

<b>Opportunities for participatory data collection</b>	The questionnaires can be both self-reported and administrable in an interview method.
<b>Additional information</b>	
<b>References</b>	Feldman, Hayes, Kumar, Greeson, Laurenceau (2007). Mindfulness and emotion regulation: The development and initial validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). <i>Journal of psycho-pathology and Behavioral Assessment</i> , 29, 177.

## 16.4 Proportion of schoolchildren involved in gardening

**Project Name:** CLEVER Cities (Grant Agreement no. 776604)

**Author/s and affiliations:** Julita Skodra<sup>1</sup>, Anne Rödl<sup>2</sup>

<sup>1</sup> UKE – University Hospital Essen, Institute for Urban Public Health (InUPH), Essen, Germany

<sup>2</sup> TUHH – Hamburg University of Technology Institute of Environmental Technology and Energy Economics Energy Systems - Environmental Assessment and Life Cycle Assessment, Hamburg, Germany

Proportion of schoolchildren involved in gardening	Knowledge and Social Capacity Building
<b>Description and justification</b>	School learning gardens provide an opportunity to engage schoolchildren in practical tasks of food growing, which can stimulate children’s curiosity and interest and deepen environmental participation (Williams and Brown 2012). Since school-aged children spend a significant amount of time at school, focus of many public health programmes was on developing opportunities for physical activity along with implementing environmental change in schools (e.g., Anthamatten et al. 2011). Besides improving playgrounds, many interventions included a development of school gardens, which proved to have positive effects on both vegetable intake (Somerset & Markwell 2008; Davis et al. 2016) and physical activity (Blair 2009) as well as on decrease in sedentary time (Rees-Punia 2017) contributing to better health of children involved in gardening activities (Ozer 2007). Besides its positive effects on healthy development, research shows that school gardening and active learning has positive impacts on academic achievements of schoolchildren (Ozer 2007; Wells et al. 2015).
<b>Definition</b>	1. Percentage of children involved in gardening activities at school: Number of pupils being in (practical) contact with the gardening project, cumulated over project period (n)

	(can be set into a ratio to the overall amount of pupils afterwards)
	2. Frequency of use or work in the school garden (times/hours per [week or month]) (based on usual schedule and independently from that schedule, e.g., during summer holidays)
<b>Strengths and weaknesses</b>	+ Simple and easy to calculate + Provides a measure that can be easily followed
<b>Measurement procedure and tool</b>	1. observations, fieldwork: counting, photographing, checklist 2. observations, questionnaire: measuring the frequency of use
<b>Scale of measurement</b>	School
<b>Data source</b>	
<b>Required data</b>	Number of pupils, frequency of use (times/hours per [week or month])
<b>Data input type</b>	Quantitative
<b>Data collection frequency</b>	1. once in the pre-intervention phase, after the intervention annually 2. once in the pre-intervention phase
<b>Level of expertise required</b>	Low
<b>Synergies with other indicators</b>	Children involved in environmental educational activities
<b>Connection with SDGs</b>	SDG 3 Good health and well-being SDG 4 Quality education SDG 11 Sustainable cities and communities SDG 12 Responsible consumption and production SDG 13 Climate action
<b>Opportunities for participatory data collection</b>	Participatory data collection is feasible through teachers reports on gardening activities
<b>Additional information</b>	
<b>References</b>	Anthamatten P, Brink L, Lampe S, Greenwood E, Kingston B, Nigg C. (2011). An assessment of schoolyard renovation strategies to encourage children's physical activity. <i>Int J Behav Nutr Phys Act.</i> 8(27)

- Blair D. (2009) 'The child in the garden: an evaluative review of the benefits of school gardening', *J Environ Educ.*, 40(2), pp.15–38.
- Davis, J. N., Martinez, L. C., Spruijt-Metz, D., & Gatto, N. M. (2016) LA Sprouts: A 12-Week Gardening, Nutrition, and Cooking Randomized Control Trial Improves Determinants of Dietary Behaviors. *Journal of nutrition education and behavior*, 48(1), 2–11.e1. doi:10.1016/j.jneb.2015.08.009
- Ozer, E.J.(2007) The effects of school gardens on students and schools: conceptualization and considerations for maximizing healthy development' *Health Educ Behav.* 34(6), pp.846–863.
- Rees-Punia, E., Holloway, A., Knauff, D., & Schmidt, M. D. (2017). Effects of School Gardening Lessons on Elementary School Children's Physical Activity and Sedentary Time, *Journal of Physical Activity and Health*, 14(12), pp.959-964
- Somerset, S., & Markwell, K. (2009). Impact of a school-based food garden on attitudes and identification skills regarding vegetables and fruit: A 12-month intervention trial. *Public Health Nutrition*, 12(2), 214-221
- Wells, N.M., Myers, B.M., Todd, L.E. et al. (2015) The effects of school gardens on children's science knowledge: a randomized controlled trial of low-income elementary schools. *Int J Sci Educ.*, 37(17), pp.2858–2878
- Williams, D.R. and Brown, J. (2012) *Learning Gardens and Sustainability Education: Bringing Life to Schools and Schools to Life*, New York and London: Routledge

## 16.5 Citizens' awareness regarding urban nature and ecosystem services

**Project Name:** UNaLab (Grant Agreement no. 730052)

**Author/s and affiliations:** Laura Wendling<sup>1</sup>, Ville Rinta-Hiiri<sup>1</sup>, Maria Dubovik<sup>1</sup>, Arto Laikari<sup>1</sup>, Johannes Jermakka<sup>1</sup>, Zarrin Fatima<sup>1</sup>, Malin zu-Castell Rüdenhausen<sup>1</sup>, Peter Roebeling<sup>2</sup>, Ricardo Martins<sup>2</sup>, Rita Mendonça<sup>2</sup>

<sup>1</sup> VTT Technical Research Centre Ltd, P.O. Box 1000 FI-02044 VTT, Finland

<sup>2</sup> CESAM – Department of Environment and Planning, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal

Citizens' awareness regarding urban nature and ecosystem services	Knowledge and Social Capacity Building
<b>Description and justification</b>	The conservation, rehabilitation or restoration of ecosystems and ecological processes is a key strategy to maintain, enhance or recover the natural capital, or ecosystem services, provided by intact natural systems.