

Engaging Children in Nature-based Solutions

Policy Recommendations

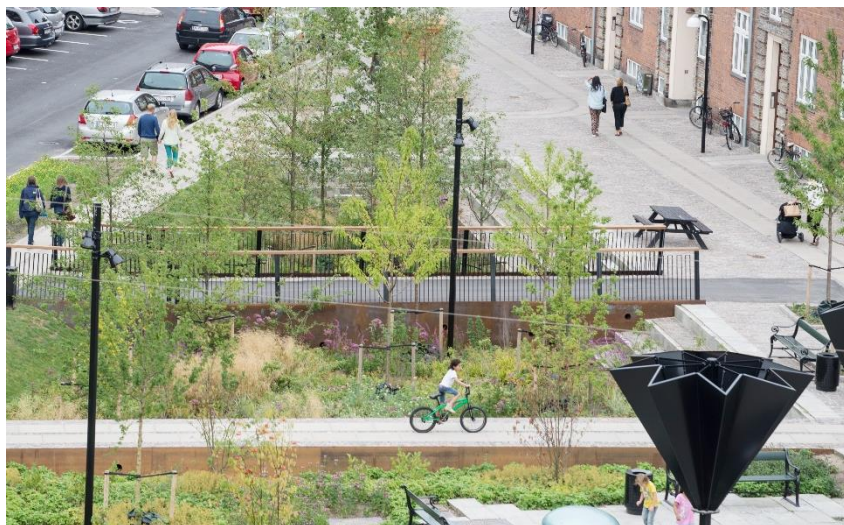
- The green transition requires innovative pedagogy. Create policies that enable schools and teachers to apply innovative approaches.
- Develop educational policy that strengthens outdoor pedagogy and biodiverse learning environments.
- Make natural environs (NbS) accessible to children's play and learning.
- Strengthen understanding among school authorities of the value of biodiverse school environments.
- Facilitate teacher training (pre-service, in-service, peer-to peer, and learning networks).
- Ensure children's ongoing participation in sustainable development. Invite schools to collaborate in planning local NbS
- Develop NbS that enhance children's ongoing relations with nature and place.
- Adapt schoolground greening efforts to local ecosystems.
- Avoid excessive policy-speak. Use language that speaks to children's imaginations and experiences.

This brief provides information about education, learning and participation with regard to NbS.

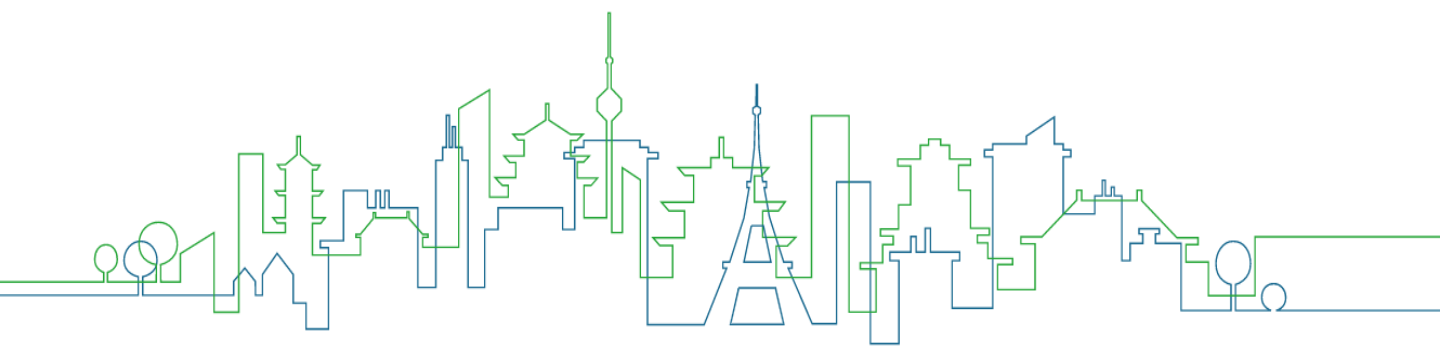
Educational potential and benefits of NbS

NbS are vital for generating and maintaining sustainable urban habitats that benefit human well-being, increase biodiversity and aid climate adaptation. NbS are also learning environments intrinsic to the ongoing learning and education of generations to come. As everyday learning environments, NbS inform and instruct city dwellers of all ages about sustainable ways of living in which both humans and nature thrive. Developing and implementing NbS is an ongoing educational process – a co-creational process involving many disciplines, sectors, generations and locations.

In REGREEN, we explored how NbS both precipitate and necessitate co-creative educational processes. We developed educational platforms for exploring NbS locally and investigated the collaborative learning processes embedded in developing NbS in local settings. As part of this, we looked for ways of involving children, teachers and schools as active partners in these processes. We focused on sharpening children's and adults' attentiveness to their natural environs, fostering greater knowledge of local areas and participating in the local democratic processes that shape these surroundings.



NbS: urban learning environments © David Buchman





Gellerup park – an biodiverse learning environment for all © Sally Anderson

Obstacles to children's learning

- Global urbanisation has reduced natural surroundings, species richness and lowered most children's opportunities for experiencing biodiverse natural settings.
- Children are spending more time indoors both at home and in school.
- Teachers lack time, resources, and institutional support for integrating nature pedagogy into already strained curricula and schedules.
- Sociocultural norms, school regulations and management policies can limit children's exposure to nature.
- Playgrounds devoid of natural elements that children can modify and manipulate hinder nature-based learning.
- Assumptions that nature is for small children leads to more indoor-oriented education as children grow older.
- NbS are too often thought of as feats of ecological engineering rather than important learning environments for generations to come.
- Lack of collaborative action, dialogue and participation in NbS undermines children's engagement, commitment and experiential learning.

The educational relevance of NbS¹

The many obstacles to children's engagement with nature have negative consequences for their health and well-being, their play and physical activity, and for their learning.

Lack of access and exposure to natural environs impact how children come to experience, know and understand the places in which their lives unfold. In impeding children's understanding of nature and ecology, it also impedes their prospects for engaging with environmental issues and with NbS. Alienating children from nature sustains ignorance, weakens their local identity and undermines their sense of agency.

Intergenerational education and learning

Although children are naturally curious about the natural world, they need opportunities to explore nature in collaboration with others. They should understand the workings of nature and feel they can contribute to creating more viable living conditions in their communities, societies and the world at large. From educational, ecological, and democratic perspectives, it is thus crucial to include children of all ages in processes of developing and governing local NbS.

For adults this means acknowledging the expertise of children in their own lives, and incorporating their actions, words, opinions and interaction with places in the ongoing work of fashioning more viable cities, neighborhoods and school environments. Creating viable environments and nature management practices that affect the lives and learning of all, calls for intergenerational collaboration.

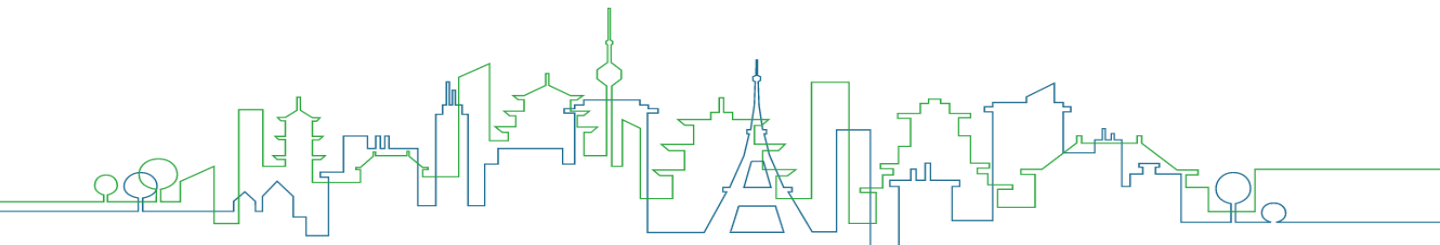


Engaging the mayor in dialogue about the local environment – its history and daily impact on children's lives. © J. Læssøe



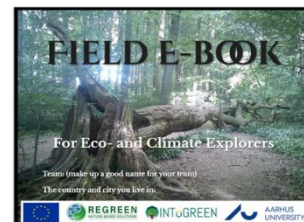
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"It's up to us to explore these new tools with the pupils, so that they can take more conscious ownership of their living space and realize that they are an integral part of an area rich in history and resources. They need to discover it, understand it, and realize that they too can take action to help it evolve".

(Teacher from Pierre Brossolette Elementary School, Argenteuil/Paris, France)



Explorative, action-oriented approaches

Our approach to children's learning with regard to NbS was eclectic, explorative and action-oriented. We focused on everyday learning environments – schools, classrooms, play areas, neighborhoods, streets, parks and more.

The overall aim was to foster children's engagement with their natural environs through exploration, observation, play, mapping and digital platforms that encouraged both place-based learning and democratic participation. The programs and tools we designed and facilitated encouraged children to actively explore their natural surroundings and reflect on how to take individual and collective action to improve these.



Children on the floormap © Jeppe Læssøe

Citizen science³

Developed at the Museum of Natural History in Paris, this citizen science program, *Vigie-Nature École* provides protocols for studying and reporting on species that inhabit schoolgrounds. Working with VNE leads to greater knowledge and appreciation of co-species and co-habitation. It can also inspire and inform artistic and narrative approaches as well as further neighbourhood exploration.



Discovering, getting to know and representing schoolyard species © Mara Sierra-Jimenez

Digital learning platforms

Two digital platforms, *Greenopolis*⁴ and *Field Ebooks*⁵ for *Eco-explorers* facilitate children's exploration of their natural environs and initiate dialogue on the need for NbS.

Working with these platforms increases children's perception of their natural surroundings and promotes understanding and appreciation of NbS.



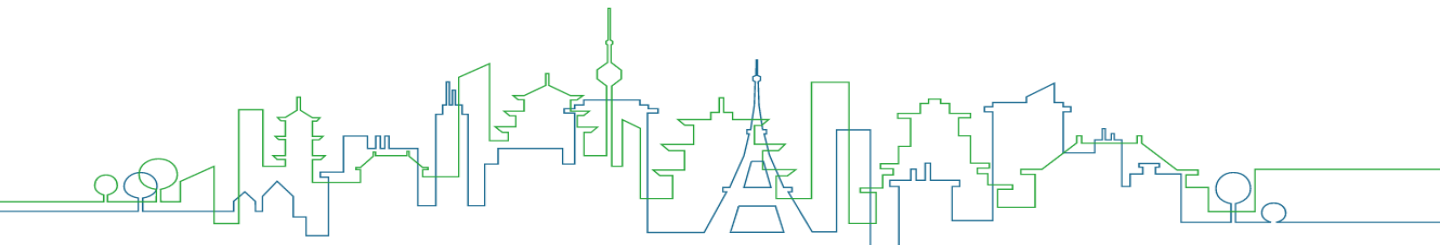
Interactive walkable floormaps²

Large floormaps covering local school districts afford a wide range of pedagogical approaches and styles. The maps are extremely effective in generating children's interest in and knowledge of their local surroundings. The maps also facilitate communication between children and city planners, thus scaffolding both children's action competence and urban planners' awareness of children's perspectives.



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More than just solutions...

Landscapes, habitats and places

Play biotopes

A play-biotope is a land area that supports children's play and learning. It is designed and managed:

- to ensure the vitality of other species
- to be compatible with local ecosystems.



© Fredrika Mårtensson



© Lars Brundin

An outdoor classroom can be any attractive outdoor space. Integrating gear or "furniture" enhances children's play and learning.



Loose stumps and branches engage children in co-creation and management.

© Lars Brundin

The surrounding landscape has an outward pull on children, which can be used in developing NbS in schools.



© Fredrika Mårtensson

Take children seriously

We often speak of NbS as green space or green infrastructure. But to the young, NbS are potential places for physical activity, for discovery and playing together with friends.

We need to take children seriously as local experts

- to gain insight from their nature encounters
- to learn from their actions, words and use of place
- to enable their participation in the development of NbS and other sustainable practices.

- NbS that alter city landscapes are collective learning environments.
- Living with NbS affects understandings of 'how cities are' and expectations of 'how cities should be'.
- NbS are profoundly educational, because as habitats, they require ongoing attention, care, management and re-fashioning.

Further reading

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REGREEN webpage
www.regreen-project.eu

REGREEN repository zenodo
<https://zenodo.org/communities/regreen>



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