

REGREEN: "Fostering nature-based solutions for equitable, green and healthy urban transitions in Europe and China"



REGREEN

NATURE-BASED SOLUTIONS

Dear REGREEN followers!

This newsletter is the fifth and final newsletter from REGREEN addressed to both experts and non-experts and the general public to provide updates on the progress of our project. This 5th issue provides - in parallel to the project website - information on the latest news, reportings, publications and other issues of interest.

REGREEN 5th Newsletter overview

*by Marianne Zandersen, REGREEN coordinator,
Aarhus University*



Welcome to the 5th and final newsletter from REGREEN!

REGREEN is about fostering nature-based solutions for an equitable, healthy and green urban transition in both China and Europe. 20 partners from China and Europe have worked together to combine research and practise to advance knowledge and evidence, to develop and test tools and guidelines to identify good investment models that can really enhance the uptake and investment in NbS and to promote awareness.

To get an overview of some of the many activities, processes, tools and guidelines that we have finalized, click [here](#).



Urban drivers, pressures and solutions – NbS typology and development of scenarios

by Laurence Jones, UK Centre for Ecology & Hydrology

Many planning decisions are initiated in response to single-issue problems, such as surface flooding, poor air quality, or high air temperature during heatwaves. One of the strengths of NbS that goes beyond the standard technical built infrastructure solutions to urban problems, is that they are multi-functional. The same trees that remove air pollutants also provide cooling and shade on hot days, can enhance interception and increase infiltration into the ground thereby reducing overland water flow, provide shelter and food for insects and birds, and support health and wellbeing of city residents.

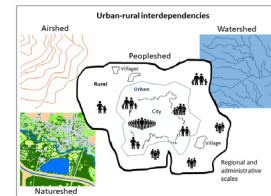
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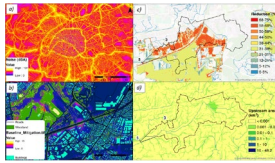
Mapping of urban nature-based solutions in Europe and China

by Ellen Banzhaf, Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany

Mapping of urban land cover and land use is an important procedure to capture cities' vegetation cover as input for the ecosystem services they may deliver. It is a need for all cities, and links directly to the Nature Restoration Law that the European Union passed in 2023. In the REGREEN project, we started by collating experience and best practices in NbS. Especially for mapping the status quo of urban land cover/ land use and related socio-demographic exposure to environmental pressures, valuable knowledge could be transferred from the Risk Habitat Megacity project, and the Leipzig Lab activities at UFZ. From there, we started to map all six Urban Living Labs (ULLs) in Europe and China to get a deeper understanding of the different settings over the last 20 years.

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Spatial modelling of ecosystem services

by Laurence Jones, UK Centre for Ecology & Hydrology

Cities are complex places where people interact with green and blue spaces (in a mixed built-natural structure) on a day-to-day basis. For many reasons, a lot of the simpler ecosystem services calculation approaches do not work well in cities, particularly those that rely on simple look-up tables to show the services an area of grassland or trees provides.

This is because the amount of service depends on many different factors. For example, the quantity of air pollution removed by trees will vary with the type of pollutant, the initial pollution concentration, the weather as well as the area and type of trees. Another aspect to consider is the fine-grained nature of the green and blue spaces which make up nature-based solutions (NbS) in cities.

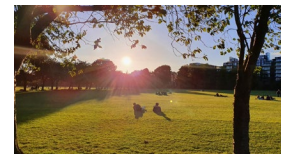
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Valuing the health and wellbeing benefits of nature-based solutions

by Ben Wheeler, University of Exeter, UK

This part of REGREEN was designed to take a holistic approach to developing our understanding of the health and wellbeing values of nature based solutions, especially in the context of the Urban Living Labs. NbS are often undervalued because the holistic values across multiple domains (e.g. social, environmental, health) are not taken fully into account. Valuing benefits properly is required in order to inform decision-making, especially with increasing pressure on space and the use of terrestrial and aquatic systems. A key challenge is that, in the context of competition for space, it is much simpler to articulate and monetise the value of development of housing and other built infrastructure compared to the complexity and multiple functions of nature. Given their complexity, the health and wellbeing values of NbS are frequently undervalued, and therefore warrant a substantive focus in a project such as REGREEN.

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Learning together: Education, Awareness and Participation

by Sally Anderson, Aarhus University

Although education is often thought of as what goes on in schools, our work in REGREEN has shown education to be an intrinsically collaborative process involving all ages and societal domains. It is impossible to imagine ‘education’ without families, laws, policies, economy, city planning, architecture, knowledge regimes, landscape, history and more. While children learn from adults, adults learn from children, not least because what children do, feel and know are of collective concern. Finally, we all learn from the historical artefacts, things, landscapes, concepts and ideas that shape our lives. Education in this sense is an everyday process – interdependent, collaborative, mulled over, debated, and contested.

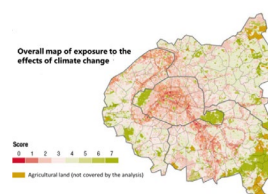
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Integrated urban governance – Guidelines for urban and territorial planning

by Gwendoline Grandin, Marc Barra, Signe Marie Iversen, Josip Beber, Anders Branth Pedersen

When land is converted into artificial surfaces, ecological functions of land can often be suppressed and thereby making ecosystems less resilient. Consequently, the EU has set a target of no net land-take in 2050. It is an ambitious target – in the period 2012–2018, net land take in cities and commuting zones in the EU was 450 km²/year (EEA 2023). In the end of 2023, REGREEN published deliverable D6.5 which investigates approaches to reduce urban land take, and investigates how to integrate NBS in planning systems.

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Urban living labs – Knowledge co-creation processes within the ULLs

by Åsa Ode Sang, Swedish University of Agricultural Sciences, SLU

With REGREEN the six Urban Living Labs (ULLs) provided a central role in the project as an arena for co-creation of knowledge involving local citizens, schools, businesses, organisations and public administrations. The three ULLs in Europe were Aarhus, Paris Region and Velika Gorica these

were represented by a local public organisation, for Aarhus and Velika Gorica this was the municipality and for the Paris Region the public organisation was the think-tank Institut Paris Region. The three Chinese ULLs (Beijing, Shanghai and Ningbo) were represented by the universities and hence the interaction processes and involvement of public stakeholders and citizens were more limited. Within the project the ULLs has been the testbed, where generic tools will be used to bring together the scientific results, new ideas and methods from the other project activities, and apply them in practise with citizens, urban planners, local businesses and other stakeholders.

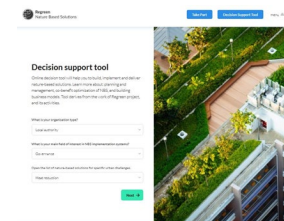
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Business development and decision support

by Francesca Tedeschini and Hans-Peter Ellmer,
JOANNEUM RESEARCH Forschungsgesellschaft mbH

To promote the implementation of NBS in cities, it is key to empower a diverse range of stakeholders and to identify and demonstrate successful replicable cases. This involves providing the necessary knowledge, tools, and support to replicate effective strategies, develop sustainable business models, and bridge the gap between research findings and practical application. In the REGREEN project, three distinct initiatives have been realised: an Online Decision Support Tool, a Prospectus for NbS Business Investment, and a Start-Up Accelerator Program. Each initiative addresses different aspects of promoting and scaling-up NbS.

[more](#)



Selected REGREEN highlights by objectives

by Hans-Peter Ellmer, JOANNEUM RESEARCH
Forschungsgesellschaft mbH

Please find here a selection of REGREEN highlights such as papers, tools, different kind of research outputs and results etc.

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REGREEN Workshop in Ningbo, China

by Richard Hardiman

For the first time since the beginning of the REGREEN project, REGREENERS were able to meet our Chinese colleagues face-to-face at a joint International Workshop on “REGREEN: Nature-Based Solutions for Smart, Green and Healthy Urban Transitions in China and Europe” held 27-30 October 2023 hosted by the Institute of Urban Environment, Chinese Academy of Sciences (IUE-CAS) in Ningbo, China.

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Greening horizons: transformative insights and collaborations celebrated at the "Re-greening Cities" conference

by Clotilde Mahé, ICLEI Europe; Francesca Tedeschini, JOANNEUM RESEARCH Forschungsgesellschaft mbH; Rosa Castañeda Prado, European Forest Institute (EFI)

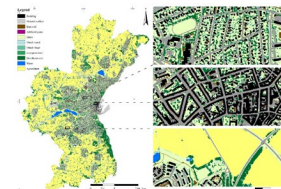
More than 120 participants, 56 speakers from 3 continents and 10 inspiring sessions: the culminating event “Re-greening Cities with Nature-Based Solutions in Europe and China – Bridging science, policy and practice” was a testimony to transformative collaborations and inspiring outcomes. Organised jointly by the Horizon 2020 projects REGREEN and CLEARING HOUSE, the conference celebrated four years of dedicated efforts in advancing sustainable urban development through Nature-based Solutions (NbS) and fostering significant impacts on city plans and systems across Europe and China.

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Enhancing Urban Resilience and Climate Adaptation through Advanced Land Use Mapping

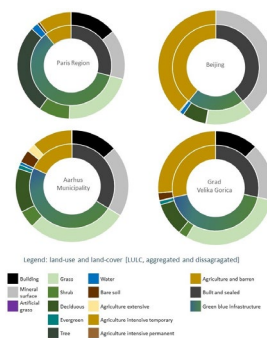
by Julius Knopp, Helmholtz Centre for Environmental Research GmbH – UFZ

Amid urban challenges from climate change, the need to enhance land-use and land-cover (LULC) understanding in diverse urban spaces is critical. High-resolution urban mapping proves invaluable for categorisation. Integrating semantic data into administrative frameworks, amid the global trend of data sharing, further enhances its



significance. Our study introduces a method using multitemporal orthophotos and LiDAR-derived height data for urban mapping

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Report: Baseline indicators

by Julius Knopp, Helmholtz Centre for Environmental Research – UFZ

Over the course of the REGREEN project, we have reviewed and worked on many different aspects of nature-based solutions; their respective ecosystem services and policies for establishing new guidelines. Additionally, engaging citizens and stakeholders in the ULLs has also been an important task. To support these activities, REGREEN compiled a list of indicators relating to the present distribution, accessibility, and potential development of new NBS within the ULLs – a so-called baseline. The baseline refers to the most recent state of land cover and land use types within each ULL.

[more](#)

Report on Interactive Walkable Floor maps

by Jeppe Læssøe, Jeplae Consulting

Within the REGREEN project, several Interactive Walkable Floor Maps (IWF) have been produced over time in collaboration with researchers from various fields and have been used in schools and for policy workshops. The IWFs are several square metres in size and are made of robust material that can be walked around on. These maps serve as a meeting place to scaffold the transition towards the adoption of NBS in cities.

In order to ensure that work with the IWFs and their creation continues beyond the duration of the project and to make information easily accessible and barrier-free, two booklets have been published online for consultation.



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Two guideline booklets on Interactive Walkable Floor Maps (IWFs) are now accessible online

by Sebastian Elze, Helmholtz Centre for Environmental Research GmbH – UFZ and Jeppe Læssøe, Jeplae Consulting

Ultimo 2021 an interdisciplinary group of researchers and urban planners began developing Interactive Walkable Floor maps (IWF) as a platform intended to scaffold governance processes as well as learning on NBS in schools. Here, at the end of 2023, the research and development process with schools and teachers has been concluded by a REGREEN deliverable report to the European Commission. It explores potentials and barriers for application of Interactive Walkable Floor maps as platforms for enhancing democratic participation and action-oriented learning about Nature-based Solutions in schools.

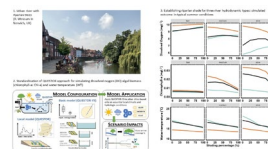
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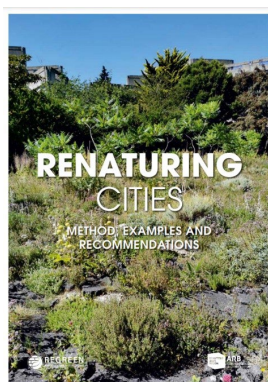
New Paper – Comparing likely effectiveness of urban Nature-based Solutions worldwide: The example of riparian tree planting and water quality

by Mike Hutchins, UK Centre for Ecology & Hydrology

Nature-based Solutions, especially tree planting targeted along riverbanks, are increasingly being advocated as improving the quality of urban aquatic environments. Can benefits of tree planting found in one city be expected elsewhere?

[more](#)





The guide “Renaturing cities: method, examples and recommendations” is now available in English!

by Gwendoline Grandin, Institut Paris Region

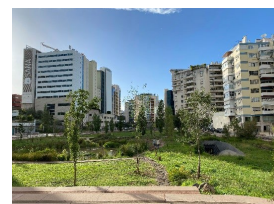
In February 2022, the regreen project published guidelines a “depaving” and “re-greening” strategy in cities. Following the first publication, these guidelines were enhanced and published in book form in French under the title "Renaturer les villes". Given its considerable success in France, the REGREEN project has decided to translate it into English.

[more](#)

Guidelines for urban and territorial planning: Incorporating NbS in urban land use planning

by Gwendoline Grandin, Institut Paris Region

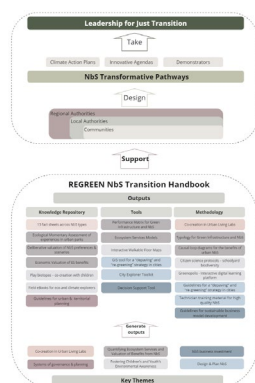
Land take is the transformation of agricultural, natural, and semi-natural spaces into urban and other artificial uses. Since the mid-1950s, the total surface area of cities in the EU has increased by 78% while the population has grown by just 33%. Urban sprawl is now foremost among the drivers of rapid climate change and the erosion of biodiversity. The loss of soil functions and ecosystem services is one of the major environmental challenges Europe is facing.



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Guide The REGREEN NbS Handbook: From Concept to Action for Ecosystem Restoration & Urban Resilience

by Elena Petsani, ICLEI Europe



The REGREEN NbS Transition Handbook provides a comprehensive overview of the REGREEN project's key findings and outcomes, focusing on Nature-based Solutions (NbS) for urban sustainability in Europe and China. The handbook is structured into nine chapters, each addressing crucial aspects of NbS design, implementation, and governance.

[more](#)

New paper: Using systems thinking when evaluating nature-based solutions

by Jo Garrett, European Centre for Environment and Human Health, University of Exeter

The major challenges that society faces, such as noncommunicable diseases and climate change, require large-scale interventions that work in complex systems. These interventions are often at regional or national level scales and can rarely be evaluated using experimental methods as researchers typically can't control who receives the intervention. Nevertheless, evaluation of these types of interventions is crucial for decision making. We propose an approach to develop systems-informed research propositions to evaluate large-scale policy or infrastructure interventions and reflect on our experiences of doing so around two NBS interventions in a newly published paper led by Dr Miriam Alvarado.



[more](#)



Green Spaces in Paris: Unveiling insights on heat-related mortality at the REGREEN-CLEARINGHOUSE Final Conference

by Jo Garrett, University of Exeter

Dr Jo Garrett, from the European Centre for Environment and Human Health, University of Exeter presented preliminary results at the REGREEN-CLEARINGHOUSE final conference, which took place in Brussels, 28th – 29th November 2023. Jo highlighted the critical role of public green spaces in mitigating heat-related mortality in Paris. This is part of Work Package 4, focused on different methods of valuing the health and well-being benefits of Nature Based Solutions. In this study, Jo has taken a monetary valuation approach.

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