	provide feedback on their experience in using the toolkit, good and bad! Sources of improved evidence Suggestions for improving the tools Ideas for new tools The consortium who led the development of this toolkit has handed over the responsibilities for co-ordinating future work to the Green Infrastructure Value Network (GIVaN). Further information on the network can be found at: www.bit.ly/givaluationtoolkit
Additional information	
References	URBAN GreenUP Deliverable D5.3: City Diagnosis and Monitoring Procedures https://www.urbangreenup.eu/insights/deliverables/d5-3-city-diagnosis-and-monitoring-procedures.kl http://www.merseyforest.org.uk/services/gi-val/ Nowak, McPherson and Rowntree, Chicago's urban forest ecosystem: results of the Chicago urban forest climate project, USDA,1994 Air Pollution in the UK 2015. https://uk-air.defra.gov.uk/library/annualreport/index Bottalico, F., Chirici, G., Giannetti, F., De Marco, A., Nocentini, S., Paoletti, E., Salbitano, F., Sanesi, G., Serenelli, C., Travaglini, D., 2016. Air pollution removal by green infrastructures and urban forests in the city of Florence. Agric. Agric. Sci. Procedia 8, 243–251. doi:10.1016/j.aaspro.2016.02.099. SDG indicator 3.9.1 https://unstats.un.org/sdgs/metadata/files/Metadata-03-09-01.pdf SDG indicator 11.6.2. https://unstats.un.org/sdgs/metadata/files/Metadata-11-06-02.pdf

2.12 Maximum surface cooling

Project Name: URBAN GreenUP (Grant Agreement no. 730426)

Author/s and affiliations: Tom Butlin[1], Paul Nolan[1], Clare Olver[1], Raúl Sánchez[2], Jose Fermoso[2], Silvia Gómez, María González[2], Jose María Sanz[2], Esther San José[2]

[1] *The Mersey Forest Offices, Risley Moss, Ordnance Avenue, Birchwood, Warrington, WA3 6QX*
[2] *CARTIF Foundation. Parque Tecnológico de Boecillo, 205, 47151, Boecillo, Valladolid, Spain*

Projected maximum surface temperature reduction	Climate Resilience
Description and justification	The surface temperature tool can be used to model the maximum surface temperature expected in a neighbourhood, taking into account the evaporative cooling effect of the vegetation. Since the implementation of

	nature-based solutions will usually result in an increase in vegetation cover, it should be possible to observe a decrease in the modelled maximum surface temperature under each climate change scenario (including the baseline).
Definition	The STAR Tools are surface temperature and runoff tools for assessing the potential of green infrastructure in adapting urban areas to climate change. They are freely available at http://maps.merseyforest.org.uk/grabs/.
Strengths and weaknesses	This KPI requires and is based in specific software; however, this software is freely available online.
Measurement procedure and tool	The software includes scenarios for different parameters (temperature, precipitation and land cover, etc.). However, these scenarios were developed for a concrete area (North West England). Therefore, information must be provided to build the scenarios in other cities outside this area.
Scale of measurement	Neighbourhood to metropolitan area
Data source	
Required data	Data need to be provided in the case of locations outside North West England (temperature scenarios, land cover scenarios, precipitation scenarios, etc.).
Data input type	
Data collection frequency	Not applicable, it is a model.
Level of expertise required	Technician
Synergies with other indicators	This KPI is directly related to KPI which measures temperature values, such as *Decrease in mean or peak daytime local temperatures* and *Temperature reduction in urban areas*. In addition its results can be related with the changes in energy consumption, such as *Saving in energy use due to improved* GI. KPIs related with people's well-being can be affected by these measures, as the temperature reduction means a better thermal comfort: *Perceptions of citizens on urban nature, increase in walking and cycling in and around areas of interventions*.
Connection with SDGs	This KPI is directly related with SDG 13 and indirectly is related with SDG 15. KPIs related with people's well being can be affected by these measures, as the temperature reduction means a better thermal comfort, so this KPI is related with the SDG 3.
Opportunities for participatory data collection	This is not a KPI open to participatory collaboration.
Additional information	

References	URBAN GreenUP Deliverable D2.4 - Monitoring program to Valladolid. https://www.urbangreenup.eu/insights/deliverables/d2-4---monitoring-program-to-valladolid.kl URBAN GreenUP Deliverable D3.4 - Monitoring program to Liverpool https://www.urbangreenup.eu/insights/deliverables/d3-4---monitoring-program-to-liverpool.kl URBAN GreenUP Deliverable D4.4 – Monitoring program to Izmir https://www.urbangreenup.eu/insights/deliverables/d4-4--monitoring-program-to-izmir.kl URBAN GreenUP Deliverable D5.3: City Diagnosis and Monitoring Procedures https://www.urbangreenup.eu/insights/deliverables/d5-3-city-diagnosis-and-monitoring-procedures.kl The Mersey Forest & The University of Manchester (2011). STAR tools: surface temperature and runoff tools for assessing the potential of green infrastructure in adapting urban areas to climate change. Part of the EU Interreg IVC GRaBS project. www.ginw.co.uk/climatechange.

2.13 Mean or peak daytime temperature

2.13.1 Mean or peak daytime temperature - Direct temperature measurement

Project Name: UNaLab (Grant Agreement no. 730052)

Author/s and affiliations: Laura Wendling[1], Ville Rinta-Hiiro[1], Maria Dubovik[1], Arto Laikari[1], Johannes Jermakka[1], Zarrin Fatima[1], Malin zu-Castell Rüdenhausen[1], Ana Ascenso[2], Silvia Coelho[2], Ana Isabel Miranda[2], Peter Roebeling[2], Ricardo Martins[2], Rita Mendonça[2]

[1] *VTT Technical Research Centre Ltd, P.O. Box 1000 FI-02044 VTT, Finland*

[2] *CESAM – Department of Environment and Planning, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal*

Mean or peak daytime temperature – Direct measurements	**Climate Resilience**
Description and justification	Green urban infrastructure can significantly affect climate change adaptation by reducing air and surface temperatures with the help of shading and through increased evapotranspiration. Conversely, green urban infrastructure can also provide insulation from cold and/or shelter from wind, thereby reducing heating requirements (Cheng, Cheung, & Chu, 2010). By moderating the urban microclimate, green infrastructure can support a reduction