

16 ADDITIONAL INDICATORS OF KNOWLEDGE AND SOCIAL CAPACITY BUILDING FOR SUSTAINABLE URBAN TRANSFORMATION

16.1 Children involved in environmental educational activities

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

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Children involved in environmental educational activities	Knowledge and Social Capacity Building
Description and justification	<p>According to social-ecological theory, personal, environmental and social factors influence children's behaviour. Behaviour change requires environments and policies that support healthful and ecological choices, strong social norms and social support for healthful and ecological choices as well as motivation and education of individuals to make those choices (Sallis et al. 2008). Sustainability education may include initiatives related to recycling, schoolyard habitat, rainwater harvesting and management, nutrition and health, waste reduction, etc. 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). Additionally, research shows that school gardening and active learning has positive impacts on academic achievements of schoolchildren (Wells et al. 2015).</p>
Definition	<p>Children involved in environmental educational activities</p> <ol style="list-style-type: none"> 1. Number of school hours spent on teaching about rainwater management and in preparing the information board 2. Number of pupils gaining an increased knowledge on plants, gardening, nature and sustainability due to a thematic inclusion in their curriculum, cumulated over project period (n) 3. Change in knowledge about natural cycles in pupils participating in aquaponic project in comparison to those who were not involved (better result in test in %).
Strengths and weaknesses	<ul style="list-style-type: none"> + Simple and easy to calculate + Provides a measure that can be easily followed

	- Spillover effect is possible
Measurement procedure and tool	<ol style="list-style-type: none"> 1. observing the integration of the topic in education, curriculum and interviews 2. observations, fieldwork: counting, photographing, checklist 3. counting and comparing: in regular intervals, the achievements in class tests are compared
Scale of measurement	School
Data source	
Required data	Number of school hours, number of pupils and school results, teachers impressions
Data input type	Quantitative and qualitative
Data collection frequency	<ol style="list-style-type: none"> 1. once in pre-intervention phase, once during the implementation and then annually 2. once in the pre-intervention phase, after the intervention annually 3. once in the pre-intervention phase, after the intervention annually
Level of expertise required	Low – medium (interviews)
Synergies with other indicators	Proportion of school children involved in gardening
Connection with SDGs	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
Opportunities for participatory data collection	Participatory data collection is feasible through teachers reports
Additional information	
References	<p>Sallis, J.; Owen, N. and Fischer, E. (2008) 'Ecological models', in: Glanz, K.; Rimer, BK., and Viswanath, K. editors. <i>Health Behaviour and Health Education. Theory, Research and Practice</i>. Fourth edition, San Francisco: Jossey-Bass, pp. 465-485.</p> <p>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. <i>Int J Sci Educ.</i>, 37(17), pp.2858–2878</p>

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

16.2 Engagement with NBS sites/projects

Project Name: URBAN GreenUP

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Engagement with NBS (sites/projects)	Knowledge and Social Capacity Building
Description and justification	The importance and significance of public access to environmental information and participation in environmental decision-making are enshrined in the Aarhus Convention, adopted in 1998 in the Danish City of Århus (United Nations Economic Commission for Europe, 1998). In England the National Planning Policy Framework also emphasises the importance of community engagement to achieving well-design places and public involvement in planning and decision-making (Ministry of Housing, Communities and Local Government, 2018). Moreover, academic sources highlight the benefits for environmental management of understanding the relationships between the views of different stakeholders, including the public (Baur et al. 2016). The monitoring of engagement with NBS in Liverpool is therefore of vital importance.
Definition	Fundamental to the monitoring of this KPI is the ability to monitor engagement at multiple stages of development and delivery of NBS. This KPI will therefore be monitored across the various public engagement activities and periods of the project using multiple data collection methods.
Strengths and weaknesses	- This KPI will require citizens' collaboration, so recovering the data could be difficult.
Measurement procedure and tool	In progress. Participant observation and record keeping of engagement events and consultation activities will be conducted; this will include the collection of demographic information on the individuals and organisations involved for use as descriptive statistics during analysis. Participant observation allows for the collection of data in a naturalistic setting whereby the researcher observes and participates in the common and uncommon activities of the subject group (Musante and DeWalt, 2010) – in this case by attending, observing and participating in the public engagement activities.