Opportunities for participatory data collection	Yes.
Additional information	
References	Gonzalez-Ollauri. A., Stokes, A., Mickovski, S.B., 2020. A novel framework to study the effect of tree architectural traits on stemflow yield and its consequences for soil-water dynamics. Journal of Hydrology, 582 (124448)

6.32 Level of Groundwater Table

Project Name: OPERANDUM (Grant Agreement no. 776848)

Author/s and affiliations: Slobodan B. Mickovski[1], Alejandro Gonzalez-Ollauri[1], Karen Munro[1]

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Ground water table level	**Natural and Climate Hazards**
Description and justification	Depth below ground surface at which the ground water exists. Higher levels cause more instability, lower levels increase strength and resistance to erosion and landslides.
Definition	The amount of water in storage in the monitored aquifer. When recharge exceeds natural discharge plus abstraction, groundwater levels rise. When recharge is less than natural discharge plus abstraction, groundwater levels fall.
Strengths and weaknesses	+: standard measurement methods exist; cartographic indices exist to spatially predict depth of water table -: high resolution intrusive investigation is needed
Measurement procedure and tool	Trial pits or boreholes excavated and measurement/monitoring carried out in situ using a dipmeter / piezometer
Scale of measurement	Micro / point measurement
Data source	
Required data	Levels [m] below ground surface
Data input type	Height [m] above datum
Data collection frequency	Periodic, continuous
Level of expertise required	Low

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