Balfour, R., Allen, J., 2014. Local action on health inequalities:
Improving access to green spaces. London, UK
Dennis, M., James, P., 2016. User participation in urban green
commons: Exploring the links between access, voluntarism,
biodiversity and well being. Urban For. Urban Green. 15, 22-
31. https://doi.org/10.1016/j.ufug.2015.11.009
La Rosa, D. (2014) Accessibility to greenspaces: GIS based indicators
for sustainable planning in a dense urban context. Ecological
Indicators, 42: 122-134.
Jakubowski, B. and Frumkin, H. (2010) Environmental Metrics for
Community Health Improvement. Preventing chronic disease,
7(4): 1-10.
Senes, G., Fumagalli, N., Ferrario, P.S., Gariboldi, D. and Rovelli, R.
(2016) Municipal community gardens in the metropolitan area
of Milano: assessment and planning criteria. Journal of
Agricultural Engineering, XLVII: 509 [82-87].
Speak, A.F., Mizgajski, A. and Borysiak, J. (2015) Allotment gardens
and parks: Provision of ecosystem services with an emphasis on
biodiversity. Urban Forestry & Urban Greening, 14(4): 772-781.

## 8.30 Food production in urban allotments and NBS

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

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Food production in and NBS	urban allotments	Green Space Management	
Description and justification	Production of food in urban orchards (agriculture, eggs, etc.). Measurement of the amount of food produced.		
Definition	The production of food will be reported in tonnes/Ha per year.		
Strengths and weaknesses	This KPI will require citizens' collaboration, so recovering the data could be difficult.		
		amount of food produced. If it cannot timate of the amount generated will	
	Users will be asked directly using surveys (online and in situ).		
	campaign (Septemb	hards, at the end of the summer er-October), users are asked directly producers might measure (scale) or	

Coolo of	estimate the quantities (how many bags, how many units and technician have to "translate" this into weight units. On the other hand, community orchards measure every year the food amount that they produce, because the products are destined for social purposes. The food production of the community orchards will be measured with a scale, not estimated. This KPI for food production is measured/estimated by tones/Ha per year and tones/year.	
Scale of measurement	Area/neighbourhood	
Data source		
Required data	Online or in situ surveys.	
Data input type	Sum of the produced food expressed as kg per user on a yearly basis	
Data collection frequency	Yearly	
Level of expertise required	Technical/basic	
Synergies with other indicators	This KPI is highly related with KPI Green intelligence awareness, as well as KPI Perceptions of citizens on urban nature – green space quality, KPI Number of jobs created; gross value added, KPI Accessibility: distribution, configuration and diversity of green space and land use changes, KPI Monetary values.	
Connection with SDGs	This KPI is directly related with SDG 3 and SDG 11.	
Opportunities for participatory data collection	This KPI requires citizens' collaboration via surveys.	
Additional informat	ion	
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 Ecological orchards of Valladolid Annual Report (2016-2017)	

http://pai.inea.org/wp-content/uploads/2016/11/memoria-2016MEJOR-CALIDAD.pdf http://www.valladolid.es/es/actualidad/noticias/huertosecologicos-2016-2017

## 8.31 Recreational opportunities provided by green infrastructure

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

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Mainhted recreation		Crean Space Management	
Weighted recreation provided by green i		Green Space Management	
Description and justification	This KPI aims to measure the increase of opportunities related to green infrastructures (Derkzen et al. 2015), being valued for recreation, social interaction, education and supporting healthy living (satisfaction).		
Definition	This KPI measures the recreation opportunities available by urban green infrastructure.		
Strengths and weaknesses	This KPI requires specific software (GIS software).		
Measurement procedure and tool	The availability of recreation opportunities can be measured considering different elements: types of urban green infrastructure; degree of naturalness; aesthetics- scenic beauty; and presence of water. Users were asked to score these elements according to the relative importance. Scores were discussed during a focus group.		
Scale of measurement	City/neighbourhood		
Data source			
Required data	engagement with NBS thr of activity undertaken in/ and cycling), frequency of as frequency count data ( visitors, number of recrea cultural events, people in educational activities) val Surface measurements sh Geographical Information shall be calculated with th	ue (Kabiisch and Haase 2014). nall be calculated with Systems (GIS). A Social Survey	