



Integrated NBS-based Urban Planning Methodology for Enhancing the Health and Well-being of Citizens

D2.4

Report on the euPOLIS approach effectiveness (Version 1)

WP2 – Stakeholders and Communities’ Engagement and Benchmarking



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Executive Summary

This document presents Deliverable D2.4 **“Report on the euPOLIS approach effectiveness (Version 1)”** which is one of the outcomes of the Work Package 2 (Stakeholders and communities’ engagement and benchmarking), and specifically Task 2.3 (Stakeholders benchmarking against already taken urban regeneration). This deliverable is the Version 1 of the Report. Version 2 and Version 3 will be submitted consequently in August 2023 and in August 2024.

Since the project is focused on multiple benefits of implementing Nature Based Solutions (NBS) in open public spaces for enhancing health and wellbeing of citizens, this report serves as the initial step towards evaluation of euPOLIS approach in this area.

Following the report on the local site analysis and list of relevant issues/problems and resources in all FR and FL cases, previously performed in WP2 and reported in D2.2 and D2.3, for the sake of completeness and clarity this deliverable includes also an updated summary of stakeholders' engagement events, performed until July 2022 (Chapter 2), presented in the previous deliverables (D2.3, D3.1).

This report D2.4 focuses (Chapter 3) on initial assessment of the effectiveness of the euPOLIS project approach in euPOLIS's FR (Front Runner cities) demo-sites in Belgrade-Serbia, Gladsaxe-Denmark, Lodz-Poland and Piraeus-Greece and also for the FL (Follower cities') case-studies in Bogotá-Columbia, Fengxi New City-China¹, Limassol-Cyprus, Palermo-Italy and Trebinje, RS -Bosnia and Herzegovina. Diversity and heterogeneity of sizes, scales and needs amongst all demo sites and case studies is forming the basis for the final evaluation of project approach effectiveness.

The assessment of the euPOLIS approach effectiveness is based on six evaluation criteria (relevance, coherence, effectiveness, efficiency, impact, scalability/extrapolation) adopted from the methodological framework of the Organisation for Economic Co-operation and Development (OECD) on development evaluation and customised for application in this project.

The euPOLIS 4 FR cities’ teams and supporting partners, as well as FL cities’ teams provided factual materials that served as a basis for assessing the euPOLIS project’s approach. These initial materials are included as an integral part of this report.

The optimal preparation for the initial effectiveness evaluation, subject of D2.4, is performed based on results of all WP2 results achieved so far.

This report is created in synergy with D4.3 report, which focuses on the guidelines for participatory processes tailored to local needs and context, and with the D.6.2 that will be developing the engagement methodology for all citizens groups for co-design process, due to be reported in October 2022.

¹ The updated from Fengxi New City has not been received by the deadline for this report. It is expected to be included in the next version (2) of this Report.

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List of Acronyms /Abbreviations

Table 1. Acronyms/Abbreviations

Acronyms/Abbreviations	Explanations
BGD	Blue Green Dream
BGS	Blue Green Solutions
BVOC	Biogenic volatile organic compound
CEUS	Centre for experiments in urban studies (Belgrade)
CD	Communicable disease
CoP	Community of Practices; in this case euPOLIS stakeholders
CP	Communicable Practices; in this case innovative BGS/NBS planning system
CS	Case Studies
DS	Demo sites
EEH	Ecological/educational hub in FR Cities
ESS	Ecosystems services
FL	Follower cities
FR	Front Runner cities
GA	Grant Agreement of the euPOLIS project
GDPM	Goal Driven Planning Matrix
MD	Multi-disciplinary
MF	Multi-functional
NCD	Non-communicable disease
OECD	Organisation for Economic Co-operation and Development
PH	Public Health
SDG	Sustainable Development Goals
UHI	Urban Heat Island
WB	Well-being
WS	Weather station
WWTP	Wastewater treatment plant

1 Introduction

This report represents the version 1 of the Deliverable for the Task 2.3 entitled as D2.4. named "**Report on the euPOLIS approach effectiveness**" of the euPOLIS project. This report contains 5 parts:

- I. Introduction - Chapter 1 of this Report.
- II. Summary of stakeholder's engagement meetings, workshops, and consultations performed in FR and FL cities - Chapter 2
- III. The initial evaluation of the euPOLIS approach effectiveness - Chapter 3
- IV. Conclusions – Chapter 4
- V. Appendix – with examples of stakeholders engagement activities results

The summary of stakeholders' engagement events performed until July 2022 (Chapter 2) was updated by cities' teams and supporting partners. It includes workshops focused on demo-site resources, workshops with cities' experts for further consolidation of demo-sites' data and specific requirements and other activities with citizens.

The initial assessment of the euPOLIS approach effectiveness presented in this report is based on six evaluation criteria (relevance, coherence, effectiveness, efficiency, impact, scalability/extrapolation), methodology adopted from the Organisation for Economic Co-operation and Development (OECD) framework on development evaluation.

The euPOLIS 4 FR cities' teams and supporting partners, as well as FL cities' teams provided factual materials on all criteria that served as a basis for assessing the project's effectiveness. These materials are included as an integral part of this report.

At a later stage of Task 2.3, euPOLIS partners will sharpen their evaluation criteria for effectiveness of euPOLIS' approach in the interactions with other WPs.

2 The stakeholders engagement meetings, workshops, and consultations performed in FR and FL cities

2.1 Summary of FR Cities initial engagement activities

The relevant part of the material regarding initial engagement activities in FR cities was obtained from supporting partners from all FR and FL cities.

Here below are listed and briefly described the main stakeholders' engagement meetings, workshops and consultations carried out for systematic benchmarking against locally already taken and relevant NBS-based urban regeneration endeavour.

2.1.1 FR City Belgrade – Linear Park and Ušće

In Belgrade, the process of engaging stakeholders was held at several levels:

First level - dissemination of ideas, methodology and goals of euPOLIS project to professional and academic community, public sector, NGO, etc.

1. 25th November 2021, 1st Belgrade's Workshop with all Stakeholders mentioned above,
2. 25-28th May 2021 at the Mikser Festival have been released public forums - Blue Gold Panel Session (Cedo Maksimovic, Istvan Kenyeres), Happier Cities/When Nature and Citizens United (Daniel Podmirseg, Nataša Đurić)
3. Participation same members of euPOLIS team in multiple events of the living urban laboratory with Urban Innovation Partnership members from Belgrade (Milena Zindović, Čedo Maksimović, Radnko Božovic, Maja Lalić, Nataša Đurić, Anja Radjenović) organised by CEUS - part of the Clever City Project during 2021,
4. Participation in the "Klimatron" conference in May of 2021
5. Cedo Maksimovic made comprehensive presentation of the euPOLIS project in the South Eastern Europe regional conference **Urban by Nature (UbN)** held In Belgrade on 17th May 2022. The emphasis was placed on the opportunities for Interactions of euPOLIS's eco-EDU hub and UbN's virtual educational hub network in the Eastern Europe.

Second level - special attention of BG euPOLIS team was cooperation and dissemination of ideas, knowledge and methodology with Belgrade academic community, especially with the Faculty of Architecture, Civil Engineering and Forestry:

The conference with architectural students was organized at the Faculty of Civil Engineering (euPOLIS partner).

Architectural Students competition for the preliminary design of the of the euPOLIS demonstration sites and the EEC facility at the Park Ušće - Zemunski kej, organised in partnership with the Faculty of Architecture. Competition procedure Including the following activities: Student's Workshop on euPOLIS approach (11th February 2022), International Jury Session (Morten Rask Madsen from Gladsaxe, Denmark was a Jury member), held on 24-25 March 2022 in Belgrade, Workshop of the local Experts with students (21st May 2022 shown in Figure 1), Exhibition of the competition's design projects with in-person involvement of the local citizens.



Figure 1. City of Belgrade. Workshop for presentation and analysis of the students' competition projects. The winning team joining euPOLIS experts to co-design the final solution, April 2022

Third level - involvement of citizens in the planning and design process of euPOLIS demonstration sites Linijski Park and Park Ušće - Zemunski kej :

1. Online questionnaire for wider citizen "You're the Expert to" during October - November of 2021
2. Online workshop "You're the Expert to" with the citizens of Zemnu (19th, November 2021),
3. Let's plan together "Linear Park", PUBLIC DISCUSSION: presentation of the Draft Plan and discussion with citizens - (5th, June 2021), Organised by CEUS, participated Cedo Maksimovic, Nataša Đurić on the part of euPOLIS.
4. Interaction Workshop: "You're the Expert to" at the site of Zemnuski kej (30th, May 2022). Participated all BG euPOLIS team and about 70 citizens. Figure 2 and figure 3.



Figure 2. City of Belgrade. Ušće Interaction workshop "You're the Expert", euPOLIS team, 30 May 2022



Figure 3. City of Belgrade. *Uisce pakr* Interaction workshop’s participants “You’re the Expert”, 30 May 2022

Belgrade’s team and specifically MIKSER, with support of ICL, is currently working on organising *Beyond the-state-of-the-art* gathering planned on 29th September 2022.

The main objective of this event is to bring together the representatives of all euPOLIS project partners for facilitating complex euPOLIS interaction and integrated issues in person. It aims to present the breakthroughs in professional and scientific achievements, to draft the outline of the final/permanent project legacy document.

This goal will be reached by the following detailed objectives:

1. strengthening the “out of silos” approach in creating the project deliverables
2. enhancing the “Beyond the State-of-the-Art” contents of WPs and the integration (synergy) roles of the WP leaders by identifying 3 levels of the strongest synergy of WPs
3. setting up the stage for the final project deliverables and its permanent legacy Including the concept/draft of (a) the euPOLIS Application Guideline, (b) the euPOLIS final conference, and (c) euPOLIS permanent legacy.
4. to achieve additional synergies with the euPOLIS's cluster/sister Horizon 2020 projects by providing the forum for the participants from these projects to present their "Beyond the State-of-the-Art" relevant achievements.

Results of this upcoming event will be reported in the next version of this report (D2.5).

2.1.2 FR City Gladsaxe – Pileparken

Phase 1:

Introduction to stakeholders and the euPOLIS project.

Overall objectives:

1. Introduction of the project to key persons
2. Alignment of expectations

Introduction of euPOLIS’ NBS based planning system and the roadmap for its implementation.

euPOLIS Workshop with urban planning and design experts from 4 FR cities
(13th November 2020)

1. Introduction of the euPOLIS mission, expected outcome and city obligations

2. Introduction of the institutions / participants from 4 FR cities and key issues (Belgrade, Gladsaxe, Łódz and Piraeus)
3. Introduction of the local supporting partners (SP) and their understanding of their roles
4. Presentation of the NBS innovative components of the city planning system
5. Socio-economic, PH&WB issues and monitoring program in support to participatory planning, data and information needs

First workshop with stakeholders– introduction to euPOLIS in Pileparken 6

Introduction of euPOLIS Project and Creation of the Community of Practises/Group of Stakeholders for stakeholders engagement in the residential area of Pileparken 6, the City of Gladsaxe. Participation of representatives of Gladsaxe Municipality, Social Balance – a part of social administration, representatives of residents and the housing association Arbejdernes Boligselskab i Gladsaxe² and euPOLIS speakers from other countries.

1. Introduction to euPOLIS and to the stakeholders
2. Introduction to current methodology of stakeholder’s involvement in urban participatory planning in Gladsaxe
3. Introduction to euPOLIS innovative methodology of NBS based urban planning with systematic (participatory) involvement of local stakeholders in co-planning/co-design through BGS matrixes
4. Experiences from other countries in dealing with participatory planning
5. Introduction to ideas to the involvement of local stakeholders with their role in euPOLIS and the methodology of their involvement
6. Workshop and discussion with three topics:
 - City’s experience in engaging with stakeholders
 - Current usage of the euPOLIS demo site (DS) by citizens
 - Demographic criteria (and why we need them)

Phase 2:

Co-creating of Verandas Garden

1st May – 30th of June 2021:

Overall objectives:

1. Supporting the community in Pileparken
2. Co-responsibility and ownership through action-based events
3. Appoint ambassadors among residents
1. Create new traditions
1. Test urban garden concept as method that can migrate to other wards (hence barrels that can be moved). Possibly with residents as driving owners of the project.

Kick-off event

7th of May 2021:

In collaboration with the Charlotte district youth job organisation

1. Establishment of urban gardens
2. Summer party with communal dining
3. Mobilising commitment among residents
4. Water games for children
5. Live music

² <https://abg.dk>

Establishment and maintenance of kitchen gardens

20 days in May/June 2020.

1. Manning the area
2. Appoint ambassadors among residents
3. Establishment of project pavilion
4. Involvement of residents
5. Facilitating conversations with individual residents about future opportunities
6. Learning about the green

Harvest festival and communal meal

23rd of June 2021

1. Handing over the 'key' to Veranda's garden to the residents
2. Conducting a qualitative questionnaire survey about residents' relationship with the outdoor spaces in Pileparken
3. Joint barbecue and sharing of food from different cultures
4. Live accordion music
5. Award of the winner of the children drawing competition
6. Veranda visits Pilepark in the form of a 2.5 m tall adventurous person
7. Ball games for children

Phase 3:**Sketch proposal and designing with residents**

December 2021–May 2022

Overall objectives:

1. Understanding of residents' view on their neighbourhood
2. Decision on the location of the project
3. Choice of theme for the NBS
4. Choice of functions to be implemented in the project
5. Decision on overall planting structure
6. Approval of the final outline proposal

Community Dinner and Citizen Involvement

9th of December 2021

1. Inputs for desired neighbourhood and community in a new courtyard design (Figure 4)
2. Community dinner for residents

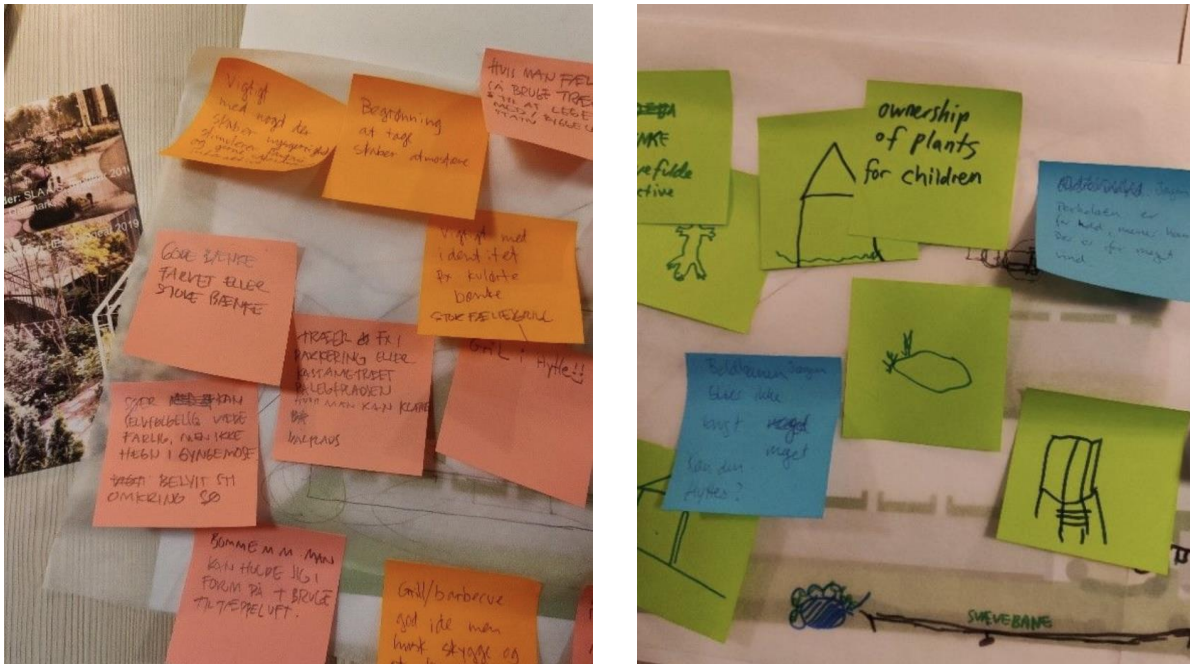


Figure 4. Gladsaxe. Co-planning and co-design of NBS with citizens

The mobile design office - Citizen participation van

01st of January – 31st of March 2022

1. The mobile office is open twice a week for resident consultation
2. Participation in carnival celebrations February 2022

Construction of flower meadow

co-dispersal of seeds 18th of March 2022

1. Sowing of flowers
2. Communal lunch
3. Discussion of final sketch proposal and expectations to the future green environment.

Approval of outline proposal

26th of April 2022

1. Presentation and approval of sketch project at departmental meeting for all residents co-dispersal

Spring market place

21st of May 2022

1. Narrator's stand on monitoring – information on upcoming monitoring project
2. Community activities around planting in kitchen gardens – supporting new traditions.
3. To explore what it takes for residents of Pileprken to want to participate in the monitoring process.
4. To strengthen residents' knowledge of euPOLIS and the research project they are part of.
5. To recruit residents to participate in the monitoring part
6. Social gathering and communal lunch – bringing together and creating meetings between residents

2.1.3 FR City Łódź – Pasaz Anny Rynkowskiej

Rynkowska Passage (demo-site) is currently used mainly as a shortcut between the more active neighbourhoods of the city centre, with their vibrant social life. Most users don't spend more time there than it takes them to walk to work every day. They visit the Passage on their way to the company, school, shop or take their children to the kindergarten next door. The location is not attractive for residents and its character does not encourage frequent visits and outdoor recreation.

Workshops for project stakeholders:

1. The first workshop (educational and informative) was held on 20 November 2020; attended by the citizens. The aim of the workshop was to present the main objectives of the project; the mission of euPOLIS, the expected results and commitments of cities, the role and involvement of stakeholders and the tools and methods to support them; presentation of the stakeholder groups/individuals and their planned/expected roles in the project
2. The second workshop (educational and informative) was held in two parts 28 July and 4 August 2021. (Figure 5). The education and information workshop of the euPOLIS project took place in two parts. The 1st workshop took place on 28th July 2021 and started with an informative and educational part in the conference room of the State Fire Service Headquarters in Łódź located just by the Rynkowska Passage. The second part of the workshop already took place directly on the demo site, but was interrupted by a storm, so we decided to continue the walk with the beneficiaries a week later. During the walk, a representative of the environmental shaping department from the Łódź City Office, responsible for the inventory of greenery in the walkway presented it in detail to the beneficiaries and discussed all plantings in the demo site. Workshop was attended by representatives of various stakeholder groups, including the Fire Department, the Municipal Police, the Municipal Kindergarten, municipal ecological activists, residents of the surrounding tenement houses, and the developer (conducting an investment in the neighbourhood). The results of the VOX POPULI survey were discussed during the walk (around the demo site); we talked about the greenery already present there and about proposed new plantings and other possible NBS.

To sum up this stage, we can say that consultations with residents were carried out, first in the form of an online questionnaire and then through participatory and educational workshops, interviews and research walks. All this was done in order to find out what problems related to the urban areas selected for the project are reported/noticed by the residents, learn about their preferences, opinions and suggestions. The aim of this stage was participatory cooperation between the euPOLIS project and its stakeholders, thanks to which new, friendly, green urban spaces will be created.



Figure 5. Lodz Workshop 2 – Participant’s photos and information poster

3. The third workshop (an online meeting) was held on 9 February 2022; attended by members of the project team but also a representation of specialists from other departments of the City of Lodz Office, such as education, participation, green areas, environment, investment and infrastructure, urban planning, etc. The aim and outcome of this workshop was to develop the final list of NBS (Figure 6) selected by Lodz.



Figure 6. City of Lodz. Pasaz Anny Rinkowskiej demo-site.

The experience gained in euPOLIS will be very useful in carrying out a modern process of broadly understood public participation, which will translate into the creation of greater functionality of new investments based on the expectations and needs of the inhabitants. Also, co-creating a new identity of the city and using innovative technical solutions of NBS type in the design and investment process.

2.1.4 FR City Piraeus – Mikrolimano, Akti Dilaveri and Ralleion

Following events were performed in FR City of Piraeus:

1. 23.11.2020 - Introduction workshop of the euPOLIS Project and stakeholders' engagement in Piraeus. The mapped stakeholders were invited in this on-line workshop, in order to draw their attention on the general scope and the potential impact of the euPOLIS project. The euPOLIS project and its methodology was presented, and the stakeholders were informed on the purpose and the anticipated effect of the proposed interventions, the details of the social survey and the importance of their engagement to this process.
2. 14.1.2021 - City of Piraeus hosted an online meeting for the stakeholders engagement and the participatory planning process for Akti Dilaveri – Mikrolimano DS. The stakeholder's issues and concerns were discussed, and next steps about the stakeholders participatory planning process were agreed. The euPOLIS Piraeus Team established contacts with the coordinators of the master plans, which are on-going this period in the Akti Dilaveri Area.
3. 13.3.2021 - City of Piraeus hosted an online meeting for the stakeholders engagement, the participatory planning process, the plan design and the next potential actions for Ralleion DS. The stakeholder's issues and concerns were discussed, and next steps about the stakeholders participatory planning process were agreed. The euPOLIS Piraeus Team established contacts with some of the most important stakeholders, the School Principal and the Parents / Guardian Association of Ralleion school, in order to coordinate and contribute to the idea of engagement as well as plan design /implementation by sharing their knowledge of school Area , giving feedback , comments , or ideas according to next steps / actions. The Association of Parents and Guardians of Ralleion School was very positive with the idea of the project and suggested that children could participate or contribute in any way to the project and the process could be interactive part of the environmental education.
4. 21.6.2021 - The euPOLIS Piraeus Team met with the President of the 3rd Municipal Community of Piraeus, in order to discuss the wider planning requirements in the DS areas and organize the stakeholders' participation.
5. 27.9.2021 - The euPOLIS Piraeus Team met with the teaching staff of Ralleion School, in order to discuss the planning requirements in the Ralleion School and how the children could participate/contribute to the project and act interactively in the framework of their environmental education.
6. 20.10.2021 – The City of Piraeus hosted an online workshop, inviting to an open discussion residents, local businesses and professionals, unions, and organisations and all those who live and work in the wider area of the Akti Delivery – Mikrolimano coast in order to engage and increase the participation of the local community for the design and implementation of the potential pilot interventions to be carried out in the area.
7. 12.11.2021 – The City of Piraeus hosted an online workshop inviting to an open discussion teaching staff, parents & guardians of Ralleion Experimental Primary Schools and their associations in order to engage and increase the participation of the local community for the design and implementation of the pilot interventions to be carried out in the Ralleion DS area.
8. 14.1.2022 - The City of Piraeus hosted an online workshop inviting to an open discussion city planners, contractors, and professionals of landscape projects in public and private sector as well,

in order for the local experts to engage and participate in the design and implementation of the pilot interventions to be carried out in Piraeus Demo Sites. Figure 7.

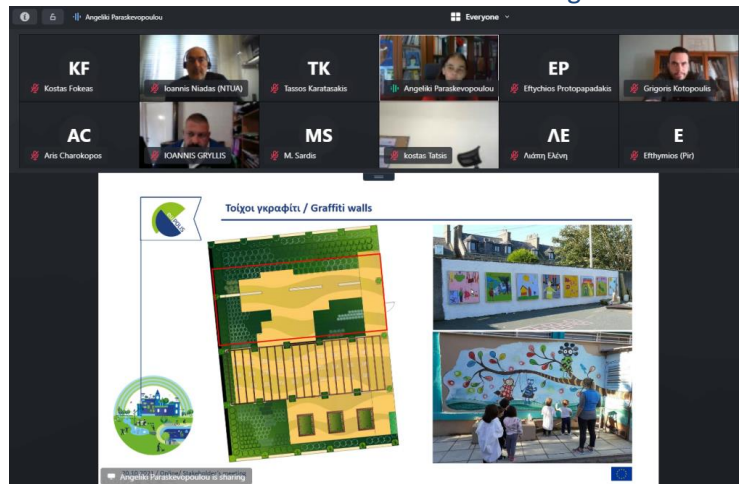


Figure 7. City of Piraeus. An online workshop, January 2022

9. 17.2.2021 - The euPOLIS Piraeus Team met with the Head of the Hellenic Offshore Racing Club (HORC), in order to engage and participate in the design and implementation of the pilot interventions to be carried out in Akti Dilaveri - Mikrolimano DS. In first place we agreed to use their facilities in order to place monitoring equipment.
10. 21-22.3.2022 – The euPOLIS Piraeus Team met with shop owners in Akti Dilaveri – Mikrolimano (Cartel, Lollobrigida, Varoulko, Wonderland) in order to discuss the option of grey water system implementation to support the greening in the area. The most of them are not positive with the grey water idea, considering that the problem that they are facing is not the cost of water but the cost of energy and maintenance and seems that there is no motive in this direction, in order to be benefited.
11. 23.5.2022 - The euPOLIS Piraeus Team met again with the teaching staff of Ralleion School, in order to discuss the structural and safety issues / difficulties related to initially proposed interventions and specifically the roof garden. The decision was to explore other options, such as vertical gardens, and finalize the proposed Interventions for Ralleion School.

Several other no scheduled face-to-face meetings have been done with citizens, specifically during our visits of the DSs and during the euPOLIS participation in dissemination and communication activities, where the proposed Interventions discussed, in order to use citizens' feedback in the design process to finalise the plan of the proposed interventions in the DS areas.

2.2 FL Cities initial engagement activities

Follower Cities are taking active part in organising and promoting a series of events related to the euPOLIS project. These activities support stakeholder's engagement and systematic benchmarking against the relevant NBS-based urban regeneration endeavours taken locally.

2.2.1 FL City of Bogota' – El Reencuentro Case Study

The stakeholder's engagement strategy implemented in the last 20 months by the Bogotá team is divided into three activities:

Activity 1: Stakeholders identification and mapping (December 2020 -June 2021).

This activity consisted of a series of semi-structured interviews with offices of the district government that supplied information to develop a better understanding of the main grassroots stakeholders of the project. The interviewed offices included: The Participation and Communal Action District Institute (IDPAC³), the Local Mayor of Los Mártires⁴, the Special Administrative Unit of Public Services (UAESP⁵), the Bogota' Secretary of Social integration⁶, the Women's Secretary, the Safety Convivence and Justice Secretary, and the Arts District Institute (IDARTES⁷).

The interviews took place between December 2021 and January 2022 and simultaneously secondary sources were gathered. The information from the interviews and the consulted sources was used by ERUs social team to create the stakeholders mapping and identify the principal challenges in each urban development plan. This map established a matrix in which the stakeholders were located according to their relevance or legitimacy within the community and according to the level of impact the urban planning tool may have on them. This mapping identified various stakeholders such as District government offices with influence in the *Plan Parcial*⁸, unregistered recyclers, migrants, indigenous population organizations, Neighbourhood boards, and other grassroots organizations.

Activity 2: Consultancy for a better city (May - June 2022)

The main purpose of this activity was to gather information on the perceptions, preferences, and imaginaries that the local community has about the project. Their perceptions were collected through a card in which the citizens select what they consider to be the most important elements for the development and the improvement in the habitability of the sit they inhabit.

The questions considered six planning principles, that are embedded into the project: transport-oriented development, a new housing supply, greening strategies, strengthening of welfare and care systems, strengthening of local economic activities, historic legacy conservation, and heritage conservation. In addition, the citizen's demographic information was also gathered (e.g., gender, type of relation with the territory, housing status), and their awareness of what an urban planning tool is (*Plan Parcial*) (see Figure 8).

³ <https://www.participacionbogota.gov.co>

⁴ <https://www.martires.gov.co>

⁵ <https://www.uaesp.gov.co>

⁶ <https://www.poverty-action.org/organization/bogotá-secretary-social-integration>

⁷ <https://www.idartes.gov.co/es>

⁸ Local urban planning tool: <https://www.sdp.gov.co/gestion-territorial/planes-parciales-de-renovacion-urbana/planes>

Usted se reconoce como Hombre Mujer Mujer transgenero Hombre transgenero Otro

En este sector usted es Propietario Arrendatario Residente Visitante

Marque con una X lo que usted considera importante para el desarrollo de este sector.

<p>Desarrollo Orientado al Transporte (DOT):</p> <input type="checkbox"/> Nueva oferta de transporte público. <input type="checkbox"/> Espacios para ciclistas y peatones. <input type="checkbox"/> Espacios para transporte privado (Automóviles, Motos). <input type="checkbox"/> Mejorar el transporte público existente. <p>Nuevas Ofertas de Vivienda:</p> <input type="checkbox"/> Vivienda social <input type="checkbox"/> Viviendas que no son de interés social. <p>Reverdecer la Ciudad:</p> <input type="checkbox"/> Parques, alamedas y espacio público. <input type="checkbox"/> Más árboles en el sector. <input type="checkbox"/> Jardines o huertas en zona urbanas.	<p>Ciudad Cuidadora</p> <input type="checkbox"/> Espacios recreativos para todos. <input type="checkbox"/> Colegios, jardines y espacios de formación. <input type="checkbox"/> Servicios para adultos mayores, personas en situación de discapacidad, primera infancia, etc. <p>Fortalecimiento de Actividades Económicas Locales</p> <input type="checkbox"/> Ferias locales de intercambio comercial. <input type="checkbox"/> Nuevos espacios comerciales. <input type="checkbox"/> Espacios de formación para emprendedores. <p>Memoria y Patrimonio</p> <input type="checkbox"/> Espacios culturales. (museo, biblioteca, teatro, etc). <input type="checkbox"/> Conservar los edificios históricos. <input type="checkbox"/> Difundir los oficios tradicionales.
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¿Sabe usted qué es un Plan Parcial? Si No Más o menos

Figure 8. City of Bogota'. Consultancy card

This consultancy also seeks to guide the participants in the theoretical aspects that direct the formulation of a *Plan Parcial* to provide them with elements and information essential for their participation in a co-creation process. To this end, participants are given a flyer with the definition of *Plan Parcial*, information about who can formulate it, and what are the steps necessary for the formulation and adoption of this urban planning tool (See Figure 9 and Figure 10).

¿QUÉ ES UN PLAN PARCIAL?

Es el instrumento de escala intermedia que complementa las disposiciones del Plan de Ordenamiento Territorial (POT) para las partes de la ciudad que están en tratamiento de revitalización y desarrollo. Los planes parciales definen:

- El modelo de ocupación:** cómo se organiza el espacio en el territorio que se interviene.
- CARGAS:** Los sistemas públicos: espacio público, vías, equipamientos y redes de servicios públicos
- BENEFICIOS:** Los sistemas privados: los metros cuadrados a construir en vivienda y otros usos.
- REPARTO EQUITATIVO DE CARGAS Y BENEFICIOS** (A mayores cargas, mayores beneficios.)

¿QUIÉN PUEDE FORMULAR UN PLAN PARCIAL? *

Para la formulación y adopción de los planes parciales se debe cumplir con las siguientes etapas:

- Propietarios del suelo.
- Comunidad.
- Distrito (en cabeza de las entidades competentes).

* (Art.2.2.4.11.2 del Decreto Nacional 1077 de 2015)

EMPRESA DE RENOVACIÓN Y DESARROLLO URBANO DE BOGOTÁ D.C.

Figure 9. City of Bogota'. Consultancy for a better city accompanying flyer. What is a Plan Parcial? information- part 1

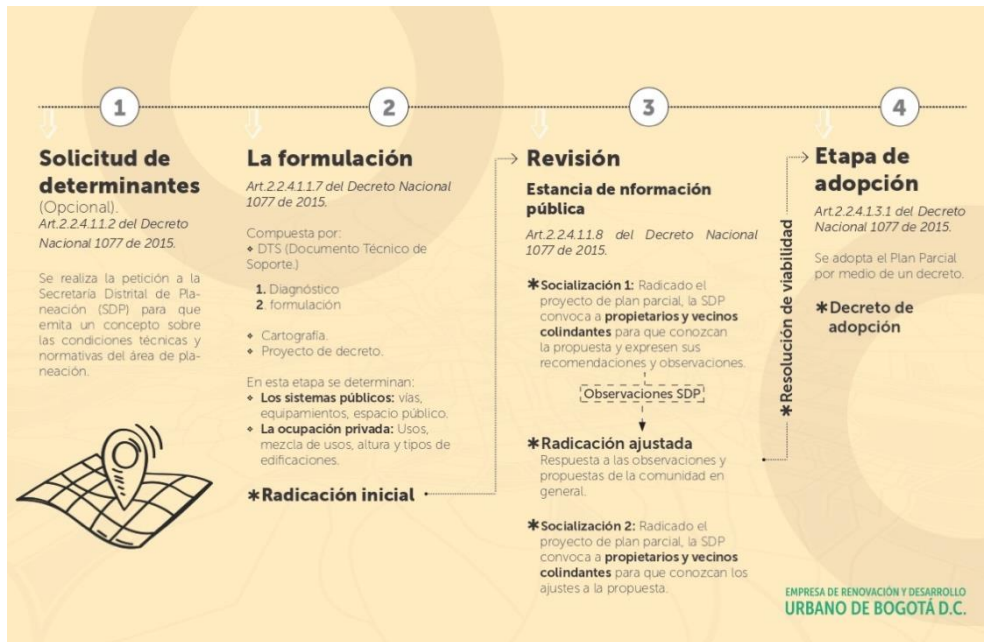


Figure 10. City of Bogota'. Consultancy for a better city accompanying flyer. What is a Plan Parcial? information- part 2

All activity (Consultancy for a better city) results are presented at the Appendix 5.1.

2.2.2 FL City Limassol – Public Garden Case Study

1. After the beginning of the project, a meeting took place (15th January 2021) in which it was generally discussed about the project and people who could help the Municipality of Limassol. Among the topics discussed, there was a goal of improving the quality of life and well-being of citizens, as well as the sustainability of the city using Nature Based Solutions. It was pointed out that the overall aim is to increase the green areas in the Limassol Urban Area and consequently promote sports and activities near the neighbourhood so that citizens do not have to drive to other parks or areas of the city for their personal exercising and leisure walking. In this internal meeting, people from the Municipality participated.

2. After the project started and the first meetings with the other euPOLIS partners took place and explained better all goals that can be achieved within the framework of euPOLIS Project and the implementation of the NBSs, a meeting was held with the Municipal Councillors (12th February 2021), the European Affairs Office and the Limassol's city planner, where the objectives of the project were mentioned and that a case study area should be selected in the city where we could use as an example of where the NBSs (and any relevant actions) to be implemented. The gap concerning the clear protection for sustaining the ecosystem services and biodiversity protection and the needs of integrating urban water management and handle risks that emerge during the change of seasons has been also analysed, as well as the supporting needs via euPOLIS partners for a better understanding of protecting biodiversity and ecosystem services, as the euPOLIS partners have the experience to explain innovative solutions that worked best for them so that Limassol will follow their lead. Also, it has been pointed out that it is not so easy to tangle private companies with NBS implementation inside Municipality due to the Treasury of the Republic of Cyprus and the procurement regulations that is essential to be followed.

3. Another meeting the municipal councillors (2nd April 2021) participated together with the European affairs office and the architect of the Municipality, people who were aware of the master plan of the public garden of Limassol. The heat island effect and ways to confront it were also mentioned, as well as the questionnaire targeted at the Limassol public so to better understand the needs of local citizens. Due to the Cyprus geographical characteristics, there are several climate issues that can raise some difficulties on maintaining the plants that will be integrated in the public garden in general. This environmental issue may cause the lack of diversity regarding the plants. The planting of various trees and Mediterranean plants that do not require a lot of water (and can additionally provide shading in order to give protection from the heavy sun during the summer) was suggested. Furthermore, the gap in respect of the lack of expertise between local private companies in terms of NBSs was discussed, as well as the needs for stimulating awareness to fill these NBSs gaps.

2.2.3 FL City of Palermo – Villa Turrisi Park

Following a first strenuous phase of stakeholder's research (as the case study's area is a predominantly privately owned area and still in the start-up phase of a park project) - as the participatory process for the area started with the euPOLIS project - City of Palermo established an important phase of dialogue with the stakeholders to carry out a shared path.

City of Palermo published Q3 questionnaire in Italian language on the homepage of Municipal website, disclosing it by mail to stakeholders and word of mouth. The questionnaire stayed online for 30 days; it was partially filled by 101 people and completely by 72 people, mostly aged between 45 and 65, of a good cultural level (50% graduates) and mostly workers (employees) and cohabiting with children.

Although for this area there was a strong push for the conversion into a park by the various local associations, we did not find the participation we expected in filling out the questionnaire. If on the one hand the area of Villa Turrisi is unknown to most, City of Palermo understood that must invest more resources in education to participation.

In July 2021, with the collaboration of ICL, the first online dissemination event for the euPOLIS project was held, during which the project was presented to the city and the idea of creating thematic focus groups. The results of Q3 were also presented and discussed.

To keep the stakeholders' attention alive, materials were shared by mail and the project newsletter was disseminated. We then proceeded to personally meet some stakeholders who showed to be particularly available, to acquire information on the area.

A promotional video of the area⁹ has also been created to foster the idea of the project among citizens, also in consideration of the funding obtained to build a first lot of the park which makes the debate with stakeholders more concrete. Figure 11.

⁹ https://youtu.be/o4l6r6_djeY



Figure 11. City of Palermo. An excerpt from the video

On the basis of the state of the site, of the investigations carried out for the project of the "greenway", of the questionnaires filled out by citizens and of the application guidelines recently provided by the City Council, the first intervention alternatives have been selected and will be examined with the stakeholders, taking into account that in the area, mainly for agricultural use, specimens of olive and citrus trees were illegally killed (and must be restored in execution of Sentence no. 693/2022 issued by the CGA of Palermo). In particular, the protection and increasing of agricultural biodiversity represents an important NBS due to the significant contribution, in the urban environment, of the "*synanthropic*" component expressed by the set of species and habitats that characterize the case study.

The proposals for methods and actions of co-design, accompanied by texts and images, will be the subject of public debate using the dedicated euPOLIS website and online participatory tools (Consul for example), to start and fill out the questionnaires and through the organization of workshops with groups of stakeholders at the *Cantieri Culturali alla Zisa* headquarters and online.

2.2.4 FL City of Trebinje – Otok

Due to the fact that the island case study (Figure 12) represents an unorganized and undeveloped location, the activities that took place are related to the conceptual design of space planning and consultation with the competent institution JU Voda Srpska¹⁰, because the location represents a flood area and a phased solution to the problem should be approached. In addition to the above, citizens were surveyed who expressed their wishes and suggestions regarding the temporary arrangement of the locality in question. In addition to the case study, the expansion of the NBS solution to other parts of the city was considered, especially in the planning of new industrial zones, airport zones and tourist complexes.

¹⁰ <http://www.voders.org>



Figure 12. City of Trebinje. Otok Case Study. View from the river

2.2.5 FL City Fengxi New City – National Pilot Sponge City

Due to the unforeseen circumstances and the change of the contact person in the Fengxi New City FL case-study, the progress report on stakeholder’s engagement event was not submitted on time at the same time as for inputs from all other FL cities. The report was received on the day before the submission (August 30th 2022) and is attached to this document in the Appendix 5.4. The planning and project approval procedure in Fengxi New City is compliant with the China’s internal relation which does include some form of public consultation. From this report it is clear what are the guiding principles of the Fengxi New City development – highly complementary to euPOLIS concept.

The Fengxi New City management is interested in learning more about the concept of the public consultations (co-planning, co-design) and they are ready to consider adopting some of the principles of euPOLIS approach.

3 Initial evaluation of the euPOLIS approach effectiveness

3.1 Methodology of evaluation

This Report on the euPOLIS approach effectiveness is using following six evaluation criteria, figure 13, to report on the euPOLIS approach progress so far:

1. **Relevance** – the extent to which the euPOLIS project objectives and design respond to partners and all other stakeholders needs, concerns and priorities, and continue to do so if circumstances change.
2. **Coherence** - the compatibility of the euPOLIS approach with other projects and potential interventions in the city or demo-site area.
3. **Effectiveness** - the extent to which the euPOLIS approach achieves, or is expected to achieve, its main and detailed objectives, and its results.
4. **Efficiency** - the extent to which the euPOLIS activities deliver, or are likely to deliver, results promptly and in line with the planned dynamics (timely way) of project activities.
5. **Impact** - the extent to which the euPOLIS activities have generated or are expected to generate significant positive, intended or unintended, higher-level impacts of NBS on PH&WB.
6. **Scalability/extrapolation** - the extent to which the benefits are expected of the euPOLIS planned interventions are likely to generate permanent legacy, e.g., continue as a broadly accepted approach that will be used in similar circumstances on city, national or international scale.

These criteria provide a methodological framework¹¹, adopted from the Organisation for Economic Co-operation and Development OECD DAC network on development evaluation, used to determine the merit or worth of the euPOLIS project and the benchmarking strategy for demonstration sites that is developed in collaboration with all relevant city experts (Task 2.3).

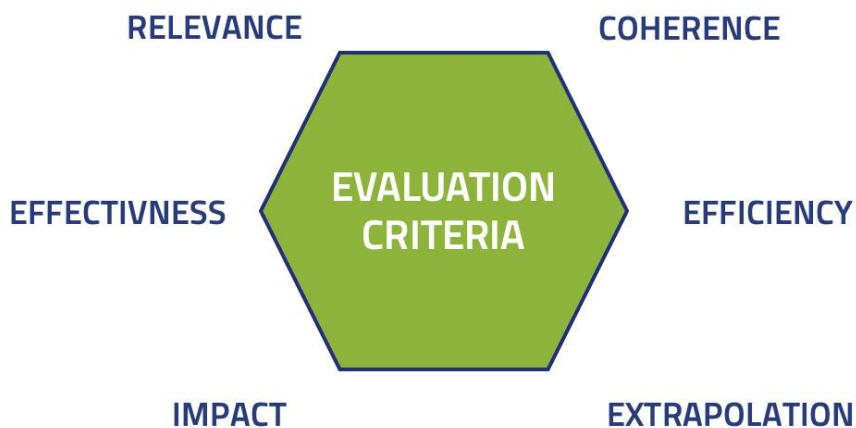


Figure 13. Six evaluation criteria for the euPOLIS approach assessment (based on the OECD framework¹²)

All above criteria are understood in the context of the individual demo-site or case-study.

¹¹ <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

¹² See DAC Network on Development Evaluation (2018), OECD DAC Evaluation Criteria: Summary of Consultation Responses (November 2018). Available at: oe.cd/criteria

3.2 Evaluation of the euPOLIS approach in FR cities

Partners from all FR cities have provided the following materials for all criteria were presented. This results in an initial evaluation of the euPOLIS approach.

3.2.1 Belgrade

Relevance

The project is highly relevant primarily to the principal partner (City of Belgrade) particularly to its urban planning service which benefited from immediate access to innovative integrated planning methodology which was trialled at both demo sites and will be extrapolated in the forthcoming large-scale GUP (General Urban Plan) for Belgrade. The other partners have proven high relevance of the project raising their own capacity around the project coverage:

1. FCEBG was able to get engaged into new complementary projects, its medical experts opened their competence in the area not fully exploited so far (for example use of the selected NBS in Improving the conditions of people with NCD (Non-communicable diseases))
2. enPLUS strengthened its position in the consultancy market for Implementation of euPOLIS planning paradigm for example in planning for new research technology campus and
3. MIKSER was able to cross fertilise euPOLIS gender-based planning and stakeholders' engagement with the complementary expertise of other participants in a clustering UNDP project. Furthermore, euPOLIS enabled conceptualising and running a forward-looking event "Towards the euPOLIS Legacy Beyond the State-of-the-Art"/September 2022.

The above are just a few examples of the relevance in coping with the ever-increasing need for advanced concepts and technology for Improving PH & WB in urban public spaces to be provided by professional stakeholders.

On the other end of the local stakeholders' spectrum, local residents and regular visitors of the Učće park/Zemunski kej demonstrated high level of interest and overwhelming level of support to the planned NBS Interventions claiming its high relevance.

Coherence

In addition to collaborating with the other relevant clustering projects at international scale through the regular events and individual complementary actions, partners in the euPOLIS project participate in regularly coordinated activities at the local (city of Belgrade /Western Balkan region) scale. Some of the project, among quite a few ones are as follows:

- a. **Clever Cities**¹³, local activities coordinated by CEUS¹⁴. This project was started before euPOLIS and had been engaged in public consultations on the Linea Park project which is one of the two euPOLIS's demo sites in Belgrade. euPOLIS team established close link and high level of coordination with CEUS resulting in high level of complementarity of the actions for improvement of both concept design and more advanced phase of planning. In pursuing the complementarity, CEUS consecrated on public engagement, socio-economic and gender issues whereas euPOLIS team concentrated on advanced NBS/BGS effects, co-planning and co-design on public health and well-being. Coordinated proposals highly appreciated by the City of Belgrade and practically all proposals made by the two projects' team have been adopted and built in the final planning documents. The synergy will continue after construction.

¹³ <https://bellab.rs/mreza/clevercities.eu>

¹⁴ www.ceus.rs

- b. **UrbanByNature South-Eastern Europe Hub¹⁵**. euPOLIS and the Urban by Nature SEE Hub have established stable collaboration based on the complementarity of the two networks: UBN-SEEH will concentrate on capacity building by running a series of online capacity building programs while euPOLIS team will complements it by making use if the full scale physical Eco-Edu Hub's network/evidence base/business development capacity facilities and its network of academic/research/professional partners (see the item c).
- c. **EuPOLIS Eco-Edu Hub's (EEH) network** of academic/research/professional partners. This network has already been created in virtual space and its full-scale version will be inaugurated after construction of the EEH. In addition, the euPOLIS project partners it will include relevant faculties of the Belgrade University (Architecture, Chemical Engineering, Mechanical Engineering, Agriculture, Forestry, Biology, Organisational Sciences), equivalent selected departments of the University of Novi Sad, several research Institutes and consulting companies pursuing NBS full scale implementation.

Effectiveness

The main objective of the euPOLIS project is to prove positive Impact of the applied NBS on human-public health and wellbeing (PH&WB). One should distinguish between 2 major aspects of these objectives.

1. to provide proof of concept e.g., document that the applied NBS have positive impact on the local environmental conditions, thus
 - 1.1. creating enabling environment for improvement of PH&WB
 - 1.2. enabling conditions for implementation of wearable devices with direct quantification of the Immediate/short term improvement of PH and WB and
2. Long-term Improvement of the health conditions of the regular visitors to the demo site areas after changing their habit.

Although to achieve 100 % the above item 1 objective will be challenging, it is realistic at both demo site locations in Belgrade: Park UČĆE/Zemunski kej and Linear Park. We shall aim at not only achieving the objectives stipulated in the GA, but also do more than that at the Linear Park location. City planners became very amenable to the euPOLIS concept of planting select tree species which have positive BVOC Impact on specific NCD (Non-communicable diseases) such as cardiovascular, respiratory, and metabolic/mental ones. Planned number of NBS interventions (3 tree lines) is much higher than initially planned. All other interventions at the Linear Park (Including local pluvial flood reduction items) are expected to be fully implemented thus creating the conditions for the entire euPOLIS program to be completed

The same considerations apply to the UČĆE/Zemunski kej demo site. with the major groups of NBS clusters/activities: (a) pocket park cluster, (b) Eco-Edu Hub cluster and (c) other open space with walking shaded promenades cluster. Detailed design and preparations for construction tendering are in the final phase of completion. Thus, it is expected that all euPOLIS concepts/plans including the program of full-scale impacts on the health of volunteers (both with wearables and conventional - dialogues) will be completed.

Efficiency

The activities relating to planning and full-scale implementation/ construction both demo sites in Belgrade consist of 3 major groups:

1. Analytic works and pre-planning carried out by professional/academic partners (FCEBG, euPOLIS and MIKSER)
2. Initial (conceptual design related) planning activities carried out jointly by the euPOLIS professional/academic partners and the team of the Chief urban planner of Belgrade and

¹⁵ <https://urbanbynature.eu/hub/south-eastern-europe>

3. Completion of the Final design and related planning documentation being carried out by professional planning institutions of the City of Belgrade (for example Urban Planning Institute of Belgrade) to be taken-up by the successful bidders in the public tenders for construction of the planned NBS interventions.

The activities in the group (a) have been carried out in timely fashion from the onset of the project and continues to be so ever since.

Despite a bit slow start of the activities from the group b. and slow uptake by the City of Belgrade and to certain extent by the team of Chief urban planner in the beginning, the joint team have succeeded to coordinate mutually planned activities at both demo locations thus the final planning for the conceptual design is in full swing (July 2022).

The activities from the group c. are slightly delayed but expected to catch-up in Autumn 2022.

All other project activities are running according to the planned project dynamics and no delays are expected till the end of the project.

Impact

The euPOLIS project, by its virtue, is expected to generate several groups of positive impacts:

1. Impact on planning

- Gradual change of “mental setup” of its own team members through cross-fertilization process in mastering innovative planning and analytical technologies. Examples: adoption of “hybrid techniques (blend of “heuristic” skills and modelling, and AI inputs in the areas traditionally considered to be based on personal skills and experience of individuals. In this way it is becoming acceptable that for example architecture/urban planning is gradually becoming an analytical discipline, rather than traditionally based on art skills.
- Change of professional attitude of the broader consortium members by accepting the concept of stronger teamwork/interactions rather than “silo” based single discipline domination.
- Gradual adoption of the euPOLIS planning principles (including GDPM matrixes) and that the individual solutions have to be verified by its mutual interactions with other systems
- Gradual adoption of planning/performance/evaluation criteria in the analysis of the options (optioneering)
- Adoption of public health and wellbeing criteria for planning of both individual and interactive solutions

2. Impact on concept of the future projects

The principles of BGS (Blue Green Solutions) developed in the BGD (Blue Green Dream) and adopted and further “perfected” by the euPOLIS, seamlessly adopted by/merged with generally known NBS are becoming powerful pivotal concept of versatile projects dealing with public health and wellbeing, adaptation/mitigation of climate changes sustainable development, ESS (Ecosystem services) and alike.

Scalability/Extrapolation

Belgrade open up multiple potentials for replication at various scales and types of projects. The following types of scalability/replicabilities are applicable:

Individual NBS

For example: simple/individual items like sunflower bench, green toilet, hanging or climbing, wastewater treatment plant in combination with greywater recycling facilities, treated effluent or rapid composting

sludge units, small sports areas with thermal soil conditioning (heating in winter, cooling in summer), shaded bicycle and pedestrian routes, adjustable functions biotopes, small park creek, circular or with or without biofilter at the end and alike

Clusters of NBS and their combinations

Clusters like multifunctional pocket parks, multifunctional roof garden, selected species treelines with proven positive impacts of BVOC on human health.

Blocks of solutions

Pocket parks with of without micro-climate regulating functions, Eco-Edu hub.

Complete solutions for parks and open and other open spaces

For example: mutually linked park spaces with biophilic connected corridors with or without additional contents on the fringes.

Planning methodology for district and different types of urban solutions

euPOLIS planning methodology based on GDPM matrixes can be adjusted to different thematic uses.

The whole cities and their urban-suburban-rural-natural corridors.

Thematic parks, technology parks, university campuses as open-air environmental laboratories, health and spa (wellness) centres and mixed-use urban conglomerations.

3.2.2 Gladsaxe

Relevance

The extent to which the euPOLIS project objectives and design respond to partners and all other stakeholders needs, concerns and priorities, and continue to do so if circumstances change

The project team has implemented a targeted participation process based on co-creation and presence. Please see introduction section. The team has become a known face in the community and a trusting relationship is established between the team, the residents and the local stakeholders. An outline project of new green facilities has been created in open dialogue with stakeholder groups. It is our conviction that the relation between project and stakeholders and the understanding of the aim of the project among stakeholders makes the project resilient to changes.

And changes have emerged concerning the negative social development experienced in the neighborhood. The need to step up social action has become even more topical since the housing department of Pileparken 6 in the spring of 2022 has been designated as a 'prevention area', a new category of housing areas to be added to the annual national lists of deprived neighborhoods, parallel communities, and conversion areas.

The euPOLIS approach is being implemented in Pileparken 6 to make an overall boost that meets both the specific environmental and the changing social needs of the area.

Coherence

The compatibility of the euPOLIS approach with other projects and potential interventions in the city or demo-site area. The euPOLIS site in Gladsaxe is developed in a non-profit residential area.

As a part of the stakeholder involvement process, the social housing administration of Pileparken has been drawn closer to the process of the euPOLIS project. The new situation based on the new wastewater plan has made it very relevant for the Housing Association to follow the euPOLIS project and learn from the project results as a part of the planning of separation of sewers in the more than 40 housing departments offering around 5.000 houses and apartments.

By combining the euPOLIS methodology with local management of rainwater, the project speaks into the Danish climate change debate. It will have the potential to be a model for a transition that many urban areas are forced into due to climate change. It is very likely that cities in the future will be forced to make wastewater planning following the Gladsaxe approach. Using nature-based solutions to reduce the load on the sewerage system will make necessary sewer renovation investments into investment in renewal of city spaces.

Effectiveness

The extent to which the euPOLIS approach achieves, or is expected to achieve, its main and detailed objectives, and its results.

The Gladsaxe project uses an intervention-based process using co-creation to create new social communities among residents and create recreative space from NBS solutions based on rainwater handling. We expect to provide a new, better, and healthier natural environment which can support social and cultural development.

The danish euPOLIS project work with an intervention-aimed livability model based on a concept of the team being present at the site. During the design process of the outline proposal the project team has been present in a contemporary mobile office at the site. The office has been open at two fixed times a week and from this location we have worked on informing the residents about the environmental ideas of the project and on the same time collecting ideas and suggestions from the residents to the ongoing design process.

The presence in the local office has been combined with presence at local events and we have made the residents a part of the physical creation of the space by involving them in the physical construction of a wild flower meadow and of planting kitchen gardens. The design result is an outline proposal suggesting an area which winds through the settlement with customized spatial solutions, different biotopes and social and recreative environments to meet up with neighbors.

Through the co-creation process the team has succeeded in gathering a group of project ambassadors among the residents. The co-creation events has been used to prepare the residents for the upcoming monitoring process.

The size of the demonstration area is a challenge to the monitoring using wearables since it will be very difficult to gather a group of volunteers large enough to constitute significant statistical evidence.

Efficiency

The extent to which the euPOLIS activities deliver, or are likely to deliver, results promptly and in line with the planned dynamics (timely way) of project activities.

The Gladsaxe euPOLIS project are working with 4 parallel processes:
Stakeholder involvement, Monitoring project, NBS technology development and Construction project

Stakeholders' involvement has been through 3 phases:
Phase 1: Introduction to stakeholders and the euPOLIS project,
Phase 2: Co-creating of Verandas Garden,
Phase 3: Sketch proposal and designing with residents

Upcoming phase: monitoring of PH&WB has been introduced to the residents at a resident workshop held in the outdoor space of the community. A program to make the residents choose to be a part of the monitoring program will be rolled out after the summer holiday.

The stakeholder involvement process has until now shown us, that it is difficult to reach a wide audience among the residents. A core of 10-15 residents has been very loyal to the project through all 3 phases. The group of interested residents are slowly growing for every event.

Through the co-designing process in phase 3 many inputs has been gathered for the outline proposal. The final outline project was approved at the section assembly by a large majority of residents providing information to the project's design brief on time. At the last resident event a majority of the present residents showed interest in participating in the monitoring process giving an optimism to the recruitment of participants to use the wearables during the monitoring phase.

The monitoring project has several coordination problems.

- It will be a problem to recruit sufficient people from the 117 apartments to use the wearables at the site to constitute significant statistical evidence on the expected change.
- It has been difficult to get a clear picture of how to construct the monitoring project. Not having a clear picture of the process in which volunteers are needed makes the recruitment difficult and the project risks to lose the confidence of the residents
- The very complex monitoring set up makes it difficult to plan and start buying the monitoring equipment before full budget overview is obtained in order not to spend the limited budget on the prioritized subjects. This is delaying the overall time schedule.
- It will be a problem to obtain the expected pre- and post-monitoring due to selection process due to circumstances explained above.

NBS technology development.

- NBS interventions has been selected and is being optimized through evaluation.
- Further optimization is being performed through modelling. The project is expected to model evaporation and water balance, 3D modelling to analyse shadow effects, Urban Water modelling with UWOT to analyse future potential of water management with urban irrigation and evaporation. Simulation of sun and wind energies to model micro climate and evaporation is being investigated.
- Technologies are being further developed together with producers of NBS products.

The project construction

- Agreements with technical advisors is being negotiated.
- Final regulatory application to the municipality is waiting final optimization.
- Approval of final tender documents is expected to be completed as planned in November.
- Tendering expected to be completed on schedule in December.

Impact

The extent to which the euPOLIS activities have generated or are expected to generate significant positive, intended or unintended, higher-level impacts of NBS on PH&WB.

The Danish Team will focus on storing and circulation of rainwater local and handle the water by evaporation.

The focus on evaporation is expected to have a significant impact on many levels.

- Handling and storing rainwater local on the surface will make water accessible for irrigation and recreation.
- Plants will be chosen and implemented in the design to provide shade in summer, wind protection and optimize evaporation.
- Evaporation is expected to have a significant influence on local temperature and microclimate.
- Water on terrain and sounds of water will be used to stimulate senses.
- The exposure of water through plants is expected to enrich the local biodiversity with more plants and plant species.
- Waterbodies is expected to create breeding grounds for animals and enrich the local fauna.
- Green spaces will be created to invite for social and recreative activities and is expected to increase the use of the outdoor areas in the settlement for different groups of people.

3.2.3 Lodz

Relevance

The extent to which the euPOLIS project objectives and design respond to partners and all other stakeholders needs, concerns and priorities, and continue to do so if circumstances change.

The objectives and design of the euPOLIS project correspond to those needs which were diagnosed at the beginning of the project, when we diagnosed the main problems occurring on the demo site, namely: high level of air pollution; water shortage; soil degradation; heat island effect. These are the same problems that occur in many places throughout the city of Lodz. What is observed on a large scale in the city in general is reflected on a small scale in the demo site, which is barely a small part of the urban area. The proposed NBS solutions were confronted with the concerns and priorities of all the stakeholders, allowing them to be chosen in such a way that they correspond to the needs we have jointly identified. Should circumstances change (with the proviso that they should change in the near future), we are left with a degree of flexibility in the scale/type of NBS selected, which should allow us to optimise them appropriately to this changed circumstance.

Coherence

The compatibility of the euPOLIS approach with other projects and potential interventions in the city or demo-site area.

There is full compatibility of the euPOLIS project approach with other projects and potential interventions in the city or demonstration area.

Effectiveness

The extent to which the euPOLIS approach achieves, or is expected to achieve, its main and detailed objectives, and its results.

The extent to which the euPOLIS approach achieves or is expected to achieve its main and specific objectives and results has been determined by the problems that were diagnosed at the start of the project and by the needs of the city's residents, which were communicated through the VOX POPULI online survey, as well as through workshops and walks with residents around the demo site.

Above all we will strive to increase the attractiveness of the demo site so that as many citizens as possible will want to use it. We want to increase the biodiversity of the site; collect as much rainwater as possible for use in dry periods; reduce the heat island effect by lowering the average air temperature on the demo

site. All of these activities are intended to result in an increase in the well-being of residents. The improvement in the quality of the demo site and the NBS implemented are intended to make the demo site a welcoming place where residents will want to spend their leisure time and will want to look after the site because they will identify with it, knowing that they had a say in its design and creation and will therefore care about its sustainability.

Efficiency

The extent to which the euPOLIS activities deliver, or are likely to deliver, results promptly and in line with the planned dynamics (timely way) of project activities.

At this stage of the project, it is difficult to know exactly how long it will take for the euPOLIS activities to produce results. Some may be observed quickly, others will only be noticeable and tangible after a longer monitoring period. We assume that the timing of the results for the individual NBS implemented will indeed be in line with the planned dynamics (timeliness) of the project activities. The results associated with the transformation of the demo site area will be noticeable first. If we increase the amount of planting, the surface of the permeable substrate in the area where the traffic routes will run, install rainwater tanks, build a sensory garden or a water playground for children, we will immediately be able to see the effects of these solutions - more residents will start to use the demo site, we will be able to recover and store water, which is so lacking in the city. But demonstrating that we have succeeded in lowering the temperature at the demo site by applying specific solutions will require longer monitoring. The same will apply to the wellbeing of the residents. We will only be able to see improvements in their well-being in the long term by monitoring how often they are on the demo site, how long they spend there, how they behave, what they use most, and what impact this has on their well-being.

Impact

The extent to which the euPOLIS activities have generated or are expected to generate significant positive, intended or unintended, higher-level impacts of NBS on PH&WB.

The overall impact of the euPOLIS activities and the solutions applied on the demo site will be positive in each of these aspects:

1. In the environmental aspect it is mainly the introduction of new greenery and rainwater management that should improve the microclimate of the demo site, reduce the heat island effect, improve rainwater retention and biodiversity of the site. Thus, the appearance of new flora can encourage the appearance of new fauna, e.g. insects, birds, hedgehogs living in the city.
2. In social terms, this increase in the attractiveness of the site should increase the number of people who use it as a green space on a daily basis. Being surrounded by greenery should also have a positive impact on the physical and mental health of the residents of this part of the city, simply improving their well-being.
3. In economic terms, the increase in the number of users of the demo site should be good for local businesses, especially those in the immediate vicinity, as it could also provide them with an increase in customer numbers.
4. The impact on urban planning can be positive in the sense that the demo site will become a test of the NBS introduced, to see which solutions work best in the urban space to be developed and introduced on a larger scale in urban planning in the future.

Scalability/extrapolation

The extent to which the benefits are expected of the euPOLIS planned interventions are likely to generate permanent legacy, e.g., continue as a broadly accepted approach that will be used in similar circumstances on city, national or international scale.

We assume that there is a real chance that the expected benefits of the planned euPOLIS interventions can generate a lasting legacy and continue as a widely accepted approach to be used in similar circumstances at the scale of our city. We aim to increase the number of green spaces in Lodz and at the same time improve their quality. Residents are increasingly calling for new greenery to be introduced into the city and for existing green spaces to be cared for. Every year, more and more environmental projects are submitted as part of the civic budget. This shows that over the years, the environmental awareness of Lodz citizens has increased significantly, and this process is still ongoing. Every year, more and more people begin to see the real impact of their actions on the surrounding city space, so residents are also becoming better educated in the field of ecological lifestyles, care for nature and its beneficial impact on their daily lives. And this is a very good foundation on which to “plant” the fruits of our work in the euPOLIS project. Once we have reached the point in the project where we can observe, measure and demonstrate all the benefits of our solutions, this will also confirm that the project's methodology and approach is the right direction to take in future urban developments of this kind.

Whether this can also be taken to a national or international level will depend to a large extent on how well the results of the project are promoted in a wide forum.

3.2.4 Piraeus

Relevance

The extent to which the euPOLIS project objectives and design respond to partners and all other stakeholders needs, concerns and priorities, and continue to do so if circumstances change.

Taking into account that the majority of the engaged stakeholders expressed their thoughts and concerns about the air pollution, the lack of cleanliness, the lack of green spaces and the noise pollution, in general euPOLIS project objectives seems to meet stakeholders needs, concerns and priorities.

Generally, the stakeholders were very positive to participate in the co-design process of euPOLIS, as their issues and concerns had never been discussed before in the framework of a project. However, there are some cases of disengagement. For example, NOEF Sailing Club expressed their willingness to contribute to the co-process and the implementation of the project. Their core purpose of engagement turned out that was to renovate their facilities and when they understood/realized that the euPOLIS objective is to demonstrate pilot interventions under specific budget limitations then they disengaged.

Related to the general renovation of Akti Dilaveri area, some residents and shop owners expressed their disagreement about the existing planning status of the ongoing master plan for the general renovation of Akti Dilaveri area and particularly on the lack of parking areas and sustainable mobility, noting that improving access in the area should be the main priority of planning by the public authorities. This is an issue beyond the scope of euPOLIS and should be discussed and solved in the framework of the development strategy of the public authorities (municipality, prefecture, government).

In Ralleion School, the participants remain very positive to participate in the euPOLIS process, as the project moves forward. The teaching staff and parents agreed that the project could serve as an efficient factor for providing opportunities for education and awareness of the pupils on NBS (e.g. education material, presentations, various dissemination actions, etc.). The discussion now is how the children could participate/contribute to the project and act interactively in the framework of their environmental education.

Coherence

The compatibility of the euPOLIS approach with other projects and potential interventions in the city or demo-site area.

The euPOLIS Piraeus Team established contacts with the coordinators of the 2 master plans, which are ongoing or planned this period in the Akti Dilaveri Area, by the Municipality of Piraeus and the Stadium of Peace & Friendship (SEF), respectively.

Considering the status of the renovation plans at the Akti Dilaveri area, by the Municipality of Piraeus and the consultations with the city stakeholders, the euPOLIS technical team provided recommendations (doc. Guidelines euPOLIS Piraeus based on euPOLIS technical team assessment) for the inclusion of additional NBS/BGS into the design of the master plan of this area. These NBS interventions will be funded by the Piraeus city in the framework of the renovation plan for Akti Dilaveri or other related projects. The relevant master plan estimated that will be presented by Municipality till the end of 2022.

The wider area of Akti Dilaveri includes the SEF park area and there is great interest for the consolidation of the blue green growth NBS actions in the future. SEF Stadium is open to cooperate, in order to develop a whole renovation plan for the Akti Dilaveri area. The renovation plan for the SEF park is not moving forward fast enough. This period is on-going the preparation of the tendering process for the master plan development.

Effectiveness

euPOLIS approach can achieve its main and detailed objectives and its results with the appropriate adjustments on the initially proposed indicative actions.

Practically, was realized that the initial approach for Piraeus DSs, as described in the submitted proposal was not the appropriate and a wider demonstration area should have been chosen, in order to be evaluated and selected the DS with the best perspectives to demonstrate euPOLIS NBS results and not exclusively areas under renovation such as Mikrolimano.

For example, given the existing situation that there is not underground infrastructure, the initial idea for the greening in Mikrolimano, combined with the installation of grey water systems in shops, in order to water elements is not possible. Considering that the renovation of Mikrolimano is done and additional underground infrastructure cannot be placed in the pavement area we are exploring potential solution inter alia, to demonstrate the grey water systems in 1 or 2 shops in the area of Akti Dilaveri or the wider area of Ralleion and Tzavella Str.

Also, is not clear yet if the Greek legislation permits the grey water systems installation in shops and under what requirements.

In Ralleion Pilot School the initial plan was to demonstrate, inter alia, an accessible roof garden, which will be watered by rainwater and grey water systems. The existing structural status of the roof does not meet the safety requirements in order to be visitable for the pupils and the additional budget, which is required for constructional works to strength the building in order to be accessible makes the initial plan not applicable. This issue discussed with the teaching staff of Ralleion School, and the decision was to explore other options, such as vertical gardens and the improvement of planting of the existing grove in Ralleion School to be visitable as education site, which estimated that could have the same impact, in order to achieve the euPOLIS objectives and its desirable results.

Furthermore, according to the submitted proposal there was the option to demonstrate a pocket park outside the Ralleion School, where there are already ramps, pavements, benches and enough planting. In

that case the decision was to allocate this amount to more efficient interventions to best meet the goals of the project, such as a MF pocket park in Akti Dilaveri, which can easily be replicated in other DSs in Piraeus in the future.

Efficiency

The extent to which the euPOLIS activities deliver, or are likely to deliver, results promptly and in line with the planned dynamics (timely way) of project activities.

The final proposed interventions, except the grey water system installation, have been discussed and agreed with the stakeholders and estimated that will be delivered till July 2023. The possibility to support the proposed NBSs by grey water systems, based the Greek legislation, will be clarified in the next months. The monitoring period estimated to start in September 2022 given the assumption that the monitoring equipment will be delivered in time according to the estimated timeline.

Regarding the volunteers' selection, who are going to get involved and support the research project, the selection process is on-going and in the next months the volunteers who will take part in project will receive their wearables and guidelines related to the monitoring process.

In order the euPOLIS activities deliver the desirable results, the interaction with the existing and new stakeholders must be continued. The next steps are to discuss the details on the finally proposed uses, tree / plant species, outdoor equipment, etc., in the framework of the co-design process, during the implementation phase.

Impact

The extent to which the euPOLIS activities have generated or are expected to generate significant positive, intended or unintended, higher-level impacts of NBS on PH&WB.

In Ralleion School, euPOLIS aims to develop an NBS school playground that would support the physical and mental wellbeing, social skills, and learning performance of pupils through the development of spaces that can host various activities offering opportunities for passive and active contact with plants (consisting of native and exotic plant species adapted to the local environmental conditions) that will support biodiversity and improve the microclimate of the school playground, as well as learning opportunities on plants species particularly native plant species as well as exotic adapted to the local climatic conditions, principles of sustainability and nature-based solutions.

The size of many school playgrounds such as the playground at Ralleion is limited and free space is necessary for pupils' play. Within an urban environment, there are limited opportunities for children to have contact with green spaces and hence nature. Pupils spend a considerable amount of their time in school, therefore, it is necessary to find ways within the school environment such as playgrounds for pupils to have contact with plants whether passive or active without compromising the availability of open space for play which is equally as important to provide to pupils. The proposed school playground aims to expose pupils either passively or actively to planting. The exterior building wall overlooking the playground will be covered with planting through climbers and/or green walls. To avoid accidents the base of the climbers will be paved with a porous surface. Additionally, the green wall is expected to reduce glare and mitigate the impact of the heat island effect on the playground.

The Mikrolimano area has been recently regenerated, therefore interventions that involve digging or major construction works cannot be undertaken. The current trees planted are young and relatively small in size therefore the existing planting appears sparser than in reality. To enhance the existing planting, particularly near the outdoor sheltered areas of the café shops, fast-growing shrubs or climbers will be positioned in

planters. The planting is expected to aesthetically improve the outdoor sheltered areas of the café shops, increasing visitation and socialization to the area as well as economically. Increasing visitation to the area promotes people to get outdoors and walk. Furthermore, sheltered with vegetation info points will be positioned in selected locations along the coastal front of Mikrolimano without obstructing pedestrian access to inform visitors of social events and further support socialisation. Citizens can be protected from solar exposure, sit, socialise, recharge their mobile devices, etc.

In Akti Dilaveri the aim is to develop an NBS MF public pocket park that would support the physical and mental wellbeing as well the sociability of all its visitors, simultaneously informing and entertaining visitors in a thermally comfortable environment provided by native and exotic plant species adapted to the local environmental conditions, emphasising the local history and the coastal landscape character and designed in accordance to the principles of sustainability and nature-based solutions.

The proposed pocket park would be inclusive to various social groups including socially vulnerable groups such as the disabled, elderly, and mothers with prams offering various opportunities for passive and moderate exercise as well as social interaction and recreation. Centrally an open-spaced sheltered by the canopies of trees with informal seating is proposed to host various events such as exhibitions, small plays, outdoor markets, educational programs, etc. The planting would constitute a botanical garden and include amongst other plant species, species found in coastal areas to enhance the natural coastal landscape character and provide opportunities to visitors to learn about the ecological importance of preserving and protecting endangered natural coastal areas. An info-point located within the park would provide information to visitors, and store equipment for hosting small events. The open space would provide opportunities to host casual or organized moderately-intensive, low-impact activities such as walking, yoga, etc. A variety of seating is provided throughout the pocket park to meet various needs and host different activities such as reading a book, having a picnic, playing chess or board games, chatting, and relaxing. All seating areas are sheltered by the canopies of trees. The paved surface of the pocket park is porous facilitating root development of trees as well as reducing the effect of stormwater runoff.

The development of an NBS - BG seawall in the Akti Dilaveri Canal, estimated that would restore and/or rehabilitate natural habitats thus increasing biodiversity and improving the water quality inside the canal and making the underwater area attractive cleaner and eco-friendly. Also the proposal for developing NBS biofilter in specified positions in the west coast of the canal would treat the surface flood runoff before flowing into the canal.

The potential benefits for the marine environment of such an installation beyond the additional space for attachment by marine organisms, include addition of moisture, shade and water retention critical for intertidal marine life, protective habitats for filter feeders such as oysters, which can improve water quality and complex habitat features offering protection and foraging areas for fish and larger invertebrates. Moreover, with the use of appropriate signage and community engagement, greater community awareness of the importance of marine biodiversity is expected. Stormwater runoff from urban areas tends to have substantially larger pollutant loads which are highly detrimental to the health of receiving waters. Today, in Dilaveri canal's seashore there are drains that drive the stormwater right to the canal. The biofilter design will be such that part of the stormwater be diverted from a kerb into the biofilter, where it flows through vegetation and temporarily ponds on the surface, before slowly filtering down through the filter media. Piping system will drive the treated water in the canal.

Scalability/extrapolation

The extent to which the benefits are expected of the euPOLIS planned interventions are likely to generate permanent legacy, e.g., continue as a broadly accepted approach that will be used in similar circumstances on city, national or international scale.

The euPOLIS technical team provided recommendations for the inclusion of additional NBS/BGS into the design of the master plan of the renovation plan for the Akti Dilaveri, which is funded by the Municipality of Piraeus. Estimated that most of the above recommendations will be taken under account in the planning and this will be the first achievement of euPOLIS scalability/extrapolation in Piraeus.

Also, the SEF park area could be the next milestone for the consolidation of the blue green growth NBS actions in the future. The renovation plan for the SEF park is not moving forward fast enough. This period is on-going the preparation of the tendering process for the master plan development.

The development of NBSs in Ralleion School and the results of its interaction with the pupils can built the legacy of euPOLIS. This approach can be replicated in other schools in Piraeus and the wider area of Attica region and at national level as well, educating / building tomorrow's citizens as NBS policy makers.

City of Piraeus is an urban area with lack of green spots. The euPOLIS MF pocket park in Akti Dilaveri could be a great opportunity of replication in order the Municipality of Piraeus to meet citizens needs at city level, supporting the physical and mental wellbeing as well the sociability of all its visitors, simultaneously informing and entertaining visitors in a thermally comfortable environment, in accordance with the principles of sustainability and nature-based solutions.

3.3 Evaluation of the euPOLIS approach in FL cities

3.3.1 Bogota'

Relevance

The euPOLIS project objectives in Bogota' respond to the stakeholder's needs in three aspects:

1. The main concern of the stakeholders of the *El Reencuentro* project is related to the social, economic, and environmental institutional articulation. In this way, the euPOLIS Goal Driven Planning Matrix (GDPM) is considered an important tool to identify current and future needs. The GDPM methodology allows the identification of project targets and goals by the implementation of different types of matrices from a multidisciplinary perspective. This perspective complements the planning scheme and makes available a holistic view of the project to articulate social, economic, and environmental aspects.
2. Due to the lack of educational and technical skills in NBS implementation, the development of the NBS selection tool will support the urban planning process. This tool brings the possibility to select the interventions according to project needs and site challenges and, relate the interventions selected with their potential to provide future benefits. The expert knowledge behind this tool will be very useful to understand the impact of NBS and the assessment criteria of each intervention.
3. Finally, the euPOLIS set of contextual and evaluation indicators build up with the group of experts in each category will help to quantify improve line base analysis in the project and quantify the impact of NBS to justify their implementation in the current and future projects of the city.

Coherence

Currently, the ERU is developing 43 projects and designing 20 strategic renewal projects in the city. These projects will allow the recovery of depressed and abandoned areas of the city. In this way, the development of these projects will increase the available public space per habitant, improve the cultural offer, and create spaces for the strengthening of the city's cultural industry. In addition, the city is increasing the housing offer to the most vulnerable populations in the district. Lastly, these projects will also facilitate the mobility of citizens and enhance regional integration through the implementation of an intermodal transport system at a district and regional scale.

For the development of these projects, the designers consider all relevant aspects that ensure the articulation of social, environmental, and economic objectives. In this way, the definition of the set of contextual and evaluation indicators proposed in the euPOLIS project can be used to make a more solid baseline analysis and future evaluation of project interventions considering the five categories of analysis (urban, environmental, social, public health and welfare and business).

Effectiveness

As a general goal, we expect to contribute to the Sustainable Development Goals (SDGs) by the creation of a sustainable and healthy city that promotes the reduction of poverty, enhances the health and wellbeing of the citizens, brings safe public spaces with no gender vulnerabilities, enhances the economic growth of the zone, and increase the sustainability of the city.

In public health and wellbeing, it is expected that:

1. The mitigation strategies of the heat urban island effect improve the health indicators related to physical activity in public spaces.
2. The management of urban run-off will reduce the stress and anxiety levels by the improvement of water regulation, water quality, and water efficiency for the citizens.
3. The greenery strategies will generate positive psychological responses due to the stress reduction by the increase of awareness of city greenery and the creation of strong green recreation areas. Also, these strategies will enhance the physical activity indicators and social cohesion.
4. The management of noise levels will have an impact on communicable and non-communicable diseases.
5. The implementation of multifunctional spaces will promote depression reduction through the direct nature interaction with citizens, promoting social cohesion.

In biodiversity and green ecological structure, it is expected to:

6. Improve the connection and articulation of public green areas with the Urban Forest by the implementation of a green corridor, parks, and new green spaces.
7. Enhance the urban biodiversity by the implementation of multi-strata planting strategies of native species that promote pollination and increase the local flora and fauna of the city.
8. Re-greenery the city by the implementation of nature-based solutions and functional green spaces.

In climate resilience to climate change, it is expected to:

9. Reduce the impervious surface of the zone by implementing nature-based solutions for stormwater management and increasing green and permeable surfaces.

Reduce the heat urban island effect by the implementation of low albedo materials, vegetated surfaces, and tree shade.

Efficiency

Figure 14 and Figure 15 present the timeline of the Plan Parcial Estación Metro Calle 26 (EMC 26) and the Plan Parcial de Renovación Urbana Calle 24 (RUC24). Nowadays, the results of euPOLIS project are considered in the formulation phase during the selection of nature-based solutions (NBS) and the identification of the major urban challenges of the site. In the feasibility phase, the euPOLIS results will help to justify the implementation of NBS by the implementation of the contextual and evaluation indicators. Finally, in the adoption phase, the experience of the front-runner cities will help to guide the implementation process of NBS.

Phase	Activity	Date
1. Formulation	Adjustments and stakeholders' suggestions.	September 2022
	Final adjustments of the formulation.	November 2022
2. Feasibility	Legal Publication of <i>Plan Parcial</i> formulation	January 2023
3. Adoption	Mandatory publication of the accepted <i>Plan Parcial</i> .	February 2023

Figure 14. Timeline for the EMC 26 realization

Phase	Activity	Date
1. Formulation	Adjustments and stakeholders' suggestions.	October 2022
	Final adjustments of the formulation.	December 2022
2. Feasibility	Legal Publication of <i>Plan Parcial</i> formulation	February 2023
3. Adoption	Mandatory publication of the accepted <i>Plan Parcial</i> .	March 2023

Figure 15. Timeline for the RUC 24 realization

Impact

The questionnaires implemented during WP3 highlighted three main WB problems of the citizens in *El Reencuentro*: gender vulnerability, low sense of place, and sense of safety. In this way, we expect that a

new urban design of the public space that includes the introduction of multi-strata vegetation and lightning strategies will increase the sense of comfort and safety for pedestrian mobility. In addition, the functional greenery strategy proposed as an NBS solution will enhance the creation of more open and visible public spaces for pedestrian mobility and the creation of multifunctional species will improve business opportunities to enhance the economic activation and reduce crime risk.

In terms of PH, the baseline status constructed by available information of the city is not conclusive to identify the main health problems in the study zone. However, it is expected that NBS implementation will improve the health indicators related to physical activity in public spaces through the introduction of green multifunctional spaces, the management of pluvial flooding will reduce the levels of anxiety, and the functional greenery strategies will enhance the sense of place and safety of the citizens reducing the stress and depression by the interaction with nature.

Scalability/extrapolation

Bogotá team expects to develop an NBS decision support tool based on the needs of the projects. Also, the team expects the development and definition of a set of contextual and evaluation indicators for the assessment of NBS in the city. In addition, we expect to create an assessment methodology to prioritize public interventions according to the benefits provided by NBS and the urban challenges identified on the site. Finally, the team expects to develop further activities for education and discussion to enhance the NBS concept in the city and increase the technical knowledge of stakeholders about NBS.

3.3.2 Limassol

Relevance

EuPOLIS project objectives are in line with Limassol Municipality's needs, as city follows the step-by-step procedure and methodologies to achieve public health and well-being and create resilient urban ecosystems at lower Life-Cycle costs. The concept of improving urban resilience through interventions and using a set of urban planning matrices, regenerate and rehabilitate urban ecosystems, seems to proceed in an optimistic way, as Limassol team is building capacity to address the most important challenges for improving urban liveability through NBSs, low environmental quality, low biodiversity in public spaces, water-stressed resources and undervalued use of space in deprived areas.

The need of developing framework and standards for addressing social and behavioral aspects to support co-design, implementation, and monitoring of NBSs in Limassol, seems to be the ideal for city of Limassol as city aims to attract more people in the center and motivate them by providing a cleaner environment.

Furthermore, by using the Goal Driven Planning Matrix in euPOLIS city was able to identify current and future needs with a list of desirable interventions. The GDPM along with the published Questionnaire, and citizens responses, gives the prestige of acknowledging all of public's needs and try to fit their requirements in specific actions that aim to citizens vision. EuPOLIS project team supports not only the use of such a matrix, but also the whole process, identification and city planning processes. EuPOLIS experts explain thoroughly the impacts of NBSs and analyses each intervention's scope.

Coherence

At this point, the municipality of Limassol does not have any ongoing projects that go in the same direction that the euPOLIS project does, but there is certainly a vision for the further development of projects supporting public health and well-being in the city center. Surely, the city aims the objective of implementing NBSs and by extension the creation of infrastructure for achieving a better quality of life, so that to attract citizens to visit more frequently the city center, away from pollutant air and congestion. In this respect, euPOLIS project is the beginning of a big idea, in which for sure there will be continuity via future proposals that Limassol Municipality aims to participate.

Unquestionably, euPOLIS plays an important role because it is essential to gain the knowhow of the methodology regarding the city planning using Nature based solutions with multiple goals in the areas of public health and well-being. However, the Limassol's Sustainable Urban Mobility Plan has been developed and it is currently in the beginning of its implementation phase, which includes some basic points of the sustainable mobility, which will try to remove cars from the city center by pedestrianization of main streets and create infrastructure for cyclists, which comes to match with euPOLIS objective and the creation of better air quality and CO2 emissions reduction, which will consequently lead to the increase of public health and well-being of the wider Limassol area. EuPOLIS also cohere with this idea in education as well, especially due to the upcoming workshops and transfer of knowledge regarding the evaluation of the project interventions, who aim in environmental, public health and well-being issues.

Effectiveness

For the Limassol Municipality, one of the main goals of euPOLIS project is to identify some standards for addressing social/behavioral aspects of NBS in the demonstration cities. As key objective, Limassol finds the transfer of knowledge and planning methodology to the city of Limassol, based on best technical and social practices. So far, all the meetings held within the framework of the euPOLIS project, improved the way of thinking of local experts and the process be followed to select the ideal measures that have to be implemented in the city and offer results through nature-based solutions focusing on public health and well-being. Considering that so far most of the projects that have been implemented by the Limassol Municipality were related to energy saving, entrepreneurship, sustainable mobility etc., for local experts apart of a challenge it is also very effective to learn the first steps and the processes that need to be followed by the beginning of such a planning from euPOLIS experts and specifically from the FR cities of the project, by selecting our demonstration area, decision of interventions, identify the goals Limassol wants to achieve and the impact that we will have on both environment and citizens. Limassol partners believe that so far it is effective approach, and when the implementation in the front runner cities will be completed, it will be possible to learn even more and use more elements of best practices that will not be just hypothetical but will indeed have been implemented and evaluated.

Efficiency

The way Limassol local experts learn from the other project partners is quite efficient, because the whole process starts from scratch and in this way it covers the whole issue from the beginning with the choices and the ideal activities to be followed in order to overcome Limassol challenges. euPOLIS project gives the opportunity to learn all the necessary moves that need and should be made for the City Planning Design, without having the risk of failure or expenses that local experts might have in case they proceed on their own. The Municipality of Limassol's experts invest time to learn from the front runner cities the whole process of selecting measures and planning, asking questions about drivers and barriers that may occur, lessons learnt while implementing interventions, and ways of overcoming possible obstacles during implementation. As the Municipality of Limassol is still in the process of identifying, acknowledging and deciding its measures and interventions, euPOLIS activities are in line with planned dynamics as it is possible

to enhance local knowledge, which gives the confidence that Limassol's experts are in position to follow all steps and lessons learnt during euPOLIS meetings and brainstorming when Limassol succeeds finding a funding scheme opportunity to grant further measures.

Impact

As a follower city Limassol Municipality does not have budget for implementing the measures that has been addressed for our challenges. However, Limassol has proceeded with the development and publication of Questionnaire Q3, which really helped understand citizens vision and needs for the city center and particularly the public garden of Limassol that is selected as case-study. The responses in Q3 pointed out local citizens' needs for increasing safety especially during peak hours and during the night, that surely needs to be addressed to guarantee the frequent visit of the area in all times of day. Several people also recommended more activities to be held inside the area that will attract more people to take a visit during weekends and for their leisure time, while a lot of people think that it is necessary to find ways of reducing the noise of the area and create more infrastructures for pedestrians and cyclists. Additionally, citizens responded to the Questionnaire also pointed out the need of creation of Eco-educational "hubs" and the establishment of outdoor art spaces.

Due to the fact that in Cyprus and especially during the summer season there are very high temperatures, the city center's temperature becomes a deterrent to visits. This heat island effect it's a challenge that needs to be addressed, and euPOLIS's effort in tackling this issue, gives the number of solutions for specific trees and vegetations planting, so that the heat wont reemitted so much by buildings and roads and thought evapotranspiration to reduce our temperature.

NBS will also improve the health indicators as by attracting more people in the city center, and providing them better infrastructure for cycling and walking, all physical activities and breathing of clean air will be enhanced and by extension stress and depression of citizens will be achieved.

Scalability/extrapolation

Limassol municipality experts are very satisfied with all support from euPOLIS project partners and with all learned from the euPOLIS project so far, especially regarding the procedures it is best to follow, the methodology and the decision of interventions, as well as the way to identify the needs of an area and its impacts to society. This approach will be definitely used in the future to select interventions in other parts of the city or similar circumstances, as well as data obtained from the questionnaire, we have already published in the framework of euPOLIS and the case study of the Limassol's Public Garden to identify the needs of the general public for a specific area that people enjoy visiting. The process of finding the ideal interventions and nature-based solutions that can not only attract more people to the city center but also improve public health and well-being, is a very important knowledge that will help improving various areas of the city center and continue to meet the needs of visitors (both locals and tourists).

It is an acceptable approach for Limassol Municipality (local authorities), who will suggest this process to other local authorities of the city and if possible, in a national scale as well.

3.3.3 Palermo

Relevance

The participation of the City of Palermo in the euPOLIS project responds to the need to make urban environments (in which 90% of the population will live by 2030-2050) livable, safe, climate sustainable, energetically independent, inspired by the circular economy and safe for all target users, on which it will be generated a positive and lasting impact on health and quality of life.

The varied mix of solutions to be examined by stakeholders, in addition to being determined by contextual factors, affect PH&WB for an equally varied target, typical of the function of public garden of the district where students, children, seniors, professionals, disadvantaged population and others will gravitate.

There is no doubt that the more agricultural component of the park will have an impact especially on children and students (for didactic and demonstrative function) and on the elderly and / or unemployed.

A portion of the garden will be used for vegetable gardens (including educational).

The component dominated by the mix of functions - aesthetics and functional, which arises from the use of water (in its different meanings), generates positive impacts of PH&WB

especially on the elderly and on subjects with mental disadvantage (given the calm effect generated by the fluid theme and the prevailing blue color mixed with typical riparian vegetation, light and light colors.

Finally, the scrub and the wood (behind which there are paths for walking and jogging) will have a PH&WB effect of stimulation and also antidepressant for sinuosity and freedom compositional.

The general impact on the local site and on the wider environment of reference will be the reconnection of fragmented habitats, as a brake on desertification process in an urban environment and mitigation of the effects of climate change (decarbonization and mitigation of temperatures and extreme events).

The grafting of a regeneration intervention determined by this green infrastructure generates socio-economic impacts for the context reference, triggering actions and processes related to green economy and affects the current objectives expressed by the current PRG and from the new PRG, supported by a transversal action of green and blue infrastructures and by interventions funded by REACT EU, in progress (including the financing for the lot in question).

Coherence

The case study Villa Turrisi is part of the objectives and solutions envisaged in the urban planning and environmental strategy that support the new urban plan, which includes the sustainable management of the coastal strip, the protection and strengthening of natural and agricultural biodiversity with agricultural and river parks, the redevelopment project of the Oreto River, urban reforestation and the provisions of the Palermo Green City program, launched in 2019. The municipality of Palermo is supported in these projects by a varied and broad partnership.

Effectiveness

The effectiveness of the euPOLIS approach and of the local experimentation is measured by the transferability and replicability of the NBS approach, method, techniques and solutions in areas of the local context and in general, in the urban areas of different geographical realities that will have to reach the goal of the beauty, quality and safety of places and the well-being of its users.

Efficiency

The efficiency of euPOLIS and of the local experimentation in progress is measured through consistency with the urban and environmental landscape planning and with the complex of planned and in progress public green and blue infrastructural for the historic parks and gardens system, for biodiversity sites (including River Oreto and Monte Pellegrino), for the coastal strip and for the diffused and linear ecological corridors (the small green city and the public parks).

Impact

The grafting of the proposed NBSs for the case study and the NBSs envisaged for the other green and blue regeneration interventions referred to (including remediation interventions for polluted and/or contaminated areas) generate multiplying effects for well-being and safety of the places and in users detectable by the increase in population and targets who frequent green areas and spaces regenerated with NBS.

In the future, once the park has been implemented, on-site workshops for people with mental disorders (e.g. gardening, yoga, etc.) can be held with the collaboration of the associations and health authority, as are known the benefits of this activity for this kind of problem.

Scalability/extrapolation

The ongoing experimentation already interacts in a positive and coherent way with the national strategies on the urban environment, on Biodiversity, on the Soil and with the well-being indicators identified by ISTAT, the DPSIR indicators for the Strategic Environmental Assessments of Plans and Programs, applicable from the local level to the extra-local level.

3.3.4 Trebinje

Relevance

Through the euPOLIS project, efforts are being made to influence large investors in the city in order to preserve and improve the greenery in the city and as part of the landscaping around new buildings. The above is especially important during the summer months because the temperatures in the city are high and it is felt that a mistake was made in the selection of trees in certain neighbourhoods due to the fact that they do not provide adequate shade and air filtering.

Coherence

Trebinje team considers that the euPOLIS project will be compatible with the new spatial planning documents and development projects for the city. For example, experiences from euPOLIS can help in the development of new zones and infrastructure projects. This applies especially to the industrial zone where the emphasis is placed on wastewater treatment and adequate waste disposal, then the new airport complex and the economic zone around it, the construction of the highway where it is necessary to think about how to protect the environment from air pollution and the construction of a new hospital that will be located near the case study.

Effectiveness

Local experts hope that euPOLIS will have an impact on other things as well, such as the construction of individual septic tanks for wastewater in parts of the city where there is no sewage system. This mainly refers to the construction of new weekend settlements on the site of the Orjen nature park, where it is necessary to carry out a special treatment in terms of wastewater in order to prevent soil and groundwater pollution. In addition, we believe that through this project, the citizens will also realize the importance of landscaping and greenery on a micro level, and within their plots, they will strive to improve the percentage of green structures with carefully selected species.

Efficiency

Trebinje team expects that the result of the impact of the euPOLIS project will initially raise awareness of environmental protection, and that a significant problem will be solved, i.e. that the city of Trebinje will solve the faecal and storm sewer system in the narrow territory of the city, then that there will be an impact on the further projects and space planning, to guarantee larger green areas and green buffer zones.

Impact

Through larger green areas and the selection of green species, it is possible to influence the creation of new pleasant environments in the city, which has an impact on air purification and a better quality of life in the city. Correctly solving the problem of wastewater will prevent land pollution and thus the quality of arable land. The influence of euPOLIS can be seen already at the beginning of the realization of a new project called "A thousand planetrees for more beautiful Trebinje" was presented recently to businessmen, investors, and representatives of city departments. The planned planting will be carried out in the next three years, and it includes the planting of park sycamore seedlings, as well as other autochthonous and Mediterranean species.

Scalability/extrapolation

Trebinje team expects that the experiences from the euPOLIS project will become the standard used in space planning and that they will be upgraded with new experiences in the future. The experiences of other larger and more developed communities are of great importance, from their examples it can be seen how they managed to concretely improve their condition.

3.3.5 Fengxi New City

Here are presented the excerpts extracted from the full report from Fengxi City (Appendix 5.4) about six evaluation criteria.

Relevance

The sponge city concept has gradually been accepted by the public, and the related rainwater control technology has been developing rapidly. In some cities, an industrial chain covering the whole construction cycle of sponge city has been gradually formed, including planning and design, construction acceptance, operation and maintenance management, products and equipment.

Coherence

The organic combination of various measures will promote the green and low-carbon development of Fengxi New City and build it into an ecological city and a resilient city.

Effectiveness

The implementation of full-cycle mature technical standards can guide the full-cycle construction of sponge city scientifically and quantitatively, effectively improve the work efficiency and reduce the investment cost on the basis of ensuring the project quality.

Jurisdiction in dozens of cities sponge, rainwater utilization, ecological restoration and construction waste recycled materials, the big data as the main business enterprise in the town was founded and registered a batch of ecological benefits such as the white horse river park prominent sponge city construction project implementation, attracts more investment enterprises and settled population, promote urban tour industry development and land value increase, Promoting a virtuous cycle of urban development.

Efficiency

Based on the project practice, we carried out a series of special studies, summarized the technological innovation and research results, and formed more than 10 scientific quantitative, mature and stable technical standards, atlas, guidelines, etc., which were effectively implemented into the engineering design and directly selected in the project construction as the construction requirements of various sponge projects.

Impact

Around issues of common concern, the thorough community, enterprises, schools, shops and so on, by conducting public opinion research, questionnaire survey, prize comment with the combination of series of activities, unblocking "consultation", guide area people to participate in, to the people, let people become construction, participation and supervision and sponge urban construction process. Vigorously support local colleges and universities to set up sponge city technology research Institute and related majors, reserve compound applied talents. Basically, some people understand, some people want to do, some people will do the atmosphere.

Scalability/Extrapolation

The people have gained a greater sense of security. On the one hand, the safety guarantee is significantly improved.

This series of comprehensive benefits will be gradually accepted by urban builders, and spread to other cities for extensive application. Cities with similar climate characteristics to Fengxi New City, such as Xi 'an, Xianyang, Weinan, Tongchuan and other cities, have gradually begun to adopt this mode to carry out urban planning and construction.

4 Concluding remarks on the euPOLIS approach effectiveness

This Version1 of the **Report on the euPOLIS approach effectiveness** represents the initial assessment of euPOLIS approach effectiveness. The next versions, Version 2 and Version 3, will be reported consequently in August 2023 and in August 2024.

The updated summary of main stakeholders' engagement meetings, workshops and consultations carried out so far reflects the bases for the systematic benchmarking against existing and relevant NBS-based urban regeneration endeavours related to WP2. It sets a scene the further activities in evaluation of euPOLIS approach deriving from its interactions-based planning philosophy to the stakeholders, analysis of stakeholder's concerns/problems and identification of available resources.

The methodology applied based the OECD methodological framework, consistent of six criteria (relevance, coherence, effectiveness, efficiency, impact, scalability/extrapolation) proved to be properly selected and got very positive reaction from all euPOLIS partners.

Although all cities experienced initial difficulties to engage with all groups of stakeholders, during the COVID period, current response on in-person activities is overwhelmingly positive and growingly increase diversity of engaged categories of stakeholders.

Both FR and FL cities¹⁶ expressed their satisfaction on the progress made so far and identified the immediate and long term needed to further enhance the results achieved so far.

¹⁶ Initial assessment of euPOLIS approach for Fengxi New City is pending

5 Appendixes

5.1 Workshop results Bogota'

Results

The first implementation of this activity had 22 participants with the following characteristics (see Table 1):

Table 2. Bogota'. Workshop participants list

Gender	Male	11
	Female	11
Relation with the territory	Owner	5
	Tenant	6
	Inhabitant	8
	Pedestrian	9
	N/A	1
Do you know what is a Plan Parcial?	Yes	2
	No	10
	More or less	5
	N/A	5

The activity had equal participation in terms of gender with 50% for both males and females. None of the participants marked the options for transgender or queer identities. This points to a low presence of these populations within the limits established for the *Plan Parcial*.

12 of the 22 participants are owners, tenants, or inhabitants which means they have direct knowledge of the territory and direct relation to it. The results for each one of the city principles presented in the consultancy card are presented below (see Figure 16).

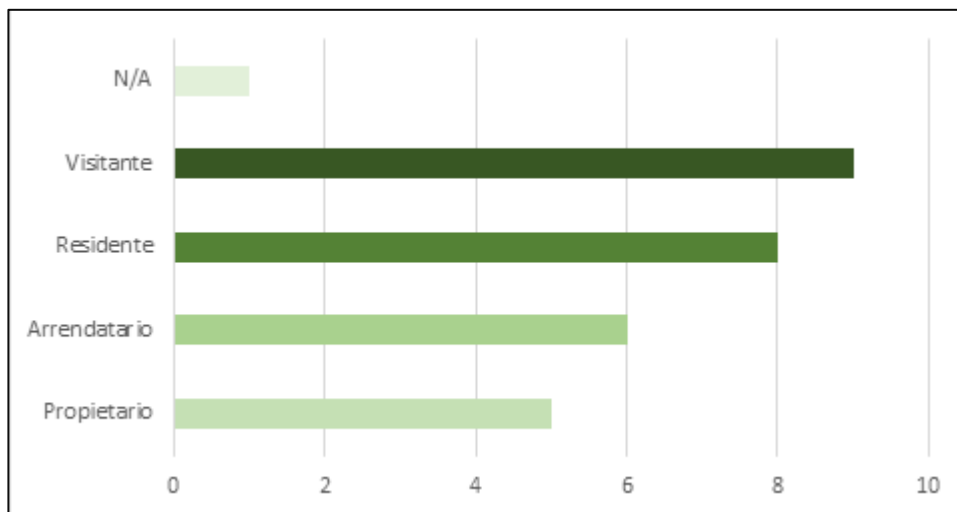


Figure 16. City of Bogota'. Participants relation with the territory

Transport-Oriented Development

For this principle the card offered four options that got the following results (see Figure 17):

1. New public transportation options: 12.
2. Pedestrian and bicycle paths: 15.
3. Spaces for private transportation (cars and motorcycles): 7.
4. Improve the existing public transportation offers: 13.

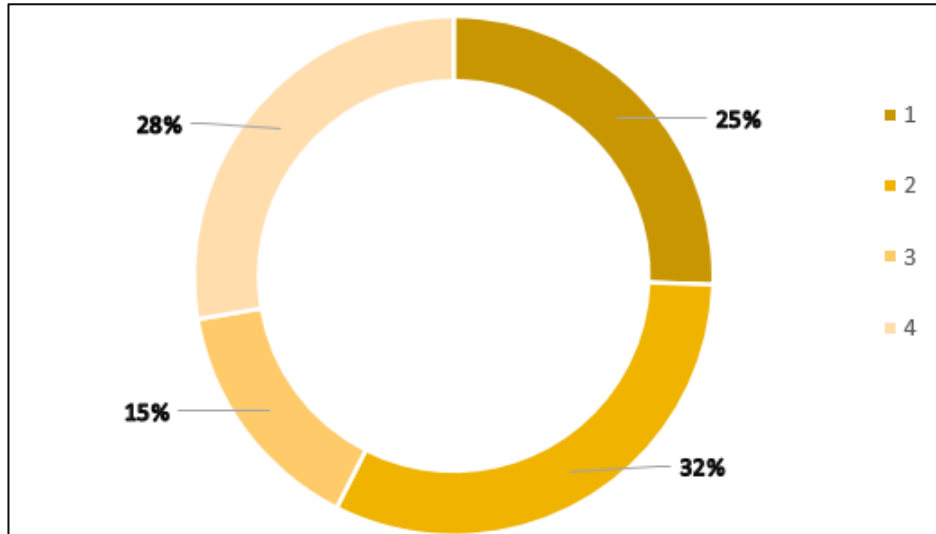


Figure 17. City of Bogota'. Transport preferences

Options 1, 2, and 4 were the most selected by the participants. These sum up 85% of the consultancy cards, which marks a clear preference for options related to public transportation or public space destined for pedestrians and cyclists.

New Housing Supply

The card offered two options that got the following results (see Figure 18):

1. Low-income housing: 15.
2. Non-low-income housing: 12.

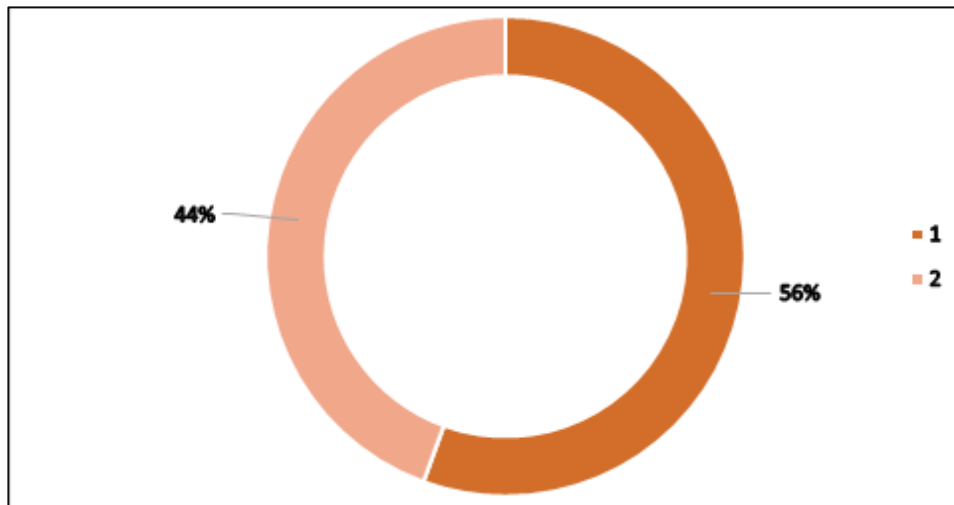


Figure 18. City of Bogota'. Housing preferences

Both options had an important percentage of participation. This shows a clear preference for low-income housing. Nonetheless, the results don't exclude other types of housing because in several instances participants marked both options.

Greening Strategies

The card offered three options that got the following results:

1. Parks, green sidewalks, and public spaces: 17.
2. More trees and foliage: 15.
3. Gardens or orchards in urban spaces: 13.

In this case, the distribution of percentages means there is no clear preference for any option, although parks, green sidewalks, and public spaces have a slightly bigger percentage.

Welfare and Care Systems

The card offered three options that got the following results (see Figure 19):

1. Leisure spaces: 15.
2. Schools, kindergartens, and learning spaces: 11.
3. Care systems for the elderly, the disabled, and young children: 15

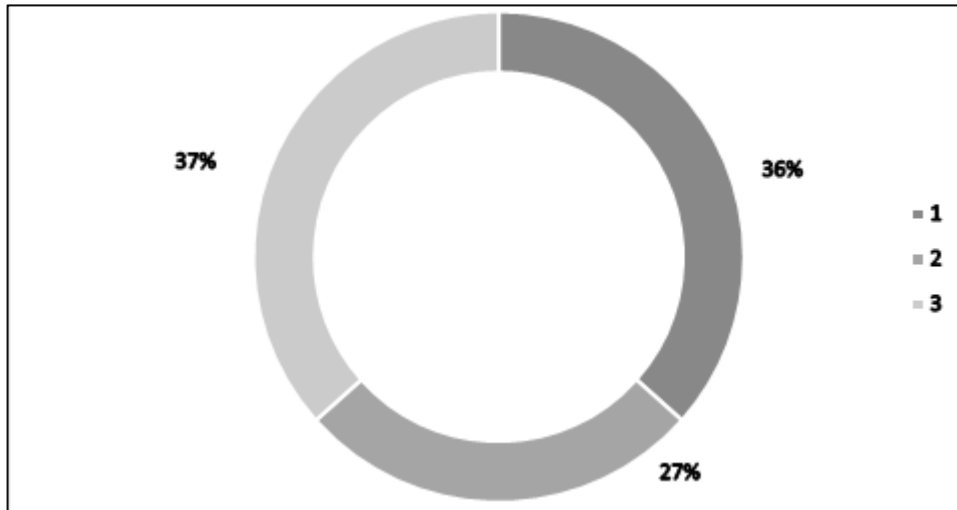


Figure 19. Welfare and care system preferences

With regards to this principle, there is no clear preference towards one specific option. There is a relatively minor preference for schools, kindergartens and learning spaces. But Leisure spaces and Care Systems for vulnerable populations share a similar percentage and appear to be the favoured choices of the participants.

Strengthening of Local Economic Activities

The card offered three options that got the following results (see Figure 20):

1. Local trade fairs: 9.
2. New spaces for commerce: 17.
3. Learning spaces for local entrepreneurs: 14.

The main preference in the case of this principle is new spaces for commerce with 43% of the answers. This preference could indicate a favorable position to the proposition of first floors active in commerce.

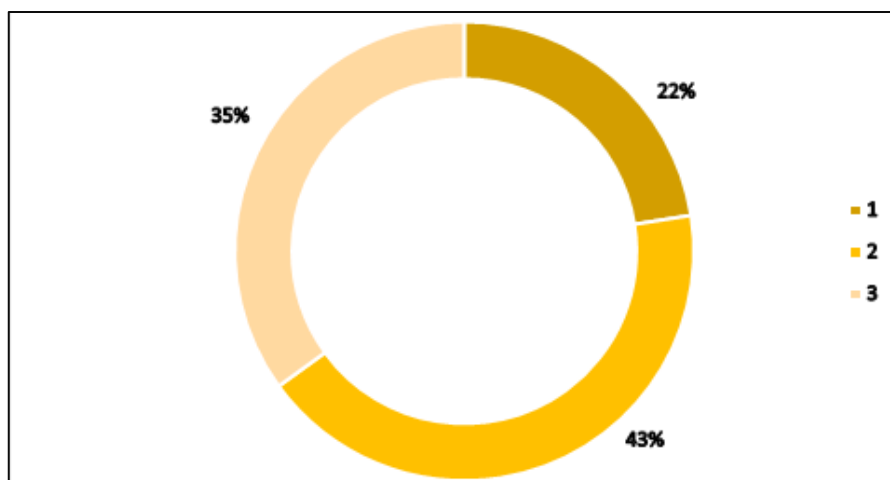


Figure 20. Local economic activities preferences

History and Heritage Conservation

The card offered three options that got the following results (see Figure 21):

1. Cultural spaces (museums, library, theatre, etc.): 14.
2. Conservation of historic buildings: 17.
3. Conservation of traditional trades: 11.

The most favored option was the conservation of historic buildings, followed by Cultural spaces. This points to a community in which its identity may be linked to the architecture of the buildings and to a need for new and better spaces for culture.

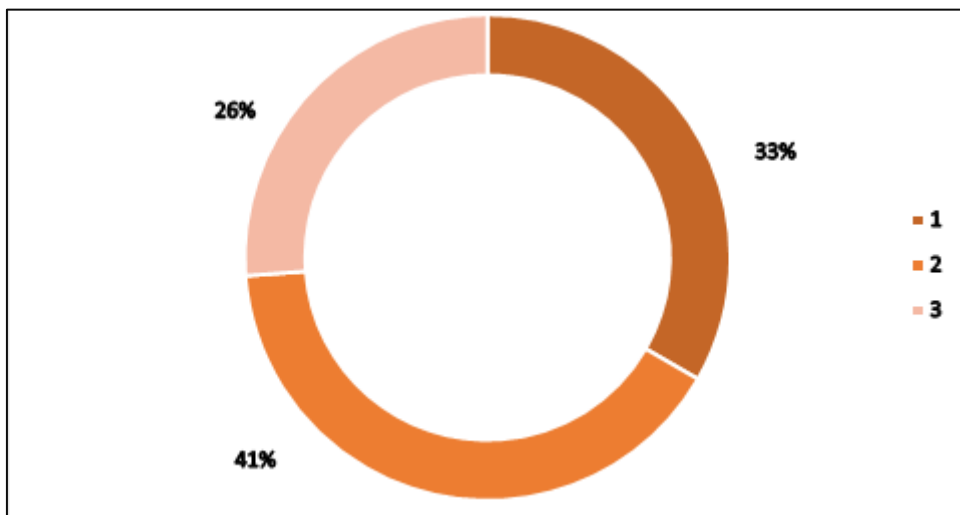


Figure 21. History and heritage conservation preferences

Activity 3: First stakeholder’s workshop (June 2022)

The main objective of this workshop was to identify the expectations about the development and transformation of El Reencuentro and to identify the potential leadership and the level of commitment of the stakeholders in the co-creation process.

The session starts with an ERUs institutional presentation about the development objectives, the goals for the transformation of the site, and the definition of the areas for intervention. Then, stakeholders were divided into four groups, each group had a moderator from the ERU social team, a case study map, and a set of drawing materials (e.g., post-it, markers, and colors) to explain their ideas on the map. Two questions were answered by each team:

1. What are the perspectives of the urban transformation and activities of the El Reencuentro? What challenges does this imply in social investment?
2. How to establish a governance scheme that facilitates, prevents, or mitigates negative social impacts?

Finally, all the ideas were presented by one person from the stakeholder's group (See photographic register in Figure 22).



A. ERUs presentation



B. ERUs presentation



C. Workshop participants



D. Workshop participants



E. Workshop participants



F. Workshop participants



G. Workshop participants



H. Presentation of the workshop results

Figure 22. Photographic evidence of the Activity 3 (14th June 2022)

5.2 Excerpts from the report on the joint WP2 and WP6 Training event in Lodz

Workshop No2

The education and information workshop of the euPOLIS project was held in two parts.

The 1st workshop took place on 28th July 2021 and started at 5 p.m. with an informative and educational part in a nearby conference room of the State Fire Service Headquarters in Lodz located at 111/113 Wólczajska Street. The second part of the workshop took place (on 4 August 2011 at 5 p.m) directly on the demo site (DS) location but was interrupted by a storm at 7 p.m., therefore we decided to continue the walk with the beneficiaries a week later.

The 2nd part of the workshop was also of interest to the stakeholders. It took place in the form of a walk through the demo-site and the discussion “on the go”. This was led by Kinga Krauze, (ERCE).

Figure 29 shows some photos from the workshop.

Brief list of stakeholder’s groups present at the Workshop:

- Fire Department,
 - City Watch,
 - Municipal Kindergarten,
 - Private university name,
 - Employees of the Lukasiewicz Institute,
 - Developer of the site, ... (name),
 - Urban pro-green activists,
 - Residents of neighbouring tenements,
 - People spending time on the walkway at the gym, benches or playground
3. Lodz residents.

Duration of the event

Following a Joint introductory online Workshop (training of trainers), held on 28th July in the morning (presented in the D2.3 report). This 1st joint WP2 and WP6 workshop for the city of Łódź took place on 28th July 2021 and started at 5 p.m. with an informative and educational part in a nearby conference room of the State Fire Service Headquarters in Lodz located at 111/113 Wólczajska Street. The second part of the workshop took place directly on the demo site (DS) location but was interrupted by a storm at 7 p.m., therefore we decided to continue the walk with the beneficiaries a week later. The 2nd part of the workshop took place on 4 August 2011 at 5 p.m. and was also of interest to the beneficiaries.

Specification of next steps (on co-design) suggested/offered to citizens (stakeholders)

The next step suggested to the stakeholders want to meet with the organisers of this workshop (euPOLIS projects partners) again in late September or early October to participate in the process of drawing up the documentation for co/planning/co/designing the walkway following the euPOLIS GDPM procedure customised to this group of stakeholders who accepted the invitation to participate in this next step. Preparations for this event (which is a part of WP6 activities) will be carried out in consultations with enPLUS (leader of the WP6).

Stakeholders’ education -euPOLIS concepts briefing

In accordance with the general principles of the euPOLIS education guidelines for training of stakeholders in co-planning/co-design, originally education curriculum was „customised” and proposed by Lodz team.

The practical stakeholder’s education and information workshop of the euPOLIS project was held in two parts:

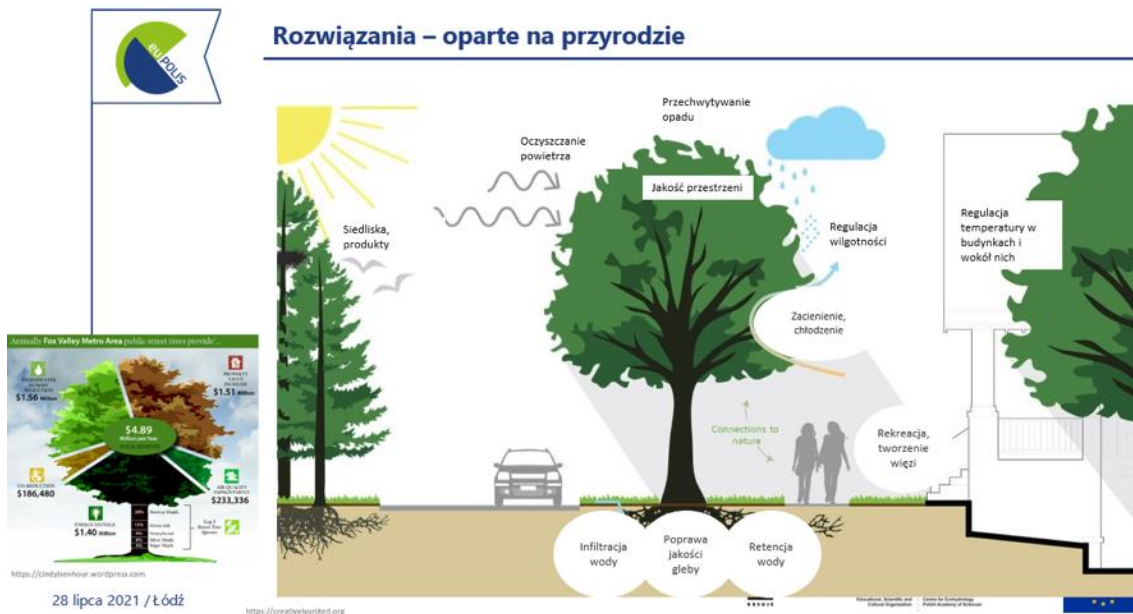
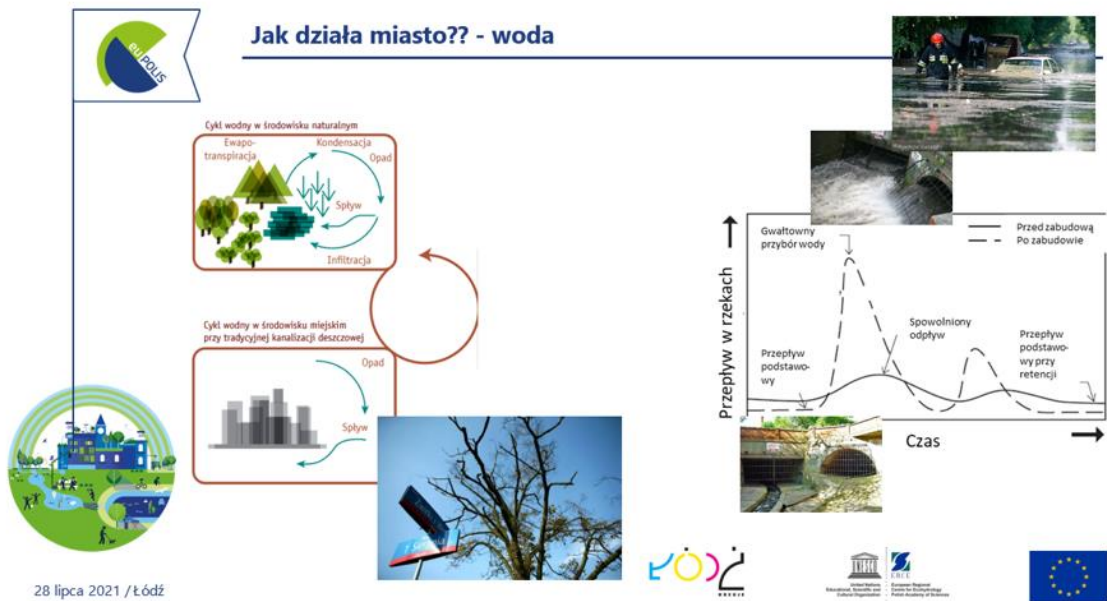


Figure 23. Lodz Workshop 2 (5th August 2021) – Slides from the Workshop presentation

Co-design process

Time of 10 to 20 minutes to be allowed for the stakeholder’s questions, clarifications (indoor part). Discussion has been organized as a short choice experiment allowing people to justify the choice and underline the critical aspects.


5.3 An example of an engagement activity - FL city of Palermo

On July the 19th, from 10 to 13.30, was held (on the Google Meet platform) the first online dissemination event in the city of Palermo of the euPOLIS project, also aimed at organizing future focus groups / workshops.

The invitation, containing the agenda of the event (Figure 25), was sent by e-mail to the list of stakeholders selected for the project.



Figure 24. Palermo Dissemination Event – Invitation



AGENDA

Orario	Attività	Speaker
10.00-10.20	Presentazioni e intro	Arch. G. Liuzzo – Coordinatrice di euPOLIS per il Comune di Palermo
10.20-10.40	Il progetto euPOLIS: una metodologia innovativa di pianificazione urbana basata su NBS e BGS	Arch. S. Boskovic - Coordinamento tecnico euPOLIS – Imperial College of London
10.40-11.00	Mitigazione e adattamento. La relazione tra euPOLIS e gli strumenti di pianificazione per la sostenibilità e la resilienza dell'ambiente urbano di Palermo.	Arch. G. Liuzzo – Coordinatrice di euPOLIS per il Comune di Palermo
11.00-11.20	Il futuro Parco di Villa Turrisi.	Ing. E. Drago – Staff. Progetto euPOLIS - Comune di Palermo
11.20-11.40	La rilevazione: analisi dei risultati del questionario online.	Dott. G. Lupo - Staff. Progetto euPOLIS - Comune di Palermo
11.40-12.00	Metodi e pratiche gestionali per indicatori e strumenti di processo.	Arch. G. Liuzzo – Coordinatrice di euPOLIS per il Comune di Palermo
12.00-12.10	Organizzazione dei primi focus groups.	
12.10-12.30	Q&A	

Focus groups per il Parco di Villa Turrisi – 19/07/2021.




Figure 25. Palermo Dissemination Event – Agenda

The press release containing the invitation to the event was published on the homepage of the institutional website (Figure 26) of the Municipality of Palermo and on the related facebook and twitter pages.

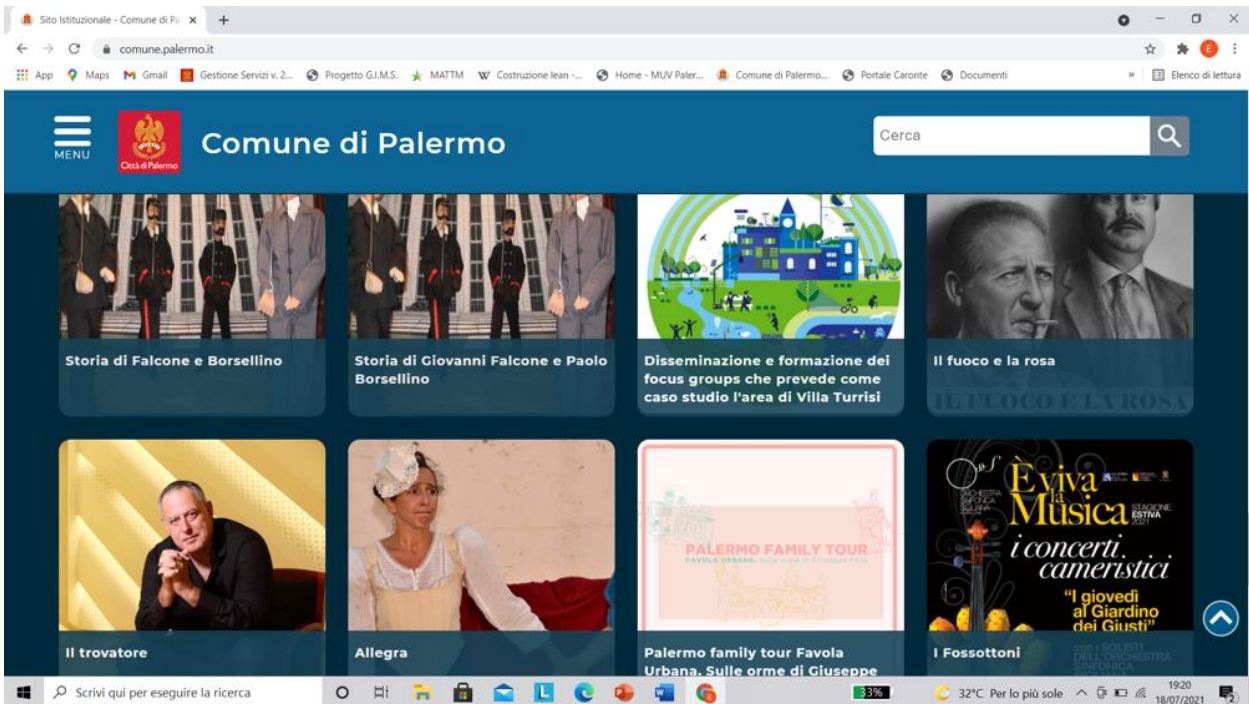


Figure 26. Palermo Dissemination Event – The city’s website homepage

About thirty people attended the event, mostly representatives of associations active in the area. Participation was discreet in consideration of the fact that this is a still little-known area of the city of Palermo, known mostly to environmental and local associations that are fighting for the creation of the park. In any case, some of the most active Associations and Committees took part in the event, including people from the third sector, representing a large number of citizens and experts (Figure 27).

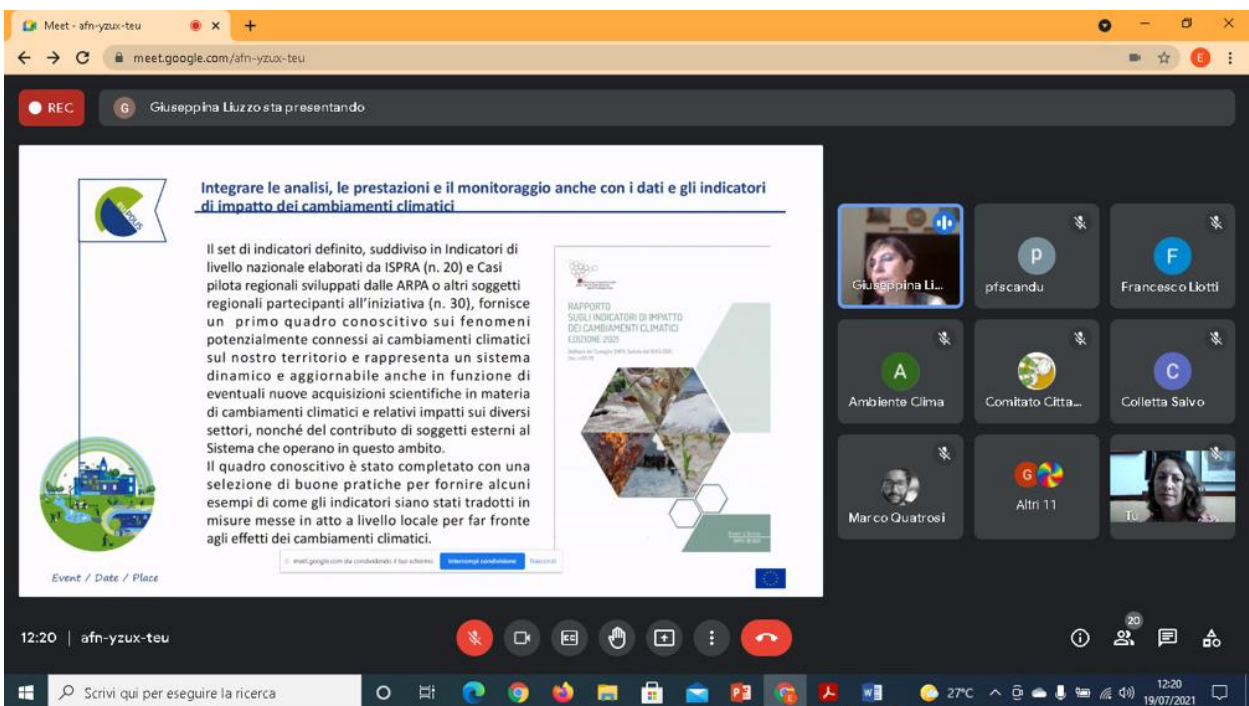


Figure 27. Palermo Dissemination Event – Screenshot of the meeting

After a brief introduction, Dr. S. Boskovic from Imperial College of London presented the euPOLIS project to the city and illustrated the characteristics of the demo sites/case studies in the FR and FL cities.

Later we talked about mitigation and adaptation with reference to the relationship between euPOLIS and the planning tools for sustainability and resilience of the urban environment of Palermo.

After a presentation of the "Villa Turrisi" case study, the results of the online questionnaire "Q3" were then illustrated, concluding that:

- A large part of the sample is emotionally linked to the territory, uses it for walks, sports or because they live there even though part of the interviewed population has difficulty moving around (disability)
- Air quality is perceived as good but there are safety issues during the day and especially at night. Another problem is the poor maintenance that causes the presence of even bulky waste.
- Various activities (social, cultural, eco-educational, urban gardens) and equipment (benches, fountains, cycle paths, etc.) have been proposed for the project of the future park. It will be taken into account in the next design stages
- Although for this area there was a strong push for the conversion to a park by the various associations, we did not find the participation we expected in filling out the questionnaire. If on the one hand the area of Villa Turrisi is unknown to most, probably the city of Palermo must invest more resources in education for participation.

The meeting then continued, talking about management methods and practices for process indicators and tools and the methodology to be followed, ending with a presentation of future focus groups and asking participants, if interested, to register. At the end there was an interesting question and answer session lasting about an hour which ended with a greeting from the Energy Manager of the City of Palermo and an invitation to participate.

Comments from participants: Although the approach of the working group dedicated to euPOLIS is in line with the ministerial indications for co-planning, it is requested not to limit oneself to a hearing, but they would to co-program the work plan and to obtain a formal act governing participation in the management of common assets. The response from the team was that they are trying to overcome the written rules or the approval of formal acts, attributing in any case the prevalence to the objective of conserving and protecting the areas of the future Park to stem further aggressions and put in place safety the areas and the population from emerging risks to share with the stakeholders a co-planning process pending the formalization of a Protocol for co-design and management with the Third Sector of Common Goods.

Concerns about the questionnaire emerged as it did not appear congruous for some parts with the objective and was deemed too long, attributing the low participation to these critical issues. It has been pointed out that this questionnaire is also functional to carrying out a socio / economic analysis; it has been structured with a format common to all participating cities that allows for the comparison of results.

Part of the stakeholders have made themselves available to the project and would like to know how they can concretely start working for this project to improve and strengthen citizens' awareness. Associations are very important for territorial animation, to act as a spokesperson for people and their needs. There is a willingness to advertise euPOLIS on its own social channels and platforms.

The willingness of the associations to promote the Q3 questionnaire was expressed in order to be able to collect other data. Although citizens' associations and committees have often found that there isn't enough space for participation, it turns out that when citizens are offered an opportunity to participate, they do not take it.

5.4 Initial euPOLIS project progress assessment report Fengxi New City

euPOLIS CITIES INITIAL PROGRESS ASSESTMENT (WP2, Task 2.3, D2.4)

DEMO SITE: FENGXI NEW CITY

INTRODUCTION (500 Words)

Please list and briefly describe all stakeholders' engagement meetings, workshops and consultations carried out for systematic benchmarking against locally already taken and relevant NBS-based urban regeneration endeavours in connection with WP2 (Stakeholders and communities' engagement and benchmarking)

In 2021, Fengxi New City took sponge city as the main construction content of the third batch of national standardization pilot of new urbanization. Relying on the standardization pilot, Fengxi New City completed the construction of sponge city standard system and realized 166 standard transformation. At the same time, it made in-depth thinking and summary based on the actual pilot work. Editor, successively participated in the biological stranded facilities cover plant design guidelines and the implementation of the case "the west salty district urban construction practice and thinking" sponge sponge urban green space construction management technology for guidance and practice such as a number of professional books, from a technical summary, pilot experience, case output different Angle will be fully summarizes the west new town is being sponge, such as urban construction experience, Related books were officially published from 2020 to 2022.

Continue to strengthen sponge city scientific research and innovation, promote 5 projects such as "Fengxi New City Sponge City Green Rainwater Infrastructure Operation and Maintenance Management Mode and Maintenance Standard", and apply for 5 patents such as "A kind of garage roof Drainage and Sponge City Rainwater collection, Purification and Utilization Organization System". The related achievements have won the second prize of engineering Construction Science and Technology Progress in 2021 by China Construction Enterprise Management Association, the first prize of Shaanxi Province Science and Technology Progress, the first prize of Shaanxi Province Construction Engineering science and technology Progress, and the first prize of Shaanxi University science and Technology.

In October 2021, Fengxi New City was invited to participate in the first national systematic whole-region Sponge City Construction Technology Exchange and Product Exhibition Conference and the founding Conference of Sponge City Construction Professional Committee of Guangdong Municipal Industry Association in Guangzhou as the special invited city. And chang DE city, pingxiang, national pilot cities such as shenzhen, zhuhai and guangzhou share exchange construction experience, the first national demonstration city west salty highlight the new sponge city construction practices and results, XuanJie new district urban construction experience sponge mode actively, expand industry path, with a number of experts to carry out friendly exchanges, And a number of enterprises and institutions to achieve business docking intention.

Systematic global sponge city in China and how to carry out comprehensive demonstration city construction process, the new town is being strengthened output and technology research, experience successively services high-tech zone, beilin, international harbor area, zhouzhi county, such as the local city, for the demonstration city of tongchuan, out, changzhi consulting services, etc, will promote local sponge into urban construction laws and regulations system, It will help Xi 'an's whole-region systematic sponge city construction speed up and achieve effective results.

WP2 (D2.4 Report on the euPOLIS approach effectiveness) will use following six evaluation criteria to report on the euPOLIS approach progress so far.

These criteria provide a methodological framework used to determine the merit or worth of the euPOLIS project and the benchmarking strategy for demonstration sites that is developed in collaboration with all relevant city experts (Task 2.3).

All criteria should be contextualized – understood in the context of the individual demo-site, the effort being evaluated, and the stakeholders involved.

Relevance (*Approx. 300 words*)

The extent to which the euPOLIS project objectives and design respond to partners and all other stakeholders needs, concerns and priorities, and continue to do so if circumstances change.

Sponge city as China's new urban rain flood management idea, through comprehensive measures, the city natural mountains and rivers wetland protection and utilization, such as cultivated land, forest land, grassland ecological space, buildings, roads, green space, water system and slow-release effect of absorbing to the rain, such as improving the capacity of urban water storage, water seepage and water conservation, realize water natural stockpile, natural, natural purification, Promote the formation of an ecological, safe and sustainable urban water circulation system. It is one of the important measures to alleviate urban waterlogging. It can effectively deal with heavy rainfall within the return period of waterlogging prevention and control design, and make the city have good "resilience" and "resilience" in adapting to climate change and resisting rainstorm disasters. NBS is consistent with the goals of surface drainage quality and stormwater management, which are based on natural solutions to achieve the target control of urban stormwater. This concept has gradually risen to the level of national strategy in China, and has been strongly supported by Chinese governments at all levels in terms of policies, funds and technologies. The sponge city concept has gradually been accepted by the public, and the related rainwater control technology has been developing rapidly. In some cities, an industrial chain covering the whole construction cycle of sponge city has been gradually formed, including planning and design, construction acceptance, operation and maintenance management, products and equipment. Meanwhile, the construction of sponge city has been guaranteed through local legislation.

Coherence (*Approx. 300 Words*)

The compatibility of the euPOLIS approach with other projects and potential interventions in the city or demo-site area.

In Fengxi New City, sponge city is taken as the main content of the engineering construction project, and low-impact development is taken as the main construction principle. For example, in the construction of municipal roads, rainwater is introduced into the road green space, and surface rainwater is retained and absorbed by building facilities such as biological detention belt and rain garden, so as to achieve the goal of purification. In the building community, the roof garden is used to solve the roof rainwater, and the dual functions of rainwater storage and landscape beautification are achieved through the integration design of outdoor landscape and sponge facilities. Sponge city achieves perfect integration with project construction. While promoting sponge city, Fengxi New City has taken a lot of measures in aspects of climate adaptability, low-carbon development and ecological protection. For example, the urban green belt, pocket park on the street and community park should be built to enhance the urban green quantity, and multi-level urban development space such as urban river (Wei River, Feng River, New River and central green corridor), central park, circular park, pocket park and community park should be built. Using clean energy medium and deep dry hot rock to solve the problem of urban central heating and reduce urban carbon emissions; The construction waste recycling technology is adopted, and the construction waste recycling materials are applied to sponge city facilities, municipal road bedding and base, permeable pavement,

building walls, etc., to solve the problem of construction waste siege. At the same time, a scientific and technological ecological island is planned in the southern area of Fengxi New Town to explore the turtback-type terrain. Open channel drainage is given priority to use natural force to achieve "high water and high drainage, low water and low drainage".

The organic combination of various measures will promote the green and low-carbon development of Fengxi New City and build it into an ecological city and a resilient city.

Effectiveness (*Approx. 300 Words*)

The extent to which the euPOLIS approach achieves, or is expected to achieve, its main and detailed objectives, and its results.

Through the construction of sponge city and the implementation of a series of ecological measures, Fengxi New City, a new city, will be more resilient and attractive. First, economic benefits continued to show. Through the construction of sponge city, the ecological soil, road rainwater intercepting device, green roof matrix and other material products developed by Fengxi New City have been applied in the whole region and received considerable economic income. At the same time, the implementation of full-cycle mature technical standards can guide the full-cycle construction of sponge city scientifically and quantitatively, effectively improve the work efficiency and reduce the investment cost on the basis of ensuring the project quality. 2) The ecological environment has been effectively improved. Rainfall occurs once every 2-3 years, and no water accumulates at 10 flood points in the demonstration area. The drainage capacity of the current pipe network is increased from once every 1-2 years to once every 3-5 years. The total annual runoff control rate of the region is 87%, the non-point source pollution (TSS) load can be reduced by 81%, and the loads such as TP and COD can be reduced by more than 60%. The water quality of surface water such as Weihe River and Feng River is getting better year by year, and the underground diving level is rising obviously compared with that before the pilot project, and the urban ecological quality is greatly improved. Third, the people's sense of gain has been significantly enhanced. A number of high-quality livelihood projects, such as Tianfuhe Garden, and a number of key rainwater and flood hub projects, such as the Central Green Corridor, have been launched, significantly improving the living environment. Fourth, the value of the city accelerated cash. Jurisdiction in dozens of cities sponge, rainwater utilization, ecological restoration and construction waste recycled materials, the big data as the main business enterprise in the town was founded and registered a batch of ecological benefits such as the white horse river park prominent sponge city construction project implementation, attracts more investment enterprises and settled population, promote urban tour industry development and land value increase, Promoting a virtuous cycle of urban development.

Efficiency (*Approx. 300 Words*)

The extent to which the euPOLIS activities deliver, or are likely to deliver, results promptly and in line with the planned dynamics (timely way) of project activities.

The main achievements are as follows: A top-level design, introduced the west salty district west new town is being sponge city special planning problems and accurate identification of regional background conditions, the science reasonable planning goals and indicators, the zoning, to carry out the control requirement, clear sponge urban planning scheme, scientific system layout JinYuanQi scope of construction, the cohesion of different levels and special planning requirements, Improve the organizational security system; A set of control system, covering five aspects of government guidance, planning control, construction control, capital control and assessment system, sponge city system, clear responsibility subject, basic principles, construction sequence and other requirements, long-term

implementation, comprehensive command of sponge city construction in the near and long term. A set of technical standards, the district establishes a localized and specialized technical standard system, and carries out technical research and standardization construction in planning, design, construction, completion acceptance, operation and maintenance, plant selection, model application and other aspects. Based on the project practice, we carried out a series of special studies, summarized the technological innovation and research results, and formed more than 10 scientific quantitative, mature and stable technical standards, atlas, guidelines, etc., which were effectively implemented into the engineering design and directly selected in the project construction as the construction requirements of various sponge projects.

In terms of project construction, by August 2022, Fengxi New City has built more than 160 sponge city projects. Among them, sponge buildings and residential area of 3.6 million m²; Sponge municipal road 110km, the total area of 3.957 million m²; Sponge park green area of 3.07 million m²; There are 3 urban above-ground rainwater storage parks with a total storage capacity of 400,000 m³. There are three river systems (Wei River, Feng River and New River), with a total length of 41.36km. More than 70 drainage pipe networks with a total length of 110km have been built and rebuilt. 3 drainage pumping stations.

Impact *(Approx. 300 Words)*

The extent to which the euPOLIS activities have generated or are expected to generate significant positive, intended or unintended, higher-level impacts of NBS on PH&WB.

Through the national pilot construction of sponge city, the third batch of national pilot construction of new-type urbanization standardization, and systematic promotion in the whole region, Fengxi has been deeply impressed by the public in its jurisdiction, and sponge City has become a city name card of Fengxi New City. We passed the test of the technology alliance, the research center, citizen observer mission, student reporters, teaching practice base in campus XuanJiangTuan, participation in the form, normalized operation, and transfer the academic higher-ups, since the media big V, industry elite, college teachers and students enthusiasm, play their own advantages, social cohesion strength, service the new sponge city construction. By conducting "knowledge competition", "originality", "small host competition", "college design competition" and other forms of public welfare activities, we use WeChat public, sponge quarterly, such as live web celebrity, from the media, the trill trendy propaganda way, positive guidance, to strengthen the social from all walks of life to sponge the cognition and understanding of the city. Around issues of common concern, the thorough community, enterprises, schools, shops and so on, by conducting public opinion research, questionnaire survey, prize comment with the combination of series of activities, unblocking "consultation", guide area people to participate in, to the people, let people become construction, participation and supervision and sponge urban construction process. Vigorously support local colleges and universities to set up sponge city technology research Institute and related majors, reserve compound applied talents. By carrying out academic exchanges, technical discussions, special training, field observation, innovative engineering competition activities, to cultivate local front-line management and technical talents, lay a talent foundation. Basically, some people understand, some people want to do, some people will do the atmosphere.

Scalability/extrapolation *(Approx. 300 Words)*

The extent to which the benefits are expected of the euPOLIS planned interventions are likely to generate permanent legacy, e.g. continue as a broadly accepted approach that will be used in similar circumstances on city, national or international scale.

Through the sponge city construction, the benefits of Fengxi New City have gradually manifested in recent years. The comprehensive guarantee pattern of urban water system has been significantly enhanced, and the ecological quality and living environment have been continuously improved. The people have gained a greater sense of security. On the one hand, the safety guarantee is significantly improved. Through the source emission reduction, waterlogging prone point regulation, the construction of decentralized stormwater storage hub, flood control improvement and other measures, the classification of rainfall runoff storage, regulation and orderly discharge are realized, and the regional drainage and waterlogging prevention ability is significantly enhanced. At the same time, the river water environment protection is used to "force" the cavernosum construction of different scales in the region, to realize the efficient coupling reduction of urban non-point source pollution and achieve the steady improvement of urban surface water quality year by year. Drive the ecological management of the beach surface of the river system, reshape the natural ecological shoreline, and create a living environment for animal and plant biodiversity. This series of comprehensive benefits will be gradually accepted by urban builders, and spread to other cities for extensive application. Cities with similar climate characteristics to Fengxi New City, such as Xi 'an, Xianyang, Weinan, Tongchuan and other cities, have gradually begun to adopt this mode to carry out urban planning and construction. A set of top-level design methods, institutional mechanism mode and technical standard system formed by Fengxi New City will provide reference for more cities.



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