



### **2015 ENCA recommendations for taking forward the spatial targeting and implementation of nature-based solutions for climate change mitigation and adaptation in urban areas and their rural surroundings**

The Interest Group on Climate Change of the Network of Heads of European Nature Conservation Agencies (ENCA), and the BioClim project group funded by the German Federal Agency of Nature Conservation (BfN) developed the following recommendations based on the session outcomes and plenary discussions at the joint BfN/ENCA European Conference on “Nature-based Solutions to Climate Change in Urban Areas and their Rural Surroundings”.

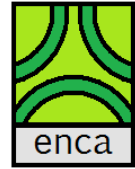
The conference took place in Bonn, Germany from 17 to 19 November 2015. These recommendations further build on the discussions of an expert workshop at the International Academy for Nature Conservation, Island of Vilm, Germany in March 2015. Both events were organised by the BfN in collaboration with the Helmholtz-Center for Environmental Research – UFZ and the German Centre for integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig.

The recommendations were endorsed by the ENCA network at its 19th plenary meeting in Bern. They focus on ways forward (implementation, research and spatial targeting) to put into action nature-based solutions (NBS) for climate change mitigation and adaptation in urban areas and their rural surroundings. The recommendations highlight four key areas for action, to:

- 1. Increase the evidence base on the effectiveness of nature-based solutions (NBS) by providing examples of best practice that demonstrate the multiple benefits provided by NBS. This includes benefits related to climate change adaptation and mitigation, the conservation of biodiversity, and the provision of other ecosystem services for human well-being, including benefits to health.**

This can be achieved by

- compiling case studies that demonstrate where cross-sector policy integration has led to cost-effective and efficient delivery of ecosystem services that have provided an equitable distribution of multiple benefits.
  - building a repository of good practice case studies that include evaluation methodology.
  - synthesizing existing and new information and communicating this effectively to all audiences from society, policy and science.
- 2. Foster research and monitoring to determine the best assemblages of species to achieve the most efficient NBS, including the optimization of multiple economic, ecological and social benefits and exploration of trade-offs created by NBS.**



This can be achieved by

- Collection of new data in the field and the use of remote sensing to gather comprehensive data on additional benefits, to complement existing case studies and data.
- focusing on how NBS can complement and be used in conjunction with technological solutions. Conservation and construction may both offer solutions, and scientific evidence is needed to quantify their relative performance in terms of ecological functioning. This includes research that combines effects of the building sector (grey), water and storm-water management strategies (blue) as well as ecosystem services (green) and looks at them in an integrative manner.
- identifying and including all benefits in analyses of cost-effectiveness, whenever decisions about regulations and developments in urban and rural areas are made. This includes economic analyses of the costs of inaction as well as the possibility of catastrophic failure of purely technical solutions. The full range of social and economic impacts should be fully taken into account by studying the monetary and non-monetary values of NBS projects.
- focusing on health and environmental justice as central benefits (not only a co-benefit) of NBS implementation.
- analysis of case studies exploring success factors in the governance of NBS, including how the right people were reached, which kind of people, who finally took the decision to implement the action, as well as the analysis of failure e.g. why actors do not take decisions in favour of implementing nature-based solutions.

### **3. Foster wider application of NBS with partners from society and policy.**

This can be achieved by

- upscaling successful projects and transferring them to other cities.
- good communication processes among different stakeholder groups (e.g. decision makers, business, society) including a detailed description of the NBS implementation process, benefits, the solutions for certain problems, mistakes made and lessons learned to avoid them, specific context, stakeholders involved.
- Building alliances with different stakeholder groups by demonstrating alignment with their interests (e.g. health issues), in order to get non-conventional partners for NBS implementation from sectors formerly not involved in NBS. This can be supported by creating positive narratives that explain how investments in nature lead to (specific and general) gains for society.
- increased investment in new partnerships with businesses and society including community groups and people with diverse background in culture and education to find suitable settings and language. Sufficient financing and a shared understanding of objectives should be guaranteed e.g. by joint ownership of projects by decision makers and practitioners.



- When implementing NBS strategies, trade-offs and off-site effects to society and the societal context should be considered. Potential displacement of people should also be considered and avoided where possible. In particular, green space standards and political targets combined with social housing standards should be implemented in an integrative approach to planning the entire city.
- strong implementation promoted and led from the top down, including the implementation of the EU Green Infrastructure Strategy and its promotion as an instrument to enhance development and implementation of NBS in an integrated way; but also bottom-up governance that integrates local initiatives from the urban society. Inclusive planning and maintenance strategies and citizen science can act as powerful approaches to better meet the demands of the diversity of stakeholders and develop truly multifunctional NBS.

#### **4. Enable successful ecological restoration with benefits for biodiversity through NBS.**

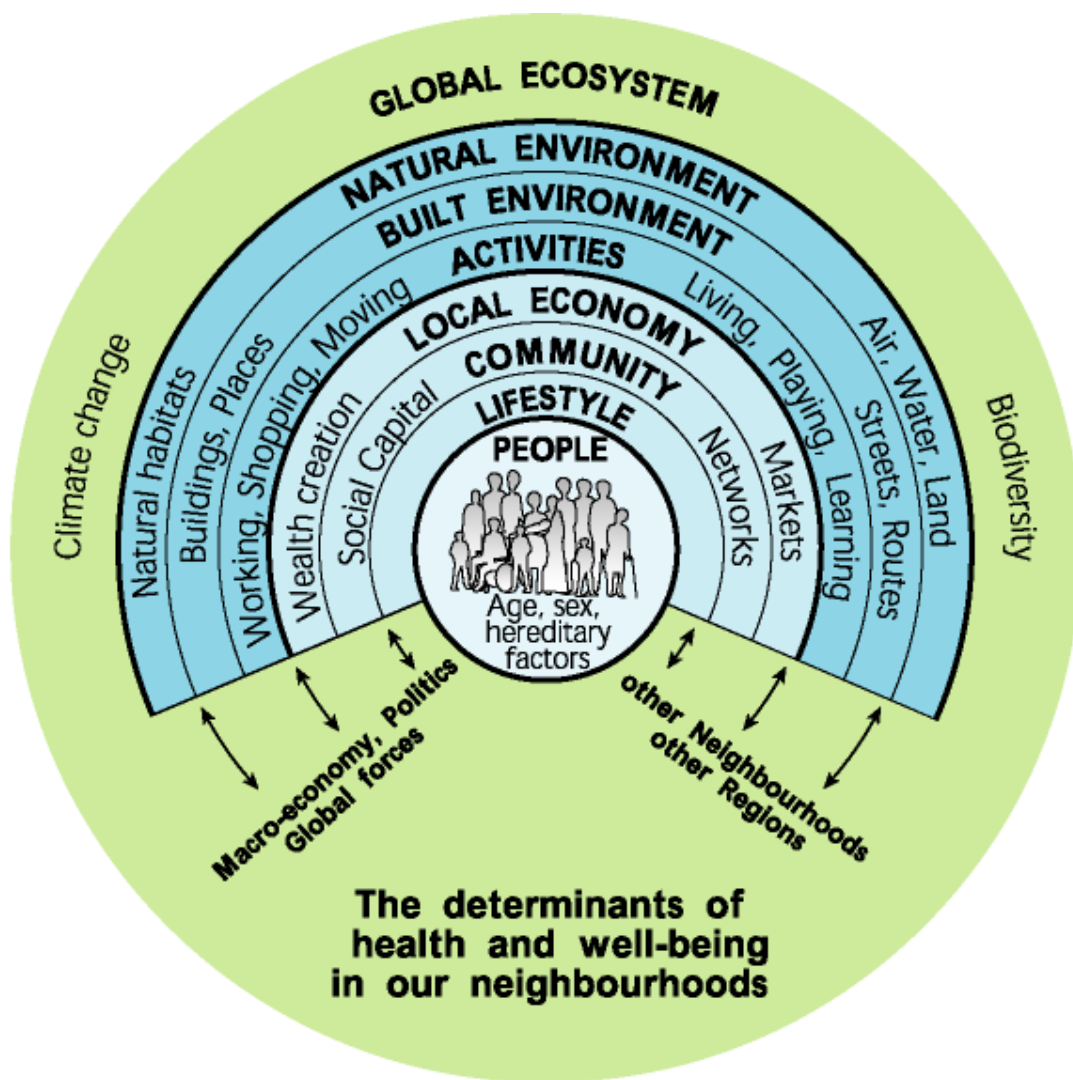
This can be achieved by

- connecting urban and rural green areas, which will promote NBS (such as temperature regulation) and also biodiversity by improving the connectivity of urban and rural ecological communities.
- connecting matrix (built-up areas and areas under more intensive land use) and core areas (green areas such as conservation areas or urban parks) within cities: existing green areas should be protected and complemented by green elements within the matrix (green roofs, green facades, bio retention swales, green strips along roadsides, etc.) to promote the provision of ecosystem services and biodiversity.
- While implementing the measures mentioned above, due consideration of the potential impact of invasive alien species (IAS) should be given in the design of NBS. For example potential IAS hotspots and pathways should be identified and – in cases where an invasive species is thought likely to benefit from a more connected landscape – potential advantages and disadvantages of enhancing connectivity should be considered carefully in NBS planning.
- Preferably using native species of local provenance for NBS.
- Climate change proofing NBS (e.g. species selection) to ensure that ecological function and biodiversity gain are resilient to future change. In some cases this might mean being more flexible about the provenance of species used.



**General remarks:**

One fundamental assumption which framed the discussions during the conference was the interconnectedness between climate change, biodiversity and human health and well-being. These interlinkages occur at various levels, as illustrated in a diagram on the “determinants of health” by Barton & Grant (2006, see below). The recognition of the integrated manner of social, economic and environmental issues is of outstanding importance for understanding the advantages of nature-based solutions.



Barton, H. and Grant, M. (2006): A health map for the local human habitat. *Journal of the Royal Society for the Promotion of Public Health*, 126 (6) pp252-261  
 ([http://eprints.uwe.ac.uk/7863/2/The\\_health\\_map\\_2006\\_JRSH\\_article\\_-\\_post\\_print.pdf](http://eprints.uwe.ac.uk/7863/2/The_health_map_2006_JRSH_article_-_post_print.pdf))