

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. <i>Journal of Hydrology</i> , 582 (124448). Gonzalez Ollauri, A & Mickovski, SB 2017, 'Hydrological effect of vegetation against rainfall-induced landslides', <i>Journal of Hydrology</i> , vol. 549, pp. 374–387

4.43 Percolation rate under different rainfall events

Project Name: OPERANDUM (Grant Agreement no. 776848)

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Percolation rate for different rainfall events		Water Management
Description and justification	After the precipitation reaches the soil (through throughflow, stemflow or directly on the soil surface), some of it will move through the soil and can create instability and erosion within the soil. Percolation may	

	also lead to the formation of perched water tables in the soil, which may have a negative effect on soil strength
Definition	The speed at which water (usually from precipitation) moves through soil.
Strengths and weaknesses	+ certain amount of mobile water is needed for supporting the growth of the vegetative part of the NBS; large body of well-established, physically-based models exist for its estimation; well-established field and lab protocols exist for its measurement of flood peak flow reduction and delay. - higher velocities of percolation can increase the risk of internal erosion of finer particles; difficult to quantify the effect of percolation on soil strength.
Measurement procedure and tool	A percolation test consists of digging one or more holes in the soil of the proposed leach field to a specified depth, pre-soaking the holes by maintaining a high water level in the holes, then running the test by filling the holes to a specific level and timing the drop of the water level as the water percolates into the surrounding soil.
Scale of measurement	Micro (individual excavation), to meso (field testing, sometimes a line of excavations)
Data source	
Required data	Water quantity, time for the water quantity to percolate through the soil
Data input type	Numerical, quantitative
Data collection frequency	Once as a baseline reading; sporadically thereafter throughout the NBS life cycle
Level of expertise required	Low
Synergies with other indicators	Moisture content, interception, throughflow, stemflow, vegetation type, vegetation cover, precipitation, erosion rate, soil type, ground water table, water flux
Connection with SDGs	11,13,15,1,7
Opportunities for participatory data collection	Yes
Additional information	
References	Gonzalez Ollauri, A & Mickovski, SB 2017, 'Hydrological effect of vegetation against rainfall-induced landslides', Journal of Hydrology, vol. 549, pp. 374–387