



D6.5: URBAN GreenUP knowledge transfer activities

WP 6 , T 6.5, T6.6, T6.7

Date of document

March, 2022 (M58)



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.	D6.5
Dissemination Level	PU ¹
Work Package	WP 6 – Renaturing city methodology
Task	T6.5, T6.6, T6.7
Lead beneficiary	SPI
Contributing beneficiary(ies)	SPI, RMIT, VAL, LIV, IZM, IFO
Due date of deliverable	31/03/2022
Actual submission date	31/03/2022

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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
Final	Alessandro Colombo and João Barata	SPI	28/03/2022



Table of Content

1	Executive summary	7
2	Introduction	8
2.1	Purpose and target groups	9
2.2	Relation to other WPs and Tasks	1
3	URBAN Greenup knowledge transfer activities.....	2
3.1	Framework.....	2
3.1.1	Main objectives.....	4
3.1.2	Type of activities	4
3.2	Coaching and mentoring actions.....	6
3.2.1	Activities developed.....	6
3.2.2	Achieved results	9
3.3	Staff exchange actions	13
3.3.1	Activities developed.....	13
3.3.2	Achieved results.....	13
3.4	Cluster of cities	15
3.4.1	Activities developed.....	15
3.4.2	Achieved results.....	16
4	Lessons learned and main conclusions.....	30
	Annex A1	31
	Annex A2	32
	Annex A3	33
	Annex A4	34
	Annex A5	35
	Annex A6	36
	Annex A7	39
	Annex A8	41



List of Tables

Table 1. Key Target groups and benefits.....	9
Table 2. Relation with other WPs and tasks.....	1
Table 3. List of knowledge transfer activities.....	4
Table 4. Identification of FCs knowledge needs/key challenges for the 1st Coaching and Mentoring workshop.....	7
Table 5. List of coaching and mentoring activities.....	8
Table 6. Knowledge needs and key challenges of partner cities	10
Table 7. Interventions from the 3rd Coaching and Mentoring workshop.....	11
Table 8. Virtual Staff Exchange 1 (SE1).....	14
Table 9. Virtual Staff Exchange 2 (SE2).....	14
Table 10. List of knowledge transfer activities performed under the Cluster of Cities	15
Table 11. Inputs from partner cities about potential topic for the replication webinars.....	17
Table 12. Interventions from the 1st Replication Webinar.....	19
Table 13.. Interventions from the 2nd Replication Webinar	21
Table 14. Interventions from the 3rd Replication Webinar	22
Table 15. Interventions from the 1st Technical Webinar	23
Table 16. Interventions from the 2nd Technical Webinar	25
Table 17. Interventions from the 3rd Technical Webinar.....	26
Table 18. Interventions from the 4rd Technical Webinar.....	28

List of Figures

Figure 1. Knowledge transfer methodological framework	2
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1 Executive summary

This document represents **Deliverable 6.5 URBAN GreenUP knowledge transfer activities**, as an output of different tasks, since knowledge transfer processes horizontally took place throughout different WP6 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.**

This document is structured into 4 chapters:

Chapter 1 correspond to the present Executive Summary.

Chapter 2 explain 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, EU organizations are identified as main key target groups. As well, activities from Task 6.4, 6.5, 6.6 and 6.7 are the main recipient of information for this deliverable.

Chapter 3 present the comprehensive methodological and conceptual framework supporting knowledge transfer activities, including its mains objectives and the knowledge transfer activities developed. This framework includes internal knowledge transfer activities, external knowledge transfer activities, and public knowledge transfer. Knowledge transfer activities are reported in details, by presenting for each one the main structure, partners involved and the main output, namely resulted through the interaction between frontrunner, follower cities and technical partners.

Finally, **Chapter 4** is focused on the main impacts of the actions reported in Chapter 3, 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 knowledge transfer activities has given relevant insights for the continuation of the NBS implementation.



2 Introduction

This document represents *D6.5 URBAN GreenUP knowledge transfer activities* 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-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;

It also reports knowledge activities that resulted from the development of the delivering ready-to-implement, integrated Renaturing Urban Plans (RUPs) in the 6 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 method 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

D6.5 URBAN GreenUP knowledge transfer activities aim to report all the activities and actions developed within the scope of “knowledge transfer” (see Chapter 3), mainly under WP6 Replication and City Clustering. It also reports knowledge transfer 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 group 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, grassroots 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;
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 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 with D6.5 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.
WP8's support to/articulate with WP6	Disseminate WP6's achievement, namely webinars outputs, through dissemination channel: Youtube channel recording and making podcasts available (supported by WP8); Project newsletters (in articulation with the WP8).



3 URBAN Greenup knowledge transfer activities

This chapter identifies all the knowledge transfer actions, reporting in details the contents and objectives of the activities performed, as well as the achieved results.

3.1 Framework

Methodological design of knowledge transfer activities

URBAN GreenUp knowledge transfer activities were 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 was design with the following framework to foster wide acceptance and replication of NBS implementation, practices and knowledge. That include the following design framework:

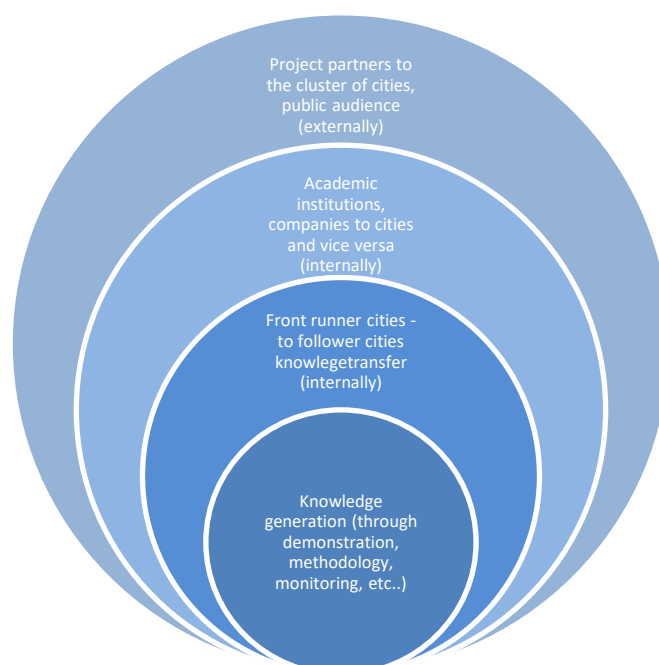


Figure 1. Knowledge transfer methodological framework

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 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 including:

- 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, planning, implementing, tendering and maintaining NBS and typical example from academic and companies
- c. The academic partners, companies and partners cities have a chance to learn from each other perspectives through technical webinar. From those cities were further equipped with NBS knowledge, academic partners have experience from real life implementation, companies have gained input for the improvement of NBS services and products.
- d. The follower cities, with the support from academic and professional partners, will be able to develop an Renature Urban Plan that adopt 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 including:

Cluster of cities will be exposed and equipped with NBS example, of how it can be replicate and what supportive mechanism for a successful NBS implementation (including the NBS selection, zoning, financial and management tools relevant for NBS) that cities will need to plan for their Renature Urban Plan.

3. Public knowledge transfer activities

The activities designed for this dimension of knowledge transfer including:

- 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 – will be the tendering, NBS selection, NBS implementation, Public-private partnership (such as developed



procedure, NBS tendering and contracting); as a professional – will be the technique and tools developed in the project for typical NBS (such as manual, guideline, method); as a citizen – on how the community can be benefit and can be involved with NBS implementation (NBS catalogue, NBS co-creation tools).

3.1.1 Main objectives

Knowledge transfer activities were designed with the main objective of fostering the replication of good practices, examples and tools developed from the URBAN GreenUp implementation. At the same time the knowledge transfer activities will further support the better implementation of NBS inside URBAN GreenUp by bringing partners together in the framework for co-creation and sharing of best practices that eventually support the adoption of good practices and tools inside NBS before further distribute to wider public. Therefore, some of the specific objectives of this task are to:

- 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.

3.1.2 Type of activities

As mentioned in the previous chapter, within the URBAN GreenUP project knowledge transfer activities took place through the deployment of different type of activities. Table 3 below gives the overall picture of these activities, per type, date, location, organization and participants. The detailed explanation of each one of theme and of its achievements is showed in the subsequent chapters.

Table 3. List of knowledge transfer activities

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	1 st 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	2 nd Replication webinar	M18	Virtual	Liverpool / Izmir	14
4	Innovative Business Models and financing instruments	3 rd Replication webinar	M24	Virtual	UBO	17
5	How to develop an engagement plan that actually works	1 st Technical webinar	M33	Virtual	SPI	10
6	How remote sensing and GIS can help us identifying priority areas for NBS implementation	2 nd Technical webinar	M35	Virtual	BITNET GMV	52
7	“Key challenges in the development of sustainable NBS Urban plans”	1 st Coaching and Mentoring Workshop from Frontrunners to Follower Cities	M36	6th CM (Izmir virtual)	SPI	-
8	Trees in our cities – opportunities, barriers and benefits	3 rd Technical webinar	M37	Virtual	Mersey Forest and Center for Watershed Protection	44
9	“Progress in the development of sustainable NBS Urban plans”	Workshop	M38	1 st early virtual session in between the 7 th and 8 th CMs.	SPI	-
10	NBS for Water Quality and Quantity Management in	4 th Technical webinar	M40	Virtual	LEITAT and CENTA	55



URBAN
Environments

11	“Participative Urban Greening: from theory to practice”	2 nd Coaching and mentoring Workshop from Frontrunner to Follower Cities	M40	7 th CM (Liverpool virtual)	SPI	-
12	“Barriers in implementing the NBS regarding planning, approval process, technical designing, procuring, implementing, and commissioning and floating island”	3 rd Coaching and mentoring workshop from Frontrunner to Follower Cities	M46	8 th CM (Valladolid virtual)	SPI	10
13	“Public-private partnership to implement the NBS (e.g green façade and electrowetland”	Workshop	Agenda – M56	2 nd early virtual session in between the 9 th and 10 th CMs	SPI/RMIT	Valladolid (speaker)
14	City pairing - Exchange of experiences between municipal teams	Staff exchange	Planned – M59	Virtual (at least the first staff exchange	SPI/RMIT	-
15	Barriers in Implementation Permeable Pavement around Peynircioğlu Stream	4 th Coaching and mentoring Workshop from Frontrunners to Follower cities	Agenda – M58	10 th CM (Liverpool - Virtual)	SPI/RMIT	-

3.2 Coaching and mentoring actions

3.2.1 Activities developed

Coaching and mentoring activities were deployed under *Task 6.5 Coaching and mentoring from frontrunner to follower-cities* 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's 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 4 below. In some cases, one follower-city asked to learn about particular topics from a specific frontrunner city.

Table 4. 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	<p>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?</p> <p>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?</p> <p>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 Medellín. The URBAN GreenUP project has a very broad list of KPIs, but Medellín need to know how these indicators are being prioritized and 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 on which Medellín can take it into account?</p>
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 cities 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 5 below systematises the description of activities performed within the coaching and mentoring from FR to FC cities (Task 6.5):

Table 5. List of coaching and mentoring activities

Nr.	Activity	Type	Date	Location/ Context	Organiser	Participants
7	“Key challenges in the development of sustainable NBS urban plans”	1 st Coaching and Mentoring Workshop from Frontrunners to Follower Cities	M36	6th CM (Izmir virtual)	SPI	-
9	“Progress in the development of sustainable NBS Urban plans”	Workshop	M38	1 st early virtual session in between the 7 th and 8 th CMs.	SPI	-
11	“Participative Urban Greening: from theory to practice”	2 nd Coaching and mentoring Workshop from Frontrunners to Follower Cities	M40	7th CM (Liverpool virtual)	SPI	-



12	“Barriers in implementing the NBS regarding planning, approval process, technical designing, procuring, implementing, and commissioning and floating island”	3 rd Coaching and mentoring workshop from Frontrunners to Follower Cities	M49	8 th CM (Valladolid virtual)	SPI, RMIT, CAR	-
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3.2.2 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 6. 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	<p>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?</p> <p>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 volunteer work and commitment?</p>

3rd Coaching and Mentoring Workshop

The 3rd 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 A1, 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 A1, Participants) and at the end of Liverpool's presentation, a Q&A session (Annex 1, 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 here².

Table 7. Interventions from the 3rd Coaching and Mentoring workshop

Follower City	Similarities and differences
Liverpool (presenter)	<p>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.</p> <p>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. 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.</p>
Valladolid	<p>Barriers of local ecosystems in Liverpool are quite similar to those existing in Valladolid. They share similarities and differences.</p> <p>Location: Finding suitable location for NBS is one of the first issues because of lack of public space.</p> <p>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</p>

² <https://www.youtube.com/watch?v=sAmvljBwba4>.



	<p>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.</p> <p>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.</p> <p>Procurement: Valladolid has used the main frameworks that already have for walls procurements – no new framework was developed.</p> <p>Cost: Valladolid don't have 10% for contingency. Liverpool had overspents, Valladolid do not have to pay any licenses.</p> <p>After the URBAN GreenUP project Liverpool is looking for private sponsorship. In Valladolid the city council will maintain the NBS.</p>
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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.
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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.
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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.
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1st Early Virtual Session

The first early 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 (Annex A2):



- 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 Eclipse 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.

3.3 Staff exchange actions

3.3.1 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, are being implemented following the plan presented in Section 2.4.2 below.

3.3.2 Achieved results

In order to support the delivery and transferring of knowledge within Task 6.6, the following plan for virtual staff exchange activities was developed (Table 8; Table 9). This plan was discussed between WP6 leader, Task 6.6 leader, frontrunner and follower cities during the last consortium meeting of the project. URBAN GreenUP technical partners supporting frontrunner cities will also be involved.

Staff exchange activities will be 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 8. Virtual Staff Exchange 1 (SE1)

Project Month	Frontrunner City	Follower Cities	Organizing/Moderator	Topic	Duration
M59	LIV, VAL	MAN, MED, BIN, LUD	SPI, RMIT, CAR	Procedure and implementation steps for floating garden, greenfacade, greenroof, etc.	1 week duration / Interval meetings
	LIV			Topic 1: Planning process (zoning, site selection, consultation)	Day 1: 2h
	VAL			Topic 2: Designing process	Day 2: 2h
	TBD			Topic 3: Tendering process (typical for NBS) – any special regulations, amendment or specifications applicable	Day 3: 3h
	TBD			Topic 4: Implementing the NBS	Day 4: 2h
	TBD			Topic 5 Commissioning the NBS and handover	Day 5: 2h
	TBD			Topic 6: Agreement on the continuation of support or maintenance	Day 5: 1h

*if possible with consultant or URBAN GreenUP partner involved (companies implemented the NBS).

Table 9. Virtual Staff Exchange 2 (SE2)

Project Month	Frontrunner City	Follower Cities	Organizing/Moderator	Topic	Duration
M61	IZM, VAL	MAN, MED	SPI, RMIT, CAR	Procedure and implementation steps for sustainable drainage, parklet, greenfacade, greenroof, etc.	1 week duration / Interval meetings
	IZM			Topic 1: Planning process (zoning, site selection, consultation)	Day 1: 2h
	VAL			Topic 2: Designing process	Day 2: 2h
	TBD			Topic 3: Tendering process (typical for NBS) – any special	Day 3: 3h



				regulations, amendment or specifications applicable	
	TBD			Topic 4: Implementing the NBS	Day 4: 2h
	TBD			Topic 5: Agreement on the continuation of support or maintenance	Day 5: 2h
	TBD			Topic 6: Agreement on the continuation of support or maintenance	Day 5: 1h

*if possible with consultant or URBAN GreenUP partner involved (companies implemented the NBS).

3.4 Cluster of cities

3.4.1 Activities developed

Several activities of transferability and dissemination of knowledge were deployed among the URBAN GreenUP project under *Task 6.7 Cluster of cities to foster transferability and dissemination*”.

This section systematises and describe in detail all the knowledge transfer activities performed under Task 6.7, namely:

- Establishment of the URBAN GreenUp Cluster of Network of Cities;
- External cities integrated the external cluster;
- Replication webinars;
- Technical webinars;

Table 10 below systematises the description of activities performed within the Cluster of Cities (Task 6.7):

Table 10. 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	1 st Replication webinar	M13	Virtual	Valladolid	18



	process starting from the basics					
3	Sharing stories from Liverpool and Izmir about working with internal departments to get past barriers in the definition/planning/implementation of NBS	2 nd Replication webinar	M18	Virtual	Liverpool / Izmir	14
4	Innovative Business Models and financing instruments	3 rd Replication webinar	M24	Virtual	UBO	17
5	How to develop an engagement plan that actually works	1 st Technical webinar	M33	Virtual	SPI	10
6	How remote sensing and GIS can help us identifying priority areas for NBS implementation	2 nd Technical webinar	M35	Virtual	BITNET GMV	52
8	Trees in our cities – opportunities, barriers and benefits	3 rd Technical webinar	M37	Virtual	Mersey Forest and Center for Watershed Protection	44
10	NBS for Water Quality and Quantity Management in urban Environments	4 th Technical webinar	M40	Virtual	LEITAT and CENTA	55

3.4.2 Achieved results

With the start of the project, internal and external activities were developed within Task 6.7 “Cluster of cities to foster transferability and dissemination”. Sections below report in details all the activities developed under this scope.



Establishment of the URBANGreenUp Cluster of Network of Cities

The establishment of the Cluster/Network has first and foremost to do with promoting and deepening the interaction between the project's frontrunner and follower cities. Therefore, it represented the first step to pave the way to knowledge transfer activities was the establishment of the URBANGreenUp Cluster of Network of Cities, which has the aim to play a key role in disseminating replication among Frontrunner and Follower cities, but also fostering the transfer of knowledge via the promotion within each country, in Europe and at the international level, of the RUP methodology and specific NBS implemented at the project level. Therefore, the cluster comprises a First Level Cluster (Frontrunner and Follower-Cities) as well as a wider (external) Network of Cities composed by European and International Cities with high replication potential and interest in NBS and in exchange experiences with project cities. Thus, this cluster ensure the transfer of knowledge to the greatest number of cities possible.

External cities integrated the external cluster

The inclusion of external cities in the cluster supports the expansion of the community of interest around NBS and related smart cities topics. Taking part of this network allows external cities to discuss with other cities on how their NBS overcome barriers, dealt with challenges and took advantages of opportunities. The network is meant to support external cities developing their knowledge and awareness about NBS as part of a smart city concept, building upon the experience of cities that are already implementing in a structured way.

Within this win-win framework, the project has currently 24 external cities³ in 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.

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 11 below).

Table 11. 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 an Unesco Heritage.

³ <https://www.URBANgreenup.eu/cities/>



	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 A2, 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 2, Participants) and in the last slot a Q&A session between frontrunner and follower cities took place. Table 12 below presents the main issues which emerged from this interaction. The video recording of the session is available [here](#).



Table 12. 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 center, 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	<p>Can you clarify how you can do make the plan and the implementation at the same time?</p> <p>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?</p>
Valladolid	<p><i>Design and implementation phases</i></p> <p>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.</p> <p><i>Financial issue</i></p>



	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 A3, 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 A3, Participants) and the last slot was dedicated to a Q&A between frontrunner and follower cities. Table 13 below presents the main issues which emerged from the discussion. The video recording of the session is available [here](#).

Table 13.. 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 4, 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 4, Participants). During the Q&A session, some issues emerged from the discussion, and are reported in Table 14 below. The video recording of the session is available [here](#).



Table 14. Interventions from the 3rd 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 aim to foster transferability between the URBAN GreenUP partners, namely technical ones, and the 24 external cities composing the Cluster of Cities.

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 A5, 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 A5, Participants) and at the end of the presentation Q&A session with frontrunner and follower cities took place. Table 15 below summarizes the main issues which emerged. The video recording of the session is available [here](#).

Table 15. 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)	<p>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 fundings.</p> <p>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.</p>



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 6, 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 6, Participants), and a two Q&A slot took place in between the presentations (Table 16, below).



Table 16. 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.
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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 A7, 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;
- Trees 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 Bay 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 A7, Participants), and ended with a Q&A session. The main results of this interaction are reported in Table 17 below.

Table 17. 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 built 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 A8, 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 A8, 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 18 below.

Table 18. 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 are the objectives. 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 microplastics? Tyre wear produces microplastic 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. Microplastics 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.



4 Lessons learned and main conclusions

The URBAN GreenUp knowledge transfer activities were 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.

This deliverable addresses the knowledge-related objectives of *WP6 Replication and City Clustering*, mainly as a result of Task 6.5, Task 6.6 and Task 6.7, in several knowledge transfer activities 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 had in the implementation of NBS, showing a high level of achievement and maturity of the interventions.

Therefore, the knowledge transfer 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 the for the post-project sustainability, also triggering the critical self-reflection of the main stakeholders involved, primarily partner cities and technical partners.



Annex A1

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	RMIT
Francisco Melo	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 A2

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 A3

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 A4

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 A5

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 A6

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
Raúl Sanchez (presenter)	CARTIF
Jesús Castillo (presenter)	GMV
Alí Serdar (presenter)	BITNET
Alessandro Colombo	SPI
Maksym Terletsy	CITY INSTITUTE
Esther San José	CARTIF
Liudmyla Yaruchuklyuda	LVIV POLYTECHNIC NATIONAL UNIVERSITY
José Bernando López	AYUNTAMIENTO DE MURCIA
David Skorna	STATUORY CITY OF KLDANO
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 KLDNO
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 Feroso	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 A7

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 Terletsy	Lviv
Marcela Norena Restrepo	Medellín
Leonardo dos Santos	Vitoria
Patricia Silveira	Póvoa de Varzim
Rozsa Soltan	Hegyvidék
Eleftheria Avgeri	Ioannina
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 A8

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 Särkilähti	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 Terletsy	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 Greateorex	Oslo
Cigdem Coskun Hepcan	Ege University
Guillermo Robles	Confederación Hidrografica del Duero
Giulio Mazzolo	ICONS
Alicia Villazán Cabero	Valladolid



Name	Institution
Stella Shackel	Liverpool
Juliet Staples	Liverpool

