

13.2 Quantity of blue-green space as ratio to built form

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Ratio of open spaces to built form	Place Regeneration
Description and justification	Urban space and environment can have an effect in resident health, resilience to weather events and even crime rate, and access to green urban space is seen as positive. Several terms and definitions have been used including green space, open space, public space, urban greenery and public park. Benefits of open spaces relate to both their materials and functions: the increased biodiversity and ecosystem services that increased vegetation and soil permeability and water retention can offer, as well as the potential increased social benefits of open meeting spaces, areas for recreation, sports and relaxation (WHO, 2016).
Definition	Ratio of open spaces to built form within a defined urban area (ratio)
Strengths and weaknesses	+ Simple and easy to use - Large uncertainties of inclusion of all relevant urban features
Measurement procedure and tool	<p>The simplest method is to measure the proportional area physically occupied by buildings. This method however does not take into account any other form of non-building space that not considered beneficial open space, such as roads and parking lots.</p> <p>Another simple method would be to calculate the green space of urban area, based on surface type counting hard impermeable surfaces as grey areas and soft permeable surfaces as green areas. This method misses all covered parks and terraces, which can form a large portion of open areas in urban environments, even if they are not green areas (Jim, 2004).</p> <p>For the purpose of this indicator, a suitable parameter is the selection of all urban green areas, added with selected open 'grey' open areas, such as public squares or pedestrian precincts. The total area covered by buildings is calculated from maps or appropriate sources. The green area is calculated and selected grey open areas are added. The ratio of the open area to the building area is calculated.</p>

Scale of measurement	Street to metropolitan scale
Data source	
Required data	Amount of green spaces, buildings and other infrastructure assets in the urban area
Data input type	Quantitative
Data collection frequency	Annually
Level of expertise required	Low
Synergies with other indicators	Relation to <i>Reclamation of contaminated land (brownfields)</i> indicator and to the whole <i>Green Space Management</i> indicator group
Connection with SDGs	SDG 9 Industry, infrastructure and innovation, SDG 11 Sustainable cities and communities, SDG 13 Climate action
Opportunities for participatory data collection	No opportunities identified
Additional information	
References	<p>Jim, C. (2004). Green-space preservation and allocation for sustainable greening of compact cities. <i>Cities</i>, 21(4), 311-320.</p> <p>University of the West of England (UWE) Science Communication Unit. (2013). <i>Science for Environment Policy (issue 39): Brownfield Regeneration</i>. Bristol, United Kingdom: University of the West of England Science Communication Unit.</p> <p>World Health Organization. (2016). <i>Urban green spaces and health: A review of evidence</i>. Copenhagen: WHO Regional Office for Europe. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf?ua=1</p>

13.3 Perceived quality of urban green, blue and blue-green spaces

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