D6.4: URBAN GreenUP Global NBS engagement, networking and knowledge transference

WP 6 , T6.5, T6.6, T6.7, T6.8

Date of document

March, 2023 (M70)

Technical References

Project Acronym	**URBAN GreenUP**
Project Title	New Strategy for Re-Naturing Cities through Nature-Based Solutions – URBAN GreenUP
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Project Duration	1 June 2017 – 31 May 2022 (60 Months)

Deliverable No.	D6.4
Dissemination Level	PU[1]
Work Package	WP 6 – Renaturing city methodology
Task	T6.5, T6.6, T6.7, T6.8
Lead beneficiary	SPI
Contributing beneficiary(ies)	SPI, RMIT, VAL, LIV, IZM, IFO
Due date of deliverable	31/03/2023
Actual submission date	20/04/2023
Revision date	06/07/2023

[1] PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)

Versions

Version	Person	Partner	Date
V1	Nuno Andrade and Alessandro Colombo; Duc Trinh Tran	SPI; RMIT	28/01/2022
V2	Alessandro Colombo; Duc Trinh Tran	SPI; RMIT	04/03/2022
V3	Alessandro Colombo; Duc Trinh Tran and Robert McClelland	SPI; RMIT	21/03/2022
Review	Giulio Mazzolo and Alice de Ferrari	IFO	27/03/2022
V4	Alessandro Colombo; Duc Trinh Tran	SPI; RMIT	28/03/2022
V5	Alessandro Colombo and João Barata	SPI	28/03/2022
V6	Manuel Pinheiro	SPI	08/03/2023
V7	Raúl Sánchez Esther San José	CAR	14/03/2023
V8	João Barata and Manuel Pinheiro; Duc Trinh Tran	SPI; RMIT	20/04/2023
V9	João Barata and Manuel Pinheiro	SPI	06/07/2023

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1 Executive summary

This document represents **Deliverable 6.4. Global NBS engagement, networking and knowledge transference**, and reflects one of the URBAN GreenUP aims of creating a community of interest within and beyond the project's partnership for the engagement of cities. It also aims to stir global interest in NBS through the promotion of demo-sites in front-runner cities and replication plans in follower cities. Additionally, this Deliverable delves into the activities behind the knowledge transference process.

To this end, this deliverable is mainly informed by the activities produced under *WP6 Replication and City Clustering* within different tasks, namely:

- **Task 6.5 Coaching and mentoring from frontrunners to follower cities**.
- **Task 6.6 Staff exchange among frontrunners and follower cities**.
- **Task 6.7 Cluster of cities to foster transferability and dissemination**.
- **Task 6.8 Link with other SCC NBS projects.**

This document is structured into 5 chapters:

Chapter 1 corresponds to the present Executive Summary.

Chapter 2 explains to what extent the document is framed within WP6, as well as are identified the main key target groups, the contribution of partners in the development of the deliverable, and the relation with other WPs, tasks and deliverables. Companies and financing organizations, cities and municipalities, civil society organizations, citizens, academia and research institutions, and EU organizations are identified as main key target groups. Activities from Tasks 6.4, 6.5, 6.6, 6.7 and 6.8 are the main recipient of information for this deliverable.

Chapter 3 presents the comprehensive methodological and conceptual framework supporting engagement, networking and knowledge transfer activities and their main objectives. This framework includes the internal knowledge transfer activities, external knowledge transfer activities, and public knowledge transfer.

Chapter 4 reports all the activities developed with the objective of promoting the Global NBS engagement, networking and knowledge transfer. Those can be broken down on activities related with the clustering of cities, including replication and technical webinars, activities linking this with other nature-based solutions projects and other relevant EU projects, coaching and mentoring activities, staff exchanges and activities in coordination with other WPs.

Finally, **Chapter 5** is focused on the main impacts of the actions reported in Chapter 4, by discussing the main lessons learnt as well as the implications for other tasks of the project. The identification of common challenges, similarities, enablers and barriers that had resulted from networking, engagement and knowledge transfer activities has given relevant insights for the continuation of the NBS implementation.

2 Introduction

This document represents *D6.4. Global NBS engagement, networking and knowledge transference* of the URBAN GreenUP project.

The URBAN GreenUP project aims at obtaining a tailored methodology to support the co-development of Renaturing Urban Plans (RUP) focused on climate change mitigation and adaptation and efficient water management, and to assist in the implementation of Nature Based Solutions (NBS) in an effective way.

This deliverable addresses the knowledge, engagement and networking related objectives of *WP6 Replication and City Clustering*, namely:

- To ensure a smooth, effective transfer of knowledge and experiences on the planning, design, implementation, maintenance and monitoring of urban NBS across the cluster of URBAN GreenUP cities;
- To create a community of interest within and beyond the URBAN GreenUP partnership for the engagement of cities with an interest in the design and implementation of NBS addressing current and upcoming urban challenges;
- To stir global interest in NBS through the promotion of demo sites in front-runner cities and replication plans in follower cities.

It also reports knowledge activities that resulted from the development of the delivering ready-to-implement, integrated Renaturing Urban Plans (RUPs) in the 5 follower EU and non-EU cities of the project, assessing commonalities and specificities of URBAN GreenUP frontrunner and follower cities (Task 6.4) in order to identify criteria and approaches for the effective replication of NBS across different locations, and developing a methodology for the replication of NBS implemented in frontrunner cities and in follower cities.

Therefore, this deliverable considers different methods deployed throughout the project in order to transfer knowledge within the project and beyond, from 'direct' knowledge transfer through activities deployed involving project partners (mainly in WP1 and WP6), to 'indirect' knowledge transfer through dissemination activities (mainly in WP8).

WP1 aims to develop a methodology for supporting the Re-naturing of the cities and areas, including new concepts as Re-naturing Urban Plans (RUP's). This methodology was supported by co-development and co-creation procedure both to be tested by partners of the project and for external stakeholders, generating an exploitable methodology both within Europe and beyond. Finally, WP8 Communication and Dissemination aims at facilitating knowledge transfer, awareness raising community engagement and acceptance to support replication and uptake at European and global level, by increasing public awareness on the activities and achievements of the project, establishing a community of stakeholders at the global, national and local level and by enabling a smooth communication and knowledge sharing among the consortium project partners, between Frontrunner and Follower cities and the community of interest (as a support to WP6).

2.1 Purpose and target groups

D6.4 Global NBS engagement, networking and knowledge transference aims to report all the activities and actions developed within the scope of engagement, networking and/or knowledge transfer, either within the partners involved in the project, or with entities from outside the project, mainly under *WP6 Replication and City Clustering*. It also reports activities that took place directly and indirectly within WP1 and WP8. European cities and cities worldwide, industry, SMEs, urban planners, public authorities, European, national and regional public bodies, decision makers, legislators, financing organizations, citizens, and consumers represent the main target groups. Table 1 below shows in details the key target groups, together with the main benefit that each of these groups can get from the project outcomes.

Table 1. Key Target groups and benefits

Target Groups	Main benefits
Companies and Financing Organizations (e.g., Business industries, Large companies, SMEs, technology providers financing organizations working in fields related to NBS).	Understand the type of NBS that cities are implementing; Acknowledge the technical features and the expertise needed to develop them; Increase market share / profitability by accompanying state of the art NBS deployment.
Cities / Municipalities (e.g., Policy and public decision makers of cities, municipalities and metropolitan areas and their respective relevant technical departments (Urban Planning, Environment, Sustainability, Socioeconomic Development, Smart Cities, etc.).	Have an insight of what national/international cities are doing in terms of greening; Acquire knowledge about NBS, its implementation, benefits, needs and impacts in the urban context; Integrate greening as a key element of the urban development policies.
Civil Society Organizations (e.g., For Profit and Not for profit organizations, grassroot movements: associations, NGOs, Third Sector).	Make sure NBS implemented are along community expectations and needs; develop associated community-based/led initiatives; Foster awareness raising and the creation of critical mass around the NBS topic.; lobby public authorities.
Citizens (e.g., General public and society at a large with different background and ages, such as residents and visitors).	Know the benefits of NBS for their own well-being and quality of life; Raise awareness to play an increasing pro-active role in NBS design, implementation, and monitoring; Contribute to a more equal society by promoting the use of public space by every citizen, regardless of gender, age, race, ethnicity, religion, sexual orientation, disability, economic status and other diverse backgrounds.
Academia and Research Institutions (e.g., Scientific community such as public and private universities and research institutions, including experts in NBS related fields (Biodiversity, Bioeconomy, Sustainable Urban Planning, Environmental Sustainability, Sustainable Urban Development Economy, Smart Cities, etc.).	Develop scientific analysis, concepts and approaches based on real use cases: how the benefits can be increased and limitations mitigated, how to improve the NBS performance; how to better integrate it in the urban layout; how to reduce maintenance costs, etc.; Improve the contribution to knowledge sharing and learning processes; Get involved in community-based/led initiatives.

EU Level	
EU DG GROWTH; DG Climate Action; DG Environment; DG Research & Innovation; EIT Climate KIC; EIP Smart Cities; Covenant of Mayors.	Promote the application of NBS principles and priorities; Contribute to policy coherence; Get involved in feedback mechanisms from the local level to the EU level and vice versa.

2.2 Relation to other WPs and Tasks

The following table summarizes the main relations from D6.4 with activities developed under others tasks and WPs, including deliverables (Table 2).

Table 2. Relation to other WPs and tasks

WP/Task	Relation
Task 6.4 Development of an implementation and replicability plan in each frontrunner/follower city according to the project methodology.	Each follower city prepared their own strategic, ready-to-implement RUP based on the assessment of local conditions and the transfer of knowledge and experience with all frontrunner and follower cities (D6.6). Informed by cluster and exchange activities: City and area diagnosis and baseline calculation procedure; Guideline to city zoning; NBS scenarios generation tool and KPIs calculation prioritization criteria; Guidelines to tendering process specification.
Task 6.5 Coaching and mentoring from frontrunners to follower cities.	FR/FC cities workshops during the Consortium Meetings; Yearly virtual sessions (in between workshops); Dedicated platform (mailing list) for interaction/knowledge exchange.
Task 6.6 Staff exchange among frontrunners and follower cities.	City pairing model among FR/FC cities with similar challenges and interests in certain types of NBS and NBS implementation (with WP6 facilitation) helping delivery/transferring knowledge.
Task 6.7 Cluster of cities to foster transferability and dissemination.	External cities integrated the external cluster; Technical and replication webinars; Contacts with the most relevant cities associations with presentations of the project.
Task 6.8 Link with other SCC NBS projects.	Identification, contact and link to external networks, initiatives and projects related to smart and sustainable cities which promote NBS, mainly through invitations to events.
D6.1 Establishment of the URBAN GreenUP Cluster and Network of Cities with an interest in NBS.	Procedure for external cities entered in the cluster.
WP8's support to/articulate with WP6.	Disseminate WP6's achievements and results, namely webinars outputs, through the URBAN GreenUP dissemination channel: YouTube channel recording and making podcasts available (supported by WP8); Project newsletters (in articulation with the WP8), website, social media; development, maintenance and engagement of the URBAN GreenUP network of cities; production and distribution of graphic dissemination materials.
WP9 synergy related activities.	Task 9.7 synergy with other SCC project (SCC-02-2016/2017, SCC-03-2016, SC5-08-2017, SC5-09-2016, and SC5-10-2016), mainly join invitation to events.

3 Global NBS engagement, networking and knowledge transfer

WP6 covers the development of the methodology to replicate NBS practices across different locations. It starts with the analysis and characterization of cities for NBS implementation and potential for NBS replication. In addition, as the project is designed to foster a cluster of cities for the adoption of NBS practice, a cities cluster has been implemented to invite and facilitate the adoption of the project's approach, tools and methods. The tools and analysis method developed for the WP6 is also meant to be used by other cities outside the project. Thus, WP6 strives to foster an international community of cities to learn from the project experience and adopt or absorb the tools, methods, and experience to develop their own agenda of NBS replication in their city.

To this end, global engagement, networking and knowledge transfer is meant to make other cities immediate beneficiaries of the results of the project, due to learning from project's experience.

This process has started with the 1st World Forum on Urban Forests titled "Changing the nature of cities: the role of urban forestry for a green, healthier and happier future" that took place in the Follower city of Mantova (December, 2018). During this event, URBAN GreenUP organised the side event "Nature-Based Solutions: overcoming barriers, enhancing benefits.", in which the NBS cooperation Manifesto was signed. The Manifesto is an initiative of URBAN GreenUP endorsed by the European Commission and by most of the EU-funded NBS projects. It has been made available for online signature on the ThinkNature platform. A dedicated banner directly linking to the page on the ThinkNature platform has been designed and long included in the URBAN GreenUP website. As of May 2022, 380 signatures have been collected. The Manifesto has been widely covered and promoted through a dedicated editorial production and on the project social media channels. The hashtag #NBSMANIFESTO was launched on Twitter.

3.1 Main objectives

The objective of D6.4 is to describe how the project contributes to the global engagement in several dimensions:

- Connect, interact and collaborate with other EU-funded NBS projects, including inviting these SCC projects to participate in URBAN GreenUP webinars;
- Engage with public participants from different forum, public and targeted (external) webinars;
- Engage with cluster of city and project's cities public (through front runners and follower cities events, communications, surveys, etc.)
- Fostering adoption of NBS implementation in internal follower cities and external cities cluster
- Sharing knowledge and best practices from academic partners, companies and municipality to fine tune the NBS implementation practices, NBS replication and assessment methodology.

- Generate public interest in the NBS implementation topic, and equip public audience with necessary information, methods, and tools.

3.2 Framework

3.2.1 Global NBS engagement and networking

To attain a correct implementation of the URBAN GreenUP project, it is important for cities to engage and network with each other and with other partners, who can help them on the implementation of NBS. This can be made either within the project related cities, for instance through the cities clustering, or communicating and sharing experiences and knowledge with other cities, which are not directly involved in the project.

Thus, it is relevant to develop activities aiming to encourage and to promote this networking and engagement, allowing cities and other stakeholders to learn and to head to the implementation of Nature Based Solutions. Therefore, the project can also grow, and the cluster can increase its dimension.

This can be achieved through different methods such as:

- International forums (such as world forum on urban forests in Mantova). There is also regular contact and exchange with other project and organizations such as the ICLEI, the UN global compact cities programme, developed by WP8;
- Through public webinars;
- Through best practices and publication;
- Through European commission taskforces activities;
- Linking with other NBS projects;
- Through individual WPs.

In Figure 1 the concept of engagement and networking on this Deliverable is systematized.

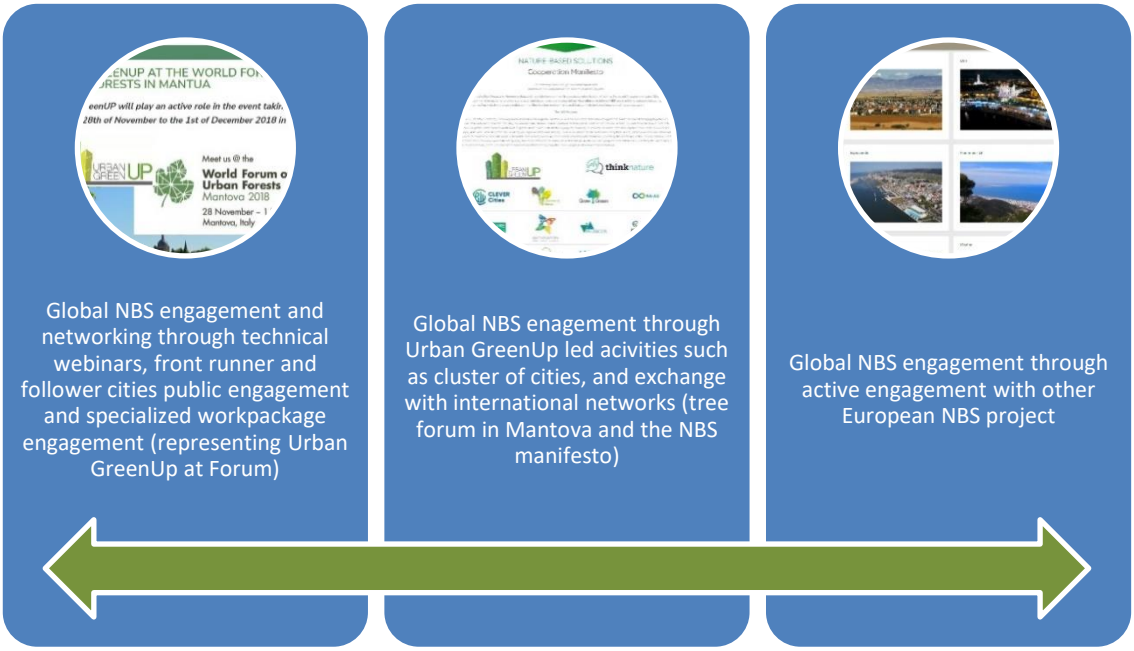


Figure 1. Concept of Global NBS engagement and networking

3.2.2 Methodological design of knowledge transfer activities

According to Pasqualetto et al. (2022)[2], there are four fields of Knowledge Transfer (KT) that must somehow be addressed within a European research project:

- Outreach, communications and dissemination – covering the targeted activities (such as webinars) and key tools and platforms (e.g., social media) that help increasing public awareness and maximizing the exposure of the subject.
- User and stakeholder engagement – fostering the need to previously constitute a group of stakeholder representatives and users whose contributions should be used and with whom the outcomes of the project must be shared.
- Training – all activities aimed to improve professional skills and competencies and to provide a legacy for the future, including online seminars, workshops, summer schools, etc.
- Clustering – aiming at ensuring effective collaboration among peers, a project of this sort ought to facilitate coordination and exploitation synergies among a wider international community.

Based on the above, URBAN GreenUP knowledge transfer activities have been strategically designed to foster the delivery of knowledge and the replicability of NBS planning, implementation, and monitoring practices. Taking into account the diverse stakeholders and their interest in the knowledge sharing, the knowledge transfer activities of URBAN GreenUP

[2] Pasqualetto, S., Cristini, L., and Jung, T.: How to get your message across: designing an impactful knowledge transfer plan in a European project, Geosci. Commun., 5, 87–100, https://doi.org/10.5194/gc-5-87-2022, 2022.

was designed with the following framework to foster wide acceptance and replication of NBS implementation, practices and knowledge. That includes the following design framework:

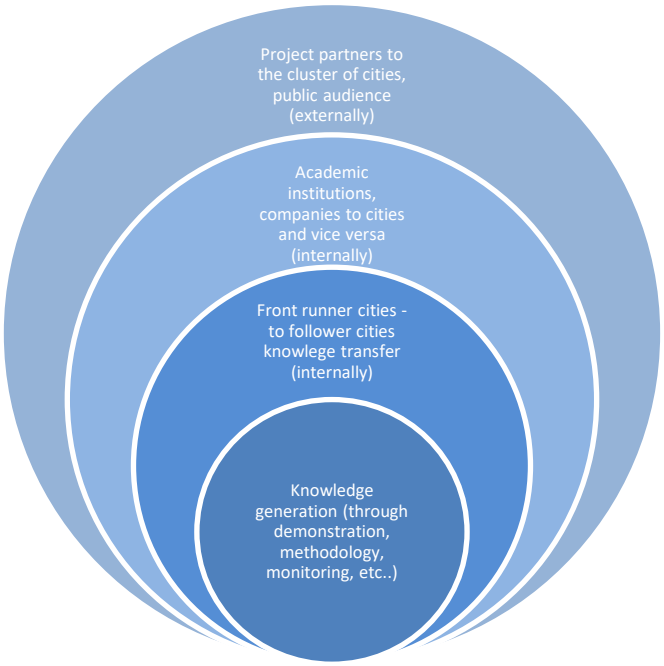


Figure 2. Knowledge transfer methodological framework

1. Internal knowledge transfer activities

The knowledge transfer from the frontrunner cities to the follower cities to support the NBS replication through the sharing of technical and methodological NBS implementation (in construction, methodology development, and technical tools) throughout the project time with coaching and mentoring activities and staff exchange.

The knowledge transfer from academic partners to the practitioners (cities, companies) and vice versa on the development of methodology and tools to support the NBS selection, implementation, and monitoring.

2. External knowledge transfer

The knowledge transfer activity was designed to foster a community of practices for NBS at city cluster affiliated with the project. The cluster will be equipped with NBS techniques, learning how NBS were implemented and selection of NBS for typical city context with appropriate incentive mechanisms.

3. Public knowledge transfer

For the public participants the knowledge transfer activities were designed to further spread the NBS implementation practices and relevant methodologies and tools for interested participants (from citizen to public service officers and NBS contractors, developers and researchers).

Activities associated with the knowledge transfer framework

1. Internal knowledge transfer activities

The activities designed for this dimension of knowledge transfer include:

a. The staff exchange between frontrunner cities and follower cities: In which follower cities will be able to learn through real example (or natural laboratory) of NBS implementation and how it addresses typical challenges of the local conditions as well as the benefit for the stakeholders.
b. The coaching and mentoring activities: In which the cities will be equipped with methodological framework and tools to support the planning, selection, implementing, tendering and maintaining NBS and typical example from academic and companies.
c. The technical webinars: where academic partners, companies and partner cities will have a chance to learn perspectives from each other's. From those cities that are further equipped with NBS knowledge, academic partners will have the possibility to experience from real life implementation, and companies will gain input for the improvement of NBS services and products.
d. Development of Renaturing Urban Plan (RUPs): The follower cities, with the support from academic and professional partners, will be able to develop a RUP that adopts most of the good practices implemented in the URBAN GreenUP project.

2. External knowledge transfer activities

The activities designed for this dimension of knowledge transfer include:

a. Cluster of cities will be exposed and equipped with NBS examples, of how it can be replicated and what supportive mechanisms are behind a successful NBS implementation (including the NBS selection, zoning, financial and management tools relevant for NBS) that cities will need to plan for their Renaturing Urban Plan.

3. Public knowledge transfer activities

The activities designed for this dimension of knowledge transfer include:

a. Public audience will be informed and get familiar with the NBS implementation inside URBAN GreenUP, and will be equipped with necessary knowledge and tools should they see it applicable to their situation: as a public officer, it will be the tendering, NBS selection, NBS implementation, and Public-private partnership (such as developed procedure, NBS tendering and contracting); as a professional, it will be the technique and tools developed in the project for typical NBS (such as manual, guideline, method); as a citizen, it will be a chance to reflect on how the community can benefit and be involved with NBS implementation (NBS catalogue, NBS co-creation tools).

4 Activities implemented and achievements

This chapter shows the global engagement, networking and knowledge transfer activities that resulted from the implementation of actions within the WPs and tasks mentioned before.

Global NBS engagement, networking and knowledge transference in the URBAN GreenUP project has been reached through the implementation of the following types of activities:

- Through technical webinars, front runner and follower cities public engagement and specialized workpackage engagement (representing Urban GreenUP at Forum);
- Through URBAN GreenUP led activities such as cluster of cities, and exchange with international networks (tree forum in Mantova and the NBS manifesto);
- Through active engagement with other European NBS project.
- Through coaching and mentoring activities which enabled the knowledge transfer between the cities of the cluster.

4.1 Cities clustering

The activities developed under *Task 6.7 Cluster of cities to foster transferability and dissemination* have represented a privileged mean to reach other European and non-European cities and NBS-related associations and to foster global NBS engagement and networking.

4.1.1 Activities developed

These activities were:

- Establishment of the URBAN GreenUP Cluster of Network of Cities.
- External cities integrating the cluster.
- Identification of potential sources of external cities to join the wider Network of Cities.
- Preparation of a standard PPT presentation – Cluster of Cities.
- Creation of a joint mailing list to fostering exchange among cities.
- Technical webinars.

Table 3 systematises the description of activities performed within the Cluster of Cities (Task 6.7):

Table 3. List of knowledge transfer activities performed under the Cluster of Cities

Nr	Activity	Type	Date	Location/ Context	Organiser	Participants
1	Establishment of the URBAN GreenUP Cluster and Network of Cities	Cluster of cities	M14	Liverpool	SPI	Frontrunner and follower-cities
2	Promoting Follower Cities involvement in the whole NBS/RUP process starting from the basics	1st Replication webinar	M13	Virtual	Valladolid	18
3	Sharing stories from Liverpool and Izmir about working with internal departments to get past barriers in the definition/planning/implementation of NBS	2nd Replication webinar	M18	Virtual	Liverpool / Izmir	14
4	Innovative Business Models and financing instruments	3rd Replication webinar	M24	Virtual	UBO	17
5	How to develop an engagement plan that actually works	1st Technical webinar	M33	Virtual	SPI	10
6	How remote sensing and GIS can help us identifying priority areas for NBS implementation	2nd Technical webinar	M35	Virtual	BITNET GMV	52
7	Trees in our cities – opportunities, barriers and benefits	3rd Technical webinar	M37	Virtual	Mersey Forest and Centre for Watershed Protection	44
8	NBS for Water Quality and Quantity Management in urban Environments	4th Technical webinar	M40	Virtual	LEITAT and CENTA	55
9	How to develop a Renaturing Urban Plan (RUP) for your city?	5th Technical Webinar	M60	Virtual	ACC / UBO	All Network of cities (Cluster + External)
10	Developing KPI and data collection program for the NBS implementation and monitoring	6th Technical Webinar	M69	Virtual	GMV / RMIT / SPI	23

4.1.2 Achieved results

Establishment of the URBAN GreenUP Cluster of Network of Cities

The *URBAN GreenUP Cluster of Network of Cities* was established in a physical meeting that took place in Liverpool on M14 of the project (July, 2018), aiming to play a key role in disseminating replication among Front-Runner and Follower cities of the project (First Level Cluster)[3]. In order to foster the dissemination of knowledge and the engagement and networking with European and International cities with high replication potential and interest in NBS, and in exchange experiences with project cities, a second level of cluster was defined to involve non-project partner cities (external). By this way, the engagement and networking were reached through the expansion of the community of interest around NBS and related smart cities topics.

External cities integrating the URBAN GreenUP Cluster of Network of Cities

By joining URBAN GreenUP Network of Cities, external cities had the opportunity to be engaged in a rich exchange of information and knowledge related to NBS experiences such as on how to overcome barriers and on how to deal with challenges, as well as taking advantages of opportunities. Therefore, external cities were engaged in the network having the possibility to develop their knowledge and awareness about NBS as part of a smart city concept, building upon the experience of cities that are already implementing it in a structured way.

In order to engage external cities in a structured way, a set of criteria[4] and procedures were defined informing the broadening of the Cluster. Around 100 contacts with cities authorities around the world were made, and *26 external cities* have integrated the URBAN GreenUP Network of Cities, where the minimum target of external cities joining the Network of Cities set up by the DoA was of 15 cities.

In terms of procedures, external cities entered in the cluster through an entry process developed by the Secretariat of the cluster for the scope, composed by a *Letter of Invitation* (LoI) and a *Letter of Commitment* (LoC). A *form* was asked to be filled out to newly external cities in order to collect general information to be displayed on URBAN GreenUP website[5].

The process for external cities to join the cluster was structured through specific template that were developed by the Secretariat for this purpose (Annex A1, Entry process URBAN GreenUP Cluster of Network of Cities):

1) External city to send the LoC back to the URBAN GreenUP Cluster of Cities Secretariat duly signed by an official authorized representative of the city;

[3] For more information on the first level see D6.1 Establishment of the URBAN GreenUP cluster and Network of Cities with an interest in NBS.

[4] For more information about the criteria informing the second level see D6.1 Establishment of the URBAN GreenUP cluster and Network of Cities with an interest in NBS.

[5] Available in Annex 2 and in here: URBAN GreenUP City Cluster: registration form (google.com)

2) External city to send to the URBAN GreenUP Cluster of Cities Secretariat a good quality picture of an NBS implemented by the city or a rendering that the city is plan to implement in the future (if exists);
3) External city to fill the data collection template, collecting generic information about the city characteristics.

External cities have joined the cluster in a two-way process: by having contacted directly by the Secretariat, or by cities themselves showing interest in joining it.

The main result of this process has corresponded to the development of the profile of each external city. Each profile includes information on:

- General city data;
- Main environmental challenges faced by the city;
- NBS implemented and planned;
- Pictures/photos of the cities and the respective NBS;
- Link to more information on the implemented/planned NBS;
- Links to additional information on the city and its challenges.

These cities profiles are uploaded on the URBAN GreenUP project website, fostering the visibility of the external cities within the SCC-2 networks and beyond. Furthermore, for each external city a *list of social networks* was also developed, to disseminate information on achievements resulted from events (e.g webinar) as well as to expand the contacts invited to these.

Preparation of a standard PPT presentation – Cluster of Cities

The expansion of the Cluster and Network of Cities through the engagement of new external cities has been also pursued through the connection to other SCC NBS projects, cities associations and through direct contacts. For this occasion, a PowerPoint presentation showing the main characteristics of the URBAN GreenUP project and the advantages of being engaged in it was prepared and used during these networking meetings. This ppt was thus used to present the Cluster's objectives and added value – to be used by project partners aiming at attracting and engaging new cities to join (Annex A3, ppt).

Creation of a joint mailing list to fostering exchange among cities

In order to keep the engagement of external cities as well as the networking with new potential ones or relevant actors (e.g associations) potentially relevant to the project, in the activities, a joint mailing list has been created to spread the news about the activities deployed by the URBAN GreenUP project.

Replication webinars

These webinars aimed to foster transferability of knowledge and disseminating best practices within the 1st Level of the Cluster of Cities, thus between the project frontrunners and follower cities.

As a prior step, the feedback about possible topics and potential contributions was collected from partner cities (Table 4 below).

Table 4. Inputs from partner cities about potential topic for the replication webinars

Partner	Topic/Contribution
VALLADOLID	Site selection: It is better to implement NBS where a need has been identified, specially related with a citizen demand. On the other hand, in Valladolid most of the interventions will be developed in public buildings and spaces. The challenge of persuading internal colleagues to support a new kind of NBS in the city, because NBS are cross-sectional interventions. Valladolid have identified the following City Council Departments: Urban planning, Urbanism, Environment control, Parks and gardens, Mobility, Civil protection, Heritage, Public participation and Innovation.
MANTOVA	Mantova is working on urban adaptation plan and there is the need to define the "right" place to work on with nature-based solutions, considering that Mantova is Unesco Heritage. Mantova is also looking for an effective involvement of public work department, with the purpose to define common sustainable action in maintenance of public properties.
IZMIR	The main problem are the baselines. Izmir is always interested in how the other cities may be advancing in measuring and monitoring some of the KPI's for instance, biodiversity and some of the water related KPI's such as water quality and rain water retention (post-intervention). Similarly on the non-technical aspects, knowledge and data on public health baselines and improvement via interventions are highly generalized Same goes for local economic impacts, i.e job creation, value added generation etc. It might also be interesting to hear on issues for "non-European" cities, Turkey, China, Colombia, Vietnam and perhaps others: innovative urban planning pertaining to renaturing- creative public/private/social financing, enhancing inclusivity, etc.

1st Replication webinar

The first Replication webinar took place on M13 and was titled "Promoting Follower Cities involvement in the whole NBS/RUP process starting from the basics", with a presentation from the representative of Valladolid City Council (Annex A4, Agenda).

The webinar session was focused on addressing general issues from Follower Cities, promoting their involvement in the whole process and with three main objectives:

- To promote a deeper involvement from follower cities in the process of the URBAN GreenUP project, starting from the basics;
- To get ideas and knowledge moving, mainly from Frontrunner to Follower-Cities;
- To assist Follower Cities in preparing for their own NBS projects and strategies in future years.

To this extent, the webinar was built upon the experience of Follower Cities as the best way to trigger questions, doubts and reactions from Follower Cities.

Valladolid's presentation focused on why they got involved, what the key drivers were, and how their area came to be responsible for the work, continuing then with a discussion with follower cities on the experience of starting a NBS project. From this discussion emerged mainly that cross-cutting arrangements in governance rather than working in silos is one of the main issues when starting an NBS project, meaning that the cooperation/integration between different departments (environment, urban planning, innovation, smart city, digitalization, economic affairs, etc.) at the city level is a fundamental aspect to be taken into consideration.

The last part of the Valladolid's presentation was focused on the overview of the key challenges, with practical examples about find locations in urban environments for vertical mobile gardens, find adequate technical solutions for high innovative NBS green infrastructures such as green shady structures, etc.).

The webinar had 18 attendees (Annex A4, Participants) and in the last slot a Q&A session between frontrunner and follower cities took place. Table 5 below presents the main issues which emerged from this interaction. The video recording of the session is available here.

Table 5. Interventions from the 1st Replication Webinar

Partner City	Interventions
Medellin	Medellin has 2.5 million inhabitants and a lot of green areas, but most of these areas are not available for people to enjoy. Thus, the city wants to increase parks and green areas, but the intervention will be very expensive since they will have to intervene at the level of the underground. Therefore, is very expensive to make changes in the underground for example on electricity infrastructure. How to deal with these costs?
Valladolid	Valladolid has the same problem, interventions in the underground are expensive, and this is one of the key lessons learnt for the implementation of gardens. Is very important to work with infrastructure and urban planning. Valladolid did not make changes in electricity, they are adapting to them. The lesson learnt here is that if we cannot construct something because we cannot make changes in the floor, then we should change the place.
Medellin	Can you please clarify about the electro wetland?
Valladolid	Electro wetland is an innovative system which use waste water and generate electricity, because the micro-organism can produce electricity when they clean the waste water. This technology was developed by LEITAT in laboratory and it is the first time that is implemented in a real urban environment
Medellin	How do you deal with the smell of this system and opposition of inhabitants?
Valladolid	If waste water system is very well designed, then it will not smell, not attract insects such as mosquitos, for example. Also, Valladolid is not developing in the city centre, this NBS infrastructure is going to be developed in the surroundings.
Medellin	How do you manage the vertical gardens during the summer, it requires a lot of water?

Valladolid	Water availability for irrigation is a problem in Valladolid, especially because of the high temperatures. For this NBS, the city is using drop irrigation, with layers in the subsoil to keep as much water as possible. Valladolid is also using autochthonous plants, not flowers, which don't need a lot of water.
Quy Nhon	Can you clarify how you can do make the plan and the implementation at the same time? About financial issues. In Quy Nhon we have limitation of the budget so we are searching for contribution from the private sector, do you have any ideas to share?
Valladolid	*Design and implementation phases* Valladolid is designing the technical/economic issues of the interventions. The city is not allowed to construct before finishing the planning phase, so the city is not doing it at the same time. Sometimes the city has to redefine new places to implement the locations, so we cannot construct if everything is not very well defined, very well structured. *Financial issue* Valladolid is demonstrating as frontrunner city, thus the NBS will be demonstrative, which means that the city is adapting the NBS to the budget, not the opposite, so is making intervention only within the budget. About the contribution from the private sector, we have an example, which is the green façade that will be installed into a private building, a commercial site of El Corte Ingles. The URBAN GreenUP project is designing and constructing the wall, while the private owner of the building is in charge of maintain/keep the green façade.
Medellin	All the interventions are made with the city budget?
Valladolid	In Valladolid the NBS are demonstrators, therefore the city council is co-financing about 10% (500.000 thousand euros) of the budget of the intervention, the EU through the project is financing approximately 90%
SPI/RMIT (moderator)	Has the private sector been showing some interest in NBS, to somehow contribute to the implementation of NBS and makes public spaces around commercial centres more liveable? Have you trigger this kind of process?
Valladolid	Yes, with the green shady infrastructure the private sector loves the idea because people have started to use more the streets, increasing the economic potentials. However, they don't want to pay, at least for the moment. Also, other sellers in other streets have asked to the city council to implement the canopies. Another example of this is the green roof of the El Campillo municipal market, where the private actor knows that the NBS will increase the economic value of the place.
Mantova	Do you have dialogue with private stakeholders of industry about benefit of NBS?
Valladolid	Not for the moment, only punctual meetings. The city is pretty sure that after implementing the interventions, after URBAN GreenUP project, they will come back to us. They need to see the interventions first.

2nd Replication webinar

The second Replication webinar took place on M18 and was titled "Sharing stories from Liverpool and Izmir about working with internal departments to get past barriers in the definition, planning, implementation of NBS", with a presentation from the representative of Liverpool City Council and Izmir City Council (Annex A5, Agenda).

Izmir's presentation was focused on the following topics:

- Structure of Izmir Metropolitan Municipality;
- Scope of internal collaboration:
- Collaboration on different stages (design; tender process, construction, etc.)
- Stories of collaboration;

Liverpool's presentation was focused on the following topics:

- Working with internal departments; barriers to progress;
- Lessons learnt

The webinar had 14 participants (Annex A5, Participants) and the last slot was dedicated to a Q&A between frontrunner and follower cities. Table 6 below presents the main issues which emerged from the discussion. The video recording of the session is available here.

Table 6. Interventions from the 2nd Replication Webinar

Partner City	Interventions
Mantova	To Izmir: Mantova is starting now submitting with different departments (public works, urban planning, green department), but for the city is difficult to discuss about NB, because this is a new approach for Italian municipalities. Therefore, the city has to involve colleagues from different departments to explain them what we are trying to do with this project. Next steps will be classes with experts to help us to understand how we can work better and to localize in our city the best place for NBS.
Mantova	To Liverpool: we share some common concerns. One example is about the political changes over time that locally changes strategic options.
RMIT (moderation)	To Liverpool: can you explain a little bit more which is the difference between the original scheme and the revised one for the Bold Street?
Liverpool	The original scheme on bold street was to pedestrian areas to create ways for resident with two lines of trees, and to create a tree sustainable urban draining system. It was a very good schemes links to the citizens and there was quite a good opportunity. Liverpool done quite a lot of preliminary work. The reason was amended is because when it went to consultation a number of the businesses didn't like the idea of pedestrian areas rising the highway. In England because of the recent austerity many businesses are struggling, and they were a little bit worried about bring the car away and just putting a pavement for people to walk on, because this might remove some business. Political support was in this context helpful to find alternative schemes to transfer NBS into different areas in the city.

3rd Replication Webinar

The third Replication webinar took place on M24 and was titled "Innovative Business Models and financing instruments". The speaker was University of Bocconi (UBO) which presented financial instruments frameworks and tools for NBS at urban level (Annex A6, Agenda).

In particular, Bocconi's presentation was focused on:

- What is a business model;
- The value of NBS;
- Financial instruments;
- Business models canvas for NBSs;
- Case studies;

The webinar had 17 participants (Annex A6, Participants). During the Q&A session, some issues emerged from the discussion, and are reported in Table 7 below. The video recording of the session is available here.

Table 7. Interventions from the 3nd Replication Webinar

Partner City	Interventions
Demir	Did you come across any kind of studies that calculate these externalities of climate change, for example most of the value proposition in NBS seems to be prevention of some of the costs, for example health expenses?
UBO	There are several studies that provide information about value generation through the implementation of NBS, impacts related to the reduction of climate risk, etc. Thus, there is a wide literature on the evaluation of the economic impacts of NBS in cities, that can be used to identify the difference values, deliveries and capture the value that is related with the revenues, and is also useful to attract stakeholders in investing in sustainable measures.
SPI (moderation)	Do you have done any experience at city level and not just at the district level, as we are speaking about cities at the project level, if the tendency is that a city using a particular methodology, for example as London did in this business improvement district, and then try to reproduce this methodology in other parts of the city or the tendency is more to combine various business models?
UBO	In the case of London there are different BID, so yes in the case of the BID is the reproduction of the same business models in different parts of the city, but this can be also the top down approach because the business is in a particular area that decide to create the BID. Regarding other case studies is more a combination of different business models based on the action and measures that the city like to implement, because of course different actions have different impacts and so the business model can be different.
SPI (moderation)	Budget instruments are still the most used and easier and there is also some tendency cities tend to use more and more other kind of instruments and off budget instruments?

UBO	Cities usually used on budget financial instruments, but there are several case studies in which cities use also off budget instruments in particular payment for ecosystem services that is a good instrument to enhance the implementation of NBS and the protection of ecosystem services. Also, crowdfunding is having a role in the implementation of sustainable projects in cities, and also the public-private partnerships, but the biggest part is still on budget financial instruments.

Technical webinars

These webinars aimed to foster technical transferability between the URBAN GreenUP partners, and the 26 external cities composing the Cluster of Cities. The workshops also intended to promote the cities engagement in NBS activities, networking – both with the URBAN GreenUP 1st level cluster cities (front-runner and follower cities), and horizontally between the external cities – as well as the exchange of knowledge and the experience sharing.

The results of each one of these webinars are reported below.

1st Technical webinar

The first technical webinar, titled "How to develop and engagement plan that actually works: A case study of doing co-creation for a Renaturing Urban Plan (RUP)", took place on M33 with a presentation by SPI.

The webinar was focused on the presentation (Annex A7, Agenda) of the lessons learnt from co-creation activities developed with the City of Bragança (external city of the Cluster of Cities) and had the following agenda topics:

- Webinar's aim;
- Webinar's expected outcomes:
- Bragança. A factsheet;
- Starting sensitization to-down;
- Briefing local stakeholders about a new initiative;
- Team formation: community of co-creation;
- Context analysis: challenges affecting territorial development;
- Tools using NBS categories from URBAN GreenUP project;
- Tools: costumer journey and other service design tools;
- Learning outcomes of engaging communities.

The webinar had 10 attendees (Annex A7, Participants) and at the end of the presentation Q&A session with frontrunner and follower cities took place. Table 8 below summarizes the main issues which emerged. The video recording of the session is available here.

Table 8. Interventions from the 1st Technical Webinar

Project Partner	Interventions
Ludwigsburg	For us here these participatory processes are quite complex, because a lot of people has a lot of ideas and take a lot of time. We do not have time to implement all of these things in a short term, so we have the problem that some citizens are a little bit frustrated because they said that we always talk, always do these nice plans, but the municipality is too slow. So, this is a big challenge, if we do such huge participation process, we have to absolutely make clear what is possible in the implementation afterward. What is the current stage now of the project, is it still implemented in the municipality?
SPI (speaker)	This was a feasibility study, we applied again for a new funds, but unfortunately, we didn't get it. However, we have a regular contact with the municipality and they used this feasibility study and a final report to develop an internal strategy and right after fishing the workshop they used these and apply for some regional funding. Thus, they internally did get understanding and awareness of what this does it mean, what this means for the municipality, so something that they uptake on the long term. What we did in the last workshops, which was also not only about the evaluation of the project, but also there was kind of self-evaluation of their participation, was to stabilize the expectations, to think about some aspects and not to another in the short term, meaning what are you ready to do this happening, instead of the municipality have the key role. The citizens 'ok some of the nature-based solution your proposed are quite easy to implement if you have the permission of the city to do, so there was the question of passing the ball to them, to say 'ok are you ready to build the urban garden'? The key element for them by the end of this process was it is not someone external or the municipality to things, they need to be active, because sometime thing not need a lot of money, more time and efforts from people.

2nd Technical webinar

The second technical webinar took place on M35, and was titled "Remote Sensing and GIS as key for NBS & Urban Monitoring". After a general introduction about the URBAN GreenUP project by CARTIF, there was two slots of presentation, with discussions and Q&A session in between the slot and at the end (Annex A8, Agenda).

The first presentation was led by GMV and was titled "How can cities benefits from space data. The role of satellites in urban planning". This first presentation was focused on the different topics related to remote sensing and GIS for NBS and urban monitoring:

- What is a GIS;
- Data Revolution: 5G, machine learning, cloud computing;
- Satellites;
- What is remote sensing all about;
- Copernicus;
- Sentinel family;
- Vegetation indexes: NDVI;
- Urban planning remote sensing (examples - Valladolid);

- Monitoring in URBAN GreenUP;
- Examples (Liverpool – vegetation; Land Surface Temperature);
- What else can satellite do for cities;
- COVID-19 Sentinel 5P use;
- Earth observation challenges;
- Summary remote sensing

The second presentation was led by BITNET, and was titled "How can cities benefit from air quality monitoring: the role of drones and citizen engagement in monitoring air pollution with low-cost sensors". During this presentation, the following topics has been addressed:

- Urban Heat Islands;
- Air Quality;
- The City of Izmir;
- Nature-based solutions (NBS);
- UHI Measurement;
- Drone and Thermal Camera;
- InStu Measurements with HOBO devices;
- Air Quality Measurements;
- Portable Measurement Devices;
- Low-Cost Sensors and calibration;

52 participants have attended the webinar (Annex A8, Participants), and a two Q&A slot took place in between the presentations (Table 9, below).

Table 9. Interventions from the 2nd Technical Webinar

Project Partner	Interventions
1st Slot	
BITNET	Recently there was quite a lot of discussions on using satellite, especially Copernicus, and hackathons for developing new concepts. Did you hear anything about this?
GMV	GMV is participating in several hackathons, we are organizing one in Malaga. The thing with the hackathons is that what we are doing is to put people that like to work together and we select a topic, for example, how can we improve the City of Malaga by using these types of data that is available, free. We need to put that information to works, we need calculation, algorithm, machine learning to be able to replicate or improve an algorism. There is a group of people that like coding, and they are moving across Europe to in these hackathons. We are aware of these types of events, we are organizing one.

LVIV	Do you have any information on how other European cities uses Copernicus and other tools and maps in their normal work in city administration and municipality? To what extent they make decision based on data?
GMV	Yes, there are several examples of cities use this type of information, what I know so far is that the cities are really keen to use data, I have seen examples of use these types of data for air quality and temperature and so on, related to atmosphere, using models and then down streaming to their local sensors. However, there is a gap there, where a lot can be done with the optical imagery, for example to monitor green area. This topic of green infrastructure is quite new, and also these technologies has been available for 3 years now, so we are now starting to use this at local level. Sentinel 3 works quite well for regional level, GMV is extracting now information of the cities. The first thing that they have been used for cities is for under development cities, to measure difficulties that they are face, for measuring urban footprint, and for that information we are also able to measure urban heat island. So, for example can be benefit research but not put it in functionalities like for example, there are cities that own huge areas of forestry and cities councils so have to do to prevent the fire events, so we can estimate the biomass and we that information we can know the benefit from that, and at the and is really a useful economic information for a city.
CITY OF IOANNINA	How cities can access the data from the satellite?
GMV	You can get the access in many ways, the most common way is to go to Sentinel app, and you will have the row information there, you have to process it etc. If you want more precise or already processed information, you can go to Copernicus Land Services website and you can get there all the shapefiles regarding the Corina land cover, layers of the trees in your cities and a lot of other information that can be useful for your city.
2nd Slot	
CARTIF	There is not a homogeneous regulatory framework regarding the use of drones, at least in Spain is not possible to use drones, you don't have the permission from the minister/government and is very complicated to use drones. We are losing a very good opportunity and a very good tool to measure a lot of things, not only air quality. We had suffered a lack of this regulation when we are going to use drones in our cities.
BITNET	Drone is not our must, we use thermal camera to do the measurement, therefore drones are nice to look at atmosphere pollution, which is not a must in this project, we look at NBS impacts. So, in that sense we need to look at the rooftops, there are always alternatives, so we do not have to use necessarily drones. However, drones are also useful, especially if you want to look at atmospheric data, and especially if you working for air pollution project.

3rd Technical webinar

The third technical webinar took place on M37, and was titled "Trees in our cities. Opportunities, barriers and benefits", with a general introduction led by SPI and presentations by Mersey Forest and by the Center for Watershed Protection (Annex A9, Agenda).

The first presentation was titled “Trees in the city – why bother?” and has focused on:

- Urban Trees in the Mersey Forest (URBAN GreenUP);
- A focus on trees and water: examples of what can be achieved from the US;
- Tress in the city: why bother?
- Physical and strategic challenges of the URBAN environment;
- URBAN GreenUP delivery of urban trees: design, delivery, functionality, monitoring.

The second presentation was titled “Urban Forests, Trees, and Water Quality”, and gave a glimpse of the perspective from the Chesapeake Bat Watershed in the United States of America. This presentation focused on the following topics:

- Introduction about the Center for Watershed Protection;
- Urban catchment (watershed) forestry overview;
- GI for water quality improvements for Chesapeake Bay;
- Data supporting water quality crediting;
- The use of planning credits to incentivise urban tree planting; Looking ahead.

The webinar had 33 attendees (Annex A9, Participants), and ended with a Q&A session. The main results of this interaction are reported in Table 10 below.

Table 10. Interventions from the 3rd Technical Webinar

Project Partner	Interventions
City of Lviv	(to Mersey Forest) Do Liverpool engage citizens in co-development, co-financing and co-maintaining NBS and trees in particular?
Mersey Forest	The challenge is that urban trees can be quite technical. We do always try to consult local communities. Sometimes people don’t want trees for different reasons. The maintenance of our trees tends to be carried out by our City Council, without often people maintaining their own trees. In terms of the finance, most of the finance for the trees tend to come through taxes and funding streams and sometimes through development of green infrastructures as part of the landscaping. Is not that often that people fund the planting of their own trees, it is not a common practice.
Izmir	(to Center for Watershed Protection) Do you prefer to work with other sustainable water management facilities such as bioswales in urban landscapes, you look at the concept as a whole, not just trees?
Centre for Watershed Protection	We work at the whole system, bioswales and other sustainable water management facilities. Many of these systems are very expensive to build and can take up space. Trees may innovate more into the overall landscape when and reduce the footprint. We really want to see how the trees can reduce the footprint of other those more engineering practices and also provide a great co-benefit that the trees provide by cooling, etc. We look at as a whole concept, not just the trees. Is more straightforward for engineers and practitioners to calculate. We look at trees as a component of the system.

SPI (moderator)	(to Center for Watershed Protection) Regarding the urban authority that is usually responsible for this kind of planning, not only urban planning, but also for providing guidelines to greening in US. Do you have guidelines coming from the national level, from the city level? How this works?
Centre for Watershed Protection	The guidance for most of engineering practices, even the use of trees is established at the state level with usually inputs and general guidelines and framework from federal government, but it is implemented at the state level, and the local jurisdictions are the ones that interpret. Thus, start at the state level and goes down to the local level, essentially implementation. The local might also have some variations on specifications, but they do not deviate too much from the state tender. Washington D.C is very unique in US, they create their own practices and own system, but the most part is developed at state level.

4th Technical webinar

The fourth technical webinar took place on M40, and was titled "NBS for Water Quality and Quantity Management in Urban Environments", with a general introduction led by SPI and presentations by CENTA and by LEITAT, followed by a final Q&A session (Annex A10, Agenda).

The first presentation was titled "How to implement green flood management in the urban landscape". The following topics were discussed:

- Impact of urban development, problems related to water infrastructures in cities, and types of flooding;
- Management of floods of river origin;
- Management of floods of urban origin;
- Examples of URBAN GreenUP solutions;

The second presentation was titled "How can NBS contribute to increase water quality and circularity in cities", with the following agenda:

- Water pollution in cities;
- NBS for water pollution control;
- URBAN GreenUP solutions (including case studies from frontrunner cities);

55 participants have attended the webinar (Annex A10, Participants), that ended with a Q&A session. The main results of the knowledge exchange among participants that has resulted from this session are reported in Table 11 below.

Table 11. Interventions from the 4rd Technical Webinar

Project Partner	Interventions
City of Oslo	What is known about the effectiveness of pollutant removal from NBS?
Leitat	In terms of water quality, they are tested a lot. NBS have been historically used to control waste water and water pollution, in the so-called wastewater treatment, so we are speaking about wetland that are specifically designed for

	water pollution control. In this context, NBS have very good removal efficiency, they have also been tested to remove pollutants. Now there are a lot of studies that demonstrates that they are able to eliminate different kind of pollutants, like metals, antibiotic, pharmaceutical, pesticides, etc.
Centa	Pollutant removal in wetland have been tested for many years and there are solutions that are implemented in many places for wastewater urban plans, so they remove up to 90-95% of organic matter, around 90% of suspended solids, and also depending on the design they can remove up to 50% of other pollutants. It is about how they are designed and which the objectives are. If we treat wastewater with this kind of systems, the urban wastewater, this water in a city is much more diluted than a conventional wastewater, because there is a lot of run-off water, and the concentration of pollution is lower, so they can be even more effective than in a conventional wastewater treatment plan.
City of Tampere	About nature-based waste water treatment, how do you prevent or manage smell because this is the main question when we think about these systems?
Leitat	This is a very common fear, especially in cities we have this type of problems, when we implement the electro wetland in Valladolid. Well operated, nature-based waste water plans, they don't make small, there are several methods, for example sub-surface systems in which water is not at the top of the surface, you cannot see the water, they are designed not to produce smell.
Centa	Centa has an experimental plan and we treat waste water from a small village of 2500 people, and there are a lot of nature-based solutions to treat waste water, and it doesn't smell. And mosquitos only proliferate when there is a water surface, free water surface, but if you want to prevent this kind of proliferation, you use absorbent flow systems and you don't have that problem. Everything depends on the design of the system and the objective do you want to get.
City of Oslo	Have you looked at the removal of micro plastics? Tyre wear produces micro plastic which can end up in road run-off.
Centa	We know that there is some research on this topic, but is a very new topic and there are no final results yet. Micro plastics can be removed by sedimentation or filtration, and they can be removed in small parts, but for the ones that are microscopic we have no results yet.
Liverpool	How much electricity can be generated by electro wetlands?
Leitat	Since now we have worked in pilot systems and we have generated low inputs devices, such as for example sensors, and now when we upscale it to Valladolid we will see, because it is a very innovative technology. There are very few examples at the demo scale, so at the scale that we are going to implementing, and the resistance associated to the scalability, we still don't know. However, you can power low input devices such as sensors or flow meters, or these kind of measuring devices.
City of Hegividek	How much run-off water a raingarden can hold? Our problem is that after a storm, water flows down the mountain streets, we want to reduce its speed and keep this water, possibly use it for watering later. Is there a natural solution? A raingarden or other plant association can solve it?

Centa	The quantity of run-off water that you can reduce depends on the design. If you want to manage a big amount of run-off in a site, maybe is better to use detection ponds, that must be bigger, and must be calculated to collect all these tun-off water in a rainfall. Therefore, it always depends on the quantity, you can apply these measures as the detection ponds, affordable parks (a place that people can use for amenities, having sports), raingardens (small interventions that can be used for small quantities of water), all always depend on the infiltration capacity of the system. You have to make studies about the percolation and filtration capacity of the soil and then use materials to provide better infiltration. Thus, the selection of one solution or another will depend on how much water you want to manage.
Izmir	We all know that canalizing the urban rivers increase the peak flow and frequency. Are there any examples in your cities of urban rivers flowing in their natural beds? And how they are doing well?
Centa	Not in the cities of the project. All the measures and solutions have not been implemented yet. So, we don't have examples in our cities of these solutions, but have been implemented these kinds of solutions in other places like in Washington, China, or Australia. If you search online a little bit you can find a lot of examples of this kind of solutions where renaturing the channels of the rivers have effects on the downstream and on the reduction of erosion.

5th Technical webinar

The fifth technical webinar took place on M60, and was named "How to develop a Renaturing Urban Plan (RUP) for your city?". It started with a presentation of the URBAN GreenUP RUP methodology given by ACCIONA (WP1), where the following topics were further explored:

- Engagement and co-creation
- Exploration
- Diagnosis
- Visualization
- Planning
- Information.

The webinar, then, proceeded with an overview from the Follower Cities, where Mantova, Medellín and Quy Nhon shared their experiences so far regarding the Urban GreenUP methodology application on their territory.

Finally, there was time for a Q&A session, when cities had the opportunity to discuss and learn from each other experiences (Annex A11). The webinar had an attendance of 59 participants and the video recording of the session is available here.

After this webinar, occurred the 5th Coaching and Mentoring Workshop, described on chapter 4.4, due to the similarities of the addressed topics. Some information from the technical webinar was useful to the Workshop, so it made sense to merge the two activities into the same day.

6th Technical webinar

The sixth technical webinar took place on M69, under the title "Webinar on Developing KPI and data collection program for the NBS implementation and monitoring". After the reception, two presentations were made about the KPI Selection Process and the Data Collection procedures by GMV. Thereafter the three FR cities explaining their cases, and lastly there was time for some discussion and the final conclusions (Annex A12, agenda).

The first two presentations about the KPI selection process and data collection gave information on how to face the existing challenges, using examples from the FR cities. In these examples, the type of indicator, the KPI definition and the related NBS were presented, as well as the measured method and the used KPI unit. Relating to the data collection, the main focus was on how to make the data findable, accessible, interoperable and reusable.

The FR cities presentations were useful to share information on the lessons learnt to provide practical inputs for the others to learn from their cases. Experience on Table 12's KPI's were shared, and feedback was given to the other cities.

Table 12 – KPI's discussed at the 6th technical webinar.

KPI Name and Definition	Cities that mentioned this KPI	Data Type
Temperature decrease in mean and peak - Decrease in mean or peak daytime local temperatures	Valladolid	Quantitative data
Nutrient abatement - Organic matter abatement in terms of chemical and biochemical oxygen demand (COD and BOD) and total solids removal (TSS).	Valladolid, Liverpool	Quantitative data
Pollinator species increase - Increased habitat for pollinators in NBS GI may contribute to increased abundance of pollinators in the wider urban area.	Valladolid, Liverpool, Izmir	Quantitative data
Carbon Removed - Urban vegetation has an important role in offsetting CO2 concentration by acting as a sink	Izmir	Quantitative data
Annual mean levels of fine PM2.5 and PM10 Particles – Effect of NBS on reducing the levels of particulate matter PM2.5 and PM10 air pollution, to increase air quality and benefit the population's respiratory health.	Liverpool, Izmir	Quantitative data
New Businesses – Effect of NBS on increasing desirability of the area to attract new businesses, bringing economic benefits.	Liverpool	Socio – Economic Data
Green intelligence awareness (Educational activities) - Quantify the number of activities, publications or campaigns focused on the enhancement of green intelligence awareness per year, related to a NBS.	Valladolid	Socio – Economic Data

Citizen perception on NBS - Measures well-being variables such as a) Green space visitors' level of satisfaction. b) Self-reported quality of life (QoL). c) Frequency of green space visitors'	Valladolid	Socio – Economic Data
NBS contribute to improve the quality of life of elderly people both by reducing the pollution and providing new spaces for social interaction and recreational/physical activity development.	Valladolid	Socio – Economic Data
Benefits from interventions – Effect of NBS in investigating the variety of socio-cultural benefits, in terms of typology, functionality and sustainable benefits.	Liverpool	Socio – Economic Data
Crime Reduction – The effect of all interventions (technical and non-technical) on crime rates	Liverpool	Socio – Economic Data
Land and Property Price Change – Effect of NBS on increasing property values, in terms of mean house prices and rental markets	Liverpool	Socio – Economic Data
Green Intelligence Awareness	Izmir	Socio – Economic Data
Job Creation	Izmir	Socio – Economic Data
GI connectivity - Increased connectivity to existing GI	Valladolid	Modelling data
Trees density	Valladolid	Modelling data
Noise reduction - Reduction in the levels of noise in Hospital Militar parade	Valladolid	Modelling data
Green Space Accessibility – Effect of increasing public engagement with NBS through the use of green travel routes and urban green spaces	Liverpool, Izmir	Modelling data
Carbon Sequestration – Effect of trees and other green infrastructure for carbon sequestration	Liverpool	Modelling data
Engagement with NBS – Effect of NBS on connecting the community to the NBS through activities such as community gardening and conservation	Liverpool	Modelling data
Energy saving from reduced building consumption - Green Infrastructure can play a role in reducing energy consumption	Izmir	Modelling data

The webinar had 24 attendees and its recording can be watched here.

4.2 Link with other SCC NBS projects

Building upon the Cooperation Manifesto, several interactions with other SCC NBS project took place. Such interaction led not only to share and disseminate relevant project outputs, mainly to promote cross-referencing, but also to proactive mutual engagement through participation in concrete events.

The activities developed under *Task 6.8 Link with other SCC NBS projects* allowed fostering global NBS engagement and networking with European and International cities as well as with other projects focused on NBS.

4.2.1 Activities developed

These activities were:

- Identification and establishment of contacts with other SCC NBS projects – including meetings, presentations and the participation in clustering activities (task forces).
- Mutual participation in events and initiatives – especially on webinars.
- Organization of external webinars – including 4 public webinars opened to external cities of the URBAN GreenUP Cluster of Cities as well as to other cities and organizations worldwide.
- Organization of the URBAN GreenUP International Conference in Valladolid – which was served as a very positive way for different SCC NBS projects members share ideas, find common grounds and generate further discussion on the NBS topic.

4.2.2 Achieved results

Establishment of contacts with SCC NBS projects, and mutual participation in webinars and Initiatives

On the linkage with other SCC NBS project, WP6 has been in contact with various other SCC NBS project managers in order to promote effective linkage between projects. This led to some concrete results. Contacts with other SCC NBS projects were identified and established, leading the following synergies:

- Meetings with Naturvation and EdiCitNet project officials (M29);
- Presentation in external project webinars (Naturvation; M32);
- EdiCitNet presentation at the Urban GreenUP Consortium Meeting (M28);
- Separate meetings with external projects: PHUSICOS; URBINAT, GROWGREEN, UNALAB, CONNECTING NATURE, REMOURBAN, SPARCS, POCYTIF, URBforDAN.

URBAN GreenUP also participated in clustering activities with other H2020 NBS projects under the coordination of NetworkNature. Clustering activities are carried out as part of the following task force groups:

- TF 1: Data management and EU NBS knowledge repository

- TF 2: NBS Impact evaluation framework
- TF 3: Governance, business and finance models
- TF 4: NBS Communicators
- TF 5: Co-creation and governance

IFO represents URBAN GreenUP in TF4. The group has met on regular teleconferences held every second month since December 2020. The activity of TF4 enabled mutual interaction and support to communication and dissemination activities, thus maximizing the impacts which could achieved by each single project. As part of this collaboration, URBAN GreenUP has invited the other projects to: i) attend and in some cases join as speaker the webinars organised by URBAN GreenUP; ii) to help promote URBAN GreenUP results and initiatives, such as the Good Practices Kit and the webinars; iii) participate in the URBAN GreenUp #Flowers4Bees social media campaign.

Mutual participation in events and initiatives

Aiming at reaching out a larger Network of Cities, was also important to ensure the linkage with the Main City Associations and Networks at the European and International levels, using a case-by-case approach depending their particular objectives, focus and interests. At this level, the invitation/participation in mutual events, cross sponsorship and promotion of events and the organization of joint events are potential synergies creating activities to be considered.

Under Task 6.8, the secretariat of the Cluster and Network of cities have participated in the following webinars and initiatives organized by other SCC NBS projects, including the subsequent share of presentations and recording:

- Participation of Urban GreenUP project partners in the ThinkNature Summer School 2019;
- Participation of Urban GreenUP project partners in the ThinkNature Summer School 2019;
- Participation of Urban GreenUP project partners in the ThinkNature Webinar 1 « NBS: Concept, Practices and Benefits»;
- Participation of Urban GreenUP project partners in the ThinkNature Webinar 2 « Technology and Practice of NBS »;
- Participation of Urban GreenUP project partners in the ThinkNature Webinar 3 «Financing and Business Models for NBS»;
- Participation of Urban GreenUP project partners in the ThinkNature Webinar 4 « Governance Models for NBS: Policies, Strategies and Decision Making Mechanisms»;
- Participation of Urban GreenUP project partners in the UrbanByNature 1 “What are your city’s needs and experiences on nature-based solutions?”;
- Participation of Urban GreenUP project partners in the UrbanByNature 2 “How to co-create nature-based solutions?”;
- Participation of Urban GreenUP project partners in the UrbanByNature 3 “How can cities develop indicators to assess impacts of nature-based solutions?”;

- Participation of Urban GreenUP project partners in the Ecosystems Knowledge Network platform webinar ""A tour of the Natural Capital Laboratory - trialing new approaches to measuring, valuing, and communicating environmental and social change";
- Participation of Urban GreenUP project partners in the ThinkNature "Paris Form on NBS";
- We Value Nature Virtual Office Hours;
- Living Labbers webinars;
- Naturevation webinars;

Organization of external webinars

The global engagement and especially networking results also came from the implementation of 4 public webinars opened to external cities of the URBAN GreenUP Cluster of Cities as well as to other cities and organizations worldwide. These webinars were co-organized in coordination with international best practices and other sister SCC NBS projects, as a results of the previous steps about the identification and establishment of contacts with other SCC NBS projects. In particular, these series of external webinars were focused on sharing stories from cities on the implementation of different typologies Nature Based Solutions, counting with the participation of a partner city from the URBAN GreenUP Project and an external city which stands out as an international benchmark in the employment of such specific types of solutions.

Vertical greening: Valladolid and Singapore

The first external webinar took place on M42 of the project (November 2020) and counted with 64 attendees. It was focused on the topic of vertical greening, with a general introduction by CARTIF and presentations from the Ayuntamiento de Valladolid and from the Singapore Green Building Council, which are resumed here:

- Brief overview of the URBAN GreenUP project presented by URBAN GreenUP project coordinator (Raúl Sanchez, CARTIF), including actions, impact geographical scope, and structure of the Cluster of Cities including presentation of the external cities composing the cluster;
- Presentation of FR city of Valladolid (Alicia Villazán Cabrero, Ayuntamiento de Valladolid) with the presentation titled "Valladolid: Green Infrastructure in the specific context of the city – the URBAN GreenUP Project". This presentation has focused on key challenges, results in terms of impacts on citizens and lessons learnt, public-private collaboration and maintenance of green infrastructures. Several examples of vertical greening were brought: a green covering shelter & mobile garden of a 488m2 daily market under the green canopies, three types of green vertical mobile garden (vegetal sculpture, board with bench, stackable frames mobile gardens) and green roof. The green façade of El Corte Inglés was presented as example of public-private collaboration, presenting maintenance requirements and water and energy demand;
- Presentation of the story from the city of Singapore (Yvonne Tan, Singapore Green Building Council), with the presentation titled "Singapore: Vertical Greening in high

density city environments". During this presentation, the following issues have been discussed: overview of how Singapore promotes vertical greening, and where we are today; Encouraging private building owners to embrace green walls; Lessons learned; keeping a green wall alive and maintaining it affordably;
- The webinar ended with a final slot for Discussion and Q&A.

More information about this webinar, such as the agenda, the event recording or the speakers' profile can be found here.

Floating gardens: Liverpool and Chicago (in coordination with UNaLAB and Connecting Nature)

The second external webinar took place on M45 of the project (February 2021) co-organized with the NBS fellow projects UNaLab and Connecting Nature. 79 participants attended this event. The webinar was focused on the topic of floating gardens, with a general introduction by CARTIF and presentations from de Liverpool City Council and from Urban Rivers:

- Brief overview of the URBAN GreenUP project presented by URBAN GreenUP project coordinator (Raúl Sanchez, CARTIF), including actions, impact geographical scope, and structure of the Cluster of Cities including presentation of the external cities composing the cluster;
- Presentation of FR city of Liverpool (Juliet Staples, Liverpool City Council) on city's floating ecosystems, with the presentation titled "Liverpool's Floating Ecosystems". The city has provided the examples of the Saltwater Floating Ecosystem in the city docks and of the Freshwater Floating Ecosystem in a park lake. By using these a case studies, the presentation has focused on issues as location, design features, manufacture and installation challenges, planting and installing challenges, and lessons learnt;
- Presentation of the story from the city of Chicago (Nick Wesley, Urban Rivers), with the presentation titled "City Immersive Floating Eco-Parks. The Chicago Wild Mile". The presentation has focused on rethinking what a river can be. Starting from the trilemma of Chicago residents, built environment and natural world, the city has highlighted the main Chicago's environmental challenges, and presenting the city vision 2020 as the Wild Mile, based upon three phases of implementation;
- The webinar ended with a final slot for Discussion and Q&A.

More information about this webinar, such as the agenda, the event recording or the speakers' profile can be found here.

Green parklets: Izmir and San Francisco (in collaboration with Grow Green)

The third external webinar took place on M47 of the project (April 2021) co-organized with the NBS fellow project Grow Green. 64 people attended this webinar, which was focused on the topic of green parklets, with a general introduction by CARTIF and presentations from the Manchester City Council and Izmir Metropolitan Municipality:

- Brief overview of the URBAN GreenUP project presented by URBAN GreenUP project coordinator (Raúl Sanchez, CARTIF), including actions, impact geographical scope, and

structure of the Cluster of Cities including presentation of the external cities composing the cluster;

- Presentation of the story from the city of Manchester by the GrowGreen coordinator (Michelle Oddy), with the presentation titled "GrowGreen Project Presentation";
- Presentation of FR city of Izmir (Berna Ataman Oflas) with the presentation titled "Pocket parks of Izmir: Installation of parklets as a part of URBAN GreenUP project". In this presentation, the city has presented the demo sites as well as the main challenges. In particular, parklets implemented in Izmir were analysed by discussing the general description and purpose, technical specifications, implementation details, operational and maintenance related issues, and final considerations.

Further information about this webinar, such as the agenda, the event recording or the speakers' profile can be found here.

Green rooftops: Valladolid and Rotterdam

The fourth external webinar took place on M49 of the project (June 2021), and counted with the participation of 40 attendees. The webinar was focused on the topic of green rooftops, with a general introduction by CARTIF and URBiNAT Project Presentation and presentation from de Valladolid City Council/Singular Green and from the city of Rotterdam:

- Brief overview of the URBAN GreenUP project presented by URBAN GreenUP project coordinator (Raúl Sanchez, CARTIF), including actions, impact geographical scope, and structure of the Cluster of Cities including presentation of the external cities composing the cluster;
- Presentation of the URBiNAT project (Tom Mackensie, URBiNAT D&C leader);
- Presentation of the URBAN GreenUP front runner city of Valladolid (Alicia Villazán, Ayuntamiento de Valladolid) and technical partner Singular Green (Patricia Briega), and focused on: green infrastructures in Valladolid, green covering shelter, green roof and green canopies (key challenges, results in the citizens, lessons learnt) and maintenance of green infrastructures;
- Presentation of the story from Rotterdam (Paul Van Roosmalen, Municipality of Rotterdam), focused on the city context, on the approach to green rooftops and on their functions, areas of implementation, relationships with relevant local urban policies, and rooftop flagship projects.

Further information about this webinar, such as the agenda, the event recording or the speakers' profile can be found here.

Organization of the URBAN GreenUP International Conference in Valladolid.

On March 29th 2023, there was a one-day international URBAN GreenUP event in Valladolid, Spain, whose main purpose was to celebrate the success of the project after 6 years of

cooperation, support and progress towards the developing, application and replications of Renaturing Urban Plans in cities to fight against climate change through Nature-based Solutions.

Additional to the presentation of the project's achievements and legacy, it was also an opportunity for other SCC NBS projects promote their work and, through very positive and constructive discussion, try to find common grounds, address the main challenges found, and to reflect on the perspectives for the future. This was especially explored through a roundtable forum on the topic 'Joint legacy of the NBS projects.' Among the participants, there were representatives from the following SCC NBS Projects:

- Unalab Project (https://unalab.eu/en);
- Connecting Nature project (https://connectingnature.eu/);
- GrowGreen project (https://growgreenproject.eu/).

Besides the forums and experts' presentations, the meeting also included a technical site visit, where participants were able to learn more about the NBS interventions carried out in Valladolid and visit the city.

Further information about this conference, such as the agenda and the speakers' profile can be found here.

4.3 Link with synergies and clustering activities with relevant EU projects and other initiatives

This section reports the link with synergies and clustering activities with relevant EU projects and other initiatives under Task 9.7.

URBAN GreenUP Project has actively contributed in the Task Force II regarding NBS impact evaluation. The Project has contributed during this period to transferring knowledge and lessons learnt, and providing case studies to the NBS Impact Evaluation Handbook development.

The Handbook aims to provide decision-makers with a comprehensive NBS impact assessment framework, and a robust set of indicators and methodologies to assess impacts of nature-based solutions across 12 societal challenge areas. The project team has contributed by providing KPI descriptions, case studies and specific contributions in different chapters.

Figure 3. Cover of the handbook published by the EC.

https://op.europa.eu/en/publication-detail/-/publication/d7d496b5-ad4e-11eb-9767-01aa75ed71a1

The project continues to contribute in TF2 through the co-coordination (together with the Connecting Nature project) of the **mini-handbook on monitoring NBS impact in biodiversity** also promoted by the EC.

The project team is also actively involved in the activities promoted by Network Nature:

- CARTIF and GMV, attended the international conference NetworkNature: Upscaling Nature-based solutions in policy and practice.

Figure 4. NetworkNature International conference

During this event, the URBAN GreenUP project will develop a Parallel session: on "Informing and supporting policy whilst ensuring the lasting legacy of NBS projects" in collaboration with UNALAB, Connecting Nature and Grow Green projects.

- CARTIF attended the NetworkNature Task Forces Cluster Meeting on 28th September 2022.

Topic	Action
Task Forces	**TF1** • If you would like to join Task Force 1: Data and Knowledge Sharing please contact jonathan@oppla.eu or Alberto.POZZA@ec.europa.eu **TF2** • If interested in joining TF2 please contact: Laura PALOMO RIOS <Laura.PALOMO-RIOS@ec.europa.eu> and Verónica RUIZ GARCIA <Veronica.RUIZ@iucn.org> • If interested to contribute to the NBS & Biodiversity work under TF2 please contact: Esther San José Carreras (estsan@cartif.es), Stuart Connop (s.p.connop@uel.ac.uk), Raúl Sánchez (rausan@cartif.es) & Caroline Nash (c.nash@uel.ac.uk) **TF3** • To join TF3 contact: Victoria Blessing Victoria.Blessing@steinbeis-europa.de **TF4** • All new projects' communicators are encouraged to join TF4 - please email kassia.rudd@iclei.org and hello@networknature.eu **TF6** • If interested in joining TF6, please contact 'GIONFRA Susanna' <susanna.gionfra@iucn.org>; Knud Erik Hilding-Hamann <khi@teknologisk.dk>; or Isabel Ferreira <isabelferreira@ces.uc.pt>

Figure 5. NetworkNature Task Force Cluster Meeting

- CARTIF also participated as a speaker showcasing the lessons learned from the project as part of the side events in the framework of the COP27.

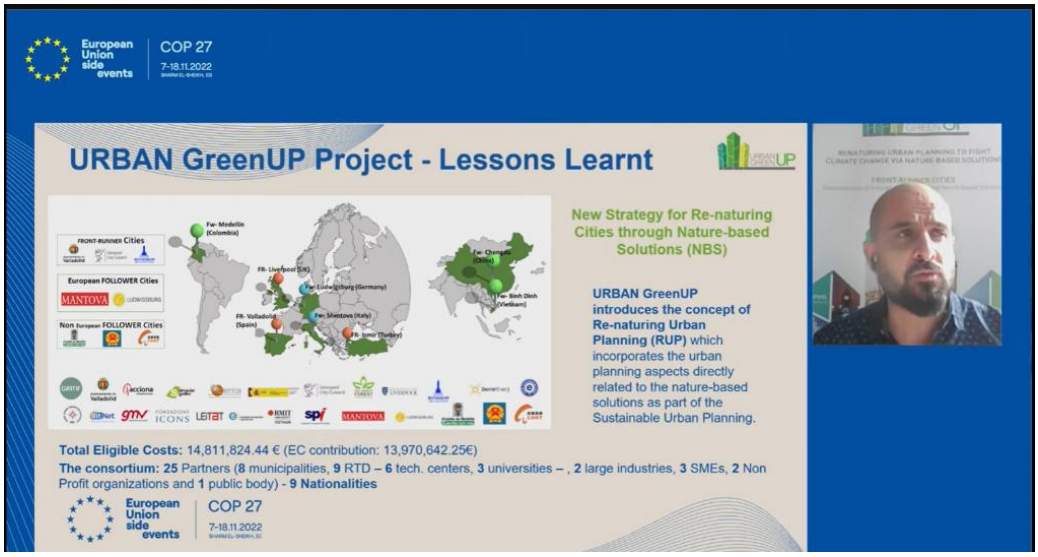


Figure 6. URBAN GreenUP participation in the COP27.

- CARTIF participated in on-line way in the Connecting-Nature Impact Summit as a speaker (28th-29th April 2022 - Genk).

Figure 7. Agenda of the Connecting Nature Impact Summit

- CARTIF participated in on-line way UNALAB: Designing Urban Spaces with Nature (6th - 7th September 2022), Eindhoven / Online.

4.4 Coaching and mentoring actions

4.4.1 Activities developed

Coaching and mentoring activities were deployed under *Task 6.5 Coaching and mentoring from frontrunner to follower-cities,* and has covered the following:

- Organization of FR/FC cities workshops during the Consortium Meetings;
- Yearly virtual sessions (in between workshops);
- Dedicated platform (mailing list) for interaction/knowledge exchange.

The designing of the coaching and mentoring activities was based on a three-folder process:

Firstly, the identification of the knowledge needs and key challenges, where follower cities have raised the necessity to learn about certain topics from frontrunner cities, who had share knowledge with follower cities on these topics through ppt presentations during the workshops. This process of knowledge transfer has started with the identification of these needs and key

challenges from follower cities, as presented in the Table 13 below. In some cases, one follower-city asked to learn about particular topics from a specific frontrunner city.

Table 13. Identification of FCs knowledge needs/key challenges for the 1st Coaching and Mentoring workshop

Follower City	Knowledge needs and key challenges
Mantova	NBS effects on **Urban Planning and on Public Health and Well Being**. Giving a **value to NBS** in euros represent a fundamental issue (want to hear on these topics from Liverpool). They also would like to learn about technical information on NBS solutions that can help in **water management** (want to hear on these topics from Valladolid).
Ludwigsburg	Especially interested in the cost of NBS. Ludwigsburg asked for an **overview of the costs for each NBS**, since **financing of NBS represent the biggest challenge.** Other key challenges identified were **heat, water management (especially during heavy rain events) and air pollution.** They also would like to learn about NBS solutions, namely: **Green noise barriers; green shady structure; green roof/green covering shelter for bus stop; green facades.**
Medellín	Medellín has identified as knowledge needs and key challenges the following ones: how **financial issues** will be worked for the implementation, maintenance and monitoring of the NBS? Has a particular financial instrument been created that provides a methodological route for this issue? **How are the different actors articulated** to the implementation, maintenance and monitoring of the NBS? Is there a document that contains these guidelines? A specific prototype to follow as a guide? Where and why should the NBS be implemented? (What are the **criteria that the leading cities have to prioritize sites**?). What specific considerations were taken to prioritize one site or another to apply the NBS? Is there a document or **methodology for the prioritization of NBS** in relation to the challenges that must be addressed? These knowledge needs for Medellín were considered as the most important ones because they worked with a matrix where the different key were related to the KPIs and the proposed NBS, trying to classify which NBS apply for Medellin. The URBAN GreenUP project has a very broad list of KPIs, but Medellin need to know **how** these **indicators are being prioritized a**nd if they have a specific **hierarchy of challenges,** how are the frontrunner cities applying it. What suggestions frontrunner have regarding the issue and **which KPI did frontrunner cities consider the most important,** related challenges and KPIs? **What was the criteria** used: on demand? Specific critical points to work in certain areas of the city? Is it more a **political approach or does it have a technical basis o**n which Medellín can take it into account?
Quy Nhon	To learn more about **participation of stakeholders** in the process of implementing NBS, as well as **funds for implementation** of NBS.

Secondly, on a knowledge driven basis different knowledge sharing format and content have been developed and transferred from frontrunner cities to the follower cities, from academic partners (with tools and methodology) to the cities and companies, from companies (technical design and maintenance methods) to the cities and academic partners. Example of the knowledge transfer activities of this type are coaching webinars, tools usage exercise. Finally,

throughout the NBS implementation cycle at frontrunner cities, comprehensive knowledge and lessons learnt such as legal and technical barriers, practical guideline was developed by cities and academic partners to transfer to follower cities and cities cluster. In addition, it will help cites to develop its planning and implementing capacity with regard to NBS. This knowledge transfer method was delivered through both technical webinars and coaching & mentoring activities.

Table 14 below systematises the description of activities performed within the coaching and mentoring from FR to FC cities (Task 6.5):

Table 14. List of coaching and mentoring activities

Nr.	Activity	Type	Date	Location/ Context	Organiser	Participants
1	"Key challenges in the development of sustainable NBS urban plans"	1st Coaching and Mentoring Workshop from Frontrunners to Follower Cities	M36	6th CM (Izmir virtual)	SPI	-
2	"Progress in the development of sustainable NBS Urban plans"	Workshop	M38	1st yearly virtual session in between the 7th and 8th CMs.	SPI	-
3	"Participative Urban Greening: from theory to practice"	2nd Coaching and mentoring Workshop from Frontrunners to Follower Cities	M40	7th CM (Liverpool virtual)	SPI	-
4	"Barriers in implementing the NBS regarding planning, approval process, technical designing, procuring, implementing, and commissioning and floating island"	3rd Coaching and mentoring workshop from Frontrunners to Follower Cities	M46	8th CM (Valladolid virtual)	SPI, RMIT, CAR	10
5	"Barriers and challenges in implementation of Parklets"	4th Coaching and mentoring Workshop from Frontrunners to Follower cities	M58	10th CM (Liverpool - Virtual)	RMIT/SPI	All members of the Urban GreenUP Consortium
6	"How to develop a Renaturing Urban Plan (RUP) for your city?"	5th Coaching and Mentoring Workshop	M60	Virtual	RMIT/SPI	Network Cities

7	"WP1 /WP6 Methodology Vs Follower cities"	6th Coaching and Mentoring workshop	M65	Liverpool (during the 11th CM)	ACC/RMIT	All members of the Urban GreenUP Consortium
8	"Public-Private partnership in implementing NBS"	Workshop	M66	2nd yearly virtual session in between the 9th and 10th CMs - (postponed due to the project extension)	RMIT/ SPI/VAL	13

4.4.2 Achieved results

The identification of knowledge needs and key challenges of follower cities (previous paragraph) served the purpose of defining the agenda of the coaching and mentoring workshops, paving the ground also for other knowledge transfer activities, as described below.

1st Coaching and Mentoring Workshop and partner cities progress

The 1st Coaching and Mentoring workshop was titled "Key challenges in the development of sustainable NBS Urban plans".

This workshop took place on M36 during the 6th Consortium Meeting (Izmir, virtual) and had the following agenda:

- Criteria for site prioritization;
- KPI selection and prioritization;
- Demonstrator projects of interest;
- Financing;
- Engagement.

Each frontrunner city had presented the following topics:

- Financing NBS (Liverpool);
- Maintaining NBS (Liverpool);
- Planning and timescale for NBS implementation (Liverpool)
- What are the follower cities experiences on designing a RUP? Are you the URBAN GreenUP project tools and methodology (Valladolid)?;
- How are you engaging the community? Are you developing co-creation activities (Valladolid)?;
- Barriers and boundaries for implementation. How to overcome (Izmir)?;

During the 6th Consortium meeting, representatives of the city councils of frontrunners and follower cities has also presented the progress in the development of NBS solutions, followed by a Q&A session.

2nd Coaching and Mentoring Workshop

The 2nd Coaching and Mentoring workshop was titled "Participative Urban greening. From theory to practice".

This workshop took place on M40 during the 7th Consortium Meeting (Liverpool, virtual) and was focused on community engagement in NBS implementation, with presentation from frontrunner cities.

At the end of each frontrunner presentations, a Q&A session between frontrunner and follower cities took place, where the latter asked about the following topics:

Table 15. Knowledge needs and key challenges of partner cities

Follower City	Knowledge needs and key challenges
Mantova	Stakeholders tends to focus on new plantings. What strategies are there to involve them in the maintenance process (except new planting) and increase their awareness in Urban forest functions?
Ludwigsburg	How do you involve citizens during the current COVID-19 situation? What has been your experience with digital participation formats? What works well in your city? Which alternatives formats (not only digital) will be tested during the following months? In the following years there will be less money in the city budget due to the covid crisis. For this reason, all the activities in the field of greening will be reduced. A possible solution to implement things might be voluntary commitment. What experiences, ideas, approaches do you have in your city to strengthen volunter work and commitment?

3rd Coaching and Mentoring Workshop

The 3nd Coaching and Mentoring workshop took place on M49 and was titled "Some typical and new barriers faced by frontrunners cities for specific NBS" with a presentation from the representative of Liverpool City Council.

The focus of this session was on the technicalities and barriers at each phase of the NBS implementation and how it was addressed in Liverpool's case, namely about:

- Some typical and new barriers faced by frontrunner cities for specific NBS;
- Advice and experience on overcoming the barriers;
- Implementation and maintenance activities;
- Lesson learnt from the barrier and the implementation process.

The Liverpool presentation focused on Liverpool's freshwater and saltwater floating ecosystems, going into the main steps of the planning process (consultation; permissions and surveys; design, procurement and budget; installation and delivery; monitoring and maintenance) having Sefton Park and Wapping Dock as empirical examples and ending with the identification of the main lessons learnt (Annex A13, Agenda).

In order to prepare the session and to facilitate the discussion and exchange of good practice surrounding the topic of overcoming the barriers when implementing specific NBS, a preliminary survey was distributed to partner cities:

1. What are the barriers your city facing with NBS implementation (concept design, procurement, implementation, maintenance, legal and standard, etc.)? (please elaborate on the barrier);
2. Are there any measures (at your city, past and current) to overcome those barriers (if known, otherwise, skip this)?;
3. For follower city, if your city has been implemented an NBS at the city, what are the procedure? Was there any challenge to implement certain NBS at your city (from all angle, technical, legal, administrative, social, economic…)?;
4. Does your city have a specific guideline to embed or integrate NBS into the design of public work or certain guideline/manual related to NBS in the public administration? If not, then is there any effort to develop one?;
5. What do you expect to learn from the coaching and mentoring (on the barrier to implement typical NBS from city)?;
6. Any further questions, suggestions we should bring up during the upcoming coaching and mentoring on barriers to implement NBS?

This workshop had 10 attendees (Annex A13, Participants) and at the end of Liverpool's presentation, a Q&A session (Annex 13, Images) between frontrunner and follower cities took place. In particular, the following similarities and differences about NBS implementation have raised from the discussion. The webinar recording of the session is available here[6].

Table 16. Interventions from the 3rd Coaching and Mentoring workshop

Follower City	Similarities and differences
Liverpool (presenter)	Liverpool is not innovating too much in the procedure for floating ecosystems. Liverpool has a draft master planning document for the all the public realm and public spaces. The lessons learned will inform future NBS. How to find the suppliers: Floating ecosystems there was anything very similar in the city to find out the suppliers. There were a number of small suppliers, some of them were able to salt and freshwater. Liverpool did open tender and choose one company. Suppliers also provide consultancy on design issues. NBS market is not a very mature one. Rain garden need two tenders. It is very hard to coordinate the design and the delivery/supply of the implementation.

[6] https://www.youtube.com/watch?v=sAmvljBwba4.

	Technical knowledge for different plantings methods in different conditions was also needed. So for rain garden, a design company worked together with an environmental company to write the specifications for the rain garden. In this sense, Liverpool is are creating the NBS market because it doesn't exist.
Valladolid	Barriers of local ecosystems in Liverpool are quite similar to those existing in Valladolid. They share similarities and differences. Location: Finding suitable location for NBS is one of the first issues because of lack of public space. Consultation: Valladolid didn't do it, they didn't ask nor need permission because implementation have been in public spaces - don't pay fees for permission because all of them belong to the city council Engagement: Valladolid had rejections from the citizens especially from those that live close to the NBS interventions, therefore they must be the first stakeholders to be engaged – before implementation. After implementation they hadn't receive any complaint. Design: The support from consultant/partners of the project is necessary as in Liverpool, because they are the technical arm. Valladolid is not externally outsourcing, but is working across different departments, some of them are not familiar with NBS. For example, someone don't think that sustainable urban raining systems will solve problems and probably will cost more and create new problems. They think that they will collapse in a few years. Procurement: Valladolid has used the main frameworks that already have for walls procurements – no new framework was developed. Cost: Valladolid don't have 10% for contingency. Liverpool had overspents, Valladolid do not have to pay any licenses. After the URBAN GreenUP project Liverpool is looking for private sponsorship. In Valladolid the city council will maintain the NBS.
SPI/RMIT (moderation)	Are replacement costs relevant within the maintenance costs?
Liverpool	The replacement costs for freshwater are very low, very little replanting. The ecosystem will evolve naturally, but no intention to replace them, Liverpool has another problem, the costs for the saltwater, including the planting. The maintenance is more risked and experimental in terms of the planting, in terms to see what will survive. When the project finishes, the maintenance for the fresh water will basically only a check, but for the saltwater will be more comprehensive inspection and check, also including perhaps some new replacement of plants.
SPI/RMIT (moderation)	Are some of Liverpool barriers also relevant for other FCs?
Ludwigsburg	Floating islands were the last priority. Citizen engagement is relevant, but the city council are the best owner of the ideas, otherwise will be too much pretty and not too effective. In Germany they also need a lot licenses.
Mantova	Mantova has a small river and we have may landscape constraints, because the river is a part of UNESCO site. Therefore, everything Mantova want to change need a long path. Also, the river is also interests by 2000 nature networks, so a lot or challenges are in place. In the past Mantova had some floating island only for cultural activities but it take really long time. So it will not so easy to approach this NBS.

Izmir	Izmir has similar barriers and boundaries during the implementation. We do not have these sustainable urban drainage activities.

4th Coaching and Mentoring Workshop

The 4th Coaching and Mentoring workshop was held on M58 and was named "Barriers and challenges in implementation of Parklets". Izmir's Parklets example was presented focusing on all the project since the location selection to the expected impacts. The addressed topics were the following:

- Location Selection;
- General Description & Purpose;
- Technical specifications;
- Implementation details;
- Operational and maintenance;
- Lessons learnt;
- Expected impacts.

Many pictures of the project and of the implementation of the parklets were shown on the presentation. Izmir also presented the co-design and dissemination activities which are taking place at the city. These consist on expanding the idea throughout Izmir, with the participation of the people living in the area. Other example of this involvement is a collaboration with a university where the planning students will design a parklets in an area of their choice.

After this, there was some time for answering some questions, shown in Table 17.

Table 17. Questions and Answers from the 4th Coaching and Mentoring workshop

Question	Answer
Can the private sector do it to the public sector by obtaining permission?	For the time being all parklets can be made by public institutions.
Maintenance cost (approximately)?	It is not easy to answer this question since The Parks and Gardens Department of the Metropolitan Municipality is in charge of the maintenance.
Is irrigation manual or automatic?	Drop irrigation system is used in the area. It is working automatically.
Are Green plants growing properly or need attention from time to time?	All the green plants needs attention time to time. Only the trees will grow properly but they need attention because they are recently planted.
Is there a copyright about the design, can we use it? (Valladolid asked this question)	Yes there is copyright. The parklets were designed by the municipality team, if the management approves the design can be implemented in other places.
Except for URBAN GreenUP, how many were made and it would be nice if there were pictures?	5 parklets were implemented at the Alsancak Region, City Center. They were all implemented with the budget of municipality. We could not find the photos but next time we will show you new pictures.

At the end, follower cities had the opportunity to join a brief *mentimeter* questionaire where they were asked to answer some questions about the parklets' applicability in their city. 9 of the 13 participants said that there wasn't any parklet application on their city. The 4 cities where parklets already exist exposed the difficulties on their implementation. Finally, there was a "mural" where participants should answer the following questions (Annex A14):

- Do you see if a parklet is applicable to your city conditions?
- What factors you think are important for your city to adopt the parklet solutions?
- What are the barriers to the adoption of Parklet in your city?
- How to overcome those barriers?
- What else do you want to learn more from parklet solution?

5th Coaching and Mentoring Workshop

The 5th Coaching and Mentoring Workshop was held on the same day as the 5th technical webinar, as they were related, and the topics addressed in the technical webinar were important for the workshop, which was later. Both activities were titled "How to develop a Renaturing Urban Plan (RUP) for your city?". The agenda for these events is presented on Annex A11.

The main part of the workshop was an interactive collection of inputs and ideas for the RUP validation. This consisted in a survey where some questions - presented in Table 18 - were asked aiming to assess the Renaturing Urban Planning Methodology.

Table 18. Questions of the 5th Coaching and Mentoring Workshop survey

Theme	Question
City Profile Data	In your feeling, what is the most important barrier in NBS application for your city, having in mind the innovative growth NBS focused?
	In your feeling, NBS can address the city challenges?
A. Engage and Co-create	Will you have a stakeholder coordination group on the panel for your RUP?
	Do you have a clear idea of how you will involve your stakeholders in the RUP development?
	Do you have any preference on how to finance this group?
B. Explore	How will you approach understanding and prioritizing your city's NBS needs?
	How will you present your targets to show what you want to achieve
	What is the most important/necessary part for you to be explained in the RUP?
C. Diagnose and D. Visualize	Have you done a city analysis and diagnosis in connection with re-naturing aspects?
	Which methods did you use to perform a city diagnosis?
E. Plan	Do you collaborate with other cities regarding re-naturing ambition?
F. Inform	Does your city have a strategic plan on re-naturing or related?
Q&A Session	Do you have any current experience to NBS implementation (past/present)?

This way, cities could share experience, evaluate the benefits of the RUP methodology and give feedback so the method can improve, and be adapted for different city environments and cultures. It is important to be mentioned that, contrary to the rest of the Coaching and Mentoring workshops, this event also included the external cities of the Network, precisely for that reason.

6th Coaching and Mentoring Workshop

The 6th Coaching and Mentoring Workshop took place in Liverpool, during the 11th Consortium Meeting, on M65. Under the title ""WP1 /WP6 Methodology Vs Follower cities" it followed up on the work from previous events. It included an updated presentation of the URBAN GreenUP RUP Methodology conceived within WP1, as well the presentations from the Follower Cities, on which each city explained their advances and progress in the development of their RUPs and NBS. After this, an interactive section was developed to provide a comprehensive view on the methodology and the work of FW cities, as had already been done on the previous workshop (Annex A15, agenda).

This interactive section also served as an opportunity to refine the questionnaire to be sent to the network of cities to validate the Urban GreenUP Methodology Methodology for the conception of the Renaturing Urban Plans, based on the survey used during the 5th technical webinar/ 5th Coaching and mentoring workshop. The questionnaire can be found in here.

1st Yearly Virtual Session

The first yearly virtual session was titled "Progress in the development of sustainable urban plans" and took place in between the 6th and 7th Consortium Meetings (M38).

During this session, all project partner cities have presented the progress of their cities in the NBS implementation:

- Izmir: Sub Demo A, B and C (list of interventions; list of tendering groups, final view of implemented solutions);
- Liverpool: Completed projects, project underway, progress on non-technical interventions, monitoring
- Ludwigsburg: Pocket park in industrial area, interventions for summer 2020, new green area in inner city, Renaturing Urban Plan, climate analysis,
- Mantova: 2019/2020 strategic actions linked to URBAN GreenUP (adaptation and mitigation strategy and guideline, SECAP, solar roof map, resilient parks and ride, etc.)
- Medellín: methodological comparison, progress on Phase 2, financial strategy;
- Valladolid: Technical, political, administrative and social criteria; challenges and KPIs of the Eklipse methodology, water NBS technical details (rain garden, infiltration well and detention basin, natural wastewater treatment plant, etc.) cost concepts for a public administration, green façade, green roofs, etc.

2nd Yearly Virtual Session

The second yearly virtual session was named "Public-Private partnership in implementing NBS" and should have taken place in between the 9th and 10th Consortium meetings. However, due to the project extension, it was later postponed to M66, in between the 11th and the 12th Consortium meetings. It counted with the participation of 13 people between organisers and attendees and was divided on the following moments:

- Introduction – Speakers were presented to the public
- Public organization fostering the Public-Private partnership in implementing NBS – Valladolid representative gave am overview of public-private collaboration in NBS implementation, based on examples from the city.
- Formulating and Implementing Public-Private Partnership for a NBS project – More detailed example of public-private partnership application, on the Electrowetland, in Valladolid.
- Public-Private Partnership agreement in the commercial building - An overview of some of one more example, the El Corte Inglés green façade, also in Valladolid.

- Q&A Moment –interactive moment with the audience where the following questions were asked using the Mentimeter tool.
    - What Type of institution you work in?
    - Have you ever been part of a public-private partnership experience where Nature-based solutions have been implemented?
    - Was your answer yes? Please share your experience
    - Was your answer no? What was the reason? Did you not have the opportunity?

4.5 Staff exchange actions

4.5.1 Activities developed

Staff exchange activities are framed within *Task 6.6 Staff exchange among frontrunners and follower cities*. This task aims to perform rotational staff exchange programme to be implemented between the three frontrunner and three follower cities, where representatives from each of the follower-cities will visit the three frontrunner cities for a period of one week to seek advice and expertise for the development and future implementation of their own development plans.

However, due to the COVID-19 situation these visits didn't take place, and an alternative to in-person staff exchange meetings were developed as a 'city pairing model' in 2022. This alternative model was designed as virtual one-on-one full day intensive meeting (on a rotating basis), where frontrunner and follower cities will exchange ideas about similar challenges and interests in certain types of NBS and NBS implementation helping delivery and transferring knowledge. These activities, with the facilitator of WP6 lead and Task 6.6 leader, occurred as presented in Section 4.5.2 below.

4.5.2 Achieved results

In order to support the delivery and transferring of knowledge, the following virtual staff exchange activities were developed (Table 19; Table 20). The plan was discussed between WP6 leader, Task 6.6 leader, frontrunner and follower cities during the last consortium meeting of the project, and was adapted to the conditions of the moment. URBAN GreenUP technical partners supporting frontrunner cities were also involved. The agendas and participants of the 1st and 2nd staff exchange activities are shown in Annexes A16 and A17, respectively.

Staff exchanges are focused on the knowledge exchange about procedure related to different topics and implementation steps (planning process; designing process; tendering process; NBS implementation; NBS commissioning and handover; Continuation of support or maintenance).

Table 19. Virtual Staff Exchange 1 (SE1) – "NBS Preparation Phase"

Project Month	Presentation Topic	Outline of content (FR Cities)	Replication by FR cities and duration
M59	T1 - How the city selected and sited the NBS	Overview of considerations and details on LIV examples such as green wall locations, tree planting locations, SuD locations, pollinator sites and habitat art sculpture sites. VAL examples: green wall locations, tree planting locations, SUDs locations, pollinator modules (same as LIV, to elaborate the comparison)	Delivered by all 3 cities: LIV, VAL, IZM 3 x 10 mins = 30 mins total
	T2 - Technical requirements and design needs for specialist NBS	Examination of the different technical requirements for the floating island, the tree SuDS, the water retention ponds and the different pollinator verges. VAL technical requirements: Vertical infrastructure, horizontal infrastructure, SUDs, pollinators.	

Table 20. Virtual Staff Exchange 2 (SE2) – "NBS Implementation Phase"

Project Month	Presentation Topic	Outline of content (FR Cities)	Replication by FR cities and duration
M60	T1 - An overview of the tendering and procurement process for different types of NBS	An overview of the different approaches, issues and barriers in procurement, an example of competitive open tender for specialist items (green walls), direct exemption procurement (for container trees), in-house delivery (tree planting and minor works) etc.	This could be replicated/adapted and delivered by all 3 cities if required with each providing an example for each type of procurement that applied to them3 x 10 mins = 30 mins total
	T2 - Implementation / construction phase	Experiences that occurred during the construction phase (F.i. delays due to lack of materials, unexpected elements, unforeseen modifications, etc.)	
	T3 - Co-creation and stakeholder engagement	Processes tried and used to engage stakeholders during the project and the impacts from the covid lockdown period. Dealing with community feedback and issues following implementation of NBS (social impact)	

After these two virtual staff exchange it was finally possible to organise face-to-face meetings. Therefore, an in-person Staff exchange event happened in Liverpool, during the 11th Consortium Meeting, on M65 of the project. It was attended by all the Frontrunner Cities (Liverpool, Valladolid and Izmir), the Follower City of Ludwigsburg, and some technical partners from the consortium (SPI and RMIT) (Annex A18).

It mainly consisted of a presentation from Liverpool on the NBS 'operation phase', especially concerning the maintenance and management and the monitoring behind it. Valladolid and Izmir also gave their inputs and a conversation was carried out regarding some common obstacles, best practices and lessons learnt. It was agreed that eventual new meetings should be opened to the Network of Cities, and should be given more time to discussion among all the participants.

4.6 Global engagement and networking activities deployed in coordination with other WPs

All the communication and dissemination activities led by IFO in WP8 aim at fostering dialogue with stakeholders and, via these dialogues, at enabling the engagement of key target stakeholders. Detailed information about these activities will be reported in D8.9 in M72.

4.6.1 Social media activity

Nowadays social media is one of the main ways to communicate and to disseminate whatever is needed. Thus, several social media campaigns, mainly targeting the general public were launched, such as:

- #Flowers4bees, launched in two editions (2020 and 2021) and inspired by the world bee day on May 20. It aimed to raise awareness of the importance of bees and pollinators to our environment. The online community was invited to participate by taking pictures of flowers and bees and posting them on Twitter (using the hashtag #Flowers4bees) or on a dedicated facebook group managed by URBAN GreenUP. In its second edition, the campaign saw the active participation of several other EU-funded NBS projects.
- In spring 2020, URBAN GreenUP set up two social media campaigns in collaboration with other H2020 projects. These were #SmartCitiesHelp (launched on the 14th of April) and #CityFromMyWindow (launched on the 8th of April). Both campaigns were launched in collaboration with the network of EU SCC01 Smart City projects and based on a proposal by IFO. The former aimed to make solutions offered by EU cities to cope with the COVID19 emergency easily available to citizens. The latter invited citizens to share pictures of their cities taken from home during the lockdown: a way to feel closer to each other despite social distancing.
- In the same weeks of the first edition of #Flowers4bees, URBAN GreenUP also joined the #EUToxicFree social media campaign. The campaign involved 14 other EU-funded projects (ASTRABAT, B-FERST, Biomonitor, AllThingsBio PRO, POCITYF, MATCHUP, STARDUST, EFFECT, Bamboo, HOUSEFUL, eTeacher, SocialRES, eNeuron and TIGON) with the goal to highlight their commitment to the zero-pollution ambition and showcase their related results/initiatives. The campaign ran on Twitter and LinkedIn and was selected as a partner event of the EU Green Week (2021 theme: Zero pollution for healthier people and planet).
- On the occasion of 2022 International Day of Women and Girls in Science (February 11th) IFO launched the social media campaign #WomenScientistsPortraits. The goal was to highlight the work of some of the women in the URBAN GreenUP consortium via dedicated social media cards.

- On occasion of the signature of the Manifesto a dedicated hashtag, #NBSMANIFESTO was launched on Twitter and used in the conversations during the event.

4.6.2 Events and Activities

Besides social media, it is also relevant to be present in a variety of events, disseminating the URBAN GreenUp concept, such as:

- The side event "Nature-Based Solutions: overcoming barriers, enhancing benefits." at the First World Forum on Urban Forests hosted by the Follower City of Mantova, Italy (28 November – 1 December 2018). In that occasion, URBAN GreenUP led the launch of the NBS Manifesto (see above in the text).
- URBAN GreenUP was actively involved in the BY&FORCITIZENS Conference hosted by the Frontrunner City of Valladolid (20 – 21 September 2018), see IFO's press release.
- URBAN GreenUP's Frontrunner cities have actively participated in the 2018 EU Green Week (21 – 25 May 2018) by organising a number of side events under the project's umbrella.
- IFO organized four webinars between March and May 2022. The goal was to showcase the NBS implemented by the Frontrunner cities and the methodology for the development of Renaturing Urban Plans developed by the project. The recording, agenda and presentations of the four webinars are available at the following links:
    - Re-naturing urbanisation
    - Singular green infrastructure
    - Water interventions
    - How to develop a renaturing urban plan for your city?

4.6.3. Stakeholders database

The stakeholders database consists of relevant associations and key-players (e.g. universities, research institutions, city councils, governmental organisations) identified by the members of the project's consortium. It will be used for targeted dissemination of URBAN GreenUP results towards the end of the project. Each partner will be responsible for managing and contacting the stakeholders they have proposed.

5 Lessons learned and main conclusions

The URBAN GreenUp Global NBS engagement, networking and knowledge transfer activities were strategically designed to foster the communication inside the network of cities as well as with exterior stakeholders, and consequently to promote the delivery of knowledge and the replicability of NBS planning, implementation, and monitoring practices, taking into account the diverse stakeholders and their interest in the knowledge sharing.

This deliverable addresses the networking, engagement and knowledge-related objectives of *WP6 Replication and City Clustering*, mainly as a result of Task 6.5, Task 6.6, Task 6.7 and Task 6.8, in several activities that were developed, covering a vast range of topics. Within these activities, Frontrunner cities, Follower cities and technical partners played a key role in proactively sharing knowledge from the experience that they have had in the implementation of NBS, showing a high level of achievement and maturity of the interventions.

The activities have also contributed to enlarge the network of cities connected to this project, promoting the engagement and the communication between them. With a larger network, it is possible to have a greater number of experiences, from the most different contexts, which can be shared and, therefore, improve the quality of NBS implementation on new cities. Additionally, fostering the engagement of all the stakeholders (cities, public institutions, technical partners or even the citizens) in this project, can play an important role on the implementation and sustainability of the project, and on generating public interest on it.

All the events related with this delivery, which addressed the networking, engagement and knowledge transfer topics, were useful for sharing experiences and to learn with the experiences from other places, as well as with the technical partners and, thus, to achieve the objectives defined in chapter 3.1. The city clustering reached and surpassed the minimum number of cities previewed in the DoA, gathering 26 external cities on URBAN GreenUP network of cities, in addition to the Frontrunner and Follower cities. The linkage with other NBS projects also occurred, with several participations on forums and meetings from URBAN GreenUP partners. The coaching and mentoring activities also fulfilled their goal to help follower cities on their NBS application, helped by the FR cities and the consortium technical partners.

Overall, networking and knowledge transfer have played an effective role in the success of the URBAN GreenUp project and thus in the implementation of NBS globally. These efforts must be continued, as the momentum and the links created by this and other projects can be maintained and still contribute to the NBS implementation. Accordingly, the communication among the cluster of cities members should not be lost after the official end of the project and initiatives to keep the interest in the network should be encouraged. For instance, there is the possibility of setting up a mailing list for the “NBS friends” in order to promote future relevant activities on Nature Based Solutions, if possible, in cooperation with other related projects. Another possibility could be to create a *Linkedin* group or other type of online forum.

Nevertheless, it should be acknowledged that some activities went differently to the initial expectations, being it due to the low attendance of some of the virtual events, the challenging engagement with all the Network of Cities at a same level, or the need for adaptation of a few planned activities, especially those related to the Yearly Virtual Sessions and the Staff Exchange

activities (particularly due to the COVID-19 pandemic restrictions). However, the latter is an example of how the project managed to overcome some of the barriers and challenges faced, having held virtual and presential sessions, still allowing desired exchange of ideas among Frontrunners and Follower Cities.

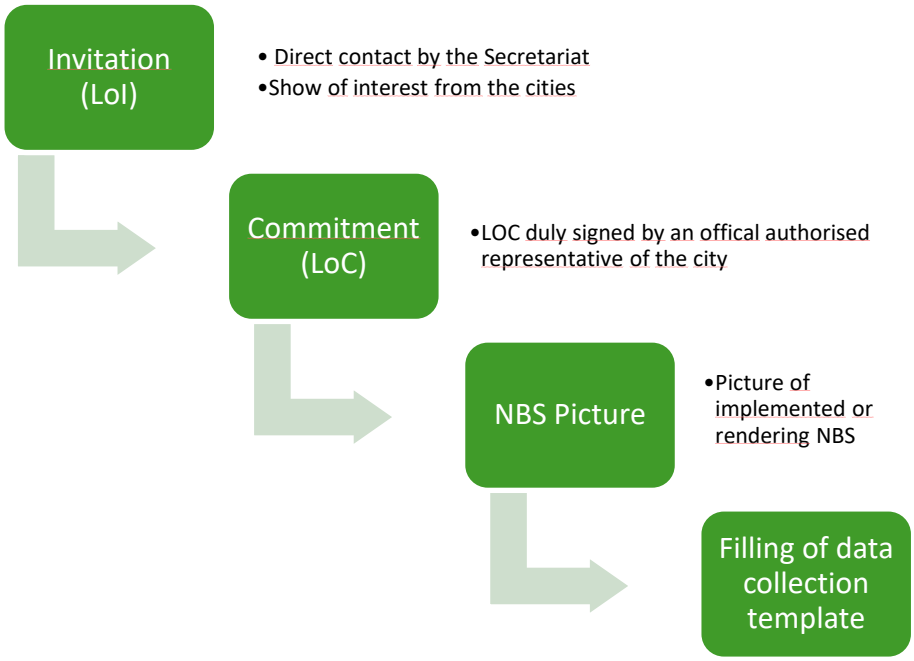
In this way, some key aspects related to engagement, networking and knowledge transfer activities that one ought to bear in mind to reach a successful impact on future projects of this sort include:

- Developing a realistic strategic plan prior to the beginning of all interactions – this is a crucial point as it will be your main 'instructions guide' throughout all the project duration. Yet, this does not mean that necessary changes cannot be made.
- Measuring your success regularly - Upon the creation of a strategic plan, a set of indicators must be selected to measure whether all the work being carried out is providing the planned results. Some examples may include the number of participants in the events, the number of interventions in the events or at any interactive platform that has been created for the purpose (chat room, emails, etc.). If results differ from the plan, then adjustments must be made.
- Engaging with your clusters on a regular basis – if possible, try to set an activity within a specific frequency (e.g. every 3 months) or at least try to keep the cluster informed by sharing some of the projects' updates. This will provide them a sense of 'belonging' to the project and will facilitate more interaction among members. However, too much information can be counterproductive, as it may get lost among other emails and notifications.
- Always have a backup plan/alternative – one thing the COVID-19 pandemic has shown to the members of the URBAN GreenUP consortium is that you must always be prepared for unpredicted events. This has been especially true regarding the staff exchange activities, where travel impediments allowed, nonetheless, very fruitful discussions among frontrunners and follower cities on NBS on a virtual basis.
- Fostering interaction among different stakeholders and members of the cluster – presentations and lectures have been a vital part of all NBS engagement, networking and knowledge transfer activities. Nevertheless, in the majority of the sessions held (webinars, workshops, etc.) when given the chance for interactive opportunities, a great deal of the participants actively shared their insights and gave their contributions to generate very pleasing discussions. A perfect example has been the roundtable moments during the international conference in Valladolid.

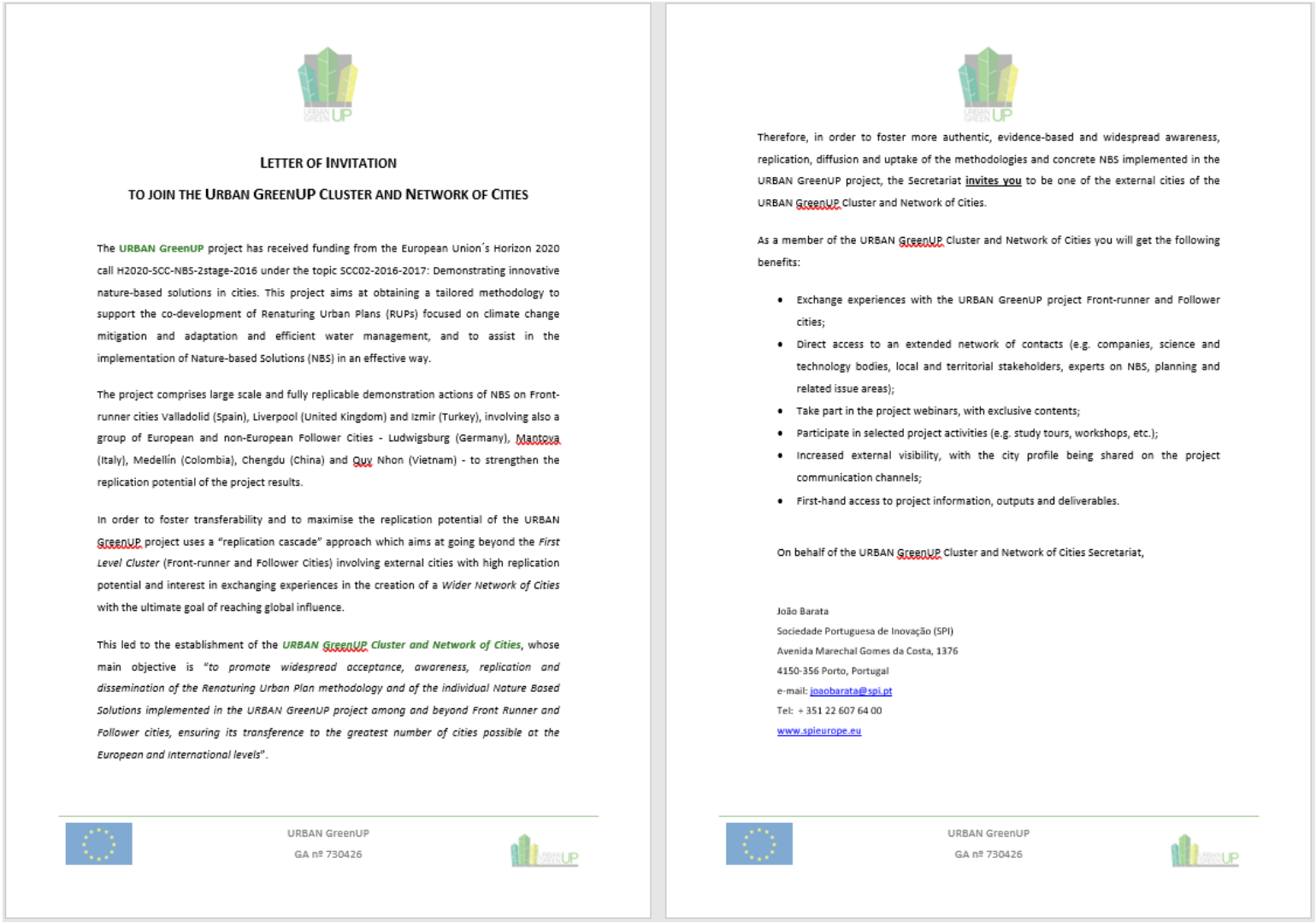
All in all, the activities reported in this deliverable have given the possibility to identify common challenges, similarities, enablers and barriers, giving relevant insights for the continuation of the NBS implementation and for the post-project sustainability, also triggering the critical self-reflection of the main stakeholders involved, primarily partner cities and technical partners.

Annex A1 – Entry Process

Entry Process scheme



Letter of Invitation (LoI)



LETTER OF INVITATION

TO JOIN THE URBAN GREENUP CLUSTER AND NETWORK OF CITIES

The **URBAN GreenUP** project has received funding from the European Union´s Horizon 2020 call H2020-SCC-NBS-2stage-2016 under the topic SCC02-2016-2017: Demonstrating innovative nature-based solutions in cities. This project aims at obtaining a tailored methodology to support the co-development of Renaturing Urban Plans (RUPs) focused on climate change mitigation and adaptation and efficient water management, and to assist in the implementation of Nature-based Solutions (NBS) in an effective way.

The project comprises large scale and fully replicable demonstration actions of NBS on Front-runner cities Valladolid (Spain), Liverpool (United Kingdom) and Izmir (Turkey), involving also a group of European and non-European Follower Cities - Ludwigsburg (Germany), Mantova (Italy), Medellín (Colombia), Chengdu (China) and Quy Nhon (Vietnam) - to strengthen the replication potential of the project results.

In order to foster transferability and to maximise the replication potential of the URBAN GreenUP project uses a "replication cascade" approach which aims at going beyond the *First Level Cluster* (Front-runner and Follower Cities) involving external cities with high replication potential and interest in exchanging experiences in the creation of a *Wider Network of Cities* with the ultimate goal of reaching global influence.

This led to the establishment of the ***URBAN GreenUP Cluster and Network of Cities***, whose main objective is *"to promote widespread acceptance, awareness, replication and dissemination of the Renaturing Urban Plan methodology and of the individual Nature Based Solutions implemented in the URBAN GreenUP project among and beyond Front Runner and Follower cities, ensuring its transference to the greatest number of cities possible at the European and international levels"*.

URBAN GreenUP
GA nº 730426

Therefore, in order to foster more authentic, evidence-based and widespread awareness, replication, diffusion and uptake of the methodologies and concrete NBS implemented in the URBAN GreenUP project, the Secretariat **invites you** to be one of the external cities of the URBAN GreenUP Cluster and Network of Cities.

As a member of the URBAN GreenUP Cluster and Network of Cities you will get the following benefits:

- Exchange experiences with the URBAN GreenUP project Front-runner and Follower cities;
- Direct access to an extended network of contacts (e.g. companies, science and technology bodies, local and territorial stakeholders, experts on NBS, planning and related issue areas);
- Take part in the project webinars, with exclusive contents;
- Participate in selected project activities (e.g. study tours, workshops, etc.);
- Increased external visibility, with the city profile being shared on the project communication channels;
- First-hand access to project information, outputs and deliverables.

On behalf of the URBAN GreenUP Cluster and Network of Cities Secretariat,

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URBAN GreenUP
GA nº 730426

Letter of Commitment (LoC)

Please print with your letter head

/

<CITY NAME> is willing to participate as a member in the Cluster and Network of Cities of the **URBAN GreenUP** project, funded by the European Commission to develop an Innovation Action project at European level in the European Commission's Horizon 2020 call H2020-SCC-NBS-2stage-2016 under the topic SCC02-2016-2017: Demonstrating innovative nature-based solutions in cities. The project aims at obtaining a tailored methodology to support the co-development of Renaturing Urban Plans (RUPs) focused on climate change mitigation and adaptation and efficient water management, and to assist in the implementation of Nature-based Solutions (NBS) in an effective way. Large scale demonstration actions of NBS will be deployed in the Front-runner cities of Valladolid (Spain), Liverpool (United Kingdom) and Izmir (Turkey), involving the Follower Cities of Ludwigsburg (Germany), Mantova (Italy), Medellín (Colombia), Chengdu (China) and Quy Nhon (Vietnam) to strengthen the replication potential of the project results. As part of the Work Package 6 activities, it was established the ***URBAN GreenUP Cluster and Network of Cities***, in order to increase the potential of replication of the RUP methodology and of the individual NBS developed and tested in the project, ensuring its transference to the greatest number of cities possible at the European and International levels.

<CITY NAME> will commit to participate in the URBAN GreenUP Cluster and Network of Cities in the following way:

- Provide to the URBAN GreenUP Cluster and Network of Cities Secretariat details about the city (e.g. short general description, size, population, NBS planned/implemented/, photos of the city and of the NBS implemented, etc.), using the data collection template to be provided by the Secretariat;
- Attend (if possible) workshops to be organized during the consortium meetings to be organised in Front-runner cities until the project (May 2022);
- Participate in the 4 webinars to be organized by the URBAN GreenUP Cluster and Network of Cities Secretariat in relevant topics around the NBS theme;
- Perform local dissemination activities, such as posting information in local language on the cities' online communication channels (e.g. website, social networks, etc.), sharing information about the project in relevant local/national/international events in which the city participates, etc.

The undersigned is an official authorised representative of <CITY NAME>.

Location and date:

Signature

(Name)

Official stamp

Annex A2 – Cities profile

Detailed profile of each external city

Aalborg	
	
General city data	Aalborg Municipality has 215.000 inhabitants and the City of Aalborg 140.000 inhabitants. Aalborg is situated in the northern part of Denmark as the 'capital' of North Jutland, a city region with a strong university working closely together with green-tech, energy businesses, medico businesses among others. We have been through a transformation from a heavy industrial city into a knowledge-based cultural city.
Main environmental challenges faced by the city	• More and more often heavy rain is challenging our water management system. • High water in the Limfjord is threatening to flood lower parts of the city. Especially in western storms where the water is pressed through the narrow stretch between Aalborg and Norresundby. • Air pollution in some areas with heavy traffic in narrow urban spaces • Noise from car traffic • Earth contamination from the past when there were heavy industries in harbour fronts and the inner city. • CO2 and other greenhouse gas emissions caused by our production, traffic pattern, the building industry and everyday consumption

NBS implemented or planned	We are developing water management plans for our stream-systems. The biggest plan is the opening of Oesteraa Streem through the inner city. The stream has been running in open and underground canals for more than 120 years, but we do a project where we lead the stream through urban development areas and a park - as a recreational project as well as a climate adaptation and water environment project. We deal with other similar but smaller projects as well as a big effort in local drainage of rainwater in our urban development. We are dealing with coastal protection integrated with recreational projects as part of harbourfront projects We do some big BRT-projects for upgrading public transport. 'Aalborg Plusbus' is the first one: 12 km east-west through the city with high ambitions for the functionality, design and urban spaces. Plusbus2 (yet only a vision) is seen as a supplement north-south through the city with potentials for changing behaviour and green transition of Aalborg.
Picture/photo of the NBS	

Athienou	
	
General city data	Athienou is a small city in the Larnaca District in Cyprus. Its size is 64.807 sq.km. and its population is 6.500 inhabitants, with around 2.500 extra foreign workers living there for work. It is built at an altitude of 135 meters, south of the plain of Mesaoria and 20km south east from the capital Nicosia. The main activities are agriculture and stockbreeding, with many industries operating.
Main environmental challenges faced by the city	The area is mainly plain, with many agricultural and stockbreeding activities. One environmental challenge is with the manure and the sewage of the cow farms, which in rainy seasons drift and end up in the residential area. Also, there is an industrial area with many industries, including some big dairy products ones. The industrial area doesn't have a sewerage system yet and liquids from industries are left in the water drainage system, polluting nearby fields. Another environmental challenge is the increasing of the number of the trees of the area, for more oxygen and greener Athienou.
NBS implemented or planned	• Manure: In cooperation with professionals, they proposed a solution to build a factory in the farms area where all the manure from the farms will go and be processed, giving at the end clear drinking water from the liquids and fertilizer or burning material from the solid. • Industrial area problem: A sewerage system, with a biological treatment plant is being planned for the industrial area, like it exists in the residential area, for solving the problem. • Greening of the area: The Municipality of Athienou has promoted in 2020 the planting of 1.200 trees in a public field outside the residential area that will end up to be a park with a bicycle route, places to rest etc. Also 300 more trees have been planned in three other places. The plan is to plant and preserve many more trees in public spaces of the area.

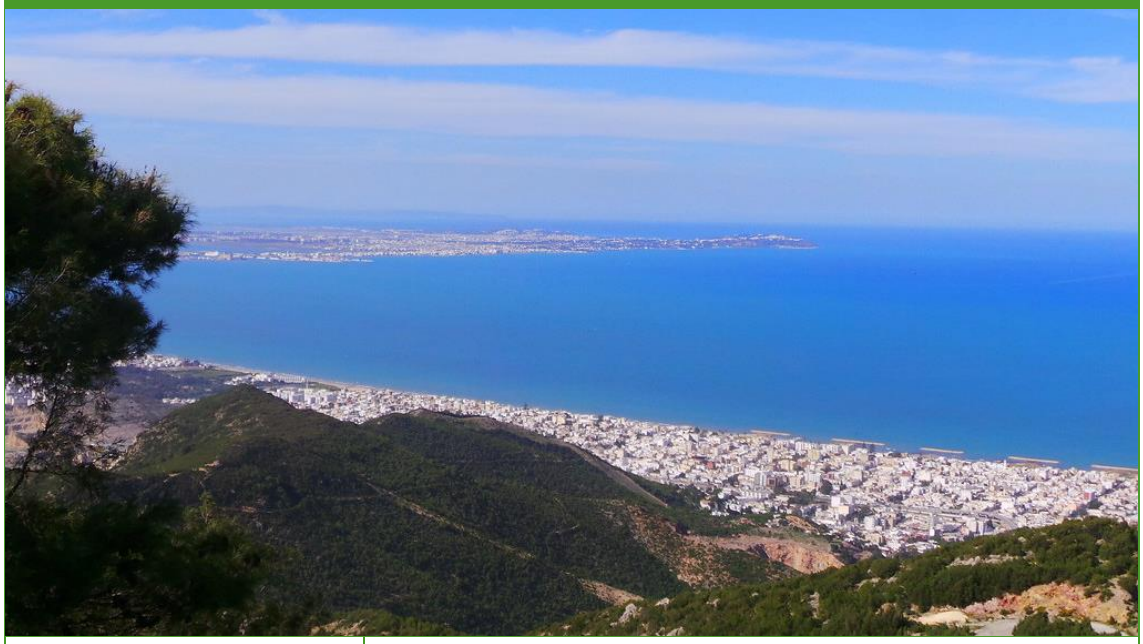
Bari	
	
General city data	Bari is a city in the south of Italy of about 350,000 inhabitants, covers an area of 117.39 square meters and has a population density of 2,733. From 1 January 2015 it became a metropolitan city.
Main environmental challenges faced by the city	Bari is a seaside city and its most important economic activities are connected to it: tourism, logistics and trade. The presence of important universities makes Bari an intelligent city with a vocation for innovation. Bari for many years has accepted to deal with current environmental challenges by trying to increase green areas in the city, waterproofing surfaces, trying to study incentives to improve the energy quality of buildings, it is also improving and implementing the quality of public transport and realizing cycle paths to ensure that citizens move safely.
NBS implemented or planned	The solutions designed to improve the liveability of the city concern the design of new parks, the study of a forestation project, the creation of green roofs, the increase in cycle paths, the study and the implementation of incentives to control public transport urban and electric and non-electric bicycles, the energy efficiency of buildings.
Picture/photo of the NBS	

Bragança	
	
General city data	Bragança is a 35341 population interior city in north-eastern Portugal and dates from the 11th century. Based on a 1173,6 km2 surface, half of is territory is protected natural area (the Montesinho Natural Park that has a unique biodiversity. It contains 80% of the mammals that exist in Portugal) and Bragança is a dynamic, attractive and modern city.
Main environmental challenges faced by the city	Bragança is an anchor of the regional economy, resisting the desertification of the hinterland, and concentrating public sector administration in the region. Economically the region still produces olive oil, grains, chestnuts and livestock, especially sheep. In recent years agriculture has suffered a decline with the abandonment of the villages and the aging of the rural population. Bragança has been awarded every year the Green Flag reflecting its focus on sustainability and environmental education.
NBS implemented or planned	The city has not yet implemented NBS but is going to learn about it via participating in the URBAN GreenUP Project.

Castelfranco Veneto	
	
General city data	Castelfranco Veneto is a town of Veneto, Northern Italy, in the province of Treviso, 30 kilometers far from the town of Treviso (Province capital). Resident population is 33 369 inhabitants and the municipality area covers a surface of 50.93 km2. The population density is 655.2 inhabitant/km2. The main economic activities are manufacturing (mainly metalworking), trading, building and tourism
Main environmental challenges faced by the city	Castelfranco Veneto, as most of medium sized towns of Veneto region, is characterized by a remarkable urban green area, both private and public, among which it stands out for its breadth and importance the historic garden of Villa Revedin Bolasco The total green area (public and private) is of 3.6 M m2, i.e. around 110 m2 per inhabitant (national average around 32 m2 per inhabitant) The necessity to rationalize the green area management, including its increasing in the surroundings, stimulates the adoption of NBS
NBS implemented or planned	The refurbishment of the access road to the hospital, the nursing home for the elderly and the historic garden of Villa Revedin Bolasco was designed considering NBS which concern both the paving of the road, the sidewalk and the cycle path and the management of waste water. The NBS are also used as a tool for the recovery of the historical memory of the places adjacent to the historical garden which constitutes an important cultural heritage for citizens.

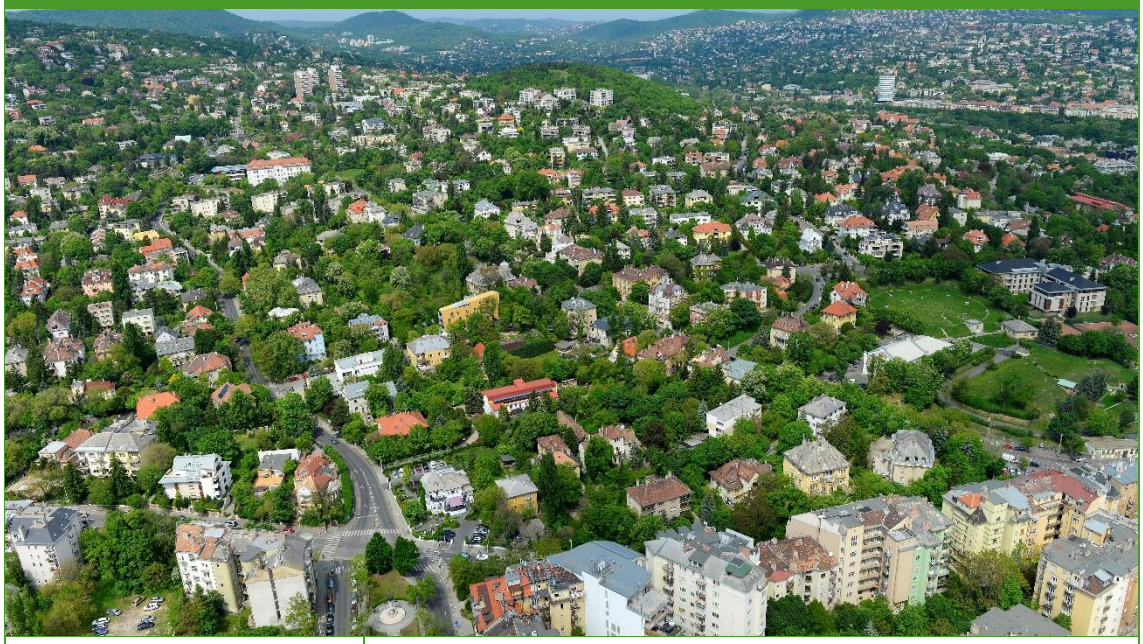
Picture/photo of the NBS	

Esposende	
	
General city data	The municipality of Esposende is located in the North of Portugal, belonging to the Braga District. The county of Viana do Castelo borders Esposende in the north, Póvoa de Varzim in the south, and the East of Barcelos. The Atlantic Ocean bathes it to the West with an approximate extension of 14 km. Esposende is a small municipality with 95.18 km2 and about 35.358 inhabitants.
Main environmental challenges faced by the city	Esposende has a vast experience in implementing information, awareness and education projects aimed at all its population. The municipality has, over the years, been implementing several European Projects and performs applications for national programmes aiming to finance interventions of all sorts (formation, constructions, infrastructures). Esposende and its coastal area is classified as a Natural Park, as it contains natural or semi-natural ecosystems, where long-term biodiversity preservation may depend on human activity, ensuring a sustainable flow of natural products and services.
NBS implemented or planned	Esposende has been organising and implementing educational programmes directed to all audiences. Esposende has also been implementing projects as Covenant of Mayors, Local Agenda 21 and is now starting to work in a project regarding the Agenda for Sustainable Development and its 17 Sustainable Development Goals. OMARE is a research project that the municipality is coordinating and has several local universities as partners, as well as the National Institute for Nature and Forests Conservation. It aims to create a monitoring and information system of the marine biodiversity in the Northern Litoral National Park, the creation of management instruments and the promotion of the project as a means to achieve the public awareness of sea and coastal problems and good habits. The municipality of Esposende has just achieved the environmental certification, and one of the major goals is to reduce the consumption of natural resources in all activities and the adequate solid waste management

Hammam-Lif	
	
General city data	Hammam-Lif is a coastal town about 20 km south-east of Tunisia. It has been known since antiquity for its thermal springs originating in Mount Boukornine. Nowadays, Hammam-Lif covers 16,000 ha confined between the Mountain of Boukornine and the Mediterranean Sea. The City counts 42 518 inhabitants according to the Census of 2014.
Main environmental challenges faced by the city	• Sea pollution caused by many hotspots like the nearby Sea connected Meliane River receiving poor treated wastewater issued from Tunis southern suburb WWTP and industrial raw wastewaters. • Accumulation of posidonia at the beach and its entrapment by a poor designed eight breakwaters constructed initially to protect the City from shore erosion and cyclones, sea level raising due to climate change-inundation of the City by floods, exacerbated by climate change, carrying out sediments from the mountain-air pollution generated by the crossing of the City by the National Road N°1 and railway.
NBS implemented or planned	• Implemented ecological public leisure garden at the tombolo behind the breakwater n°5. Use of wooden structures and spontanously grown plants found in-situ. • Implemented eco-museum at Boukornine mountain • Implemented public leisure area at the premise of Ain Zarga spring with an eco-museum and wild animal husbandry. • To be implemented a green roof at the top of the Municipality building with use of solar and wind power generators.

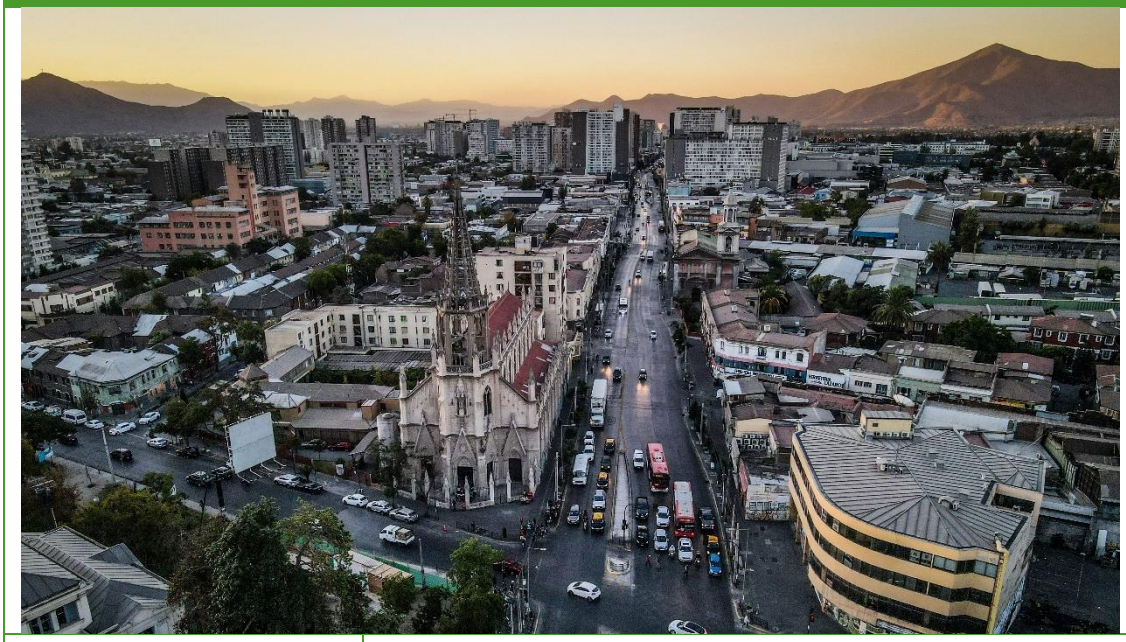
Picture/photo of the NBS	

Hegyvidék



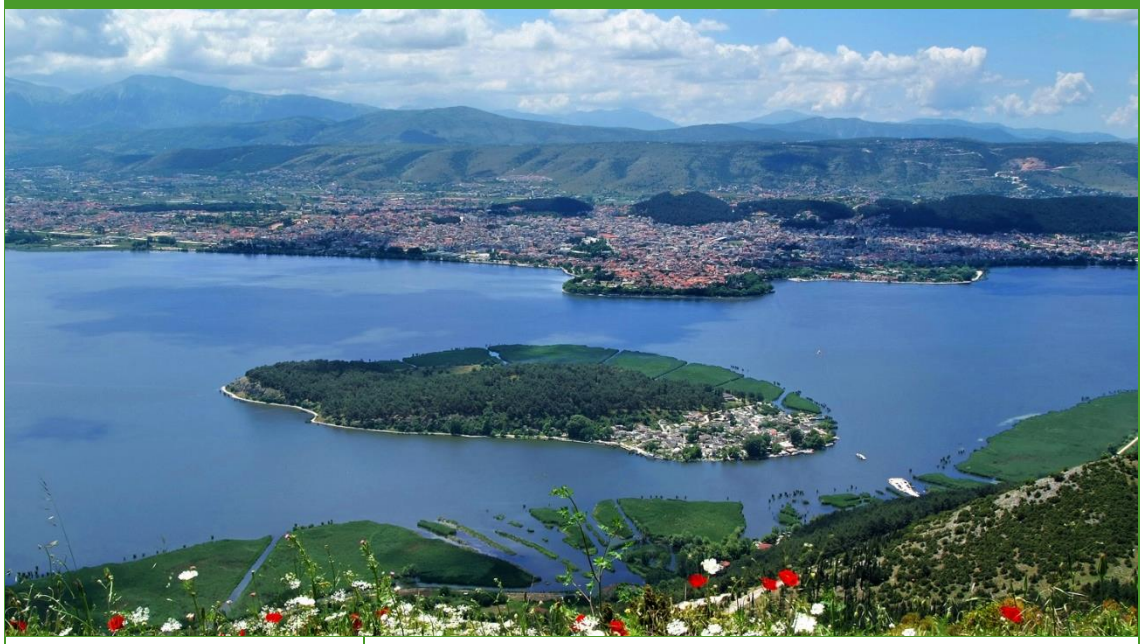
General city data	Hegyvidék is located in the hilly part of the Buda side of the capital. The population is 58,322 and the total area is 26.67 km2. On account of its extensive, forests and richness in green, the district serves as the 'lung of the city'. The administrative area of the district can be divided into three zones: a densely built-up inner-city zone, a sparsely built-up suburban zone, and a forest area.
Main environmental challenges faced by the city	The green space per capita in the municipality with 170 m2 is by far above the European average (18,2 m²) Due to this and the lack of resources, maintenance and replacement of trees are a challenging task Urban forests are exposed to significant tourist pressure. In the busiest inner-city zone, there are high levels of noise and concentration of air pollutants. The urban heat island effect is also pronounced. In some of the streets, the specific location of utilities hinders tree planting. The municipality lacks experience in community involvement techniques and participatory planning.
NBS implemented or planned	They set up an urban meadow in the district. By treating the lawn in a nature-friendly way, we restore the vegetation, increase its species stock, and with it the population of pollinating and other insects and songbirds that feed on them. They asked waterworks to reduce the usual 5 mowing per year in their area for pollinating insects.

Independencia

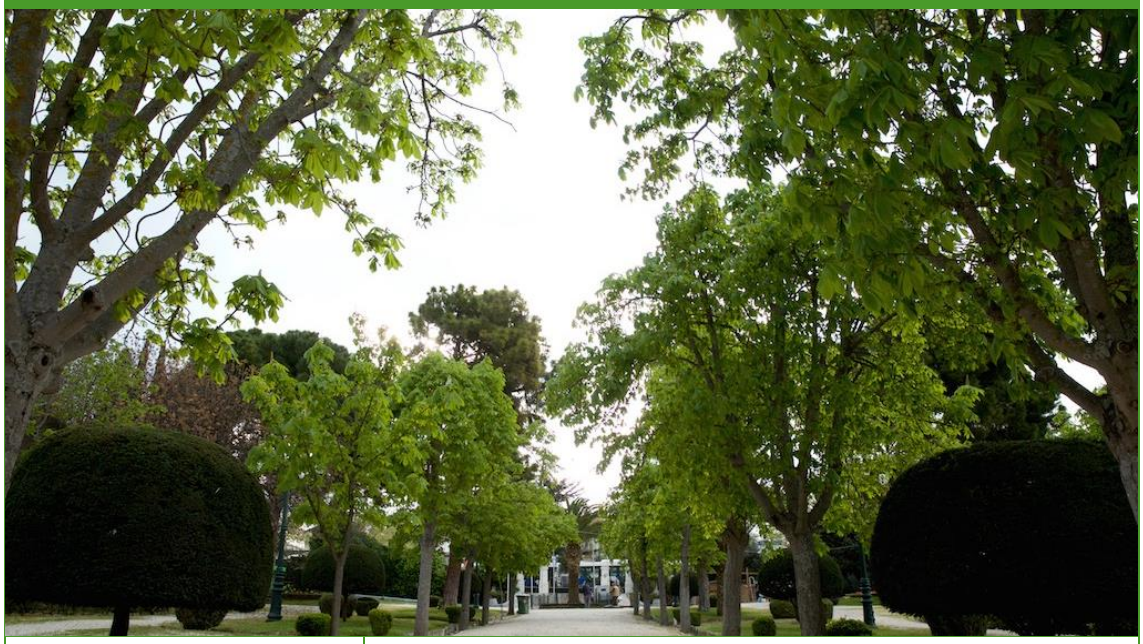


General city data	Independencia is a commune located in the north-central sector of Greater Santiago (Chile). Its urban layout is rather irregular in shape and is characterized by the presence of medium-size buildings. Based on the data collected in 2017 in the Census of the National Institute of Statistics, the commune has an area of 7 km² and it is estimated that the population for the year 2022 was 150,074 inhabitants, where 74,538 are women and 75,536 are men.
Main environmental challenges faced by the city	Currently, one of the priorities of Independencia is to improve the life quality of the residents of the commune, for which the municipality is committed to ensuring and promoting care for the environment, with the aim of achieving a balance with the social and economic development. The environmental challenges currently facing the commune are those associated with the following topics: • Circular cities and economy. • Sustainable energy. • Climate change. • Environmental education and citizen participation. • Sustainable trade. • Green infrastructure. • Water efficiency. • Mobility and public space.
NBS implemented or planned	Within the commune, the main NBS, which is currently under development, is the Urban Forest with the Miyawaki methodology. This project consists of recovering an empty area within the commune, which will be used to create an urban forest that imitates the dynamics of a native forest, restoring part of the natural ecosystem of the place. In addition, this project seeks to reduce the effect of "Heat Waves" and the effect of the "Heat Island" of the city.

Ioannina

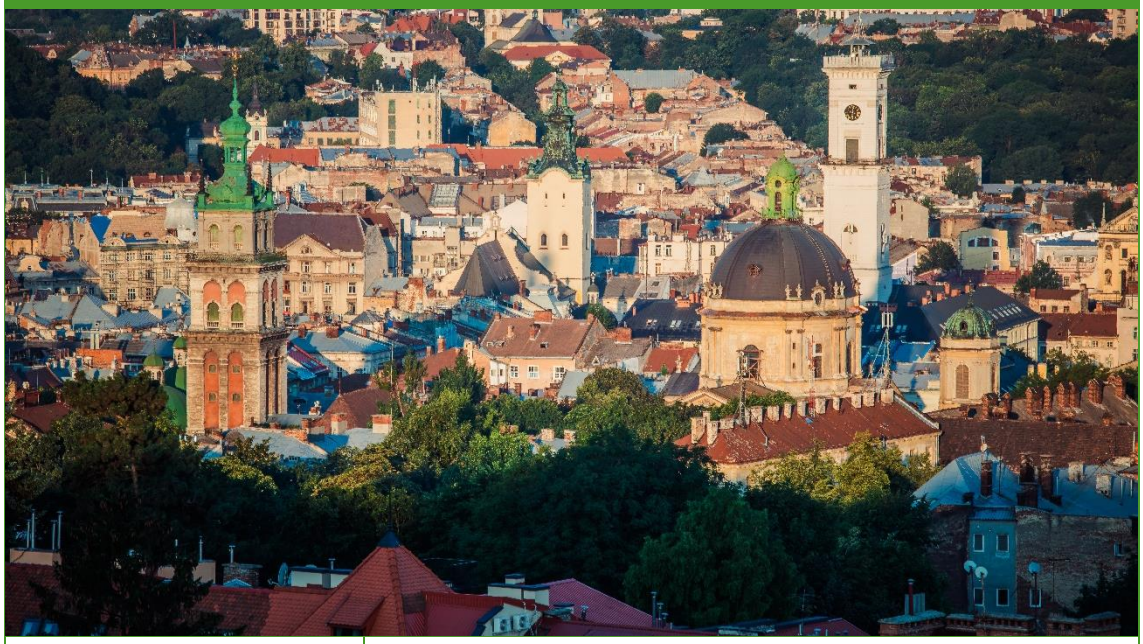


General city data	Ioannina is the capital and largest city of Epirus, a north-western region of Greece, with an increasing population of 112,486 people. Forms a geopolitical crossroad of the development axis of north Greece. Lake Pamvotis is what mainly characterizes Ioannina and gives its own stigma in the city. The city's modern development is marked by its advancement in arts, literature, trade and tourism.
Main environmental challenges faced by the city	Lake Pamvotida is an aquatic ecosystem and has been characterized as an eco-development system. The inhabited lake island is a tourist attraction, as is the Perama Cave. The natural surroundings of the city are one of the 19 aesthetic forests of the country. Ioannina is a major tourist destination at all times of the year, and the city's growing tourist infrastructure supports it. Ioannina's sustainable urban development plan, aims to protect, restore and highlight the natural environment, the city's history and cultural heritage as factors to enhance competitiveness and promote employment.
NBS implemented or planned	Municipality of Ioannina during the previous years has implemented street renovations on soft sidewalks in the historic city centre and bicycles lanes of about 6,6 Km. Now among others, is going to interconnect, redevelop, upgrade and enhance public spaces, existing network of pedestrians, public roads and squares promoting the lakeside area and others significant areas such as the castle and the Litharitsia Park. Also plans projects like integrated actions for the protection and restoration of Lake Pamvotida and like those of remodelling of aquaculture areas as ecotourism and environmental awareness-raising areas.

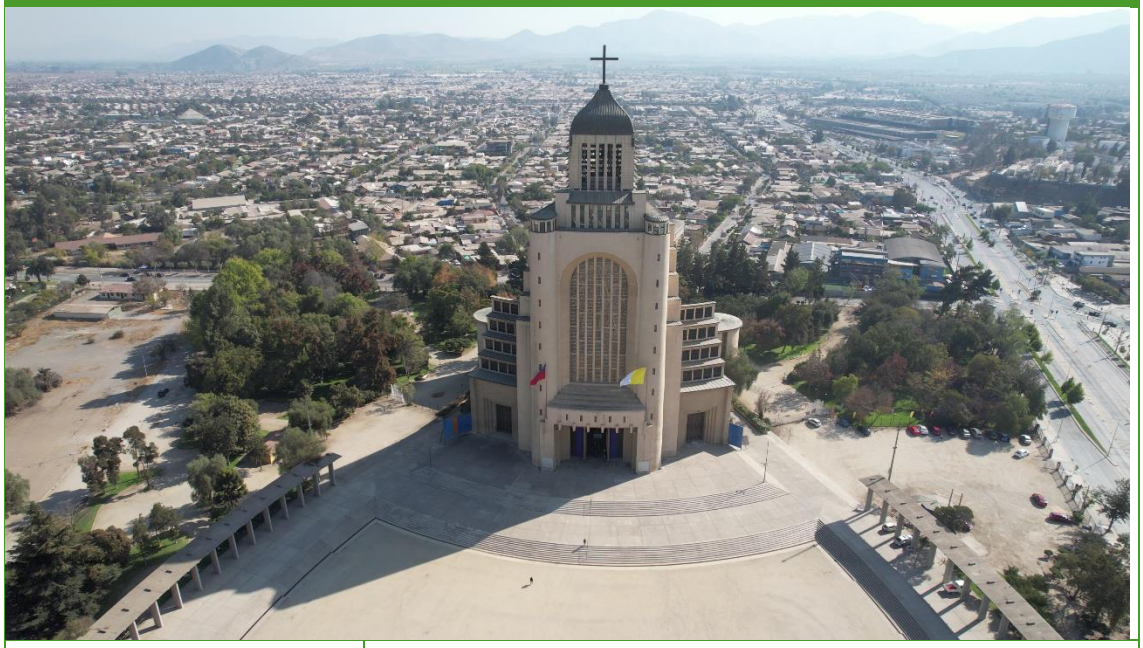
Kifissia	
	
General city data	Kifissia is a city in Greece with 71,259 citizens and 2,095.85 person/km2 population density and is situated 12 km northeast of Athens city centre. The built-up area of Kifissia is continuous with those of the neighbouring suburbs. Kifissia is a green suburb with many parks and tree-lined streets.
Main environmental challenges faced by the city	The main environmental challenges that face Kifissia includes air emissions from transport, over exploitation of water resources and forest fires.
NBS implemented or planned	• Parking area under a green park with bike sharing, saving water system, and car washing with biodegradable cleaning materials • Voluntary reforestation actions of burned forest areas • Parks, green spaces/resting areas, and tree lined streets are present around the city • Planned NBS: "Kifissos River in the modern age" this is funded program invitation. The aim of the proposed Project is: information, public awareness and engaging citizens in issues of environmental protection, submitting proposals for development policies and sustainable river management.

Kladno	
	
General city data	Kladno is a city in the Central Bohemian Region of the Czech Rep. It is located 25 km northwest of Prague. Kladno has a population together with suburban areas of more than 123,000 (nearly 70,000 in Kladno). Kladno has heavy industry history. The proximity to Prague helped to keep the local economy stable in spite of the heavy industrial decline after the collapse of the communist regime.
Main environmental challenges faced by the city	• Low energy efficiency; • Air pollution; • Environmentally affected areas from industry (incl. brownfields); • Lack of zero/low carbon transport vehicles (incl. almost zero use of electro-mobility); • Low usage of renewable energy sources; Heap of waste and soil contamination in same areas; • Drought – in general (lack of rainfall; torrential rain and low sewerage capacity; low efficiency of water management in agriculture); • Biodiversity - more conventional than sustainable forest management; rare species disappear (in a partial way); • Green spaces - increasing pressure on maintenance in the city.

NBS implemented or planned	• Already implemented (examples): • Energy savings in some buildings; • Remediation of the coal (coke) factories with high degree of contamination (e.g. Poldi area); • Establishing a greenery coefficient within construction activities (compulsory even for private sector); • Ensuring the ecosystem stability within some areas – complex measures in landscape (around the Sítenský bridge). • Planned (examples): • Systematic approach in sector of energy savings (incl. positive energy district achievement); • Brownfields – risk analysis incl. measures proposal (more or less focused on elimination of the contamination and future use of land); • Setting up the energetic management - complex of activities incl. • IT system purchasing; thermal mapping of the territory; • EPC model set up; • Electric cars/buses (fleet generally) purchase and infrastructure construction; • Mine water solutions (together with contamination and waste problem)

Lviv	
	
General city data	Lviv is eastern located in Eastern Europe. It is the largest city in western Ukraine and the sixth-largest city in the country overall with a population of 750 thousand inhabitants. Lviv is located on the watershed on the edge of the Roztochia Upland, approximately 70 kilometers from the Polish border and 160 kilometers from the eastern Carpathian Mountains. The climate is humid continental.
Main environmental challenges faced by the city	Lviv is facing climate change impacts during the last decades. Temperature rising and a decrease in precipitation are big threats. In August 2015 mean air temperature reached +21.6°C exceeding the long-term norm on 4 degrees amid the complete absence of rain (1 mm per month!). Heavy rains and heat island effects are now the most obvious and frequent problems. Due to the change in precipitation pattern city became prone to heavy rains which often result in flash floods. In summer 2018 several flood events happened in the city. Additionally, mobility caused air pollution in the city.
NBS implemented or planned	Integrated Urban Development Concept of Lviv till 2030 defines the development of the green areas and linking of them into one ecological network. Sustainable Urban Mobility Plan defines the pedestrian connections and green routes as key for the city's sustainable urban development. During the last 5 years the main NBS in the city were parks, green public spaces. But for the next decade, a network of green areas within the city is going to be developed and pedestrian-cycling routes developed together with increasing tree planting and park renovation activities. Additionally, water-based solutions (lakes and small scale fountains and other solutions) are going to be implemented to mitigate climate change impacts.

Maipú

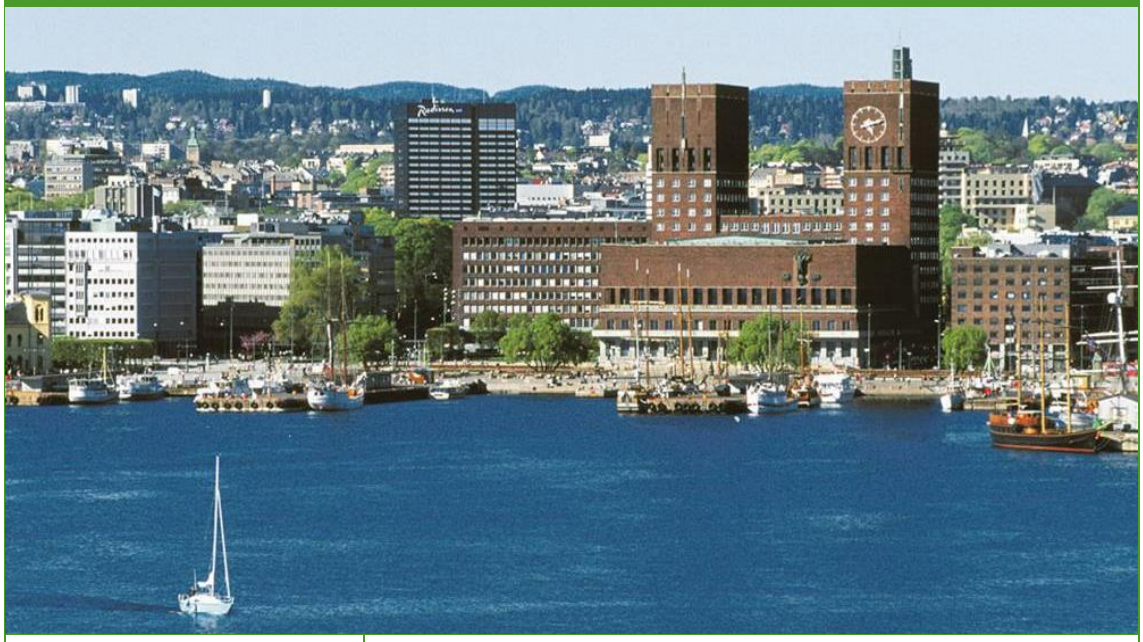


General city data	With a population of 521,627 inhabitants (according to the 2017 census) Maipú is the second most populous commune in Chile, after Puente Alto. The commune is located in the plains of the Maipo river next to some small hills or island hills, with appearances of the Cordillera de la Costa. Its geographic coordinates are 33° 32' south latitude and 70° 46' west longitude and is located 488 meters above sea level. It has an area of 135.5 km2, which corresponds to 6.7% of the Province of Santiago. Maipú is crossed by the Mapocho River, its tributary Zanjón de la Aguada, and 132 small agricultural canals.
Main environmental challenges faced by the city	Even though the commune has a total of 250 ha of green areas (making it the largest area in the entire country), it only has 5.92 m2 per inhabitant, according to a study carried out by the 'Quiero mi parque' foundation, which is well below what the WHO establishes of 9 m2/inhabitant. On the other hand, the municipal mission establishes the need to build a more sustainable, dignified and fair Maipú, through cutting-edge municipal management and the active participation of the community, where one of the axes that guides this municipal management is the search for a sustainable Maipú that takes into account the climate crisis and adapts in favour of environmental protection.
NBS implemented or planned	In this context, the municipality is already carrying out some actions in this area, such as the 2023 arborization campaign, with 2,023 new trees for the commune and the declaration of an urban wetland of the Mapocho River for the protection of this valuable ecosystem, which will include a reforestation plan for its restoration. Maipú has also a municipal environmental certification system, which establishes the need to implement various internal sustainability actions, which we want to implement based on nature-based solutions. By joining the URBAN GreenUP community we seek to strengthen the capacities to develop projects of solutions based on nature that may lead to a more sustainable commune.

Pictures/Photos of the NBS	

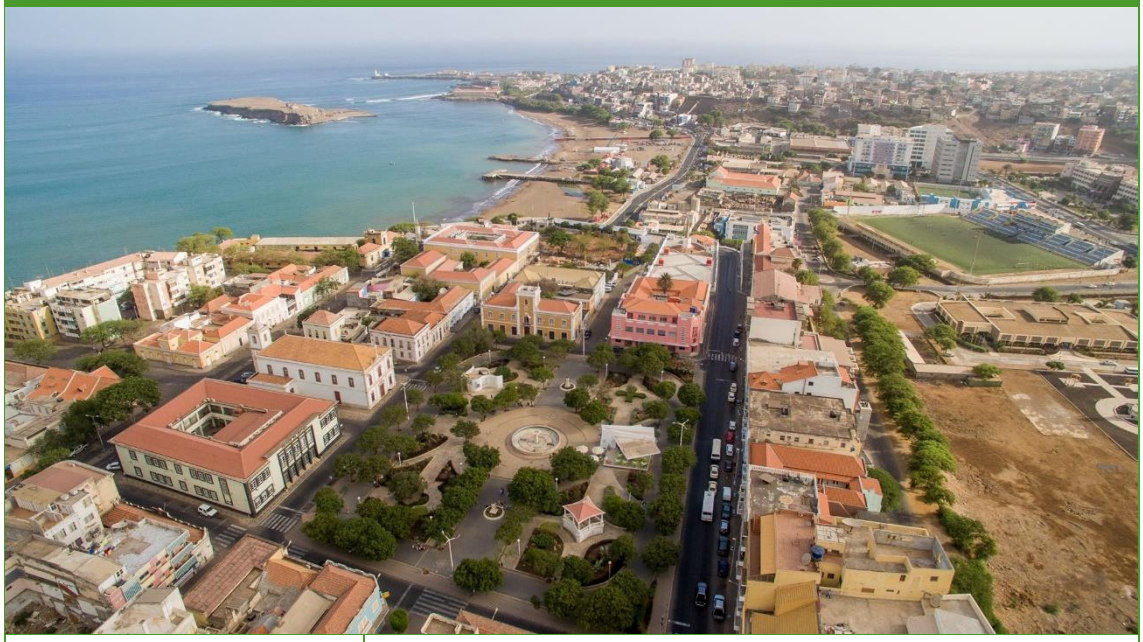
Monterosso Almo	
	
General city data	Monterosso Almo is a Sicilian village of less than three thousand inhabitants nestled in the Iblei mountains. Surrounded by the woods of Calaforno and Canalazzo, it maintains its healthy air and its green panorama. Its territory, inhabited even before the arrival of the Greek colonists in Sicily in the eighth century B.C., has important archaeological sites dating back to the late Copper Age.
Main environmental challenges faced by the city	To maintain and improve the area, reforestation interventions have already been adopted, together with the Forestry Corps, to contain the hydrogeological instability and erosion of the Monterosso slopes. In addition, the usability of Parco Canalazzo has been improved, creating an area equipped for recreation and leisure.
NBS implemented or planned	Over the next few years, the Municipal Administration will continue to implement projects that, through sustainable solutions, will lead to maintaining and improving the quality of life and the environment. The projects envisage the safeguarding of the municipal territory and the surrounding areas through tree planting; the creation of natural barriers for water drainage; awareness campaigns for sustainable agriculture that contrasts soil erosion. In order to improve air quality, the Administration also intends to place two charging stations for electric cars.

Murcia	
	
General city data	With more than 450.000 inhabitants, it is the seventh most populated city in Spain, with a population density of around 450 inhabitants per square kilometer. Less than half the local population lives in the urban area, and the rest are unevenly spread through the 54 municipal districts. The city extends approximately 882 km2.
Main environmental challenges faced by the city	We are implementing our SECAP in order to reduce our CO2 emissions and to adapt our city to climate change. On the other hand, we have recovered the banks of the river giving back to the citizens a natural space.
NBS implemented or planned	One of the Projects that is ongoing is the Reforestation Plan. It aims at planting 100.000 trees by 2030, absorbing C02.
Picture/photo of the NBS	

Oslo	
	
General city data	Oslo is the capital city of Norway, and with its population of 693 494, it is also the largest city in the country. The city's urban area is relatively compact and nestled between the Oslo Fjord and forested hills. Approximately two-thirds of the total municipal area of 454 sq. kilometres is forest, and as such, represents one of Norway's most important recreational areas with over a million users.
Main environmental challenges faced by the city	Oslo is one of the fastest-growing cities in Europe, which creates both opportunities and considerable challenges. The city is already experiencing the impact of climate change, particularly with regard to increased frequency of extreme precipitation events causing problems for stormwater handling. Urban growth also puts pressure on the availability of green space in the city. The city therefore needs to strike a balance between the need to build new infrastructure, schools, care facilities, etc., and the implementation of an ambitious environmental and climate policy.
NBS implemented or planned	The City of Oslo aims to reopen closed waterways, taking into consideration the original nature of the area concerned and, if possible, historical courses and accessibility to the public. In this way, the reopening of waterways can make a significant contribution to climate adaptation, as well as increased biodiversity, better water and air quality, and make Oslo an attractive, blue-green city for its citizens. An example of an implemented measure to reopen one of Oslo's waterways is the Teglverk Pond (see picture below). This was a major project completed in August 2015, reopening a 650 metre stretch of waterway. The pond has been planned and designed as a natural water cleaning system, with a number of sedimentation pools and streams, a small lake and shallow water with dense vegetation. All the species found in and around the pond are native to Oslo. The result of the project is clean water, increased biodiversity and a popular recreational area for the local population.

Picture/photo of the NBS	

Póvoa de Varzim	
	
General city data	A coastal town in the district of Porto, Póvoa de Varzim, with about 65 thousand inhabitants, is one of the most recognised bathing areas in the Northern Region of Portugal. With extensive sand (more than 12 km long), easily accessible and with a unique texture, a sea rich in iodine and a coast full of welcoming bays, it is a tourist attraction pole without parallel in the region.
Main environmental challenges faced by the city	Climate change is currently one of the greatest environmental threats. The climate projections for Póvoa de Varzim point to a potential decrease in total annual precipitation and for a potential increase in temperatures, an increase in the frequency of heatwaves and the occurrence of extreme phenomena with events of intense and/or very intense precipitation. The effects of climate change can be particularly senses in coastal zones. Rising sea levels alter the shape of coastal lines, contribute to coastal erosion and can cause flooding and further intrusion saltwater groundwater.
NBS implemented or planned	The lake in Póvoa de Varzim urban park has registered for the first time in 2017 an exponential growth of algae, which seriously affected the quality of the lake's water and the animal species. This was increased by the rising temperatures and the decrease in the renewal of the lake water, due to the decrease in the contribution of water from the streams that flow into the lake. Therefore, the City Council has designed and implemented, with the support of a specialized company, an intervention based on the use of beneficial environmental microorganisms, which decompose the excessive organic matter, reducing its availability for algae, limiting its growth. In addition, the team responsible for this project has developed a new additional measure that aims to reduce the occurrence of algae blooms through nutrient sequestration by the implementation of phytoremediation islands. This measure is still under development and is expected to be implemented during this year.

Praia	
	
General city data	Oslo is the capital city of Norway, and with its population of 693 494, it is also the largest city in the country. The city's urban area is relatively compact and nestled between the Oslo Fjord and forested hills. Approximately two-thirds of the total municipal area of 454 sq. kilometres is forest, and as such, represents one of Norway's most important recreational areas with over a million users.
Main environmental challenges faced by the city	• Successive episodes of droughts and rains of torrential character concentrated in a reduced number of days or even hours, contributing to the inexistence of permanent water surfaces and low quantity / quality of groundwater; • Rapid demographic growth generating peripheral neighbourhoods characterized by high clandestine constructions, lack of basic infrastructure (water, electricity, sewerage, etc.) and inappropriate behaviours/attitudes towards the environment; • The aforementioned factors contribute to the destruction and deficit of green spaces in the municipality.
NBS implemented or planned	The intention is to install the drip irrigation system in the main green spaces in Praia (squares, squares, separators, roundabouts) as a way of reducing water stress, plant death and contributing to the economy/saving of Water. Six reservoirs will be built upstream to facilitate gravity irrigation. The reservoirs will be supplied with water self-transported from the Waste Water Treatment Station (WWTP), from the boreholes/wells and from the use of water from the company Ceris. The project will also contemplate an educational aspect, through the elaboration of a manual of green spaces resilient to climate change and awareness actions in the student sector. In this sense, the challenge is to find better solutions to design, transform or qualify green spaces more adapted to climate change.

Picture/photo of the NBS	

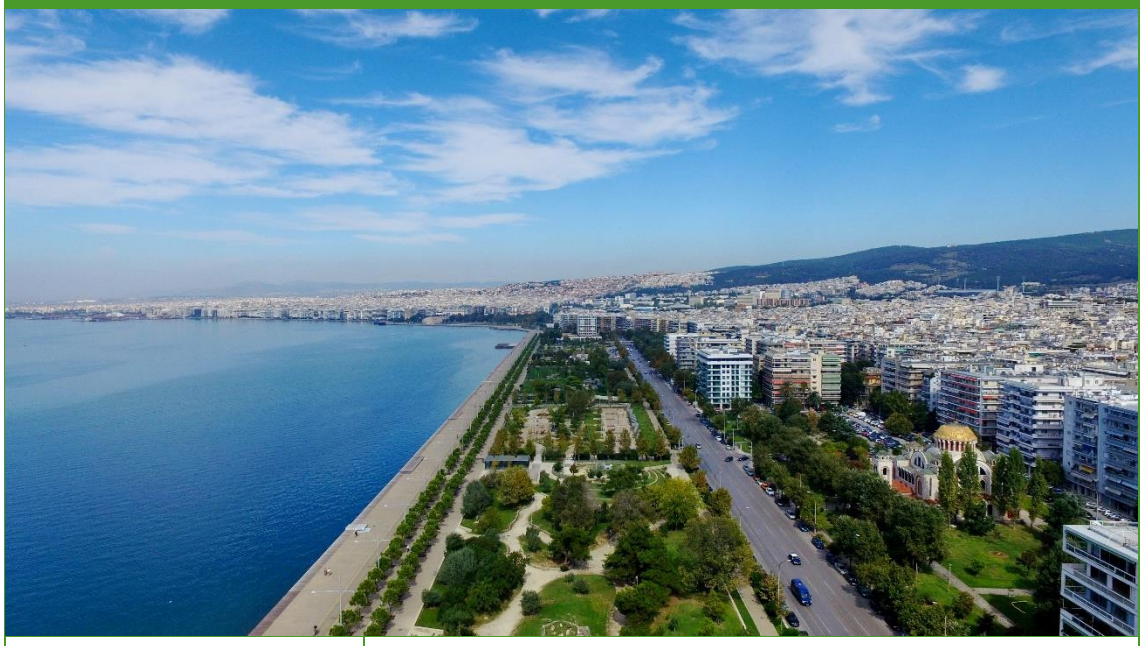
Santa Pola	
	
General city data	Santa Pola is a 31,745 population coastal town located in the Valencian Community. It is currently one of the most important fishing ports in the Spanish Mediterranean. Based on a 58.6 km2 surface, its main natural resources are the Natural Park of Las Salinas, the Sierra and Cape and beaches in an 11 km length. Santa Pola is one of eight municipalities that form the Alicante coastline Costa Blanca.
Main environmental challenges faced by the city	According to the 2009 General Plan, green areas in Santa Pola can be divided into three categories: beaches, outdoor recreation areas with sports facilities and public parks. There is a lack of parks or squares in the municipality, as they represent only 7.04% of the total area of green spaces. The availability of green space per individual is 4.21 m2. This data indicates the lack of urban green space available for leisure and recreation. Furthermore, Santa Pola is a city highly exposed to the impacts of climate change, and in particular heatwaves.

NBS implemented or planned	In 2015, a territorial ordination instrument of supra-municipal scope (PATIVEL) was presented with the objective of preserving and protecting the coast of the Valencian Community. In Santa Pola, both the Natural Park of Las Salinas and Cabo de Santa Pola are areas of considerable ecological, cultural, agricultural, scenic and territorial value, the preservation of which is a priority for the municipality. The City Plan of Santa Pola is committed to safeguard the protected coastal front of the city, protect natural resources, use anthropogenic resources coherently so that the natural environment does is preserved, develop a bicycle lane on the entire coastal front of the municipality of Santa Pola, strengthen environmental awareness in general among citizens and manage responsibly the parks and gardens in the city. The ponds from the old lagoon system of the Santa Pola Wastewater Treatment Plant (WWTP) have been kept as lagoons, fulfilling the functions of: a reservoir of regenerated water from the purification of wastewater (100% of the residual water from Santa Pola) for later use in irrigation, in its entirety (100% of the water that reaches the treatment plant). This basically is the regulation system for the distribution of irrigation water in a traditional system, the head reservoir. Its use is also intended as a recharge of nearby natural wetlands (Las Salinas and Clot de Galvany Natural Park, both recognized in the wetland system of southern Alicante. At present, a place of passage and even nesting of birds has been generated (spontaneously) in these lagoons, since a permanent sheet of water is available (regenerated from residual water). As projects: Use water in more areas (already presented in an integral water cycle project), recharge nearby wetlands (already recognized by protection figures) to ensure permanent sheets of water, generate islands for the nesting of certain threatened species in the lagoons themselves, and visitor spaces / pedagogical observatories to show the integral water cycle, what is the end of the recovery of the residual water.
Picture/photo of the NBS	

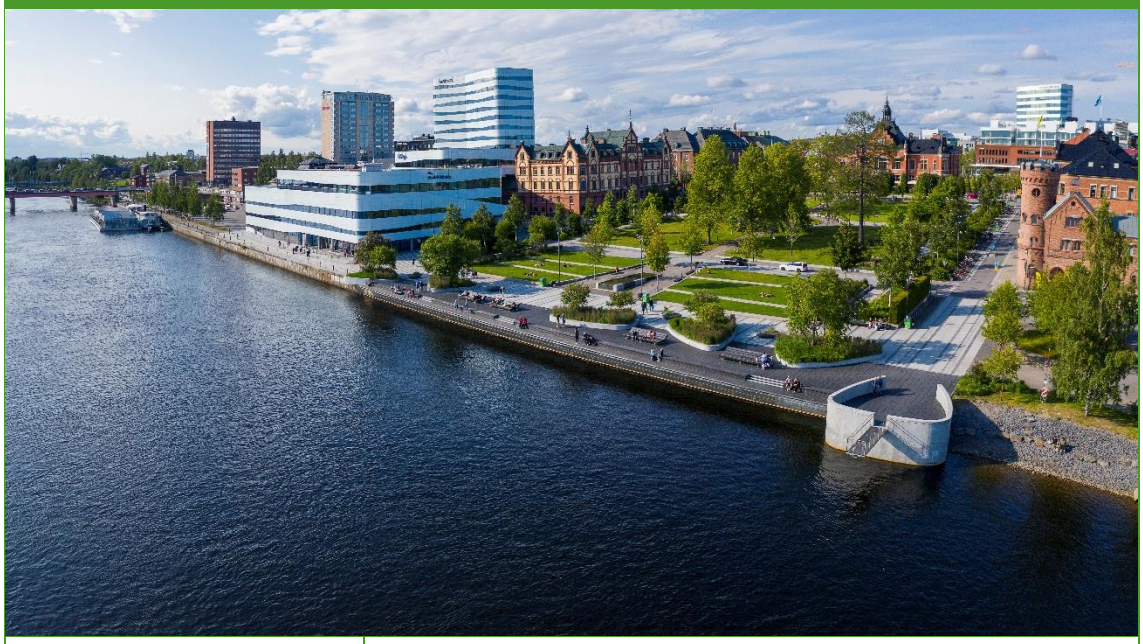
São Paulo	
	
General city data	São Paulo is a huge city, the core municipality of the 39 that build the Metropolitan Region of São Paulo; Population: 11.604.366 (2017); Area: 1.527 km²; GDP: US$ 125 billion (2017).
Main environmental challenges faced by the city	São Paulo is a huge city, the core Municipality of the Metropolitan Region of São Paulo. The main environmental challenges are linked to its size and the social and economic processes that oriented its growth: water availability, floods, landslides, lack of green areas. In the built environment, the main challenges are the lack of public services in the more distant and poor regions, mostly sanitation. Mobility issues and congestion bring air pollution, but probably the more difficult challenges to overcome are those related to social and economic issues, as income inequality.
NBS implemented or planned	Linear parks: implanted along rivers and creeks, providing an area to accommodate floods and increasing green areas for people's use Parks: increase of general and experimental NBS use. Plans: the so-called four green plans: a) Plan for Environmental Services Payment: sets the norms to the payment for environmental or ecosystem services in the Municipality. Time horizon: 2030; b) Mata Atlântica Municipal Plan: this Plan sets guidelines for the recovery of native vegetation and biodiversity (biome Mata Atlântica) within the Municipality and for connecting relevant tree patches. Time horizon: 2030; c) Street Tree Planting Plan: is a Plan to establish guidelines for a better street tree management, in a participative way. It counts with inventory, street tree planting prioritization, etc. Time horizon: 2040; d) Municipal Plan for Protected Areas, Green Areas and Free Spaces: sets guidelines for the conservation of public and private green areas. Time horizon: not yet defined.

Tampere	
	
General city data	Tampere is the third-largest city in Finland and the largest inland centre in the Nordic countries. Currently there are almost 240 000 inhabitants, and close to half a million inhabitants in Tampere Region. Tampere is one of the three most rapidly developing regions in Finland. It is a centre of leading-edge technology, research, education, culture, sports and business.
Main environmental challenges faced by the city	City on Tampere aims to be a carbon neutral city by 2030. Roadmap towards carbon neutrality focuses on sustainable mobility, construction and living, energy production and consumption, consumption and material flow management and urban nature. The City of Tampere is growing and densifying, and climate change is expected to result in higher temperatures and increased rainfall, especially in winter. Densification and rain are the main challenges tackled with NBS in Tampere.
NBS implemented or planned	NBSs in Tampere focus mainly on quantitative and qualitative stormwater management. There are ca. 45 nature-based stormwater management solutions such as retention ponds, alluvial meadows, infiltration basins, biofilters and constructed wetlands. There are also few green roofs in the city. Vuores district stormwater management system, which is hybrid of grey and blue/green infrastructure, is one of the largest in Nordic countries. In UNaLab project, NBSs in Tampere have been developed further and novel solutions such as new filtering materials have been tested. Tampere has also developed online monitoring of NBS performance especially in water management.

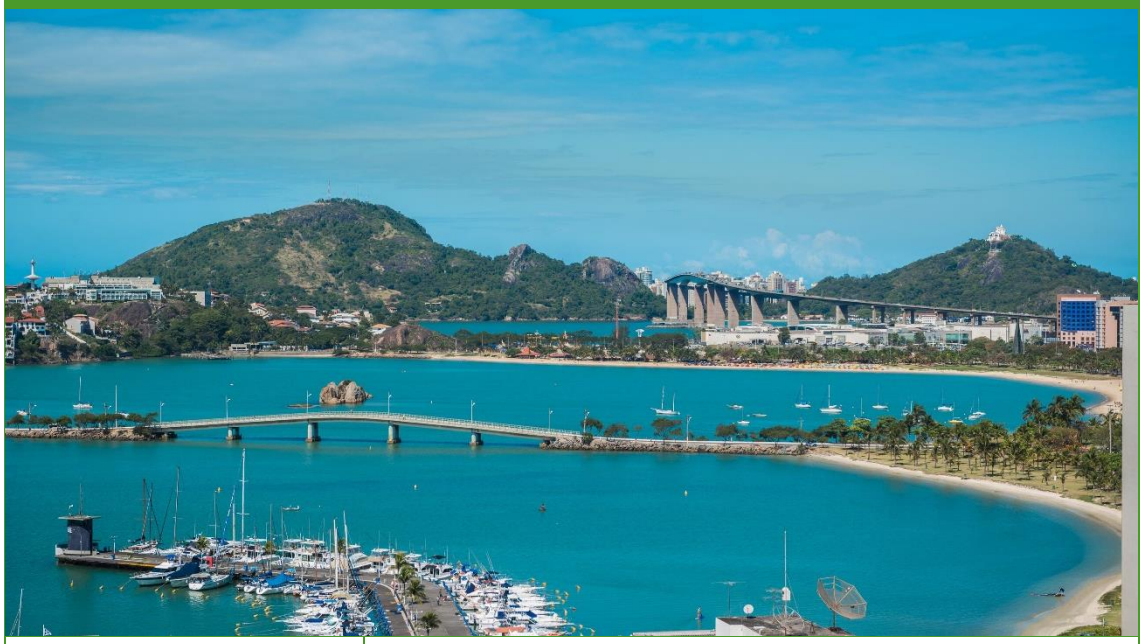
Picture/photo of the NBS	

Thessaloniki	
	
General city data	Thessaloniki is the second biggest city of Greece with approximately 20.000 m2. The population of the municipality of Thessaloniki is 324.766 (2011 census). The city is inhabited continuously since 315BC, it has been part of the Hellenistic, Roman and Ottoman empires and had a strong Jewish history. Today it is an active port-city, with three respected universities, and robust tourist industry.
Main environmental challenges faced by the city	The city has a dense urban structure with limited open or green spaces as there is currently 2.6 m2 of green space per resident, although the city has a peri-urban forest and 7km waterfront. Thus the city faces many challenges by natural hazards (flooding, wildfire, earthquake).
NBS implemented or planned	VERTICAL GARDEN: The “hanging” garden -a lush vertical garden that was created on the front of the building of the Office of Urban Environment Management- designed by Panos Dragounas, Sotiris Theodosopoulos, Varvara Christopoulou, impresses the passers-by on Cleanthous Street since 2018."
Picture/photo of the NBS	

Umeå



General city data	Umeå is the largest city in North Sweden with more than 125 inhabitants with an average age of 38. Umeå is a centre of education, technical and medical research in Sweden, with two universities and more than 39.000 students. The climate is subarctic, with short and fairly warm summers. Winters are lengthy and freezing but considering the latitude, very mild due to the influence of the Gulf Stream.
Main environmental challenges faced by the city	Umeå has high ambitions for the environment. One of the largest challenge to become climate neutral by 2030 is CO2, air pollution caused by car traffic. Due to the arctic climate and geographical location, this is also made worse due to inversion during cold winter months.
NBS implemented or planned	The green healing wedge - healing the city and its people. As the green wedge is running from one edge of the city to the other edge, it will become a perfect green corridor for people to move from one side of the city to the other in a green and healthy corridor. By making the green wedge coherent, it will be an important green corridor where we will handle the stormwater. The trees and forests in wedge will also be important in improving air pollution. The trees on the wedge will be an important noise reduction from the road. Water purification, pollination and flow control are other environmental benefits of the wedge. Umeå is also well known in Sweden for its many birch tree alleys lining the street space. Originally they were planted to prevent fire from spreading across the street space, but now they serve as air purifiers while also counteracting heating of the street areas, thus reducing the urban heat island effect and also improving the air quality.

Vitória	
	
General city data	Vitória is the capital of Espírito Santo. It has 362,067 inhabitants and 96,5 km². It presents natural beauty and various ecosystems, such as the Atlantic Forest, mangroves, beaches, estuaries, islands and an unique geography, which is part of the identity, history and culture of the city and its people. Owns the 5th best National HDI and is the 3rd best capital in the country to live in.
Main environmental challenges faced by the city	• Quality of the surrounding waters • Universal environmental sanitation • Control and reduction of air pollution • Degradation and deforestation of protected ares • Mangrove conservation • Control of polluting effluents • Conservation and expansion of the municipality's native vegetation cover • Increased urban afforestation • Slope containment • Containment of marine erosion • Preserving the landscape • Environmental and health education • Waterproofing the urban soil • Growth in disordered urban occupation • Lack of connectivity between protected areas

NBS implemented or planned	*Urban Master Plan:* • Protection Plan for the Natural Landscape and Historic Buildings; • The requirement to execute a rainwater collection, storage and disposal system; • Afforestation in uncovered parking lots; • Housing close to shops and services to encourage walking or cycling. *Implanted:* • Protected areas - Since the mid-1980s, Vitória has declared 71 areas as protected areas, 25 of which are islands, 9 are mangrove areas, 7 are reforestation areas, 12 are urban parks and 19 are protected areas. The Conservation Units have been created on the last four years: Environmental Protection Area (Turtle Shore), the first marine UC in the municipality, preserving the last and only remnant of this ecosystem in the Municipality and the Wildlife Refuge, with remnants of the Atlantic Forest; • Gardens, Squares, Urban Parks, flowerbeds and other green areas that add up to approximately 6 million m². In 2020, 599 trees were planted; • Urban afforestation has 35,600 trees planted.

Vila Franca de Xira

General city data	Vila Franca de Xira is the main city of the municipality of Vila Franca de Xira. It belongs to the Lisbon metropolitan área. It has 318,19 km2 and 136886 inhabitants. The Tejo river crosses the municipality. The main urban areas are located in the South in the right bank of the river, which is more mounty. The left bank of the river has plain areas of “Lezíria” e “Mouchões”.
Main environmental challenges faced by the city	The main environmental challenges faced by Vila Franca de Xira (VFX) are related to the proximity to Tejo river. Tejo is the biggest river in Portugal and VFX is located in the beginning of its estuary. With the expected changes related with environmental climate change, VFX will be very susceptible to estuary flooding and progressive flooding, and susceptible to quick flooding. Excessive heat is predicted to be a problem in the future. VFX deals with the pressure of construction, due to the proximity to Lisbon city, but maintains a character of urban-rural fringe.
NBS implemented or planned	During the past years Vila Franca de Xira has been implementing NBS in green spaces. In the 22 Km of river front, from South to North, there are being built urban parks and trails to allow populations access to the river front and to assure that the main values of the protected area are preserved and respected. These parks and trails are built in respect to local characteristics and with natural materials and solutions, allowing the water to take its course in harmony with human proximity. The Tejo Estuary Riverside Linear Park is one of these front river parks were NBS were used. The park respects the local conditions and creates access for humans in harmony with nature. It has a bird’s observatory and an environmental interpretation center. This project won an honour mention in Green Project awards 2014 and the first price in Landscape and Public Spaces Archmarathon Awards 2015, and in WAN Landscape Awards 2016.

Picture/photo of the NBS	

Annex A3 - PPT

URBAN GREEN UP

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730426

URBAN GREEN UP

URBAN GREENUP OVERVIEW

Program: HORIZON 2020 - Work Programme 2016 - 2017
Topic: SCC02-2016-2017: Demonstrating innovative NBS

Name of the coordinating person: Raúl Sánchez

Technical Coordination Team: Nuria Garcia, Jose Fermoso, Laura Pablos, Silvia Gómez, Paloma González, María González, Esther San José.

Administrative Coordination: Daniel Martín

Dates: 1st June 2017/1st May 2022

Total effort: 1.230,5 person month

Total Eligible Costs: 14,811,824.44 € (EC contribution: 13,970,642.25€)

The consortium: **25** Partners (**8** municipalities, **9** RTD **– 6** tech. centers, **3** universities **–** , **2** large industries, **3** SMEs, **2** Non Profit organizations and **1** public body)

Nationalities: **9** (Spanish, English, Turkish, German, Italian, Portuguese, Chinese, Vietnamese, Colombian)

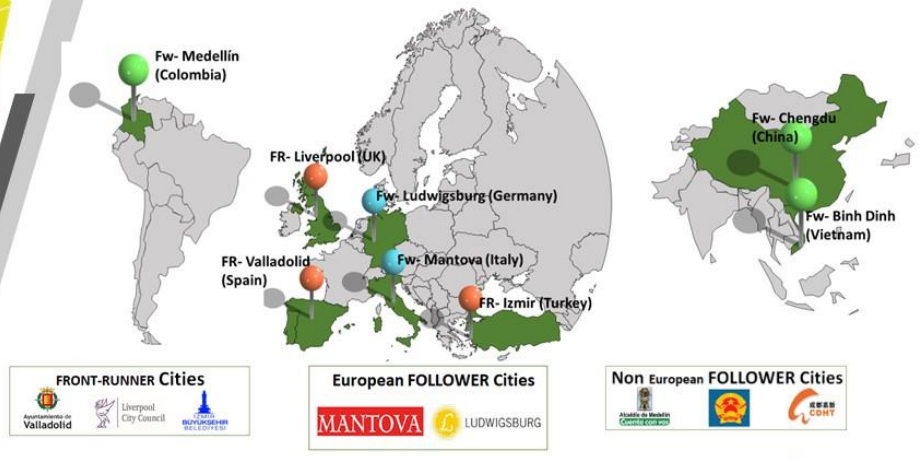
2

URBAN GREENUP OVERVIEW

URBAN GreenUP is the demonstration of an **innovative methodology to re-naturing cities** (the concept of **Re-naturing Urban Planning –RUP**) **through NBS interventions**, considering new technologies, towards the adaptation of the cities to fight against the climate change:

1. Identification of the **city challenges**.
2. Involvement of the **key stakeholders** (industry partners, SMEs, Start-ups entrepreneurs and citizens – collaborative approach).
3. **Demonstration** in 3 Demo-sites (Valladolid, Liverpool and Izmir).
4. **Evaluation and Replication** at EU level.
5. Application of **interdisciplinary approach**: different methodologies - EKLIPSE, ESA, MAES
6. Involvement of **Social Sciences and Humanities**: Collaborative methodology (plan to involve the Social Science and Humanities and deployment of NBS) and new SSH KPIs.

URBAN GREENUP WORLDWIDE DIMENSION



URBAN GREENUP ACTIONS

URBAN GreenUP actions will be implemented in different **Sub-Demo areas** in each Front-runner City.

The main feature of this implementation is the **interconnection among Sub-Demo areas.**

The NBS interventions has been categorized in **4 overall categories, and those in different sub-categories related to specific climate change challenges:**

RE-NATURING URBANIZATION	WATER INTERVENTIONS	SINGULAR GI	NON TECHNICAL INTERVENTIONS
Green route	SUDS	Smart soils	Educational activity
Arboreal Interventions	Flood actions	Pollinators	Engagement
Carbon capture	Green Pavements	Vertical GI	City coaching
Resting areas	Water treatment	Horizontal GI	Support activity
		Pollutants filter	
		Bike-pedestrian infrastructures	
		Urban farming	

URBAN GREENUP IMPACTS

- ✓ **New global NBS market**, new economic opportunities, products, local **green jobs** (more than 500 direct jobs)
- ✓ Increasing **awareness** of the benefits of re-naturing cities
- ✓ **Enhancing stakeholder** and **citizen participation** (processes for **co-design**, **co-development** and **co-implementation**).
- ✓ Fostering the creation by 2020 of **healthier** and **greener cities**
- ✓ **Increasing** the **international cooperation**
- ✓ Enhancing the **implementation of EU environmental policies**
- ✓ **Improving** living conditions and **biodiversity**
- ✓ **Improving mobility conditions** – green corridors associated with promoting the use of bicycles

URBAN GREENUP CLUSTER AND NETWORK OF CITIES

7

MAIN OBJECTIVE

To promote widespread acceptance, awareness, replication and dissemination of the Renaturing Urban Plan (RUP) methodology and of the individual Nature Based Solutions (NBS) implemented in the URBAN GreenUP project among and beyond Front Runner and Follower cities, ensuring its transference to the greatest number of cities possible at the European and International levels.

EXTERNAL CITIES JOINING WILL GET THE FOLLOWING BENEFITS (1):

- Exchange experiences with the URBAN GreenUP project Front-runner and Follower cities
- Direct access to an extended network of contacts
- Take part on the project webinars, with exclusive contents

9

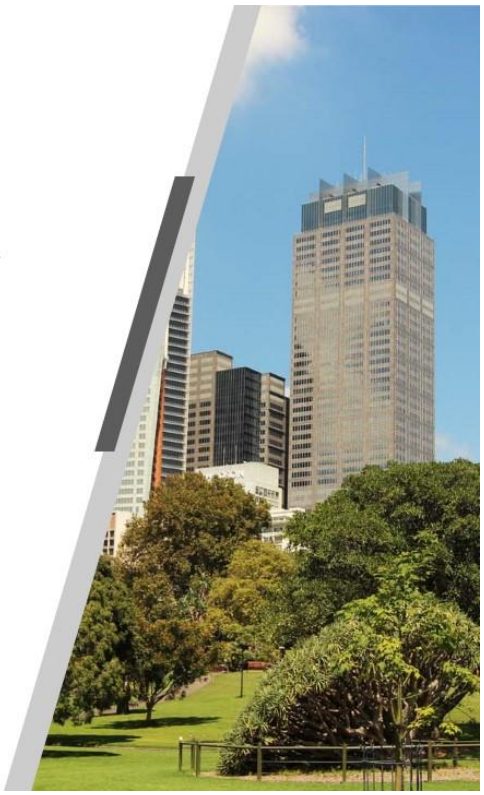
EXTERNAL CITIES JOINING WILL GET THE FOLLOWING BENEFITS (2):

- Participate in selected project activities (e.g. study tours, workshops, etc.)
- Increased external visibility, with the city profile being shared on the project communication channels
- First-hand access to project information, outputs and deliverables.

10

CURRENT STATUS

- Up to this day, **26 external cities** joined our external network...
- ... and there are more to come!



11

AALBORG

DENMARK

ATHIENOU

CYPRUS

BARI

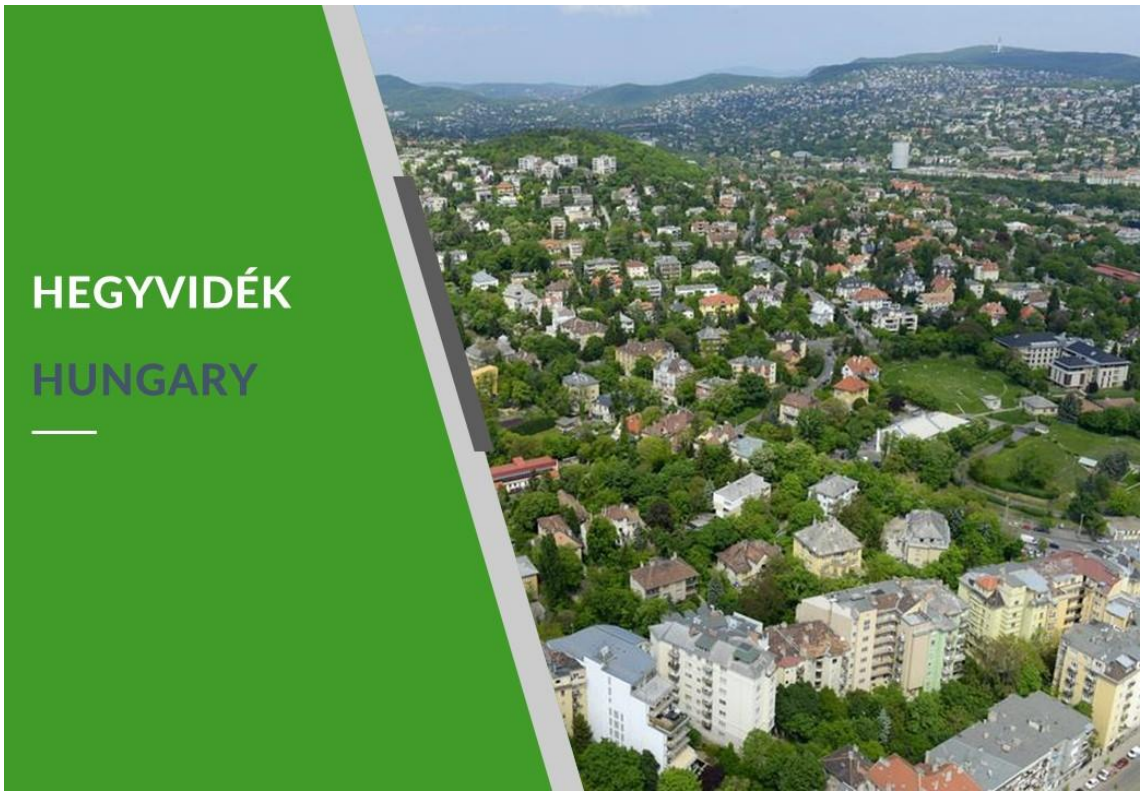
ITALY


BRAGANÇA
PORTUGAL


CASTELOFRANCO
VENETO
ITALY


ESPOSENDE
PORTUGAL


HAMMAM-LIF
TUNISIA


HEGYVIDÉK
HUNGARY


INDEPENDENCIA
CHILE

IOANNINA

GREECE

KIFISSIA

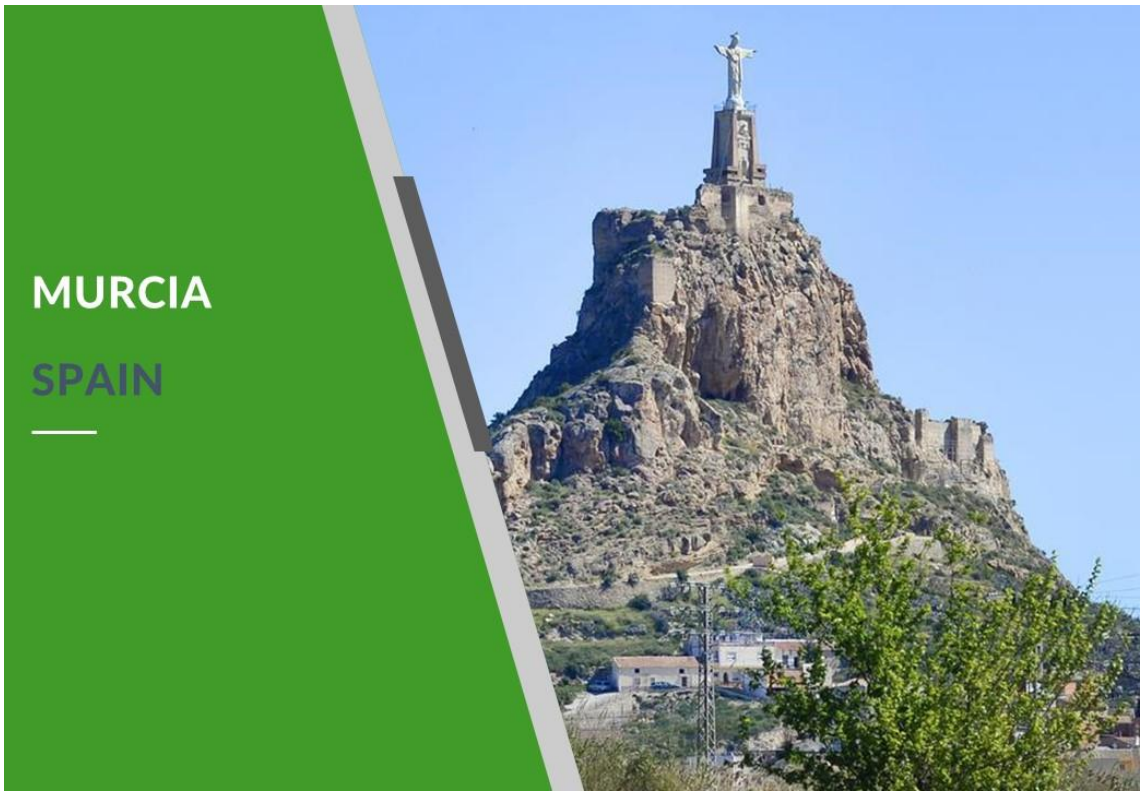
GREECE

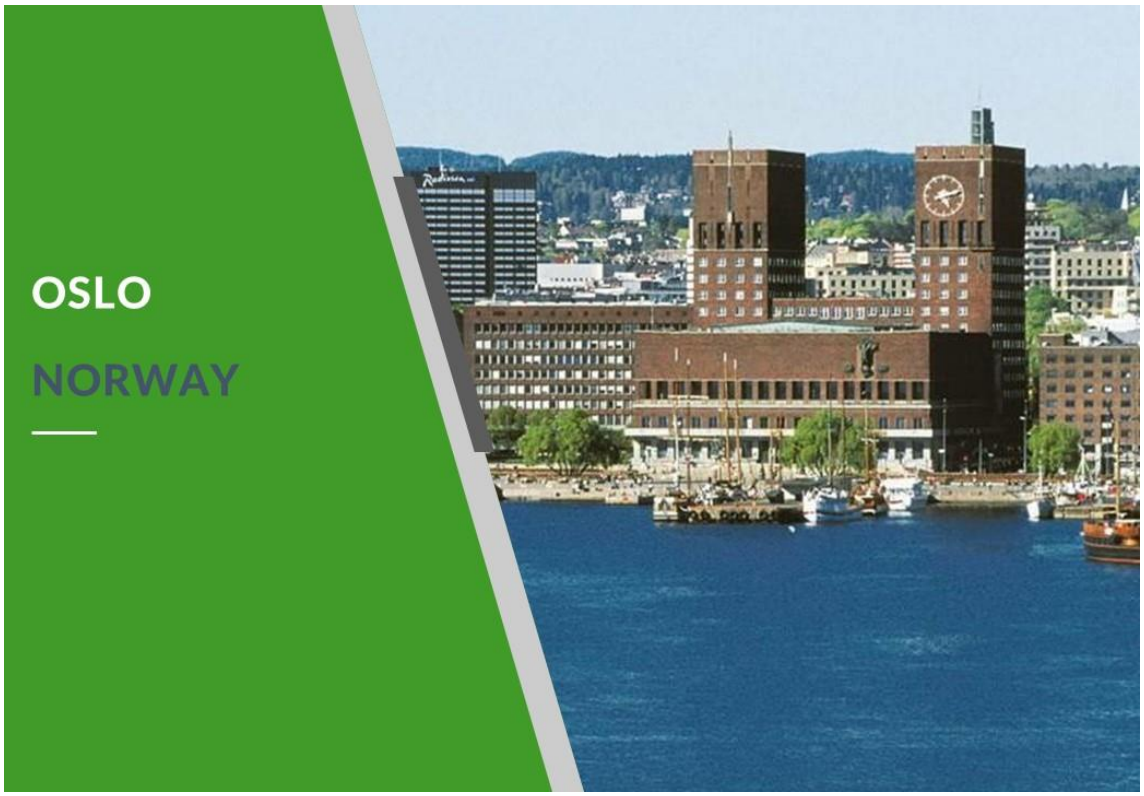

KLADNO
CZECH
REPUBLIC


LVIV
UKRAINE


MAIPÚ
CHILE


MONTEROSSO
ALMO
ITALY


MURCIA
SPAIN


OSLO
NORWAY

PÓVOA DE VARZIM

PORTUGAL

PRAIA

CAPE VERDE


SANTA POLA
SPAIN


SÃO PAULO
BRAZIL


TAMPERE
FINLAND


THESSALONIKI
GREECE


UMEÅ
SWEDEN


VITORIA
BRAZIL


VILA FRANCA DE XIRA
PORTUGAL

Annex A4 – 1st REP

Agenda of the 1st Replication webinar

Time (CEST)	Theme	Responsible Partner
15:00 – 15:05	Frontrunner city gives a short discussion/presentation about why they got involved, what the key drivers were, and how their work area came to be responsible for the work	Valladolid
15:05 – 15:10	Discussion with follower cities on the experience of starting a NBS project	Follower Cities
15:10 – 15:20	Frontrunner city gives an overview of key challenges in the months from project kickoff, with a couple of examples.	Valladolid
15:20 – 15:30	Discussion with follower cities on different challenges facing different cities.	Follower Cities

Participants at the 1st Replication webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Francisco Melo (host)	SPI
Thami Croeser (host)	RMI
Alicia Villazán	VAL
Benedetta Lucchitta	UBO
Carlos Aragon	CEN
Clara Corbella	LEI
Clare Olver	CFT
Cuong Viet Nguyen	BIN
Diana Bedoya	MED
Esra	DEM
Gulden Akkurt	IZT
Jesús Ortuño	GMV
Magdalena Rozanska	ACC
Paula Zapata	MED
Raúl Sánchez	CAR
Roberta Marchioro	MAN
Steffen Weeber	LUD

Annex A5 – 2nd REP

Agenda of the 2nd Replication webinar

Time (CEST)	Theme	Responsible Partner
15:00 – 15:15	Stories from Liverpool collaborating with internal departments	Liverpool
15:15 – 15:30	Q&A and discussion with Follower Cities	Follower Cities
15:30 – 15:45	Frontrunner city gives an overview of key challenges in the months from project kickoff, with a couple of examples.	Valladolid
15:45 – 16:00	Q&A and discussion with Follower Cities	Follower Cities

Participants at the 2nd Replication webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Sofia Cunha (host)	SPI
Alicia Villazán	VAL
Benedetta Lucchitta	UBO
Carlos Aragon	CEN
Charlotte Klose	LUD
Elisa Parisi	MAN
Esra Demir	DEM
Juliet Staples	LIV
Kaan Emir	DEM
Magdalena Rozanska	ACC
Maria Ortega	CAR
Patricia Briega	SGR
Trinh Tran Duc	RMI

Annex A6 – 3rd REP

Agenda of the 3rd Replication webinar

Time (CEST)	Theme	Responsible Partner
15:00 – 15:30	Business models and financing instruments: general framework Case studies presentation on the implementation of business models at the urban level	UBO
15:30 – 16:00	Q&A and discussion	FR Cities/ FC Cities / URBAN GreenUP partners

Participants at the 3rd Replication webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Francisco Melo (host)	SPI
Sofia Cunha (host)	SPI
Almudena González	GMV
Benedetta Lucchitta	UBO
Clare Olver	CFT
Cristina Yacoub	LEI
Esra Demir	DEM
Ha Viet	RMIT
Jesús Ortuño	GMV
Juliet Staples	LIV
María González	CAR
Nhu Quynh	BIN
Roberta Marchioro	MAN
Serif Hepcan	EGE
Tania Molteni	UBO
Trinh Tran DUC	RMIT

Annex A7 - 1st TEC

Agenda of the 1st Technical Webinar

Time (CET)	Theme	Responsible Partner
15:00 – 15:05	Brief presentation of Deliverable 1.19 "Co-creation toolkit" (WP1), edited by Thami Croeser (RMIT)	SPI
15:05 – 15:25	How to develop an engagement plan that actually works: a case study of doing co-creation for a Renaturing Urban Plan (RUP)	SPI
15:25 – 16:00	Interactive Session: Discussion & Reflection	FR Cities/FC Cities/URBAN GreenUP partners

Participants at the 1st Technical Webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Olga Glumac (host)	SPI
Francisco Melo (host)	SPI
Alessandro Colombo (host)	SPI
Charlotte Klose	LUD
Ester San José Carreras	CFT
María González Ortega	CFT
Clara Corbella	LEI
Tania Molteni	UBO
Marcela Norena	RMIT

Annex A8 - 2nd TEC

Agenda of the 2nd Technical Webinar

Time (CET)	Theme	Responsible Partner
14:00 – 14:05	H2020 URBAN GreenUP project – Introduction	CARTIF (Raúl Sanchez)
14:05 – 14:20	How can cities benefit from space data: the role of satellites in Urban planning	GMV (Jesús Castillo)
14:20 – 14:40	Discussion and Q&A – Part 1	Audience
14:40 – 14:55	How can cities benefit from air quality monitoring: the role of drones and citizen engagement in monitoring air pollution with low-cost sensors	BITNET (Ali Serdar)
14:55 – 15:15	Discussion and Q&A – Part 2	Audience

Participants at the 2nd Technical Webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Francisco Melo (host)	SPI
Rául Sanchez (presenter)	CARTIF
Jesús Castillo (presenter)	GMV
Alí Serdar (presenter)	BITNET
Alessandro Colombo	SPI
Maksym Terletsky	CITY INSTITUTE
Esther San José	CARTIF
Liudmyla Yaruchuklyuda	LVIV POLYTECHNIC NATIONAL UNIVERSITY
José Bernando López	AYUNTAMIENTO DE MURCIA
David Skorna	STATUORY CITY OF KLADNO
Juliet Staples	LIVERPOOL CITY COUNCIL

María Carmen Gonzalez Vives	LOCAL DEVELOPMENT SANTA POLA
Zsófia Hamza	MUNICIPALITY OF BUDABEST
Marta Alvarez	ACCIONA
Artemis Giavasoglou	MUNICIPALITY OF KIFISSIA
Maria Giulia Longhini	MUNICIPALITY OF MANTOVA
Sonia Sanchis Perez	LEITAT
Paul Nolan	THE MERSEY FOREST
Cigdem Coskun Hepcan	EGE UNIVERSITY
Clare Olivier	THE MERSEY FOREST
Joe O'Reilly	THE ENVIRONMENT PARTNERSHIP LTD.
Attilia Varga	MUNICIPALITY OF HEGYVIDEK
Kyriakos Kareklas	MUNICIPALITY OF ATHENIOU
Jim Greatorex	CITY OF OSLO
Anne Juel Andersen	MUNICIPALITY OF AALBORG
Martin Kraus	STATUTORY CITY OF KLADNO
Gulden Gokcen	IZMIR INSTITUTE OF TECHNOLOGY
Monika Klamann	THE ENVIRONMENT PARTNERSHIP LTD.
Manuel Valls	AYUNTAMIENTO DE MURCIA
Stella Shackel	MERSEY FOREST7UNIVERSITY OF LIVERPOOL
Jorge Díez	AYUNTAMIENTO DE SANTA POLA
Charlotte Klose	CITY OF LUDWISBURG
Alicia Villazán Cabero	VALLADOLID CITY COUNCIL
Mária Marort	CARTIF
José Fermoso	CARTIF
Maarit Sarkilahti	CITY OF TAMPERE

Silvia Silgom	CARTIF
Bent Braskerud	CITY OF OSLO
Maria José Mojica Marhuenda	SANTA POLA COUNCIL
Maria Angustias Campos Florido	AYUNTAMIENTO DE SANTA POLA
Sebastián Madrigal	AYUNTAMIENTO DE SANTA POLA
Marcela Norena Restrepo	ALCADIA DE MEDELLIN
Anatoly Smaliychuck	IVAN FRANKO NATIONAL UNIVERSITY OF LVIV
Anna Gamanova	STATUARNI MESTO KLADNO
Patricia Silveira	CAMARA MUNICIPAL DA PÓVOA DE VARZIM
Silvia Gomes da Costa	CAMARA MUNICIPAL DA PÓVOA DE VARZIM
Eleftheria Avgeri	MUNICIPALITY OF IOANNINA
Kasper Van Hout	MURCIA CITY HALL
Jorge Vásquez Munoz	ALCADIA DE MEDELLIN
Sara Molina	SECRETARIA MEDIO AMBIENTE MEDELLÍN
Serif Hepcan	EGE UNIVERSITY

Annex A9 - 3rd TEC

Agenda of the 3rd Technical Webinar

Time (CEST)	Theme	Responsible Partner
15:00 – 15:05	Welcome and H2020 URBAN GreenUP Project Overview	Francisco Melo (SPI, Portugal)
15:05 – 15:20	Trees in the city – why bother?	Paul Nolan (Mersey Forest, Liverpool, UK)
15:20 – 15:40	Urban catchment forestry from the beginning!	Bryan Seipp, (Center for Watershed Protection, Maryland, US)
15:40 – 16:00	Discussion and Q&A	Audience

Participants at the 3rd Technical Webinar

Name	Institution
Giulio Mazzolo (host)	IFO
Francisco Melo (host)	SPI
Paul Nolan (presenter)	THE MERSEY FOREST
Bryan Seipp (presenter)	CENTER FOR WATERSHED PROTECTION
Ali Serdar	BITNET
Alicia Villazán Cabero	Valladolid
Anne Juel Andersen	Aalborg
Bent Christen Braskerud	Oslo
Cigdem Coskun Hepcan	Ege University
Clare Olver	The Mersey Forest
Esther San José	CARTIF
Guillermo Robles	CHD
Jim Greatorex	Oslo
Kaan Emir	Demir Enerji
Kyriakos Kareklas	Athienou

Laura Gabriele	Luwigsburg
Maksym Terletsky	Lviv
Marcela Norena Restrepo	Medellín
Leonardo dos Santos	Vitoria
Patricia Silveira	Póvoa de Varzim
Rozsa Soltan	Hegyvidék
Eleftheria Avgeri	Ioaninna
Jan Pospichal	Kladno
Juliet Staples	Liverpool
Bent Braskerud	Oslo
Benedetta Lucchitta	Bocconi University
Serif Hepcan	Ege University
Julie Svenningsen	Aalborg
Anna Claudia Bufo	Bari
Sonia Fluxa	Santa Pola
Alexandra Roeger	Esposende
Maria Åkerman	Tampere
João Cameira	Bragança

Annex A10 - 4th TEC

Agenda of the 4th Technical Webinar

Time (CEST)	Theme	Responsible Partner
11:00 – 11:05	Welcome and H2020 URBAN GreenUP Project Overview	Francisco Melo (SPI, Portugal)
11:05 – 11:25	How to implement green flood management in the Urban landscape?	Arantxa Aguirre (CENTA)
11:25 – 11:45	How can NBS contribute to increase water quality and circularity in cities	Clara Corbella (LEITAT)
11:45 – 12:00	Discussion and Q&A	Audience

Participants at the 4th Technical Webinar

Name	Institution
Francisco Melo (host)	SPI
Arantxa Aguirre (presenter)	CENTA
Clara Corbella (presenter)	LEITAT
Anatoliy Smaliychuk	Lviv
Ioannis Boskidis	Ioannina
Eduardo Mendes de Oliveira	São Paulo
Paul Nolan	Mersey Forest
Pedro Capitão	Esposende
Sebastian Madrigal	Santa Pola
Stella Psarropoulou	Thessaloniki
Maarit Särkilahti	Tampere
Maria Angustias Campos	Santa Pola
Maria José Mojica	Santa Pola
Jesús Ortuño	GMV
Giovanna Michielin	Mantova
Orsolya Pap-Szuromi	Hegyvidék
Krisztián Schneller	Hegyvidék
Réka Erzsébet Molnár	Hegyvidék

Name	Institution
Zsófia Hamza	Hegyvidék
Katerina Vini	Hegyvidék
Isabel Díaz de Mera Pastor	Singular Green
Sónia Fluxá	Santa Pola
Eleni Bakola	Ioannina
Artemis Giavasoglou	Kifissia
Marcela Noreña Restrepo	Medellín
Trinh Tran Duc	RMIT
Maksym Terletsky	Lviv
Anna Claudia Bufo	Bari
Merve Ozeren Alkan	Izmir
Alisa Krumm	Ludwigsburg
Eleftheria Avgeri	Ioannina
María González	CARTIF
Patrícia Silveira	Póvoa de Varzim
Zdeněk Nedvěd	Kladno
Yusuf Kurucu	Izmir
Patricia Leslie Barragan Macedo	Vitória
Leonardo Santos	Vitória
Kaan Emir	Izmir
Salla Leppänen	Tampere
Jorge Vásquez	Medellín
Sara Molina	Medellín
John Abe	Izmir
Joana Miranda	Esposende
Kyriakos Kareklas	Athienou
Esther San José	CARTIF
Terje Laskemoen	Oslo
Maria Carmen González Vives	Santa Pola
Roberta Marchioro	Mantova
Jim Greatorex	Oslo
Cigdem Coskun Hepcan	Ege University
Guillermo Robles	Confederación Hidrografica del Duero
Giulio Mazzolo	ICONS

Name	Institution
Alicia Villazán Cabero	Valladolid
Stella Shackel	Liverpool
Juliet Staples	Liverpool

Annex A11 - 5th TEC/5th C&M

Agenda of the 5th Technical Webinar / 5th Coaching and Mentoring Workshop

Time (CEST)	Theme	Responsible partner
1st Slot	Public webinar	
14:00 – 14:05	Reception	Raúl Sánchez (CAR)
14:05 – 14:20	Presentation of the RUP methodology	Magdalena Rozanska (ACC)
14:20 – 14:25	RUP methodology in Ludwigsburg	Amely Krafft (LUD)
14:25 – 14:30	RUP methodology in Mantova	Elisa Parisi (MAN)
14:30 – 14:35	RUP methodology in Medellin	Marcela Noreña (MED)
14:35 – 14:40	RUP methodology in Quy Nhon	Nguyen Viet Cuong (BIN)
14:40 – 14:50	Q&A Session	Audience
14:50 – 15:00	BREAK	
2nd Slot	Workshop (only for network cities)	
15:00 – 15:05	Introduction	Duc Trinh Tran (RMIT)/ Alessandro Colombo/João Barata (SPI)
15:05 – 15:15	Interactive collection of inputs and ideas for the RUP validation	Magdalena Rozanska (ACC)
15:15 – 15:30	Q&A Session	Duc Trinh Tran (RMIT)/ Alessandro Colombo/João Barata (SPI)

Images of the Q&A Session

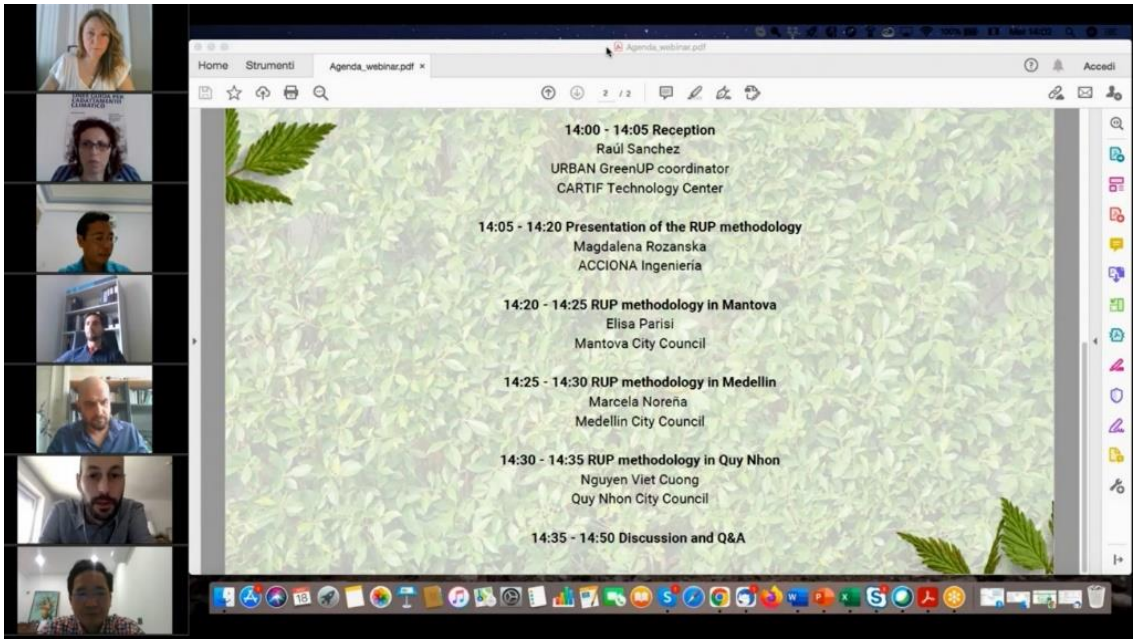
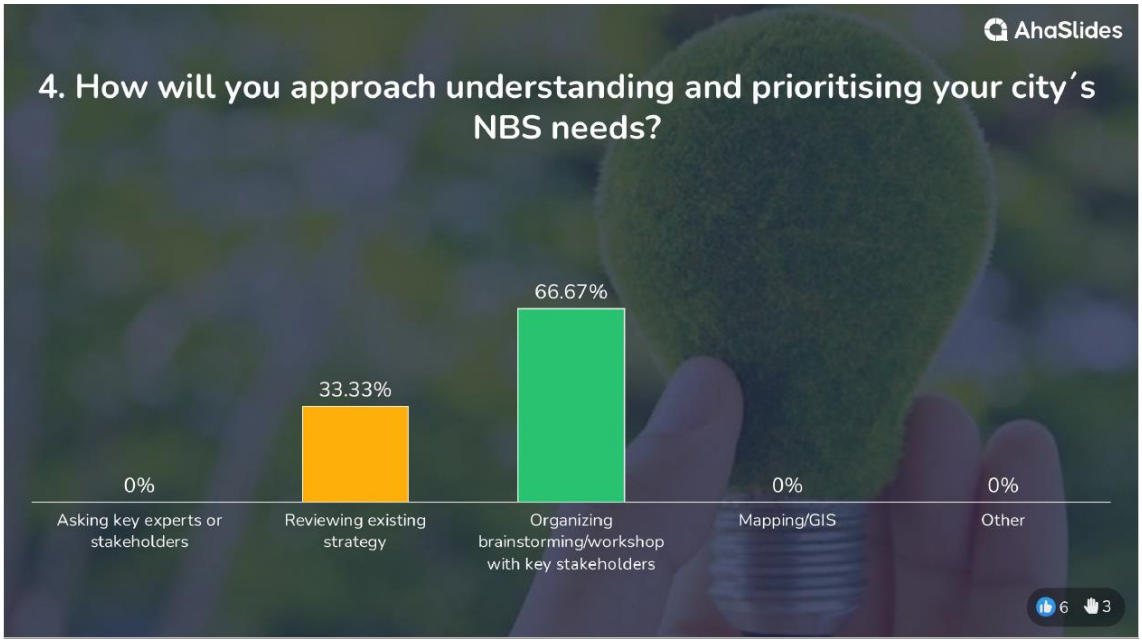


Image of the AhaSlides interactive moment with the Audience



Annex A12 – 6th TEC

Agenda of the 6th Technical Webinar

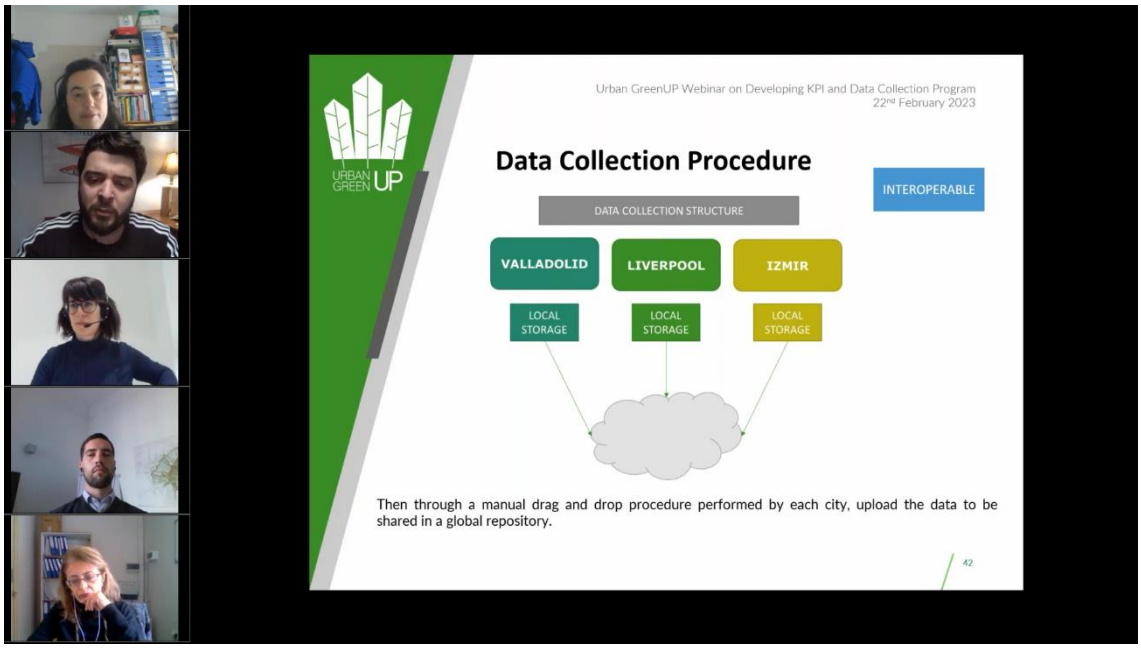
Time (CET)	Theme	Responsible Partner
10:00 – 10:05	Reception	Duc Trinh Tran (RMIT)/ João Barata/Pablo Bustamante (SPI)
10:05 – 10:15	KPI Selection Process	Jesús Ortuño (GMV)
10:15 – 10:25	Data Collection Procedures	Jesús Ortuño (GMV)
10:25 – 10:35	Valladolid Exposition	Alicia Villazan (VAL)
10:35 – 10:45	Liverpool Exposition	Stella Shackel (CFT)
10:45 – 10:55	Izmir Exposition	Esra Demir (DEM)
10:55 – 11:10	Q&A and Final Conclusions	Duc Trinh Tran (RMIT)/ João Barata/Pablo Bustamante (SPI)

Participants at the 6th Technical Webinar

Name	Institution
João Barata (host)	SPI
Duc Trinh Tran (host)	RMI
Jesús Ortuño (presenter)	GMV
Stella Shackel (presenter)	CFT
Alicia Villazán (presenter)	VAL
Esra Demir (presenter)	DEM
Isabel Sánchez	Ayuntamiento de Valladolid
Ainhoa Gaudes	LEITAT
Paul Nolan	Mersey Forest
Célia Maria Ferreira	Castelo Branco
Zsófia Hamza	Hegyvidék Municipality
Oyku Dogan	IFO
Andrea Tardio	-
Caglar Tukel	Demir Enerji
Laura Martínez	-

Name	Institution
Michela Chuchini	-
Olga Voutsikaku (1)	-
Olga Voutsikaku (2)	-
Olga Voutsikaku (3)	-
Pablo Rivas	-
Hans de Boer	-
Sara Lopes	Município de Vila Franca de Xira
Sung Minh Huynh	-

Image of the 6th Technical Webinar



Annex A13 – 3rd C&M

Agenda of the 3rd Coaching and Mentoring workshop

Time (CEST)	Theme	Responsible Partner
12:00 – 12:10	Intro & practicalities	Trinh Tran Duc (RMIT) & Francisco Melo (SPI)
12:10 – 12:40	Some typical and new barriers faced by frontrunner cities for specific NBS	Juliet Staples (LIV)
12:40 – 13:30	Discussion and Q&A	Partner cities

Participants at the 3rd Coaching and Mentoring workshop

Name	Institution
Trinh Tran Duc (host)	RMIT
Francisco Melo (host)	SPI
Juliet Staples (presenter)	LIV
Alicia Villazán	VAL
Amely Kraft	LUD
Esther San José	CARTIF
Kaan Emir	IZM / DEM
Marcela Noreña Restrepo	MED
Roberta Marchioro	MAN
Tuan Nguyen	BIN

Images of the Q&A session

Annex A14 - 4th C&M

Agenda of the 4th Coaching and Mentoring workshop

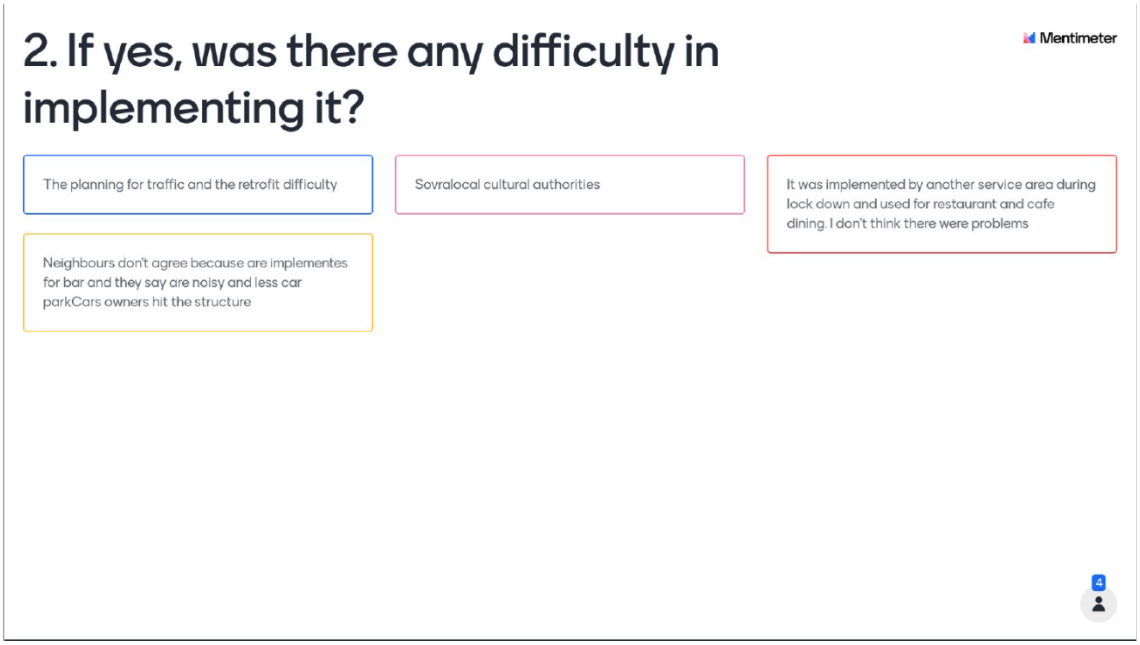
Time (CET)	Theme	Responsible Partner
15:30 – 16:00	Barriers and challenges in implementation of parklets	Esra Demir (DEM) / Duc Trinh Tran (RMIT) / Alessandro Colombro/João Barata (SPI)
16:00 – 16:30	Q&A Session	Audience

Participants of the 4th Coaching and Mentoring Workshop

Name	Institution
Trinh Tran (host)	RMIT
Alessandro Colombo (host)	SPI
João Barata (host)	SPI
Esra Demir (presenter)	DEM
Alicia Villazán	VAL
Isabel Sanchez	VAL
Cuong Nguyen	BIN
Tuan Nguyen	BIN
Ali Atalay	BITNET
Oguzhan Herkiloglu	BITNET
Paul Nolan	CFT
Clare Olver	CFT
Stella Shackel	CFT
Roberta Marchioro	MAN
Elisa Parisi	MAN
Caner Demir	DEM
Baha Kuban	DEM
Serif Hepcan	EGE
Yusuf Kurucu	EGE
Hüseyin Hüsnü Kayıkçıoğlu	EGE
Tolga Esetlili	EGE
Alice de Ferrari	IFO
Giulio Mazzolo	IFO

Name	Institution
Oyku Dogan	IFO
Rául Sánchez	CAR
Maía González	CAR
Esther San José	CAR
Eva Ferrero	CAR
Silvia Gómez	CAR
Daniel Martin	CAR
Isabel Martin	CEN
Juan Bocardo	CEN
Jesús Ortuño	GMV
Fátima Mateos	GMV
Sinan Alper	IZM
Berna Oflas	IZM
Vahyettin Akyol	IZM
Gulden Gokcen Akkurt	IZT
Stéfano Salata	IZT
Koray Velibeyoglu	IZT
Sergio Aguado	LEITAT
Juliet Staples	LIV
Christine Darbyshire	LIV
Daniel Barrington	LIV
Gülşah Kaçmaz Akkurt	Other
Ellen Sweeney	Other
Ian Mell	Other
Minh Huynh	RMIT
Jenny Tran	RMIT
Robert McClelland	RMIT
Thami Croeser	RMIT
Patricia Briega	SGR
Alessandro Colombo	SPI
João Barata	SPI
Nuno Andrade	SPI
Sarah Clement	University of Liverpool
Benedetta Lucchitta	UBO
Edoardo Croci	UBO

Mentimeter activity during the 4th Coaching and Mentoring Workshop



Mural activity during the 4th Coaching and Mentoring Workshop

Annex A15 - 6th C&M

Agenda of the 6th Coaching and Mentoring workshop

Time (GMT)	Theme	Responsible Partner
10:00 – 10:20	WP1 / WP6 Methodology	Magdalena Rozanska (ACC)
10:20 – 10:40	Follower Cities expositions	Follower Cities
10:40 – 11:00	Discussion and Q&A	Audience

Annex A16 - 1st SE

Agenda of the 1st Staff Exchange session

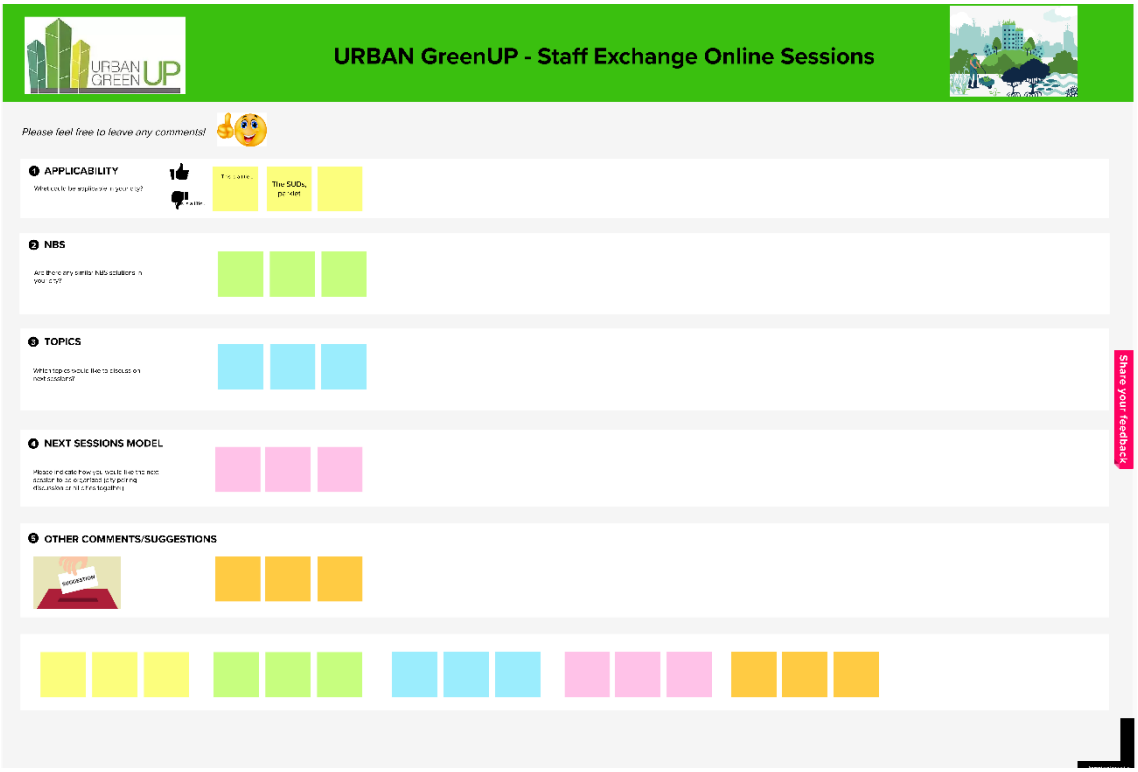
Time (CET)	Theme	Responsible Partner
09:00 – 09:05	Reception	Duc Trinh Tran (RMIT)/ Alessandro Colombo/João Barata (SPI)
09:05 – 09:20	Liverpool Exposition	Juliet Staples (LIV)
09:20 – 09:35	Valladolid Exposition	Alicia Villazán (VAL)
09:35 – 09:50	Izmir Exposition	Esra Demir (DEM)
09:50 – 10:15	Q&A and Final Conclusions	Duc Trinh Tran (RMIT)/ Alessandro Colombo/João Barata (SPI)

Participants of the 1st Staff Exchange session

Name	Institution
Trinh Tran Duc (host)	RMIT
Alessandro Colombo (host)	SPI
João Barata (host)	SPI
Alicia Villazán (presenter)	VAL
Esra Demir (presenter)	DEM
Juliet Staples (presenter)	LIV
Sinan Alper	IZM
Tuan Nguyen	BIN
Roberta Marchioro	MAN
Giorgia Lain	University of Bologna

Images of the Q&A session

Mural activity during the Q&A session



Annex A17 – 2nd SE

Agenda of the 2nd Staff Exchange session

Time (CET)	Theme	Responsible Partner
11:30 – 11:35	Reception	Duc Trinh Tran (RMIT)/ Alessandro Colombo/João Barata (SPI)
11:35 – 11:50	Liverpool Exposition	Juliet Staples (LIV)
11:50 – 12:05	Valladolid Exposition	Alicia Villazán (VAL)
12:05 – 12:20	Izmir Exposition	Esra Demir (DEM)
12:20 – 13:00	Discussion of ideas	Audience

Participants of the 2nd Staff Exchange session

Name	Institution
Trinh Tran Duc (host)	RMIT
Alessandro Colombo (host)	SPI
João Barata (host)	SPI
Alicia Villazán (presenter)	VAL
Esra Demir (presenter)	DEM
Juliet Staples (presenter)	LIV
Robert McLelland	RMIT
Amely Kraft	LUD
Roberta Marchioro	MAN
Giorgia Lain	University of Bologna
Marcela Norena	MED
Tuan Bin	BIN
Ha Tran	BIN
Hang Nguyen	BIN
Minh Huynh Ngoc Song	BIN

Annex A18 - 3rd SE

Agenda of the 3rd Staff Exchange session

Time (GMT)	Theme	Responsible Partner
14:00 – 14:10	Reception and overview of the previous virtual sessions	Duc Trinh Tran (RMIT)/ João Barata (SPI)
14:10 – 14:25	Liverpool Exposition	Juliet Staples (LIV)
14:25 – 15:00	Lessons learnt discussion among FR and Follower Cities on the 'NBS Operation Phase'	Audience