

**CLEARINGHOUSE**  
中欧城市森林应对方案

## Overview of Task 1.2 (WP1)

Review of current UF-NBS practices in Europe and China (D1.2a): process, findings and highlights

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Review of scientific literature (D1.2b):  
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# 22 UF-NBS case histories: Europe and China

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- **European (16)**

- Donau-Auen National Park (Vienna, Austria)
- Parkbos Ghent, Stadsrandbos Oostende peri-urban forest, and Renforcement du Réseau Écologique Bruxellois (Brussels, Belgium)
- International Horticultural Exhibition 2024 (Łódź, Poland)
- “Baumstarke Stadt”, Leipzig, and Landschaftspark Duisburg-Nord (Germany)
- Water Haigh Woodland Park (Leeds, United Kingdom)
- Park forest Grmoščica (Zagreb, Croatia)
- Serra de Collserola Natural Park (Barcelona, Spain)
- Tivoli, Roznik and Šiška hill Landscape Park (Ljubljana, Slovenia)
- Old Town Bay – Vanhankaupunginlahti (Helsinki, Finland)
- Parco Nord Milano, Milan, and L. Braille Public Garden, Bari (Italy)
- Aarhus City (Denmark)
- Bois de Vincennes (Paris, France)

- **Chinese (6)**

- Hilly Area (Fu Forest Trail), Fuzhou, Fujian Province
- Meishan Dongpo Urban Wetland Park, Meishan City, Sichuan province
- “Green Wedges” Jiaxing, Zhejiang Province
- Green Lungs of the City Project, Yiwu, Zhejiang Province
- Plain Area (Afforestation Programme), Beijing, national capital region
- Fushan Ecological Park, Qingdao, Shandong Province



# Review process of UF-NBS

- Ingathering of grey literature (e.g., project reports) and UF-NBS case histories (CH research partners)
- 22 case history templates (16 European; 6 Chinese)
- Categories reviewed:
  - NBS typology
  - Ecosystem services
  - Network/connectivity
  - Integration
  - Multifunctionality
  - UF-NBS valorization
  - Principal UF-NBS actions and non-UF-NBS actions
  - Inter- and transdisciplinarity
  - Social cohesion and biocultural diversity
  - Lessons learned and transferability of UF-NBS projects
  - Renaturing



# Cross-case comparative analysis of UF-NBS

- Colour-coded scheme identifies categories (e.g., UF-NBS actions, ecosystem services)
- Semi-structured interviews

| European case histories   | Non-UF-NBS actions   |
|---|--|
| Donau-Auen National Park, Vienna, Austria                       | <ul style="list-style-type: none"> <li>• Citizen engagement with local green/green initiatives</li> <li>• Spiritual, scientific, educational, recreational, and visitor opportunities - all must be environmentally and culturally compatible</li> </ul>   |
| Stadsrandbos Oostende peri-urban forest, Belgium                | <ul style="list-style-type: none"> <li>• Vegetable garden</li> <li>• Children's farm</li> </ul>  |
| Parkbos Ghent, Belgium  | <ul style="list-style-type: none"> <li>• Restoring brook systems</li> </ul>  |
| Renforcement du Réseau Écologique Bruxellois, Brussels, Belgium | <ul style="list-style-type: none"> <li>• Participatory urban planning of public space and private gardens</li> <li>• Bathing areas</li> <li>• Re-think public lighting to enhance biodiversity</li> </ul>  |
| International Horticultural Exhibition 2024, Łódź, Poland       | <ul style="list-style-type: none"> <li>• Big outdoor events e.g., exhibitions, fairs, concerts;</li> <li>• New park infrastructure, leisure equipment, pavilions and restaurants at exhibition site.</li> </ul>  |
| Landschaftspark Duisburg-Nord, Germany                          | <ul style="list-style-type: none"> <li>• Culture <ul style="list-style-type: none"> <li>- Festivals &amp; concerts</li> <li>- Lights (evenings)</li> </ul> </li> <li>• Leisure <ul style="list-style-type: none"> <li>- Climbing walls and high ropes of old buildings</li> <li>- Indoor diving tank – filled from canal</li> <li>- Bike rental; cycle path – connects surroundings, encourages cycling</li> <li>- Footpaths</li> <li>- Skate and BMX parks</li> <li>- Playgrounds</li> <li>- Pet corner</li> <li>- Geocaching</li> </ul> </li> <li>• History <ul style="list-style-type: none"> <li>- Tours through iron works; themed topics e.g. steel furnaces, Torch Tours</li> <li>- Viewing platform</li> </ul> </li> </ul> |



# Rapid review: macro- categories of key words

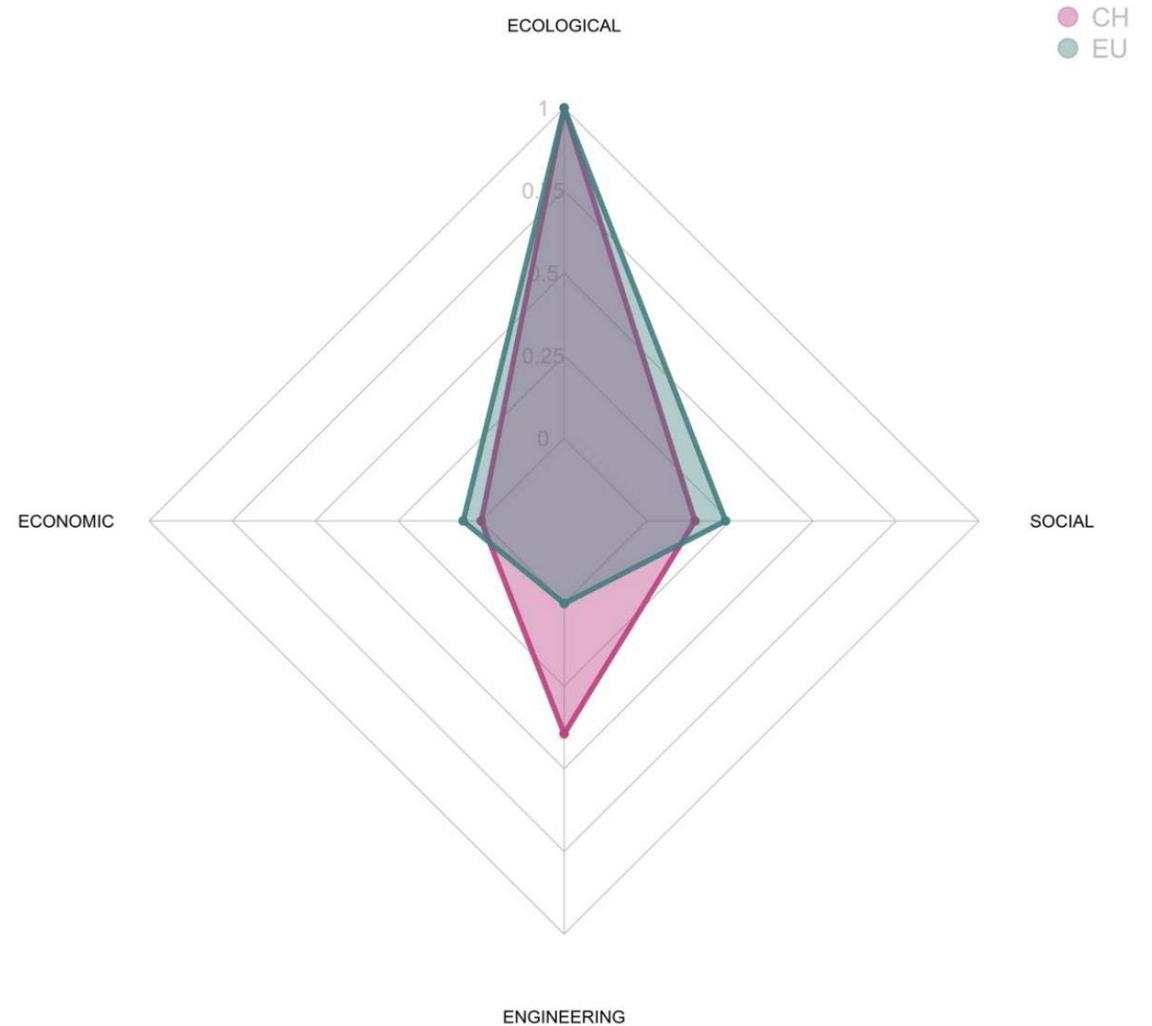


Fig. 3. Spider diagram showing the relative predominance of each of the four macro-categories (1) ecological, (2) engineering, (3) social, and (4) economic for Europe and China.

# Findings of comparative analyses on UF-NBS in Europe and China

- Stronger emphasis in Chinese case histories on reforestation and conservation, reconnecting ecological corridors, reducing the heat island effect, and protecting indigenous tree species
- Scale of the Chinese case histories is larger than the European scale
- Despite cultural differences the similarities in terms of the reasoning behind UF-NBS and their drivers are remarkably similar
- 10 European cases were found comparable for Sino-European relevance, particularly for planning approaches, environmental challenges, best practices, replicability, and stakeholder involvement
- Overlap of the three macro-category dimensions 'economic', 'social', and 'ecological', while a clear difference appeared in the fourth dimension of 'engineering' - more predominant in the Chinese cases of UF-NBS



# Highlights of UF-NBS comparative analyses

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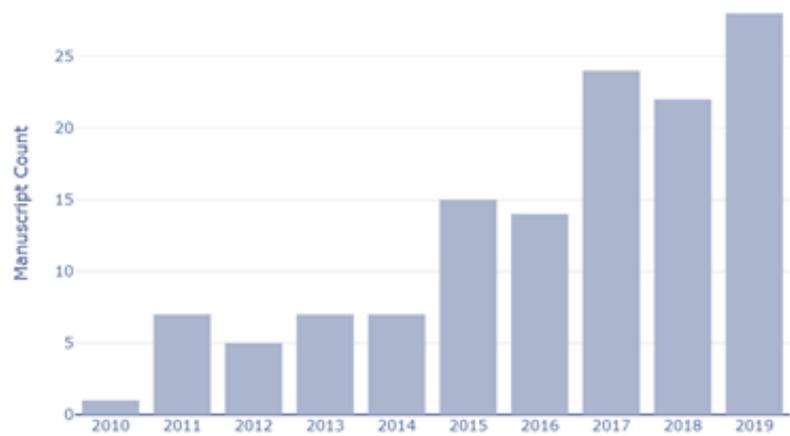
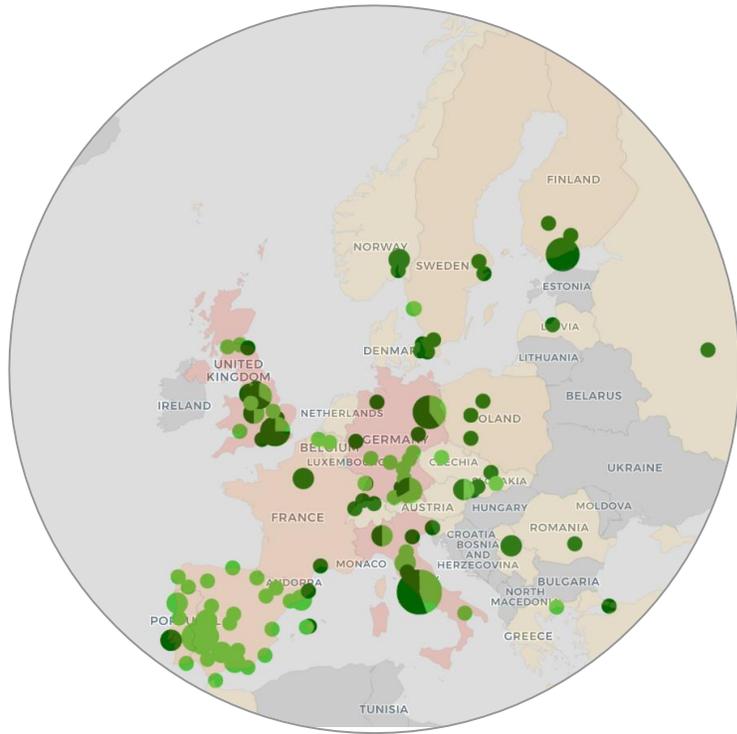
- There are more similarities than differences in the approach to UF-NBS between China and Europe, but scale is a factor along with the ambition for large-scale afforestation in China
- There is a close nexus between urban green and blue space systems when it comes to UF-NBS. Ecosystem services and the urban green infrastructure approach (especially multifunctionality and networking) are equally evident in project literature.
- In both European and Chinese UF-NBS case histories the social component (expressed by key words such as citizens, place, education) is well established and represents one of the targets of new plans and projects for urban regeneration
- Large investments are being allocated in Chinese cities for large-scale projects related to restoration (e.g., rivers, brownfields, degraded lands) and afforestation. The execution and management of these projects require an engineering and technological approach, which is probably not yet established in most European UF-NBS
- The rapid review of key words confirms the existence of a common shared approach for UF-NBS implementations between Europe and China. The analysed case histories from both continents clearly support the idea of adopting UF-NBS to support ecological functions and ecosystem services at large
- UF-NBS do not operate in isolation from other green spaces, and many examples of UF-NBS are associated with waterbodies. This relationship is an area for further research but is considered to be synergistic.



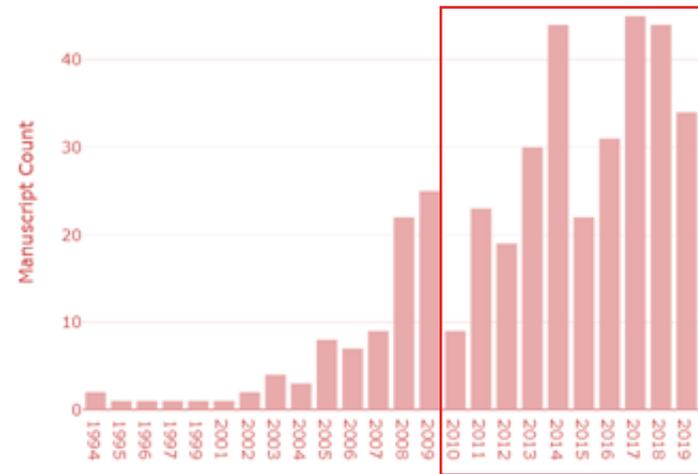
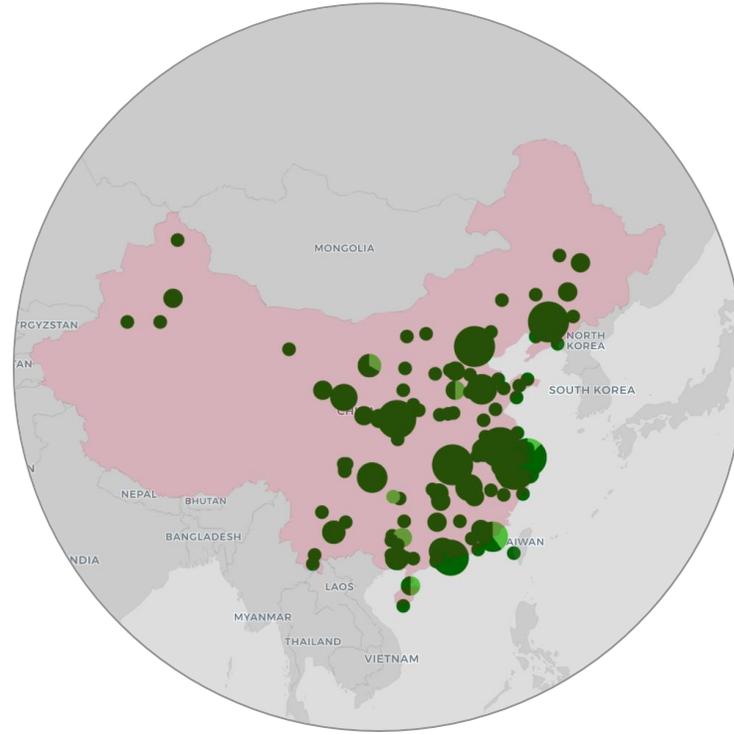
# Conclusions: relevant findings for whom?

- Lessons to be learned from China for upscaling study findings to city/regional level (*researchers and practitioners from multiple disciplines of urban forestry, decision-makers*)
- In China large afforestation projects are highly engineered and structured differing from European projects, mainly due to scale and investment potential (*researchers, decision-makers, landscape planners*)
- There are more similarities than differences in the approach to UF-NBS between China and Europe, but scale is a factor along with the ambition for large-scale afforestation in China
- Both Europe and China highly value the social component of UF-NBS; represents target for urban regeneration (*landscape planners, designers, social scientists, private associations*)





n=130



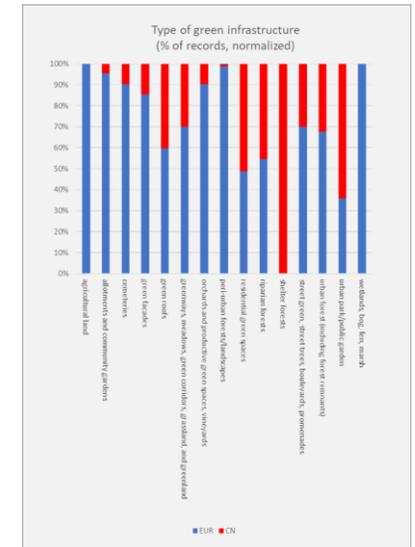
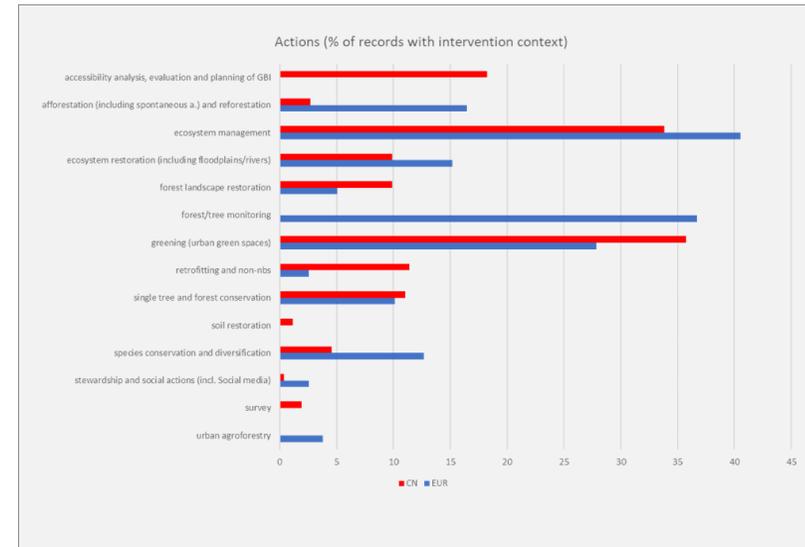
n=301

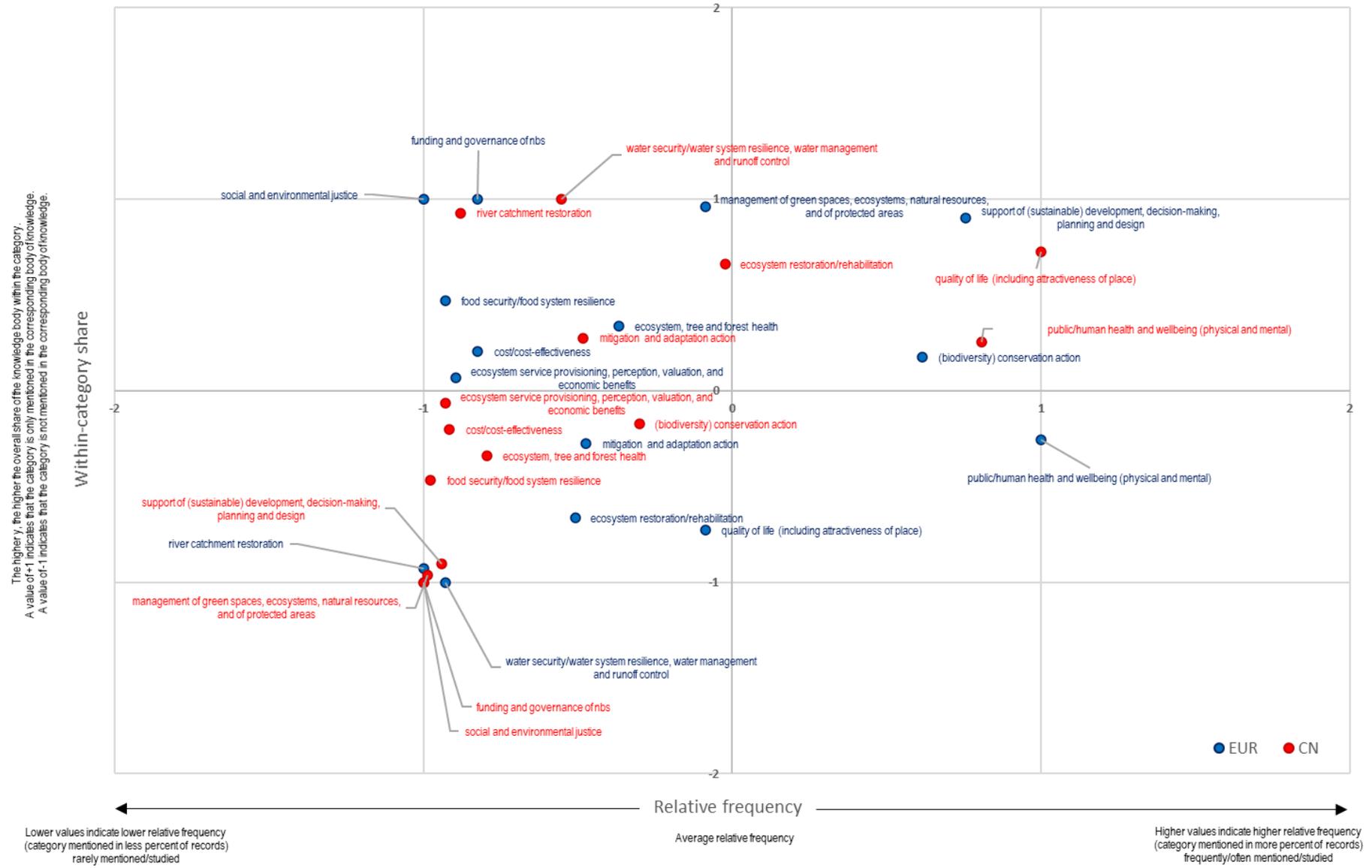
D1.2b describes a review to identify the effects and impacts of UF-NBS on biodiversity, livability, public health and human well-being (by intention, comparatively broad eligibility criteria).

# Comparative assessment

Records analysed in regard to two measures:

- Relative frequency (%), i.e., share of records within a knowledge body with a reference to a specific criterion – determine „importance“ of a criterion within a body of records
- Within-category share (%) – determine the „prevalence“ of a category *with respect to the case study regions*, i.e., Europe, and China





Relative frequencies and within-category shares of socio-environmental challenges (Europe: n=130, China: n=301).

# Findings

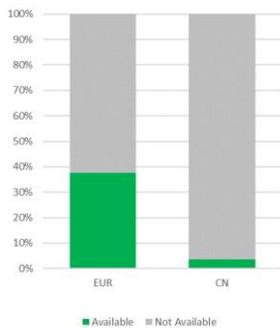
- *Comparatively common actions include greening, conservation, ecosystem restoration, forest landscape restoration* (in China possibly reflecting on the large-scale nature of afforestation projects when compared to term afforestation).
- Common benefits of greening and restoration include *increase of amenity values, maintenance of biodiversity, recreation, noise attenuation*, and *regulation of the hydrological cycle*, and *regulation of air quality*. The *regulation of water quality* is more prevalent in China, whereas *food production* and *shading* are more prevalent in Europe.
- *Public health and human well-being* and *biodiversity conservation* are common challenges. *Water security and water system management*, and *river catchment restoration* more prevalent in China. Contrary to case histories, in Europe, *social and institutional dimension more prevalent: social and environmental justice, funding and governance, stewardship and social action*; and food system-related challenges, actions (*urban agroforestry*), and types (*orchards*).
- Generally, *diversity of green infrastructure elements under study* as well as the *peri-urban space* appears to be higher in Europe.



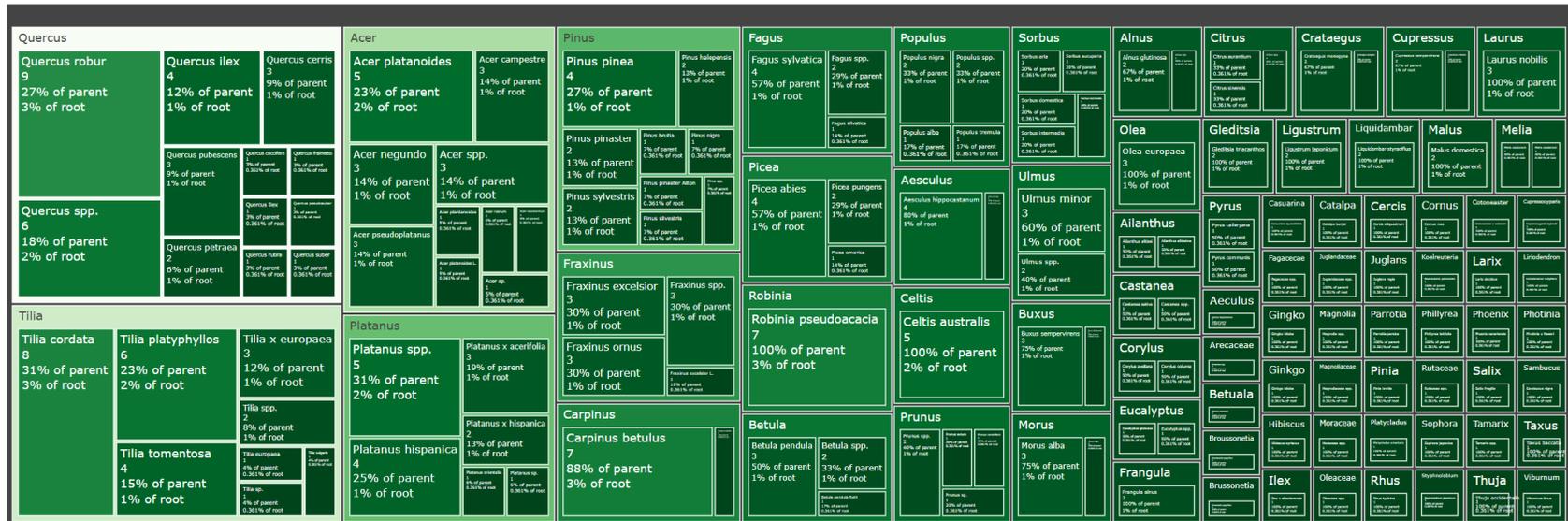
# Europe



Availability of tree-related data in records (% of records)

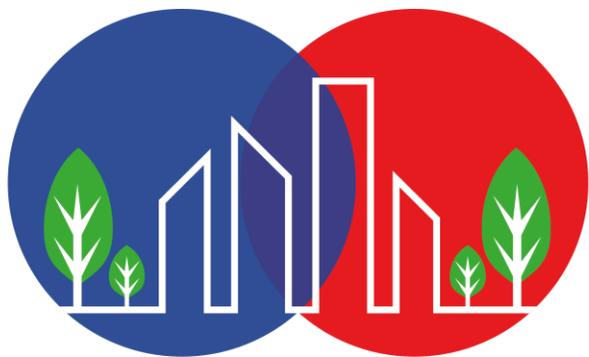


# China



Tree-specific data in records: Share of records with tree-specific information, and frequency of recorded genus/species. Please find this data on [review.clearinghouseproject.eu](http://review.clearinghouseproject.eu)

# Thank you



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