



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

## D2.3

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### **Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)**

WP2 – Stakeholders and Communities’ Engagement and Benchmarking

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D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

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## Table of Contents

<i>Executive Summary</i> .....	7
<i>List of Figures</i> .....	8
<i>List of Tables</i> .....	9
<i>List of Acronyms /Abbreviations</i> .....	10
<b>1 Introduction</b> .....	<b>11</b>
1.1 <i>Introductory note on the concept of the report</i> .....	13
<b>2 Definitions of BGS/NBS Interventions and Planning System</b> .....	<b>14</b>
2.1 <i>BGS/NBS Planning System</i> .....	14
2.2 <i>Why is BGS Planning System needed</i> .....	17
2.2.1 <i>Planning objectives matched by capacity building/education of stakeholders</i> .....	17
2.2.2 <i>Multi-disciplinarity and multifunctionality as the basic principles of BGS Planning System</i> ...	19
2.2.3 <i>Planning methodology - euPOLIS's BGS/NBS innovative planning system/methodology in the nutshell</i>	20
2.2.4 <i>An introduction to Goal Driven Planning Matrix and its customization for implementation in euPOLIS's training on co-planning/co-design</i> .....	21
2.2.5 <i>Customization for implementation in euPOLIS's training on co-planning/co-design</i> .....	24
<b>3 Local conditions and list of relevant issues/problems and resources in FR and FL cities</b> .....	<b>27</b>
3.1 <i>Methodology of data &amp; information gathering</i> .....	27
3.2 <i>FR Cities DS preliminary information on specific conditions</i> .....	27
3.2.1 <i>FR City Belgrade – Linear Park and Ušće</i> .....	27
3.2.2 <i>FR City Gladsaxe – Pileparken</i> .....	32
3.2.3 <i>FR City Łódź – Pasaz Anny Rynkowskiej</i> .....	35
3.2.4 <i>FR City Piraeus – Mikrolimano, Akti Dilaveri and Ralleion</i> .....	37
3.3 <i>FL Cities CS preliminary information on specific conditions</i> .....	41
3.3.1 <i>FL City of Bogota' – El Reencuentro Case Study</i> .....	41
3.3.2 <i>FL City Limassol – Public Garden Case Study</i> .....	42
3.3.3 <i>FL City of Palermo – Villa Turrisi Park</i> .....	43
3.3.4 <i>FL City of Trebinje – Otok</i> .....	44
3.3.5 <i>FL City Fengxi New City – National Pilot Sponge City</i> .....	45
<b>4 Stakeholders Education Guidelines</b> .....	<b>48</b>
4.1 <i>The Mission, Principles and the Contents of the Education Guidelines</i> .....	48
4.1.1 <i>The Mission</i> .....	48
4.1.2 <i>The Principles</i> .....	49
4.2 <i>Educational needs of different stakeholder groups</i> .....	56
4.3 <i>Stakeholders' participatory planning education needs and goals within the framework of the euPOLIS project's capacity building</i> .....	60



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

---

4.4	<i>Stakeholders' long-term interests as reasons for co-planning</i> .....	61
4.4.1	<i>Instructions to FR and FL Cities on the steps to be taken</i> .....	61
4.4.2	<i>Engagement through the on-line Questionnaire Q3</i> .....	62
4.4.3	<i>Responds of FR and FL cities to the Questionnaire (Q3) for Citizens</i> .....	62
5	<i>Implementation of participatory planning methodology</i> .....	67
5.1	<i>The general methodology/the principles</i> .....	67
5.2	<i>Concluding remarks on application of the collaboration methodology in participatory planning in FR Cities</i> .....	77
5.2.1	<i>Belgrade</i> .....	77
5.2.2	<i>Gladsaxe</i> .....	78
5.2.3	<i>Lodz</i> .....	79
5.2.4	<i>Piraeus</i> .....	80
5.3	<i>Concluding remarks on application of the Collaboration methodology in participatory planning in FL Cities</i> .....	80
5.3.1	<i>City of Bogotá</i> .....	80
5.3.2	<i>City of Limassol</i> .....	80
5.3.3	<i>City of Palermo</i> .....	81
5.3.4	<i>City of Trebinje</i> .....	81
5.3.5	<i>Fengxi New City</i> .....	82
6	<i>Conclusions/Lessons learned</i> .....	84
7	<i>Appendixes</i> .....	86
7.1	<i>An example of Eco-Edu Hub in Park Usce, Belgrade</i> .....	86
7.2	<i>Appendix – Excerpts from the report on the joint WP2 and WP6 Training event in Lodz</i> .....	88
7.3	<i>Appendix - An example of customized training unit based on BGS/NBS/GDPM</i> .....	93
7.4	<i>An example of possible areas of training FR city of Piraeus</i> .....	94
7.5	<i>An example of possible areas of training - FL city of Palermo</i> .....	96
8	<i>Acknowledgment</i> .....	99



## Executive Summary

This document presents Deliverable D2.3 **“Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)”** and it is a main outcome of the Work Package 2.

Since the euPOLIS project deals with potential positive impacts of implemented Nature Based Solutions (NBS), in open public spaces on human health and wellbeing (PH&WB), this report sets-up the stage for the whole project development, firstly by presenting the basics of NBS (in this project also called BGS – Blue Green Solutions, thus NBS/BGS, or BGS/NBS) and the means of assessing their positive impacts. Successful implementation of the range of NBS based measures strongly depends on (i) **identification of major issues/problems and resources on the local sites and how to deal with them** and (ii) **education guidelines on how to develop and increase the knowledge and skills (competence) of the broad range of stakeholders** identified and introduced in D2.1 and further completed in D2.2. In this, D2.3 report we firstly present the general principles of BSG Innovative planning methodology in Chapter 2. This is followed by **Chapter 3 on findings of the major issues/ problems and resources at the local sites. This is presented in the form of tables for each of the 4 FR cities' demo sites (DS)**. Since the main purpose of the Task 2.2 is the introduction of the relevant BGS/NBS this is summarised in this chapter. In order to address the major issues/ problems and resources it is necessary that all project partners and other euPOLIS stakeholders work on the "same wavelength" and that they have gone through the euPOLIS basic education process. The principles / guidelines on stakeholders' education are presented In Chapter 4. Finally, In the Chapters 5 and 6 presented are the methods on implementation of participatory planning. customised to the problems and issues Identified and the suggested training methodology. In this way, the major points of this task are met. This report is opening-up the “stage” for full scale implementation of the other PWs, particularly in WP3, WP4, WP6, WP7 and WP8.

All four FR (Front Runner) and five FL (Follower) cities will be trained based on specific conditions in FRs' demo sites (DS) and FLs' case studies (CS) Identified In the first part of this task. The initial training has been carried out during the past four months; the results/outcomes are presented in this report. In this way, the conditions are created for a full-scale 'learning by doing' to be done in the WP6, based on two "stumbling blocks" presented in chapters 3 and 4 of this report. By realising the need of coordination of the preparatory activities, initial training of the key personnel in FR and FL cities have been trained (training of trainers) in joint session of the WP2 and WP6, as presented in the Appendix 7.2.

The initial background material needed for the Chapters 4 and 5 was obtained through the questionnaires Q2 (presented in D2.2) and the Workshops performed in all 4 FR cities, and through direct contributions of the cities and supporting partners. Additional material (more details) has been obtained through the Questionnaire 3 (Q3) for the cities Lodz and Piraeus. The cities of Gladsaxe and Belgrade will complete the remaining bits in September 2021,

The final recommendation is that each of the stakeholder's groups or their clusters which grasped the essence needed for performing their tasks in the euPOLIS project, based on the material presented in the reports D2.2. and D2.3, should Implement this knowledge and skills in the other projects, to follow both in other locations and after the end of the euPOLIS project. This spatial and temporal extrapolation of the euPOLIS innovative methodology is this project's major legacy.



## List of Figures

Figure 1. Principal components of demo-sites in FR cities .....	15
Figure 2. Mismatch between city growth challenges and contemporary urban planning strategies determining the education character of euPOLIS system .....	18
Figure 3. Overarching character of BGS applied in the euPOLIS project: All urban components, infrastructure systems, ESS ecosystem services, socio-economical and resource recycling facilities are encompassed .....	19
Figure 4. Converting urban problem/issues into challenges/opportunities .....	20
Figure 5. Change of the planning framework / mindset (mental setup change) as a prerequisite for implementation of euPOLIS NBS/BGS methodology .....	21
Figure 6. Systemic interactions between urban components and infrastructure systems, as a bases for their quantification, optimization and financial evaluation .....	22
Figure 7. GDPM (Goal Driven Planning Matrix) as an overarching item of other BGS Planning Matrixes used in production of innovative design brief of BGS/NBS paradigm .....	22
Figure 8. Examples of positive and negative aspects creating criteria for planning, adopted from MSc thesis .....	25
Figure 9. Procedure for identifying and quantifying benefits from interactions between trees and urban functions and solutions .....	26
Figure 10. City of Belgrade. Linear Park plan and its zones of influence .....	28
Figure 11. City of Belgrade. Usce Park area plan.....	30
Figure 12. City of Gladsaxe. Existing view of the Pileparken .....	33
Figure 13. City of Lodz. Pasaz Anny Rinkowskiej demo-site.....	35
Figure 14. City of Piraeus. Three demo-site areas (1. Mikrolimano, 2. Akti Dilaveri and 3. Ralleion School) .....	38
Figure 15. City of Bogota'. El Reencuentro case study .....	41
Figure 16. City of Limassol. Public Garden Case Study .....	42
Figure 17. City of Palermo. Villa Turrisi Case Study. ....	43
Figure 18. City of Trebinje. Otok Case Study. View from the river .....	45
Figure 20. Fengxi New City Case Study. Project visualisation .....	46
Figure 20. Merging of the Innovative BGS/NBS system with the existing planning system and creation of permanent Eco-edu Hub (for training in temporal extrapolation) .....	49
Figure 21. Participatory Planning Education Guideline. Merging the innovative BGS based GDPM planning system with the existing methods.....	50
Figure 22. euPOLIS BGS/NBS planning methodology at work with two type of extrapolation of the planning system.....	51
Figure 23. An option of possible WWTP demo-unit to be implemented at Belgrade demo site .....	56
Figure 24. Eco-edu Hub in Park Usce. Ground-floor plan view .....	86
Figure 25. Eco-edu Hub in Park Usce. Basement plan view .....	86
Figure 26. Eco-edu Hub in Park Usce. Front view .....	87
Figure 27. Eco-edu Hub in Park Usce. Cross section view .....	87
Figure 28. Eco-edu Hub in Park Usce. Roof plan view .....	87
Figure 29. Lodz Workshop 2 – Participant’s photos and information poster.....	88
Figure 30. Lodz Workshop 2 – Slides from the Workshop presentation .....	92
Figure 31. Palermo Dissemination Event – Invitation.....	96
Figure 32. Palermo Dissemination Event – Agenda.....	96
Figure 33. Palermo Dissemination Event – The city’s website homepage .....	97
Figure 34. Palermo Dissemination Event – Screenshot of the meeting .....	97





## List of Tables

<i>Table 1. Acronyms/Abbreviations .....</i>	<i>10</i>
<i>Table 2. Belgrade – Demo site Linear Park, Belgrade: Chronology of euPOLIS activities and events of consultations on issues/problem, resources, and participatory co-planning (interactions of WP2 and WP6) .....</i>	<i>29</i>
<i>Table 3. Belgrade – Usce demo site’s list of relevant issues and resources .....</i>	<i>31</i>
<i>Table 4. Gladsaxe – Pileparken demo site’s list of relevant issues and resources.....</i>	<i>33</i>
<i>Table 5. Lodz demo site’s list of relevant issues and resources .....</i>	<i>36</i>
<i>Table 6. Piraeus. Mikrolimano and Akti Dilaveri demo site’s list of relevant issues and resources .....</i>	<i>39</i>
<i>Table 7. Piraeus Ralleion Complex School demo site’s list of relevant issues and resources .....</i>	<i>40</i>
<i>Table 8. Educational needs of the euPOLIS stakeholders’ groups .....</i>	<i>56</i>
<i>Table 9. An example of bespoke/customised/tailor-made participatory planning topics based on GDPM matrices for a group of Piraeus stakeholders.....</i>	<i>59</i>
<i>Table 10. An example of possible areas of training of specific group of stakeholders to increase motivation and support to euPOLIS, Pireaus .....</i>	<i>67</i>
<i>Table 11. An example of educational needs and trainers in FL city Bogota’ .....</i>	<i>68</i>
<i>Table 12. An example of educational needs and trainers in FL city Limassol .....</i>	<i>73</i>
<i>Table 13. An example of educational needs and trainers in FL city Palermo.....</i>	<i>74</i>
<i>Table 14. An example of educational needs and trainers in FL city Trebinje .....</i>	<i>76</i>
<i>Table 15. An example of possible areas of training of specific group of stakeholders to increase motivation and support to euPOLIS, Pireaus .....</i>	<i>94</i>



## List of Acronyms /Abbreviations

Table 1. Acronyms/Abbreviations

Acronyms/Abbreviations	Explanations
BGD	Blue Green Dream – EU Climate_KIC project
BGS	Blue Green Solutions
BVOC	Biogenic Volatile Organic Compounds
CD	Communicable disease
CICES	Chartered Institution of Civil Engineering Surveyors
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
Eco-edu	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
LCC	Life Cycle Costs
MAES	Mapping and Assessment on Ecosystems Services
MD	Multi-disciplinary
MF	Multi-functional
NCD	Non-communicable disease
PH	Public Health
Q1	Questionnaire 1
Q2	Questionnaire 2
Q3	Questionnaire 3
UHI	Urban Heat Island
WB	Well-being
WS	Weather station
WWTP	Wastewater treatment plant



## 1 Introduction

This report represents the final version of the Deliverable D2.2 (Ver 2) entitled as D2.3. named "**Report on the local site analysis report and list of relevant issues/problems and resources**" of the euPOLIS project. This report contains 3 major parts:

- (i) Definition of BGS interventions and planning system - Chapter 2 of this Report.
- (ii) Report on local site analysis and relevant issues and resources in FR and FL cities - Chapter 3 of this Report.
- (iii) Stakeholder Education Guidelines (principles) - Chapter 4 of this Report

By providing consistent information on the conditions, issues, and resources in the local FR cities' demo sites (item ii), this deliverable creates the framework for successful running of all other WPs. Complementary to this Information is the need for all project partners/stakeholders to master the basics on the other 2 aspects (item i and iii). The urban planning methodology adopted for the euPOLIS project is based on the innovative Nature Based System (NBS), developed within the Blue Green Dream (BGD)<sup>1</sup> project hereinafter called BGS (Blue Green Solutions) urban planning system<sup>2</sup>. The education of the euPOLIS stakeholders' is based on this BGS methodology, which is further enhanced with the contributions of the euPOLIS project partners. Therefore, while planning for NBS implementation in the 4 euPOLIS's FR cities the same BGS methodology will serve as the core for the new planning system. It has to be based on the major characteristics of the sites and the major concerns/issues and resources (Item I), as identified and presented in this report. In that respect, this report presents kind of "One stop shop PRIMER of the euPOLIS project" as explained in what follows.

The euPOLIS's scientific and professional paradigm is based on its own unique/bespoke BGS methodology of systemic urban/spatial planning for sustainability, climate resilience and cost efficiency. Nevertheless, its complex analytic GDPM (Goal Driven Planning Matrixes) methodology is disaggregated in its basic steps and components and customised for simple implementation in training all local stakeholders, using the "learning by doing" methodology, as a synergy of WP2 and WP6. In doing so, urban planners, but also all other stakeholders in euPOLIS's 4 FR (Front Runner) and 5 FL (Follower) cities, will be trained on the findings of specific conditions in FRs' demo sites (DS) and FLs' case studies (CS) identified and presented in this report. These conditions include technical, environmental, and socio-economic status before and during the implementation of BGS/NBS (in FRs), or analysis of the possible interventions in FL cities (initially presented in this report), as well as PH (Public Health) and WB (Well-being) of the relevant groups of stakeholders (volunteers) at each of the DS.

The training/education methodology tailored to the needs of each of the stakeholders' groups, or their clusters, enables each of the group members to meet their needs by "mastering"/grasping the essence necessary for performing their tasks both in the euPOLIS project and afterwards in their professional affairs. Normally, the education of euPOLIS's stakeholders would take place in their direct personal contact with the BGS instructors (in-person teaching). However, under the specific conditions created by COVID-19, in the initial phase of euPOLIS project, the teaching interactions have been adjusted to online methodology both for lecturing, hands-on training and concrete (co)planning/co-design for full scale implementation of the NBS/BGS intervention. For the sake of coordinated actions and to suite the proposals of the FR & FL

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<sup>1</sup> Blue Green Dream (BGD) website: [www.bgd.org.uk](http://www.bgd.org.uk)

<sup>2</sup> Božović, R., Č. Maksimović, A. Mijić, K. Smith, I. Suter, M. Van Reeuwijk, (2017) Blue Green Solutions, A Systems Approach to Sustainable, Resilient and Cost-Efficient Urban Development, Climate\_KIC, EIT, European Institute for Innovation and Technology.



## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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stakeholders to avoid duplication of efforts, this initial (introductory) form of training was done in combination of WP2 and WP6.

The main feature of BGS based planning is that participatory planning i.e., all stakeholders' engagement in planning from the preliminary phase (site analysis, BGS/NBS resources and conceptual design) till the final phase (final design, construction, and its supervision) is done under the same education/training methodology and consistent/robust content (curriculum). The education methodology follows this principle. Due to time constraints, budgetary limitations and COVID-19 related issues, the teaching is based on "blended" methodology i.e., combination of online lecturing followed by "learning by doing" methods, using BGS and the material collected at each of the 4 FR demo sites in training the local stakeholders from that city.

D2.3 is an integral part of the final report for the tasks T2.2 of the WP2 (both D2.2 and D2.3 are the part of T2.2). It contains detailed methodology of the status, problems/issues, as well as working examples, and the results of the feedback form the training/design sessions, taking into account the site-specific conditions, which are being collected in the following step-by-step process:

- a. The initial information provided in the application documents are further discussed in the Workshop 1, separate for each of 4 FR cities, held in November 2020.
- b. The data and information that are easily obtainable are collected firstly from the cities and their institutions: urban planning and urban services companies (primarily water and greenery), through the tailor-made (euPOLIS bespoke) questionnaire Q2. This initially obtained information has been used in the initial phase of training (workshops held in November 2020).
- c. Additional data obtained directly from other local stakeholders (residents, neighbourhood, local businesses, etc.) collected by the Questionnaire 3 (Q3) in by both official cities' institutions and other stakeholders from March 2021 till July 2021. The cities of Gladsaxe and Belgrade have postponed their replies and relevant events till September 2021.
- d. Items that require more time and resources will be collected "on the go" and gradually introduced in the training and planning process, to be done in the WP6.

As it can be seen from the above, this is a continuous process that will be carried out even during the interventions (instating NBS assets in the demo site) and further enhanced in the post-construction period in which the impacts of NBS on PH & WB will be monitored. However, the material presented in this report is a very Important Intermediate result for securing successful start and follow-up of the project.

As for the interactions with the other WPs, the data collected and initially processed in the WP2 (T2.2) has been used as inputs the WP3 (T3.1). Further links with other WPs and their tasks are presented in that WP (Task). The stakeholders' issues, concerns and resources are being acquired by similar considerations. These items are collected by several different methods separately or in their combination:

- a. During the 4 initial workshops with all stakeholders of FR cities carried out in November 2020 using the Mentimeter<sup>3</sup> platform (Results in section 5.1 of the report D2.2).
- b. The feedback obtained online and through the Questionnaire 2 distributed to the 4 FR cities in Mid-January 2021 (Preliminary FR cities answers in Appendix 8.5 of D2.2)
- c. Answers to the Questionnaire Q3 (distributed to local stakeholders through local social media started from March 2021)
- d. Some answers were obtained in small groups' consultations with clusters of stakeholders (for example Piraeus and Lodz cities), and finally
- e. With answers given to questionnaire Q3 received by offline methods (for example by interviews).

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<sup>3</sup> <https://www.mentimeter.com>



All these 5 sources of data are processed by cities and supporting partners, to produce a unified consistent set of data and information, which defines part of the baseline conditions and inputs for T3.1 and T3.2 in identifying the performance indicators of the existing NBSs and prediction of the ones, for the planned and implemented NBS in all 4 FR cities' demo sites.

All of them are used during planning process by both official planning institutions and with participation of other stakeholders.

### **1.1 Introductory note on the concept of the report**

We focused on facilitating, both understanding and acceptance of key inputs by the participating partners. Thus, in this report the most essential parts of both technical and socio-economical aspects of the BGS planning methodology are briefed in sections of the Chapter 2.

Specific attention in the Tasks 2.2 and 2.3 is paid to updating and discussing the roles of FR and FL Cities in adopting the products and recommendations of D2.3, and by turn, developing their own agenda for full-scale implementation of:

- a. final processing of the status and Issues/concerns and resources at their DS and CS
- b. customization of guidelines for stakeholder education
- c. creating plans for deployment of the stakeholder's training programme
- d. creating framework for full-scale engagement for the trained of professionals and volunteers in the customized programmes for the DSs and CSs' upgrade to the benefit of local visitors, residents, and all other citizens.

Additionally, at a later stage, euPOLIS partners will sharpen their skills and develop appropriate programmes for up-scaling implementation of euPOLIS' deliverables in the interactions with WP6.

## 2 Definitions of BGS/NBS Interventions and Planning System

### 2.1 BGS/NBS Planning System

Implementation of NBS, also called BGS in this project, is a crucial concept of the future urban and spatial planning for increased sustainability and resilience to climate changes and cost-efficiency of both retrofitting/rehabilitation of existing urban areas, as well as the planning of new ones. In the euPOLIS project we implement a so called “inverse paradigm”: instead of the concept of “protecting nature/environment”, we use nature (implement NBS/BGSs) for protecting people and their health and well-being. This is a very efficient way to protect the nature and the environment and achieve the goal of “healthy cities for happy people”.

Such a concept was initially implemented in the natural environment (forests, wetlands-bogs)<sup>4</sup>; today is, also, implemented in densely populated urban environments<sup>5</sup>. In the euPOLIS project we introduce a well organised planning system, accompanied by identification, quantification, and optimization of interactions between urban infrastructure systems, ESS (eco systems services) and people (their health and wellbeing). As Maes (2017) states, concrete application of NBSs in a research and innovation agenda requires a sharper definition of NBSs, focusing on the accumulated knowledge on ecosystem services<sup>6</sup>. In addition to the “sharper definition” within the euPOLIS project, these solutions are planned with the environmental framework agreed upon by a multidisciplinary team of experts and other stakeholders, and implemented with their performance indicators, monitored and documented, and with the findings embodied into final educational design guideline.

Systemic Implementation of BGS/NBS is a crucial pre-requisite for the success of the future EU Green Deal programme. A broader spectrum of BGS/NBS includes more assets/items than what will be implemented in the euPOLIS. In that broader framework BGS tackle the nexus between water, energy, soil, and waste in whole range of urban solutions and infrastructure, including both the indoor and the outdoor environment. Urban blue-green infrastructure is a network of nature-based features situated in built-up areas that provide different benefits to citizens and environment<sup>7</sup>.

In the euPOLIS project we implement some of these interventions, which are pertinent to open public spaces, such as parks, squares, streetscape etc. In doing so, special attention is drawn to longevity and sustainability of the implemented solutions as well as their multifunctionality (MF). For example, in accordance with the euPOLIS paradigm most of these solutions meet the criteria of circular economy (resource recycling). However, in several<sup>8</sup> recently applied solutions (for example Green Belt of Tehran) these systems have semi-failed because in the dry climate zones there is no water to irrigate green areas

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<sup>4</sup> Nesshöver, K., Assmu, T., Irvine, K.N., Rusch, G.M., Waylen, K.A., Delbaere, B., Haase, D., Jones-Walters, L., Keune, H., Kovacs, E., Krauze, K., Külvik, M., Rey, F., Van Dijk, J., Vistad, O.I., Wilkinson, M.E., Wittmer, H. (2016) The science, policy and practice of nature-based solutions: An interdisciplinary perspective. *Science of the Total Environment*, Science of the Total Environment. Volume 579.1 February 2017, Pages 1215-1227. Available from: <https://doi.org/10.1016/j.scitotenv.2016.11.106>

<sup>5</sup> Van den Bosch, M., ÅOde Sang, A., (2017) Urban natural environments as nature-based solutions for improved public health – A systematic review of reviews, *Environmental Research*. Volume 158, October 2017, Pages 373-384 Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0013935117310241>

<sup>6</sup> Maes, J., Jacobs.S., (2017) Nature-Based Solutions for Europe’s Sustainable Development. *Conservation Letters*. A journal of the Society for Conservation Biology. Available from: <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12216>

<sup>7</sup> Mijic, A., & Brown, K. (2019) Integrating green and blue spaces into our cities: Making it happen. Grantham Institute Briefing Paper, No 30. Imperial College London. Available from: <https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Integrating-green-and-blue-spaces-into-our-cities---Making-it-happen-.pdf>

<sup>8</sup> <https://use.metropolis.org/case-studies/sustainable-development-of-tehran-city-green-space>

and ensure functional stability (for example, plants died). There must be synergy between the components (green & blue), whereby green vegetation areas and their blue supporting components are harmonized (for example, green spaces are irrigated during long dry summer months, without rainfall).

A schematic with the range of BGS/NBS solutions implemented in the euPOLIS's FR demo-sites (DSs) is presented in figure 1. The same numbering used for NBSs are used in the schematics of all NBSs presented in the Grant Agreement (GA) of the project. They will be systematically implemented in WP6. In the captions of figure 1, each of the NBS groups (I, II, III) is characterized by preferential impacts of PH.



Figure 1. Principal components of demo-sites in FR cities

#### Group I NBS Clusters/ interventions:

1. NBS-based multi-functional (MF) pocket parks, accessed by NBS locally conditioned pathways and shared spaces (1.1 -1.9), affecting PH&WB by reducing stress, depression, anxiety levels; the reduction of the number of risk factors for NCDs such as (obesity, depression, stress, etc.); encouragement of outdoor activities as a result of fostered socialization; Cycling and walking in the shade will optimize psychophysical body load; create positive emotional attachment.
2. Waterways with mini biotope nodes, aquatic biodiversity – feed from groundwater aquifer or purified surface runoff; affecting visual improvements, quality access, and positive emotional attachment to the neighbourhood. Positive impact of nature/water sounds on psychophysiological functions and psycho-emotional condition.
3. NBS for surface runoff quality and pluvial flood management, reducing risk of surface water pollution and communicable diseases (CD).
4. Groundwater abstraction for water, energy, greenery nexus, reducing risk of CD and short-cutting of pollution of abstracted portable water.
5. MF NBS canopy for socializing, “recharging electronic devices”, or “green bus stop”, etc., augmentation of the use of NBS-enhanced public space, increasing the number of citizens in outdoor activities and interactions, creating a positive emotional attachment.





## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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6. MF Live vegetation shaded waterfront promenade, encouraging walking, which optimizes psychophysical body load allowing more activities, reducing stress and anxiety levels, fostering new functions in space as well as social ties.
7. Air pollution abatement shrubs, trees and vertical green curtains, reducing the risk of NCDs levels and improving noise conditions; generally improved ecological status; positive impact on PH of all vulnerable groups, such as children, elderly and disabled persons.
8. Metabolic hub with MF ecotechnology demonstration/promotion, roof garden and art and culture performance, stimulating relaxation and restoration; strengthening the social cohesion; minimizing the output of GHG and reducing the global warming effects through lower carbon emission; fostering the sense of place and trust in NB solutions; prevention of CDs through development of ecological awareness hygiene measures.
9. MF floating island, river water purification, improving local microflora and cleanness of water; reduced risk of CDs of the urban water body (rivers, lakes, wetlands) users and waterfront promenade visitors.
10. Coastal sea bottom marine aquatic biotope with euPOLIS-NBS, reduced risk of diarrhoea and skin diseases caused by contact with polluted water; positive aesthetic experience and pleasure created in contact with visual attraction of dryland/marine aquatic interaction.
11. MF euPOLIS Urban square/streetscape and other NBS (biotopes, sensory garden, waterfall, biodiversity & kitchen garden for socializing, recreation), improvement of local outdoor environment quality such as cleaner air and microclimate control, reducing of risks for NCD's, improving socialization or recreation, and reducing post-illness healing duration in urban biotopes.
12. Space for NBS business activation and promotion, setting the base for sound business models introducing employment as an important precondition for WB and social determinant of PH; long-term social and WB impacts by strengthening small business.

### **Group II Monitoring- ICT System:**

- A. Wearable devices for monitoring PH & WB.
- B. Visualisation equipment.
- C. Renewable energy sources.
- D. Citizens' observatories.
- E. Sensor network.
- F. Remote sensing, WS. Micro-climate / wireless weather station

### **Group III Ecological-educational Hub (eco-edu) containing selection of sample BGS/NBS, showroom for presenting raw data and process information, and hosting/dissemination centre**

It is broadly known that the implementation of BGS/NBSs is essential in supporting full functionality of eco-systems services (ESS) in urban areas for providing their future sustainability and resilience. However, when it comes to the full-scale implementation, there is a lot off misunderstanding/confusion on the means of their implementation and assessments of their impacts. As a full-scale demonstration of their meaningfulness, euPOLIS will link the concrete examples of BGS/NBSs, with definition and impact of each of the bellow functions (a-c).

- a. **ESS Provisioning functions** (provision of clean air, crops, food, raw materials, etc.) have been dramatically degenerated within our living environments.
- b. **ESS Regulating functions** (micro-climate, air quality, carbon sequestration and storage, water purification, soil quality, etc.) of ES: euPOLIS will introduce mapping of existing regulating potentials and enhance systematically its impact with adequate urban components such as greenery, water, etc.





- c. **Socio-Cultural ESS** (interaction and recreation facilities for mental and physical health, positive emotional experience and sense of place, slow- tourism, etc.) of ES represent an area that is not included in the standard planning criteria. Supporting services (habitat supporting, maintenance of genetic diversity, photosynthesis, nutrient cycling, etc.), and systematic activation of ESS and the use of their MF components in euPOLIS project will be documented with concrete indicators in both baseline and implemented conditions. ESS classification to be used will be in line with CICES<sup>9</sup>. The principles of Working Group on Mapping and Assessment on ES and their Services (MAES)<sup>10</sup> will be systematically implemented in euPOLIS.

The above groupings were essential in identifying and analysing the needs and requirements of both the stakeholders and the FR's demo sites (DS) and FL's case studies (CS).

## 2.2 Why is BGS Planning System needed

### 2.2.1 *Planning objectives matched by capacity building/education of stakeholders*

The State-of-the-Art in urban planning methodology, at global scale, struggles to cover the needs of modern societies and the concerns caused by urgent planetary issues like: climate change/global warming; pollutions of natural resources: air, water, and soil; and meeting the UN sustainability development goals (SDGs). In Europe the guiding principles are defined by the EU regional and urban development strategic documents and linked to the relevant EU Directives.

Analysis of successes and failures of the urban development carried out recently and during past half a century, reveals that there is a big mismatch<sup>11</sup> between city growth challenges and contemporary planning strategies. This results in suboptimal efficiency of the current planning methodology in creating new opportunities to improve sustainability, resilience to climate changes, and cost efficiency of urban solutions. Urban open spaces and their role in improving PH & WB (which is the topic dealt with in this project) are no exceptions, on the contrary, they are often planned with the other principal criteria in mind (aesthetic for example) rather than PH & WB. This calls for innovative integrated planning system. Project euPOLIS has adopted the BGS planning system developed in the EU Climate KIC project<sup>12</sup> Blue Green Dream.

For the comprehension of BGS role is important to understand why the concept of BGS is needed in the context of the PH&WB. As shown in the figure 2 there is a mismatch (gap) between city growth challenges and contemporary urban planning strategies. The essence of the euPOLIS project is to address this mismatch and to feel these gaps with the particular emphasis on PH&WB.

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<sup>9</sup> Chartered Institution of Civil Engineering Surveyors [www.cices.org](http://www.cices.org)

<sup>10</sup> MAES [https://ec.europa.eu/environment/nature/knowledge/ecosystem\\_assessment/index\\_en.htm](https://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm)

<sup>11</sup> S. Borgstrom et al (2006), Scale Mismatch in Management of Urban Landscape  
[https://www.jstor.org/stable/26266007?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/26266007?seq=1#metadata_info_tab_contents)

<sup>12</sup> [www.bgd.ogr.uk](http://www.bgd.ogr.uk)

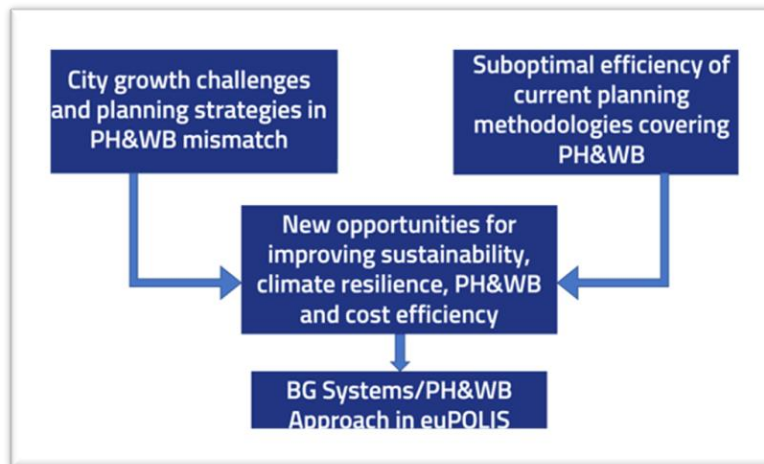


Figure 2. Mismatch between city growth challenges and contemporary urban planning strategies determining the education character of euPOLIS system

This project is driven by the need to demonstrate and quantify positive impacts of NBS/BGS, in urban open spaces and to use the results obtained to enhance competence of both urban planning experts and all other institutions, in particular citizens (jointly called stakeholders), which share interest in benefiting from this new paradigm. Yet, this requires a range of concerted actions in expanding the education/training capacity of the whole spectrum of stakeholders including the project partners in the first place and then not only in all other stakeholders in FR and FL cities.

To reach this goal, practically, all euPOLIS project partners played their roles. In addition to strengthening their own capacity, by better mastering the basics and details on NBS co-planning/co-design themselves (this was "sharpened" practically in all online meetings) they were engaged in the following stakeholders' capacity building activities:

- a. **Academic partners** (ICL, NTUA, FCEBG/Medical team, ISS) contributed to better definitions of NBS roles in urban planning (ICL), clarifications of impacts on PH& WB (FCEBG/Medical team) and Interactions with local stakeholders for encouraging their direct participation in co-planning/codesign (NTUA - Piraeus and ISS) in all other FR cities' DCs. Additionally, ICL is systematically pursuing euPOLIS complementary research (5-7 MSc projects every summer) using the euPOLIS DA and CS as a research base and contributing to strengthening both scientific aspects of the project and spreading of its paradigm to much broader international community.
- b. **"Horizontal" supporting partners** (ERCE, ENPL, MIKS, BYSP, AMPHI, GSH), each of them, in its own area of expertise contributed to strengthening building blocks of the euPOLIS education/training tool, which was being used and continuously upgraded throughout the past 6 months.
- c. **Technology supply partners** (VFI and BPL). In addition to contributing to series of online events their representatives (Istvan Kenyeres, Biopolus and Daniel Podmirseg) participated as multiple live lecturers in the MIKSER festival 2021, one of the first euPOLIS event with personal participation.
- d. **Monitoring and IT equipment** in training particular groups of stakeholders (BIO, SENT, PLEG) and in data processing (RISA) by providing detailed information on interactions of the equipment that they are supplying with euPOLIS's multifaceted data acquisition, processing and modelling system and its potential use in both training of stakeholders and full scale NBS testing for PH&WB efficiency.

Thus, their roles indicated in the report D2.2 were further disaggregated defined “perfected” and fully implemented during the period between February and July 2021 as presented in what follows.

### 2.2.2 Multi-disciplinarity and multifunctionality as the basic principles of BGS Planning System

To achieve the goal of training our stakeholders and to be able to scale-up the euPOLIS “wisdom”, each person involved (regardless of their level of previous professional education/vocational training and skills) will master the basic principles of BGS functions and planning/operational principles, explained in easy to comprehend methods. The principal features of euPOLIS’ NBS/BGS planning system are as follows:

- a. Multidisciplinary (MD)/overarching character of BGS, we tackle all urban infrastructure systems in their mutual interactions- see figure 3).
- b. Multifunctionality (MF), each of the urban components/infrastructure systems plays several “non-conventional”/interacting roles (see for example the role of trees shown in figure 9).
- c. Analytical character of mutual interactions between them: interactions identified, modelled, quantified, optimised, financially evaluated and their benefits demonstrated through cost efficiency (preferably lower LCC). In the case of euPOLIS project both tangible (numerically quantifiable) and non-tangible benefits will be demonstrated through its monitoring/assessment/educational, full-scale implementation and scaling-up system.



Figure 3. Overarching character of BGS applied in the euPOLIS project: All urban components, infrastructure systems, ESS ecosystem services, socio-economical and resource recycling facilities are encompassed

BGS call for rethinking existing ways of planning, designing, constructing, operating, and maintaining urban water systems (blue assets), urban vegetated areas (green assets, biomass production), and buildings, consider energy, air quality, and city behaviour under climate extremes, not as separate systems but in combination. The innovative advantage of this method is the fact that interactions between the components of urban categories including Ecosystem Services, are quantified, therefore, enabling the

design team to optimize the entire project, based on parametric results (analysis) with direct implication on cost and quality.

### 2.2.3 Planning methodology - euPOLIS's BGS/NBS innovative planning system/methodology in the nutshell

First, the implementation of the innovative and integrated euPOLIS's BGS/NBS requires two important changes to take place; **Systemic education accompanied by demo sites evidence is needed.**

1. All **big urban issues** of modern days, caused by: (a) natural disasters (floods, droughts, weather extremes etc.), (b) anthropogenic actions (water, air and soil pollution, noise, vibration, urban heat islands etc), (c) poor performance of technical systems (low energy efficiency, big water losses), and (d) socio-economical (including gender) issues (all of which are affecting human health and well-being) are traditionally seen as big problems. However, in the BGS approach, they are seen as challenges and opportunities, which can lead to new societal (next generation) and economic developments. This approach (as shown in Figure 4) is accepted by euPOLIS as the planning paradigm.

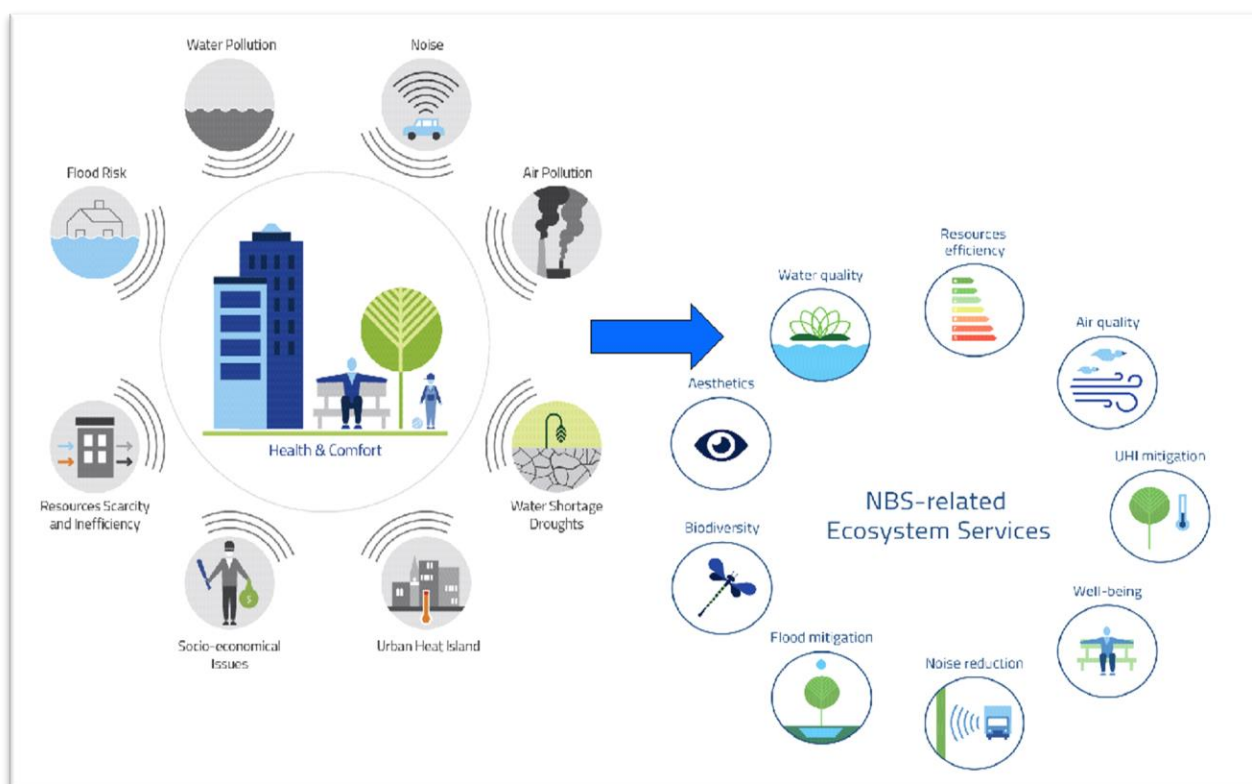


Figure 4. Converting urban problem/issues into challenges/opportunities

2. The current planning methodology is usually compartmentalised (silo based), meaning that each discipline has little interaction with the others. On the contrary BGS methods requires systematic interactions between all disciplines (experts). This requires change of planning framework and introduction of the BGS based integrated planning system as shown in figure 5.

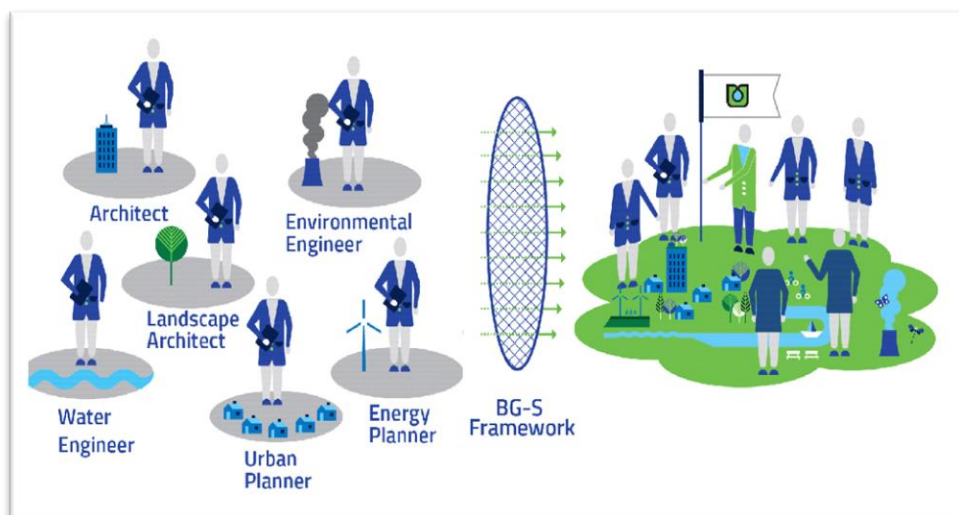


Figure 5. Change of the planning framework / mindset (mental setup change) as a prerequisite for implementation of euPOLIS NBS/BGS methodology

In all 4 FR cities and 5 FL cities, a training program for implementation of these principles in participatory planning will be customised to local conditions and euPOLIS goals for PH and WB in open urban spaces.

#### 2.2.4 An introduction to Goal Driven Planning Matrix and its customization for implementation in euPOLIS's training on co-planning/co-design

The analytical procedure and implementation tools/mechanisms to be implemented in euPOLIS project is called Goal Driven Planning Matrix (GDPM). Its essence is presented as follows:

- a. Systemic interaction of all urban infrastructures/ESS Eco system services (Figure 6). These interactions identified, quantified, optimized and financially evaluated.
- b. GDPM and its components – 7 matrixes are shown in figure 7.
- c. These matrixes are essential component of the participatory planning education of stakeholders. The details on how they are incorporated in the educational units (Section 6.1-Principle1).



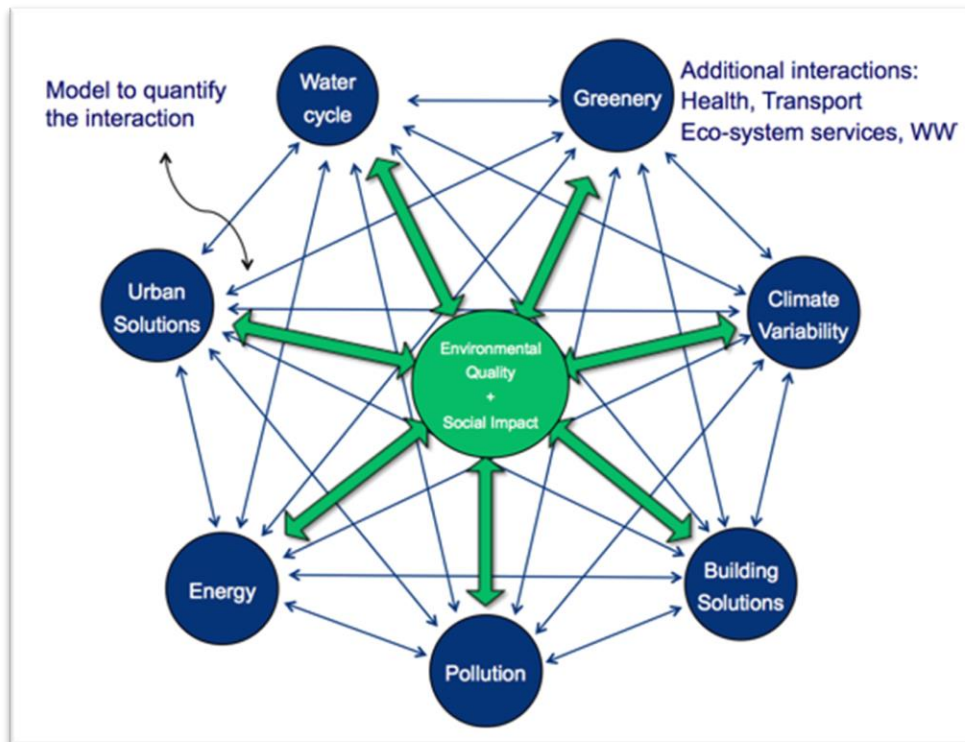


Figure 6. Systemic interactions between urban components and infrastructure systems, as a bases for their quantification, optimization and financial evaluation

In the euPOLIS/BGS approach, individual urban infrastructure or ESS components are identified, analysed, quantified, optimised, financially evaluated, evaluated, and finally used for co-planning. codesigned and the in the GDPM (Goal Driven Planning Matrix) as the principal analytical tool.



Figure 7. GDPM (Goal Driven Planning Matrix) as an overarching item of other BGS Planning Matrixes used in production of innovative design brief of BGS/NBS paradigm



A brief description of the meanings, roles, and implementation mechanism of each of the GDPM matrices in euPOLIS is described as follows:

**Goal Driven Planning Matrix (GDPM)** -The suboptimal efficiency of current planning methodologies often misses optimal solutions. The GDPM starts with systemic identification of projects challenges, and collection of functional requirements from all stakeholders. The objectives are converted into goals and broken into targets designed to create conditions conducive to enhanced citizens PH and WB. To meet these targets, the system defines required functions, concepts, and potential solutions. Optimised solutions are then converted into 'Detailed Design Brief' used for the detailed design of urban facilities supporting selected solutions with best PH&WB benefits.

**1. Matrix of functional Interactions between urban components** - City synergies are identified & quantified by means of systematic integration of resources from different urban categories and delivers optimal solutions. Standard engineering design is typically focused on problem solving rather than problem prevention. There are significant benefits for the projects if synergies are identified and applied.

**2. Resilience to CC & weather extremes** - Weather resilience solutions are defined using local data. The defined resilience solutions are then integrated with project sustainability solutions and integrated into urban planning system.

**3. Capital and operational Cost Dependence Matrix (CDM)** - In standard urban planning practice, the costs of urban components are often considered in a 'silo' format, and hence potential savings related to components' interactions are not fully exploited. EuPOLIS will systematically identify potential capital cost, running cost and LCC savings when synergies between urban components are implemented.

**4. Project "blend in" matrix** - New urban developments within the city often disrupt life of its neighbourhoods. EuPOLIS proposes that new developments should systematically blend in into neighbourhood: 1. Should not have any negative impact on life in the neighbourhood, 2. Should contribute to the neighbourhood life quality. To facilitate blend in criteria, euPOLIS has developed a "blend in" matrix template.

**5. Gender related planning criteria** - Standard planning does not consider gender equality as regular planning criteria. The social and functional equality of different gender groups (women, seniors, kids, other ethnicity, refugees, technologically obsolete, disabled, etc.) cannot be achieved without it. euPOLIS introduces the gender related planning criteria as mandatory urban planning component.

**6. Business activation module** - This Matrix comprises systemic local resources integration to activate business opportunities and introduce active business and operational models. This NBS system produces "hybrid" resources and integrate them with existing local resources to identify potential business opportunities.

**7. Planners long term responsibility** – The euPOLIS proposes new approval system to be introduced at a level of master planning to achieve more controlled, target related, planning process: Planners will have to prove that they have simulated future functionality of critical city / project under different operational conditions. This should be the introduction of planner's responsibility for future project functionality and resilience. When accepted this innovation will represent significant improvement of planning standards.



### 2.2.5 Customization for implementation in euPOLIS's training on co-planning/co-design

The principles of participatory planning/training/education in the euPOLIS is presented in detail in the Section 4 of this report. It is also illustrated with an example of customized guidelines (See the Annex 7.3). These guidelines are conceptualised so that the training package can be customised and used for training of each of the selected target audience groups. An example of its use in running the initial forms of training (training of trainers). The first session on Introduction of this methodology on participatory planning for full-scale implementation of BGS/NBS in FL Cities has been run (on 28th July 2021) as a joint session of WP2 and WP6 ([link on euPOLIS SharePoint](#)).

**The "template"** for organisation of similar training/capacity building session can follow the organisation of this event as follows:

1. **Audience:** One or more group of euPOLIS stakeholders (See the figure 22)
2. **Lecturers:**
  - 2.1 Local experts: euPOLIS's horizontal services delivery partners plus other local experts who have undergone the euPOLIS "training of trainers" program
  - 2.2. International experts: primarily from the euPOLIS partners teams
  - 2.3. Other International experts (by invitation) who are familiar with euPOLIS paradigm and the material
3. **Basic lecturing material:**

Electronic version of the BGS (Blue Green Solutions) and its "derivatives" (PP presentations for the curriculum units (see figure 22) available on the euPOLIS Sharepoint (consortium main depository, login required).
4. **Additional lecturing material:**

Locally available sources: euPOLIS reports (deliverables), excerpts from the local planning documentation for FR's DS or FL's CS, technical guidelines, additional material prepared by the lecturers, compliant with the curriculum units.
5. **Preparations for a training session/Workshop**

Each training session has to be well organised and advertised. A public call with invitation to participate in the training session should preferably sent to the stakeholders known to the organisers (from the organisers' data base). Additional public call- invitation can be sent through social media and other known channels (newspaper, public boards, local sites).
6. **Links to DS/CS**

As much as possible examples from DS/CS on BGS/NBS application and the results of monitoring of their impact on PH/WB should be used in lecturing and hands-on training to illustrate full-scale. It is advisable to organise a visit, or part of the session at the premisses of the DS/SC. An example of such a session is the workshop held on 28<sup>th</sup> and 29<sup>th</sup> July at the Lodz's demo site (Excerpts are shown in Appendix 7.2).
7. **Possible co-planning/codesign methodologies/sessions**

The type of co-planning/co-design methodology depends on the target groups and state of the project. According to BGS/GDPM methodology the most desirable state is pre-planning in which the co-design/co-planning sessions result in a comprehensive planning framework / DESIGN BRIEF. One way to achieve this goal is to organise interactive sessions with individual, or group answers which can be processed online (for example by Mentimeter), or offline. Further discussions / iterations organised in the same or separate sessions. An example of such a session in Belgrade,



presented in the Section 5.1 of D2.2 report. Other forms can be designed by the lecturing/moderating/Integrator teams, or Individuals.

#### 8. A sample program of an Introductory training workshop

Please see the Appendix 7.3

#### 9. A simple demonstration of the importance of reviewing NBS and their potential effects

Developments of the examples of these demonstrations are in progress and will be presented in the coming period.

A simple demonstration of the importance of reviewing NBS's interactions and their potential effects (both positive and negative) can be illustrated by looking at a generic tree vs. a specific group of trees relative to their surroundings. The benefits and negative effects of a single tree is illustrated in the figure 8. Figure 9, however, illustrates how specific trees interact with their surroundings, and their specific quantifiable benefits.

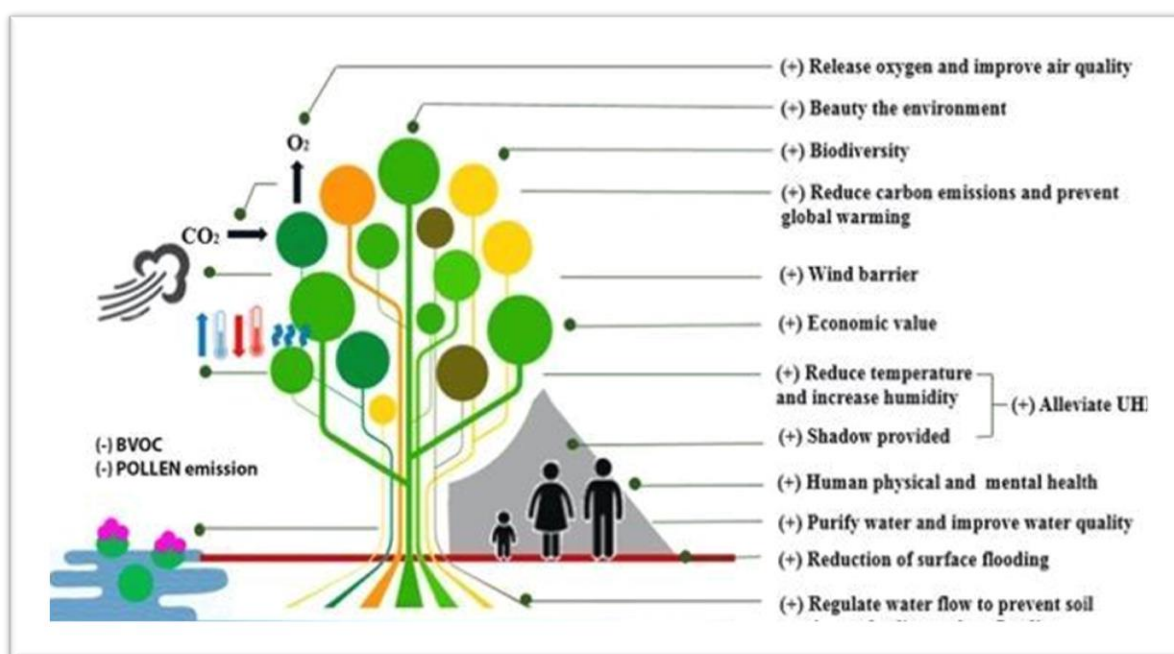


Figure 8. Examples of positive and negative aspects creating criteria for planning, adopted from MSc thesis <sup>13</sup>

In figure 8, positive aspects of tree species are shown on the righthand side. On the contrary, negative aspects, such as release of biogenic volatile organic compounds (BVOC) from the tree canopy usually results in creation of highly corrosive ozone and other air quality imperment elements, with can have highly negative impact on PH & WB. In the euPOLIS project we introduce the selection of tree species for separate BGS clusters, so that the positive impacts are enhanced, and negative impacts are suppressed.

This procedure for identifying tree functions linking them with the interactions with an urban component and ESS and the resulted synergies in benefits are presented in figure 9.

<sup>13</sup> Wang, Xuran, (2020) Impact and benefits of vegetation species used in BGS based landscape, MSc Thesis defended at ICL, supervised by C. Maksimovic and F. Zhang and B. Qiu

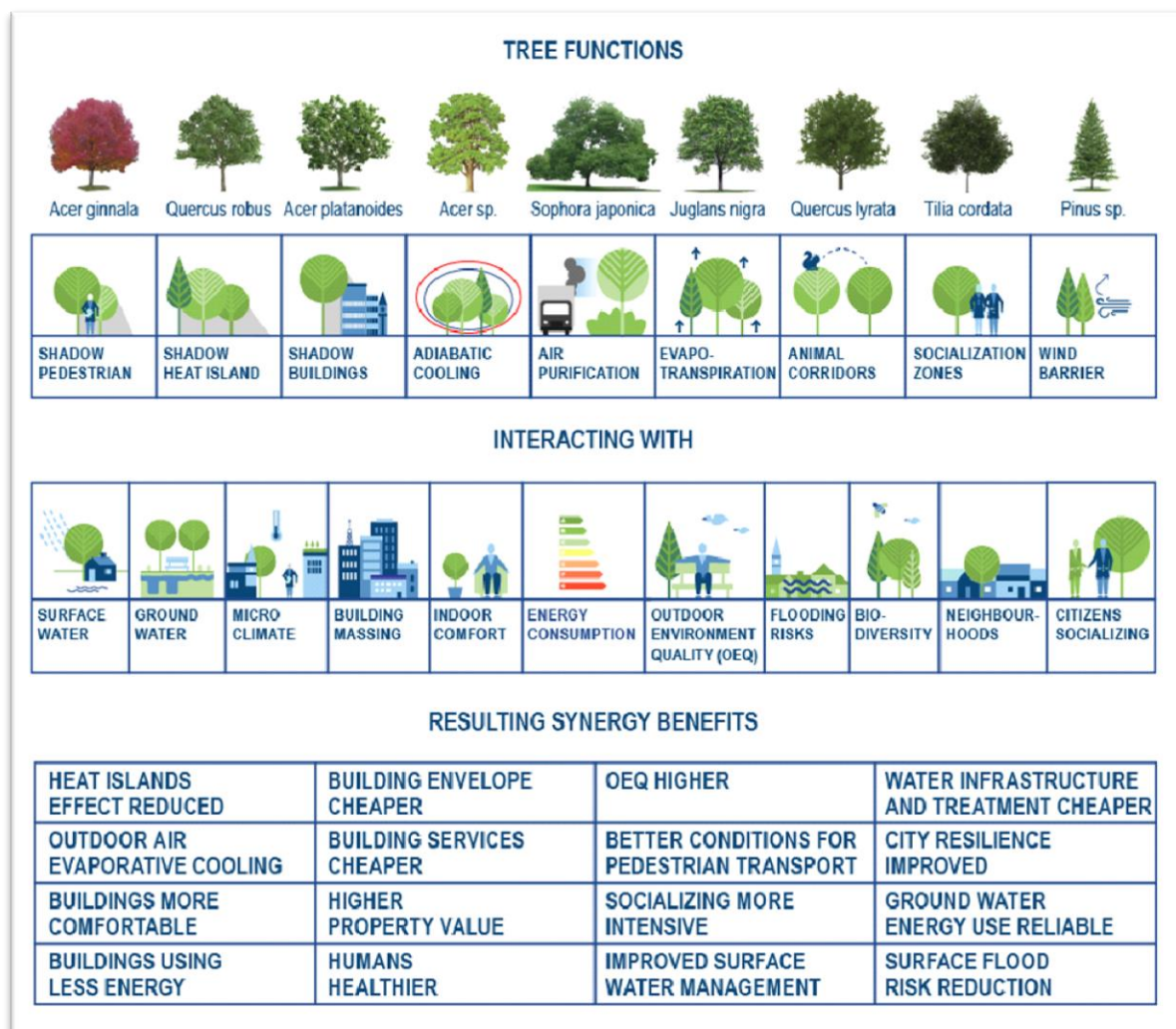


Figure 9. Procedure for identifying and quantifying benefits from interactions between trees and urban functions and solutions

As mentioned in the previous text, This Section 2 provides the basics (kind of primer) on the BGS concept for application in innovative urban planning (participatory planning/co-panning/codesign o be systematically applied in the euPOLIS project. It is essential that all project participants and other stakeholders (including the motivated general public) read/get familiarised with these basic principles as the first point of reference, before getting involved in any other WPs' activities. Although, it can be used / read as a stand-alone text, for both top level and other professionals that will be used in production of technical documentation for DSs and CSs consult also both more detailed BGS instructions and the other documents suggested in this report and attend the other training sessions which will be organised subsequently.

### 3 Local conditions and list of relevant issues/problems and resources in FR and FL cities

#### 3.1 Methodology of data & information gathering

Six initial Workshops with the FR Cities Stakeholders were held in November 2020, (fully reported in the D2.2 report) which provided very valuable data and information described in this section, indicating the additional needs for education/training of various groups of stakeholders:

- Workshop - Meeting of Supporting Partners to 4 FR cities held on 29.10.2020.
- Workshop with Urban Planning and design experts from 4 FR cities held on 13.11.2020.
- Meeting of the euPOLIS FR City's Gladsaxe Stakeholders held on 18.11.2020.
- Meeting of the euPOLIS FR City's Piraeus Stakeholders held on 20.11.2020.
- Meeting of the euPOLIS FR City's Lodz Stakeholders held on 23.11.2020.
- Meeting of the euPOLIS FR City's Belgrade Stakeholders held on 25.11.2020.

Joint WP2 and WP6 Workshops will be organised in all FR and FL cities from October 2021. FR City Lodz already held the workshop on 28<sup>th</sup> July 2021, (see Annex 7.2). FL City Palermo performed the first dissemination event (see Annex 7.5).

Specific groups of stakeholders are volunteers from which crucial information on impact of BGS/NBS on their health and wellbeing will be gathered at specific demo-sites in FR Cities. In order to make sure that they are both educated and motivated to be cooperative and to have personal benefits it is important that they also be subjected to initial training before they start performing their walking and collecting data. This specific training will be provided by combined teams by:

- a) BGS core-team.
- b) monitoring equipment (wearables) technology providers.
- c) Team of medical experts – providers of horizontal services support.

#### 3.2 FR Cities DS preliminary information on specific conditions

The relevant parts of the material obtained from the Questionnaires are processed in this report, the other parts, pertinent to the tasks T3.1 and T3.2, will be presented in their correspondent reports. Answers to the Questionnaires, presentations during the various task meetings, together with materials presented in workshops provided the preliminary picture about specific conditions in FR and FL cities are described in the following sub-sections.

##### 3.2.1 FR City Belgrade – Linear Park and Ušće

In order to establish a connection with stakeholders and to collect information and obtain demo site data, the first meeting of the euPOLIS FR City Belgrade with stakeholders was held on 25th November 2020 and an additional euPOLIS workshop was organised on 16<sup>th</sup> July in Municipality of Belgrade.

There were several interactive sessions organized as a forum in which all stakeholders taking part in euPOLIS could express their opinion related to the existing methodologies for involvement of stakeholders in participatory planning and other euPOLIS related activities can be enhanced. This was planned to “boost” their participation in/support to the project, but they should also benefit from its deliverables. The participants accepted euPOLIS team’s proposal of stakeholders engagement methodology under the Covid-19 restrictions: each of this workshop’ committed participants try to motivate 10 to 20 other interested



stakeholders, to participate in future euPOLIS events and activities. This is complementary to the polycentric network creation proposed by the socio-economic team. All newly engaged stakeholders will be given due attention after accessing euPOLIS data base.

**The Linear Park in Belgrade** (Figure 10) is a completely new park space, planned to be created by transforming a cancelled railway track from the old industrial storage building "Beton hala" to the Pančevo bridge on Danube. The Linear Park passes through diverse urban zones, from relatively well regulated and active zones beneath the Belgrade fortress, to the decaying areas of the Port of Belgrade industrial zone. With the planned realization, a complete transformation of the surrounding urban tissue is expected as well, which has already begun with intensive construction in lower Dorćol area in the past several years.



*Figure 10. City of Belgrade. Linear Park plan and its zones of influence*

In the surrounding areas of the planned park there are already diverse urban functions - from existing housing complexes that already create defined architectural and urban areas, to low-density decaying and slum housing that will be transformed; from business and commercial functions to storage and industrial buildings; from port and railway buildings and other transport-related functions to sports and recreation facilities; from devastated built structures to protected heritage such as the electric power plant Power and Light, Nebojša tower and other monuments.

The existing conditions on the planned location for the demo park shows that these zones are planned for complete transformation from a port and industrial area of devastated built and natural environment, into a landscaped park environment.

Presently, none of the planned facilities exist at the subject location, so the following park functions will be realized within the Linear park and the euPOLIS demo park projects: bicycle and pedestrian paths, green areas of rest, gathering and leisure, playgrounds and park squares, stormwater etc.

Initial planning of the area was carried out as a competition of young architects' groups each of which dealt with a reach of a few hundred metres. The competition started before the euPOLIS project team was introduced to provide advisory assistance and to address numerous problems, concerns, and possible innovative concepts and NBS based plans. However, after the competition was over the planning



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

documentation was managed by professional Urban Planning Institute of Belgrade. Interactions of euPOLIS team within the public consultations were ever increasing (see the Table 2 with the chronology of activities and events) and the adoption of euPOLIS' ideas was gradually increasing until the submission of the final consultation document (item 11 in the Table 2) "Remarks to the raft PDR, "Plan of Detailed Regulation for the Linear Park - Belgrade, City municipalities: Palilula and Stari Grad"<sup>14</sup>. So far, the feedback received from the Urban Planning Institute is very encouraging. There are indications that euPOLIS experts may be invited to join the tea producing GUP (General Urban Plan), a long-term strategic document (next 20 years (Item 13 - Table 2). More details on the planning for both the Linear Park site (S) and its possible "Spatial and Temporal extrapolation" to the whole city will be dealt with in the WP6.

Table 2. Belgrade – Demo site Linear Park, Belgrade: Chronology of euPOLIS activities and events of consultations on issues/problem, resources, and participatory co-planning (interactions of WP2 and WP6)

Nº	Belgrade demo-site Linear Park. Chronology: activities and events	Site or City specific
1	Preparations for the "Stakeholders Consultation Workshop (SCW)" Workshop. September to November 2020	S/C
2	Initial "Stakeholders Consultation Workshop (SCW)" held on 25th November 2020 reported on in the D2.2. document	S/C
3	Consultations on Issues relating to the Questionnaire Q3 February – July 2021	S/C
4	Post "Stakeholder Consultation Workshop (SCW)" consultations with the Chief Urban planner and the Urban Planning Institute of Belgrade) December 2020- July 2021	C/S
5	Consultations with euPOLIS partners and preparation of the strategic documents on "Introduction of the euPOLIS paradigm into the planning process". December 2020-July 2021. An example is the item 2 and similar events and activities in FR and FL cities.	S
6	Preparation and submission of the initial document on Linear Park project with the first set of remarks and proposal based of euPOLIS strategy ...15/06/21	S
7	Recipient of the initial feedback from the Urban Planning Institute of Belgrade 01/07/21	S
8	Study of the euPOLIS/EnPlus experts (led by dr R. Nevenić) on selection of species for distinguishing between those with high positive impact and ones with proven negative impacts on PH&WB July 2021	S
9	Interactions of euPLUS with ICL research team on the positive and negative impacts of tree species on PH (NCD) ... Mid-June - the end of August 2021	S
10	Submission of the Final consultation document (remarks to PDR – Plan of Detailed Regulations) ...22nd July 2020	S

<sup>14</sup> EnPlus (on behalf of the euPOLIS team) (In Serbian: Privedbe na nacrt Plana detaljne regulacije za Linijski park – Beograd, Gradske opštine Stari grad i Palilula, In English: Remarks to the raft PDR, "Plan of Detailed Regulation for the Linear Park - Belgrade, City municipalities: Palilula and Stari Grad"

11	Preparation for the interactions in the next phase of the Planning with young architects for addressing the euPOLIS team's concerns and problems relating to the Linear Park concept (co-planning) ... July – August 2021	S
12	Post submission consultations with the Institute of Urban Planning on possible "Spatial and Temporal Extrapolation" of the euPOLIS innovative planning technology to the GUP (General Urban Plan) long-term strategic document (next 20 years) ... August 2021	C

**Ušće Park in New Belgrade** is located at the waterfronts of Sava and Danube, and has the total are of approximately 91 ha, from the Hotel Jugoslavija to Branko's bridge on Sava. The Park (Figure 11) is specific for its location in the city central area, allowing for vistas towards the Belgrade fortress, the confluence of Sava and Danube, and the Large War Island (natural reserve in urban area).



Figure 11. City of Belgrade. Ušće Park area plan

In the vicinity housing and commercial functions are located: two business towers, a shopping centre "Ušće", the government building Governmental Palace Serbia, mixed-use blocks, Hotel Jugoslavia and the planned location of the future Philharmonic Hall. Also, the Museum of Contemporary art is located within the park.

Terrain morphology is mostly flat, excluding the river embankment, which is convenient for creating bicycle and pedestrian paths and other park facilities. Some of the issues/problems revealed by the euPOLIS team: the existing park mostly "crowded" along the riverbanks' pathways but the rest of the park ("the main body" area) is lacking in additional amenities to attract more visitors. Therefore, it is neither well maintained (grass is dry in July and August) nor well visited. Additional "poor quality" of the area (listed in the Table 3) are due to: its size, lack of orientation /signage, poor lighting, and security during the night. The existing conditions on the micro location of the demo site shows that the space is already used as a park, with existing running track, bicycle path and pedestrian path along the river embankment.

The demo site location is planned by the euPOLIS project to address the to include broad range of NBS listed in the caption of Figure 1 (section 2.1 of this report). The NBS Interventions will be "clustered" in two main items: pocket park hosting a group of NBS that will be regularly used by the visitors and Eco-edu HUB (shown in the Appendix 7.1) which will be used to educate visitors, support development of the eco business activation and to demonstrate the potentials of small scale NBS at the roof, façade and around the building (including a micro plant for demonstrating advantages of the Innovative waste water treatment technology (to be furnished by Biopolus, euPOLIS partner), and recycling the treated effluent for irrigation of green

spaces. The existing trees and greenery are not distributed in an adequate manner and in relation to existing amenities.

Existing groups of trees in this location will be conserved and used, with additional planting in accordance with the principles of the euPOLIS project.

Table 3. Belgrade – Usce demo site’s list of relevant issues and resources

№	Belgrade demo-site Usce. List of relevant issues and resources	Site or City specific
1	There are currently no permanent structures on the site. There are temporary structures, mainly for kids' entertainment, all in a very poor condition, in the big need for improvement and "face-lifting".	S
2	This park section has a pedestrian walkway on the river quay, which overlaps with the cycling path, and is used by wheelchairs and strollers, which causes multiple user conflicts. Park area is not so well equipped with pedestrian paths, but people rather walk freely.	S
3	The City applies regular maintenance throughout the Usce park area, however the quality can be improved. For example, large portions of grassed areas are not irrigated in summer, thus discouraging visitors to visit that part of the park	S/C
4	The places on the site are not planned as multifunctional. There are designated areas for recreation (walking, running, cycling), some children playgrounds, free climbing artificial rock, two small street basketball courts, small outdoor gym, small water features etc.	S
5	The safety in the area mostly good during the day (i.e., high visibility, good maintenance, accessibility), however at night-time it can be improved: there are parts of the site that are not illuminated sufficiently. There are safety cameras on the site, however they do not cover the entire area.	S
6	There is a presence of the UHI effect due to the wrong Albedo effect and materialization of streets and some walkways. Summertime temperatures are higher in the area up to 1 to 2 h after sunset.	S/C
7	The site is quite green; however, it is populated with non-functional greenery (not planned for wind protection, shading, not considering effects of biogenic VOCs on PH & WB, etc.). There are trees on the site, however they do not cover large areas, and do not offer benefits planned to be achieved through objectives of the euPOLIS project. Big number of trees are not regularly "trimmed" and there is a real danger that visitors can be wounded by the falling big branches from the canopy.	S
8	Apart from a few zones, the shading is not adequate during the summer months. Shading is considered insufficient for the users’ wellbeing.	S
9	There are no natural or engineered facilities for protection from winter winds.	S
10	There is no study on the extent of biodiversity in the area.	C
11	There is a source of air pollution and noise coming from the traffic on the large boulevard passing on one side of the site.	S/C



12	There are no public toilets and the number of benches and other resting places is insufficient	S
13	There are currently no wastewater and site water management advanced solutions applied at this demo site. Wastewater from this and surrounding areas is discharged via city sewerage system directly to the Danube and Sava rivers. This poses significant threat to the visitors, especially this who try to establish direct contact. There are no surface (runoff) water management features on the site.	S
14	The area has issues with faecal waste from pets. This type of waste is owner's responsibility; however, most ignore this regulation as it is not enforced.	S
15	Presently, urban agriculture is not developed on this location and in Belgrade in general.	S
16	Many Park visitors do not live in the area which might be the cause why they do not have a sense of place attachment, and behave irresponsibly toward park amenities (destroy, litter, etc.).	S
17	There is no organized information & communication technology system on the site. even the basic info posters are missing.	S
18	The interaction between the City authority and citizens is only formal at present. There is no participatory planning in place.	S
19	There are currently no established PPP models to involve the private sector in NBS implementation across the city, neither good local business models facilitating the use of NBS. On the contrary, private initiative is seen as a threat	S/C
20	Despite being located at the riverbanks, (confluence of) big rivers Sava and Danube, there is no quality contact of visitors with the river water bodies except in short reaches	S
21	There are a lot of restaurants and night clubs on floating pontoons along the walking promenades which do not take care of cleaning floating debris, thus creating aesthetically unpleasant environment. Night club's visitors do not notice it (it is dark), ordinary walkers are displeased	S

Information obtained through the Workshops, site inspections, video and performed baseline status (D3.2) revealed the list of relevant issues and resources listed in the table 3.

### 3.2.2 FR City Gladsaxe – Pileparken

The initial connection with Stakeholders was established during the first meeting of the City of Gladsaxe that was held on 18<sup>th</sup> November 2020. Several other meetings followed in 2021.

The chosen site in Gladsaxe has different conditions as a result to city strategies, a local development project and the character of the housing at the site, predefining a framework for the euPOLIS Urban Planning Methodology.

The project is based on interdisciplinary cooperation involving local Municipality, Utility, architects, engineers, scientists, residents, and operating staff to achieve green recreational solutions to obtain local management of water exclusively based on evaporation.



As illustrated in figure 12, the Gladsaxe site includes Pileparken 6, built in 1969 and renovated in 2010. A social housing estate built by means of public funding. In return, the municipality can dispose over every third vacant home for housing purposes. Pileparken 6, a housing association, contains 4 apartment blocks, 117 apartments, 1700 inhabitants, and 16 500 m<sup>2</sup> of property.



Figure 12. City of Gladsaxe. Existing view of the Pileparken

euPOLIS will combine the green potential and expertise from the technical water treatment project to develop NBS solutions for urban revitalization. Some specific conditions which are related to the training/capacity building needs in Pileparken are listed in table 4.

Although the main problems have been identified and listed here in the relevant tables, it is still too early to decide on what interventions will be applied at all, which of them will be funded by euPOLIS and which one will remain to be funded by cities. This is part of the co-planning work for design development to be done in WP6 at the later stage.

Table 4. Gladsaxe – Pileparken demo site’s list of relevant issues and resources

Nº	Gladsaxe – Pileparken demo-site. List of relevant issues and resources	Site or City specific
1	Pileparken has three major problems: 1. green areas have a very low biodiversity, 2. green areas do not inspire residents to use it 3. Residents do not use the outer space.	S
2	Kids sport playgrounds are made on hard, non-permeable material.	S
3	The areas are not planned to serve as multifunctional. There are not many areas on site that can serve as places for outdoor physical activity.	S
4	The area of the site does not have cycling lanes.	S
5	The safety of the area is good during the day, but it is compromised during the night-time due to poor lighting.	S
6	There are no enclosed areas for pets on the site.	S

7	There are no plans for additional construction as the area is fully developed. However, there is a recreative potential (not adequately utilized) of green corridors close to the site.	C
8	Lack of unique spatial elements	S
9	The area is probably not affected by the UHI effect, although it has not previously been investigated. However, as climate changes are expected to affect the area, new planning will require resilience to climate change from all new interventions and NBSs.	S/C
10	There is no adequate NBS shading for buildings or pedestrians present on the site.	S
11	The biodiversity enhancement activities have started but are not yet sufficient. At this stage there is no comprehensive monitoring of the biodiversity on the project site.	S/C
12	There are increased risks of animal collision if e.g., amphibians coming from neighbouring area cross the road to colonise the new NBS in the project sites.	S/C
13	The plants present on the site are mostly ornamental plants. Only a few of them are local plant species. The overall biodiversity present in Pileparken is poor, and the area is professionally managed, thus not allowing wild plants to colonise and attract more insects.	S
14	The renewable energy is presently not used on the site.	S
15	Gladsaxe Municipality is at present working on a fully updated status on achieving the set recycling targets within the different categories of solid waste, that is sorted and collected in the municipality.	C
16	There is no urban gardening with food production in Gladsaxe. The Municipality has established five demonstration gardens in the neighbourhood of this residential district.	S
17	The area is characterized by a lack of socializing activities – with introvert families, and there is a lot of segregated living.	S
18	Residents are showing low willingness to participate in different social activities.	S
19	When families have children, they typical move out very fast.	S
20	The placement of the trees does not really invite the people to use the area for leisure, besides the playground for children. The interactions between human and nature are not existing besides the aesthetics. The "social innovator" has already been introduced at the demo site	S
21	There are no information & communication systems presently developed on the site.	S

Together with the Danish supporting partners, GLM provided the strategy to be used by the municipality for citizen engagement. This strategy will help identify possible synergies with the euPOLIS approach. Additionally, as a cross-fertilization action the potential contribution of the euPOLIS project will be proposed to this strategic planning document in its future update.

### 3.2.3 FR City Łódź – Pasaz Anny Rynkowskiej

The first meeting with Stakeholders was held on November 20th, 2020 and was run in Polish language with 2 presentations by foreign speakers presented in English. The joint Workshop for WP2 and WP6 was held in two parts. The 1st part 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 Łódź located at 111/113 Wólczańska Street. The second part of the workshop took place directly on the demo-site. Full report can be found in Annex 7.2.

Selected demo-site, shown in figure 13, is a group of downtown urban blocks and is a part of the W3B city unit (areas for transforming historic structure). It includes different functions: residential, sport and recreation areas, (open air food and drinks serving area), grounds for public greenery, transport and technical infrastructure.



Figure 13. City of Łódź. Pasaz Anny Rynkowskiej demo-site.

The existing state of the neighbourhood is the following. Near the area under development there are mostly dense tenement buildings and more extensively developed post-industrial (former factories) areas. In the immediate proximity there are residential areas (often in poor condition), an extensively developed fire station area and a municipal kindergarten. In the current local zoning plan, the neighbouring properties are envisaged as residential, service or residential-service use (symbol MW/U), except for the area at Kosciuszki Street, where the function of educational services is envisaged.

The demo site is a pedestrian/bicycle connector, (not passable for cars) between three main streets of the city centre. There is an outdoor gym (established in the place exposed to the Sun in the sunny place so it can be uncomfortable during the summer months), playground and a few benches. There is also an unattractive, asphalted space in the square (probably the old playground) currently unused. Shading is provided in several places by surrounding buildings and existing trees.

Main users of the public spaces are local inhabitants who take their dogs for a walk or pedestrians who want to take a short-cut through passage and the users of outdoor gym are also common visitors. There is a number of social problems occurring in the walkway area. To complement the information collected from the residents of the walkway area, City of Łódź also decided to use information activities (posting information materials in the area of the square and in adjacent places) and consultations with the residents to discuss current social problems that affect the area of future revitalization.

Currently, purchasers of apartments in the apartment building on Gdańska Street and the developer himself are in a dispute with the city over the playground, which has been there for a long time. They are demanding that the children's equipment be moved because of its direct proximity to the apartment building (which was built contrary to the development plan). Residents also raise the issue of problematic users of the



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

playground (parents who meet there in larger groups and consume alcohol and then leave trash and bottles on the site.

From additional conversations with residents as well as from direct observation of the area City of Lodz have established that the area of the square is a meeting place for people drinking alcohol, who occupy not only the playground but also the rows of benches located on both parts of the walkway.

The residents and users of the area complain about the problem of safety, especially in the evening hours or after sunset in autumn and winter. Confirmation for these observations are the feelings of female employees of a nearby kindergarten who, finishing work in the afternoon, leave the building together to walk in a group to the cars parked in the parking lot fearing for their physical safety.

Residents indicate that the square is crossed by Caritas beneficiaries who, in addition to consuming alcohol and other psychoactive substances, behave in a loud and sometimes aggressive manner. Moreover, people in crisis of homelessness after leaving the Caritas Point change clothes in the green area and often leave old things there.

The residents and visitors of the passage have a similar, unfavourable opinion about the frequenters of a nearby club, who end their entertainment in the late hours of the night and in the morning and disturb the peace.

In conclusion, it should be noted that the investment area is largely off-limits for people who would like to regenerate in this place. Potential users as well as residents manifest concern for their physical safety as they are exposed to accosting and antisocial behaviour by alcohol and other substance abusers.

Table 5 collects relevant issues and resources of the demo-site in Lodz.

Table 5. Lodz demo site's list of relevant issues and resources

Nº	Lodz demo site. List of relevant issues and resources	Site or City specific
1	Site is surrounded by large, bare, not aesthetically pleasing concrete walls.	S
2	There are no multifunctional areas; the planning process is driven by a single-target approach.	S/C
3	Pedestrian transport is compromised as there is a lack of pedestrian crosswalks to surrounding areas, and the pavement is uneven. There is also a lack of cycling paths close to the site, however, there is a small bike stand.	S
4	The area is not covered by security cameras.	S
5	Accessibility to people with wheelchairs and parents with strollers is not sufficient.	S
6	There are no BGS hot spots that have been identified with clear protection / management targets towards climate adaptation, sustaining ecosystem services and biodiversity protection.	S/C
7	There are no NBSs focused on rainwater retention on the demo site.	S/C

8	The site is exposed to an indirect UHI effect from the surrounding densely urbanized neighbourhood and direct UHI effect from the buildings and surface materials in the immediate vicinity (on the site).	S/C
9	The summer shading is not systematically distributed by adequate planning of greenery – there is considerable space for improvements of the direct shading for visitors and reductions in building radiation.	S
10	The site is exposed to dominant winter winds.	S
11	There are no recycling activities on the site.	S
12	Urban agriculture does not exist on the site. There is a serious potential for it.	S
13	There are no public toilets on the site	S
14	There is a small, poorly equipped outdoor gym on the site.	S
15	The categories of visitors are limited – they are mostly people who walk their dogs in the park, use the small outdoor gym, and are accompanying children to the playground.	S/C
16	Problematic users of the playground (parents who meet there in larger groups and consume alcohol and then leave trash and bottles on the site)	S
17	Area of the square is a meeting place for people drinking alcohol, who occupy not only the playground but also the rows of benches located on both parts of the walkway.	S
18	Safety issues - site avoided by potential visitors due to the safety endangered by drinking people	S

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.

#### **3.2.4 FR City Piraeus – Mikrolimano, Akti Dilaveri and Ralleion**

Several workshops have been held in Piraeus. An example is the Workshop held on 23rd April 2021 at the municipality of Piraeus in which the euPOLIS's initial options for NBS applications in all 3 micro locations (Mikrolimano, Akti Dilaveri and Ralleio) have been considered together with the relevant Issues/options and resources have been analysed. Several other face-to-face meetings have been scheduled in Piraeus in cooperation with NTUA and supporting partners, and new smaller teams' workshops will be organized. The material is available via the Municipality website<sup>15</sup> under the euPOLIS tab.

<sup>15</sup> <https://piraeus.gov.gr/>





Figure 14. City of Piraeus. Three demo-site areas (1. Mikrolimano, 2. Akti Dilaveri and 3. Ralleion School)

As illustrated in figure 14, demo-sites of Piraeus are constituted of three areas in close proximity to one another and directly connected to the Mikrolimano area Ralleion Complex Pilot School (RCPS) and Riverine inland area in Akti Dilaveri.

The Municipality of Piraeus, supported by euPOLIS team, has accepted the concept of euPOLIS Innovative urban planning and the Idea of creating a new promenade in Akti Dilaveri of high aesthetic, environmental and tourist/commercial value by merging it to the existing (upgraded) promenade in Mikrolimano with links to Ralleion Complex Pilot School. Multiple measures to clean up the bottom sediment and to maintain high water quality in the canal by improved surface runoff water through NBS such as rain gardens (biofilters) combined with the green harbour interventions.

Piraeus also plans to develop a park and pathway parallel in front of the Ralleion Complex Pilot School (RCPS) on Tzavella & Alexandrou Street using appropriate planting, cool pathway construction works and solar panel lighting, similar to those specified for the Mikrolimano project to improve the microclimate and mitigate air pollution. Currently, the plants offer limited opportunities for people – plant interactions are limited and used as a buffer zone, the hard landscape constitutes mainly of concrete paving slabs contributing to the urban heat island effect and surface runoff. The goal is to develop accessible MF roof and potentially a vertical farming wall at the library of RCPS. The school's library roof and facade will provide such opportunities and could raise pupils' awareness to NBS. A permanent euPOLIS eco-edu hub is planned to be based on this site. Details will be developed within the WP6. Relevant issues for Piraeus DSs are shown in tables 6 and 7.

The euPOLIS concept of Innovative planning will be used for the conceptual design of the improvement (upgrade - face-lifting) of the park on the other side of the canal. Construction of the NBS In the park will depend of provision of additional funding through the Municipality of Piraeus.

Table 6. Piraeus. Mikrolimano and Akti Dilaveri demo site's list of relevant issues and resources

№	Piraeus Mikrolimano and Akti Dilaveri demo site. List of relevant issues and resources	Site or City specific
1	The merging and consolidation of Mikrolimano and Akti Dilaveri areas, will create a continuous coastal front. This "added value" is supposed to be one of the major tourist attractions in Piraeus	S/C
2	The renovation of the west part of Akti Dilaveri Channel is in the design phase. However there is a danger that it could be done in "conventional fashion", without taking into account euPOLIS innovative planning paradigm	S/C
3	Lack of green spaces and recreation areas (e.g., parks, meeting places, etc.) along the "urbanised" bank of the canal. There is a lot of green area on the other side of the canal (Piece and Freedom park) which is in big need for upgrade	S/C
4	Ruined sidewalks. Several paving slabs are broken. Tree roots have broken paving slabs.	S/C
5	There is not any pedestrian, jogging and bicycle paths along the canal. Although, there are sidewalks, some of those are not accessible to people with mobility problems.	S
6	Lack of lighting of public areas	S
7	Non-utilization of inactive public spaces and buildings	S
8	Different layers of construction have created unattractive walls that could potentially be reconstructed in view or in usage	S
9	Lack of parking spaces	S
10	Irrigation system tampering and theft in some locations also contribute to planting maintenance problems.	S
11	Recycling treated greywater water for irrigation system to be considered	S/C
12	Present shading is considered insufficient for users.	S
13	There is presence of Heat Island effect	C
14	Tree pits are small, and the surrounding impervious paving creates problems for tree longevity.	S
15	There are no facilities for protection from winter winds	S
16	Water pollution issue in the inland canal along Akti Dilaveri	S
17	Air pollution	S
18	Noise pollution	S
19	Heavy traffic in the area, which is attractive to be pedestrianised	S
20	Lack of cleanliness	S
21	Citizens consider that should be further highlights the history and cultural heritage of Pireaus	S/C



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

22	There is no collaboration of any kind between local neighbourhood and existing restaurants and other businesses	S/C
23	The existing 3 areas (Mikrolimano, Akti Dilaveri and Ralleion school) are disjointed	S

Table 7. Piraeus Ralleion Complex School demo site's list of relevant issues and resources

No	Piraeus Ralleion School Complex demo site. List of relevant issues and resources	Site or City specific
1	Lack of green spaces and recreation areas (parks, meeting places, etc.)	S
2	Ruined sidewalks. Several paving slabs are broken. Tree roots have broken paving slabs.	S
3	Street furniture adjacent to school in poor condition	S
4	There are no pedestrian, jogging and bicycle paths. Although, there are sidewalks, some of those are not accessible to people with mobility problems.	S
5	Lack of lighting of public areas	S
6	Lack of parking spaces	S
7	Interaction between spaces with plants and children and environmental awareness	S
8	Shading is limited in the morning hours near the entrance at the Ralleion School complex. In the remaining surrounding green spaces, no shading is provided.	S
9	There is a strong presence of Heat Island effect	S/C
10	Tree pits are small, and the surrounding impervious paving creates problems for tree longevity.	S
11	There are no predictions of weather extremes and / or other phenomena caused by the climate change.	C
12	Ralleion School Complex is built near a major avenue so there is lots of traffic, noise, and air pollution due to the dense built environment	S
13	The school complex has toilets only for its users. There are no other public toilets. All toilets are conventional with water flushing.	S
14	The site would benefit from developing into an exemplary eco-edu HUB, but careful consultations with the existing users should be pursued	S/C



### 3.3 FL Cities CS preliminary information on specific conditions

#### 3.3.1 FL City of Bogota' – El Reencuentro Case Study

El Reencuentro is an area that has an important value for the city of Bogotá, it contains large public spaces and city-scale facilities, as shown in figure 15, such as: Central Cemetery, El Renacimiento Park, District Administrative Centre, City Council etc. It is located on an axis that has an important historic and symbolic value that connects the project to other facilities such as the National University and the International Airport El Dorado.



Figure 15. City of Bogota'. El Reencuentro case study

For the euPOLIS project case study, a smaller area was defined (52.6ha). In this area two Master Plans are in place, one is ongoing (24th Street) and the other is an existing one (26th Street). The existing plan defines a central of public transportation connections.

The euPOLIS methodology will be used as an integral part of the participatory process of “Juntos Construimos” or Building Together, a new co-design strategy led by the ERU to promote co-creation process in the planning scheme of the city.

Based on the ERU's (Empresa de Renovación y Desarrollo Urbano de Bogotá<sup>16</sup>) experience 20 relevant stakeholders have been defined. All of them are relevant in the case study zone, a few of them are mentioned here: euPOLIS partners, Universities, Patrimonial and Cultural authorities, citizen's representatives, and specifically vulnerable population representatives. In Bogotá, a local team is planning to obtain the information about issues, concerns, and resources through the euPOLIS Questionnaires (Q1, Q2) classifying and splitting them into three questionnaires to be answered by each group of stakeholders: ERU as planning authority, UNIANDES as a technical advisor and the group of institutional Stakeholders (Subway Authorities). Finally, Q3 was distributed to the citizens in May 2021. More information about the specific issues and concerns will be obtained during the first meeting with stakeholders (date to be defined).

<sup>16</sup> <http://www.eru.gov.co>

### 3.3.2 FL City Limassol – Public Garden Case Study

Limassol Municipality's methodologies of data & information gathering vary according to each scenario.



*Figure 16. City of Limassol. Public Garden Case Study*

The Public Garden of Limassol (Figure 16) is located in the city centre (Limassol is located in the southern coast of the island), right in the heart of the city and at the coastal front of Limassol's touristic area. Its location gives the opportunity of being visited not only by the local people but also by tourists, as it is very accessible, near to many accommodation services and in walking distance from the famous Limassol's embankment and the pedestrian street.

Limassol Municipality aims to create a green area for the public (locals and tourists) to use it during leisure and exercising time, introducing green paths for motivating the public to walk. The vision is to succeed a transformation of the existing Limassol's public garden to a garden with all kinds of Cypriot and generally Mediterranean shrubs and herbs, with trees along the way and benches for people to rest after their walk, exercise or even to enjoy their afternoon coffee.

Future plans of the Limassol Municipality include the enhancement of public health and well-being by introducing the project of a new botanical garden along the green paths and by constructing small artificial islands with plants.

The public garden is a well-known popular sightseeing place due to the existence of the house of the "Garden's Theatre" which hosts various performances and concerts especially during the summertime and for the occasionally special events, festivals (like charity events), and the Cypriot annual wine festival. It is also houses the Limassol Zoo, which gives an added value to the garden concept and makes the area an ideal family spot. Currently there is a playground inside the garden, some old exhibition buildings with references to historical activities, some paths for walking along and some trees that provide small shading areas for the visitors.

Limassol Municipality is currently working on the definition of stakeholders' concerns, but some general information related to the Public Garden can be defined at this stage through the Municipal Engineer and public. As Cyprus is located further east of Europe, we have some climate issues that can raise some difficulties on maintaining the plants and the greenery that will be integrated in the public garden in general. This environmental issue may cause the lack of diversity regarding the plants. In Limassol

Municipality's action plan, we have included 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), as in Limassol rainfall is not that frequent, but this selection limits us in terms of variety.

In order to overcome the diversity of plants issue we have also included in our action plan the creation of a new botanical garden which will include Cypriot shrubs and herbs. Despite that the public garden is located in the city centre, due to the fact that Limassol residential area is considered scattered, some citizens may be located in a non-walking distance from the garden area and unfortunately even though there is an existing infrastructure for public transport, there is a lack of its use. Apart from the busses as transportation mean (there are bus stops in walking distance from the Public Garden), citizens may also use their private cars/transport means for visiting the garden, which will consequently lead to the lack of free parking spaces. This means that part of the public garden must be used just for the parking.

### 3.3.3 FL City of Palermo – Villa Turrisi Park

The urban centre of the city of Palermo, shown in figure 17, is located on a plain, known as the "Conca D'oro" (gold basin). Once a beautiful green area<sup>17</sup>, rich in citrus trees, today it is a densely built urban environment. However, several green discontinuous areas remain, but they are not all preserved and protected. Precisely, the historic agricultural estate of Villa Turrisi is among those for which a protection action has not taken place yet.



Figure 17. City of Palermo. Villa Turrisi Case Study.

Since 2011, the area has been one of the sites identified by the Municipality of Palermo with the aim of increasing green infrastructure. According to the new master plan, it will be one of the new urban parks. The area was also involved in an international design competition, launched in October 2017, to transform unused railways into green way cycle lanes. An important axis of soft mobility (passing through Villa Turrisi Park) could be designed in addition to the city's cycle paths network, involving plenty green areas of the city. The feasibility project is currently ongoing. This area has an important hydrological historic (heritage) background. Baron Nicolò Turrisi (1817-1889), an important politician and once owner of the

<sup>17</sup> Chirco, Adriana (2006) Palermo la città ritrovata – itinerari fuori le mura, Dario Flaccovio Editore





lands, was a brilliant agronomist and did part of his experiments in his estate<sup>18</sup>. The estate had an articulated land irrigation system based on an underground drainage duct, approximately 1.5km long, which may still exist and in this case deserves protection as a historic work of hydraulic engineering. Two streams of considerable importance flow in Villa Turrisi Park. The Passo di Rigano canal and the Borsellino stream. They are currently completely canalized (converted to sewer turn) and covered. Re-naturalization of covered waterways will be eco-designed with contribution of the euPOLIS project's planning methodology.

Historical complex<sup>19</sup> was gradually eroded by unauthorized and incompatible activities which have changed the quality of soil, landscape and biodiversity.

The implementation of the Villa Turrisi Park is therefore based on four specific strengths: presence of identity characters, clear historic evidence, valuable historic green, lots of stakeholders and an active local community.

Municipality experts are focusing on four interconnected areas:

1. Environmental requalification and prevention / control of environmental risks.
2. Public guided use of the site.
3. Private guided use of the site (pacts and green contracts).
4. Public and private areas for leisure time and experimentation (urban gardens, shared green spaces, sport areas, ...)

Since 2011, numerous associations united in the "Parco Villa Turrisi" Association have asked the Municipality of Palermo to protect this important testimony of agricultural biodiversity and to create a park with different levels of protection and accessibility. The Municipality of Palermo requested the Superintendence of Cultural Heritage to protect the area with an unchangeable obligation, before approving the Landscape Plan for the Palermo Area. In this Plan the area has been included with a significant level of protection.

### **3.3.4 FL City of Trebinje – Otok**

The case study, called "Otok" (meaning Island in English) is located on the left bank of Trebišnjica river (known as the biggest sinking river in Europe) illustrated in figure 18.

Since the initial planning of this area was done by conventional methodology, in which there is significant room for enhancement of the environmental/eco value, Trebinje will implement advanced planning technologies that will be available through euPOLIS in this case study, which it will lead to improvement of citizens' health and well-being. Of particular importance is the impact of NBSs on shading and evaporative cooling in the prevailing hot summer months. This site is planned to be a core location for karst-related specific/adventure tourism linked to Trebišnjica<sup>20</sup>, the biggest sinking river in Europe. The experience gained in the euPOLIS project on specific aspects of Innovative planning, customised to the development of the karst region, and specific NBS/BGS will be used in cities with similar geomorphological features. Scaling up will include other cities with similar ambitions to develop new lifestyles and a specific form of tourism based on the advantages created by karstic formation features. As seen in the wider urban area, the boundaries

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<sup>18</sup> Brucoli, G., (2007) Una tutela attiva per il patrimonio identitario locale, in M. Leone (a cura di) "Nuovi Paesaggi urbani per la campagna di Palermo, Roma, Aracne

<sup>19</sup> Marino, G., Termotto, R. (a cura di), (2013) Conoscere il territorio Arte e Storia delle Madonie. Studi in memoria di Nico Marino, Vol. I, Associazione culturale "Nico Marino", Cefalù (Pa)

<sup>20</sup> Vukojevic, D., (2011) Geomorphological specific features of Trebinje as tourist attraction, Journal of the Geographical Institute Jovan Cvijic

of the case study are formed by live urban streams of exceptional beauty and could, if properly planned, have big ecological value. On the north boundary is the river of Trebisnjica, on the east, west and south the area of Otok is surrounded by the urban canal. Blessed with sufficient water (which is a scarce resource in the karstic region) and with a lots of sun during all 4 seasons, this place has a great potential for sustainable development of specific forms urban life.



*Figure 18. City of Trebinje. Otok Case Study. View from the river*

The area covered by the CS is approximately 15,5 ha. The main road divides this area into two parts: 5,5 ha and 10 ha. On the smaller part, the construction of sports and the recreation centre is planned, and on the larger part housing and hospitality facilities, hotels, etc.

The city has started with the construction of bicycle and pedestrian paths along the river canal. A row of plain trees has been planted along the landscaped canal, which will provide natural shade in the future. It is planned to build public lighting through solar panels. The euPOLIS planning methodology will be practiced in renewal of the spatial and urban plans for the site.

This area has high potential and good natural resources for tourism development, for constructions of sports and recreation centre and, in general, it is a good residential area. The location is easily accessible in relation to the city centre. In recent years, the expansion of construction has played a significant role in changing the urban matrix of the city of Trebinje. It is noticeable that in the near future green spaces that are part of the cultural heritage will fall into the background. Therefore, it is necessary to create new green spaces in order to maintain a balance between the built space and the natural environment. Existing city park has become small in relation to the city scale, and it cannot offer recreation and socialising facilities for all generations. Citizens need a place that is easily accessible and where they can stay longer and be in contact with nature. Creating a green space with recreational facilities based on sustainable development can contribute to a better quality of life for citizens.

In those respects, there are several new initiatives inspired by the initial euPOLIS's "enlightening". The examples include: re-examining the concept of the Sun City project (already Initiated), innovative concept of WWTP at the Varina Gruda suburban settlement, which includes recycling of treated effluent for vineyard Irrigation and several similar Initiatives.

### **3.3.5 FL City Fengxi New City – National Pilot Sponge City**

Fengxi New City is located in the Shaanxi province of China, close to the historic city of Xian. It is a part of the National new area, National pilot sponge city<sup>21</sup> and represents the UN demonstration pilot project of

<sup>21</sup> Haifeng Jia, Zheng Wang, Xiaoyue Zhen, Shaw L.Yu, (2017) Opportunity and Challenge, China's Sponge City Plan, Sponge Cities Special Issue, August 2017 Available from: [https://www.researchgate.net/publication/311887922\\_Opportunity\\_And\\_Challenge-China%27s\\_Sponge\\_City\\_Plan](https://www.researchgate.net/publication/311887922_Opportunity_And_Challenge-China%27s_Sponge_City_Plan)

ecological hydrology. Since 2011, Fengxi New City, shown in the figure 20, has introduced the idea of regional rainwater management into its city planning, and actively carried out research. The project developed and put in practice a low impact rainwater management system, known as the "Sponge city program".



*Figure 19. Fengxi New City Case Study. Project visualisation*

In April 2015, Fengxi New City has been selected as one of the first batch of pilot sponge cities by the Chinese government. Also, in July 2019, it was authorized for the global ecological demonstration pilot project of hydrology by the United Nations educational, scientific and cultural organization (UNESCO). The development of green energy is another successful of Fengxi New City. Here, the city uses deep geothermal energy to replace coal or natural gas for heating in winter, which is very environmental, green, and sustainable. Now the city has compiled some standards and technical guides for the development of deep geothermal energy. Fengxi New City, is working to toward building an integrated energy system, to build a lower-carbon, more ecological, sustainable, and healthy city.

Currently, Fengxi New City promotes<sup>22</sup> the concept of sponge city throughout the entire city, and it has finished a lot of successful projects, including sponge neighbourhoods, roads, parks and other public service projects. Urban drainage and water-logging prevention capacity has been significantly improved, and the quality of the water environment has continued to improve.

Most of the Fengxi New City was built recently, implementing NBSs BGSs mainly inspired by Chinese concept of sponge cities<sup>23</sup>. There is an area (red polygon) which has yet to be planned and developed. euPOLIS team will aim to use its innovative planning system, to stretch beyond the sponge city concept. It will work to include designs to bring together what has already been achieved through the Sponge City program with new concepts such as the harvested storm water (resource recycling), grey water and possibly wastewater recycling, renewable energy, and urban farming. The concept can be replicated at other locations in Fengxi and at other cities in China. This case study area will be used to help train local planners.

Fengxi New City faces many problems, such as how to avoid the impact of urban integration, inefficient use of land resources, low-quality urban construction, low-level industry similarity, and continuous deterioration of ecological environment. Among them, the urban "water" problem is particularly prominent, including a series of water security, water ecology, water environment problems, such as drought and less rain, concentrated seasonal rainfall, ecological sensitivity, coexistence of water shortage

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<sup>22</sup> World Future Council Website: <https://www.worldfuturecouncil.org/sponge-cities-what-is-it-all-about/>

<sup>23</sup> Maksimovic, C., Boskovic, S., Yiwen, C., Yu, J., (2018) Integration of Sponge City concept into Blue Green Solutions (BGS) system" in International Sponge Cities conference. X. 2018, pp. 81-99





## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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of resource type and water quality types, the low level of urban development of collapsible loess and new areas, urban waterlogging, groundwater over-extraction, river system pollution and so on.

Despite this, Fengxi New City has a superior geographical location. Historically, the first city "Feng and Hao", was an important transportation hub in northern China with convenient transportation. It is the only central hub node with "meter" shaped distribution of aviation, railway, high-speed railway and expressway in China. There are many historical and cultural relics, good natural endowment, numerous universities, talents, scientific and educational resources, and abundant groundwater and geothermal resources, which can be developed and utilized. Concerns and issues of the FL cities, although not based on the new NBS implementation, have been re-examined so that any new findings are incorporated into the final recommendations of this D2.3 document.

The experience on the NBS impacts on PH and WB gained in FR Cities will be used in shaping the training needed for the FL Cities.



## 4 Stakeholders Education Guidelines

### 4.1 The Mission, Principles and the Contents of the Education Guidelines

#### 4.1.1 The Mission

The basic topics and principles of the EU regional and urban development are defined in the document Urban development<sup>24</sup> which stipulates the following concerns and priorities:

- a. Cities are seen both as the source of and solution to today's economic, environmental, and social challenges. Europe's urban areas are home to over two-thirds of the EU's population, they account for about 80 % of energy use and generate up to 85 % of Europe's GDP. These urban areas are the engines of the European economy and act as catalysts for creativity and innovation throughout the Union. But they are also places, where persistent problems, such as unemployment, segregation, and poverty, are at their most severe.
- b. The urban dimension of Cohesion Policy will be strengthened, with 6% of the European Regional Development Fund dedicated to sustainable urban development strategies. There is also a new European Urban Initiative to support cities to innovate, access knowledge and understand policy, and support networking and capacity building.
- c. The various dimensions of urban life – environmental, economic, social, and cultural – are interwoven. Success in urban development can only be achieved through an integrated approach. Measures concerning physical urban renewal must be combined with those promoting education, economic development, social inclusion, and environmental protection. It also calls for strong partnerships between local citizens, civil society, industry, and various levels of government.

The basic principles of participatory planning are introduced in the D2.1 as follows:

**Participatory planning** is based on a set of democratic activities and citizens' engagement methods in the decision-making processes. It aims to identify peoples' needs and solve problems faced by the local community. It is based on the close partnership between the authorities, planners, and residents as well as other important local actors.

**Participatory planning** aims to engage citizens - individuals, families, informal groups, local communities, and civil society organizations. It is based on the open conversation between the authorities and the remaining stakeholders, that leads the joint decision making (as described in the section 2 of this report).

Participation can be:

- **Vertical** – like the relationship of local or central authorities with other stakeholders) including citizens/residents.
- **Horizontal** – based on the collaboration of various groups of people and institutions in achieving a common goal.

The education of stakeholders in the euPOLIS project, both vertical and horizontal participation, will be practiced. As the leaders of the planned interventions, cities' authorities will be practicing "vertical" collaboration by dealing with other stakeholders including citizens/residents in their own cities. However, in the euPOLIS project several internationally reputable partners (including technology delivery companies) are engaged to assist and support both cities and other partners throughout all countries with FR and FL

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<sup>24</sup> [https://ec.europa.eu/regional\\_policy/en/policy/themes/urban-development/](https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/)

cities. This constitutes horizontal participation/collaboration which will be utilized in participatory planning as well as in engaging the supporting partners and organizations in the decision-making and planning activities. The main aim of the education component is to raise the level of competence of partners and to build an active cooperation between partners as well as monitoring of the effect of NBS on their health and wellbeing. These principles customised to the local conditions and implemented in 4 FR cities and presented in this report.

#### 4.1.2 The Principles

**Principle 1: Seamless merging/synergy of the Innovative BGS/NBS based GDPM planning system with the existing one** as shown in figure 20. In euPOLIS project this seamless transition is performed from the existing planning methodology practiced so far, (mainly "sillo" based), though added value of Innovative BGS methodology brought in by euPOLIS demonstrated in the enhanced DS/CS. These enhanced DC/CS will serve as the exemplars for creation of permanent Eco-edu Hubs for training of future planners, in which the innovative planning technologies can be practiced and its benefits demonstrated in both FR's Demo sites and In FL's Case sites.

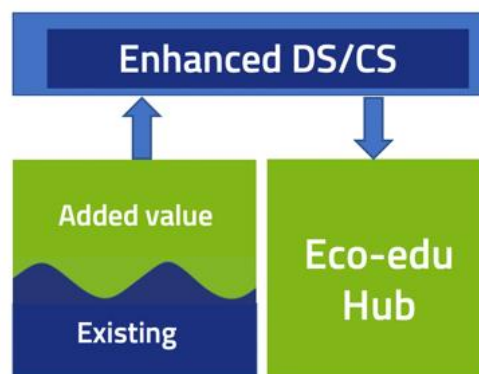


Figure 20. Merging of the Innovative BGS/NBS system with the existing planning system and creation of permanent Eco-edu Hub (for training in temporal extrapolation)

This emerging should be done in a step-by-step fashion so that all planning professionals may identify the added value that thus innovative methodology brings to the existing planning paradigm. Gradual Introduction of the Innovative planning system is practiced at the 4 FR and 5 FL cities and its mastering by all 13 groups of stakeholders (every group in its own capacity, shown in figure 21).

Stakeholders Groups	Curriculum
1. euPOLIS Partners	Introduction to BGS/NBS
2. City Planners	
3. Consultants and designers	Co-design participatory planning with GDPM
4. Contractors for NBSs in FR Cities	
5. NGOs to coordinate and support volunteers	DS and CS for learning by doing
6. Citizens from DS neighborhood	
7. Community organizations	Socio-economic-gender based planning
8. Local businesses	
9. Any other stakeholder not included above	GDPM's business development
10. Group 1 Volunteers	
11. Group 2 Volunteers	Scaling-up methodology
12. S'holders for the global dissemination of results	
13. Citizens	

Figure 21. Participatory Planning Education Guideline. Merging the innovative BGS based GDPM planning system with the existing methods

This will be achieved through the “training of trainers” method which will create a “healthy core” of the euPOLIS CoP (Community of Practices) for both training all local stakeholders’ groups and spreading/disseminating/scaling-up this unique “Communicable Practice” (CoP).

The above activities will result in consistent curricula for running target orientated training/education/capacity building for the successful participatory planning in each of these cities. Although they will be customized to local conditions, the curricula for each of the FR and FL cities will be based on the following building blocks of the training programs:

- **Unit 1** Introduction to BGS/NBS customized to local conditions (local status) and their impacts on shaping co-design process logistics.
- **Unit 2** Co-design process implemented in the city for the euPOLIS design based on the euPOLIS concept of site interventions.
- **Unit 3** Practical implementation of participatory planning methodology based on local DS and CS (learning by doing) which will be put in practice in the WP6, with emphasis on role of stakeholders participatory planning in the pre-planning process compliant with GDPM methodology.
- **Unit 4** Socio-economic-gender based collaborative planning process.
- **Unit 5** GDPM's business development
- **Unit 6** Development of the scaling-up methodology, identification of districts/cities for practicing euPOLIS scaling-up principles.

Implementation of this training methodology various combinations can be made with each of the above curriculum nits separately for each of the stakeholder groups or both can be combined/clustered.

## Principle 2: Spatial Extrapolation /Scaling-up

In order to make the above merging and development of the innovative paradigm happen, it is of crucial importance that the mastering of that innovative planning technology is based on sound/simple educational platform and tools for its implementation. The partners of the euPOLIS project have an access to complete set of methodology, educational framework, and implementation mechanisms. With the relevant inputs from the FR's DEs and with the appropriate involvement of all stakeholders, a complete "package" of educational systems will be created, implemented in DS and CS, and be ready for the replication in other cities, countries, continents. The extrapolation/scaling-up method is presented in figure 22. Using the lessons learned in the eco-edu hubs and the capacity level developed with the local (trainers), three major levels of spatial extrapolation/scaling-up are foreseen:

- In more districts/sites of the euPOLIS FR and FL cities.
- In the other cities of the same country.
- Cities in the other countries/continents.

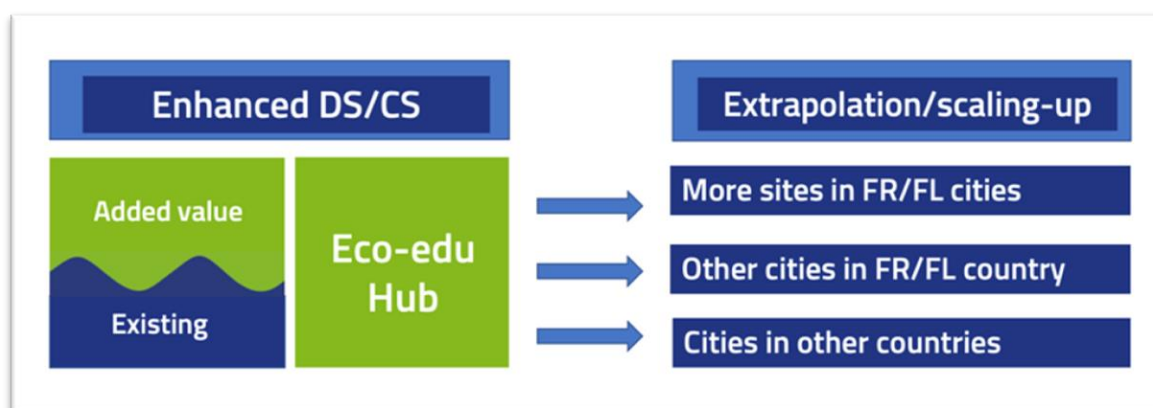


Figure 22. euPOLIS BGS/NBS planning methodology at work with two type of extrapolation of the planning system  
a. spatial extrapolation/scaling-up to other sites, cities and countries and  
b. temporal extrapolation: Eco-edu Hubs as permanent euPOLIS's legacy for demonstration and education/training

The above curricula customized with 4 FR and 5 FL cities have been further defined and implemented in the period March-August 2021. The initial examples and results of the activities carried out are presented in the main body of the text that follows and for FR cities in Lodz in Annex 7.2 and in FL cities in Palermo in Annex 7.5.

## Principle 3: Temporal Extrapolation

The program of the euPOLIS project is created so that it leaves permanent legacy in training next generation of planners and other professionals. The innovative urban planning methodology is created to last long after the project is completed (temporal extrapolations). One of the most important activity for reaching this ambitious objective is to establish a permanent unit which will continue to demonstrate the achievements of the project and provide training/education services to all types of future stakeholders in need of such services. We call them Eco-edu Hubs. They contain a living selection of BGS/NBS, host educational services and assist in developing eco businesses based on euPOLIS technologies and technology transfer expertise.

An example of the solution and contents of such a unit for the city of Belgrade is presented in Annex 7.1. In Piraeus, the future hub will be located at the Rellieo school, in Lodz it will be hosted by ERCE, PAS and in Gladsaxe the whole (small scale) site is the Hub itself.



According to the long-term strategy of implementation of innovative participatory planning and demonstration of its lasting values (legacy) in both FR and FL cities, eco-edu hubs will be available to both cities' institutions, researchers and businesses supporting euPOLIS programme and learning from its methodology.

In conclusion, euPOLIS's upscaling methodology will be applicable at several spatial and temporal levels as follows:

- a) **Upscaling on personal level.** euPOLIS training guidelines will enable this to be done by both professional planners and other stakeholders, through the self-learning methodology.
- b) **Upscaling on district level.** This can be done by the euPOLIS partners, trained top level professional planners who will use their mastering of euPOLIS NBS/BGS/GDPM planning methodology for dealing with the similar problems in their cities by engaging other local stakeholders in the same fashion applied in the early phase of planning for FR/FL cities.
- c) **Upscaling on city level.** Similar to the methodology applied in the item b), upscaling to the city level can be implemented by combining two different approaches: bottom-up participatory planning upscaled to the city level and (c2) top-down planning methodology similar to what is currently practiced, but enriched by euPOLIS analytical tools and participatory planning principles. The application of this methodology is particularly important in preparing strategic development plans for cities (urban areas) and their interactions with sub-urban, rural neighbourhoods. This will be a particularly valuable paradigm for prudent implementation in the forthcoming EU's Green-Deal Program in which euPOLIS's innovative/analytic/NBS BGS based/ climate resilient/sustainable/cost-efficient methodology can serve as a unique/bespoke lighthouse/beacon for systemic advanced planning philosophy. This would be euPOLIS project's permanent legacy.
- d) **Upscaling on country level.** Similar to the FR/FL city level where we have full scale DC/CS venues for the proof of concept and creation of the evidence base, the same methodology can be implemented at the whole country level.
- e) **Upscaling on global level.** The above euPOLIS' innovative planning methodology is probably one of the most suitable European products, a candidate for broader application at a global level of Green Deal advanced planning methodology, combined with the other similar ambitious programs, such as, for example, Chinese eco-civilization concept.

**Principle 4:** Eco-educational hubs in 4 FR cities will be located as follows:

**Extrapolation in time (temporal extrapolation)** by leaving behind Initial Infrastructure (Eco-edu hubs in each of the FR cities) which can continue euPOLIS mission and spread its innovative approach.

These hubs should be designed to meet several objectives to:

- a. "host" small scale examples of the NBS/BGS and the monitoring and data communication equipment both in the interior, on the roof, at the façade, around the building
- b. host euPOLIS's professional and research teams who will carry out the monitoring and scientific/professional art of the program and the relevant data base and educational/demonstration/promotion content
- c. receive visitors (both professional and public) for indoor and open-air gatherings, to carry out the relevant euPOLIS's mission program both during and after the project is finished





- d. serve as a permanent euPOLIS's legacy spot for continuing hosting and support to future euPOLIS compatible developments of urban environmental and planning innovations and euPOLIS' compatible business development both at the local and international level.

These principles have already been implemented in DS Usce in Belgrade and will be further developed in other euPOLIS cities as described below.

### **1. Belgrade: Purpose built euPOLIS multifunctional facility**

The multifunctional facility of the Belgrade FR DS is selected to demonstrate the impact/value of existing and additional euPOLIS developed BGS/NBSs. The location of Usce Park will be enhanced by a range of innovative BGS/NBSs currently not existing at the location. These include practically all facilities presented in figure 1. The advantage of this location is its close proximity to two big rivers, which have positive cooling impacts during hot summer days and also positive 'warming/slowing down cooling' impact during cold winter days. The other advantage is popularity of the site to the recreation/sport/cycling/walking visitors, which will be further enhanced by the implementation of new innovative BGS/NBS that will add value to basic functions (irrigation of the grass areas, of the existing lawns). These advantages will be used for the selection of the optimal location for the multifunctional edu-eco hub, explained above, and further enhanced with links to the exiting Museum of Contemporary Art which, will be motivated to develop joint eco-art functions with euPOLIS.

In the second location (Linear Park) potential impacts of the newly built BGS/NBS and their possible synergy with the Museum of Science and Education, located in the neighbourhood, for possible hosting of edu-eco activities will be examined. (Drawings of conceptual plan for eco-edu hub in Belgrade are shown in Annex 7.1).

### **2. Gladsaxe: DAMP Project Area**

Gladsaxe's supporting partners team are working on the plan of how to work with residents and most importantly, how to identify the groups of citizens that will be a part of the planning process. The DAMP project-building site is starting from this spring and will be used as an eye-catcher for citizens. It is possible to extend the education/training information on the existing DAMP-project website with the euPOLIS information and constant updates on what is going on. This will result in creation of a real and virtual platform for citizens' engagement in planning for possible additional BGS/NBS that will be planned for added value. The Danish site is different from others as it is on the private propriety and it has 117 residential units on the plot, of which hopefully half will participate.

The principal element of the communication strategy will be the implementation of a vegetable garden on a central spot in the settlement. The gardens will be the pivotal point of arrangement and training. It is the aim to make this place an attraction that make people step out of their apartments and into a common social space. It will be a space of learning about gardening, learning about the NBS planning at the site and a space of discussion about individual and common problems and needs.

As the vegetable grow up, so will the first phase of the local complementary water project be constructed, and the plan is to move the vegetable garden into the so-called 'evaporation square' in which all local NBSs (using the water evaporation) are clustered. The evaporation from the future "vegetable gardens" will support the management of local rainwater balance by evaporation. We work on the idea to let the vegetable garden being made together with the resident's moveable.

When the garden moves to the new facilities at the 'evaporation square' the garden will be able to move on to a new site in the neighbourhood and to host meetings with:



- Friends of the board and curious neighbours.
- General information in the neighbourhood.
- Garden experts.
- Urban ecological Centre.
- The Library of Møkhøj and later from April to June with Local healthcare.
- Health Promotion Centre.
- The Neighbourhood Mothers.

The list will be expanded when new target groups will be able to see their role in the project and as new groups are introduced by stakeholders within the coming four months. The initial experience gathered from other projects will be synergized for added value to be complemented by the "added value" of the euPOLIS group of BGS/NBS, planning methodology, construction, and monitoring program.

The site will continue to be active with similar program after the euPOLIS project is finished.

### **3. Lodz: ERCE UNESCO Chair in Ecohydrology and Applied Ecology**

Eco-edu hub in Lodz will be located at the University of Łódź/the UNESCO Chair in Ecohydrology and Applied Ecology<sup>25</sup> (the twin institute of ERCE). The UNESCO Chair is a body dedicated to the education of students and professionals with guaranteed funding in long-term, it will serve as eco-edu hub to continue beyond EuPolis.

The stakeholders identified in Lodz are a diverse group, ranging from top-level professionals to ordinary citizens (often from marginalized communities). Therefore, in order to build an informed and involved community, a series of meetings is planned - their form will be subject to discussion due to the constraints of the Covid-19 outbreak. The meetings will aim to raise stakeholders' awareness of the NBS, participatory planning and project synergies and motivate them to take part in advanced stages of planning, or "added value" euPOLIS BGS/NBS interventions, monitoring and synthesizing for the development/customizing of innovative planning guidelines suitable for the future scaling-up.

One option to create a communication base between stakeholders is the use of posters and leaflets, and information boards. Firstly, they will have a promotional and informational function through which residents and other stakeholders will learn about the planned project. Secondly, they will help those people who are not computer proficient, those that will not participate in meetings (including on-line), and those that would not have time, to obtain information. The leaflets will allow the stakeholders to express their opinion on a given issue (information about the project, presentation of possible options and a request to indicate which of them is the most important for them, space for additional information from the residents, their plans and ideas). The completed leaflets should be placed in predetermined places, e.g., in an urn set up in a fixed, accessible place. Additional option is on-site standby (in a place accessible also to people with disabilities) and telephone standby - for people who cannot/will not use other forms but have a need to express their opinion. On-site standby should take into account the pandemic situation and existing constraints. Finally, online meetings - to achieve higher participation, it is necessary to reach more people with information about the meeting through: website, Facebook, information on leaflets and posters.

The above preparatory activities will be enhanced with a more "all Inclusive"/ proactive euPOLIS method based on the systemic implementation of the euPOLIS's GDPM planning methodology, which will enhance the existing planning practice.

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<sup>25</sup> [www.ehaeunescochair.org](http://www.ehaeunescochair.org)



#### 4. Piraeus: Ralleion School premises

The Ralleion School of Piraeus was identified as an area of various available resources.<sup>26</sup> It is a complex pilot school which educates children belonging in a wide range of ages (4-18 years).

The Ralleion School is located in the broader Mikrolimano/Akti Dilaveri neighbour area. (5 minutes walking distance away of Mikrolimano).

Hence, the school's facilities are designed to be part of the eco-centre of Piraeus. This eco-educational hub will contain some NB/BG solutions and ecologic, educational, demo functions with positive impact to urban areas.

More precisely:

1. A pocket park and a cool pathway parallel to the road.
2. Green roof and urban vertical farming in the library building shall be considered and evaluated.
3. Small grey water treatment modules (showers, sinks, washing machines), so that treated effluent from the school can be used for irrigating the local greenery.

The Ralleion Complex Pilot School is selected to be the eco-edu hub, as it will combine the implementation of NB/BG solutions with the educational infrastructure and facilities. Also, it is a place which combine the interaction of different ages, from children up to teenagers, their families, and teaching and administration staff who are residents of the area. The group is a very active and valuable part of the community. This group will be educated and initiated to these new proposed solutions, during and after the end of the euPOLIS project. In parallel, an environmental association is active in the school, and, as a result the maintenance and sustainability of the facility after project is secured. In parallel there is deep engagement of the school community, which will be enriched with relevant educational activities.

The key element in pursuing euPOLIS capacity building will be creation of specific (outpost) education and training units in the FR's demo-sites which are called **eco-edu hubs**. They will host demo-units and mock-up of innovative BGS technologies plus the facilities to receive visitors, students, researchers, professionals and carry out awareness-raising and training sessions.

Eco-education hubs will also host permanent or temporary rigs demonstrating full scale facilities of technology supplying partners (VFI – vertical farm institute and BPL – Biopolus) and will also serve as permanent outpost (field) research/educational unit to both local organisations: academic, school, professional learned societies, NGO and the like. During the euPOLIS period, education in participatory planning of stakeholders can take place on the spot, at the eco-edu hubs. They will be managed by the city supporting partners.

The following figure 23 is an example of a permanent eco-educational unit for NBS based wastewater treatment plant (WWTP) and its treatment by product resources recycling. This combination of eco-edu hub and WWTP has already been conceptualized at Belgrade demo site's eco-edu hub (as illustrated in detail in Annex 7.1). It will consist of a basic water factory production platform.

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<sup>26</sup> Tsaftaridi, Eleni-Anastasia, 2020. Assessment of the potential for implementation of BG Solutions and resource recycling with participation of local stakeholders, MSc Thesis defended at ICL, supervised by C.Maksimovic and S.Boskovic



Figure 23. An option of possible WWTP demo-unit to be implemented at Belgrade demo site

In addition to accompanying scientific research, the edu-eco hubs will primarily serve as a demonstration object for stakeholders to show innovative BGS implementation methods in urban areas.

#### 4.2 Educational needs of different stakeholder groups

The stakeholder groups identified in D2.1 has been modified/updated to define the initial approximation of the education needs. The next iteration will be obtained by asking selected representatives of particular groups for their update/improvement of the relevant contents of the tables 8 and 9..

Table 8. Educational needs of the euPOLIS stakeholders' groups

Stakeholders group		Sub-group	Educational needs to be further refined
1	Project partners	Partner Front Runner (FR) cities Belgrade, Gladsaxe, Łódz, Piraeus	All partners need to “speak the same BGS language i.e., to be brought to the same/similar level of understanding the basic principles BGS – The detailed description of BGS planning system, particularly Project Proposal item 1.4.1.1
		Academic and research NTUA, ICL FCEBG, ISS, GSH, research and partners supporting local FR cities (ERCE AMPHI, BYSP, ENPL, CEE	
		Technology delivery partners BPL, VFI, BIO, SENT, RISA, PLEG	
		Horizontal services providing partners ICL, ISS, MIKS, ENPL, FCEBG (HE team), CRG, CDP	
		Follower cities: Palermo, Limassol, Trebinje, Bogotá, Fengxi New City	
1a	“Friends of the Project”/ Project Associates Local Partners	Related academic institutions: Faculty of Architecture - Urban Departments / Faculty of Forestry – Spatial Planning, Landscaping / Faculty of Political Science – Political Ecology dpt. / Social Sciences	euPOLIS Workshops for local media will be organised together with MIKS (Lead partner in WP9 (, to brief the press, out of the invited group, several media partners will be selected. This concept will be replicated in all 4 FR cities.
		Partners in all similar EU FUNDED PROJECTS conducted in 4 FR Cities – Horizon – NBS, Social engagement, etc. whose results can be used as the springboard for our project (to avoid overlapping)	



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

		<p>Institutions with relevant experience, knowledge or data holders in the fields relevant to the project: Research Institutes and organizations / Market research and Opinion polling Agencies/ Science Centres/Statistical Offices. To bypass the lack of official data through some alternative sources</p> <p>Media Partners in each city – friendly media willing to learn more about NBS, Climate Change and Innovative practices and follow the project from the beginning to the end</p> <p>Enthusiast Professionals/ Experts and Entities (In related fields of the project) who want to join the project on a voluntary basis</p>	
2	City planning authorities, other departments and services in FR cities	<p>Departments for Urban planning, Environmental protection, Energy, Water management Food supply - city market, Land Development Public Agency, Public landscaping company, Departments of social activities (NBGD), Departments of commerce and economy (local, national, international relations)</p> <p>Health services, Participation and Communication units, Social dialogue committee</p> <p>Environmental Protection Units</p>	Detailed description of BGS planning system, particularly, Project Proposal item 1.4.1.1
3	Consultants & designers for the final planning and design of NBS in FR cities / Producers of NBS relevant material	<p>Architects, Urban Planners, Water, Energy engineers Consultations with the existing local “green” initiatives, community urban gardeners, beekeepers, biodiversity initiatives, etc. to be embraced by the project. / Local horticulturists, greenhouse producers, small scale urban farmers, landscape designers, engineers with experience in urban farming/ indoor farmers concepts, rooftop &amp; green facades manufacture, Food-waste activities University-institutes: visionary design- and art-related topics, master-design courses (architecture, landscape design, graphic design) with semester-topics all around urban vertical farming</p>	Detailed description of BGS planning system, particularly Project Proposal item 1.4.1.1
		Each FR city to define subgroup(s)	Detailed description of BGS planning system, particularly Project Proposal item 1.4.1.1
4	Contractors for NBS in FR cities	<ul style="list-style-type: none"> <li>○ hospitals and similar</li> <li>○ European Nutrition Councils (existing or interest for foundation)</li> <li>○ Other food, energy, water, environment - related NGOs</li> </ul>	The description of NBS system as presented in the item 1.3.1., Overall Concept, as well as item Table 1. NBS interventions at the DS, affected KPI’s and impacts on PH&WB
5	(Health-related organizations and local) NGOs to	Specific residents’ and community groups	The NBS planning concept and methodology, with accent on participatory planning, in a

D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

	coordinate and or support (Group 2) volunteers' actions in FR cities		simple understandable form for people who are not professional in the urban planning category
6	Citizens from the Demonstration Sites neighbourhood for co-planning/co-design		The NBS planning concept and methodology, with accent on participatory planning, in a simple understandable form for people who are not professional in the urban planning category
7	Other stakeholders international NGOs and local CSOs, unions, community	Depending on the type of business Establishment of localized vertical farm institute on association level combining academia, business and engaged community, preferably interconnection with existing NGOs dealing directly or indirectly with local food on dissemination, events, active work and communal activities (e.g., meetup-groups)	The NBS planning concept and methodology, with accent on business activation algorithm, in a simple understandable form for people who are not professional in the urban planning category, possibly with recognisable example
8	Local businesses	<ul style="list-style-type: none"> <li>○ Political activists,</li> <li>○ young movements/parties,</li> <li>○ citizens' lists with focus on climate change,</li> <li>○ gender equality,</li> <li>○ engagement for big-picture EU-ideas and strengthening grassroots democracy,</li> </ul>	The NBS planning concept and methodology, with accent on participatory planning, in a simple understandable form for people who are not professional in the urban planning category
9	Any other stakeholders not included above (1-8)	<p>Volunteer-group-categories:</p> <ul style="list-style-type: none"> <li>○ academia,</li> <li>○ SME,</li> <li>○ engaged citizens,</li> </ul> <p>categorized in age (cross-fertilization regarding future perspective, climate change, experience, systemic know how)</p>	The description of NBS system as presented in the item 1.3.1., Overall Concept, as well as item Table 1. NBS interventions at the demo sites, affected KPI's and impacts on PH & WB. description of testing process technicalities and logistics (testing manual for volunteers)
10	Group 1 Volunteers From all stakeholders' groups (1-9) for permanent collaboration with euPOLIS project in FR cities	Health team experts (HE) to define categories meeting the criteria for example: (a) age strata of local residents, (b) typical gender groups	
11	Group 2 Volunteers (Sub-group of the Group 1) recruited for monitoring of NBS / BGS impacts on PH & WB (by wearables and by interviews etc.)	To be defined during the project in collaboration with CDP Coordinated by ICL in collaboration with NTUA. ENPL, ISS, MIKS and RG, Vertical Farm Institute, Cropify Systems, SKYBERRIES Conference and SKYBERRIES Academy	This should be prepared by the dissemination WP





D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

12	Stakeholders for the global dissemination of the euPOLIS results	To be defined by the FL cities partners in euPOLIS Especially for Fengxi: Cross-fertilization with the municipality of Shenzhen, Shanghai and Dutch Greenhouse Delta (if necessary, we have direct contacts on municipality and C-level)	The NBS planning concept and methodology, with accent on participatory planning, in a simple understandable form for people who are not professional in the urban planning category The NBS planning concept and methodology, with accent on business activation algorithm, in a simple understandable form for people who are not professional in the urban planning category, possibly with recognisable example The description of NBS system as presented in the item 1.3.1., Overall Concept, as well as item Table 1. NBS interventions at the demo sites, affected KPI's and impacts on PH & WB
T	Stakeholders in FL cities		

Table 9. An example of bespoke/customised/tailor-made participatory planning topics based on GDPM matrices for a group of Piraeus stakeholders

Group No	Stakeholder Group	Anticipated engagement level	euPOLIS education for possible motivation increase
1	Project Partners	Very High	All Matrixes Modelling and optimisation tools Health Impact quantification
2	City Planning Authorities in FR cities	Very High	All Matrixes Modelling and optimisation tools Impact quantification
3	Consultants and designers for the final planning and design of NBS in FR cities	High	All Matrixes Modelling and optimisation tools Impact quantification
4	Contractors for NBS in FR cities	Medium	Introduction to NBS/BGS, Business development, Blend in
5	NGOs to coordinate and /or support (Group 2) volunteers' actions in FR cities	High	Introduction to NBS, Gender matrix, Climate change, Blend in, Health indicators, Wearable devices technology suppliers. NBS interventions at the demo sites, affected KPI's and impacts on PH & WB
6	Citizens from the Demonstration Sites neighbourhood for co-planning/co-design	Medium	Participatory process, advantages, Blend-in, Gender and Climate change matrixes



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

7	Other stakeholders, such as NGO and community organisations, women charities, entities working with people with disabilities and alike	Medium	Introduction to NBS, Gender Matrix, Business development, Climate change
8	Local Businesses	Medium	Introduction to NBS, Blend-in, Business development matrixes
9	Any other stakeholders not included above (1-8)	Medium	Introduction to NBS, Climate change, Health impact indicators, Gender matrix
10	Group 1 Volunteers from all stakeholder groups (1-9) for permanent collaboration with the euPOLIS project in FR cities	High	Introduction by the wearable device suppliers, Health Indicators, Introduction of NBS, Climate change
11	Group 2 Volunteers (Sub-group of Group 1) recruited for monitoring of NBS/ BGS impacts on PH & WB (by wearables and by interviews etc.)	Medium	Introduction by the Wearable device suppliers, Health Indicators, Introduction of NBS, Climate change
12	Stakeholders for the global dissemination of the euPOLIS results	Very High	Climate change, Health indicators, Blend in
13	Stakeholders in FL cities	Very High	General GDPM application introduction to NBS, Blind in, Cost saving

Additional table (Table 15): 'An example of possible areas of training of specific group of stakeholders to increase motivation and support to euPOLIS, Pireaus' on local stakeholders' group and their needs in Piraeus is presented in the appendix 7.4.

Based on the above table detailed planning for education in all FR and FL cities will be further developed and in part implemented in the forthcoming Workshops within the Task 2 and presented in the final report. The educational needs of different stakeholder groups will be addressed based on the concrete situation at FR and FL cities.

### 4.3 Stakeholders' participatory planning education needs and goals within the framework of the euPOLIS project's capacity building

The goal (the main objective) of the euPOLIS stakeholders participatory planning is to enable city management and planning to implement euPOLIS co-planning principles and then educate stakeholders on basic principles of euPOLIS (NBS/BGD based) innovative planning system so that all major stakeholders are truly motivated to implement this planning methodology and to develop the sense of co-ownership of the future solutions.

This principle stems from one of the "established" project goals: keep maintaining and "nourishing" euPOLIS project's strength: Introducing and implementing euPOLIS's unique innovative planning concept /system for healthy (blue green) cities, high professional level (beyond "cheap mass production" triviality – superficiality), raising awareness i.e. performing target orientated training of all project participants and groups of stakeholders in which the education and dissemination/communication tools have to share the same visual identity, presented in simple, imaginative, attractive easy to understand fashion, motivating people to grasp it (join and support us) for their own benefit.



Therefore, the first workshops held in November 2020 has been conceptualized and planned with the above principles and basic tasks defined in Task 2.2 description in the GA<sup>27</sup>.

The improvement of stakeholders participatory planning capacity is to be achieved by engaging them in planning (not just consultations), together with the planning professional from the preliminary phase (site analysis, NBS resources and conceptual design) till the final phase (final design, construction, and its supervision). The education methodology follows this principle. This goal is achieved by the following detailed objectives/ actions related to T2.2:

- a. Approaching / reaching out a broader community
- b. Carrying out detailed survey (through the Questionnaires Q2 and Q3, see the annex 8.3 and 8.4. of stakeholder's general knowledge and perception/views on the project, local FR &FL cities' conditions, characteristics of their demo sites, issues, concerns, and targets
- c. Defining educational needs of different stakeholder groups (combined with the initial assessment of these needs)
- d. Performing the initial education of the top-level planners in all FR and FL cities (October 2020), first group of stakeholders (4 FR cities Workshop 2, November 2020), second group of stakeholders (workshops 3. "Mini workshops"/ Community meetings/Direct interactions) and producing the concepts and initial findings (intermediate results) in the D2.2
- e. Producing the initial data, information, and findings on further needs for stakeholders detailed training to be performed in full-scale (learning by doing) in the WP6 and other WPs.

Further work will be performed in the T2.3 Stakeholders benchmarking against already taken urban regeneration endeavours (M4-M48).

#### **4.4 Stakeholders' long-term interests as reasons for co-planning**

##### **4.4.1 Instructions to FR and FL Cities on the steps to be taken**

As a part of preparations for carrying out the Q3 exercise, all FR and FL cities have been asked to do the following:

1. Disseminate the translated and adapted press release to your relevant media offices.
2. Leave e-mail contacts in the footer section, offer further assistance, and more details to the media office, a statement, or an interview with City's representative regarding the euPOLIS project.
3. Post the survey visuals on City's social media profiles and link them to the Google Form (survey) with a short invitation for the citizens to participate in the process of improving their neighbourhood.
4. Boost post targeting the right audience (depending on the boosting budgets, you can either choose 30 days span or if the survey is not going well from some point, boost the post for a specific duration).
5. Contact mapped stakeholders and invite them to participate, as this is the first step in this permanent co-creation of the scientist and citizens:
  - Send them an e-mail with a survey attached to it for their office staff to fill it in.

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<sup>27</sup> Ibid.



- Ask them to introduce the project to other interested parties and conduct the survey among this broader network of stakeholders.
  - Ask them to post or re-share this survey on their social media profiles (this will also later be your CAR materials).
6. Face-to-face visit to the FR Cities' demo sites and FL Cities' case studies: to hire volunteers, equip them with tablets, and instruct them how to handle a survey.

Cities also engaged with the local media partnerships through media offices online sections as society, health lifestyle, innovation etc.

#### **4.4.2 Engagement through the on-line Questionnaire Q3**

Within the month of March (2021), FR and FL cities have received the following materials required to conduct a survey and engage as many citizens as possible during the estimated 30 days period for collecting the answers.

- The general press release, which is to be translated to the local language, and adjusted to present City's role in the euPOLIS project, and the demo-location.
- The survey template which is to be translated and adapted to the specifics of the FR Cities demo-sites or FL case-studies, nearby population (cities with two demo-location will create two Google Forms for each location and adapt them accordingly).

#### **4.4.3 Responds of FR and FL cities to the Questionnaire (Q3) for Citizens**

Stakeholders' interests, needs and expectations will be explored both in FR Cities demo-sites' and in FL cities case studies through the bespoke on-line Questionnaire (Q3) prepared by euPOLIS Partners to involve citizens in bringing healthier nature to their neighbourhoods to improve the health and wellbeing of people who visit the site.

The data collected in this survey have been analysed by the euPOLIS expert team and included in the proposal of interventions and solutions in (demo/case location).

The survey is divided into 7 sections, starting with a general section collecting basic information about the person, continuing with sections in which we map the person's relationship to the Demo/Case site (Q3 sections 2 and 3) their opinions on different aspects of the current status of the demo site (Q3 sections 4 and 5), as well as their interest and availability to take an active role in the euPOLIS project (Q3 sections 6 and 7).

Every city had an opportunity to adapt and customize the Questionnaire Q3 to their local conditions. Participants' answers are anonymous, but they can leave their email address if they wish to be contacted for project updates and participate in its further steps, and to benefit from co-design and their participation.

The City Belgrade is still processing the Q3, but most of the information needed were obtained by direct Involvement of euPOLIS team In public consultation (for the Linear Park DS) and direct insights (Park USCE). Finally, the city of Gladsaxe will distribute and process its Q3 forms in September 2021.

Here below are presented the current results of Q3 processing.



#### 4.4.3.1 LODZ - Linear Park in the opinion of the inhabitants of Łódź.

The concept of a linear park in the center of Łódź is based on the positive experiences of other cities in opening up urban space to the needs of residents. The construction of a linear park follows a more general trend of surface growth of green areas inside cities with the simultaneous retention of rainwater. In order to verify our assumptions, the inhabitants of Łódź, i.e., the beneficiaries of the project, were asked about their actual state of affairs, i.e. the use of this urban space so far, and their issues and preferences regarding the changes planned by the city as part of the EuPOLIS project.

When asked about the circumstances of using the passage between Kościuszki and Gdańska Streets, the residents (55 people) were mainly driven by its proximity to their place of residence (14 people) or the fact that the passage is on the way to school or work (16 people). Among the respondents, only 21 indicate that they visit the passage for cultural or recreational purposes, although they live elsewhere. A bit lighter is shed by the residents' answers to the open question regarding the time spent in the area of the passage. They indicate that, in their opinion of the respondents, the passage does not appear to be an attractive place where you can stay longer. Rather, the arcade functions as a place that "is on the way to its destination" that is merely passed through. There are voices pointing to the need to "green" this area such as:

- *"I hope that some sensible plantings and lighting will just happen there, not "concrete oasis"*
- *"I stay here for 20 minutes, there is nothing to do any longer 15 minutes as long as it takes time to move on"*
- *"Quality of the sidewalks in the streets surrounding the square is very low."*

Some respondents raised their concerns about the safety of the area because of the lack of lighting and it is used for gathering of "suspicious groups" of people, drinking alcohol etc.

- *"The place is not very friendly, especially when drunk men spend their time there".*

Subsequent questions about the assessment of such aspects as: air quality, cleanliness of the air and the surrounding area, noise level, lighting, safety or temperature level and the related number of green areas reveal a rather pejorative perception of the passage. Collective opinions indicate that the passage is rather not a "friendly" place, there are no plantings that would reduce the temperature and noise level in this place, as well as improve the cleanliness of the air. Consequently, in the opinion of the respondents, this place is not considered to be friendly to children or seniors. Also, the relatively poor infrastructure (mainly benches) The above conditions determines the marginal interest for the visit in the passage, which mainly serves as a place for walks with pets. (19 votes).

Here following are described the preferences of respondents regarding the revitalization of the arcade. The respondents, when asked about their preferences in terms of the use of the passage, clearly expressed themselves in favour of "greening" this area, pointing to its future eco-educational function (23 votes) and the implementation of urban agriculture (30 votes). These aspects, in turn, determine the recreational function of the arcade (31 votes), and then the sports (19) and cultural (18) function. The respondents see new plantings as an opportunity to reduce pollution, noise and lower the temperature, which will significantly increase the attractiveness of the area and enable the development of further possibilities of its use in accordance with the preferences of the inhabitants. The friendly environment prompted the respondents to develop the vision of the arcade as a kind of culture incubator. An example of the view:

- *"Exhibition of sculptures, artistic work of students of the Academy of Fine Arts".*



The planned changes, in the opinion of the inhabitants of Łódź, should also be aimed at reducing anti-social behaviour and discouraging people whose behaviour is perceived by the inhabitants as socially undesirable:

- *“Anything that will make it not a place that attracts young necks with beer. I don't know what functions deter them, but lighting and monitoring can probably help. In the past, from the side of ul. Kościuszko, the problem was prostitution,”.*

People participating in the study clearly indicate the need for new plantings of ornamental plants, trees, and water infrastructure (water jets, drinkers, fog boxes). Along with the implementation of "green" solutions, the residents also call for taking care of the sports and recreational infrastructure (benches, seats, playgrounds and educational squares). In the opinion of the respondents, stationary and mobile food outlets, a community garden and a stage should also appear in the arcade, which will attract the attention of the local community.

#### 4.4.3.2 PIRAEUS

In order to have a more sufficient picture about the characteristics and the actual use of the demo site area in Piraeus, recorded were the residents and visitors profile, opinions, preferences and expectations regarding the potential interventions that could be planned and implemented in the area.

The demo site area is a hyper local interest area, and many visitors are using the demo site facilities for education, sports and entertainment activities (55% at least 3 times a week).

Indicatively:

Of the respondents / users of Akti Dilaveri area, almost 75%:

- are not resident of the demo site area and visit the area by car
- use the area as a visitor for sailing and other sport activities, at least 2 times a week, usually weekend and stay in the area at least 1-3 hours per visit
- during their visit to the above area, they are also visiting the Microlimano area.

Of the respondents / users of Ralleion Pilot Complex School, almost 20%:

- are residents of the wider City of Piraeus and visit the area with family on a daily basis, usually workdays
- during their visit to the above area, they are also visiting the Akti Dilaveri area.

Of the respondents / users of Tzavella Str., almost 36%:

- are residents of the demo sites area, and
- visit/use the Akti Dilaveri area with friends or / and family, usually for walking and entertainment activities, on a daily basis and at least 1-3 hours per visit.

Of the respondents / users of Microlimano area, almost 90%:

- are residents of the demo sites area, and
- visit / use the Akti Dilaveri area with friends, for walking and sailing or other sports activities, at least 2 times a week, usually weekends and afternoon and stay in the area at least 1-3 hours per visit.





## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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The main kind of problems which are identified in the demo site areas, and they think is necessary to change in order to build a more sustainable area within the next 20 years, are

- the lack of cleanliness
- the lack of green spaces and recreation areas (parks, meeting places, etc.)
- the unsustainable urban mobility
- the ruined sidewalks
- the lack of pedestrian and bike paths
- the lack of parking spaces
- the non-utilization of inactive public spaces and buildings
- the traffic and noise pollution.

Also, when asked about the unique characteristics of the area, which they believe that should be further highlighted, the most answers that were give include:

- the coastal front
- the history and the culture heritage of Piraeus
- the SEF facilities
- the further utilization of the public spaces

Furthermore, the respondents for Akti Dilaveri and Microlimano demo sites think that additional cultural / athletic / eco-educational / community activities could be hosted in the demo site / case locations.

The respondents for Ralleion Pilot Complex School, were asked about the necessity of planting in the school yards and the quality and quantity of the existing planting. All of them answered that “the presence of greenery is necessary and contributes to the improvement of the microclimate and the air quality of the school yard” and “it is important for children to come in contact with plants”. They think that the presence of greenery in the school contributes to the environmental awareness of the students and the most of them (85%) believe that could help to improve the students school performance and their nutrition, too.

The community of Ralleion Pilot Complex School, already recognised the usefulness of the existing plants and the potential NBSs to be used in environmental education programs.

No one in the sample seems to be negative in the idea of design and implement NBS in the demo site areas and the most of them would like to participate in the implementation of euPOLIS in the area.

### 4.4.3.3 LIMASSOL

Limassol had a total of 116 responses from a total of 46 questions concerning the Limassol Public Garden. Most of the answers came from the group age of 25-39 and I am happy to inform you that they answered all of the questions comprehensively. Under each question one can see the responses individually, but 99% of the responders answered every question.

### 4.4.3.4 TREBINJE

The questionnaire was distributed to city administration workers and their family members of different profiles. The main results can be summarized, as follows

- 136 people participated
- Citizens had one month to complete the questionnaire and submit it to the Department of Spatial Planning



- The questionnaire was mostly participated by citizens aged 25-39
- It was stated that the citizens do not stay long on site, case study called „Otok“ because it is undeveloped and there is not much to offer except a walk and a stay by the river.
- Citizens consider the site safe and pleasant to stay in terms of natural conditions
- Citizens believe that the site is suitable for the use of solar energy

#### 4.4.3.5 PALERMO

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. The reviews were 427. About 15% are domiciled in the area of Villa Turrisi.

About religion, 63% is made up of Catholics and we have a small percentage of Buddhists and Jews. Regards the answer of the questionnaire revealed that a large part of the sample is emotionally linked to the area, uses it for walks, sports or because they live there and have difficulties in moving around (disability).

The air quality is perceived as good but there are problems related to safety during the day and in particular at night. Another problem is the low maintenance which causes the presence of even bulky waste. As we know the area is used for agricultural / residential purposes and there is no equipment at the moment.

For the project of the future park, various activities (social, cultural, eco-educational, urban gardens) and equipment (benches, fountains, cycle paths, etc.) have been suggested.

We will take this into account in future design steps.

Finally, it must be said that 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, probably the city of Palermo must invest more resources in education to participation.

In conclusion to the section 4, based on the material presented in this section, a significant gap for the need of principles for educational guidelines has been filled. In this way conditions are created for further detailed training by the “learning by doing” principle to be done in WP6. Furthermore, this material can be considered as the “skeleton” for other forms of detailed training for spatial and temporal extrapolation of the euPOLIS innovative planning paradigm -philosophy.

## 5 Implementation of participatory planning methodology

### 5.1 The general methodology/the principles

Based on the above-described features of BGS/NBS related issues, needs and planning methodologies, all 4 FRs and 5 FLs are currently developing their customized approach on addressing the gaps in knowledge and planning methodology as well as obtaining systemic stakeholder engagement in the early phase of planning. A key component in reaching high competence in participatory planning is target-orientated raising awareness/training/education of all groups of stakeholders. This will be done in two phases:

- Phase 1, which is done in this WP and presented in detail in this D2.3. It is primarily done by (i) “training of trainers”, who will then train all local stakeholders in the native language and (ii) initial joint training sessions of WP2 and WP6, an example of which is presented in the Appendix 7.2.
- Phase 2, which will be practice in the WP6 by “learning by doing” methodology.

Table 10. An example of possible areas of training of specific group of stakeholders to increase motivation and support to euPOLIS, Piraeus

Unions	Location:	Posble area of training to increase motivation and support to euPOLIS
Residents of Mikrolimano - Descendants of Refugees of Asia Minor 1922	Refugee Settlement of Asia Minor Lane A, number 5, 185 33, Mikrolimano	Residents potential interests if they participate in planning based on their answers to Q3
Panhellenic Open Sea Sailing Club	Akti Dilaveri 3, Piraeus 185 33	Potential Business drivers’ analysis, development and implementation
Noe - Navy Group of Greece	Karagiorgi Serbias 18, Piraeus - Mikrolimano, 18533, ATTICA	Potential Business drivers’ analysis, development and implementation
Iop - Sailing Club Piraeus Sport Club	Akti Koumoundourou & Mantzarou, Piraeus - Mikrolimano 18533, ATTICA,	Potential Business drivers’ analysis, development and implementation
Hellenic Rowing Federation of Navy Club Fans	Akti Koumoundourou 22, Piraeus - Mikrolimano, 18533, ATTICA	Potential Business drivers’ analysis, development and implementation
3rd Municipal Community of Piraeus	Dim. Falireos 5, Piraeus 185 47	General GDPM Blend in Matrix Climate Change Gender Matrix
Parents & Teachers Association of Ralleion Primary Schools of Piraeus	Alexandrou 3 & Tzavela 18533 Piraeus	Planning co-design Blend in Matrix General GDPM, Indoor Env. Qual. Climate Change Gender Matrix
Educational and Local Improvement Society of Neo Faliro		Planning co-design General GDPM, Water Energy Greenery, Vertical Farming, Grey Water recycling Climate Change Blend in Matrix
Navy Club of Delfinario	Akti Dilaveri 2, Piraeus 185 33	Potential Business drivers analysis, development and implementation
Navy & Sport Club Irinis- Filias (Noef)	Akti Dilaveri 2, Piraeus 185 33	Potential Business drivers analysis, development and implementation



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Association of Professional Fishers of Mikrolimano, Piraeus "The Saint. Nectarius »		Climate Change General GDPM – Water quality
1st System of Naval Scouts of Neo Faliro	Dim. Falireos 38, Neo Faliro, Piraeus 185 47	Climate Change Matrix General GDPM – Water quality
Local Improvement Society of Neo Faliro, "THE RENAISSANCE"		General GDPM Capital Saving Matrix Blend in Matrix
Neo Faliro Association		General GDPM Capital Saving Matrix
<ul style="list-style-type: none"> <li>○ Piraeus Municipal Radio - KANALI 1</li> <li>○ Public Benefit Municipal Enterprise of Piraeus (KODEP)</li> <li>○ Volunteering Office of Municipality of Piraeus</li> <li>○ Culture, Sport and Youth Organisation (OPAN PIRAEUS)</li> </ul> SEF Stadium		General GDPM Blend-in Matrix
Association of Restaurants and Related Professions of Piraeus	80 Kolokotroni Str., Piraeus 185 35	Potential Business drivers analysis, development and implementation
Restaurants, bars and related business entities		Potential Business drivers analysis, development and implementation

Table 11. An example of educational needs and trainers in FL city Bogota'

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
1. Project partners	Academic organization	Universidad de los Andes	Partner euPOLIS	Co-design participatory planning with GDPM DS and CS for learning by doing Socio-economic gender base planning GDPM's business development Scaling-up methodology		Yes
	District organization	Bogotá's Urban Development and Renovation Company.	Partner euPOLIS	Introduction to BGS/NBS Co-design participatory planning with GDPM Socio-economic gender base planning GDPM's business development	Uniandes (BGS/NBS )	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
				Scaling-up methodology DS and CS for learning by doing		
1a "Friends of the Project"/ Project Associates, Local Partners	District Organization	Metro Bogotá Company	Institutional	Introduction to BGS/NBS Co-design participatory planning with GDPM GDPM's business development Socio-economic gender base planning	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
	District Organization	Transmilenio Company	Institutional	Introduction to BGS/NBS Co-design participatory planning with GDPM GDPM's business development Socio-economic gender base planning	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
2. City planning authorities in FL cities	Governmental Organization	Planning and Heritage Authority	Institutional	Introduction to BGS/NBS Co-design participatory planning with GDPM Socio-economic gender base planning	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
	District Organization	Special Administrative Unit of Public Services (Central Cemetery).	Institutional	Introduction to BGS/NBS	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
	District Organization	Special Administrative Unit of Public Services (British Cemetery).	Institutional	Introduction to BGS/NBS	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
	District Organization	Special Administrative Unit of Public Services	Institutional	Introduction to BGS/NBS	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
		(German Cemetery).				Universidad de los Andes can be the trainer.
6. Citizens from the Demonstration Sites neighborhood for co-planning / co-design	Academic organization	INNCA University.	People representation	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
	Citizens	EDIFICIO SANTA FE	Owners	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		EDIFICIO 28 AVENIDA PROPIEDAD HORIZONTAL	Owners	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		CAPELLANIA DEL CEMENTERIO CENTRAL DE BOGOTA	Owners	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
7. Other stakeholders such as international NGO's and local CSO's, unions, community organizations, women's organizations, entities working with people with	Non-governmental organizations	FUNDACION DESARROLLO Y VIDA SOSTENIBLE	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		CORPORACION GRUPO SEMILLAS	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.





D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
disabilities, refugees, homeless, and other sensitive groups						los Andes can be the trainer.
		FUNDACION MUINAJEMA	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		CORPORACION CASA DE SOLIDARIDAD CON COLOMBIA	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION DE ESCUELAS DE ARTES INTEGRALES IBEROAMERICANA MICROEMPRESARIA MUTLIACTIVA ONG	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION SOL RADIANTE INDIGENAS DE COLOMBIA	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		ASOCIACION DE MUJERES BUSCANDO LIBERTAD	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION PARA EL APOYO Y PROGRESO DE POBLACIONES VULNERABLES	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
						Universidad de los Andes can be the trainer.
		FUNDACION TRANSGREDIR LA INDIFERENCIA	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION DEPORTIVA SOCIAL Y CULTURAL EL QUIJOTE	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION SOCIAL Y DEPORTIVA NUESTRA TIERRA	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		ASOCIACION DE LA RED DE MUJERES ACTIVAS Y PRODUCTIVAS	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION PARA EL FOMENTO DEL DEPORTE Y EL ARTE	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		FUNDACION PRODUCCIONES KILELE	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Stakeholders group	Sub-group	Entity / Organization	Role	Educational needs	Trainer	Do we need support for other partners?
						Universidad de los Andes can be the trainer.
		CORPORACION VISO MUTOP	People representation/company	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.
		ASOCIACION MANDALA VERDE	Sustainability/Public space	Introduction to BGS/NBS GDPM's business development	Uniandes (BGS/NBS)	Yes, to all of them except introduction to BGS/NBS in which Universidad de los Andes can be the trainer.

Table 12. An example of educational needs and trainers in FL city Limassol

Stakeholder Group	Sub-Group	Educational Needs
1. Project Partners	Follower City - Limassol	Co-design participatory planning with GDPM DS and CS for learning by doing Socio-economic-gender based planning GDPM's business development Scaling-up Methodology
1a. "Friends of the Project"/ Project Associates Local Partners	Institutions with relevant experience	Co-design participatory planning with GDPM GDPM's business development
	Research Institutes and organizations	Co-design participatory planning with GDPM DS and CS for learning by doing GDPM's business development Scaling-up Methodology
	Enthusiast Professionals/ Experts and Entities	Introduction to BGS/NBS DS and CS for learning by doing Scaling-up Methodology
2. City planning authorities	Departments for Urban planning	Detailed description of BGS planning system Co-design participatory planning with GDPM Socio-economic-gender based planning Scaling-up Methodology
	Environmental protection	Detailed description of BGS planning system DS and CS for learning by doing Socio-economic-gender based planning
	Water management	Introduction to BGS/NBS DS and CS for learning by doing Socio-economic-gender based planning



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

	Departments of commerce	Introduction to BGS/NBS Co-design participatory planning with GDPM Scaling-up Methodology
3. Producers of NBS relevant material	Architects	Detailed description of BGS planning system DS and CS for learning by doing Socio-economic-gender based planning
6. Citizens from the Demonstration Sites neighbourhood for co-planning/co-design	Specific residents' and community groups	Introduction to BGS/NBS NBS planning concept and methodology
7. Other stakeholders international NGOs and local CSOs, unions, community	Non-governmental organizations	NBS planning concept and methodology Co-design participatory planning with GDPM DS and CS for learning by doing Scaling-up Methodology

Table 13. An example of educational needs and trainers in FL city Palermo

Stakeholders	Education needs/topics of interest
Project partners	
City planners/public entities	
Urban planning office / Ufficio Urbanistica	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Mobility Department / Servizio Mobilità urbana	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Water management department / AMAP	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Energy department / Regione - Assessorato all'Energia e Servizi di Pubblica Utilità - Dipartimento Energia	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender based planning; GDPM'S business development; Scaling up methodology
Public landscaping company /Soprintendenza	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Public Health Department /ASP	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Regional environmental protection agency - ARPA	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Departments of commerce and economy (local, national, international relations) / Camera di Commercio	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Departments of social activities / Servizi sociali	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Culture Department / Settore delle Culture	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Metropolitan City / Città Metropolitana di Palermo	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Consultants and designers	
To be selected	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Citizens from the Case study's neighbourhood	
To be selected after Q3	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Associations	
Parco Villa Turrisi Association - the association was born in Palermo in January 2013 from the union and collaboration of environmental committees and associations operating in the area <ol style="list-style-type: none"> <li>1. WWF Palermo:</li> <li>2. Comitato Parco Villa Turrisi</li> <li>3. Legambiente Sicilia</li> <li>4. Italia nostra - sezione di Palermo</li> <li>5. Fondo per l'Ambiente Italia - Sicilia -</li> <li>6. UPPalermo</li> <li>7. LIPU Palermo</li> <li>8. Comitato Addiopizzo</li> <li>9. Coordinamento Palermo Ciclabile FIAB</li> <li>10. Libera Palermo</li> <li>11. Liberi Professionisti</li> <li>12. Salvare Palermo</li> <li>13. Comitato Bonafede Russia</li> <li>14. Konsumer Sicilia</li> <li>15. Movimento Difesa del Cittadino</li> <li>16. Forum delle Associazioni</li> <li>17. MASCI</li> <li>18. Arcigay</li> <li>19. Guerrilla Gardening</li> <li>20. Anvvfc Palermo Città</li> <li>21. Circolo Laudato Palermo</li> </ol>	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Mobilita Palermo	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Vivisano onlus	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Coldiretti	Introduction to BGS/NBS



D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Others associations to be determined	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
University of Palermo (UNIPA)	
Prof. Goffredo La Loggia and prof. Valerio Noto - Faculty of engineering department of hydraulics	
Prof. Maurizio Carta - Faculty of architecture- department of urban planning	
Prof. Lorenzo Gianguzzi - Faculty of Agricultural, Forestry and food Science	
Prof. Fernando Trapani- Faculty of architecture	
Prof. Maurizio Sara - University of Palermo (UNIPA)_ Faculty of Biological sciences and Chemical and Pharmaceutical technologies	
Prof Manfredi Leone- Faculty of architecture- department of urban planning	
Prof. Gioacchino Fazio - Faculty of Economics	
Other professionals	
Carlo Pezzino Rao - lawyer, expert in environmental law	Introduction to BGS/NBS; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Eng. Vincenzo Di Dio, President of Palermo Engineer's Order	
Arch. Francesco Miceli - President of Palermo Architect's Order	
Order of Chemists of Palermo	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Order of Agronomists and Foresters of Palermo	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
Order of Geologists of Palermo	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing; Socio-economic gender-based planning; GDPM'S business development; Scaling up methodology
SCHOOLS	
Istituto di istruzione superiore Statale Enrico Medi	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Istituto Magistrale Statale "G. A. de Cosmi"	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Instituto Comprensivo Statale Michelangelo Buonarroti (In via Casalini there are a kindergarten and a primary school complex, both with different sections)	Introduction to BGS/NBS; Codesign participatory planning with GDPM; CS for learning by doing
Local businesses	
To be determined	Introduction to BGS/NBS
Citizens	
Alessandro Accardo Palumbo	Introduction to BGS/NBS

Table 14. An example of educational needs and trainers in FL city Trebinje

Nº	Stakeholders group	Curriculum
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1	City planners	<b>Socio-economic-gender based planning</b> Take into account all aspects relevant to planning and creating better citizens well-being
2	Citizens	<b>Participatory planning</b> Active surveys Listen to the opinion of the citizens
3	Consultants and designers	<b>Introduction to BGS/NBS</b> Modelling in accordance with the local environment conditions
4	Local businesses	<b>Business development</b> To analyse in the initial part the directions of development of business ideas in the future for a certain area
5	City administration	<b>Introduction to BGS/NBS</b> Use of NBS implementation methods in infrastructure

## 5.2 Concluding remarks on application of the collaboration methodology in participatory planning in FR Cities

### 5.2.1 Belgrade

Participatory activities in Belgrade are usually organized by nongovernmental organisations (civil sector) in the form of seminars, workshops with citizens etc. Participatory methodology is not yet fully developed by the city's regulations, but the initial activities announced in the City's website are gradually being introduced.

The exercise with euPOLIS project's participatory planning & co-design is creating a precedence building more confidence between the civil sector and official city's organisations (Urban Planning Institute, City Greenery, Belgrade Water and Wastewater Company, Secretariat for Environmental Protection and alike)

Available tools for engagement of local stakeholders and citizens are:

- Media posts, on regular bases, information about project activities and NBS principles and values at social networks and local media.
- Invite mapped stakeholders into permanent participation and co-creation part of the project as citizens and professionals.
- Ask mapped stakeholders to post or re-share information about the project and invitations for participatory activities on their social media profiles.
- face-to-face work on the demo location.
- Future development of participatory activities from online questionnaire forms to co-creation workshops and unformal meetings with citizens to inform them about NBS values and all phases of development of the project.
- Organising activities (community work, festivals, recreational activities) in demo park to create a sense of belonging.

Although some of the above were available for some time, their use is yet to be seen. In that respect, as a part of educational process, euPOLIS project has analysed the existing methods and tools and suggested a systemic approach in creating an updated/enhanced system, with more creative interactions between all stakeholders. Collaboration in co-planning for the Linear Park project, already implemented in this phase on euPOLIS project is a good example in that direction.



In this respect the recent Initiative of the Urban Planning Institute is very encouraging. They are motivated by the progress in the initial implementing euPOLIS's innovative planning methodology and are indicating their desire to include this methodology (and possibly some euPOLIS team specialists) in the next phase of strategic planning (GUP/General Urban Planning) which stretches much beyond euPOLIS project.

### 5.2.2 Gladsaxe

To strengthen social cohesion and environmental sustainability, the city will cooperate and facilitate increased civic participation with citizens, local community stakeholders and enterprises. The city wishes to be an active partner and its ambition is to reach the goals of the strategy to be activated and further developed in interaction with other actors.

The strategy of the danish approach is planned to be made as a collaboration between the supporting partners and Gladsaxe Municipality with an approach embedded in the Gladsaxe strategy and fellow citizenship strategy. These strategies will enable the identification of possible synergies with the euPOLIS approach. There are some good examples of this type of resident-involving cooperation, e.g., between the municipality and social housing initiatives in Gladsaxe Municipality<sup>28</sup>.

We will also have access to those experiences via our team and the social housing network when we reach this point. Ideas on how the project can establish a dialogue with the residents in Pileparken are arranged:

- Decide targeting groups of people. Perhaps we will not address everyone, but it will make it possible to establish a dialogue with someone who usually would have never come.
- Make a grand opening at the end of construction of DAMP phase 1.
- Make vegetable garden in the DAMP phase 1 project where people can meet around the activity of planting their own crops. Events with fire and barbecue usually attract a lot of people.
- Resident information meetings.
- Because of the manageable size of Pileparken, it is possible to walk from door to door to greet and introduce the project and identify a few enthusiastic souls who can be ambassadors for the project.

Existing channels of communication with citizens and their involvement are:

- Via the board and local technicians of the housing area;
- Action-based - communication through physical presence and involvement processes – e.g., urban spaces and city gardens below the apartments in the housing area, or social activities that get people out of their apartments;
- Via key persons from the municipality and key persons/ambassadors among the residents in and around the respective residential area;
- Via posters and notices in the stairwells;
- Home page and/or Facebook and;
- Possibly via other relevant - but not yet clarified - written or virtual channels.

The upcoming resident involvement project in Pileparken is being planned together with the local resident board on building a common vegetable garden and will be further enhanced with introduction of euPOLIS approach.

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<sup>28</sup> Gladsaxe Strategy. Sustainable growth and welfare 2018-2022. Available form: [www.gladsaxe.dk](http://www.gladsaxe.dk)



There is a potential in communicating the relation between NBS, urban evaporation and the positive impact on the climate. This relation will be made into a local story telling being displayed on the site, as well on digital platforms. We expect that it will have a positive effect to communicate how the residents will get a part in improving the local, regional and global climate by creating a new approach on local rainwater management in an urban context.

We see the action-based approach in both the euPOLIS and the DAMP projects as having a strong potential in communicating new participatory planning NBS approaches at a broader scale.

### 5.2.3 Lodz

A participatory design manual was created for officials and other consultation organizers, which explains “step by step” what actions should be taken to make participatory design of public spaces a success. The outcomes of the project are the basis for planning the upscaling of the participatory planning process on more redevelopment projects throughout the city.

As part of the project "We are changing streets", the city of Lodz developed a participatory process design guideline for the reconstruction of five street sections in Old Polesie District in Łódź. The aim of this pilot project was, among other things, to develop methods and techniques that could be used in other Polish cities.

City of Lodz has experience in collaborating with the non-government organizations and informal initiatives in the participatory planning processes. In previous years, several NGOs were commissioned to organise debates, workshops and other activities connected to city’s public spaces. In 2012 there was a consultation process called “Idea for Tuwima Street” during which the citizens took part in workshops where they could express their expectations towards the street’s development. In 2015 during the European Mobility Week<sup>29</sup> there was a workshop organized under the slogan "Our Sienkiewicza Street, Our choice". Workshop participants in three project groups created the dream look of Sienkiewicza Street and its immediate vicinity on a model with the use of special blocks showing, among others, sidewalks, trees, playgrounds, bicycle lanes and car lanes. The NGOs even organized debates or consultations regarding the future of the most important public spaces in the city – i.e., the Liberty Square, the Dąbrowski Square. Some participatory processes were even aimed at including children in discussions about their expectations of their school’s surroundings.

The creation of a linear park will be done using methods related to participatory planning and assuming not only the social functionality of the park but also co-responsibility for the newly created space. Therefore, while creating the park, a number of diagnostic tools will be used, aimed, first of all at: recognizing the current functions of the area, checking among residents what functions of the new space would be most desirable, and conducting potential negotiation and educational processes aimed at creating a consensus between the existing and desirable functions. The activities will be both meetings or workshops aimed at stakeholders and more interactive forms, such as diagnostic or prototyping walks. This is the first stage - important because it creates social capital around the initiative, the residents together create a concept of the park area, it is not an imposed, counter-installation or an investment that does not take into account real needs. In the second stage, on the basis of preliminary plans prepared after the first stage, consultation meetings will be held - the residents will be presented with variants of the park, including recreational or sports infrastructure, corresponding to the demographic structure of the area and another, corresponding to the demand. The residents will be able to choose from the catalogue of solutions such elements that will

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<sup>29</sup> [www.mobilityweek.eu](http://www.mobilityweek.eu)



allow them to get involved and take care of the green space, which will realize the postulate of co-responsibility (for example, bottom-up planted flower beds, social herb garden, etc.).

#### **5.2.4 Piraeus**

Piraeus intends to identify relevant stakeholders for the further involvement in participatory planning through the organisation of separate workshops or community meetings per each demo site. It will also explore additional ways of acquiring the information about stakeholders' issues and concerns. One of the methods was performed through online Questionnaire Q3. Alternative ways will be studied to approach the citizens without access to internet, or mobile devices.

During the next months, a separate Workshop or Community Meeting for Ralleion is planned with the participation of teachers, parents, and neighbourhood residents. Proposed Framework (presentations and interactive session) for the Workshop consists of the presentation of the demo site conditions and proposed interventions; discussion on the stakeholders issues, concerns, resources, and ways of participation in the co-design process; participation in the identification and engagement process of the key volunteers (relevant citizens and stakeholders) for the success of the social survey; participation in the social survey (questionnaires, personal & group interviews, wearable sensors for monitoring health and well-being, etc.) in order to measure the impact of the NBS on well-being and health; participation of stakeholders in the dissemination process of the project (for example, newsletters).

### **5.3 Concluding remarks on application of the Collaboration methodology in participatory planning in FL Cities**

#### **5.3.1 City of Bogotá**

Bogotá is working on the participatory strategy called "Building Together"<sup>30</sup> (Juntos Construimos) as a co-creation strategy for planning the public spaces in the case-study's area. The main principles that the strategy is relying on, are inclusion, collaboration, transparency, innovation, and generation of collective knowledge. It contains also a specific strategy for citizens' participation through the communication and dissemination, training, transparency, co-working, appropriation, sustainability and results measuring. Currently, ERU is in the process of drafting the strategy to include the euPOLIS philosophy and to present the project methodology during the main activities with the citizens of the case study.

#### **5.3.2 City of Limassol**

Limassol Municipality participated in several European projects concerning the sustainable development, the improvement of the mobility system, energy efficiency in buildings and environmental awareness campaigns. The past 15 years the Municipality executed projects of more than 50 million Euros, which makes it an experienced partner dedicated to all assignments.

Limassol Municipality has all necessary infrastructure and arrangements for various design activities and planning. It has quantitative and qualitative adequacy of executives and collaborators as well as the appropriate logistical infrastructure for the management and implementation of works, and infrastructure and halls for inviting, engaging, and educating stakeholders and citizens. It has facilities in the centre of Limassol where services like financial department, technical services, citizens' service office, neighbourhood

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<sup>30</sup> Juntos construimos website: <http://www.eru.gov.co/index.php/es/juntos-construimos>



council office and cleaning service are housed. It carried out many consultations and public hearings in order to fulfil public works (like the town's square) and has experience in participatory planning like the Limassol Local Plan and the "Joint Council".

Limassol Municipality has also taken the initiative of developing the Green/Environmental Neighbourhoods, which aims to substantially upgrade and improve the quality of life of the area's residents. With the green neighbourhood initiative, Limassol Municipality planned (it has already designed and is ready to procure the construction works for the creation of the first three neighbourhoods) the redevelopment of selected roads that are connected to green spaces and schools, including the creation of bicycle paths, organised parking spaces and areas rich in green. Special road signs will be installed and measures to reduce traffic congestion will be taken to make these neighbourhoods more human, safer for children and more attractive. The design of this strategic objective of neighbourhood development has also been implemented through public consultation. The Municipality informed citizens and asked for the public's opinion on how to improve its quality of life, from whom increasing the green areas in the urban area and reducing the traffic congestion where the most common thoughts.

Limassol Municipality intends to adapt the Questionnaire 3 and publish it in its social media site for gathering information from citizens regarding their concerns and opinions referring to the selected case-study (the Limassol's Public Garden).

### **5.3.3 City of Palermo**

On the basis of the requests made by associations, citizens and various knowledge bearers, numerous technical round tables have been activated. The City Council has approved Resolution n. 59 of 2015 which identified the actions for the launch of the Park and the responsible offices of the Municipality of Palermo. Since that date, bilateral meetings and tables have been held between the Municipality of Palermo and the Associations and some portions of the Park have returned to the possession of the Municipality. Recently, after the 5 February 2021 meeting, the working group for the Villa Turrisi Park project was set up and coordinated by the Palermo Monreale Greenway Project Manager, which crosses the future Park. This experience represents a solid starting point for the euPOLIS experimentation and to involve stakeholders on the potential of applying NBS in the principles and practices of urban regeneration and environmental governance. The Municipality website hosts platforms and tools for communication and participation to aid in the decision, but it will be necessary to foresee their strengthening for the euPOLIS project and experience.

The Q3 questionnaire will be sent to stakeholders, creating a mailing list, and to citizens via the institutional website and social channels. The associations involved will also be asked to advertise the questionnaire through their respective channels.

### **5.3.4 City of Trebinje**

During the development of the plan for the area of Otok CS, the competent institutions actively participate in the process by giving suggestions related to their competence. Citizens who own the land covered by the plan are informed at the outset and have the opportunity to submit their suggestions and opinions. There is a practice of participatory planning by making the plans available to the public. The holder of the plan preparation determines the draft plan and puts it on public view for the duration of at least 30 days to make a statement and submit written comments on the draft plan in deadline. All comments are entered in the notebook of remarks and opinions during the presentation or submitted in written form later. Simultaneously with the presentation of the draft plan for public inspection, an expert discussion is held.



The public shall be informed about the place, duration and manner of public presentation of the draft plan at least eight days earlier. The holder of the plan and the plan council, if appointed, consider the arrivals written comments on the draft plan and submit to the holder of the plan preparation a reasoned statement opinion on objections that could not be accepted.

One novelty in the planning methodology are brochures that present ideas regarding the development of the city. Brochures are a type of survey that contains illustrations followed by questions that make citizens think. This is important in order to give their answers and influence the view in the planning and expansion of the city. A way to improve participatory planning is to organize early insights into planning solutions in the initial stages in order to involve the competent institutions and listen to the experiences and needs of citizens to obtain a quality solution. In the urban sense it is desirable to develop 3d models from the very beginning in order to monitor the relationship between the different elements. Such models can improve participatory activities and offer quick spotting of imperfections to maintain harmony in space. Observations can relate to irrational use of space, altitude rhythm, orientation of buildings, green elements, sunshine of the space, traffic connections etc. Modern trends impose some new approaches in spatial planning and design, therefore quality participatory activities are necessary in order to preserve the character of the space that makes the City of Trebinje recognizable.

### **5.3.5 Fengxi New City**

Top planning teams from all over the world were invited to participate in the systematic analysis of the current situation of the region and possible water-related problems in the future, together with the government and the public. The goal was to establish the sponge city planning system and define the planning objectives and index. Based on the actual planning objectives of the project, we should systematically revise relevant professional plans for green space, roads, river and lake systems, drainage and water-logging prevention, sewage treatment, etc, and to establish "Intelligent management platform for S.C. Assessment and Monitoring" so that we can conduct performance evaluation and feedback optimization on the reachability and rationality of the sponge planning and design objectives.

China Sponge City Construction (LID) Technology Innovation Alliance was established, and experts and scholars from all over the worlds were invited to participate in the international seminar on sponge city construction to discuss the sponge city construction plan. In order to support the construction of sponge city scientifically, Fengxi New Town integrated local scientific and technological resources and talents advantages, established a collaborative innovation platform for government, industry, academia and research based on sponge city construction. So far more than 20 special research projects have been carried out jointly with the research institutes of local universities, to form a resource pool and provide technical support for the scientific promotion of sponge city construction.

Finally, of particular importance is to mention that euPOLIS's innovative NBS BGS planning procedures brings the planning to new heights in which it becomes strengthened/enhanced by results of numerical modelling of NBS BGS improvement of environmental conditions and indirectly of PH & WB. This modelling will be calibrated, validated and extrapolated with the results of monitoring at demo-sites.

Some examples<sup>31</sup> of how this can be done are presented in the appendix 8.2 for the case of Akti Dilaveri DS in Piraeus.

The core team of the euPOLIS project will create a special task force-advisory group to work together and assist both FR and FL cities in bringing together the relevant professionals and international experts and create a joint concept for systemic implementation of the participatory planning guidelines. It will be based on the combination of existing methodologies practiced In FR and FL cities and the relevant components of

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<sup>31</sup> Wang, Qi, (2020) Blue Green Solutions and Green Harbour Concept: Rehabilitate coastal area and underwater, MSc Thesis defended at ICL, supervised by C. Maksimovic and S. Boskovic





### D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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the GDPM planning system. It will include combination of top-down elements, dominating in the existing methodologies and the bottom-up one pursued by the euPOLIS project paradigm.



## 6 Conclusions/Lessons learned

Since this report (D2.3) in which the emphasis is placed on identification of the status (site analysis) and the relevant issues/problems and resources of the demo sites (DSs) in FR cities and case sites (CSs) in FL cities is a second one of the Task 2.2 it is useful to remind its readers that it is complementary to what has been presented in its predecessor (D2.2) and that **together** they cover what is stipulated in the program of the Task 2.2.

*Task 2.2: Stakeholders and wide public participatory planning education (ICL, CDP, RG, FCEBG, MIKS, AMPHI, ERCE, ISS, BYSP, ENPL, GSH, BPL, VFI, all cities), [M2-M12]*  
*EuPOLIS' team considers stakeholders and wider public education as major ingredient for the adequate participatory planning process as only process that secures optimal project success. Workshops at all 4 demonstration sites of the project will be organised (starting from month 3 of the project) to inform participants of basic participatory planning components and enable them to attain highest practical level of competence for constructive quality involvement in the preparatory, planning, implementation, approval and usage phases of the each site project. At these local workshops, the specific site spatial, functional, natural and demographic conditions will be investigated to enable the euPOLIS' team, together with the local stakeholders and expert teams, to define demonstration sites related concerns and problems with particular accent on PH and WB as well as resources useful for the implementation of relevant NB solutions.*

An important part of the euPOLIS project is to implement innovative planning methodology at its DSs and CSs so that they improve PH&WB. The prerequisites for the full success of this “undertaking” after

- a. the conditions/status of these sites are identified, major issues, concern and resources revealed and presented and
- b. all stakeholders properly “made fit” for adopting this innovative paradigm/philosophy i.e. have gone through the mental set-up change (as presented in the figure 5 of this report) through proper training in basics of NBD/BGS participatory co-planning, co-design for which a simple, consistent, ragged methodology is available

These two important aspects are covered/put together in this D2.3 report and are available for further customisation and use in the other WPs of this project.

It is of paramount importance to demonstrate that the training and the education of stakeholders will result in their improved capacity in both participatory planning and advanced planning in general, which can then result in a permanent legacy of adopting this methodology by both euPOLIS cities' planners and other planners who are not partners of the euPOLIS consortium. The key result is the upscaling methodology developed in euPOLIS/ tested and ‘perfected’ in the DS/CSs to the other locations (spatial extrapolation) and after the project is finished (temporal extrapolation). This can be achieved by further customization for not only similar cases /districts in FR/FL cities, but also in other cities in relevant euPOLIS countries, as well as other European and countries in other continents. Furthermore, to be extrapolated in time, leave permanent capacity building system and initial Infrastructure (Eco-edu hubs), which can continue to spread euPOLIC paradigm after the project has been finished.

As presented in detail in this report (Section 4), the euPOLIS's upscaling methodology will be applicable at several spatial and temporal levels. It is summarised as follows:

- a. **Upscaling on personal level.** euPOLIS training guidelines will enable this to be done by both professional planers and other stakeholders, through the self-learning



## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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- b. **Upscaling on district level.** This can be done by the euPOLIS partners, trained top level professional planners who will use their mastering of euPOLIS NBS/BGS/GDPM planning
- c. **Upscaling on city level.** Similar to the methodology applied in the item b), upscaling to the city level can be implemented by combining two different approaches: (c1) bottom-up participatory planning upscaled to the city level and (c2) top-down planning methodology. This would be euPOLIS project's permanent legacy
- d. **Upscaling on country level.** Similar to the FR/FL city level where we have full scale DC/CS venues the same methodology can be Implemented at the whole country level
- e. **Upscaling on global level.** The above euPOLIS's innovative planning methodology is probably one of the most suitable European products, a candidate for broader application at a global
- f. **Extrapolation in time (temporal extrapolation).** By leaving behind Initial Infrastructure (Eco-edu hubs in each of the FR cities) which can continue euPOLIS mission and spread its innovative.

The initial deliverable D2.2 has set up the stage/developed the framework for successful implementation of the most crucial activities in the euPOLIS project. It contained sufficient initial concepts and framework for the activities to be performed in this task as well as in the tasks T2.3, T3.1, and T3.2 and in planning for other relevant WPs and their tasks.

This D2.3 report presents final results for three major stumbling blocks of the euPOLIS' program for 3 major parts: (i) Report on Demo Sites' Specific Conditions, (ii) Report on Stakeholders issues, Concerns and Resources, and (iii) Stakeholder Education Guide Principles. Some detailed results presented In D2.2 have deliberately not repeated here for the sake of consistency and robustness of this report. It also provides basic illustration/instructions on how to conceptualise development and planning of euPOLIS's permanent legacy- Eco-edu Hubs Appendix 7.1, compatible to figure 1 in section 2.1 of this report.

The background material needed for the main body of this report is obtained through the questionnaire Q3 and the Workshops performed in all 4 FR cities and through direct contributions of the cities and supporting partners. The synergy with the WP6 which will take over detailed planning for FR 's DSs and FL's CSs has been initiated by running joint initial training and co-planning sessions.

Finally, this report is the basis for the continued activities in other WPs in particular WP6 leading to final construction and full-scale Implementation of BGS/NBS In FR cities.

## 7 Appendixes

### 7.1 An example of Eco-Edu Hub in Park Usce, Belgrade

This hub, presented in figures 24-29, is conceptualized to meet several objectives:

- to "host" small scale examples of the NBS/BGS and the monitoring and data communication equipment that will be implemented in the Park Ušće (as presented in the figure 1) both in the interior, on the roof, at the façade, around the building
- to host euPOLIS's professional and research teams who will carry out the monitoring and scientific/professional art of the program and the relevant data base and education/demonstration/promotion content
- to receive visitors (both professional and general public) for indoor and open-air gatherings, to carry out the relevant euPOLIS's mission program both during and after the project is finished
- To serve as a permanent euPOLIS's legacy spot for continuing hosting and support to future euPOLIS compatible developments of urban environmental and planning innovations and euPOLIS' compatible business development both at the local and international level.

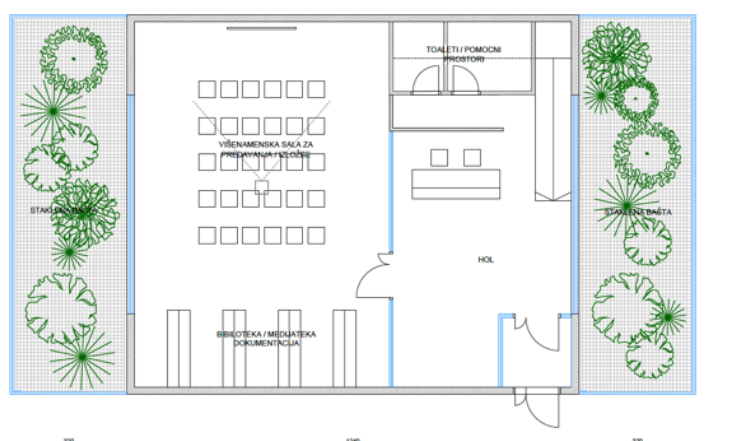


Figure 24. Eco-edu Hub in Park Usce. Ground-floor plan view

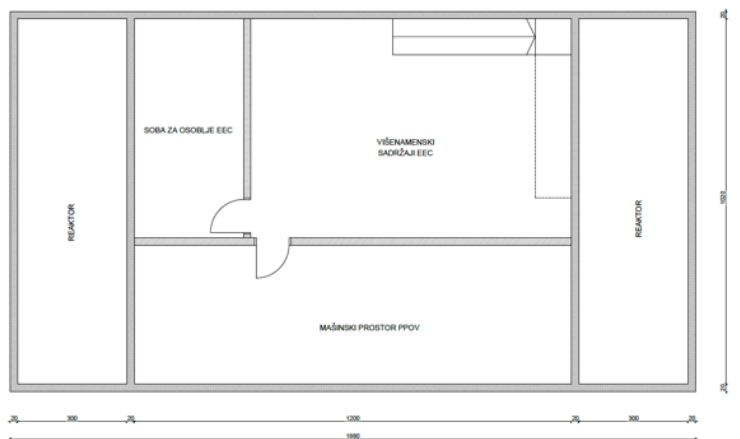


Figure 25. Eco-edu Hub in Park Usce. Basement plan view



Figure 26. Eco-edu Hub in Park Usce. Front view



Figure 27. Eco-edu Hub in Park Usce. Cross section view

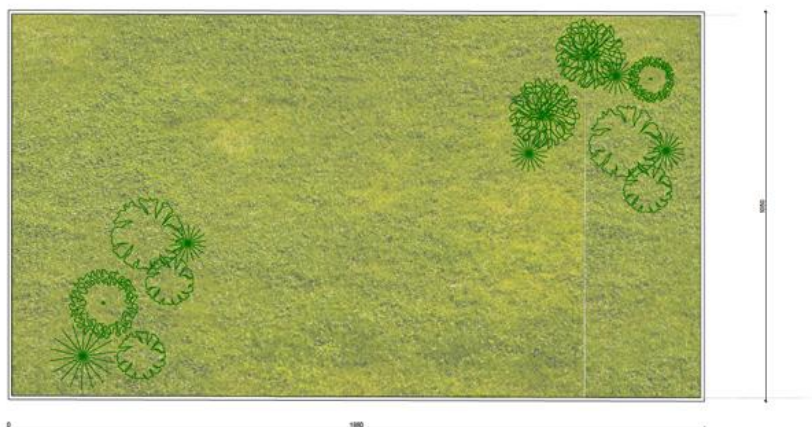


Figure 28. Eco-edu Hub in Park Usce. Roof plan view



## 7.2 Appendix – 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 Wólczańska 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.



Figure 29. Lodz Workshop 2 – Participant's photos and information poster

### Brief list of stakeholder's groups present at the Workshop:

- Fire Department,
- City Watch,
- Municipal Kindergarten,
- Private university name,
- Employees of the Lukaszewicz 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
- 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:

- ***EuPolis project and approach:***
  - to implement blue-green infrastructure in the city (important to underline that it differs from grey infrastructure projects);
  - to improve public health (PH) and well-being (WB) through: regulation of microclimate, reduction of air, noise, water pollution, beauty and diversity of the space by implementing NBS/BGS;
  - to open the space for multiple users and educate the adults on how to use and improve their health by NBS and kids on the value of such spaces to plan and work jointly with all stakeholders by shared responsibilities
- ***General stakeholders' education framework:***

euPOLIS education framework was introduced by the following brief blocks

  - **Stakeholders euPOLIS concepts** briefing has been covered by: Marta Chomczyńska's introductory presentation about the project,
  - **the results of online EuPolis questionnaire** by Patrycja Wojtaszczyk's presentation,
  - Kinga Krauze's slides on ecosystem services delivered by the city blue-green spaces and by the whole outdoor part, when we discussed with the citizens what has been proposed for the Eupolis actions for Łódź (banners), how the solutions operate with pros and cons and some operational issues we must face (e.g. slopes or landforms), how they fit the Eupolis target to improve health and well-being of the citizens – in fact we presented the possible EuPolis solutions and the citizens indicated why those are important to them and which aspects of their lives could get improved, and how NBS could be distributed (in my report part: solutions approved by citizens).

Regarding point to plan and work jointly including shared responsibilities we have only initiated the discussion on the following topics:

- items included in the report that was presented in the previous (indoor) part of the workshop,



- the scheme of further work was proposed by Patrycja and discussed. The plan includes 2 more meetings in the demo and update of the information on euPOLIS activities with announcements left in the passage, joint co-design meetings with the designer BEFORE accomplishing the description for the public procurement contract for the implementing company, opening e-mail contact channel between citizens and the City of Lodz office.

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

**The 1<sup>st</sup> part of the 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. After welcoming the participants Marta Chomczynska (City of Łódź) gave a presentation about the project and its aims. This was followed Wojtaszczyk (City of Łódź) who presented the results of the Q3 survey for Łódź. The theoretical part of the meeting was concluded by Kinga Krauze (ERCE PAS), who led the educational part for the beneficiaries (see the minutes of the workshop included).

**The 2<sup>nd</sup> part of the Workshop** (during the walk),

A representative of the environmental shaping department from the City Hall of Lodz responsible for the inventory of greenery on the walkway presented it in detail to the stakeholders and discussed all the species planned at the demo-site venue.

It was announced that the details of the possible improvement of the site with some more different species including possible quantification of their impacts will be done within the WP6.

#### **Stakeholder's questions, further theoretical clarifications / Discussions for co-design process**

Stakeholder's meeting 28th July and 5th August 2021, Łódź

Rapporteur: K. Krauze

From Tasks 6.1 (WP6) and 2.2. (WP2) (15min): short explanation on how the city operates when dealing with environmental / urban infrastructure issues relevant to euPOLIS project

Where does all the surface runoff water go during and after the rain (urban flooding issues)?

Why is it so hot there (UHI/Urban Heat Island issue)?

What are the consequences of that to people (health and well-being) and nature if the systems were not planned to cope with these natural processes (the system cannot perform satisfactorily, cannot deliver the services and it is expensive)?

How blue-green solutions operate in general and how they can be adopted and retrofitted to this location?

What solutions do we know and how do they work? – EuPolis

It was announced that the detailed planning for improvement of environmental conditions and the people's health and well-being customised to this concrete location will be carried out in the next (planning) phase of the WP6.

Figure 30 shows main slides presented during the Workshop.



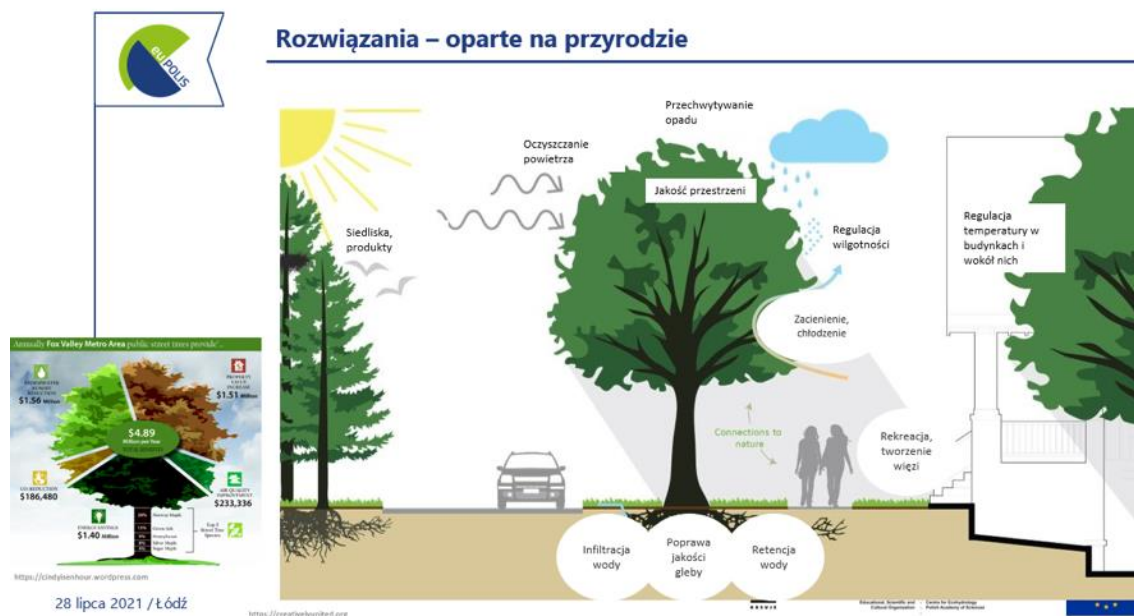


Figure 30. Lodz Workshop 2 – Slides from the Workshop presentation

### 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.



## 7.3 Appendix - An example of customized training unit based on BGS/NBS/GDPM

### Topic: Stakeholder's inclusion into demo site planning process

#### A. Introduction

The next workshop (Joint event of the WP2 Workshop no.2 within the WP6) as from of "Training of Trainers". It will contain elements of the Task 2.2 (Stakeholders education).

The first 45 minutes (possibly longer if required with discussions) will be devoted to participants briefing on euPOLIS planning approach and methodologies.

Task 2.2 specifies: Workshops at all 4 demonstration sites of the project will be organized (starting from month 3 of the project) to inform participants of basic participatory planning components.

Task 6.1 specifies: Identify local stakeholders' concerns / problems, requirements as well as resources to produce site specific GDPM.

Both tasks call for stakeholder briefing / education, to enable them to take role of co-planners within the demo site urban planning process.

To avoid multiple workshops related to these two tasks, and utilize convenient timing of these two tasks, the joint (integrated), Task 2.2 and WP6, implementation activities are envisaged:

#### B. Public invitation for all stakeholders (citizens) to participate in W2:

Note: Although the text was prepared for the city of Lodz, the text is generic so that it can be used by the other FR cities for their events

#### *The proposed invitation text*

*(clear, short, and understandable for all):*

The City of ..... is undertaking project with the aim to improve citizens Health and Well-Being in the city. Project is funded by European union within the European Horizon 2020 program. Local pilot demonstration location ..... is selected to demonstrate new planning methodologies designed to have significant positive impact on Public Health and Well-being.

- Citizens are invited to take active role in the design of euPOLIS demo site in this location. The public workshop will be organized on ..... (date, time, approximate duration 120 to 180 min).
- This workshop is organized by the ..... City team, supported by euPOLIS project partners. We invite: all citizens interested in designing and / or using this site, citizen interested in a long-term collaboration with euPOLIS project, local businesses, community organizations, NGOs, and any other public groups not mentioned.
- The first part of the workshop will be devoted to citizens briefing on euPOLIS principles and methodologies, to inform you on innovative project approach and technologies. The second part of the workshop will be used for co-design process where citizens will, via Internet, share their opinions, concerns, wishes and suggestions for the optimal solution at this demonstration site.

#### C. Proposed workshop structure

**a. EuPOLIS Presentation (45 min)** - Stakeholders euPOLIS concepts briefing based on following curriculum:

From the Task2.2 (35 min):

1. Introduction of GBS / NBS
2. Co-design
3. GDPM system
4. Socio – gender, environmental related planning



5. BGS business activation
6. Scaling-up methodology

From the Task 6.1 (10 min): short explanation of local demo site shortcomings and goals to be achieved. The above euPOLIS Presentation (T2.2 and T6.1) will be prepared by task 2.2 and 6.1 teams and carried out by local supporting partners in local language.

**b. Discussions (10 – 20 min)** - Time of 10 to 20 minutes to be allowed for the stakeholder’s questions, clarifications.

**c. Co-design process (60 – 120 min)**

- The task 6.1, jointly with local teams, will prepare 4 to 6 basic questions for stakeholders and coordinate it with local teams,
- Local teams will translate it for workshop use,
- Citizens will use “mentimeter” or any other agreed tool to answer questions,
- separate space on used platform tools should be allowed for citizens other comments and suggestions, not covered with questions.
- At the workshop, it is necessary to reach an agreement between the citizens (workshop participants) and the city and euPOLIS team, on further methods and models of including citizens in the project and its realizations, as well as tools for continuing informing citizens about the process and results.
- As a follow-up, city will sort out and translate all stakeholders’ submissions (not only selected ones) and submit it to the tasks 2.2 and 6.1 leaders.

The workshop should be covered by translation from local language into English language and from English to local language for the benefit of tasks 2.2 and 6.1 teams which will be present at the workshop for the benefit of their potential communication with citizens.

Management to advise FR cities that the translation is mandatory. If there are financial issues, they probably can be resolved with unused traveling financial resources.

Once cleared by project management, the above proposal will be submitted to WP6 partners for their comments.

Ranko Bozovic and  
Cedo Maksimovic

**7.4 An example of possible areas of training FR city of Piraeus**

*Table 15. An example of possible areas of training of specific group of stakeholders to increase motivation and support to euPOLIS, Piraeus*

Unions	Location:	Possible area of training to increase motivation and support to euPOLIS
Residents of Mikrolimano - Descendants of Refugees of Asia Minor 1922	Refugee Settlement of Asia Minor Lane A, number 5, 185 33, Mikrolimano	Residents potential interests if they participate in planning based on their answers to Q3
Panhellenic Open Sea Sailing Club	Akti Dilaveri 3, Piraeus 185 33	Potential Business drivers analysis, development and implementation
Noe - Navy Group of Greece	Karagiorgi Serbias 18, Piraeus - Mikrolimano, 18533, ATTICA	Potential Business drivers analysis, development and implementation





D2.3 Report on the local site analysis report and list of relevant issues/problems and resources  
(Version 2)

Iop - Sailing Club Piraeus Sport Club	Akti Koumoundourou & Mantzarou, Piraeus - Mikrolimano 18533, ATTICA,	Potential Business drivers' analysis, development and implementation
Hellenic Rowing Federation of Navy Club Fans	Akti Koumoundourou 22, Piraeus - Mikrolimano, 18533, ATTICA	Potential Business drivers' analysis, development and implementation
3rd Municipal Community of Piraeus	Dim. Falireos 5, Piraeus 185 47	General GDPM Blend in Matrix Climate Change Gender Matrix
Parents & Teachers Association of Ralleion Primary Schools of Piraeus	Alexandrou 3 & Tzavela 18533 Piraeus	Planning co-design Blend in Matrix General GDPM, Indoor Env. Qual. Climate Change Gender Matrix
Educational and Local Improvement Society of Neo Faliro		Planning co-design General GDPM, Water Energy Greenery, Vertical Farming, Grey Water recycling Climate Change Blend in Matrix
Navy Club of Delfinario	Akti Dilaveri 2, Piraeus 185 33	Potential Business drivers analysis, development and implementation
Navy & Sport Club Irinis- Filias (Noef)	Akti Dilaveri 2, Piraeus 185 33	Potential Business drivers analysis, development and implementation
Association of Professional Fishers of Mikrolimano, Piraeus "The Saint. Nectarius »		Climate Change General GDPM – Water quality
1st System of Naval Scouts of Neo Faliro	Dim. Falireos 38, Neo Faliro, Piraeus 185 47	Climate Change Matrix General GDPM – Water quality
Local Improvement Society of Neo Faliro, "THE RENAISSANCE"		General GDPM Capital Saving Matrix Blend in Matrix
Neo Faliro Association		General GDPM Capital Saving Matrix
<ul style="list-style-type: none"> <li>o Piraeus Municipal Radio - KANALI 1</li> <li>o Public Benefit Municipal Enterprise of Piraeus (KODEP)</li> <li>o Volunteering Office of Municipality of Piraeus</li> <li>o Culture, Sport and Youth Organisation (OPAN PIRAEUS)</li> </ul> SEF Stadium		General GDPM Blend-in Matrix
Association of Restaurants and Related Professions of Piraeus	80 Kolokotroni Str., Piraeus 185 35	Potential Business drivers' analysis, development and implementation
Restaurants, bars and related business entities		Potential Business drivers' analysis, development and implementation

## 7.5 An example of possible areas of training - FL city of Palermo

On July the 19<sup>th</sup>, 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 following link has been created for the Google Meet event:

<https://meet.google.com/afn-yzux-teu>

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



### INVITO AL PRIMO EVENTO PARTECIPATIVO PER IL PROGETTO euPOLIS



## FOCUS GROUPS / PROGETTO DEL PARCO DI VILLA TURRISI

Lunedì, 19/07/2021.

Online: piattaforma Google Meet



Partecipa con Google Meet: <https://meet.google.com/afn-yzux-teu>

Meeting ID: 429 064 225#

Partecipa tramite telefono: +39 02 3041 9558

Figure 31. 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 32. Palermo Dissemination Event – Agenda

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

## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

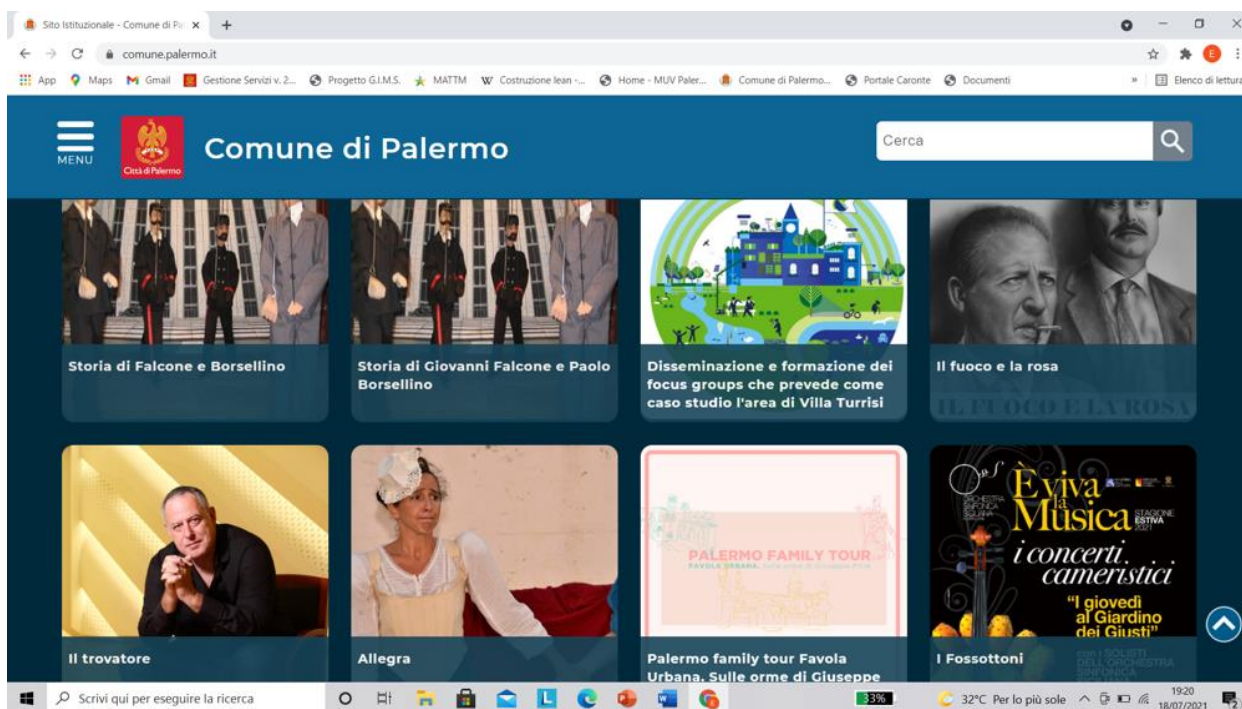


Figure 33. Palermo Dissemination Event – The city's website homepage

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.

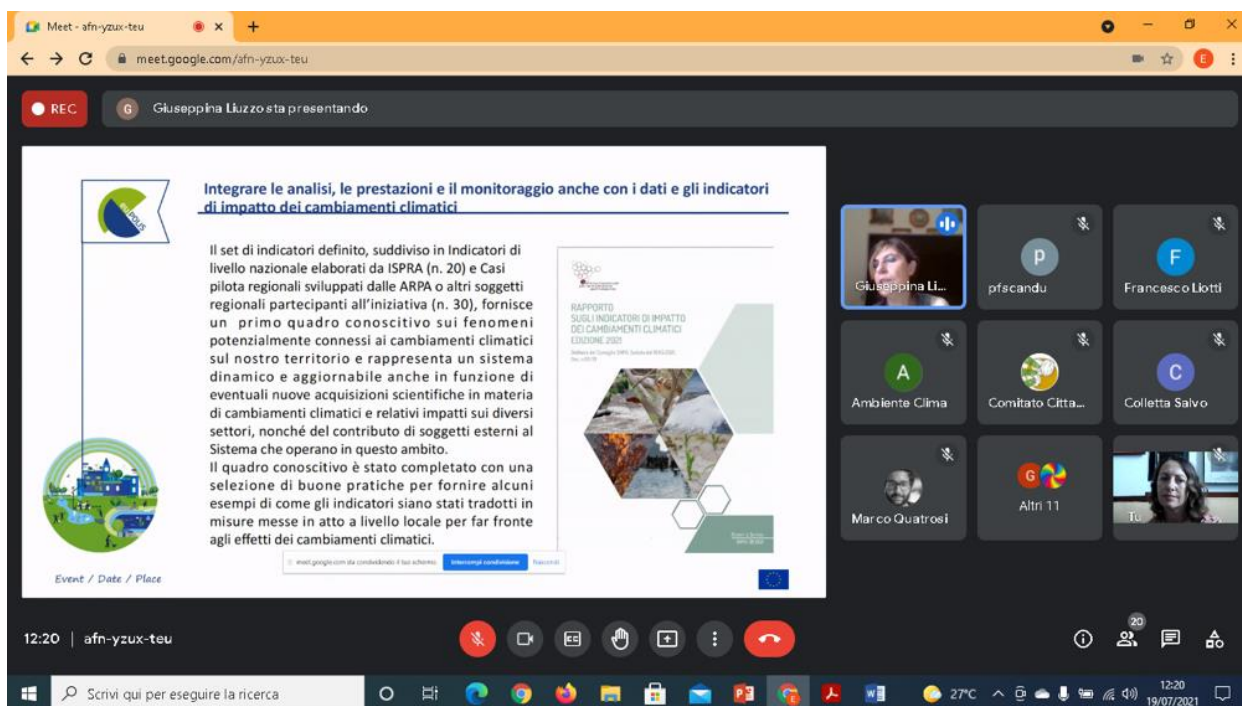


Figure 34. Palermo Dissemination Event – Screenshot of the meeting



## D2.3 Report on the local site analysis report and list of relevant issues/problems and resources (Version 2)

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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.



## 8 Acknowledgment

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For any other dissemination activities, the EC emblem with the phrase:

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For further information, please contact the WP2 Leader (c.maksimovic@imperial.ac.uk).