

2.1.6 Modelled carbon content of the upper soil layer

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Modelled carbon content of the upper soil layer	Climate Resilience Green Space Management
Description and justification	Indicators of Carbon Sequestration in Soil sub-criterion will assess the carbon sequestration in soil.
Definition	In soils and sediments, there are three basic forms of carbon that may be present: elemental, inorganic, and organic C. The quality of organic matter in sediments is critical to the partitioning and bioavailability of sediment-associated contaminants. Elemental carbon forms include charcoal, soot, graphite, and coal. The primary sources for elemental carbon in soils and sediments are as incomplete combustion products of organic matter (i.e., charcoal, graphite, and soot), from geologic sources (i.e., graphite and coal), or dispersion of these carbon forms during mining, processing, or combustion of these materials. Inorganic carbon forms are derived from geologic or soil parent material sources. Inorganic carbon forms are present in soils and sediments typically as carbonates. Naturally-occurring organic carbon forms are derived from the decomposition of plants and animals. In soils and sediments, a wide variety of organic carbon forms are present and range from freshly deposited litter (e.g., leaves, twigs, branches) to highly decomposed forms such as humus. In addition to the naturally-occurring organic carbon sources are sources that are derived as a result of contamination through anthropogenic activities.
Strengths and weaknesses	
Measurement procedure and tool	Model/Sampling/Survey
Scale of measurement	ton/ha
Data source	

Required data	
Data input type	Quantitative
Data collection frequency	
Level of expertise required	High
Synergies with other indicators	
Connection with SDGs	SDG 11 Sustainable cities and communities, SDG 13 Climate action, SDG 15 Life on land
Additional information	
References	http://bcodata.who.edu/LaurentianGreatLakes_Chemistry/bs116.pdf

2.1.7 Soil carbon decomposition rate

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Soil Carbon Decomposition Rate		Climate Resilience Green Space Management
Description and justification	Indicators of Carbon Sequestration in Soil sub-criterion will assess the carbon sequestration in soil.	
Definition	Decomposition of Carbon is a part of the Carbon cycle and is essential for recycling the finite matter that occupies physical space in the biosphere. Decomposition is the process by which organic substances are broken down into simpler organic matter. One can differentiate abiotic from biotic decomposition (biodegradation). The former means "degradation of a substance by chemical or physical processes, e.g., hydrolysis" (Water Quality Vocabulary. IShaO 6107-6:1994). The latter means "the metabolic	