

# CLEARINGHOUSE 中欧城市森林应对方案

## Collaborative Learning in Research, Information-sharing and Governance on How Urban forests as nature-based solutions support Sino-European urban futures

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And more than 60 scientists and city partners active in the consortium

EFI 17.10.2019



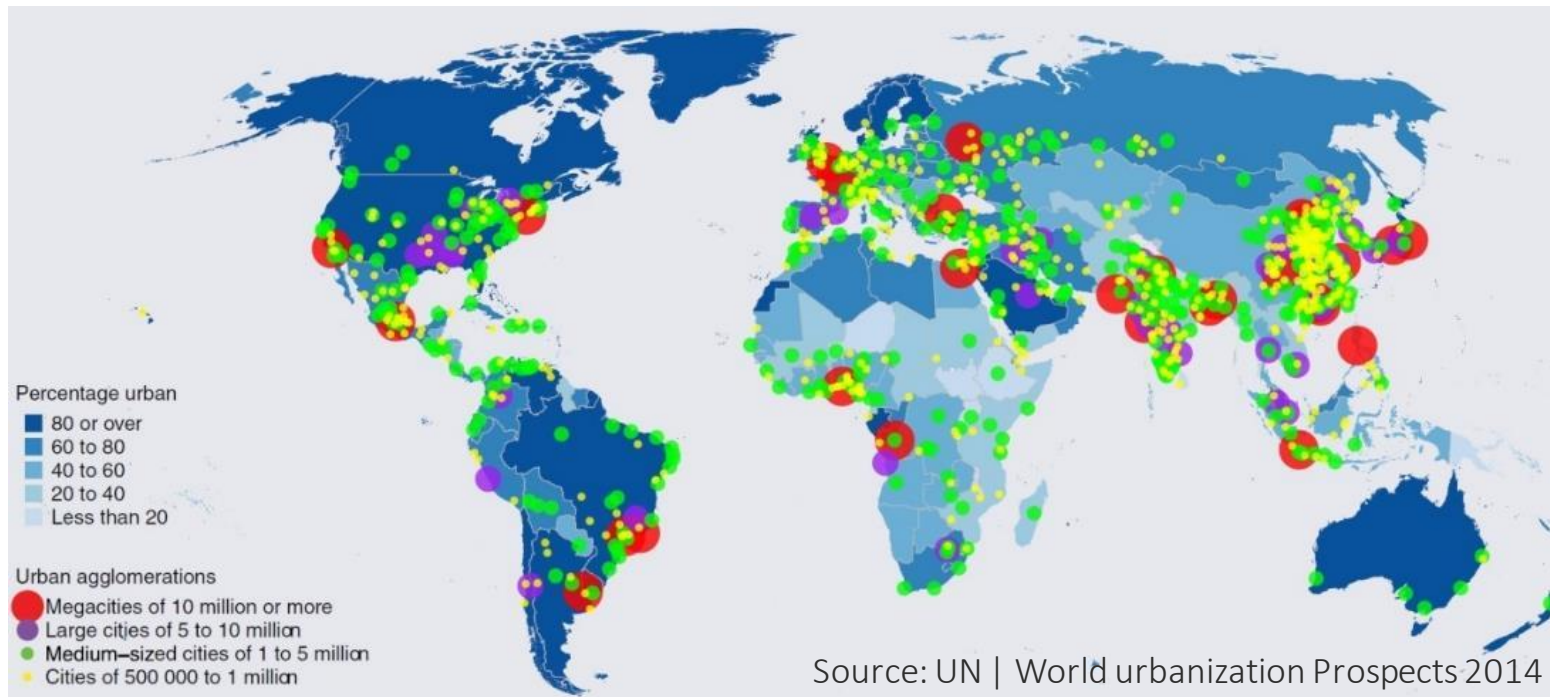
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n°821242. Several Chinese CLEARINGHOUSE partners have also contributed to the funding.

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项目背景

# Cities and urbanization 城市化



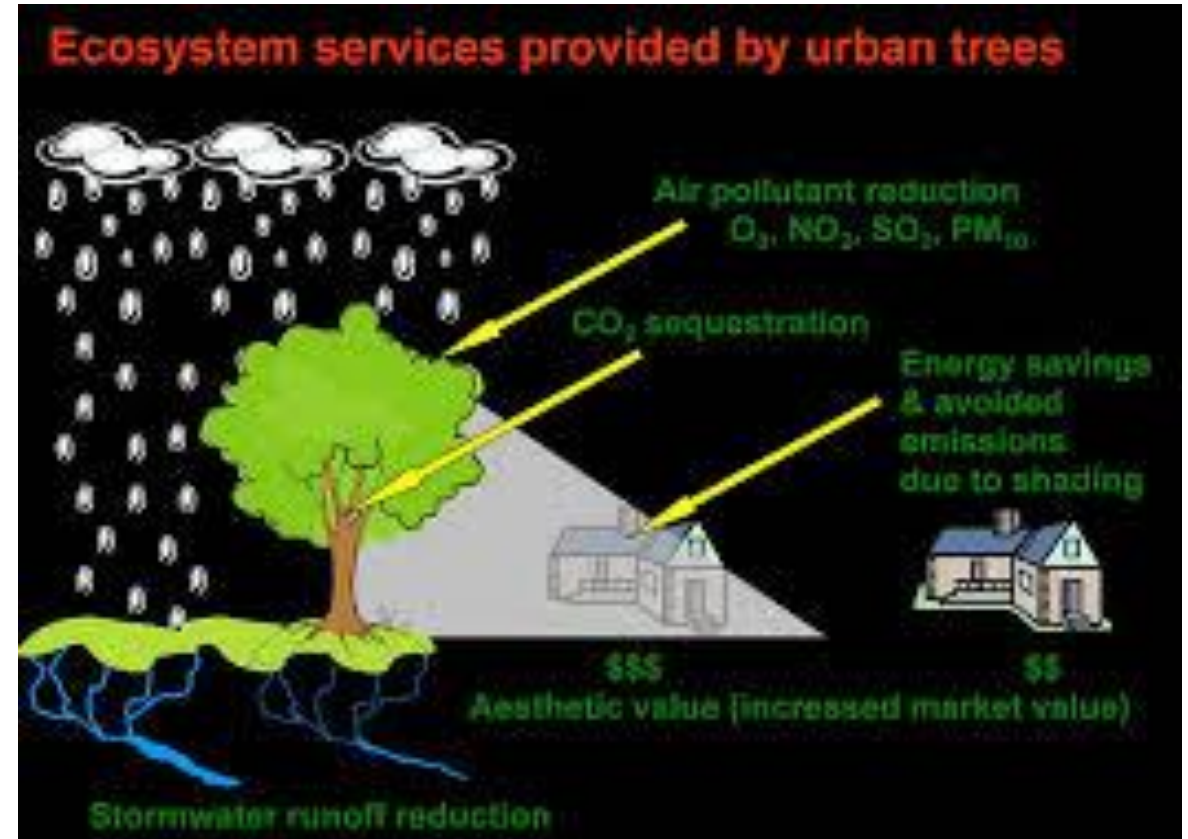
Cities are highly vulnerable to environmental change which is happening at an alarming rate!

- More than 50% of global population live in cities
- More than 90% of global economic activities
- 65% of global energy consumption
- 3/4 of anthropogenic greenhouse gas emissions
- 70% City populations (by 2050)
- Negative impacts: environmental challenges, human health ...



# Urban Trees and Forests 城市树木与森林

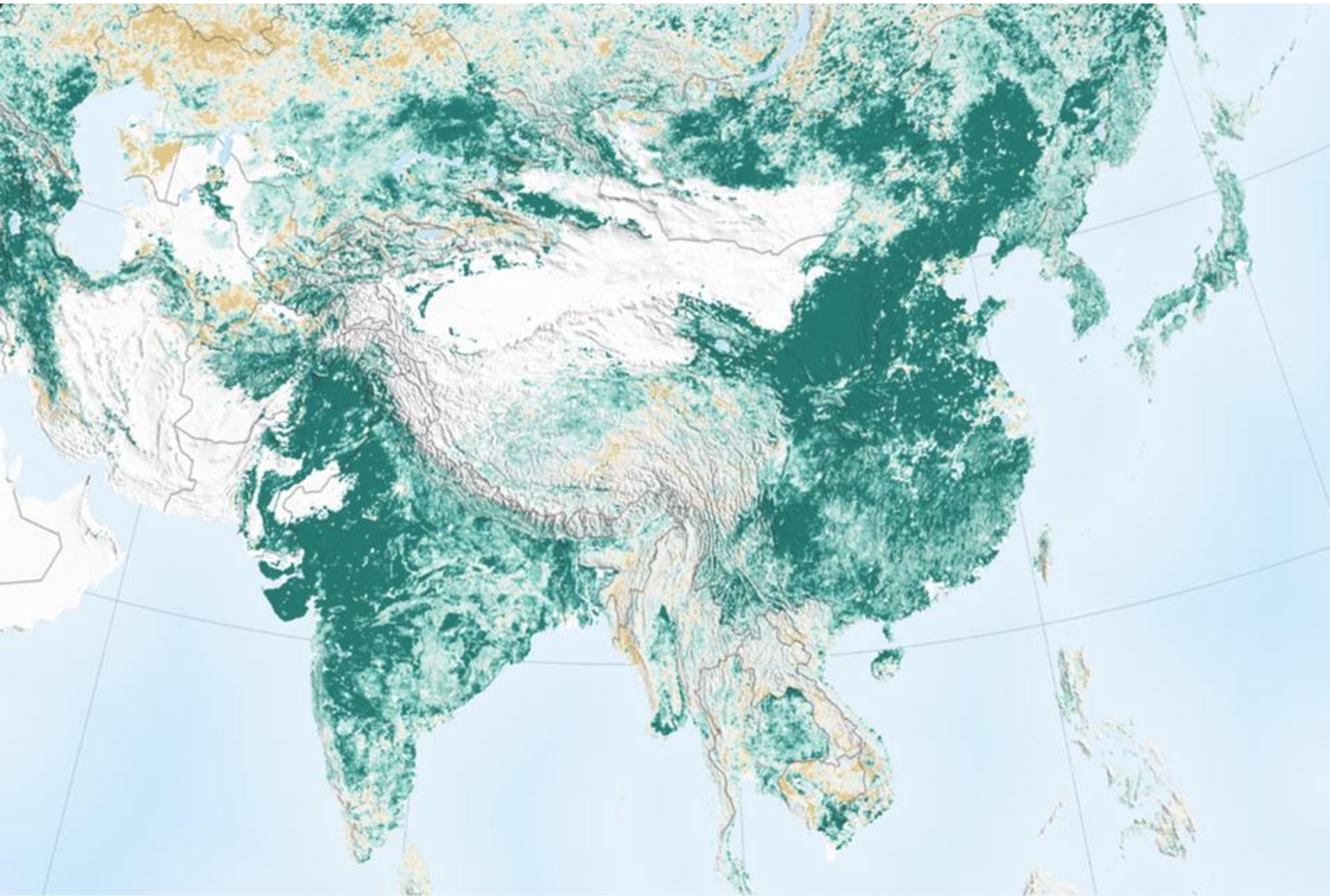
1. Urban forests have ever been a critical provider of manifold ecosystem services to urban societies
2. There are distinct urban forest governance, management and conservation strategies for urban forests that are at the interface of a changing ecosystem and evolving societal demands
3. Increasing our understanding of different management approaches across countries and continents is imperative to facilitate mutual learning and better urban forestry strategies in the future



Credit: iTreetools.org





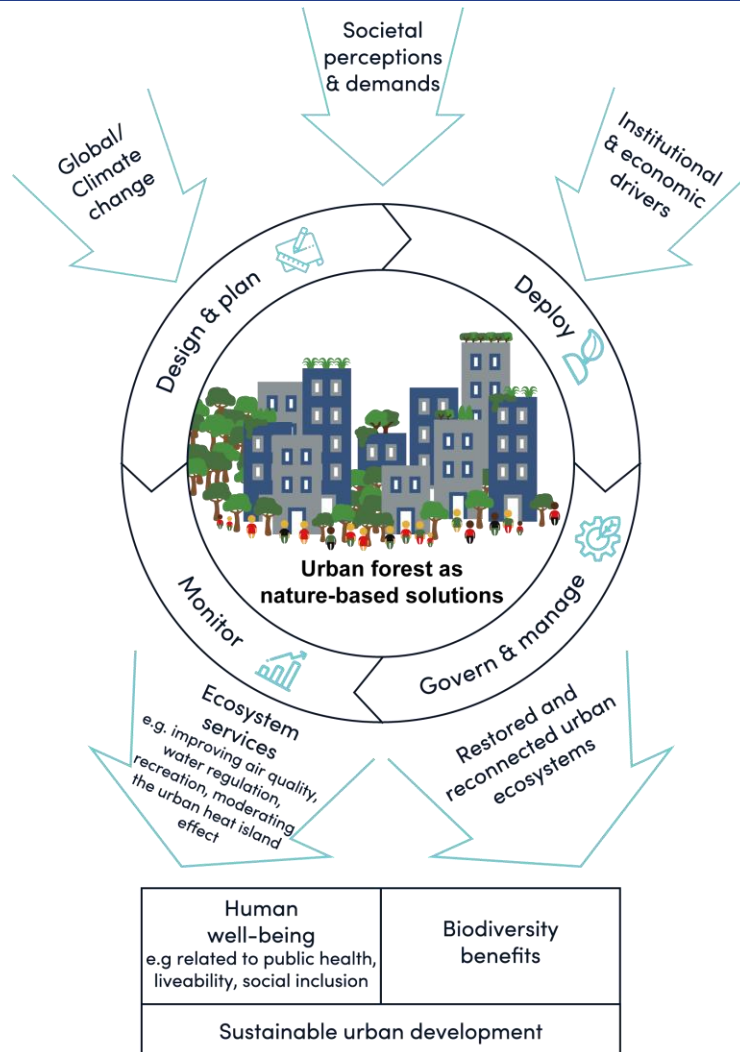


China's outsized **contribution** to the global greening trend comes in large part (42%) from programs to conserve and expand forests.

— — NASA report



# Urban Forest as Nature-based Solutions (UF-NBS)



- Nature-based solutions: “solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.”
- **UF-NBS** are a subset of nature-based solutions that build on tree-based urban ecosystems to address societal challenges, simultaneously providing ecosystem services for human well-being and biodiversity benefits.
- **UF-NBS** include peri-urban and urban forests, forested parks, small woods in urban areas, and trees in public and private spaces



# CLEARING HOUSE

## 中欧城市森林应对方案

# Project Figures

Call: H2020 – SC5-13-2018

EU funding: €4,986,468.75

48 Months

20 European Partners

7 Chinese Partners

10 Cities and urban regions

11 Countries

## CLEARING HOUSE

### Project Partners

- 1 European Forest Institute (EFI) (Coordinator)
- 2 Research Institute of Forestry - Chinese Academy of Forestry (CAF-RIF)
- 3 Fundacja Sendzimira (TSF)
- 4 Vrije Universiteit Brussel (VUB)
- 5 Humboldt-Universitaet zu Berlin (HUB)
- 6 Centro de Investigación Ecológica y Aplicaciones Forestales (CREAF)
- 7 Uniwersytet Lodzki (UniLodzki)
- 8 LGI Consulting SARL (LGI)
- 9 Università degli Studi di Bari Aldo Moro (UNIBA)
- 10 Luonnonvarakeskus (LUKE)
- 11 Universitaet Fuer Bodenkultur Wien (BOKU)
- 12 Hrvatski Sumarski Institut (CFRI)
- 13 Beijing Forestry University (BFU)
- 14 Fujian Agriculture and Forestry University (FAFU)
- 15 Guangzhou Institute of Forestry and Landscape Architecture (GZIFLA)
- 16 Zhejiang University (ZJU)
- 17 Shenzhen Fairy Lake Botanical Garden (SZFLBG)
- 18 Institut Bruxellois pour la Gestion de l'Environnement-Brussels Instituut Voor Milieubeheer (IBGE)
- 19 Urząd Miasta Krakowa (UMKrakowa)
- 20 Area Metropolitana de Barcelona (AMB)
- 21 BOS+ Vlaanderen vzw (BOS+)
- 22 Vlaams-Brabant (Vlaams-Brabant)
- 23 The University of Hong Kong (HKU)
- 24 Stadt Gelsenkirchen (Gelsenkirchen)
- 25 Association mondiale des grandes métropoles, Metropolis (Metropolis)
- 26 International Union for Conservation of Nature (IUCN)

### Case Study Cities/City Regions

- beneficiary
- non-beneficiary
- 18 Brussels\*
- 19 Krakow\*
- 20 Barcelona\*
- 24 GelsenKirchen
- 27 Leipzig-Halle
- 28 Beijing
- 29 Hong Kong\*-Ghuangzhou-Shenzhen
- 30 Hangzhou
- 31 HuaiBei
- 32 Xiamen

\*Covenant of Mayors signatory





1	<b>European Forest Institute (EFI)</b>	15	Fujian Agriculture and Forestry University (FAFU) 福建农林大学
2	<b>Research institute of Forestry - Chinese Academy of Forestry</b> 中国林业科学研究院林业研究所	16	Guangzhou Institute of Forestry and Landscape Architecture (GZIFLA) 广州市林业和园林科学研究院
3	Fundacja Sendzimira (TSF)	17	Zhejiang University (ZJU) 浙江大学
4	MD2 LLP (MD2)	18	Shenzhen Fairy Lake Botanical Garden (SZFLBG) 深圳仙湖植物园
5	Vrije Universiteit Brussel (VUB)	19	Area Metropolitana de Barcelona (AMB)
6	Humboldt-Universitaet zu Berlin (HUB)	20	Urząd Miasta Krakowa (UMKrakowa)
7	Centro de Investigacion Ecologica Y Aplicaciones Forestales Consorcio (CREAF)	21	Institut Bruxellois pour la Gestion de l'Environnement - Brussels Instituut Voor Milieubeheer (IBGE)
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14	Beijing Forestry University (BFU) 北京林业大学		

# Expected Impacts

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- Restored and functioning urban ecosystems with an enhanced capacity to deliver services (功能完善的城市生态系统)
- Business and investment case for UF-NBS on the basis of increased evidence about the benefits from restored urban ecosystems with regards to urban liveability, climate change resilience, social inclusion, urban regeneration, public health and wellbeing (基于研究验证的城市森林应对方案，涉及到气候变化弹性、城市更新、公众健康等)
- Guidelines for cost-effective and high-impact urban ecosystem restoration and ecological rehabilitation measures and new planning approaches and methods (为城市生态系统修复及其新方法途径提供导向性支撑)



# Objectives

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We will analyse & develop the potential of UF-NBS for enhancing the resilience of cities facing major ecological, socio-economic, and human wellbeing challenges:

- Analyse current frameworks, **public perceptions and demand** towards UF-NBS (WP1)
- Evaluate **impacts on urban societies**, including aspects of socio-environmental justice and gender, cost-effectiveness and replicability for diverse contexts (WP2)
- Facilitate a **collaborative learning process** on UF-NBS, connecting practitioners, businesses, policymakers and scientists (WP3)
- Develop **decision support tools** and **guidelines** for cost-effectively expanding, governing and managing UF-NBS (WP4)
- Increase **awareness** on the benefits of UF-NBS and **disseminate** it among governments, businesses, civil society and academia (WP5)



# Work Packages

No.	Work Package Title	Lead (Co-Lead)	Start Month	End month
1	Reviewing knowledge and developing the analytical concept 建立跨学科理论与实践分析及评估体系	HUB (HKU)	1	19
2	Conducting the comparative case study analysis 典型城市及城市群对比研究	CAF-RIF (VUB)	5	40
3	Establishing the Collaborative Learning Process 研学协作平台	EFI (FAFU)	3	44
4	Synthesising, knowledge developing tools and piloting solutions 成果整合及开发应用	BFU (TSF)	17	45
5	Communicating and disseminating CLEARING HOUSE 沟通与宣传	LGI (CAF-RIF)	1	48
6	Managing CLEARING HOUSE 项目管理	EFI (CAF-RIF)	1	48
7	Project Ethics 规章制度	EFI (CAF-RIF)	1	48





WP7. Ethics Requirements

WP6. Project management

WP3. Establishing the collaborative learning process

WP1. Reviewing knowledge & developing the analytical concept

WP2. Conducting the case study analysis

WP4. Synthesising knowledge, developing tools and piloting solutions

- T1.1. Identifying novel UFBS & developing an UFBS typology
- T1.2. Reviewing the existing knowledge
- T1.3. Surveying societal perceptions and demands towards UFBS
- T1.4. Analysing governance, institutional & economic frameworks
- T1.5. Developing the interdisciplinary analytical framework

- T2.1. Conducting the exploratory case study analysis
- T2.2. Conducting the in depth case study analysis

- T3.1. Implementing the co-design and co-learning process
- T3.2. Running the learning architecture
- T3.3. Implementing citizen science monitoring of UFBS
- T3.4. Evaluating the collaborative learning process

- T4.1. Deriving business models & investment cases
- T4.2. Developing decision support for UFBS implementation
- T4.3. Developing thematic guidelines
- T4.4. Piloting UFBS Field Labs

WP5. Communicating and disseminating

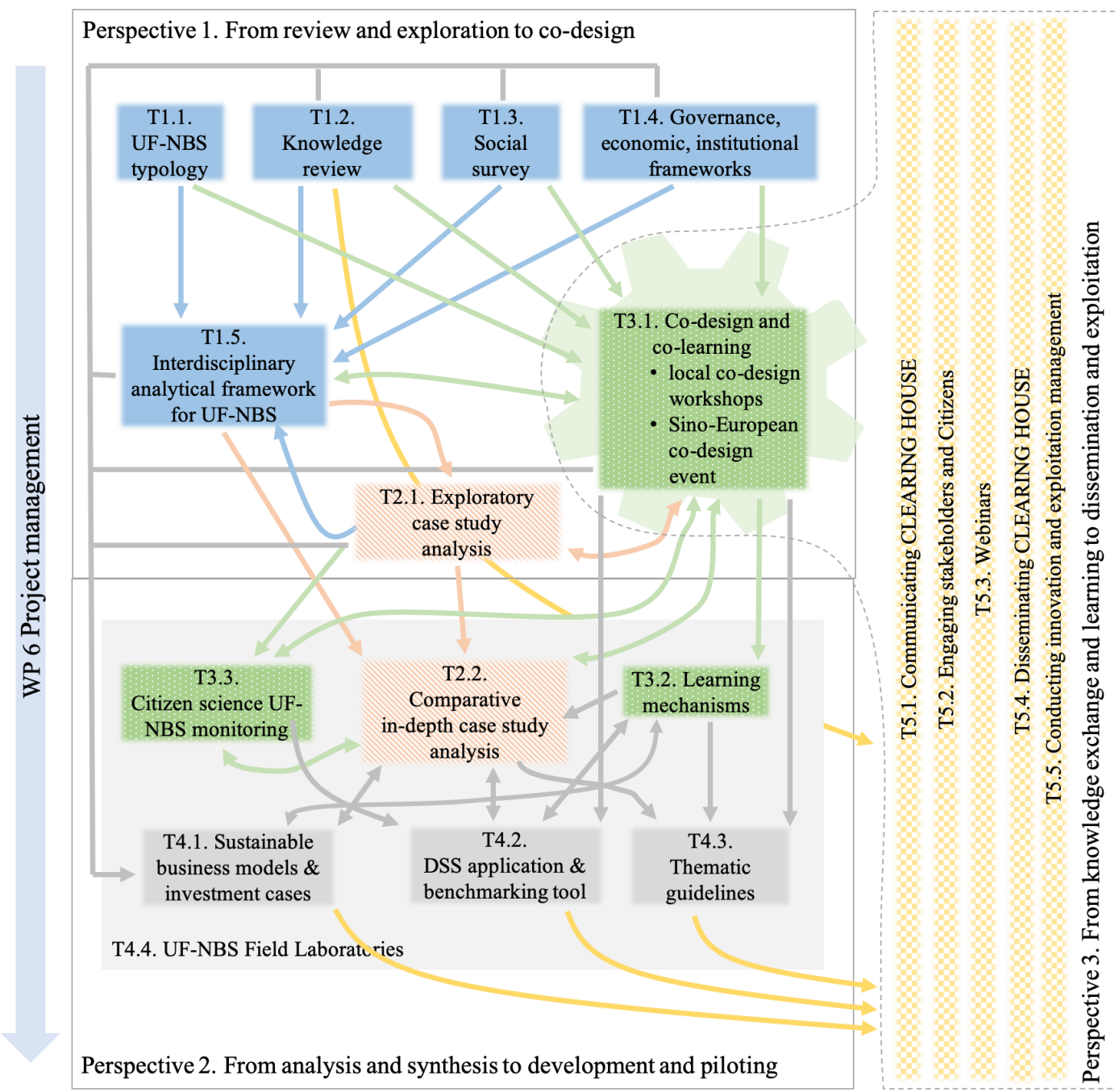
- T5.1. Communicating CLEARING HOUSE
- T5.2. Engaging stakeholders and citizens
- T5.3. Maintaining a webinar platform for knowledge exchange and upskilling

- T5.4. Disseminating CLEARING HOUSE research findings
- T5.5. Conducting innovation and exploitation management

## CH Concepts

- WP1 develops the interdisciplinary analytical framework for WP2 in close collaboration with WP3
- WP2 is the analytical core of the project which build on WP1, the results will be feed into WP3,4&5
- WP3 drives a collaborative knowledge sharing process. Sino-European co-design and co-learning workshops will take place and citizen science will be used to involve public in UF-NBS monitoring.
- WP4 develops and tests user-oriented tools





# CH Work flow

## STEP I (M1-19):

From review and exploration to co-design  
 从文献分析、方法探究到协作研究

## STEP II (M7-14):

From analysis and synthesis to development and piloting  
 从案例分析、成果整合到开发应用测试

## STEP III (M1-48):

From knowledge exchange and learning to dissemination and exploitation  
 从知识交流、学习到推广传播



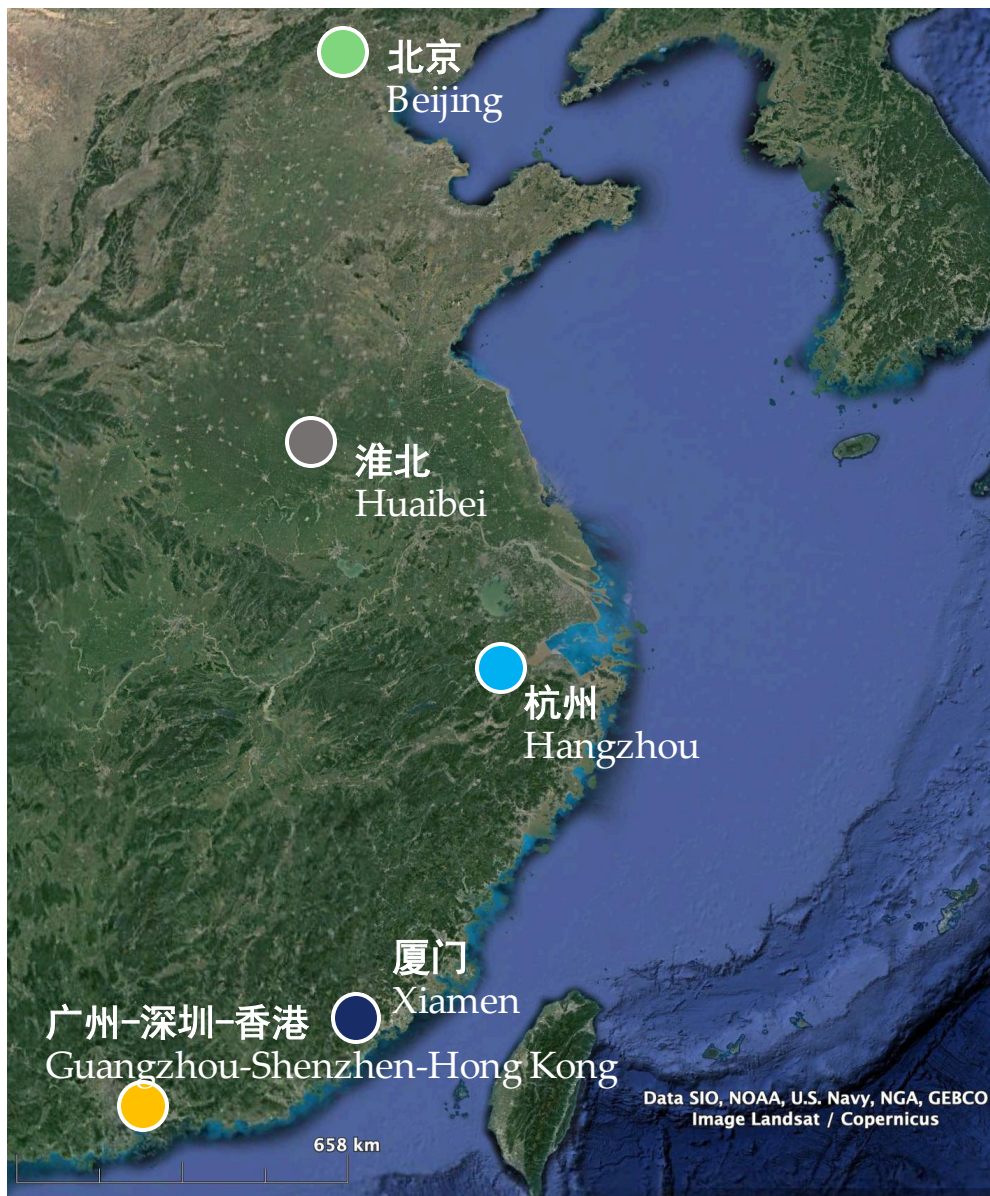
# Main Activities

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- Mapping how urban forests are used/managed as NBS (**Typology**)
- **Surveying** societal perceptions and demands towards UF-NBS in Europe and China
- Analysing the respective policy frameworks in Europe and China
- **Comparative case study analysis** in five pairing cities/city cluster between China & Europe
- Experiment with elements of **citizen science**, co-design and co-learning with citizens, stakeholders and decision makers in Europe and China (two competitive calls)
- Developing **user-friendly UF-NBS tools** (e.g. guidelines for target key users)







- 城乡尺度上的多样性生态服务功能
- 矿区城市的生态修复功能
- 河岸修复及区域性生态廊道

- 改善旅游城市的空气质量
- 河岸修复及沿岸防护林





EUROPE	CHINA
 <p>Brussels</p>	<p>Beijing</p> 
 <p>Leipzig-Halle</p>	<p>Guangzhou+Shenzhen</p> 
 <p>Krakow</p>	<p>Hangzhou</p> 
 <p>Gelsenkirchen</p>	<p>Huaibei</p> 
 <p>Barcelona</p>	<p>Xiamen</p> 



Inner-city afforestation  
市域造林



Urban-rural linkages  
城乡区域一体化



Air purification  
空气质量



Heat wave mitigation  
热浪消减



Outdoor recreation  
户外游憩



River catchment restoration  
河流集水区修复



Increasing attractiveness &  
aesthetics  
城市魅力提升与景观优化



Restoring former industrial sites  
矿区修复



Urban regeneration  
城市更新



# Key Events

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- Kick-off meeting in Bonn (4-6<sup>th</sup> September 2019)

## **CLEARING HOUSE will contribute to**

- Chinese Forum on Urban Forestry (annual meetings)
- World Forum on Urban Forestry (China, autumn 2022)
- European Forum on Urban Forestry (yearly in May)

## **CLEARING HOUSE will also Potential contribute to:**

- GGWC-Great Green Wall for Cities (announced by FAO)
- Nature-based solutions as one of methods to tackle climate change (China is the co-leader of NBS plan in UN Climate Action Summit) 联合国气候行动峰会
- Ministry of Ecology and Environment will support to develop NBS



# Deliverables

## 30 Deliverables

### In the first year:

- D1.5 Screening tool for the exploratory case study analysis
- D3.1 Guidance document for the local co-design and co-learning workshops
- D3.2 Local co-design workshops synthesis report
- D5.1 Communication and dissemination plan
- D6.1 Project Management Plan
- D6.2 Data Management Plan

WP	YEAR 1				YEAR 2				YEAR 3				YEAR 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1. Reviewing knowledge &amp; developing analytical concept</b>																
T1.1						D1.1										
T1.2						D1.2										
T1.3						D1.3										
T1.4						D1.4										
T1.5		D1.5					D1.6									
<b>WP2. Conducting the comparative case study analysis</b>																
T2.1						D2.1,										
T2.2														D2.2		
<b>WP3. Establishing the collaborative learning process</b>																
T3.1		D3.1		D3.2,			D3.3									
T3.2						D3.4							D3.5			
T3.3																D3.6
T3.4.													D3.7			
<b>WP4. Synthesising knowledge, developing tools and piloting solutions</b>																
T4.1														D4.1		
T4.2										D4.4, D4.3						
T4.3														D4.4		
T4.4															D4.5	
<b>WP5. Communicating &amp; disseminating CLEARING HOUSE</b>																
T5.1	D5.1					D5.1							D5.1			
T5.2																
T5.3																
T5.4																
T5.5						D5.4							D5.4			D5.4
<b>WP6: Project Management</b>																
T6.1.	D6.1	D6.2														
T6.2.						D6.3							D6.3			D6.4
WP	YEAR 1				YEAR 2				YEAR 3				YEAR 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

# Tasks in Progress

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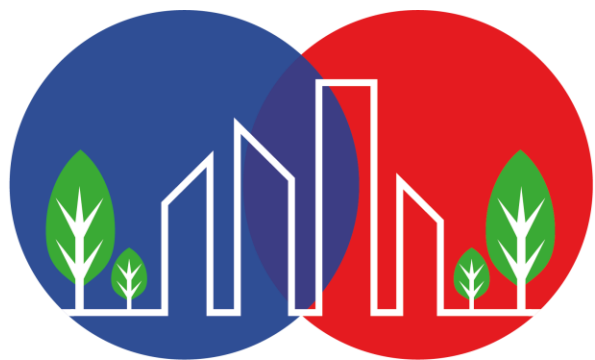
- Developing UF-NBS typology
- Social survey on perception and demands towards UF-NBS
- Co-design and co-learning process
- Communicating CLEARING HOUSE

More activities in the near future...





# Thank you & 谢谢!



**CLEARINGHOUSE**  
中欧城市森林应对方案



[CLEARINGHOUSEPROJECT.EU](http://CLEARINGHOUSEPROJECT.EU)



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