	For the saturation degree: soil water content, specific gravity of the soil particles, void ratio of the soil
Data input type	Quantitative, numerical
Data collection frequency	Continuous
Level of expertise required	Intermediate to high
Synergies with other indicators	Digital terrain model; soil moisture content, groundwater table level, soil strength
Connection with SDGs	11,13,15,17
Opportunities for participatory data collection	Yes, through citizen science
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) Gonzalez-Ollauri, A. and Mickovski, S.B., 2017. Plant-Best: A novel plant selection tool for slope protection. Ecological Engineering 106 (2017) 154–173.

8.22 Stemflow funnelling ratio

Project Name: OPERANDUM (Grant Agreement no. 776848)

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Stemflow funnelling ratio	**Water Management** **Green Space Management**
Description and justification	Aboveground vegetation parts funnel rainfall around the plant stem and promote its infiltration preferentially into the soil. The volume of water funnelled around the stem is substantial and its infiltration into the soil may promote changes in the stress state of the soil. Also, when rainfall interacts with the canopy it becomes richer with nutrients and organic matter that will then be transported into the soil.

Definition	Proportion of rainfall that is funnelled around the plant stem and then into the soil. Funnelling ratio > 1 implies substantial concentration of rainfall around the plant stem.
Strengths and weaknesses	+: well established procedures exist for NBS that include trees; it can be related to tree architectural traits; easy-to-establish empirical models with incident rainfall; related to soil biogeochemical processes; opportunities to use soil temperature as an indicator of stemflow funnelling belowground -: requires significant effort and suitably qualified workforce for measurement/monitoring; difficult to measure effect in the soil
Measurement procedure and tool	Installation of small diameter gutters spiralling along the tree stem and collection of the volume of water flowing through the gutters. Measurement of rainfall volume beyond the canopy's influence. Linear regression between stemflow and gross rainfall. Data collection of tree architectural traits and implementation of multivariate statistics to relate both tree architecture and stemflow
Scale of measurement	Point (micro, individual) to field (meso)
Data source	
Required data	Water volume; tree architectural traits (canopy cover fraction, leaf area index, number of leaves, number of branches, branches inclination, tree basal area)
Data input type	Numerical, quantitative
Data collection frequency	During every rainfall event
Level of expertise required	Intermediate to high
Synergies with other indicators	Moisture content, soil temperature, matric suction, interception, throughflow, vegetation type, vegetation cover, precipitation
Connection with SDGs	11,13,15,17
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).

	Gonzalez Ollauri, A & Mickovski, SB 2017, 'Hydrological effect of vegetation against rainfall-induced landslides', Journal of Hydrology, vol. 549, pp. 374–387

8.23 Soil Erodibility

Project Name: PHUSICOS – According to Nature (Grant Agreement no. 776681)

Author/s and affiliations: Gerardo Caroppi[1,2], Carlo Gerundo[2], Francesco Pugliese[2], Maurizio Giugni[2], Marialuce Stanganelli[2], Farrokh Nadim[3], Amy Oen[3]

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Soil Erodibility	Green Space Management
Description and justification	Indicators of Soil Physical Resilience sub-criterion will assess if the project scenarios enhance the ability of a soil to resist or recover their healthy state in response to destabilising influences.
Definition	Soil erodibility is a parameter of the soil profile reaction to the process of soil detachment and transport by raindrops and surface flow. The soil erodibility is expressed as the *K*-factor in the widely used soil erosion model, the Universal Soil Loss Equation (USLE) and its revised version (RUSLE). The *K*-factor, which expresses the susceptibility of a soil to erode, is related to soil properties such as organic matter content, soil texture, soil structure and permeability. With the Land Use/Cover Area frame Survey (LUCAS) soil survey in 2009 a pan-European soil dataset is available for the first time, consisting of around 20,000 points across 25 Member States of the European Union.
Strengths and weaknesses	
Measurement procedure and tool	Model/Survey
Scale of measurement	Unit of measure: mm^3/ha
Data source	
Required data	Soil properties
Data input type	Quantitative