss), topography, rainfall
Connection with SDGs	11, 13, 15, 17
Opportunities for participatory data collection	Entirely participatory

Additional information	
References	Mickovski S.B., Santos O., Ingunza P.M.D., Bressani L.2015. Coastal slope instability in contrasting geo-environmental conditions. In: Geotechnical Engineering for Infrastructure and Development - Proc. XVI European Conference for Soil Mechanics and Geotechnical Engineering, Edinburgh, Scotland, September 2015: 1801-1806.

6.36 Occurred landslide area

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Occurred Landslide Area	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	Represents the observed surface which moves downward of a mass of rock, earth, or artificial fill on a slope divided by the surface subjected to the high and medium landslide risk obtained by analytical modelling (in percentage). The main scopes of the index is to assess the effectiveness of the adopted design solution for either the entire or the partial area referred to the total risk area.
Strengths and weaknesses	Relatively easy to estimate.
Measurement procedure and tool	This indicator can be estimated from both analytical and observational considerations.
Scale of measurement	Dimensionless, %
Data source	
Required data	Geological and geotechnical information, topography (Model/Survey).