8.6 Effective green infrastructure in the urban-rural interface

Project Name: Indicators for urban green infrastructure (EEA)

Author/s and affiliations: EEA, ETC/ULS

Effective green infrastructure in the urban-rural interface	Green Space Management
Description and justification	Green infrastructure at the fringes of cities performs similar ecosystem services to that in inner urban areas, though direct benefits from urban-rural interactions are highlighted. Green spaces in the peri-urban area may improve air quality and mitigate climate change. A well-connected network of green elements, which form ventilation channels, facilitates the circulation of fresher and cleaner air from the periphery into the city. The vegetated ventilation network may reduce traffic emissions, mitigate noise and provide a cooling effect. Open areas at the urban fringe may favour species richness. These natural and semi-natural areas generally host a diversity of landscapes, as they are dynamic locations surrounded by a variety of land uses. Moreover, GI elements may be used to join urban areas with the neighbouring countryside. This improved connectivity may support the functioning of ecosystems, both urban and rural, mitigating the negative affects of the built environment. Moreover, the urban-rural interface forms a vital recreational and cultural pool for urban society that is equally connected to nature and the countryside.
Definition	Percentage of potential green infrastructure on the peri-urban area.
Strengths and weaknesses	Strength: Weaknesses: resolution of the data (minimum mapping unit 25 ha).
Measurement procedure and tool	The delineation of potential green infrastructure in the peri-urban area is based on a proximity analysis of selected Corine land cover classes associated with green infrastructure (EEA, 2006; EEA, 2014). The proximity analysis follows the Corilis methodology (EEA, 2006). This method uses the gridded structure of the data to measure the potential or influence of a given land cover type in the area around the place where it is found, using a weighting distance function. The approach assumes that the influence of a given land parcel on its surroundings declines with increasing distance. Thus, the methods can be used to produce scaled maps with cell values ranging

	from from 0 to 100 to show the degree of influence that the distribution of a stock of a given cover type has on its neighbourhood. Intensity maps are generated after weighting values of neighbouring cells. In order to be as restrictive as possible, the spatial smoothing is applied to a radius of 1 km, which means that all neighbouring green infrastructure elements within a distance of 1 km will be considered to influencing on each point of the territory. Several previous tests revealed that the selected threshold to represent the green potentiality is to be set on a minimum of 70%.
Scale of measurement	Minimum mapping unit 25 ha **Note:** the indicator is now based on the 25 ha MMU Corine Land Cover dataset. In 2020, the Copernicus Urban Atlas data will be used and hence the MMU will improve to 0.25 ha.
Data source	
Required data	Corine Land Cover
Data input type	Data provided by Copernicus Land Monitoring Service with public access
Data collection frequency	Every 6 years (2000, 2006, 2012, 2018).
Level of expertise required	Geospatial analysis. Thematic knowledge on green infrastructure and urban environment.
Synergies with other indicators	Share of green urban areas (EEA) Access to green areas in Europe (DG Regio)
Connection with SDGs	SDG-11 (Sustainable cities and communities), specifically target 11.7 (universal access to safe, inclusive and accessible, green and public spaces)
Opportunities for participatory data collection	
Additional information	
References	EEA, 2006. Land accounts for Europe 1990-2000. EEA. EES Report No 11/2006. https://www.eea.europa.eu/publications/eea_report_2006_11/eea_report_2006_11/viewfile#pdfjs.action=download EEA, 2014, Spatial analysis of green infrastructure in Europe, EEA Technical Report No 2/2014, European Environment Agency. https://www.eea.europa.eu/publications/spatial-analysis-of-green-infrastructure

	https://www.eea.europa.eu/themes/sustainability-transitions/urban-environment/urban-green-infrastructure/indicators_for_urban-green-infrastructure https://eea.maps.arcgis.com/apps/MapSeries/index.html?appid=42bf8cc04ebd49908534efde04c4eec8%20&embed=true

8.7 Hot spot in peri-urban green infrastructure

Project Name: Indicators for urban green infrastructure (EEA)

Author/s and affiliations: EEA, ETC/ULS

Hot spot in peri-urban green infrastructure	Green Space Management
Description and justification	The urban-rural interface, the area where a city or town meets the countryside, has no clear delineation due to the permeability of its boundaries. It is a dynamic and highly diverse region, where development processes and changes occur at different spatial and temporal scales. The urban fringe is characterised by the trade-off of land uses and the compensation of derived impacts. Here, a strong competition for land use takes place and, accordingly, potential conflicts of interest may arise among a variety of end-users. However, it also presents an opportunity for greening and for connecting existing green spaces to build a solid and functional natural network. The hotspot identifies those areas where the influence of green spaces and the impact of artificial elements overlap. This indicator provides information about the amount and location of areas where potential conflicts may exist or, from a positive perspective, where management actions present major opportunities for enhancement. On the one hand, high hotspot values may be due to the negative effects of the encroachment of artificial areas into green landscapes and the related loss of ecosystem services and functions. On the other hand, it may represent an opportunity to use green spaces to alleviate the urban heat island effect or to clean up pollution.
Definition	The hotspot ratio is the percentage of potential GI in peri-urban areas, strongly influenced by the proximity of built-up areas. Potential and a considerable urban effect coincide.
Strengths and weaknesses	Strength: Weaknesses: resolution of the data (minimum mapping unit 25 ha).