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12.2 Total particulate matter removed by NBS vegetation

Project Name: proGIreg (Grant Agreement no. 776528)

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Particulate Matter Removed by NBS Vegetation	Air Quality
Description and justification	Particulate matter (PM) abatement, due to the green surface is a key indicator of the amelioration of the environmental quality due to the implementation of NBS in urban areas. Indeed, PM has become a serious environmental problem and harms human health.
Definition	The PM abatement is defined as the PM deposited on tree and shrub leaves.
Strengths and weaknesses	It allows to detect the abatement of PM at different particle size fraction. The limit is that the survey is discrete and not continuously during the time.

Measurement procedure and tool	PM deposited on the leaves will be studied by Scanning Electron Microscopy combined with Energy Dispersed X-Ray microanalysis, obtaining a quanti-qualitative characterization of the deposited particles, as a function of their size and elemental composition
Scale of measurement	NBS
Data source	
Required data	Leaf samples
Data input type	Discrete variables
Data collection frequency	Particulate matter abatement will be estimated twice during the project (at the NBS implementation and after 2 years: pre-post design)
Level of expertise required	High
Synergies with other indicators	Reduction of Pollutants
Connection with SDGs	Make cities inclusive, safe, resilient and sustainable Ensure healthy lives and promote well-being for all at all ages
Opportunities for participatory data collection	
Additional information	
References	<p>Baldacchini, Sgrigna, Clarke, Tallis, Calfapietra, 2019. An ultra-spatially resolved method to quali-quantitative monitor particulate matter in urban environment <i>Environ. Sci. Poll. Res.</i> 26; 18719-18729</p> <p>Baldacchini et al., 2017. How does the amount and composition of PM deposited on <i>Platanus acerifolia</i> leaves change across different cities in Europe? <i>Environ. Sci. Technol.</i> 51; 1147-1156.</p> <p>Sgrigna, Baldacchini, Esposito, Calandrelli, Tiwary, Calfapietra, 2016. Characterization of leaf-level particulate matter for an industrial city using electron microscopy and X-ray microanalysis, <i>Sci. Tot. Environ.</i> 548-549; 91- 99. 39</p>