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### *2.1.3 Total Leaf Area*

**Project Name:** Nature4Cities (Grant agreement: No. 730468)

**Author/s and affiliations:** Florian Kraus[1], Bernhard Scharf[1]

[1] *Green4Cities GmbH/GREENPASS GmbH*

| **Leaf Area (LA)** | **Green Space Management**<br>**Climate Resilience**<br>**Air Quality** |
|---|---|
| **Description and justification** | The LA (Leaf Area) is a Key Performance Indicator of the GREENPASS® system.<br>It expresses the sum of leaf area of NBS within project area. The Leaf Area is the operating surface of NBS and |

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| | therefore decisive for climate regulation, carbon storage and air purification. |
| **Definition** | The LA (Leaf Area) describes the total amount of leaf area of all NBS in a project area. |
| **Strengths and weaknesses** | + key performance indicator regarding biodiversity<br>+ easy for communication, understanding and decision-making<br>+ useful for design optimization<br>+ link the NBS performance to a single number<br>- needs area analysis and calculation |
| **Measurement procedure and tool** | - NBS analysis of an area and calculation (eg with GREENPASS® system and tools)<br>- numerical value in $m^2$ |
| **Scale of measurement** | Object, neighbourhood and city scale |
| **Data source** | |
| **Required data** | - project area<br>- NBS typologies and areas |
| **Data input type** | - numerical analysis of vegetation types incl. characteristics (eg LAI) |
| **Data collection frequency** | - one to several times in planning and optimization process |
| **Level of expertise required** | easy to understand – for planners and decision makers |
| **Synergies with other indicators** | - |
| **Connection with SDGs** | SDG 11 Sustainable Cities and Communities, SDG 13 Climate action |
| **Opportunities for participatory data collection** | - |
| **Additional information** | |
| **References** | Kraus, F.; Scharf, B. (2019): Management of urban climate adaptation with NBS and GREENPASS®. Geophysical Research Abstracts. Vol. 21, EGU2019-16221-1, 2019 EGU General Assembly 2019.<br>Kraus, F.; Scharf, B. (2019): Climate-resilient urban planning and architecture with GREENPASS illustrated by the case study 'FLAIR in the City' in Vienna. OP Conf. Ser.: Earth Environ. Sci. 323 012087.<br>Nature4Cities, D2.1 - System of integrated multi-scale and multi-thematic performance indicators for the assessment of urban challenges and NBS. |

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| | https://www.nature4cities.eu/post/nature4cities-defined-performance-indicators-to-assess-urban-challenges-and-nature-based-solutions.<br>Nature4Cities, D2.2 - Expert-modelling toolbox<br>Nature4Cities, D2.3 – NBS database completed with urban performance data<br>https://www.nature4cities.eu/post/applicability-urban-challenges-and-indicators-real-case-studies<br>Nature4Cities, D2.4 - Development of a simplified urban performance assessment (SUA) tool |

### *2.1.4 Carbon Storage Score*

**Project Name:** Nature4Cities (Grant agreement: No. 730468)

**Author/s and affiliations:** Florian Kraus[1], Bernhard Scharf[1]

[1] *Green4Cities GmbH/GREENPASS GmbH*

| **Carbon Storage Score** | **Climate Resilience** |
|---|---|
| **Description and justification** | The CSS (Carbon Storage Score) is one out of five Key Performance Scores of the GREENPASS® system.<br>It expresses the carbon storage performance of the NBS in a project area. Carbon dioxide is the most relevant greenhouse gas. The ability to capture carbon dioxide is most relevant in climate change mitigation. |
| **Definition** | The CSS (Carbon Storage Score) describes the total amount of stored $CO_2$ within the vegetation and soil of a project area. |
| **Strengths and weaknesses** | + worldwide standardized key performance score regarding greenhouse gases and carbon sequestration<br>+ easy for communication, understanding and decision-making<br>+ useful for design optimization<br>- needs simulation (photosynthesis activity) |
| **Measurement procedure and tool** | - modelling, simulation tools and GREENPASS® analysis and calculation<br>- numerical value in kg/day |
| **Scale of measurement** | Object, neighbourhood and city scale |
| **Data source** | |
| **Required data** | - project area<br>- NBS typology |