

B@SEBALL

Biodiversity at School Environments Benefits for ALL

DURATION
15/12/2019 – 15/03/2024

BUDGET
638 045 €

PROJECT DESCRIPTION

Context

In our rapidly urbanizing world, chronic health conditions associated with urban living are on the rise. One of the main current challenges is unravelling the role of reduced access to and reduced quality and quantity of nature and biodiversity in these living environments. Enhanced immune functioning emerges as one promising candidate for a central pathway between nature and health. Despite mounting evidence that people with a diverse microbiome or who interact with green spaces enjoy better health, studies have yet to directly examine how biodiverse urban green spaces might modify the human microbiome and reduce chronic disease. Another challenge is to enhance access to nature for all, which is unevenly distributed among social groups with different socio-economic and cultural backgrounds. In this project, the environmental microbiome, defined as the microbes in soil, on plants, and associated with air dust, will be targeted, as well as its social distribution.

General objectives and underlying research questions

B@SEBALL will investigate how biodiversity in the school/playground environment can positively affect children's health (asthma and allergy prevalence) and mental well-being and how this can be linked to human microbiome diversity. B@SEBALL will also investigate the opportunities for reducing health inequalities among children via biodiversity at school environments. Further, B@SEBALL will investigate how school/playground management and design can benefit from this knowledge, as well as relevant policy, education and family practices. Through its partners, B@SEBALL can build on established school projects aimed at greening playgrounds: Flanders (MOS) and Wallonia & Brussels (GoodPlanet Belgium).

Methodology

B@SEBALL will sample children from "grey" and "green" schools (i.e. the school environment) in "rural" and "urban" landscapes (i.e. the larger environment surrounding the schools) in different Belgian regions. B@SEBALL will investigate the influence of the school environment, mediated by macro- and microbiological characteristics, on asthma/allergy prevalence and mental well-being. Because, previous research has stressed the necessity of taking into account the rural-urban gradient, we expect the effects to depend on this gradient and hypothesise that positive health effects of green school environments will be larger in urban contexts. In this study, we will use the microbiome on leaves of plants growing outside as an indicator reflecting the cumulative effects of these environmental exposures. Children's exposure to airborne microbial fraction will be measured by nostril human microbiome swab samples of the children.

B@SEBALL has designated work packages for key elements of the work: WP1 integrated assessments, WP2 school engagement, WP3 environmental assessment, WP4 health assessment, WP5 social assessment and WP6 coordination and communication. B@SEBALL starts with a joint methodological implementation phase across all work packages. Selection of schools will be incorporated in this phase. Next, engagement with schools will be organized, as well as recruitment of study participants. Collaboration with participating schools will be organized, based on which data collection can start. Next, data processing and transfer from designated work packages 3, 4 and 5 will form the basis for integrated assessment in WP1. Based on the integrated assessment, project outcomes will be formulated, which can feed into stakeholder and end-user dialogue, in order to create targeted and practice relevant key messages. In a final communication and dissemination phase, first the study participants will be addressed, before final wide spread external communication.

Potential impact of the research on Science, Economy, Society, Culture, Public policy or services, Environment and/or quality of life and/or Collection management and conservation

Access to environments with biodiversity, such as urban green spaces and nature sites, are not evenly distributed among children. B@SEBALL aims to contribute to more equal health opportunities for children, by investigating the health contribution of biodiversity at school environments, and how this is distributed among children with different socio-economic and cultural backgrounds. Reducing health inequality is an important challenge of primary health care. According to the biodiversity hypothesis microbial contact of people with biodiversity is important for human health, especially in childhood.



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Description of the expected final research results (model, scenario, report, workshop, publications, etc...) and valorisation plans at short and medium term.

A project website will be developed in order to inform interested parties about the project from the start of its activities. Project results will be communicated in targeted formats: policy and stakeholder briefs and fact sheets for policy representatives and stakeholder organizations, and scientific publications for the scientific community. Depending on additional resources beyond BELSPO funding, easily accessible briefs including infographics and fact sheets and graphic material (ie short videos) for the school stakeholders and parents, will be developed.

CONTACT INFORMATION

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