


NBS Implementation Strategy

Part 1 - Introduction

Lead partner	CES
Type	Demonstrator
Dissemination level	PU - Public
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Acronym	URBiNAT - Urban inclusive and innovative nature
	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776783

The content of this report reflects only the authors' view and the European Commission is not responsible for any use that may be made of the information it contains.

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Table of contents

Part 1 - Introduction	5
Purpose of deliverable	6
Roles and objectives in relation to other work packages.....	7
Executive summary	8
 Part 2 - Porto	
1.Introduction	
2. Taskforce	
2.1 Roles & Organization	
2.2 Articulation with Municipality departments and beyond.....	
2.2.1 Sharing experiences	
3. NBS co-implementation process	
3.1 Lessons learnt from the citizen engagement on previous stages	
3.1.1 Co-creation process analyses.....	
3.1.2 Co-creation process report	
3.2 Strategies to re-activate and improve citizens engagement process	
3.3 NBS Implementation Planning	
3.3.1 NBS implementation: the example of the cultural platform Campanh'up	
3.3.2 NBS implementation: the example of IAAC pedagogical farm in school courtyard.....	
4. Urban Project implementation	
5. Conclusion and Achievements; Innovative Implementation procedures & process	
 Part 3 - Sofia	
1.Introduction	
2. Taskforce	
2.1 Roles & Organization	
2.2 Articulation with Municipality departments and beyond.....	
3. NBS co-implementation process	
3.1 Lessons learned from the citizen engagement on previous stages	
3.2 Strategies to improve citizens engagement process (or Citizen engagement in the implementation stage).....	
3.3 NBS Implementation Planning - Healthy Corridor Promotion & Activation.....	
3.3.1. NBS implementation	
3.3.2. From proposals to co-implementation: general guidelines.....	

3.3.3. Activation of the Healthy Corridor in Sofia	
4. Urban Project implementation	
4.1. Structuring the process	
4.2. Administrative and technical procedures	
5. Conclusion and Achievements	
6. Annexes	
Co-creation process report/Feedback (fiche)	
Part 4 - Nantes	
1. Introduction	
2. Taskforce for the implementation stage	
2.1 Roles and Organization	
2.2 Articulation within the task force and beyond	
2.2.1 Complementary roles within the Nantes task force	
2.2.2 An organization to support the implementation of the NBS in a territory of projects	
3. NBS co-implementation process	
3.1 NBS Implementation	
3.2 The citizen engagement on previous stages	
3.2.1 Co-creation process analyses	
3.2.2 Co-creation process report/Feedback (fiche)	
3.3 Strategies to Improve citizens engagement process	
3.3.1 Municipal Advisory board: building on the dynamic of an existing group	
3.3.2 Reactivate the district meetings, the place for exchanges between inhabitants and elected representatives	
3.3.3 Rely on thematic working group for the implementation of the NBS	
3.3.4 Reinforce the Local District Committee as the place for validation by elected representatives within Urbinat	
4. Urban Project implementation	
4.1 Administrative and technical procedures	
5. Conclusion and Achievements	

Part 1 - Introduction

Purpose of deliverable

Deliverable 4.6 aims to describe the “NBS Implementation Strategy” of the healthy corridor in the three frontrunner cities. The strategy is defined by each city according to the healthy corridor concept and urban plan organized by the local taskforce and co-created with local citizens and stakeholders. In this sense, the main principle is to develop a co-implementation strategy where the healthy corridor and the NBS will be implemented in a collaborative process where the municipal technicians and the local citizens have a key role. To organize this participatory process, a stakeholder advisory board with representatives of all actors involved will follow the implementation process.

Nevertheless, each city is organizing these boards or commissions according to their local culture. In parallel, the green infrastructure and pathway systems will be built by companies that will be selected according to public tenders or other administrative procedures, as it is explained for the case of Nantes.

The deliverable is divided into four parts. Part 1 does the introduction and does an analysis of the cities’ implementation strategy while part 2, 3 and 4 are dedicated to the NBS implementation in each frontrunner, Porto, Nantes and Sofia.

Considering the principle of developing a co-implementation strategy with citizens and stakeholders, the deliverable will also analyse the co-creation process developed so far.

Roles and objectives in relation to other work packages

Deliverable 4.3 NBS implementation strategy has a direct relation with task and deliverables of WP4, considering that this is the deliverable that articulates the NBS catalogue with the implementation of the urban plan for the healthy corridor in the frontrunner cities.

D4.3 has these objectives in relation with other WPs:

In relation with WP2, D4.3 is incorporating the local diagnostic (D2.1), namely the territorial and social analyses that identified the needs and goals for the study and intervention area. It also reports the cooperation and networking between the local partners as well as between the three frontrunner cities (D2.2 and D2.3). The deliverable is the direct result of the urban planning task (D2.4) and it will be integrated in the Roadmap for NBS and healthy corridors planning and implementation (D2.5)

In relation with WP3, D4.3 is analysing the co-creation process, monitoring the participatory activities and the citizen engagement. In this sense, it will define a co-implementation process based on the learnings taken from the co-diagnostic and co-design stage. The participatory process developed so far organised according to the local participatory culture (D3.1), the community driven process adapted to each city (D3.2) and following the workshops, methods and tools guidelines (D3.5). The participatory activities are described in the annex.

In relation with WP4, the implementation strategy for the NBS co-designed in each living lab with local citizens and stakeholders inspired by the NBS catalogue (D4.1). The Healthy Corridor (HC) (task 4.4 and deliverable 4.2) promoted the co-design process that identified the NBS and integrated it in a global strategy for the intervention area. This global strategy was developed by the local taskforce (municipalities with the local scientific partners) in order to prepare the urban plan for the healthy corridor in the frame of task 2.4 and presented in D2.4. The urban plan was developed with contributions of the citizens and with the technical support of external teams, when needed. The cities contracted facilitators to develop the co-design process, when the local taskforce needed.

In relation with WP5, the implementation strategy of the healthy corridor has a direct correlation with the WP5, the URBiNAT Observatory. On one hand, the implementation of the healthy corridor aims to have an impact on the health, environment and economy of the communities, that will be measured and evaluated by task 5.3 and 5.4. On the other hand, the implementation strategy aims to engage the municipality, the stakeholders and the citizens in a collaborative process with impact in the governance and in the participatory process that will be monitored and evaluated by task 5.5 and 5.6.

Finally, the implementation strategy will aim to contribute to the market potential of the NBS that will be analysed and characterised by WP7.

Executive summary

The implementation strategy of the healthy corridor aims to engage the municipality, the stakeholders and the local citizens in the production, construction and activation of nature-based solutions (NBS), in order to achieve a co-implementation process.

Based on the local diagnostic and on the healthy corridor concept and urban plan, this implementation strategy will be adapted and developed for each city and its intervention area. In this sense, the co-creation process that has been built together in the last 2,5 years will frame the specificity of each implementation strategy that is reported in part 2, 3 and 4 of these deliverables, namely Porto, Nantes and Sofia.

With the objective of preparing the next 2,5 years, the cities analyse and evaluate the participatory process (co-diagnostic and co-design) with the description of each activity and develop an evaluation. With this critical overview, the cities redefined their participatory approach and proposed a new co-implementation strategy. To support the cities, URBiNAT developed a municipal roadmap that was adapted by the three front runners' cities according to their local culture contributing to a co-governance model. Porto created a working commission of the healthy corridor with working groups dedicated to each NBS group; Sofia established a stakeholders' advisory board and Nantes adapted an existing citizens commission. All these commission aim to create a space of dialogue and decision-making process to implement the healthy corridor between elected peoples, URBiNAT team, municipal technicians, local association and institutions and local citizens.

The implementation of NBS will have two main parallel approaches. One, related with the green infrastructure and pathway systems will be built by companies that will be selected according to public tenders or other administrative procedures, as it is explained for the case of Nantes. Other, related with the implementation of activities and immaterial products related to culture, sports, education, socio economy, food that will be implemented according to a specific management and production process following the URBiNAT guidelines, but adapted to each city culture.


The report of each city is organised in five chapters to define the implementation strategy: chapter 1 does an introduction integrating the results of deliverable 4.1, New NBS, 4.2 Healthy corridor concept and 2.4 Healthy corridor urban plan; chapter 2 is dedicated to analyse the management structure, the local taskforce, namely the way municipal technicians have been integrated; chapter 3 does the analysis and evaluation of the co-creation process, namely to the co-implementation strategy; chapter 4 describes the administrative and technical procedures, namely the public procurement process. Finally, the conclusion presents the lesson learnt and the main achievements.

The part 1, introduction, presents the guidelines that frame the co-implementation strategy, namely the redesign of the municipal roadmap, that was already presented in deliverable 3.2. The introduction also presents an analysis of the three co-implementation strategies in order to evaluate the way cities adapted and improved the guidelines. This is also important to identify lessons learnt to be integrated in the co-implementation of the follower cities.

NBS Implementation Strategy

Urban Plan Report Porto

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Type	Demonstrator
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List of figures

Figure 1. Schematic resume of the different entities that compose and support the Task force, and respective roles.....	7
Figure 2. Schematic resume of the different entities that compose and support the Task force, and respective roles, showing the organic units and companies that will potentially integrate the Taskforce support (in orange) for an effective and sustainable implementation of the ideas considered to be developed under URBiNAT.....	12
Figure 3. Structural and functional organization scheme of the COT.CS and respective GT.	32
Figure 4. Diagram of general dynamics and workflow.	33
Figure 5. Diagram of general dynamics of each GT.....	33
Figure 6. Organizational diagram for campanh'up.....	38
Figure 7. Stages and timeline of campanh'up.....	38
Figure 8. Plan of the urban project for the Healthy Corridor of Porto.	42
Figure 9. Plan of the urban project for the Healthy Corridor of Porto, including the identification of relevant places.....	45

List of tables

Table 1. Entities that compose the Porto Taskforce and their roles, with identification of the main participant members and focal points (identified in green).	10
Table 2. Municipal organic units and companies involved in URBiNAT.	11
Table 3. Resume of the testimonials from different municipal technicians about the work and importance of the Task Force.	13
Table 4. Co-creation sessions.....	28
Table 5. Actors, and respective tasks.....	31
Table 6. Project team and tasks.....	42
Table 7. External project meetings and consultations.	44
Table 8. Resume table of main conclusions and achievements.	47

Table of contents

Part 2 - Porto	5
1.Introduction	5
2. Taskforce	7
2.1 Roles & Organization	7
2.2 Articulation with Municipality departments and beyond.....	10
2.2.1 Sharing experiences	13
3. NBS co-implementation process	14
3.1 Lessons learnt from the citizen engagement on previous stages	14
3.1.1 Co-creation process analyses.....	14
3.1.2 Co-creation process report	19
3.2 Strategies to re-activate and improve citizens engagement process	29
3.3 NBS Implementation Planning	34
3.3.1 NBS implementation: the example of the cultural platform Campanh'up	35
3.3.2 NBS implementation: the example of IAAC pedagogical farm in school courtyard.....	39
4. Urban Project implementation	41
5. Conclusion and Achievements; Innovative Implementation procedures & process	46

Part 2 - Porto

1.Introduction

The co-implementation of the healthy corridor in Porto is organised according to the co-creation process of the healthy corridor that was described and analysed firstly in the deliverable 2.1 Local Diagnostic and secondly in deliverable 4.2 Healthy Corridor Concept.

The local diagnostic of Porto' study area, Campanhã, characterized the territory and the community, but also identified an important group of citizens and stakeholders interested in contributing with their knowledge and energy to the co-creation of the healthy corridor in Campanhã. The implementation of the healthy corridor in Campanhã will have to face some of the challenges identified in the local diagnostic. The territorial challenges of the intervention area the intersection with road infrastructures, as highway A43 or Alameda de Cartes, the abandoned of the public plots, steep slopes as embankments for the road systems, informal paths to connect Cerco do Porto and Lagarteiro neighbourhoods with Falcão one. The social challenges in the study area reveal high unemployment, low level of education, high number of people living in social housing, high level of criminality and lack of health practices, as walking or sports activity. But it also reveals important assets such as interest in urban agriculture, high number of local associations (sports, social and cultural), high sense of belonging, and cultural diversity.

A) Territorial Analysis

- Green areas and their connection for leisure and sports activities
- Better conditions of pedestrian paths. New connections
- More accessible paths for all citizens
- Lighting
- Stay/sitting/resting areas
- Qualified green areas and nature in the urban environment
- More autochthonous plants and trees
- Play areas for children

B) Social Analysis

- Adequate cleanliness and maintenance of the public space
- Socialization/community/entertainment opportunities. Community spaces improvement
- Improve local economy
- Respect existing memory
- More connectivity with existing and future projects/initiatives
- Participatory opportunities/tools for citizens engagement in urban planning
- Improve literacy for environmental issues

The healthy corridor concept was developed during the co-design stage with the active participation of adults and children in several activities and workshops (see 3.1.2 and annex). The result was the ideation of 39 NBS organised in four groups: public space and nature, culture and sports, education and environment and socio economy and solidarity practices. These new NBS went through a validation process that identify three groups: NBS that will be implemented by URBiNAT, NBS that will not be implemented and NBS that will be forwarded to other municipal projects to be implemented in synergy with those initiatives, if possible. Nevertheless, all the proposal were integrated in the Healthy Corridor concept in order consolidate its goals, namely:

- To design a public-access green park that is multifunctional, inclusive and a driver to improve quality of life for the local community;
- To design a green urban structure that fosters ecological dynamics and environmental quality;
- To develop a network of pedestrian and cycling routes that promote soft mobility;
- To create areas for resting, recreation, contemplation and meeting in an environment of high microclimatic comfort and safety;
- To create areas for social events and community initiatives;
- To underpin the functional and spatial cohesion of the urban network through connections to strategic points;
- To mitigate the visual, sensorial and environmental impacts of large road structures, namely the A43 motorway;
- To provide areas for educational outdoor experiences.

In this sense, we can identify aims and principles for co-implementation strategy of the healthy corridor. In the case of Porto, the taskforce decided to establish two parallel and articulated paths: one for the territorial solutions and other for the immaterial solutions. The first one will follow the urban planning procedures for the implementation of urban parks, with an urban project that will be licensed and developed into an execution project, a public procurement will select a construction company and the company will provide the construction works supervised by URBiNAT taskforce, namely CIBIO-ICETA as coordinator. The second type of solutions, the immaterial ones, will be developed and implemented in parallel in the frame of three working groups - culture and sports, education and environment, and socio economy and solidarity practices - constituted by municipal technicians, URBiNAT taskforce partners, citizens and stakeholders. Both implementation processes will be followed by the Working Commission for the Healthy Corridor (see 3.2). The aim of this process is to create a green infrastructure to support social, cultural and economic activity and to develop synergies with stakeholders and with the several municipal projects that are being implemented.

This document is organised in three main chapters. This first chapter “introduction” links the implementation plan with the main results of deliverable 4.2 - co-diagnostic needs and expectations, the NBS proposals and its organisation and the healthy corridor aims and principles. Chapter two is focused on the organisation of Porto taskforce, namely with the partners' roles and their articulation with the municipal departments. Chapter three defines the co-implementation strategy based on the analyses of the co-creation process developed so far. It will be the backbone of the healthy corridor implementation with the activation of the Working Commission of the healthy corridor and the working groups to develop NBS. Chapter four is dedicated to the urban project implementation where the Administrative and technical procedures are identified as well as the technical team. Finally, the last chapter presents the main findings and achievements. The annex compiles the fiche of all the participatory processes developed so far, according to a set of criteria defined together between the cities.

2. Taskforce

2.1 Roles & Organization

The Taskforce in Porto was created in order to facilitate the work developed in the city of Porto by making the project planning, implementation, communication and decision-making processes more agile. This entity is composed by the City (including the main municipal departments involved), and strongly supported by the local and horizontal partners (Figure 1), each of them represented by a focal point.



Figure 1. Schematic resume of the different entities that compose and support the Task force, and respective roles.

These focal points commit to an average of weekly meetings (more or less, as needed) where all ongoing topics are discussed aiming at the successful implementation of the project, always aligned with the remaining colleagues from each entity and with the work developed by the other cities' Taskforce.

As the Taskforce is responsible for the activation and implementation of the different phases that compose URBINAT - co-diagnostic, co-design, co-implementation and co-monitoring - some of the main tasks performed, so far, included:

Co-diagnostic:

- Support the methodology design for the different diagnostic analysis performed;
- Perform specific diagnostic analysis and support external entities responsible to develop other analysis;
- Provide contributes for project deliverables - Responsible for the compilation of all diagnostic data obtained (internally and externally) in the Local Diagnostic Report (Deliverable 2.1), which was the base for the work developed in the following stages;
- Support the development and dynamization of participatory activities during the co-diagnostic phase.

Co-design:

- Develop the methodology and implementation of the participatory activities;
- Systematization of citizens' proposals (including technical viability, synergies with other projects, sustainability and legal/municipal framework) and related communication contents;
- Articulation with the different actors involved to guarantee their engagement and active participation (e.g., local citizens, associations and schools, other municipal departments and political representatives);
- Contribute for project deliverables (e.g., D4.2).

The implementation of such tasks required the creation of specific planning and reporting tools in order to make sure all Taskforce members were communicating effectively, and to register the decision-making process. Some of these tools included the Planning Fiche, Reporting Fiche and a tracking online document, shared among all Taskforce members, to keep a constant collaborative record of the meetings, working sessions and activities developed by the Task Force.

Besides these overall roles of the Taskforce members, the responsibilities of each entity are listed on Table 1, on the next pages:

PORTO TASKFORCE		
PARTNER TYPOLOGY	ENTITIES AND REPRESENTATIVES	ROLE IN THE PROJECT
C I T Y	Porto Municipality Pedro Pombeiro - Director of Municipal Department for Environmental Planning and Management (URBiNAT Coordination) Marta Pinto - Chief of Environmental Management Division Ana Ferreira - Project Management (URBiNAT Management) Sara Velho - Project management support Nuno Morais - Project management support Manuel Ribeiro - Representative of Urbanism Municipal Department/Municipal Department for Urban Planning Cláudia Costa - Representative of Municipal Department for Social Cohesion/Chief of the Municipal Division for Social Network Management Ana Magalhães - Representative of the Municipal Department for Education/Director of the Municipal Department for Education Development and Infant Support	<ul style="list-style-type: none"> - Implementation of the different stages of the co-creation process (co-diagnostic, co-design, co-implementation and co-monitoring); - Support the methodology design for the participatory process and its implementation, based on local experience; - Support the Healthy Corridor project development and responsible for its implementation; - Connection with all political representatives involved; - Articulation and involvement of the different municipal organic units inside the Municipality, making sure different backgrounds and practical experience from ongoing and previous projects are fed into URBiNAT; - Articulation with municipal associated entities, such as municipal companies and local associations; - Collection of all needed data inside the Municipality for the Project's implementation and writing of the deliverables; - Representation of the city in all needed external communications about the URBiNAT project in Porto.
L O C A L P A R T N E R	Domus Social, EM José António Ferreira (Coord.) - Responsible for the Studies and Planning Office Joana Restivo - Studies and Planning Office (Project manager) Sara Teixeira - Housing Stock Management Department (Condominium management)	<ul style="list-style-type: none"> - Support the different stages of the co-creation process, ensuring the articulation with the municipal tenants and social housing neighbourhoods' public space; - Presence in participatory activities to support its implementation, concerning all matters related with municipal housing; - Technical support for data collection and production concerning municipal housing; - Contribution for the Healthy Corridor Urban Plan program planning.
	CIBIO José Miguel Lameiras (Coord.) - Landscape Architect, Professor and Researcher Beatriz Truta - Landscape Architect and researcher, project management David Campos - Landscape Architect and researcher, landscape design specialist Rosendo Silva - Landscape Architect, researcher, 3D Specialist	<ul style="list-style-type: none"> - Coordination of the Landscape design project for the Urban plan, in Porto (including development of the masterplan and landscape architecture technical drawings) - Specialist in territorial nature-based solutions - Presence in participatory activities to support its implementation, concerning all matters related with the landscape project for the Healthy Corridor
H O R I Z O	CES Gonçalo Canto Moniz (Coord.) - URBiNAT coordinator; co-coordination of participatory process; co-responsible of architecture project;	<ul style="list-style-type: none"> - Coordinators of participatory activities in the Co-diagnostic and Co-design - Integration of the participatory results in the healthy corridor strategy - Co-responsible of the Architecture project integrated in the Urban Plan

N T A L P A R T N E R	Beatriz Caitana da Silva - URBiNAT co-coordinator for social and solidarity economy. Co-coordination of the participatory process. Coordination of the monitoring and evaluation Nathalie Nunes - Co-coordination of the participatory process and human rights Isabel Ferreira - Co-coordination of the participatory process and governance Fernanda Curi (2019-2020) - PhD Researcher for participatory process (co-design) Sheila Holz (2018-19) - PhD Researcher on participatory process (co-diagnostic)	<ul style="list-style-type: none"> - Support to the Monitoring and evaluation of the healthy corridor - Support in Interviews with companies to identify NBS business cases (WP7) - Support on the design of the co-governance structure - COT.CS
	UC António Rochette (Coord.) - Co-Responsible of data analyses Luis Miguel Correia (Coord.) - Co-Responsible of the architecture project Alexandre Ornelas - researcher on data analyses (GIS) Djime Dourado - researcher on data analyses (GIS) Vitório Leite - researcher on architecture	<ul style="list-style-type: none"> - Support the methodology design for the participatory process and its implementation, based on local experience; - Support the global strategy for the healthy corridor; - Support the architectural urban project. - Data analyses for the co-diagnostic
	GUDA Américo Mateus - Designer, PhD, Professor and Researcher Susana Leonor - Designer, PhD, Professor and Researcher Sofia Martins - Designer, Mphil Professor and Researcher	<ul style="list-style-type: none"> - Design of participatory activities (Co-diagnostic; Co-design) - Development of communication materials and tools - Preparation and Facilitation of Online Workshops

Table 1. Entities that compose the Porto Taskforce and their roles, with identification of the main participant members and focal points (identified in green).

In this critical moment of transition between the co-design and co-implementation phase, the articulation between all these actors is crucial as it is necessary to re-activate the participation of all actors involved in the participatory process, after a more internal analysis and stabilization of the proposed ideas unpredictably extended due to COVID- 19 pandemic.

2.2 Articulation with Municipality departments and beyond

As URBiNAT aims for the implementation of a Healthy Corridor composed by several NBS that cross many different (but complementary) thematic areas (from social, to culture and sports, to environment) it is crucial to ensure active involvement of different municipal organic units and municipal companies.

As so, since the beginning of URBiNAT different municipal departments were involved by the appointment of a focal point that would be contacted and mobilized as their expertise and participation was needed during specific moments in URBiNAT (Table X.). Such contact has been made by the project leader inside the Municipality of Porto - the Department for Environmental Planning and Management.

Municipal organic units and companies involved in URBiNAT
Environmental Planning and Management Department / Environmental Management Division
Urban Planning Department
Social Cohesion Department / Health Promotion Division
Education Department
Mobility and Transportation Department
Finances and Patrimony Department
Tourism and Commerce Department
Green Spaces and Infrastructure Management Department
Civil Protection Service
CMPEAE – Empresa de Águas e Energia do Município do Porto (Águas e Energia do Porto, E.M.)
Ágora - Cultura e Desporto do Porto, E.M.
GO Porto, E.M.
InvestPorto - Porto's Investment Platform
CMPH - Domus Social - Empresa de Habitação e Manutenção do Município do Porto, E.M. (Domus Social, E.M.)

Table 2. Municipal organic units and companies involved in URBiNAT.

Nevertheless, it is important to highlight that not all municipal organic units or municipal companies participated with the same degree of involvement (given their area of expertise) during the different stages of the project. This means that some municipal organic units and companies had a more punctual participation during the project, while others were more actively engaged during the URBiNAT activities given their pertinence for the project's intervention thematic areas, namely: Municipal department of Urban Planning, Municipal Department for Social Cohesion and Municipal Department of Education.

At this stage of the project, a more active participation will be required from specific municipal organic units and companies (oriented by the thematic of each idea proposed and considered to be developed under the URBiNAT Project) some of these groups will be invited to participate with a more relevant role through a proposed structure and organization, described in more detail further ahead in the present document (refer **do Cp.X** - Working Commission for the Healthy Corridor and respective Working Groups). This means that potentially new organic units and municipal companies will become more involved with the Task Force (Figure 2), bringing specific expertise, practical experience and know-how for a successful planning, implementation and monitoring of the different ideas proposed. Moreover, this close involvement of actors beyond the Taskforce will aim at a progressive appropriation of the ideas inside the Municipality of Porto (with constant support from all other involved entities), guaranteeing their sustainable implementation and activation of the Healthy Corridor through time, even beyond URBiNAT's life time.

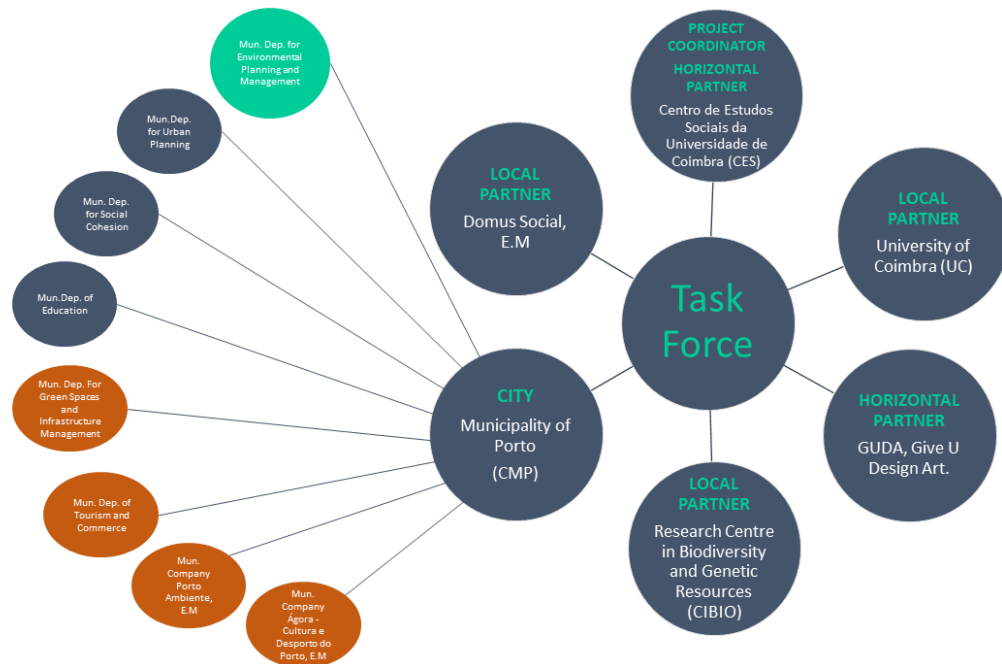


Figure 2. Schematic resume of the different entities that compose and support the Task force, and respective roles, showing the organic units and companies that will potentially integrate the Taskforce support (in orange) for an effective and sustainable implementation of the ideas considered to be developed under URBiNAT.

2.2.1 Sharing experiences

As a brief reflection on the participation of different municipal technicians in the URBiNAT Project from an external point of view, some testimonials were collected as a way of analysing the perception of the work performed by the Task Force and its importance. Such feedback is, as always, crucial for needed adjustments to take place (Table 3).

Luisa Fontes - Municipal Technician/Environmental Planning and Management Division/Environmental Management Division (DMPGA/DMGA)	"I participated as a support team during the co-diagnostic phase and consider the work developed by Porto Task Force fundamental and worthy of merit."
Ana Chaves - Municipal Technician/Environmental Planning and Management Division/Environmental Management Division (DMPGA/DMGA)	"I participated in the presentation of the project to the DMGA team, which integrated a practical moment for brainstorming ideas and solutions under the project's objectives and the context of the implementation area. I have been following the process, acquiring knowledge of the main achievements and key moments. I consider the work of the Task Force as crucial, as it can be evidenced by the outcomes of the process of co-diagnostic and co-design."
Pedro Medeiros - Municipal Technician/ Green Spaces and Infrastructure Management Department (DMEVGI)	"I was present during the visit to Oliveira Urban Farm and surrounding areas during some of the meetings to collect contributions for this area's requalification and the experience was very positive as it allowed for the opportunity to give a contribution to such an interesting project, that is highly needed for the revitalization of this area of the city. I considered the work of the Task Force as adequate."

Table 3. Resume of the testimonials from different municipal technicians about the work and importance of the Task Force.

3. NBS co-implementation process

3.1 Lessons learnt from the citizen engagement on previous stages

3.1.1 Co-creation process analyses

Co-creation evaluation

Under the inclusive urban regeneration approach are part the intertwined environmental, social, cultural and economic issues. Nevertheless, according to Dumitru et al. (2020) the evaluation schemes of nature-based solutions have been conceptualized considering social cohesion and wellbeing impacts as indirect or secondary to the environment. Besides “lack of explicit consideration of pathways through which NBS affect impacts, especially those related to human health and the social fabric”. This is precisely the focus of the co-creation process analysis, capturing information from the social actors, turning clearer the relationship between NBS and social impacts in the URBiNAT. Thus, put some lens in the empirical context, the micro level of the co-creation process to reveal the actors’ point of view and the level of social cohesion reached.

The co-creation process analysis proposed by the project is anchored in the content analysis approach using categories. This process, under the monitoring and evaluation strategies from T5.5 and T5.6 is relevant to correct possible route deviations, to understand where we are and to produce consistent evidence. In terms of methodology, it assumes an objective to identify the constancies, similarities and regularities, through horizontal analysis that helped in the synthesis of the set of interviews. As part of the methodological focus, the interpretative models that reveal the cognitive and affective architecture of the people interviewed. Also, throughout the interviews taken in the analysis, thematic repetitions and types of discursive structures can be seen (GuerraXXX).

The empirical context to analyze the co-creation process concerns the set of participation activities that took place in 2019 and 2020. These activities correspond to: public sessions with all stakeholders; workshops, internal meetings between technicians, researchers and elected people; and task force expanded meetings. Regarding the data collection the qualitative methods were favored, namely the semi-structured interviews and direct observation during the co-design phase activities. The interviews took place involving local residents, elected representatives, municipal staff and academic partners. While, the direct observation occurred, above all, during part of the co-design phase between June of 2020 and December of 2020. The objective of the interviews was to capture the perception of the respondents on motivation, participatory process, interaction between participants, quality of activities, results achieved until now and future recommendations. Whereas the objective of the observation was to understand the relational dynamic among different stakeholders during the co-creation and co-production actions. For this section we intend to present the results of the analysis of five interviews combined with the empirical observation grounded on the researcher lens.

Ethical cares

URBiNAT prioritizes that their ethical practices set forth are adopted. Considering the ethical guidelines from D1.4 and D1.6., during the data collection activities, the researchers applied two modalities of informed consent: verbal consent in the first part of the interview, and written informed consent based on the models provided by WP8. During all interviews, participants were informed of its purpose, average duration, recording authorization and context of the URBiNAT project. Also, how the interview could be used and who is the institution responsible for their storage, treatment and analysis.

Discussion

Although the participatory process is part of the planning with the purpose of reaching high levels of citizen engagement and active involvement in the production of solutions and services; the real context demonstrates that there are different influencing factors to achieve these goals. Assuming the objective of preparing analysis supported by common parameters to other NBS projects, eventually contributing for future comparison, this section took in account the indicator “Openness of participatory processes” provided by the Evaluating the Impact of Nature-based Solutions handbook (Dumitru and Wendling, 2021). The indicator’s method recommends three components for data collection and characterization, namely 1. The participation techniques, 2. the co-creation and co-production agents and 3. the degrees of participation.

In terms of **participation techniques**, the URBiNAT takes as a starting point the co-creation as a practice and as a concept, composed of multiple layers and different ways of performing it. Assuming sociomaterialities as part of their co-creation approach, it means different means (material and immaterial) used to enhance the active involvement. Several practical activities have been adopted, such as workshops, online and in person meetings, field visit and interactions with the territory, participatory techniques from design thinking, photo voice, walkthrough, interviews, communication tools by e-mail and internet webpage, reports, minutes. Also, several resources to support the activities, such as maps, draws, flexibility of the activities time, food services? communication material to support the sections... However, during the interviews some references on the need for improvement of communication strategies emerged. In particular the lack of communication with neighborhood residents that do not participate in the project and the need to disseminate information with the wider community.

The URBiNAT implementation is based on a multi-stakeholder approach. The **co-creation agents** represent diverse sectors municipality, organized or non-organized citizens, and academic esphere, and several dynamic roles, go through different attitudes throughout the process: observation, mediation, facilitation, provocation, motivation, depending on the context and the progress. Sometimes these roles can overlap or actors might exchange and coopte the roles of other participants. At other times these roles may not be distinguished by all participants. It can be fruitful, because the representation/means of the roles did not influence the participatory process or the lack of information access. There is no immediate recognition of the Municipality's role as the local project coordinator. The respondents associate their participation in the sense of the project “going well”: “if the project goes well there they come”.

Regarding the **degrees of participation** proposed by TF2 Handbook (information, consultation, collaboration, co-decision and empowerment) preliminary results from the co-design phase demonstrate within the URBiNAT co-creation activities more consultative forms than levels of co-decision and empowerment. According to the Handbook, under the informative type, the actions implemented are more related to the explanation of the project. The consultation form refers to the presentation of the project and collection of their suggestions, but the decision making can be made with or without taking into account the inputs. The collaborative degree, it means the decision making takes the stakeholders recommendations into consideration. Under the co-decision type, the cooperation with stakeholders towards an agreement for solution and implementation. And finally, the empowerment degree means delegation of decision-making over project development and implementation to the stakeholders.

The analysis on the main characteristics of the URBiNAT co-creation process can determine which degree the project is. Thus, providing empirical evidence to support these arguments, the next section will describe assessment results organized into three main categories: the relational dynamic, the co-production, the diversity of participants and the perception of results and recommendations.

The relational dynamic

A result with great merit was the creation of a local coordination mechanism (task force) with common processes established and a high degree of co-production among institutions, knowledges and agendas. The task force expresses the vitality of the project, keeping the participatory process active. Also, managed to make concepts such as co-production operational through the engagement of different municipal departments. The TF is composed by professional architects and urban planners, and professionals from natural sciences, humanities and social sciences, resulting in a distribution of tasks based on the themes of performance of each discipline or institution, which reveal tacit **disciplinary barriers** and challenges to foster interdisciplinarity. Another aspect is the absence of citizens' representation (to confirm). Based on observation during some TF meetings, some decisions referring to the co-creation process were made, in this case, without citizens' collaboration.

Within the co-creation activities, the **negotiation of ideas** is part of the relational dynamic between participants. During the interviews the participants do not allude to moments of tension, discordance and claiming. Rarely they mention having changed their initial propositions, or feel rejection of them. What reinforces the finding of a welcoming and inclusive environment to the proposals brought by the participants, at the same time the degree of debate gives us the idea of being situated at more preliminary levels. That may have occurred due to the project phase, the lack of reasons or arguments that would indicate the need for a moment of debate/contradiction and the agreement with the themes of collective interest. This situation can also be justified by the relevance and character of the proposed ideas, the delay in analyzing them, for a more collective and well-founded response.

Another relevant merit in the Porto case was the **engagement of politicians elected** (representatives of three different departments) in some activities with citizens. That is a differentiating element not only for Porto city but the project in relation with other sisters' projects as well. Nevertheless, the evaluation focuses on reinforcing the strongholds and scrutinizing what could be reviewed, that is the pathway to achieve excellence in any process. The researchers observed that almost all the meetings were moderated or led by academic actors or municipality technicians. In some meetings, the elected politicians were the only ones personally presented: if on the one hand the choice is perceived, on the other hand, this accentuates the conventional relationship between elected politicians and citizens, based on the personalization of some and the anonymization of others.

Thus, they observed the adoption of bureaucratic and technical discourse by politicians and technicians, from the citizens' side to more demanding speeches. The citizens would not have a space to lead the analysis of the process, such as the politicians, they could comment on proposals somehow reduced to their needs. There were certain inequalities of the information domain among different actors, and the preparatory meetings between TF members and politicians could generate these differences. Indeed, the preparatory meetings were fundamental in guaranteeing the commitment and engagement of elected politicians, but at the same time, produced effects on the balance of conditions for participation. Therefore, if there were interim meetings to share the information with citizens, they could benefit.

The knowledge co-production

Overall, the participants describe the workshops and meetings before covid break, as having welcoming sessions with a democratic and trusting environment for exposing ideas. The methodological choices of the project with positive evaluation, in particular by the combination of moments of “reflection and practice”. Some practical activities were highlighted during the interviews, namely: the event in Corujeira square, whose most relevant aspects associated were the potential to mobilize other participants, the intergenerational practices and the increase of project visibility; and the walk in the neighborhood urban area mentioned as the opportunity to perceive the terrains, assessment of green spaces and become aware on physical barriers. These practical activities also help to improve the participants' level of understanding about the activities carried out.

The activities during the pandemic period were mostly through online platforms, it requires a finely tuned order of agenda, with few spaces for open discussions. The preparation meetings, according to the observation, reveal the prioritization of technical projects over the needs of the participatory process, that is over the issues of interest for the community. This occurs within a context where technical advice is assumed to be decisive in decision making. Added to this, there is a certain distrust, also on the part of technical teams in general, about participatory processes, as revealed in the interview with elected politicians. Although the co-production stimulates the plurality of information able to make the final result more applicable to the needs of the target audiences or users, the predominance of discursive legitimacy on technical perspective reduces the possibilities for displacing the frontier between technical and non-technical knowledge.

During the co-design phase, one only meeting was organized between all stakeholders due the challenge to arrange a common agenda. Speeches from politicians were observed more centred on citizen participation as authors of their actions in the community. They reinforced the co-production methodologies as the opportunity for the city council learning. And not only that, the opportunity to make decisions based on different knowledge, demonstrating that elected politicians do not have all the information about what happens in the territory, as stated by the interviewed elected politician. Even so, the inclusion of knowledge produced by the community in the decision making is different from an institutional practice of co-decision.

Still on the aspects of co-production in the co-design phase, the analysis of the proposals made by technicians from different departments increased their quality and the chances of success in implementation. However, some barriers hindered greater interaction between technicians and citizens, namely the difficulty of scheduling, the lack of time for technicians committed to other activities, the low frequency of meetings held, the bureaucratic and technical discourses associated with the vertical hierarchy of governance, and also the interdisciplinary vulgar challenges. Despite that, citizens indicate in the interviews collaborative actions and reinforce the desire for greater interaction with local public authorities.

The guarantee of objective conditions for participation, such as flexible hours after work, is also mentioned as fundamental in attracting more people.

The intensity of meetings to manage critical points and redesign strategies between different partners; more than the meetings with citizens.

The diversity of citizens engaged

Still on this last point, the proportion of citizens involved is also recognized in the referred handbook as an assessment indicator. Thus, since Campanhã is a parish characterized by the diversity of social groups, the absence of representation from the Roma community limits the reach of the project and inclusion of all groups.

Two main groups were engaged in this phase: school-age children and adults. The children were engaged in activities that took place in the 3 primary school out of 6 that are located in the study area. In each school, all the students with parents' consent participated, with an average of 120 students per school. Other children participated in activities with their families that were carried out during the public event. The adults were...

The results achieved and recommendations

Although the project has achieved some results, its multi-sectoral and multi-thematic characteristic poses some challenges to its execution. First, the respondents mentioned the project time, the delay and the desire to already have "concrete things". Due to the COVID 19 breaks, the respondents demonstrated some doubt about the continuity of citizen involvement.

Second, the group suggests the creation of strategies to continue activating the community in the intermediate times, that is, periods when there are no activities in progress. Communication strategies feed trust relationships, and it is mentioned again to make the local population aware of the project's activities and current moment.

Third, for those interviewed, decision makers should participate in the activities, as they exert an influence on the final project. Highlight the importance of the involvement of decision makers as who can decode relevant issues during the process.

Finally, the respondents refer the working in and with the terrain seeks to emphasize the broad sense of "terrain". Carrying out actions directly in the geographic space of the community. According to the work with people in the community, seeking to involve people who live there and experience the daily life of the territory. "To go in the same direction" is the appeal made to the participants to strengthen cooperation and interaction between all those involved.

It only confirms that co-creation processes are not linear, they are complex and situated in a pre-existing context.

3.1.2 Co-creation process report

















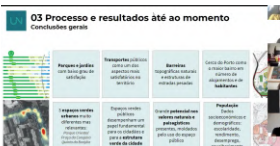
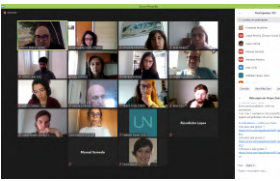
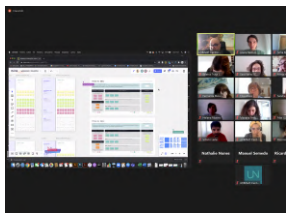
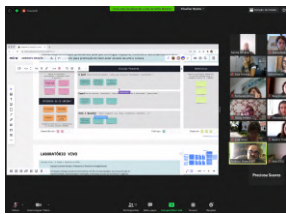

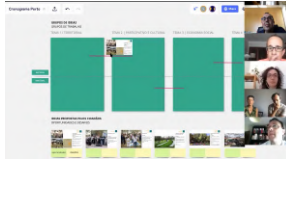


Sessi on	Date	Participants	Goals	Methodology	Photo
M01	27/02/ 2019	Involvement Meeting with councillors and directors of department Number: 22 councillors - 6 directors of department - 16	Presentation URBiNAT presentation for Political involvement	Presentation Discussion	
M02	11/03/ 2019 -	Involvement Meeting Municipal technicians Number: 25	Mapping To map municipal project in Campanhã and which ones engage citizens	World cafe	
M03	27/03/ 2019	Involvement Meeting with local institutions Local associations and institutions Number: 25	Mapping To map institutions project in Campanhã and which ones engage citizens	World cafe	 Photo: BT
M04	31/05/ 2019	Integration Workshops with Corujeira primary school Children from 6 to 10 years old Number: 175	Perceptions To present URBiNAT and engage children in the participatory process of local diagnostic	World cafe Walkthrough Photovoice Mapping	 Photo: CB
M05	5/05/2 019	Integration Workshops with Falcão primary school Children from 6 to 10 years old Number: 140	Perceptions To present URBiNAT and engage children in the participatory process of local diagnostic	World cafe Walkthrough Photovoice Mapping	 Photo: JMC
M06	17/06/ 2019	Integration Workshops with Cerco do Porto primary school Children from 6 to 10 years old Number: 120	Perceptions To present URBiNAT and engage children in the participatory process of local diagnostic	World cafe Walkthrough Photovoice Mapping	

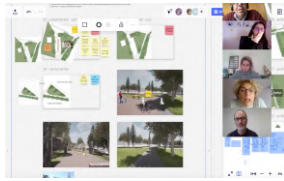

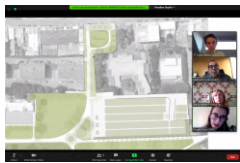
			Photo: CB		Photo: CB
M07	09/20 19	Involvement NBS training session Municipal technicians Number: 10	Training To train municipal technicians in URBiNAT methodologies	Training	
M08	01/10/ 2019	Involvement Public meeting in the auditorium of the Parish Council Local associations and institutions Number: 16	Presentation Presentation of URBiNAT	Presentation Discussion	
M09	11/10/ 2019	Involvement Public Kick Off in Praça da Corujeira Citizens Number: 150	Perceptions To present URBiNAT and engage citizens and stakeholders in the participatory process of local diagnostic	Mapping Gaming Cultural mapping Solidarity market Theater	 Photo: CB
S00	18/11/ 2019	Involvement Meeting with citizens Citizens, local associations and institutions Number: 27 13 males 14 females	Transform Introduction - Co-planning of co-design activities Photo: FC	Design thinking	 Photo: FC
S01	28/11/ 2019	Involvement Corujeira primary school preliminary workshop Children 9 years old Number: 19	Transform Introduction of URBiNAT Self-projection Activity about the courtyard	Presentation Mapping Walkthrough	 Photo: FC
S02	04/12/ 2019	Involvement Citizen workshop Citizens, local associations and institutions Number: 11	Transform Presentation of LD - co-creating categories	Community workshop	 Photo: GCM


S03	05/12/2019	Involvement Cерco do Porto primary school preliminary workshop Children 8-12 years old Number: 10	Transform Introduction to URBiNAT Self-projection Activity about the courtyard	Presentation Mapping Walkthrough	 Photo: FC
S04	06/12/2019	Integration Corujeira primary school workshop Children 9 years old Number: 19	Ideation Walkthrough in the intervention area and activities (mapping and drawing)	Walkthrough Mapping Drawing	 Photo: FC
S05	07/12/2019	Integration Citizen workshop Citizens, local associations and institutions Number: 7	Self-projection Community Workshop to prepare the walkthrough Analysis of territorial mapping data collected during Stage 2 of the Local diagnostic	Community Workshop	 Photo: FC
S06	13/12/2019	Integration Cерco do Porto primary school workshop Children 9 years old Number: 17	Ideation Walkthrough in the study area and activities (mapping and drawing)	Walkthrough Mapping Drawing	 Photo: FC
S07	14/12/2019	Integration Citizen walkthrough Citizens, local associations and institutions Number: 24	Ideation Walkthrough in the study area - Identification of needs and challenges	Walkthrough	 Photo: FC
S08	10/01/2020	Involvement Falcão primary school preliminary workshop Children 9 years old Number: 17 5 with specificities	Transform Introduction to URBiNAT Self-projection Activity about the courtyard	Presentation Mapping Walkthrough	 Photo: FC

S09	14/01/2019 (v d)	Involvement São Roque primary school preliminary workshop Children 9 years old Number: 28	Transform Introduction to URBINAT Self-projection Activity about the courtyard	Presentation Mapping Walkthrough	 Photo: FC
S10	15/01/2020 (v d)	Interaction Citizen workshop Citizens, local associations and institutions Number: 12 5 males 7 females	Ideation Presentation of NBS catalogue and co-selection of new NBS	Gaming (NBS Cards) 3D model thinking	 Photo: FC
S11	24/01/2020	Integration São Roque primary school workshop Children 9 years old Number: 27	Ideation Walkthrough in the study area and activities (mapping, drawing, gaming, 3D models thinking)	Walkthrough Mapping Drawing Gaming, 3D model thinking	 Photo: FC
	02-06/2020	Interaction Face-to-face meetings with citizens local associations and institutions Number: 5	Proximity / Design Co-design of each citizen NBS proposal	Round table	 Photo: FC
S12	15/06/2020	Interaction Online meeting with citizens and political representatives Citizens, local associations and institutions Number: 60-70	Public presentation of the Local Diagnostic	Presentation Discussion	
S12a S12.1	17/06/2020	Involvement Online meeting with citizens - a) Citizens, local associations and institutions Number: 7	Transform Development of new ideas - Needs		

S12b	23/06/2020	Integration Online meeting with citizens - b) Citizens, local associations and institutions Number: 7	Self-projection Development of new ideas - Co-creation of NBS	Design thinking	
S12c	25/06/2020	Interaction Online meeting with citizens - c) Citizens, local associations and institutions Number: 7	Ideation Development of new ideas - NBS video	Design thinking	
S13a	26/06/2020	Interaction Meeting with citizens Citizens, local associations and institutions Number: 7	Design Production of video with the new ideas by the citizens	Film making	 Photo: GCM
S13a	11/07/2020	Interaction Online meeting with citizens and political representatives Councillors, Citizens, local associations and institutions Number: 40-50	Validate Presentation of the new NBS co-created from December to June	Presentation Discussion	
S13b	14/07/2020	Interaction Workshop with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Design Discussion of the Educational, Environmental and territorial NBS	Focus groups Design thinking	 Photo: FC
S13b	14/07/2020	Interaction Walkthrough with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Design Discussion of the Educational, Environmental and territorial NBS	walkthrough	 Photo: JR

S13b	16/07/2020	Interaction Workshop with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Design Discussion of the culture and economy NBS	Focus groups Design thinking	 Photo: FC
S13b	16/07/2020	Interaction Workshop with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Design Introduction on workshop Experiment in the intervention area	Experiment	 Photo: FC
S13b	16/07/2020	Interaction Workshop with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Design Falcão garden group Logar do Falcão group (vacant building + Oliveira urban garden + existent paths) Lagarteiro group	Focus groups Design thinking	 Photo: FC
S13b	16/07/2020	Involvement Walkthrough with citizens and municipal technicians Citizens, local associations and institutions Number: 40-50	Diagnostic Walkthrough along the intervention area to analyse local needs and visualise NBS implementation	walkthrough	 Photo: FC
S14	18/09/2020	Interaction Online meeting with citizens and political representatives Citizens, local associations and institutions Number: 40	Validate Decisions on the proposed ideas (Triz - description, positive aspects, challenges, decision, discussion)	Triz	
S15	23/10/2020	Interaction* Public Event in the intervention area (*) cancelled due COVID-19	Argue / Experimenting Experimento to test the new NBS		
S16a	07/11/2020	Interaction Online meeting with citizens and political representatives Citizens, local	Systematize Present and discuss the healthy corridor preliminary study		

		associations and institutions Number: 30			
S16b	07/11/2020	Interaction Online meeting with citizens and political representatives Local associations and institutions Number: 30	Design Co-design of four main NBS - Place for exercise, sensorial garden, amphitheater, solidarity market	Online Design (Miro)	
S17	07/01/2021	Interaction Online training with citizens Local associations and institutions Number: 5	Development Training on edu communication with young adults related with NBS Campanh'up	Training in the field	 Photo: RL
From Co-Design to Co-Implementation phase					
S18	14/01/2021	Interaction Online meeting with the head teacher and coordinators of Cerco do Porto group of schools School teachers Number: 12	Development Planning the implementation of education NBS urban farm	Online presentation and discussion	
S19	20/04/2021	Interaction Meeting to plan Campanh'up Local associations and institutions Number: 4	Development Planning Campanh'up NBS	Presentational and Online presentation and discussion	
S20	15/06/2021	Interaction Online meeting to activate the Culture and Sports working group Local associations and institutions Number: 12	Development Planning the implementation of Culture and Sports NBS	Presentational and Online presentation and discussion	
S21	20/07/2021	Interaction Online meeting to activate the Social Economy and Solidarity practices working group Local associations and institutions Number: 6	Development Planning the implementation of Social Economy and Solidarity practices NBS	Online presentation and discussion	

S22	21/07/2021	Interaction Online meeting to learn from two solidarity markets in Coimbra and Covilhã Local associations and institutions Number: 6	Development Planning the implementation of solidarity market NBS	Online presentation and discussion	
S23	22/07/2021	Interaction Online meeting to activate the Education and Environment working group Local associations and institutions Number: 12	Development Planning the implementation of Education and Environment NBS	Presentational and Online presentation and discussion	
S24	24/07/2021	Interaction Heritage route test Local associations and institutions and citizens Number: 12	Experiment Heritage route about the healthy corridor	Walkthrough	
	17/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Alberto Rocha - Ioga and Urban Farm		
	21/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with André Sousa - Lagarteiro - sport pavillion and school		
	21/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Aidé - Urban farm		
	22/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Ricardinho Lopes - Radio		
	17/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Filipa and Helena		

	24/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Claudia Costa - Bairros Críticos, Formação e Animação cultural		
	25/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Filipe - associação TODOS		
	26/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Laurinda - lugar passadiço		
	26/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Nuno Moutinho - atividades agrícolas		
	28/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with ???		
	29/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Isabel Rute (APPC) - mercado solidário		
	29/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Joaquim e André - cianotipia		
	30/01/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with visões úteis - hangar		
	12/02/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Rui - Teatro		
	13/02/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Ricardinho - Campanh'up		
	17/02/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with		

			Sérgio Afonso - ESAD		
	18/02/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Laurinda		
	18/02/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with TODOS, OUPA, ASAS, APD - terreno ao lado A24		
	06/03/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Gisela, Soutelo - Memórias de Campanhã		
	07/03/2020	Interaction Face-to-face meetings with citizens	Proximity / Design Co-design of NBS proposal with Beatriz - Mercado		
S19	January to May 2021	Interaction Online biweekly meetings with the Campanh'up (Isabel Rute), Fios e Desafios (André Sousa), OUPA (Ricardinho Lopes), CES (Beatriz Caitana and Gonçalo Canto Moniz)	Development Planning the implementation of Campanh'up		
S20	May to June 2021	Interaction Online biweekly meetings with the Campanh'up (Isabel Rute), Fios e Desafios (André Sousa), OUPA (Ricardinho Lopes), CES (Beatriz Caitana and Gonçalo Canto Moniz), Ágora (Nuno Faria, Cristina Regadas, Marta Bernardes)	Development Planning the implementation of Campanh'up		

Table 4. Co-creation sessions.

3.2 Strategies to re-activate and improve citizens engagement process

Creation, development and implementation of the Working Commission for the Healthy Corridor – COT.CS - in Porto

After the co-design phase, which suffered a major setback due to COVID-19 pandemic, considerably reducing working rhythm of URBiNAT project in Porto, local teams are now steadily advancing for the co-implementation phase by building on the past participatory process and developing strategies for its improvement to create another wave of participants activation, involvement and engagement.

As the project is now on a critical transitioning stage between co-design and co-implementation, by further developing the proposed NBS ideas, it is important to properly prepare the grounds by establishing a solid structure and workflow for the works ahead, ensuring a sustainable and effective implementation of the proposed ideas to be developed under URBiNAT.

As so, and given the need to further developed the “new NBS”, the local team felt the need to create a Stakeholder Advisory Board predicted to be implemented during the project, which, in Porto, adopted the name of **Working Commission for the Healthy Corridor (*Comissão de Trabalho para o Corredor Saudável – COT.CS*)**. This commission aims to be an organized structure between all involved actors to support the process of detailed development, implementation and monitoring of the ideas proposed during the URBiNAT participatory process and classified as “To be developed”.

COT.CS Objectives

- To create solid grounds for an open and transparent dialog between all local actors, aiming at the implementation of NBS to promote a sustainable local development in the projects' intervention area, in Campanhã Parish, through all dimensions – economic, social and environmental;
- To promote an effective change in the intervention area through the creation of new spaces that allow for better mobility, security, liveability and inclusion, based on the active involvement of local actors;
- To guarantee the continuity of initiatives created by URBiNAT, even after the project co-financed phase is over, assuring the sustainability of the intervention;
- To provide a continuum follow-up of the development, co-implementation and co-monitoring phases of the material and immaterial NBS to all involved actors (giving priority to the proposed ideas classified as “to be developed” in URBiNAT, as well as, in the future the proposals characterized as “to be forwarded”, upon technical and financial availability);
- To do a collective prioritization, evaluation of financial funds and financial sustainability, implementation and monitoring of the proposed immaterial ideas/NBS;
- To actively involve the representatives of the different municipal organic units with technical competences in the thematic area of the proposed ideas/NBS, making sure the project is integrated in their line of action.

Main assumptions

In order to achieve these objectives, the COT.CS defined the following main assumptions that should be the base for its implementation:

- The development and implementation of immaterial ideas/NBS proposed during the participation process should count with the active participation of all involved actors (citizens, associations, the Municipality of Porto and the URBiNAT project) for its further development, including the definition of adequate implementation phases, technical/financial feasibility and monitoring;
- The coordination of the COT.CS is a responsibility of the Environmental Planning and Management Department/Environmental Management Division of the Municipality of Porto (DMPGA/DMGA), even after URBiNAT's life time;
- In the COT.CS the main aspects of the proposed ideas/NBS are debated, recommendations/suggestions from all actors involved are collected and discussed aiming for a collaborative decision process with the active involvement (whenever possible) of the political representatives. If a decision cannot be taken during the meeting, the political representatives will further analyse and take the needed decisions that will be communicated to the COT.CS members by the DMGA.

General structure for organization and functioning of the COT.CS

Nevertheless, and despite the defined objectives and assumptions, it is important to highlight that this is a work in progress and will, in an organic way, evolve and receive the needed adjustments through time based on experience. This means that its structure and working flow is not fixed, but adaptable and mutable in time, based on its own co-monitoring and co-evaluation.

Participating members and respective tasks

Members	Tasks
Ideas' proponents Citizens, local Associations and School Community	Presence during the COT.CS meetings (with at least 1 representative) and in the Working Groups (WG) in which they are involved aiming at the co-development, co-implementation and co-monitoring of the immaterial ideas/NBS to be implemented in URBiNAT.
Representative of the Environmental Planning and Management Department/Environmental Management Division of the Municipality of Porto (DMPGA/DMGA) Support the sessions of the COT.CS and facilitator for the sessions of the WG	This representative will have the important role of facilitating, energizing, capacitating and promoting the sessions of the WG, working as a bridge between the different actors involved aiming at the successful implementation of the proposed ideas based on NBS and on collaborative implementation/management models.
Municipal organic units and companies Technicians from different municipal organic units and companies with competences in each thematic area of the WG (Municipal Departments of Urbanism, Social	Presence during the COT.CS meetings (with at least 1 representative) and in the WG in which they are involved aiming at the co-development, co-implementation and co-monitoring of the immaterial ideas/NBS to be

Cohesion, Education, Environmental Planning and Management Department, Cultural Management, Ágora - Cultura e Desporto do Porto, E.M., Domus Social E.M, and other that may be relevant, depending on the ideas to be developed)	implemented in URBiNAT, identifying potential opportunities (e.g., ongoing initiatives and projects in the Municipality that can leverage the proposed ideas; best use of already existing resources; among others) and challenges, while proposing mitigation measures. Moreover, these representatives have an important role of building the bridge with the respective municipal organic units aiming at an effective activation of the proposed ideas.
Political representatives Involved in the project (Innovation and Environment, Urbanism /Public Space and Patrimony, Housing and Social Cohesion/Education)	Presence, whenever possible, in the COT.CS meetings aiming at the discussion of the proposed topics for decision making.
Municipal Directors (at least from the DMPGA/DMGA, responsible for the coordination of the COT.CS)	Presence in the COT.CS meetings aiming at the discussion of the proposed topics, decision making at the Department level and operationalization and management of all decisions inside their municipal organic units.
URBiNAT technical Team (Task Force - TF) <ul style="list-style-type: none"> - Centro de Estudos Sociais da Universidade de Coimbra (CES), URBiNAT Coordinator; - University of Coimbra (UC); - Research Centre in Biodiversity and Genetic Resources (CIBIO); - Municipal Department for Environmental Planning and Management (DMPGA/DMGA); - Domus Social, E.M; - Municipal department for Urban Planning (DMU/CMP); - GUDA, Give U Design Art. 	Presence in all COT.CS meetings and GT in which they are involved as observers, guaranteeing an effective bridge with the work already developed within URBiNAT and assuring a proper framing and adequate implementation of the proposed ideas/NBS, aligned with the project's objectives.

Table 5. Actors, and respective tasks.

COT.CS will not be a formal structure (no official regulation will be defined) and it will be inclusive, open to all participants who want to contribute for the co-development, co-implementation and co-monitoring of the proposed ideas/NBS (upon invitation that should be previously agreed among all actors and formalized by the coordinator of the COT.CS).

Working Groups

In order to promote a more focused and efficient operationalization of the proposed ideas/NBS, the COT.CS will be divided into specific Working Groups (GT) that will work the ideas at a more operational level, aiming at their successful and sustainable implementation.

For a more organised implementation, the GT are divided in three thematic areas, according to the organisation of the NBS groups, defined in D4.2:

- 1) GT for social economy and solidarity practices;
- 2) GT for culture and sports;
- 3) GT for education and environment.

Each GT will be composed by (at least) one idea proponent (citizens, associations and/or local schools), one representative of the DMPGA/DMGA that will have the role of facilitator during all GT sessions, one

municipal technician from each organic unit aligned with the thematic of the GT and at least one representative of the URBiNAT TF that will guarantee the effective connection with the work already developed and to be implemented in the project, ensuring a proper implementation framework within URBiNAT's goals.

After the launching of the COT.CS, the creation of a 4th group, dedicated to the collaborative and participative management of the future public space of the Healthy Corridor, can be considered depending on the will and interest of the participants.

Creation of reporting, monitoring and evaluation tools

Aiming at the effective report and monitoring of the work developed between the COT.CS and the GT meetings and respective (self) evaluation (for all needed adjustments to take place), specific working instruments and standardized tools will be developed (e.g. contacts database; minute model; project presentation model; work planning model; COT.CS, GT and the Healthy Corridor evaluation model; among others), providing all participants a common and unified ground for reporting that can be comparable, facilitating the communication between them. These tools should be defined and proposed in the first working session of the COT.CS.

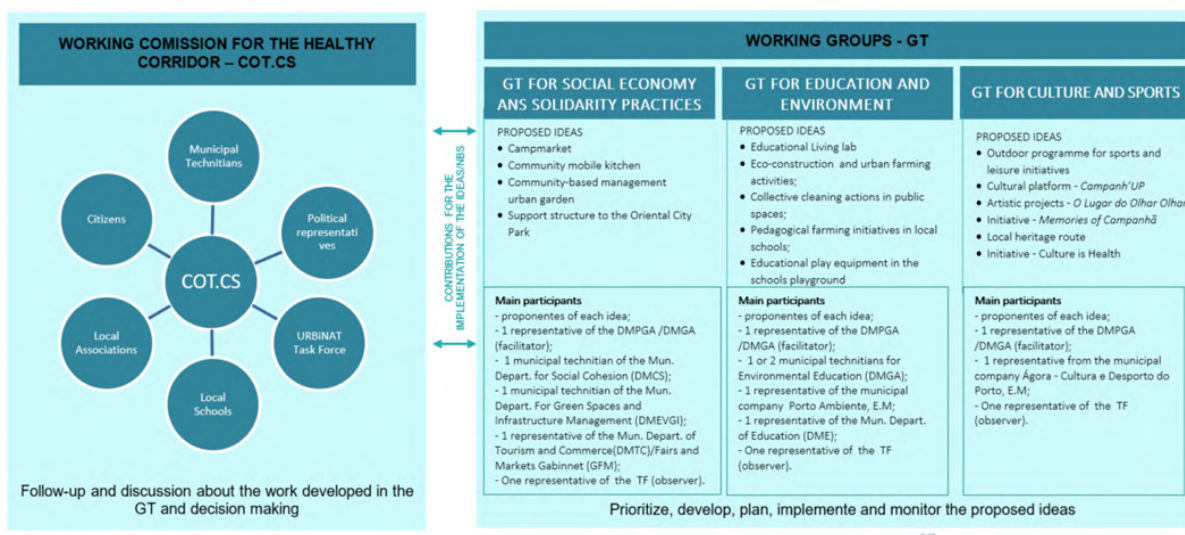


Figure 3. Structural and functional organization scheme of the COT.CS and respective GT.

General dynamics and workflow

General dynamic for the COT.CS:

- Meetings every three months, with an average duration of 2 hours;
- In each meeting should be included:
 - An update and discussion about the work developed by each GT;
 - An update on the evolution of the healthy Corridor project (material NBS).
- The meeting agenda and invitation are responsibility of the DMGA;
- The dynamization of the meeting, writing and sending of minutes are the responsibility of the DMGA (with close support from the URBiNAT Task Force).



Figure 4. Diagram of general dynamics and workflow.

* If the political representatives cannot be present or take a decision during the meeting, the decision-making process may need to happen outside the meeting of the COT.CS and further communicated by the DMGA to all members of the COT.CS.

General dynamic of each GT

- The meetings for each GT should happen every 15 days or monthly (or other frequency, depending on the needed regularity previously agreed between all parts involved) and they should have as main goals the development in greater detail, planning and implementation of the proposed ideas after a first exercise of prioritization (to avoid work overload and dispersion). Proper mechanisms for sustainable implementation, financing, evaluation and monitoring should be defined for each idea;
- The dynamic for each GT should be defined by its members, assuming that:
 - Each meeting invitation, including the agenda proposal and support docs, should be sent between 3 to 5 days in advance;
 - The mediation of the meeting, writing and sharing of minutes with all participants should be assured;
 - The reporting information and documentation for the COT.CS should be prepared and sent 3 to 5 days prior to the meeting of the COT.CS;
 - An update of all ideas should be given during the COT.CS meeting.



Figure 5. Diagram of general dynamics of each GT.

Activation process for the COT.CS and the GT

Before the activation:

Step 1. Presentation (by the DMGA), discussion and finalization of the present guiding document for the COT.CS between all URBiNAT TF members – predicted until 9 June 2021;

Step 2. Official validation of the final version of the presente guiding document by the CMP and internal communication to the municipal organic units to be involved– predicted until 17 June 2021;

Step 3. DMGA sends the invitation for the first meeting of the COT.CS, predicted for the last week of July, guaranteeing the proper framework and invitation of all actors and sharing the proposed agenda and support documents;

During the activation meeting (2h):

- Welcome message, context and resumed agenda for the session – DMGA (10’);
- Update on URBiNAT – Brief resume on the material and immaterial solutions and their current status of development – DMGA (15’)
- Presentation of the guiding document of the COT.CS – DMGA; (15’);
- Sharing the experience – Giving the example of the GT for Culture and Sports (15’)
- Open moment for comments/suggestions (15’);
- First, brief session for the kickstart of the GT – working dynamics and next steps (ideas prioritization and workplan) (45’);
- Closing of the session (5’)

Post activation:

- Sharing the minute of the meeting with the definition of next steps to start the work of each GT (DMGA).

3.3 NBS Implementation Planning

According to deliverable 4.2, URBiNAT Porto co-designed the NBS for the healthy corridor and organised it in four groups: urban space and nature; culture and sports; education and environment; socio economy and solidarity practices.

These NBS proposed by citizens and local associations are integrated in the healthy corridor global strategy and represent a common vision for the study area. The solutions have a purpose by themselves but they are also part of a network of solutions, connected between them and with the surrounding initiatives and municipal and private projects, as demonstrated in chapter 4 of D4.2.

URBiNAT Porto will start the development of each NBS in order to implement it until 2023. The NBS Urban Space and Environment will have a development integrated in the urban plan of the healthy corridor (see D2.4), following the architecture and landscape design methods. These methods will have a technical approach although citizens will follow and advise the process with regular meetings in the frame of COT.CS.

Other NBS (culture and sports; education and environment; socio economy and solidarity practices) will be developed through the COT.CS’ working groups constituted by citizens, URBiNAT task force, and municipal technicians of the related municipal department, as described in the last chapter. These processes will use participatory activities to guarantee the active engagement of the citizens, the appropriation of URBiNAT values and the integration of municipal framework. In this sense, the process of development proposals towards a co-implementation stage should follow general guidelines and a roadmap of actions, that will be supervised by COT.CS.

General guidelines - from proposals to co-implementation:

- Inspiration in a community social problem;
- Collective engagement in its design;
- Diversity of actors represented;
- Intersectionality in participation: women, children, the elderly, residents of the neighbourhoods;

- Co-production as a principle and methodological orientation;
- Use of material and immaterial resources;
- Sustainability and funding based on community resources and public and private subsidies;
- Registration and systematization;
- Complementarity between solutions.

Road map of actions - development of NBS proposals:

1. Relation of the NBS with the local context
2. Description of the initiative
3. Objectives and expected results for the environment and for the community
4. Methodology and tools: co-dynamization, co-creation and co-production
5. Management and implementation
6. Stages and Timeline
7. Budget
8. Multidimensional sustainability: financial, in the community,

3.3.1 NBS implementation: the example of the cultural platform Campanh'up

This methodology is being tested in one NBS of Culture and Sports working group which is a cultural platform named Campanh'up by the citizens. It is part of the broader practical field of community or popular communication, as it goes beyond informing, in which people analyze the problem-situation and propose solutions.

According to the URBiNAT NBS catalogue, Campanh'up is a Participatory NBS based in the Cultural Mapping NBS. In this sense, it is not a product and not only a method but a whole process. It puts emphasis on processes which enable projects to be platforms for discussion, engagement, citizen participation, and empowerment.

Relation of the NBS with the local context

Campanh'up aims to fight the stigma that Capanhã community feels due to the fact that is located in the oriental part of the city separated by a train line and a highway (VCI), which creates a physical and socio-economic barrier and constituted by several social housing neighbourhoods, which creates a physiological barrier. Campanh'up is proposed to empower Campanhã citizens and to communicate their heritage, culture, knowledges, and initiatives, namely related to nature-based solutions.

Description of the initiative

The proposal aims to create a cultural platform that allows the dissemination, creation of information, training and entertainment through various initiatives and mechanisms (e.g., website, workshops, radio station).

The objective will be to streamline the process of creating a platform for disseminating information co-dynamized with the community, with content that is of collective interest, through diversified channels and actions: joint dynamization actions; experiments with different activities; workshops/training; content production; website development, social networks; other diversified products and channels of communication and interaction.

Objectives and expected results for the environment and for the community

Objectives:

Catalyze processes to actively connect people and deepen local knowledge. In this sense, it will promote space for collective expression, discussion and action between different groups, supporting and guiding collective decision-making and strategies for future development. Decisions about, for example, the development of activities around the platform. It will also strengthen the participation and involvement of the Campanhã community in inclusive regeneration processes through community and cultural communication strategies.

Expected results:

Direct involvement of residents and other stakeholders from the intervention/study area in gathering information, discussions and decisions about the development of the location. This involvement will benefit the participation process as a whole, also feeding in content, analysis and dynamics the organized mechanism of participation within the scope of COT.CS

Opportunities for dialogue between the community and local authorities, offering diverse sources of information that can overcome the limitations of expert opinions. Thus, the information and analysis developed will also be links for sharing and discussion that will feed the participation process, for example, within the scope of the municipal roadmap (commission for monitoring the healthy corridor)

Information that does not represent a “final answer” or “final result”, but rather is “discussion creators”, which open new perspectives on results mapping and local development. This information will be developed in the resulting formats of educommunication and community communication, continuing the collection that has already started, such as interviews with key people in the community, about their path, photographic records, audio, video of emblematic places of development in the locality, sharing of artistic productions.

Diversified and permanent channels of communication and interaction, in an inclusive and regenerating process.

Methodology and tools: co-dynamization, co-creation and co-production

Inspired by approaches such as community communication, which seeks to strengthen the active involvement of the community in the social issues in which they are involved.

Co-created process/platform, as it is born from the citizens' initiative with the support of the project's technical teams.

Organic, in the sense that it is flexible and open to adapt to local characteristics, that is, ongoing events, local needs and realities, and inclusion of new strategies throughout the implementation process.

Co-dynamic information dissemination process/platform, from/to/with the community, with contents that are of collective interest, through diversified channels and actions:

- joint actions
- experiments
- workshops/training
- content production
- website development, social media
- other products and diversified channels of communication and interaction

It is intended to deal with matters related to the Parish of Campanhã:

- Participation of residents in their local community, that is, in collective and individual initiatives such as those resulting from the local cultural mapping of participation;
- socio-cultural mapping through the NBS Cultural Mapping, such as a workshop, walk or conversation circle.

Co-creation and co-production:

Campanh'up is part of the broader practical field of community or popular communication, as it goes beyond informing, in which people analyze the problem-situation and propose solutions. In this sense, people are part of the information produced and co-produce knowledge.

In this model, everyone has something to share, so specialized communication skills are not required. People's skills are strengthened and placed at the service of the community itself, which reinvigorates the feeling of belonging to the place/community. It also feeds from an educommunication perspective, which has expanded mainly in Latin America as a theory and practice to create a critical and educational space in communication for citizenship.

Co-dynamization:

Proposal developed within the scope of URBiNAT's participation activities in the co-design phase of solutions for the healthy corridor of Campanhã. The work started with a local facilitator, Ricardo Lopes, member of OUPA, a local association focused on hip-hop culture, with a social and cultural aim. Ricardinho is a community resident facilitator committed to carrying out sociocultural practices to encourage collective participation. The co-dynamization is using the instruments and methodologies that enhance sociocultural efforts and participation, as in the case of cultural mapping.

Management and implementation

Campanh'up will be co-managed by a group of stakeholders as defined by the COT.CS proposal:

- Citizens/residents: are part of the Platform's management committee, participate in meetings to validate strategies and support their implementation.
- Young communicators: actively work on the different components of the Platform, including content production.
- Local association: executive coordination of the platform, part of the Management Committee for decision-making, institutional representation when necessary. Contribution with human and material resources(?).
- Local associations: integrate the Platform Management Committee
- URBiNAT Local Partners promote the platform as they represent the local coordination of the project. Support its local development and dissemination. CES: technical and financial support in the platform experimentation phase. It ensures the platform's relationship with the URBiNAT project, and the proper adoption of the project's guidelines. Participates in decision making and development of communication products;

The stakeholders developed a management structure and three main implementation activities as described in the following diagram:

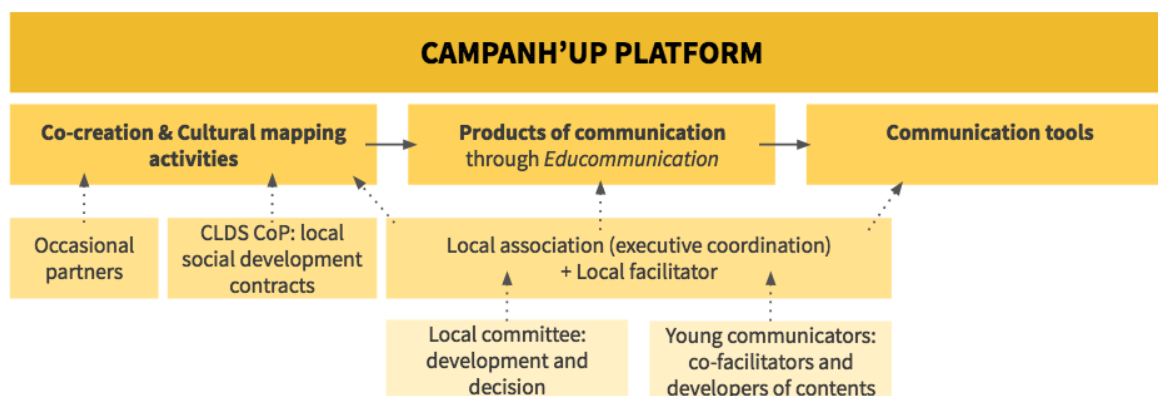


Figure 6. Organizational diagram for campanh'up.

Management structure:

- Executive committee (Comissão de Gestão Integrada) - Local association + Local facilitator
Local committee: development and decision
Young communicators: co-facilitators and developers of contents
- CLDS CoP: local social development contracts
- Occasional partners

Implementation activities:

- Co-creation & Cultural mapping activities
- Products of communication through *Educommunication*
- Communication tools

Stages and Timeline

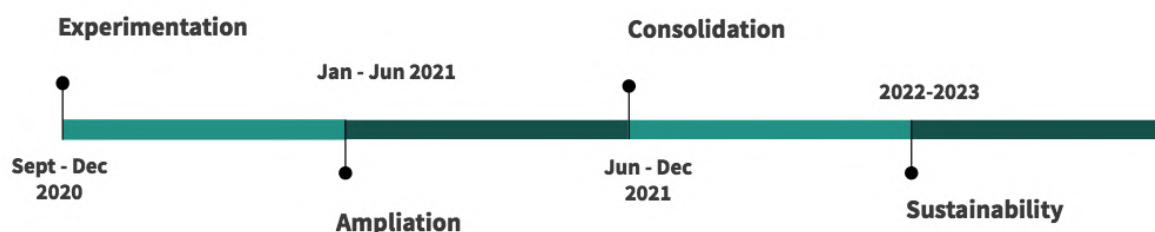


Figure 7. Stages and timeline of campanh'up.

Experimentation:

Incubated by URBiNAT, built from a more experimental dynamic:

Expand opportunities for participation by developing a methodological process of community communication based on information, production and critical analysis.

Foster new means of communication and interaction, co-designed and co-facilitated, with and by the champions (who lead and mobilize other citizens) and residents of the intervention/study area;

Facilitate access to information and conditions for informed participation in the project;

Ampliation:

Involvement of local associations and residents of the Parish of Campanhã in the development of the Platform;

Involvement of the APPC Association for the experimentation, expansion, consolidation and support phases;

Integrated management of the platform, involving different local actors;

Training proposal for a team with young citizens, associations and local entities (ongoing)

Open to anyone interested in participating and co-creating.

3.3.2 NBS implementation: the example of IAAC pedagogical farm in school courtyard

As already mentioned in deliverable 4.2, the NBS proposed by the local school's community were mainly interventions focused outside of the classrooms, in the school courtyard, such as "Recovering and installation of school playgrounds for all ages". This happened mainly because one of the URBiNAT participatory activities was a walkthrough in the school's playground, where children had the opportunity to establish a dialogue with the task-force team about their user experience of the courtyard and their perceptions about the school as an urban collective space.

Some of these perceptions were quite specific, such as the wishes for drinking fountains, more fruit vegetation, benches, etc. However, others revealed a global understanding and concern of these facilities and its global use, such as "Improvement of the school entrance" or even pedagogical and curricular propositions like "Pedagogical farming initiatives in local schools."

Later, this schools' interest about urban farming was formalized on an application to the city participatory budgeting called "Quintinha pedagógica", which was accepted, and will be used to improve the urban farm that already exist in the local main school centre - Agrupamento de Escolas do Cerco do Porto.

Taking in consideration this existent project - already under development - and these perceptions that were collected, URBiNAT will intervene in the six primary schools' courtyard with adaptive solutions of small size NBS, co-created by the school community, the local task-force and IAAC, which will aim to spread the pedagogical scope of "Quintinha Pedagógica" to all the schools of the study area and also to create an educational play equipment in the school's playground.

The co-implementation of IAAC NBS in Campanhã primary schools is following these steps:

- Meeting with Local task force, chancellor of Education, Director of Schools Grouping, Coordinators of Primary Schools to decide if URBiNAT will implement one IAAC NBS in one school or six small IAAC NBS in each school yard. The group decided to co-implement six small IAAC NBS in each school yard (September 2020)
- Meeting with Local task force, cDirector of Schools Grouping, Coordinators and teachers of Primary Schools to learn about the IAAC NBS and discuss how and when the co-creation process should take place (January and July 2021)
- Online questionnaire about the school yards and the urban farm knowledge to be filled by each school (August 2021)

- Meeting with Coordinators and teachers of Primary Schools to present the methodology and the questionnaire (July 2021)
- Meeting to discuss the co-design workshop (September 2021)
- Workshops to co-select and co-design IAAC NBS in each school (September/October 2021)
- Design of NBS by IAAC (October - December 2021)
- Workshop to validate the IAAC proposal (January 2022)
- Final design to develop NBS by IAAC (February - May 2022)
- Co-implementation in each school (June - July 2022)

4. Urban Project implementation

The Urban project in Porto will be established at a multifunctional urban park developed along a main corridor, connected to other pedestrian connections. It will be composed by nature-based solutions (material and immaterial, some from the URBiNAT NBS catalogue, others proposed by the participants of the co-creation process, others expressed by the territory, its problems and opportunities).

Administrative and technical procedures

Masterplan:

The masterplan was developed by the Landscape Architecture team from CIBIO (Porto's local partner) and UC (local partner). It was based on the Local Diagnostic developed in the framework of D2.1, from Workpackage 2. The Local Diagnostic analysed the study area and supported the identification of the intervention area for the Healthy Corridor. Since that deliverable (D2.1), CIBIO invested on deeper and detailed territorial studies concerning the urban context of the intervention area. These territorial studies were presented and discussed during the participatory activities with local citizens. The pedestrian network and the mapping of the vacant lots were the ones that most caught up the attention of the participants. Once the intervention area was selected, CIBIO also implemented a questionnaire to the users of the public space.

During the development of the masterplan of the Healthy Corridor a parallel line of work was being developed to analyse the proposals that arose from the participatory process. For that systematization process the Local Taskforce consulted different entities and municipal departments. The territorial proposals that were classified under the category "to be developed" were incorporated in the preliminary study and designed with the citizens on an online participatory activity.

The project development was frequently discussed in Portos' Taskforce weekly meetings, and gathered feedback from CMP (DMGA and DMU), Domus Social, EM, CES and UC.

The masterplan resulted from the local diagnostic, the participatory activities and the territorial studies developed until November 2020.

The final version of the masterplan was presented and discussed in a participatory activity with citizens, local associations and elected people, on November 7th. The session was recorded and is available on URBiNAT's website.



Figure 8. Plan of the urban project for the Healthy Corridor of Porto.

Licensing phase:

The licencing process of the urban, is the second phase of the project procedure, and started after the approval of the preliminary study.

The licensing process started with the following lines of work:

a) Create a project team and task division:

ENTITY	MEMBERS	TASKS
CIBIO	José Miguel Lameiras Teresa Portela Marques Paulo Farinha Marques David Campos Beatriz Truta Rosendo Silva	Project coordination- Landscape Architecture team Territorial nature-based solutions implementation The team was present in all participatory activities Responsible for: Masterplan, Green structure plans, terrain modeling design
CES/UC	Gonçalo Canto Moniz Luís Correia Vitório Leite	Architecture project - Falcão ruin The team was present in all participatory activities Responsible for: Architectural design of the Falcão ruin
DMGA	Pedro Pombeiro Marta Pinto Ana Ferreira	Responsible for: Internal Project management and articulation with URBiNAT goals
GoPorto	Gustavo Garcia	Responsible for: Project management and articulation with external entities
Sopsec	Hipólito Sousa Guedes José Amorim Vitor Cardoso	Engineering company Responsible for: Lighting plan, built structures, drainage and irrigation plans

Table 6. Project team and tasks.

- b) Final approval of the intervention area limits** - It included the collection of data concerning land register. This information was obtained by DMPGA/DMGA (Environmental Planning and Management Department/Environmental Management Division) and DMU (Urban planning Department).
- c) Identify synergies with existing/future projects** - Given the location of the intervention area, in the interface of several facilities, housing units and green spaces it was important to ensure articulation with the following existing and future projects:
- Oriental city Park expansion - Contiguous to the intervention area, so it would be important to ensure visual and materials homogeneity. Also, URBiNAT's project has the opportunity to improve and requalify an entrance in the extension of the Oriental city Park. Therefore, a meeting was booked with Otiental Park Landscape Architect, Sidónio Pardal.
 - Cerco do Porto Neighbourhood intervention - Building's refurbishment in construction stage and public space requalification in design stage (preliminary study). URBiNAT's local diagnostic and participatory activities also provided Cerco's project some relevant information to be taken into consideration on the proposal. URBiNAT'S project aims to improve pedestrian mobility by adding a new sidewalk that connects to Cerco do Porto. Given that both projects are contiguous, the synergy is clear. Therefore, some meetings were booked with the Cerco do Porto Architect team, José Manuel Soares and Pedro Moura Martins.
 - Future Crematorium - Will be built in Rua do Monte de Campanhã, contiguous to the Cemetery and the intervention area. URBiNAT's project aims to design the public space around the future crematorium taking into consideration the building needs in terms of accessibility and landscape framework. CIBIO team studied other crematoriums in Porto, to use as guidelines for this intervention.
 - Life project - H2020 project being implemented in Escola Básica do Falcão, contiguous to the intervention area near Rua do Falcão. DMPGA made the bridge between URBiNAT and Life project (as DMPGA is a local partner in both). The urban project will take into consideration the location of the Life project and ensure its visibility from outside the school.
 - Expansion of Oliveira Urban Garden - Initially this intention was part of URBiNAT goals, however the municipality advanced with the idea, which is currently under implementation. URBiNAT's project will requalify Horta da Oliveira entrance.
 -
 - Future subway line in Alameda de Cartes - To be built by the municipality. URBiNAT project already predicts the intensification of pedestrian connections.

d) Collect feedback from different municipal departments/companies and external entities

Date	Department/entity	Topics
24.11.2020	Águas do Porto, EM	- Site visit
26.11.2020	Águas do Porto, EM	- Preliminary study presentation - Discussion about river walls near the intervention area
02.02.2021	Prof. Dr. Sidónio Pardal e green spaces department	- Preliminary study presentation - Articulation of City Oriental Park (materials, green structure and pedestrian connections) - Guidelines for green spaces irrigation - Maintenance strategy for green spaces
09.02.2021	Fire Station unit	- Guidelines for access and circulation of emergency vehicles in urban parks - Guidelines for fires marks distribution
09.02.2021	Project team of Bairro do Cerco do Porto	- Synergy and articulation between projects
10.02.2021	Project team and team responsible for Ruína do Falcão	- Proposal analysis for Ruína do Falcão
10.02.2021	AdEPorto	- Guidelines for urban lighting projects (AdE Handbook)
26.02.2021	Environmental municipal council	- Presentation of the project and its approval
12.03.2021	URBiNAT Consortium	- Project presentation and state of the art
19.03.2021	Elected people of Urban Planning and Environment	- State of the art of the licensing project
23.03.2021	Mobility department	- Project presentation - Guidelines for pedestrian mobility and crosswalks
29.03.2021	Civil protection department	- Site visit to evaluate current state of existing walls
23.04.2021	Mobility department	- Analyse mobility department written feedback
26.04.2021	Project team of Bairro do Cerco do Porto	- Articulation between projects

Table 7. External project meetings and consultations.

The licensing project was submitted on May 19th by GoPorto, EM. At this point the team is waiting for a formal feedback from the municipality and external entities (APA, Águas e Energia do Porto, Agência de Energia do Porto, IP)



Figure 9. Plan of the urban project for the Healthy Corridor of Porto, including the identification of relevant places.

1- Entrance garden at Rua do Falcão; **2** - Open wood of ornamental species; **3** - Main pedestrian path; **4** - Active recreation clearing; **5** - Slopes contiguous to the football field; **6** - Old ruin square; **7** - Pedestrian connection to Emilio Biel; **8** - Vacant lot contiguous to Alameda de Cartes; **9** - Garden near Alameda de Cartes; **10** - Recreational clearing with panoramic views; **11** - Terrain contiguous to the future crematorium; **12** - Connection to cerco do Porto neighbourhood; **13** - Sloped grove of indigenous trees ; **14** - Connection to Oriental Park

Execution project:

The execution phase, currently under development, consists of detailing the licensing project, mainly in what concerns materials and construction details. It will include the final budget table, as well as technical instructions and description of all materials in terms of nature, supply and construction techniques. Again, this phase will result from the collaborative work between CIBIO, GoPorto, EM, DMPGA and Sopsec.

Procurement:

After the approval of the Execution Project, the Municipality of Porto will initiate the procurement procedure. Considering the investment value, the project shall be subject to a financial audit by *Tribunal de contas*. Once this procedure is finalised and approved, the municipality will launch the public procurement open call.

Once the construction company is selected it begins a phase where both the construction company and the project team analyse and revise the final version of the project (*Erros e Omissões*).

Construction process:

After the selection of the construction company and the subsequent phases, the municipality formally launches the beginning of the construction works. The urban project in Porto is predicted to take, at least, 12 months to be built.

5. Conclusion and Achievements; Innovative Implementation procedures & process

Co-diagnostic & participatory activities	<ul style="list-style-type: none"> • Implementation of different methodologies for local diagnostic based on a complementary approach, providing a systemic and innovative experience for the municipality that can now be transferred and scaled-up; • Involvement of a group of actors from different backgrounds that most likely never worked together before, got together and worked for a common goal - the design of a Healthy Corridor; • It created the possibility to integrate different visions and experiences into URBiNAT, reflecting on the real needs of the territory and adequate ideas to answer them; • Creation of a workflow between all the actors and specific reporting and recording tools to facilitate the communication and decision making.
Porto Taskforce	<ul style="list-style-type: none"> • Establishment of a more agile workflow and effective communication between the entities involved and, consequently, the conditions to achieve the project's implementation goals; • The collaborative work allowed for not only the good quality of the work performed but also the resilience of the team through the ability to balance the workload between the different members, depending on their availability, guaranteeing a continuum capacity to answer the project's needs and answer to unpredicted opportunities and challenges; • It allowed for the definition of collaborative working best practices and tools that can be continued beyond the project's lifetime and transferred to other projects inside the Municipality; • Moreover, such tools were also shared between cities, in order to perfect the developed tools by sharing best practices.
Project team for the Urban plan	<ul style="list-style-type: none"> • Weekly meetings the landscape team (CIBIO) the engineering team (Sopsec) and the municipal team (GoPorto, EM and DMPGA) were key for the development of the process; • This team also met with all municipal departments whose expertise were related with the project. This strategy was innovative given that the feedback/guidelines given by each department were taken into consideration within the licensing phase, and not later as usual. The technicians were involved in the co-creation process and their feedbacks and knowledge was heard, discussed and readily incorporated in the project for the Healthy Corridor.
Design process supported by innovative Digital tools	<ul style="list-style-type: none"> • The co-diagnostic phase was supported by the use of innovative digital tools such as drones and data available in online digital platforms; • The landscape project was fully developed using state of the art three dimensional models and virtual reality tools, to support the decision-making process and not only for communication purposes. (The original plan was to involve the community in a participatory session using virtual reality tools, however it was not possible due to Covid-19 restrictions)
Political involvement	<ul style="list-style-type: none"> • During URBiNAT, the collaborative participation of the political representatives in key moments of the participatory process were crucial not only to transparently share and explain the identified constraints and opportunities of the territory, allowing for a more focused action plan, but also to take some steps towards new collaborative governance models; • It allowed for leading by example, facilitating the process of appropriation of the project inside the different municipal organic units; • This close involvement allowed for the recognition of URBiNAT's importance for the municipality and, consequently, the amplification of its impact in the territory due to the co- investment of the municipality funds in the Healthy Corridor, complementing on the project's available budget, leveraging the

	opportunity created by the project.
Direct involvement of municipal technicians	<ul style="list-style-type: none"> • Feedback collected by different departments/technicians/municipal companies both during the co-diagnostic and the co-design phase, allowing for another point of view of the territory and experience from previous projects; • The active involvement, since the beginning of the project, is allowing for a slow but steady appropriation of the project inside the municipality in an organic way through different municipal units.
COT.CS	<ul style="list-style-type: none"> • The work developed so far, through the active involvement of the different actors allowed for the creation of an organic structure (Working Commission for the Healthy Corridor, Comissão de Trabalho para o Corredor Saudável - COT.CS) that is coordinated and appropriated by the municipality to co-implement and co-monitor the developed solutions during and beyond URBiNAT; • The working groups (GT) that will function through this COT.CS and the involvement of specific municipal organic units aim for their progressive appropriation and integration in each team's agenda for a successful and sustainable implementation.

Table 8. Resume table of main conclusions and achievements.

6. Annex

Co-creation process report/Feedback (fiche)

ACTIVITY #01 Title
Image: 
Co-creation process (stage): Co-design
Phase: (See table)
Theme: Dialogue with citizens
Data, time (duration): 11/01/2020
Event format: presencial
Place: Local, Campanhã, Porto
Target group: Associations
Number of participants: define a precise number or a range (50-60)
Objectives Walk with António to know Campanhã and its associations: António (arquitecto) Associação Desportiva de Campanhã Espaço Mira - Manuela Matos Monteiro and João Lafuente (MIRA) - o Mapa Emocional de Mirafior - https://miramapaemocional.net/ Associação Malmequeres de Noeda Rui Silva, theater Chalana, Campanhã social assistant Joaquim Jesus, artist and professor, that already participated in workshops André Silva - local artist
Programme Walk around, visit exhibitions
Methods and tools Walkthrough and one-to-one meeting
Results and Evaluation To know the intervention area from the inside

ACTIVITY #02 | Outside physical activities and urban farm extension

Image:



Co-creation process (stage): Co-design

Phase: (See table)

Theme: Dialogue with citizens - Develop the yoga proposal and the urban farm extension

Data, time (duration): 11/01/2020

Event format: presencial

Place: Local, Campanhã, Porto

Target group: Citizens - Alberto Rocha

Number of participants: 1

Objectives

To establish and confirm the proposal of creating yoga activities in the public space

Alberto Rocha is a yoga trainer at “Jardim do loga”

Alberto also contribute for the urban farms proposal because he has a plot in Horta do Oliveira

Programme

Walk around

Methods and tools

Walkthrough and one-to-one meeting

Results and Evaluation

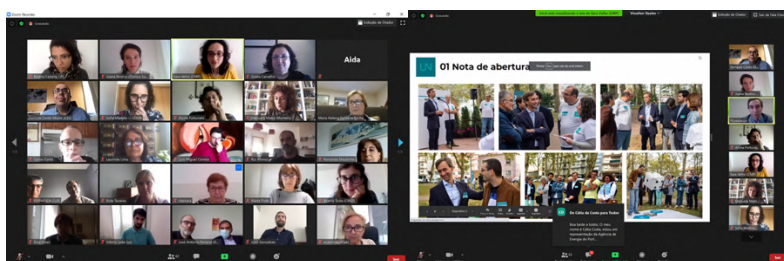
Alberto suggested the need to articulate proposal

Yoga and urban farms promote the sense of community

ACTIVITY #03 Lagarteiro needs
Image:
Co-creation process (stage): Co-design
Phase: (See table)
Theme: Dialogue with citizens - Lagarteiro challenges
Data, time (duration): 21/01/2020
Event format: presencial
Place: Local, Campanhã, Porto
Target group: Citizens - André Sousa (Norte Vida)
Number of participants: 1
Objectives To confirm in loco the challenges in Lagarteiro neighbourhood
Programme Walk in Lagarteiro neighbourhood Visit the sports pavilion
Methods and tools Proximity Walkthrough and one-to-one meeting
Results and Evaluation To know the intervention area from the inside The challenges related with the management of the sports pavilion: <ul style="list-style-type: none"> • difficult to use by the associations, • difficult to access by the Lagarteiro citizens • The neighbourhood is in the back of the pavilion The need to qualify the Lagarteiro school yard These challenges were confirmed as ideas for the healthy corridor

ACTIVITY #04 Urban farm and community kitchen
Image:
Co-creation process (stage): Co-design
Phase: (See table)
Theme: Dialogue with citizens - Adelaide Pina (Aidé)
Data, time (duration): 21/01/2020
Event format: presencial
Place: Aidé house and horta da Oliveira, Campanhã, Porto
Target group: Citizens - Adelaide Pina (Aidé)
Number of participants: 1
Objectives To identify the need of a community kitchen and a community garden
Programme Walk in Lagarteiro neighbourhood Visit the sports pavilion
Methods and tools Proximity Walkthrough and one-to-one meeting
Results and Evaluation To know the intervention area from the inside The challenges related with the management of the sports pavilion

ACTIVITY #12 | Participatory forum (local community)



Co-creation process (stage): Co-design - NBS co-selection

Phase: Transform

Theme: Presentation of the main results of previous diagnosis activities in the Urbinat study area

Data, time (estimated duration): 2020-06-15, 05:00 pm (2:00)

Event format: online (Zoom)

Place: Porto, Portugal

Group of participants (by role): engaged citizens, new participants, municipal councillors, municipal staff

Number of participants: 60-70

Objectives

- Share with the local community the main results of previous diagnosis activities carried out in the Urbinat study area, identifying its usability for the foreseen activities;
- Contribute to further engaging the citizens involved, opening up the opportunity for new citizens (that inhabit, work or study in the area) to get involved;
- Set up a working basis for the coming participatory sessions - co-design and co-implementation;
- Introduce the next participatory sessions (programme/timing and aims).

Programme

1. Opening of the session (5' + 5') (Vice-Mayor Filipe Araújo CMP + Gonalo CES)
 2. Introduction (5') (Marta Pinto CMP)
 3. Process and main results so far
 - a. Local Diagnostic (15') (Joana Restivo DOMUS)
 - b. Deductive process of the plots to intervene (15') (Jos   Lameiras CIBIO)
 - c. Participatory activities (15') (? CES/GUDA)
 4. Future activities (15') (CES/GUDA/CMP)
 - a. Plan and timeline (? CES/GUDA) (10')
 - b. Process assumptions (5') (Marta Pinto CMP)
 5. Questions and answers (15')
 6. Closing of the session (2') (Sara Velho CMP)
- (*) Moderator: Sara Velho CMP

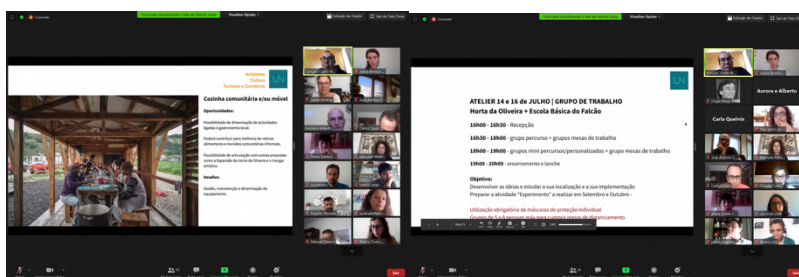
Methods and tools

Online community meeting
Powerpoint presentation + Discussion

Results and Evaluation

The total number of participants (60-70) surpassed the estimated one (50-60), a very positive aspect when considering the hiatus since the last participatory meeting (as the pandemic dynamic evolved). Participants from URBINAT, technicians (municipality) and citizens were almost equally balanced. The explanatory part was extensive due to the amount of information that has been produced, lengthening the session. The state-of-the-art / future activities confirmed to be crucial to relaunch the participatory process, creating an informative basis for the next set of activities.

ACTIVITY #13 | Presentation of the new NBS co-created from 2019 December to 2020 June



Co-creation process (stage): Co-design

Phase: Systematization

Theme: Citizens' ideas systematization and development. Creation of the Working Groups

Data, time (estimated duration): 2020-07-11, 11:00 am (1:30 hour)

Event format: online (Zoom)

Place: Porto, Portugal

Group of participants (by role): individual citizens, collective citizens (association), school community, municipal councillors, municipal staff

Number of participants: 40-50

Objectives

- Presentation of the citizens ideas systematization
- Strengthening and support the ideias systematization through technical and political analysis
- Correlate the ideas with the URBiNAT NBS and create clusters (groups)
- Create the working groups for the coming sessions

Programme

0. Welcome reception - 15'

Part A - Presentation

1. Introduction note (CES - Gonalo Canto Moniz CES)
2. Presentation of the validated plots to intervene (10') (CIBIO - Jos  Lameiras)
3. Presentation of the citizens ideas (20') (CES - Gonalo Canto Moniz)
4. Comments from Deputy City Councillors (2'+2'+2'): Innovation and Environment (CMP - Filipe Ara jo); Urban Planning (CMP - Pedro Baganha), Housing and Social Action and for Education (CMP - Fernando Paulo)

Parte b - Talk

5. Collected ideas and proposals (40') (CMP/CIBIO/DOMUS/GUDA/PARTICIPANTS) (CES moderation)
6. Contributes for the creation of the working groups (15') (CES moderation)
0. Tolerance for last comments (10')

Methods and tools

Online meeting / forum

Powerpoint presentation:

https://docs.google.com/presentation/d/1CnzbpJy91_hr76CEoGfKcl0rlwcHGHAUvhXnOzk3kNs/edit#slide=id.g8b14590d64_1_302

Tool for visual collaboration (Miro): https://miro.com/app/board/o9J_ksVGyn4=

Results and Evaluation

Total number of participants concurred with the estimated one. The session was productive but extensive, as the explanatory Part A took longer than planned, leaving little time for Part B (to be continued in the next session).

ACTIVITY #13a | Workshop with citizens and municipal technicians



Co-creation process (stage): Co-diagnostic; Co-design

Phase: (See table)

Theme: Interaction; Workinggroups; Walkthrough

Data, time (estimated duration): 2020-07-14, 02:00 pm (4 hour)

Event format: Presencial

Place: Campanhã, Porto, Portugal (Falcão Primary School playground, and intervention area)

Group of participants (by role): Individual citizens, local associations, municipal technicians, academic researchers

Number of participants: 40-50

Objectives

Working groups for the development of citizens' NBS, organized by thematic groups

- Develop the proposed ideas already analysed and categorized in the previous meeting with citizens, local associations, municipal technicians, and elected people
- Discuss opportunities and constraints of the proposals, in order to define priorities and identify next steps for their development
- Define which proposals could be integrated in the Experiment event, or other types of channeling opportunities

Programme

1. Introduction of the session by CES
2. Working groups for NBS development
3. Walkthrough along the intervention area
4. Final discussion

Methods and tools

Focus group (working groups) and walkthrough

Results and Evaluation

- Each working group developed a panel composed by a map and post-it's with ideas on how to develop each idea/cluster of ideas
- Each walkthrough reflected on the needs of the intervention area: best pedestrian connections; lighter; vegetation control; overall requalification to improve citizens quality of life and safety

ACTIVITY #13b | Workshop with citizens and municipal technicians



Co-creation process (stage): Co-diagnostic; Co-design

Phase: Design

Theme: Interaction; Workinggroups; Walkthrough

Data, time (estimated duration): 2020-07-16, 02:00 pm (4 hour)

Event format: Presencial

Place: Campanhã, Porto, Portugal (Falcão Primary School playground, and intervention area)

Group of participants (by role): Individual citizens, local associations, municipal technicians, academic researchers

Number of participants: 40-50

Objectives

The session is a continuation of the previous atelier, for the development of citizens' NBS, organized by thematic/working groups (see S#13a).

Programme

1. Introduction of the session by CES
2. Working groups for NBS development (continuation)
3. Survey to the users and passers-by in the intervention area (CIBIO)
4. Final discussion

Methods and tools

Focus group (working groups) and questionnaires

Results and Evaluation

- Each working group continued on developing a panel composed by a map and post-its with ideas on how to develop each idea/cluster of ideas
- The “in-situ” survey to passers-by in the intervention area (Urban Project) confirmed and unveiled relevant data regarding the needs of the intervention area from the users' perspective.

ACTIVITY #14 | Decisions on the proposed ideas



Co-creation process (stage): Co-design

Phase: Argue and Validate

Theme: Validate Decisions on the proposed ideas (Triz - description, positive aspects, challenges, decision, discussion)

Data, time (estimated duration): 2020-09-18, 04:00 (2 hour)

Event format: online

Place: Porto, Portugal

Group of participants (by role): individual citizens, collective citizens (association), municipal councillors, municipal staff, academic researchers

Number of participants: 40

Objectives

1. State of the art on the development of citizens' ideas
2. Share and discuss the technical analysis produced by the taskforce with municipal technicians
3. Articulation with the Healthy Corridor (intervention area) and final decision on the categorization of each proposal
4. Introduce the organization of the “experiment” event

Programme

1. Session introduction and framework (chronogram)
2. Presentation of the thematic groups in which the proposals were organized + presentation of the categorizations: “to be developed”, “to be channeled”, “not to be developed”
3. Presentation of the technical analysis produced by the taskforce with municipal technicians - including: “opportunities”, “constraints” and category proposed for each NBS(TRIZ card)
4. Final discussion concerning the integration of the NBS into the Healthy Corridor and NBS categories final decision
5. Experiment event preparation - date, NBS to be tested

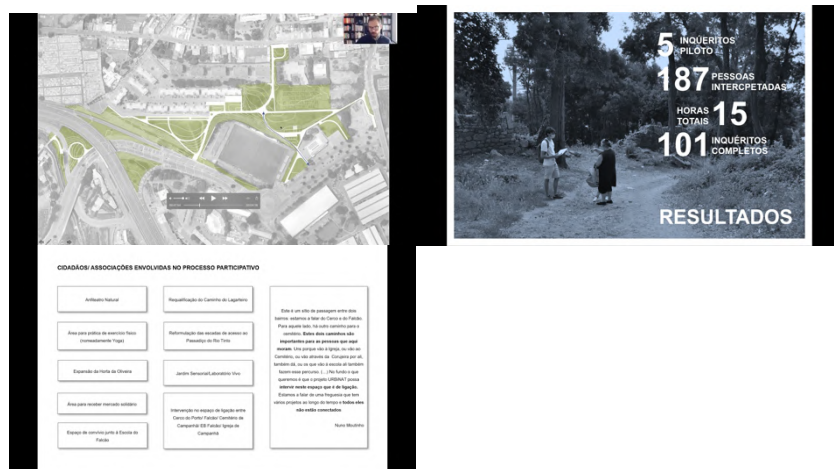
Methods and tools

Triz Methodology; Online powerpoint with specific area to register feedback and discussions

Results and Evaluation

The categorization of the NBS into “to be developed”, “to be channeled”, “not to be developed” was discussed with the community who had the opportunity to contribute and validate. The citizens and local associations identified in which NBS want to be involved for further development.

ACTIVITY #16a | Present and discuss the healthy corridor urban plan



Co-creation process (stage): Co-diagnostic / Co-design

Phase: Systematization, Argue, Validation

Theme: Presentation of the Healthy corridor Preliminary study

Data, time (estimated duration): 2020-11-07, 02:00 pm (2 hour)

Event format: online

Place: Porto, Portugal

Group of participants (by role): individual citizens, collective citizens (association), municipal councillors, municipal staff, academic researchers

Number of participants: 30

Objectives

Present and discuss the Preliminary study for the Healthy Corridor

Programme

1. Intervention area analysis (local diagnostic, site visits, territorial analysis, survey to the users, main needs and expectations)
2. The proposal for the Healthy Corridor
3. NBS in the Healthy Corridor

Methods and tools

Online presentation and discussion

Results and Evaluation

Discussion and approval of the preliminary study of the Urban Plan

ACTIVITY #18| Planning the implementation of NBS urban farm (education)



Co-creation process (stage): Co-design

Phase: Design

Theme: Online meeting with the head teacher and coordinators of Cerco do Porto group of schools

Data, time (estimated duration): 2021-01-14, 04:00 pm (2 hour)

Event format: online (Zoom)

Place: Porto, Portugal

Group of participants (by role): school community

Number of participants: 15-20

Objectives

1. State of the art on the development of citizens' ideas (Education group)
2. Share and discuss the technical analysis produced by the taskforce with municipal technicians
3. Articulation with the Healthy Corridor (intervention area) and final co-decision on the categorization of the proposals.

Programme

1. Session introduction
2. Presentation of the thematic group 'Education' (proposals organization following the categorizations: "to be developed", "to be channeled", "not to be developed")
3. Presentation of the technical analysis produced by the taskforce with municipal technicians - including: "opportunities", "constraints" and category proposed for each NBS (TRIZ card)
4. IAAC presentation: technological solutions for the pedagogical equipment for schools' playgrounds (in articulation with the Pedagogical farming initiatives)
5. Discussion concerning the NBS integration into the Healthy Corridor and NBS categories final decision
6. Education proposals/working group next steps

Methods and tools

Online presentation

Results and Evaluation


The categorization of the NBS - Education Group into "to be developed", "to be channeled", "not to be developed" was discussed with the school community who had the opportunity to contribute and validate, with the presence of IAAC. Participants identified the NBS they want to be involved in for further development.

ACTIVITY #00 Title
Image: if possible, include 1-2 images of the activity 5cm máx XX XX XX
Co-creation process (stage): Co-diagnostic / Co-design / Co-Implementation / Co-Monitoring
Phase: (See table)
Theme: use keywords to describe the theme in one line
Data, time (estimated duration): 2021-06-01, 14.00 (1 hour)
Event format: online / presencial
Place: Local, District, Municipality
Group of participants (by role): individual citizens, collective citizens (association), municipal councillors, municipal authorities, municipal staff, academic researchers, practitioners, facilitators,
Number of participants: define a precise number or a range (50-60)
Objectives 5 lines one main objective two-three specific objectives or expected results XX XX
Programme 5 lines describe in 3-4 topics the organisation of the session XX XX XX XX
Methods and tools 5 lines identify with keywords the method - walkthrough, photovoice, workshop, focus group.... identify with keywords the tools - interviews, triz, diamond ranking, mapping, questionnaire, XX XX
Results and Evaluation 5 lines output of the activity (needs, ideas, proposals, decisions, sharing) evaluation (from the facilitator perspective) evaluation (from the participant perspective) Contribution for the next activity

NBS Implementation Strategy

Urban Plan Report Sofia

Lead partner	CES
Type	Demonstrator
Dissemination level	PU - Public
Work package	WP4
Deliverable	D4.3 / D 2.4
Due date	month 38 (31 July 2021)
Version	1.0

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Acronym	URBiNAT - Urban inclusive and innovative nature
	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776783

The content of this report reflects only the authors' view and the European Commission is not responsible for any use that may be made of the information it contains.

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List of figures

Figure 1. The URBiNAT Healthy Corridor in Nadezhda: Process, scope of activities, and content.	6
Figure 2. Urban Concept for the Healthy Corridor in Sofia.....	8
Figure 3. Sofia Task Force and other local participants. Left - during the application and co-diagnosis, right - during the co-design and co-implementation	11
Figure 4. Roles and duties in Sofia Task Force.	11
Figure 5. Evolution of the Sofia Task Force team from 10.08.2018 to 07.2021.	13
Figure 6. Vertical subordination within the Sofia Municipality Urbinat team.	14
Figure 7. Articulation within the Municipality structure and composition of Sofia municipality team.	16
Figure 8. Representation of profession, proximity to the Healthy Corridor, previous experience in initiatives, engagement with community activity within the applicants for participation in SAB. Source: Registration.....	26
Figure 9. Representation of gender, age, position, level of education, labour market status, functional difficulties within the applicants for participation in SAB. Source: Registration	27
Figure 10. Stages of the implementation of investment projects in Bulgaria.	42
Figure 11. Stages of the implementation of the investment project of the Healthy corridor in Sofia. (Light blue - completed stages).	43
Figure 12. Incorporation of Sofia Advisory Board (SAB) in the design stages of the Healthy corridor project in Sofia.	43
Figure 13. Stages of the design of the school greenhouse NBS - as part of the investment project of Healthy corridor in Sofia.	43
Figure 14. Stages of the design of the Mineral water swimming pool NBS.....	44
Figure 15. Timeline for the implementation of the activities included in the procurement procedure for the implementation of the SofiaHealthy corridor.....	45

List of tables

Table 1. Indicative timeline for main Advisory Board tasks.	28
Table 2. Rules of Sofia Stakeholder Advisory Board (SAB) for URBiNAT project.....	29
Table 3. NBS typology in Sofia according to the implementation process.	30
Table 4. Results from the already completed stages of the design of the school greenhouse by IAAC.	33
Table 5. Detailed description and specifications of the planned activities related to participation in NBS co-design and co-implementation phases.....	36
Table 6. Requirements for the design of the Healthy corridor according to technical specification in the public procurement documentation.	40
Table 7. Requirements for the contractor according to the public procurement documentation.....	41
Table 8. Requirements for the implementation according to the public procurement documentation.	42
Table 9. Administrative procedures, participatory activities and actors involved in the implementation of the Healthy corridor in Sofia. An indicative table of the process.....	50
Table 10. The co-creation chronology.	64

Table of contents

Part 3 - Sofia	5
1.Introduction	5
2. Taskforce	10
2.1 Roles & Organization	10
2.2 Articulation with Municipality departments and beyond.....	13
3. NBS co-implementation process	19
3.1 Lessons learned from the citizen engagement on previous stages	19
3.2 Strategies to improve citizens engagement process (or Citizen engagement in the implementation stage).....	23
3.3 NBS Implementation Planning - Healthy Corridor Promotion & Activation.....	30
3.3.1. NBS implementation	30
3.3.2. From proposals to co-implementation: general guidelines.....	31
3.3.3. Activation of the Healthy Corridor in Sofia.....	34
4. Urban Project implementation	37
4.1. Structuring the process	37
4.2. Administrative and technical procedures	42
5. Conclusion and Achievements.....	51
6.Annexes	54
Co-creation process report/Feedback (fiche)	54

Part 3 - Sofia

1.Introduction

The present deliverable 4.3 is dedicated to the co-implementation strategy and follows the achievements of Deliverable 4.2 which define the conceptual strategy of the Healthy Corridor. Based on the overall URBiNAT methodology, the Healthy Corridor co-creation process in Nadezhda has been adapted to the local administrative framework and cultural context. In Deliverable 4.2 the first two phases of the co-creation process - co-diagnostic and co-design are presented in terms of the activities developed, participating actors, and main goals achieved.

Deliverable 4.2 presents the main results from the co-creation process (including the co-diagnostic and co-design activities) and outlines conceptual strategy integrating citizens' proposals for new NBSs and mini catalogue in a preliminary urban project for the intervention areas.

Based on the analysis of the understanding about the rights and obligations and the arising tensions, different arguments are identified thus giving an insight to the culturally rooted and intergenerational differences to the approaches and motivations to collaboration and participation among the closely involved groups of actors - inhabitants, pupils and representatives of the district administration, citizens.

The Co-design process underwent two stages due to the challenges that the Taskforce had to deal with during the crisis of Covid 19. The restrictive measures did not allow any project events to be held indoors, while the winter season limited the Taskforce to hold them outdoors. The planned public event for closing the local diagnostic and the co-design kick-off at the beginning of April 2020 was postponed for June. The time under the lockdown was effectively used to synthesize and appropriately present the local diagnostics in 13 panels and to prepare the methodology for the co-selection and co-design workshops.

The first stage, focused on the NBSs co-selection and co-design, was organized in a series of workshops and activities with stakeholders of various group compositions and sizes. In May 2020, the inclusive design started with the identification of relations with the solutions already selected and validated by the municipal technicians and Sofia task force (STF). The results from the ideation and visioning workshops conducted in August-September 2020 along with the summarized results from the Local Diagnosis served as a baseline for the Design Brief of the Healthy Corridor plan. Then, after a two-month period of a preliminary design of the Healthy Corridor Concept, the first stage of the Co-design was closed in January 2021, followed by a two-month procedure of finalizing the Healthy corridor concept and presenting it to different Municipal Council's Commissions, and finalized with the Political approval (March 18th, 2021) of the axis of the Corridor, the zones of intervention, and the groups of NBSs to be implemented.

The second stage of the co-design process comprised 4 workshops held in June 2021 - one in each area for focused intervention. The participants - inhabitants and stakeholders from the neighborhood worked with 3D models in order to validate and add specific accents and details to the NBSs already selected and proposed for implementation in each area. A Superbarrio workshop with pupils from the sports School tested the participants' attitudes and preferences of the NBSs from the preliminary selected Sofia mini catalogue and prototyping for the tasty gardens of learning was implemented in Kindergarten N 90. Intensive communication with the IAAC team, the Management Body of the 15th

school, and the Taskforce during the first and second stages of the Co-design process brought to a preliminary design of the educational pavilion in the schoolyard. The summarized results from the second stage were intended to support the author of the detailed design, who at the time of the submission of this deliverable had not been selected yet. The end of the second stage of the co-design process concurred with the establishment of the Advisory board as a main corrective and tool for inclusive participation in the course of the final design, implementation, and management of the Healthy Corridor.

THE CO-DESIGN PROCESS OF THE HEALTHY CORRIDOR IN NADEZHDA, SOFIA

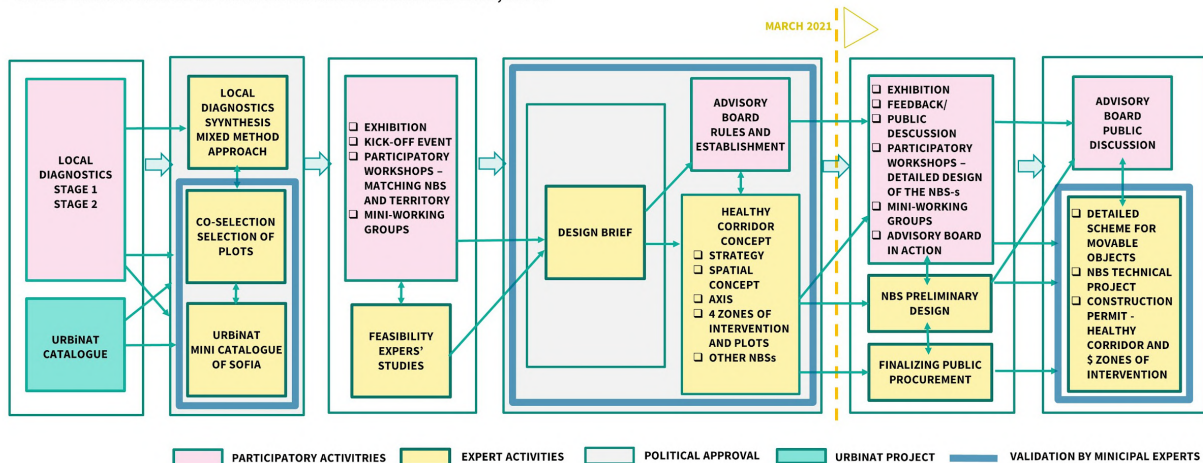


Figure 1. The URBiNAT Healthy Corridor in Nadezhda: Process, scope of activities, and content.

Deliverable 4.2 conceptualizes and traces the transition from the Local diagnostics to the co-creation process, thus scaling down and focusing on the axis of the corridor and the four intervention areas in order to further develop the Healthy Corridor Concept as a synergetic cluster of NBSs. Based on the URBiNAT pillars - inclusive urban regeneration, public space, nature, health and NBS marketable solutions, the Healthy Corridor in Nadezhda focuses on four specific strategic objectives supported by different activities in meeting the identified needs during the co-diagnostic and co-design process:

1. Provide healthy and adaptive solutions in the neighborhood;
2. Improve connections, access, and porosity;
3. Cherish public space for all, diversify its use, and make it distinctive together;
4. Celebrate open space, provoke active life and fruitful community ties.
- 5.

The urban project of Sofia Healthy Corridor focuses on building green connections, understandings, co-implementation, and the use of public spaces. The involvement of citizens in the creation of living public spaces is expected to contribute to overcoming urban fragmentation by removing physical and symbolic barriers to their use, protection of the environment and maintenance of inter-block spaces. The physical elements (infrastructure sub-projects) and "soft measures" implemented in the Nadezhda district, contributing to the expansion of the social basis for their planning and implementation, will be researched and promoted within the project in order to improve the living conditions of citizens and overcome social and environmental challenges.

Nevertheless, that the co-partners of the Sofia task force work together on each task in order to Co-create the Healthy Corridor, diversifications are further anticipated depending on the partners' interests, profile, specialization, and expertise. The focus of the work of Sofia Municipality is the planning, design, and construction works, while the implementation, of the activities of the "Living

lab", the assessment of the impacts and evaluation of the scaling and replication potential of the Corridor as a complex NBS is seen as a scientific contribution and main responsibility of UACEG.

In order to activate the URBiNAT "Living Laboratory" in Sofia, and then develop the design brief, the detailed design and then construction works for the implementation of the infrastructural elements of the Healthy Corridor, the main nature-based solutions that will be implemented have been specified. These solutions are systematized and presented in a Spatial Concept for the implementation of a Healthy Corridor in Nadezhda. This "Healthy Corridor" is defined as an urban environment of new quality, created through the implementation of nature-based solutions, and a "living laboratory" for testing new urban solutions.

The concept adopted by the Sofia Municipality Council clarifies the spatial parameters of the long-term commitment of the municipal authorities to interventions in the public urban space of the region, aimed at improving the quality of the urban environment and creating better conditions for active movement and daily physical activity of all members of the local community. It also presents the target groups and provides the appropriate activities for them. It defines the compatibility of the various events - between them and with other traditional and new activities carried out in the inter-block spaces of the residential complexes.

Along with the construction of the main route and its connection with the green system, street network and public spaces on the territory, the concept will be open and will be able to flexibly respond to changing natural and socio-economic conditions, community needs, as well as emerging ideas and innovative solutions, through changes in the set of functions, physical elements and modes of use.

The Healthy Corridor itself represents a linear park that can be seen as a complex nature-based solution. The Preliminary urban project for the Healthy Corridor summarizes proposals in 16 subzones of territorial and technological NBS clusters, all of them organized in 4 main zones of intervention (Co-place, Health Energy, Aqua Vita, and Green Assembly) and 2 minor zones of intervention (Kindergarten N90 and the bridge over Suhodolska river). The impact of the Corridor will be most evident in the four main areas of intervention along its length. Thematically, the four zones of intervention are dedicated to four main topics and each area of intervention integrates several individual nature-based solutions that are currently under development through collaborative practices.

Among the positive results that the project would like to achieve is the renovation of unused/ empty public spaces through the involvement of the local community, creating an interesting, accessible and diverse urban environment for sports, communications, knowledge exchange and entertainment of the local community.

Various NBSs are targeted along the Healthy Corridor, creating a "green innovation and integration area" that allows to improve the visibility of solutions and maximize the impact of each one. Each proposal and decision are personalized in order to further associate it with the physical, mental and social well-being of citizens, the social cohesion of neighborhoods and to map the changes in the perceptions to inclusiveness and security in a measurable way.



Figure 2. Urban Concept for the Healthy Corridor in Sofia.

The next steps of the Healthy Corridor Co-creation are focused on the implementation, with the main stages: finalization of the public procurement for the realization of the project events, finalization of the engineering public procurement and the subsequent detailed design and licensing, beginning of the construction (march 2022) and opening of the Healthy Corridor (end of 2022).

The co-implementation strategy follows the basic aims and principles defined in Guidelines for URBiNAT advisory boards and committees - a document developed within the URBiNAT consortium by a team from CES. It is intended to improve the level of understanding among the stakeholders; improve the level of commitment of the stakeholders; leverage the participatory experiences to concrete contributions. Co-implementation should be based on inclusion and diversity; discursive interaction; cooperation; consensus building; and integration.

In order to meet the challenges related to the integration of innovation in the process of urban governance, such as the co-design and co-creation of the Healthy Corridor, a new structure allowing for participation and inclusion was established - the Sofia Advisory Board. It involves citizens, politicians, administration, researchers, practitioners, etc. Besides this, the traditional communication channels for spreading the project achievements, milestones, and results developments are used. The dissemination and communication activities aim to generate interactions and publicity about the objectives of the Healthy Corridor and to use their results through various materials, tools and channels (website, newsletter, promotional materials, social media, articles), networks, events and conferences, in order to reach and influence a segmented and wider audience. The segmented audiences cover a variety of stakeholders, including citizens and local communities, local authorities, politicians, the scientific community, as well as relevant international networks, corporate actors and individual groups. In order to achieve the concept for the construction of the Healthy Corridor in Nadezhda, it is necessary to a) perform local detailed examination, reflection and monitoring in the Living lab for integration of scientific methods and achievements in the practices of spatial planning; b) activate broad multilateral participation of all stakeholders in the process of implementing new models of inclusive urban renewal, developing the environment by ideas generation and realization of mutually reinforcing innovative projects; c) improving living conditions and social cohesion, with an innovative, broader and holistic concept of sustainability.

The implementation of the planned co-creation activities and steps for Sofia Healthy Corridor will lead to various multifacet expected results. The Healthy Corridor Concept, the spatial strategy and the preliminary project are seeking to upgrade and achieve synergy with the activities already set in a number of planning documents, and to expand the territorial scope of the already started process of promoting Sofia as a "City for people" taking into account the investment initiatives implemented by Sofia Municipality. Studying the specifics of the local context, Sofia task force focuses on building a pedestrian connection of the structural elements of the green system of the district of Nadezhda. The Healthy Corridor will serve as a functional spatial link between Park Nadezhda and Severen Park connecting a network of various NBSs, a socio-economic link uniting different communities and different possibilities for implementation of market-based potentials and synergies resulting from the application of the NBSs, an arena to change perceptions, attitudes, behavior, lifestyle and philosophy of life. The implementation of the four main intervention areas along the Healthy Corridor will be a pilot route to illustrate the potential of alternative models for urban regeneration. The process of joint design and implementation is a guarantee for a qualitative change in the attitude of citizens to the environment around them, which will allow good practices to be widely disseminated beyond the borders of the URBiNAT study area.

The URBiNAT approach enhances the establishment of an inclusive process for local communities in identifying and finding solutions to meet the diverse needs of communities and specific target groups in the neighborhoods through close cooperation with the local municipal authorities. These are expected to bring improved quality of public space, including development, maintenance, better accessibility for all citizens and providing opportunities for multifunctionality through tools offered by urban design, landscape architecture and architectural design.

2. Taskforce

Sofia Task Force consists of two project partners, each with own URBiNAT Budget: the team from Sofia Municipality and the academic partner UACEG. This chapter makes an overview of the roles and organization of the partners from Sofia in a time perspective (during the application and co-diagnosis, and during the co-design and co-implementation phase) and the articulation with municipal departments and beyond.

2.1 Roles & Organization

Sofia Municipality (SM) is an administrative and territorial unit. Its management is a mixture of the self-government of the citizens and the operation of the state policy for the development of the capital. Sofia Municipality is responsible for all administrative and operational activities related to ensuring different types of services to its citizens – education, health care, public transport, waste and water management, and others. These activities are provided with public activities and infrastructure through municipal enterprises or public-private partnerships (e.g., concession).

Key partner, part of Sofia Municipality is the administration of Nadezhda district. Nadezhda district, where the Urbanat Study area is located, is to the North of the city center and is one of the 24 districts that are financially dependent on the Budget of Sofia Municipality. URBiNAT project makes it possible for Nadezhda district to co-create a Healthy Corridor linking Park Nadezhda and Severn Park. Initially, at the time of the application and after the project kick-off and until the beginning of the third year of the project implementation, the administration of Nadezhda district was included in the team of Sofia Municipality.

The local team from SM is responsible for the design and implementation of the Healthy Corridor and the NBSs, the coordination of the communication with citizens at the district level, takes part in the participatory activities, communicates and coordinates the content of the Urban Plan and the procedures with the political level at the Municipality and the Technicians. For the first two years of the project implementation, representatives from the Municipal company Sofproekt (now Sofiaplan) were an important part of the SM team thus providing data for the local diagnostic and responsible for the Healthy Corridor design.

As a local partner, UACEG provides methodological support throughout the whole co-creation process (co-diagnosis, co-selection, co-design, co-implementation, and co-monitoring). The UACEG team is responsible for the scientific leadership within the local task force, the local diagnostic, the implementation of the research activities, providing the design brief, providing support for the design of the Healthy Corridor concept and strategy, promoting workshops in the cities' living labs to support the co-design process of the Healthy Corridor. The team works for the creation of data sets, analysis, evaluation, and simulations, which are the main tasks of the established URBiNAT Observatory for Urban Inclusive and Innovative Nature. UACEG takes part in the activities related to the dissemination of publications and the NBS Catalogue. The team is also part of the networking and participates in events and conferences.

The Local community groups involved since the project design and elaboration of the application form, are Zaedno (NGO), Bread Houses (NGO), Hrankop (farmers markets network)- all of them bringing practices recognized as social and solidarity economy NBS by URBiNAT community and successively affiliated to UACEG. At the time of the application, the association for the Development of Sofia (NGO)

was affiliated to Sofia Municipality. The initial intent to involve various local actors as schools and kindergartens (teachers and parents, classes), parents boards at schools, pupils' parliaments at schools, mothers; local NGOs; Nadezhda Municipal Cultural Centre; Nadezhda Social services office; Locomotive sports club; Sofia Agency for Energy Efficiency, Sports Sofia 2000, businesses providing innovative technical solutions.

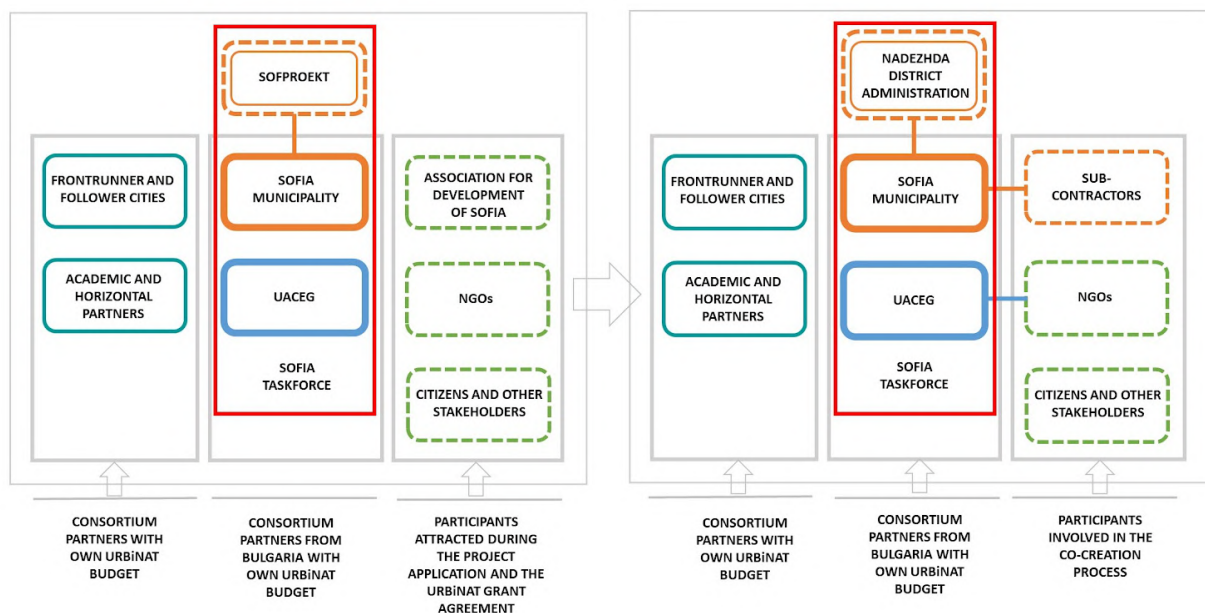


Figure 3. Sofia Task Force and other local participants. Left - during the application and co-diagnosis, right - during the co-design and co-implementation

The roles and duties in the task force are divided into leaders (project leader and scientific leader), operational teams, facilitators, validation and specialized experts, observers, subcontractors, advisory board members, and administrative and financial management experts. (Figure 3)

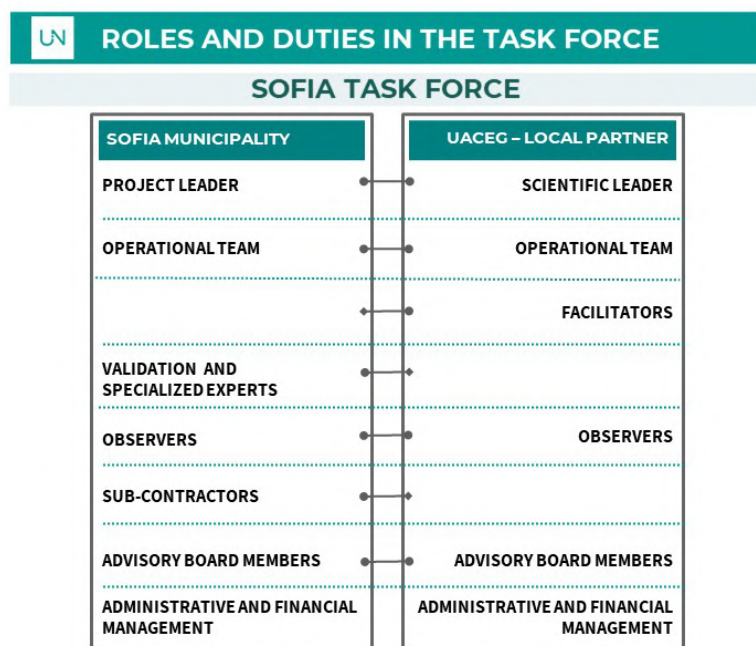


Figure 4. Roles and duties in Sofia Task Force.

Members of the SM and UACEG teams can take more than one role depending on the phase of the URBiNAT project, the professional expertise, and the personal commitment to the project.

The scientific leadership (UACEG,) performed by 1 or two people, covers the strategic level and the coordination of the research and the Living Lab activities according to the overall URBiNAT methodology and the specificities of the Tasks within the work packages. This role is taken by a senior researcher with an academic position. The project leadership for SM was executed by people with an overview of the project - for the first two years (2018 - 2020) by the Deputy Mayor and the Chief architect and by the Chief architect since 06.2020.

The main task of the operational team is to transform knowledge into action in the Living lab. The operational team consists of 4 members of the SM team (4 members from SO and 2 members from Sofproekt before 06.2020) and 4 members of the UACEG team. The operational team has to organize and execute all co-creation activities, including the analysis and application of the project methods during the local diagnostics (UACEG), the preparation of the design brief (UACEG), the participatory co-design workshops (UACEG, SF), the preliminary design and its reporting to the Municipal Council (SM), the preparation of the public procurement documents for the detailed design (SM with the support of UACEG) and construction of the Healthy Corridor (SM), the implementation of the nonmaterial NBSs (SM). UACEG takes part in the action research (coordinated by the Coordinator CES), and with the support of SM is responsible for feeding the URBiNAT Observatory with data that will allow comparing the changes before and after the implementation of the Corridor. The members of the SM team are responsible for the identification and inclusion of experts in the teams of each municipal department (later mentioned as validation and specialized experts) who can assist with information and specific expertise. SM members were leading the process for the Establishment of the Advisory Board and will be the main actors in organizing its future work. Technical staff was temporarily employed by UACEG for the execution of simultaneous tasks, as co-design workshops and application of Behavioural mapping (for the observation and the digitalization), or in cases when specialized skills were needed (e. Design of the exhibition panels, geocoding the participants' demographic characteristics and their reported perceptions and proposals). Both partners, SM and UACEG, are contributing to the dissemination and communication activities and are obliged to take part in activities with the work-package working groups for the execution of the tasks assigned in the Grant Agreement. Both teams are responsible for keeping records and organizing the technical documentation of the URBiNAT project activities, milestones and results.

The validation and specialized experts from different municipal departments are responsible for administrative procedures and coordination of the design project validation, as well as for consulting on the feasibility of the actions and NBS implementation, for approval of the planned actions and solutions in the co-creation process within their administrative responsibilities. The specific role is assigned to the Directorate directly subordinated to the Chief architect. Experts in the fields of mineral water usage, urban and territorial planning, green system and ecology, climate and energy, education, transport, communication and public procurement are involved in the project since its very beginning in order to keep them informed about the project status and create a closer commitment to the strategic and day-to-day issues connected and arising during the co-creation of the Healthy Corridor.

The facilitators for the purposes of different tasks of the Living lab were recruited according to the rules of the URBiNAT project: they were not members of the task force and were recruited and trained by the local scientific leader following the WG Instructions. Their main function is to minimize bias and manipulation during participatory activities by avoiding suggestopedia and helping to collect info "in a pure state". The main characteristics in their profile of the facilitator are empathy and the ability to

manage the discussion. Until 07. 2021 the recruited on temporary base facilitators were usually researchers from UACEG, experts from Sofproekt (until 06.2020), experts from NGOs, and PhD students. The role of the observer was performed by a mix of experienced and junior temporary employed staff who were in charge of taking "hidden" information from the parallel conversations and discussions, in detecting avoided subjects and identifying the blocking stakeholders from the workshops, and in identifying the most important stakeholders. These were usually good and experienced “listeners” with skills to document the information approached and/or collected - PhD students, NGO representatives, graduate students, or members of the team who were not directly involved in the execution of the operational duties.

The role of the subcontractors is to complement activities that are not in the jurisdiction and/or are beyond the capacity of the administration of Sofia Municipality. The most significant subcontract will be executed for the purposes of the detailed design and construction of the Healthy Corridor. In addition, a subcontract was executed for conducting the survey on health and wellbeing (December, 2019), another one was executed for organizing the meeting in Sofia (January 2019), and one for organizing events during the activation of the Healthy Corridor is underway.

The members of the Operational teams of Sofia Municipality (SM) and UACEG have been part of the Advisory Board since its inauguration in June 2021. Their active participation there will facilitate the activities in the Living lab during the co-implementation and evaluation of the Healthy Corridor in Nadezhda.

The administrative and financial management teams are responsible for the financial management of the project and the adherence to specifications of the Bulgarian legislation in the areas of public finances, employment, and financial documentation of the project.

2.2 Articulation with Municipality departments and beyond

The main topics discussed in this subchapter are related to the evolution of the team of Sofia Municipality, the articulation within Sofia Municipality, the articulation within Sofia task force, and the articulation beyond Sofia task force.

The Evolving team of Sofia municipality:

The evolution of the Sofia Municipality team underwent four different stages, each one characterized by specific team composition, level of engagement of political and decision-making representatives. (Figure 5)

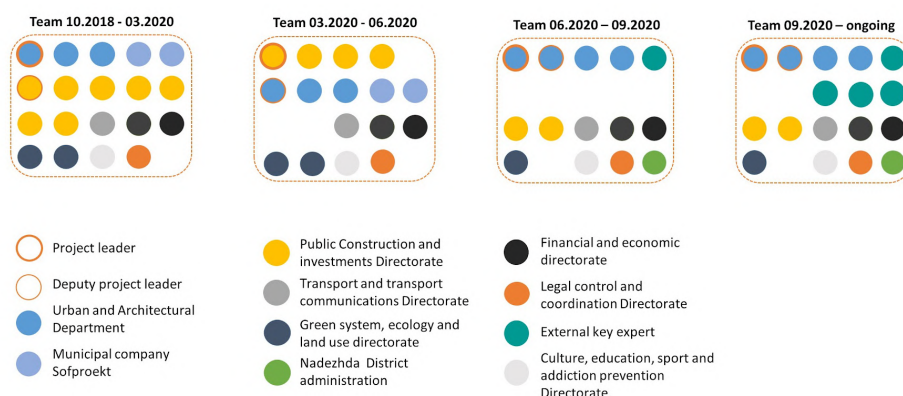


Figure 5. Evolution of the Sofia Task Force team from 10.08.2018 to 07.2021.

Driving factors for the evolution and (re)structuring of the Sofia municipality team are a) the attempt to reduce bureaucracy and improve the efficiency of the team; b) the complexity of the project that requires the involvement from the very beginning of the project administrative staff from all fields of expertise and respective departments; c) improving the communication and commitment to the project; d) considering the total workload as well as respecting personal development goals of the team members.

Initially, the Mayor of Sofia Municipality who was authorized by the Municipal Council appointed a team for the management and implementation of the project that was composed of municipal employees. The initially applied approach to reduce bureaucracy and shorten some time frames of procedures - the engagement of administrative staff and decision-makers (political level) at Sofia Municipality was then supported by the forthcoming local elections in the autumn of 2018. Experience with previous European projects at SM proved that staff and administration should be engaged at the earliest possible moment. A slight mismatch between the real obligations and the expected future obligations was identified, as, during the stage when the local Diagnostics had to be developed, the largest portion of municipal experts represented the Public Construction and Investment Directorate. At that time the team was too big, the internal communication was clumsy, and few people were working on the operational level.

The next changes in the team composition were driven by the fact that some of the team members were pretty busy with their day-to-day tasks or were assigned additional ones, they left the project. Their roles in the Sofia Taskforce were taken by 4 new external experts and one expert from the Nadezhda district administration. Since 06.2020 the participation and support of the District Mayor and his administration was an important contribution to the project, yet not officially institutionalized. As of 06.2020, the Chief Architect of Sofia Municipality was appointed a leader of this team and Sofproect stepped aside due to the overload related to the elaboration of important programs and projects. The main aim of this team with its current composition is to prove Sofia as a real front-runner city of the UBiNAT project.

Articulation within Sofia municipality

The organization of the work and the obligations of every team member were regulated by an Order of the Sofia Municipality Mayor. The general model of decision making and implementation of the project tasks are structured as follows:



Figure 6. Vertical subordination within the Sofia Municipality Urbinat team.

The team leader assigns direct tasks and controls the work of all experts. Each expert plans his own work according to the importance and timeliness of the assigned tasks in compliance with the regulations, internal acts of Sofia Municipality and the requirements of the project, according to the orders given by the team leader. The expert makes independent decisions within the specific rules, incl. with regard to the organization of work and the manner of performance of the tasks assigned to him. Each expert has to:

- implement instructions given by the team leader and assist him in coordinating activities;
- organize its work on the implementation of the tasks and monitor timely interaction and good communication between team members;
- prepare a monthly report on the implementation of its obligations;
- participate in the collection and analysis of information on the technical progress of the project, supporting the preparation of interim and annual technical reports and the final report of the project;
- participate according to his area of competence in the project implementation activities;
- inform the team leader about all problems and difficulties encountered in the implementation of the project activities that may frustrate the achievement of the final results, as well as about the measures taken for their resolution and/or elimination;
- inform the team leader in case of established discrepancies and irregularities;
- preserve the confidentiality of all documents, materials, information and circumstances that became known to him during or on the occasion of the performance of the work assigned to him.
- participate in public discussions, workshops, forums, etc. related to the work on the project.

The communication is internal (within the task force) and external. Each expert communicates with all members of the task force, as well as all structures and units of Sofia Municipality which are related to the implementation of its direct obligations. By order or after coordination with the team leader, he can communicate with the state authorities, NGOs, legal entities, and individuals within the tasks he works on or with media representatives in order to provide information on the achievements of the project for publication.

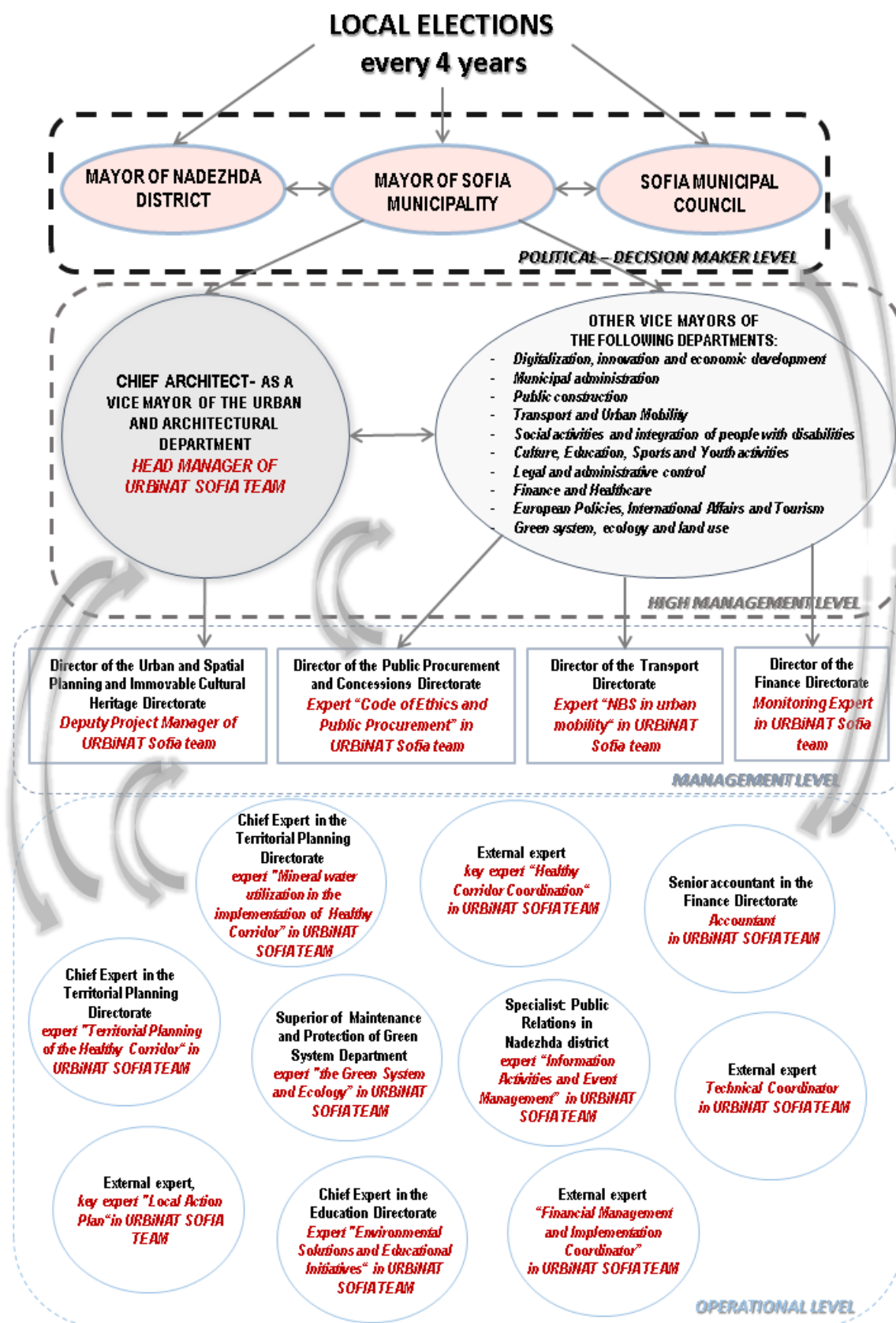


Figure 7. Articulation within the Municipality structure and composition of Sofia municipality team.

Articulation within Sofia Task Force

The decision to conduct regular meetings in order to keep the team informed on the progress of the project was taken soon after the closing of the Sofia meeting - in February 2019. Usually, the Attendants are those that are operationally engaged in different tasks implementation. The meetings during the Local diagnostics and the first stage of the co-design (before the lockdown due to Covid-19 pandemics) were held monthly at the building of the district administration in Nadezhda. At that time none of the Nadezhda district administration team was a member of the SM team, but the PR-s, the Deputy mayors, and other administrative staff were regularly attending and assisting the process.

The communication between the teams of both partners in the Sofia Task Force is open and horizontal with the aim of keeping everyone informed on the ongoing activities and upcoming steps. The distribution of tasks for each Urbinat activity, and contribution to deliverables where collaborative work from the academic partner and the municipality team is essential, the team follows the essential steps of:

- Discussing the content and structure of the deliverable and reaching an agreement on them
- Distribution of responsibilities between the partners according to their engagements in the Urbinat and according to the characteristics of the task
- Appointment of tasks to the team members according to their expertise and availability
- Regular meetings at key stages of the development of the deliverable/activity for updates on the content and structure and for amendment of tasks appointment according to the changes in them or in the workload of the team members.

The communication within Sofia Task Force includes all up-to-date means of information exchange - live meetings, e-mail, instant messaging, online collaboration tools, cloud storage, etc. Since the outburst of the Covid-19 pandemics (in Bulgaria the first emergency measures including full lockdown were announced on 13 March 2020) the team extensively uses online platforms for group video meetings. The adaptation to the new tool was quite fast and allowed the team to keep pace with the ongoing tasks though it caused some postponements to the participatory activities.

Articulation beyond Sofia Task Force

Essential parts of the implementation of the healthy corridor in Sofia are the open process and the involvement of diverse actors - municipal or government bodies, NGOs, structures of the local communities, citizens etc.

One of the key partners is the Nadezhda district administration, as the Healthy corridor is located within the boundaries of Nadezhda district. The experience in the initial phases of the URBINAT process proved the need for involving a representative of Nadezhda district in the core team of Sofia Municipality in Sofia Task Force in order to facilitate the communication with the district administration, to extend the expertise of the team in the field of communication and to support the participatory process in terms of communication with local communities, local stakeholders and using online information channels.

The local diagnostic and the co-design phases intensified the communication with the NGOs, whose best practices were selected as representative for Sofia as a front runner city. Step by step they were attracted and added value to the inclusiveness of the Urbinat participatory activities, thus establishing connections between the local stakeholders, the Sofia taskforce and the NGOs as mediators and know-how holders of the Social and Solidarity NBSs implementation. The Internationally recognized

practices of the “Bread house network” and “The edible organic garden of learning: alternative environmental education for the youngest” (later transformed to “Tasty gardens of learning”) have been included as best practices for Sofia as a front runner city, thus complementing the already selected NBSs coming from different partners in the first draft of URBiNAT catalogue. Along with the letter of support from the Zaedno foundation, the “Tasty gardens of learning” practices became part of the project application. Later, the different projects of Zaedno foundation made it possible to find and make connections with two kindergartens within the Urbinat study area. The recently developed URBiNAT prototypes in one of them (Kindergarten N90 in Nadezhda 4) proved the unlimited potential of networking. The stakeholders’ workshop and the organization of the Consortium meeting in Sofia held in January 2019 brought the “Farmer’s market network ” as a social and solidarity NBS. It was conceived along with already developed and experienced agents viewed as potential facilitators of the participatory process in Nadezhda.

The establishment of thematic working groups and the communication within and beyond them also brought a good level of activation of the topics about NBs and the utilization of the thermal water. The thematic working group dedicated to one of the main accents during the URBiNAT project proposal phase (2018), the thermal water, tried to open the discussion among a wider group of experts, design professionals, NGOs and municipal and district staff. The group “Work with children ” allowed the activation of pupils from the 4 schools and the dialogue with the school and kindergarten headmasters and staff.

A key element of the URBiNAT project in Sofia is the school greenhouse and open classroom, located in the schoolyard of 15th High School “Adam Mitskevitch” in Sofia. It is one of the interventions planned for the “Aqua vita” zone for focused interventions along the healthy corridor. Its structure will be designed and produced by **IAAC** according to its commitments and budget within the URBiNAT project. Sofia Task Force supports the work of IAAC by providing necessary information, regular feedback, organizing meetings with involved stakeholders like the headmaster of 15th school, holding workshops (organized by UACEG) with the school pupils etc. Sofia Municipality team has elaborated a detailed design brief for the greenhouse and after discussing it with the headmaster of the 15th school and within the municipal administration, responsible for design and construction permits, the brief was discussed with IAAC. On-time and effective communication have proved to be essential in the articulation of this part of the Healthy corridor.

The communication with external actors and stakeholders is supported by one member of each Partner, responsible for external communication. The teams have also nominated members who are responsible for online communication and visibility of the project and for the publications through social media channels. Before the information is published, it has to be communicated and confirmed within the team.

An innovative structure for Sofia in the implementation and in the procedures of planning, design and construction is the Advisory board (for details see 3.2 below), established within the URBiNAT project. The Advisory board will support the process of validating design proposals and facilitating communication with the citizens. The Sofia task Force members participate in the Advisory board and provide information about the status of the project and the upcoming steps. The board is an independent structure chaired by an elected person. The communication within the board is planned in a way that it could easily adapt to the dynamic context and occasional restrictions for meeting in person because of Covid-19. The information, presentations and documents from the board meetings are shared online and every member can easily access them.

3. NBS co-implementation process

The implementation of the Healthy Corridor aims to regenerate and integrate part of the Nadezhda district in Sofia by creating an innovative and inclusive catalog of nature-based solutions (NBS) to ensure sustainability and mobilize the driving forces for social cohesion. Interventions will focus on the innovative use of public space, creating together with citizens new urban, social and nature-based relationships in and between different neighborhoods.

The joint creation of the Healthy Corridor as a completely innovative and flexible NBS, which in turn brings together a large number of micro-NBSs emerging in the process of joint design with a leading role of communities' convergence.

The investment in the Healthy Corridor in Sofia will improve the urban environment by creating a large-scale, nature-based innovative structure that integrates "physical" and "soft" measures in order to ensure sustainability and mobilize actors and resources to achieve social cohesion. The "physical" (infrastructural) measures implemented in the Nadezhda region will be studied and promoted in order to improve the living conditions of the citizens and to overcome social and environmental challenges.

3.1 Lessons learned from the citizen engagement on previous stages

During the previous two stages, a clear definition of the correlation between identified needs and the co-design proposals has been achieved through the engagement of 383 adults and pupils during co-selection and co-design activities in schools, public spaces and online workshops, and another 554 during the co-analysis stage. The proposals were systemized into operative categories, with the involvement of all actors - citizens, local associations, schools, municipal technicians, political representatives and URBiNAT technical team. Based on the findings of the local diagnostic and the citizen engagement in the previous stages, a global strategy for the Healthy Corridor that fits into the strategic and spatial development agenda for the city and the URBiNAT area was formulated.

Co-diagnostic stage

During the co-diagnostic stage, the project was introduced to diverse groups, mainly political representatives, municipal technicians, citizens, and other stakeholders. The conducted "mapping of the local participatory culture" that started during the Consortium meeting in Sofia (Jan. 2019) gave a good start to the identification of active and interested actors, existing practices and projects under implementation in the Sofia, Nadezhda and the URBiNAT study area. Two strategies to develop the "participatory activities" were adjusted by the local taskforce, one focused on specific groups that were approached through diverse methods, and another - focused on a public event in the Nadezhda Institute of Culture held in May 2019. These activities and actions involved a large group of citizens in URBiNAT and activated the Sofia Living Lab (see Milestone 2).

The wider framework of the analysis and the holistic approach to the LD brought the challenge to identify a broader scope of basic and specific human needs, the satisfaction of which is impossible to be handled financially, temporally, operationally and in terms of capacity for implementation. It was realized that this might threaten the management of expectations. In this way, and in the light of the theory-practice dialogue on the right to the city and the representative democracy Sofia task force started to design the procedures and formal rules for the establishment of the advisory board at the earliest stage, soon after the opening of the co-design stage. Meanwhile the Sofia Task force (STF),

along with the municipal and district technicians, made the prioritization and validation of the problems addressed in the LD. An exhibition and a public event made it possible to reach more citizens' groups, share the results and announce the forthcoming feedback and argumentation on the choices during the co-design process.

Grounding on the local context, the implemented mixed-method approach combines traditional methods for information gathering and synthesis, inclusive participatory methods for gathering specific information about the area and its inhabitants. All these, along with the intensive consultations and validation procedures were gradually integrated into the established statutory planning process. Based on the analysis of the understanding about the rights and obligations and the arising tensions, different arguments were identified that give insight to the culturally rooted and intergenerational differences to the approaches and motivations to collaboration and participation among the closely involved groups of actors - inhabitants, pupils and representatives of the district administration, citizens. A significant mismatch has been identified between the beliefs concerning rights and obligations for public space management, which in terms leads to tensions between inhabitants and users of public space, young people and elderly inhabitants, condominium owners and pupils, inhabitants from different communities, and inhabitants/communities and local administration staff. The district administration admits that the biggest challenge in the process of changing public spaces is working with citizens. Inhabitants want to study how to and actually to take part in activities (meetings, discussions) related to their neighbourhood by being informed in advance through notices distributed to the blocks or near the venue of the meeting. They want to see more signs and posters, informing and motivating the good attitude and care for public spaces and infrastructure. This information should be presented in an impactful way, not just as a list of prohibitions and obligations. Pupils are willing to participate, but they outline that they need somebody to guide and instruct them on how to perform transformative activities. Representatives of the district administration believe that there is potential to improve the two-way dialogue and dissemination of information related to the municipality's actions and plans for sustainable development. They admit that they recognize the lack of a mechanism for applying "punishment" in cases of pollution of public spaces – one of the main reasons for the poor condition of the inter-block spaces.

The strengthening of public awareness of the resources and potential of urban public space and the problems associated with their maintenance, protection and management. On one hand this would facilitate public control over the distribution of the funds for the maintenance, management and design of public spaces, and on other hand would better connect the planning process and the control of the implementation of day-to-day management tasks and investment plans. Control is essential for the credibility of the process of the management of the quality of public spaces, as the loss of credibility leads to loss of motivation among residents to collaborate. The right to choose the projects through participatory forms of budgeting and to control the design and management of public place in LSHs, as well as in the on-going maintenance is a strong empowerment tool that trigger a sense of pride and satisfaction with the outcome, reduce vandalism and anti-social behaviour, strengthens ties among neighbours, and develops sustainable communities. Communication of local/district administration with citizens, motivating, guiding, involving are realized need actions that would ensure empowerment. Further studies and future efforts should be focused on building frameworks and formal arrangements for participation by clearly defining the places and times to enable participation. In order to feed policy analysis, planning and design processes, new ways of data gathering and approaching public space management should enhance better study and assessment of the cause-effect relationship between physical characteristics and social dimensions of public places.

Co-design stage

The co-design activities were organized in seven steps, according to the methodology proposed in the co-creation process: transform, self-projection, ideation, design, validate, argue, systematize. These steps aimed to diversify among the different levels of commitment to the project, as involvement, interaction and integration. According to the level of details discussed and the results from the participatory activities implemented, two sub-stages could be identified within this stage. The first sub-stage focuses on the appropriation and relating the NBSs solutions to the areas of intervention, which includes the activities of transformation, self-projection and ideation. At the end of this stage, the NBSs suitable for implementation in the four intervention zones were co-selected from Sofia URBiNAT mini-catalogue and the new NBS were identified and classified according to the URBiNAT catalogue into territorial, technological, participatory and social-and solidarity economy. The focus of the workshops and the results gave good representation of new technological and territorial co-selected solutions and very few proposals for the nonmaterial solutions. The participatory and social and solidarity solutions were less recognized and more rarely proposed, maybe because of lack of awareness and recognition or difficulty to be easily imagined. There are several reasons for this result: the applied methodology of the workshops and the conscious attempt to seek interrelation between the solutions and their spatial localization, the cultural perceptions and expectations of the participants on public space, the low popularity of the social and solidarity economy among the inhabitants of Nadezhda. Nevertheless, these findings, it is also important to outline that many of the ideas appropriated to some of the immaterial solutions related to education, culture and civic capacity building were addressed during the conducted interviews and focus groups in the Local Diagnostic Stage 2.

All of the collected new proposals were further related to one of the following groups of categories: public space, sports and recreation, social economy, education, culture, and solutions providing for climate change resilience (climate adaptat). The URBiNAT team systematized all the information collected and went through a decision process with the municipal technicians in order to further diversify the proposals according to the possibility to develop the proposal as NBS, the need to channel the proposal to other municipal projects, and not to develop the NBS. (See D4.2.)

The approved NBSs were integrated in the Healthy corridor preliminary project, the approved version of which was presented to the citizens and other stakeholders before the implementation of the co-design workshops. Some NBS have been being developed in parallel, namely the immaterial solutions that will activate the use of the Healthy corridor.

Different groups took part in the first phase of the co-design - inhabitants of the blocks in close proximity to the buildings around the four zones of intervention and people usually crossing or walking nearby; representatives of specific interest groups and communities as dog owners, bicycle riders, professionals (as architects, engineers, a medical doctor, a retired journalist, a retired civil worker at the District municipality), and elderly/retired; active citizens that lead the action for cleaning of interblock spaces, initiators of actions for upgrading public space (at Co-place and Aqua vita) managers of the condominium associations (at Co-place and Aqua vita).

Based on the on-site communications, the participatory activities performed outlined several types of inhabitants by attitude to social action for transforming public space: (a) very active ones in addressing certain problems (a rather limited group, most of them already involved in ongoing initiatives); (b) ones ready to join if invited, with further guidance and organization needed; (c) ones reluctant to join as it is considered a responsibility of the municipality; (d) passive ones, unwilling to be bothered; (d) ones providing advice and proposing solutions, yet unwilling to be involved in practical action; (e) ones

suspecting a hidden agenda behind the project initiatives; (f) ones easily disappointed when things do not happen fast enough.

Some differences in the readiness and depth of participation through proposals and co-selection of NBSs were observed in the various types of workshop sites. In the more transitional but narrow public space at the edge of Park Nadezhda the many people crossing the Suhodolska river bridge were passing, asking and informing themselves but a smaller part of them spent more time looking through, discussing, sharing of impressions, proposing and selecting. Contrary to this, the other transitional site behind the Post office gathered passers-by that were actively proposing ideas rather than selecting from the catalogue. In these cases, there was a more general agreement and even positive emotions and surprise about the good intentions of the project and its innovative, regenerative, green and healthy oriented character. The other types of places - more semi-public ones around some of the housing groups and their territorial communities, proved to be more fruitful for intensive discussions and specific interests of the local residents. Some of them were presenting themselves as leaders and certainly seemed to be opinion makers of the neighbourhood. Some of them were well informed about the project and they had very specific attitudes towards the concept, the solutions, the expected impacts from the project and more generally about the public works and the community activities needed at that place. Others were sceptical or were addressing issues that are more basic in terms of the physical conditions, parking and other problems of the urban environment and its use, that cannot be resolved solely by the project and its funding. While communicating and realising the opportunities and the constraints of the project many of the participants were readjusting their preferences towards attainable and practical proposals and solutions. Some of them were not always that inclusive and oriented towards other groups of users and uses out of their lifestyles. At some sites there were core groups of interested users and more peripheral ones which outnumber the core groups and they seem to have differing ideas and preferences.

The ideas collected were documented in working NBS forms and further co-evaluated in terms of technical and financial feasibility through a collaborative and transparent process with the URBiNAT task force, the municipal technicians and the political representatives. As a result, from this systematic analysis, all proposals were divided into three main categories: Category 1) Proposals to be developed on the Healthy Corridor and that will be further developed as they met financial/technical feasibility within URBiNAT and are aligned with the project's goals, the project's timeframe, and the municipal priorities; Category 2) Proposals to be forwarded and channeled to the respective municipal departments to be integrated in ongoing and/or future projects as they do not meet financial/technical feasibility within URBiNAT and/or that are not aligned with the project's goals, but are meeting certain needs of the study area and/or are aligned with the municipal priorities; Category 3) Proposals not to be forwarded and not further developed/implemented as they do not meet financial/technical feasibility within URBiNAT and are not aligned with the project's goals and the municipal priorities for the study area.

The Task force and the expert estimation noted that some of the workshop participants propose solutions, but they do not project themselves neither as users nor as organizers. Their proposals are generally intended for someone else. However, in cases when the proposals addressed an important environmental and community issue, they were considered and included in the URBiNAT plan. Another important consideration when evaluating the proposed solutions was their potential for integration, complementation and expected synergetic results. Therefore, the immaterial solutions are projected as means for activation of the Healthy Corridor, and the clusters of territorial and technological NBSs will accommodate events, community initiatives, and interactions.

The authentic ideas gathered through the different participatory methods implemented in the Living Lab in Sofia, and used for the definition of the new NBSs, were summarized into six groups: public space, sports and recreation, social economy, education, culture, and climate adaptation measures (climate adapt) These groups represent the main, but not the only one, connection that the generated ideas have with the site. The following table summarizes the ideas collected for the creation of the NEW NBSs in the six groups previously defined.

The first round of co-creation workshops was postponed for around 3 months due to the first stage of the Covid-19 pandemic. The warmer season between June and September provided suitable chances for direct contact while keeping the needed sanitary measures at the most relevant level. The situation of emergency imposed various challenges, such as the need for access to equipment and Internet, especially for the vulnerable population as well as the need for additional equipment and space for the households with more children and those organizing a home office. In fact, the restrictive measures did not allow any project events to be held indoors, while the winter season limited the Taskforce to hold them outdoors. Though planned in advance, the need for more space for the public events in order to maintain a safe social distance, even outdoors, has been recognized during the workshops.

3.2 Strategies to improve citizens engagement process (or Citizen engagement in the implementation stage)

The strategies for improving citizen engagement are based on communication and institutionalization. The first includes all activities and measures for providing information and reaching target groups and was essential during the co-diagnostics and first activities of the co-design while the second refers to the establishment of an Advisory Board within the Urbinat project and will be important during the upcoming activities of the co-design and the co-implementation phases.

The support of some institutional figures has proved to be important for the improvement of the engagement process. Besides the participation of the citizens and local communities, some special groups are also closely engaged in the co-diagnostic, co-design and co-implementation of the Urban plan in Sofia. The pupils from the high schools in Nadezhda as well as some of the teachers have been invited and have participated (under the consent of their parents) in a number of workshops. The headmasters of 15th School "Adam Mickiewicz" and 90th kindergarten "Vesa Paspaleeva" have also participated and they have facilitated the participation of the children and pupils from their institutions. The headmaster of the school has also assured that the pupils from the school club will take care of the plants and the greenhouse will serve as an experimental field for all students.

The strategies related to communication included different media - posters, exhibitions, brochures, flyers, email lists, Facebook page, Instagram profile, web pages of the Directorate Architecture and Planning and of the Nadezhda district administration. In order to reach the target groups and increase their participation in the workshops within the co-diagnostics and co-design phases, the posters describing the event and inviting participants were mounted at the entrance of every residential unit within the targeted area, and flyers were sent to the postboxes. Exhibitions were held at specific stages of the project when results from the Urbinat phases had to be presented. Online tools were used for regular updates on the project progress and on the current and upcoming activities as well as for sharing the invitations for the workshops in order to reach the wider public and hopefully increase participation.

The **communication strategy** for attracting and engaging citizens in the co-design and co-construction processes aims at encouraging and promoting project activities such as best practices, roadmaps and guidelines for the development of the Sofia Healthy corridor. The specific objectives of the Strategy are:

- to provide a detailed communication strategy for dissemination through different networks, sites, reaching the target audiences and stakeholders of the project, as well as to those who could benefit from the results of the project. As a result of the engaged civic participation in the project, the aim is to strengthen the expected impacts on the public;
- to promote a permanent dialogue between the main stakeholders (European and international) in order to address common and urgent challenges, as well as to use it for beneficial interactions;
- to strengthen the feedback with the public in assessing the applicability and adequacy of the implemented solutions.

The communication with a non-professional audience will be achieved through regular public and online presentations of the goals, project results and recommendations. They will be distributed in various formats (video, infographics, etc.), using accessible, non-technical language and through popular social media platforms and other locally specific channels.

The purpose of the communication and dissemination activities is to ensure that the results of the projects will be presented to the main target groups of participants through appropriate communication channels and in style, language and format (report, video animation, guidance document, etc.) to resonate with each audience.

After the completion of the first steps of co-design, Sofia Taskforce is advancing for the next steps and for the co-implementation by building upon the achievements from the participatory process and developing strategies for its improvement to create another wave of participants activation, involvement and engagement. As the project is currently on a critical transitioning point when new participant - the contractor for the design-and-build procedure will be involved in the detailed design of the Urban plan and the implementation of the NBSs, the importance of properly preparing the grounds for continuing citizen engagement and for providing more efficient communication, dialogue and workflow through the co-design underlined the need for establishing a new body representing the citizens.

Sofia Advisory Board was established on 15.06.2021. It is an innovative approach for Sofia Municipality. As a pilot initiative, it aims to empower citizens to overcome the deeply embedded conviction that urban planning is a top-down process, which disregards the public's voice. It is expected that it will encourage civic pride and involvement and will thus ensure the sustainability of the Healthy Corridor and will provide a basis for subsequent development and management of the area based on collaboration and consensus-building.

The Sofia Advisory Board (SAB) aims at supporting the process of development of detailed project designs and further the implementation and monitoring of the NBSs. It is supposed to facilitate civil society participation in the URBiNAT project and to ensure its representation as well as to improve communication with the local community and with stakeholders and decision-makers as well as to provide objective civil monitoring for the project itself (details in 4.4.2).

The board will support problem identification and their solution. It will represent the communities living or working in the vicinity of the Healthy Corridor and will serve as a mechanism for active civil society participation and a connection between Sofia Taskforce (project teams of Sofia Municipality and UACEG) and the civil society. It is a result of the Sofia Taskforce's commitment to developing sustainable mechanisms for consultation and interaction with civil society and to addressing its needs and expectations when developing new policies or assessing their impact.

Sofia task Force prepared a special document "RULES OF SOFIA STAKEHOLDER ADVISORY BOARD FOR PROJECT URBiNAT" and consulted it with Urbinat project partners. The document sets the framework for the activities of SAB - functions, composition and roles, structure, and work rules. The document was discussed at the first meeting of SAB and adopted on the second.

The activation of SAB was done through an open call which was actively promoted via websites, portals, and social media:

- <https://www.sofia-agk.com/Pages/SinglePublication/D70cegHO8VA%3d>
- <http://www.sofia-nadejda.com/%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B8-%D0%B8-%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82%D0%B8/%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82-URBiNAT>
- <http://citybuild.bg/news/mozhe-uchastvate-syveta-zeleniia/44231>
- <https://www.facebook.com/ArchitectureSofia/posts/1352810711762372/>
- <https://www.facebook.com/RajonNadezdaStolicnaObsina/posts/3999090473467333/>

More than 30 applicants with a very good diversity and level of representation replied to the call (Figure 8 and Figure 9).

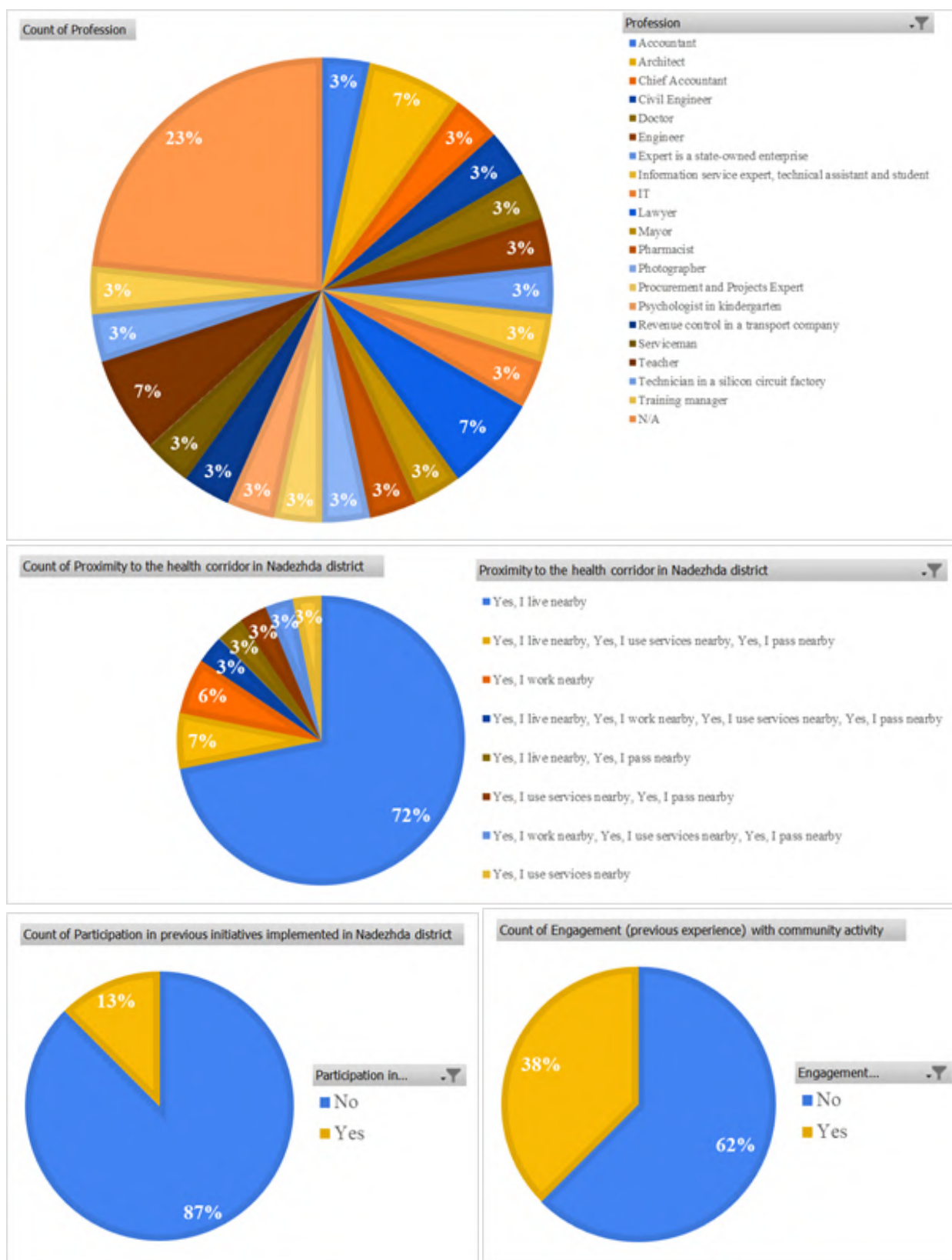


Figure 8. Representation of profession, proximity to the Healthy Corridor, previous experience in initiatives, engagement with community activity within the applicants for participation in SAB. Source: [Registration](#)

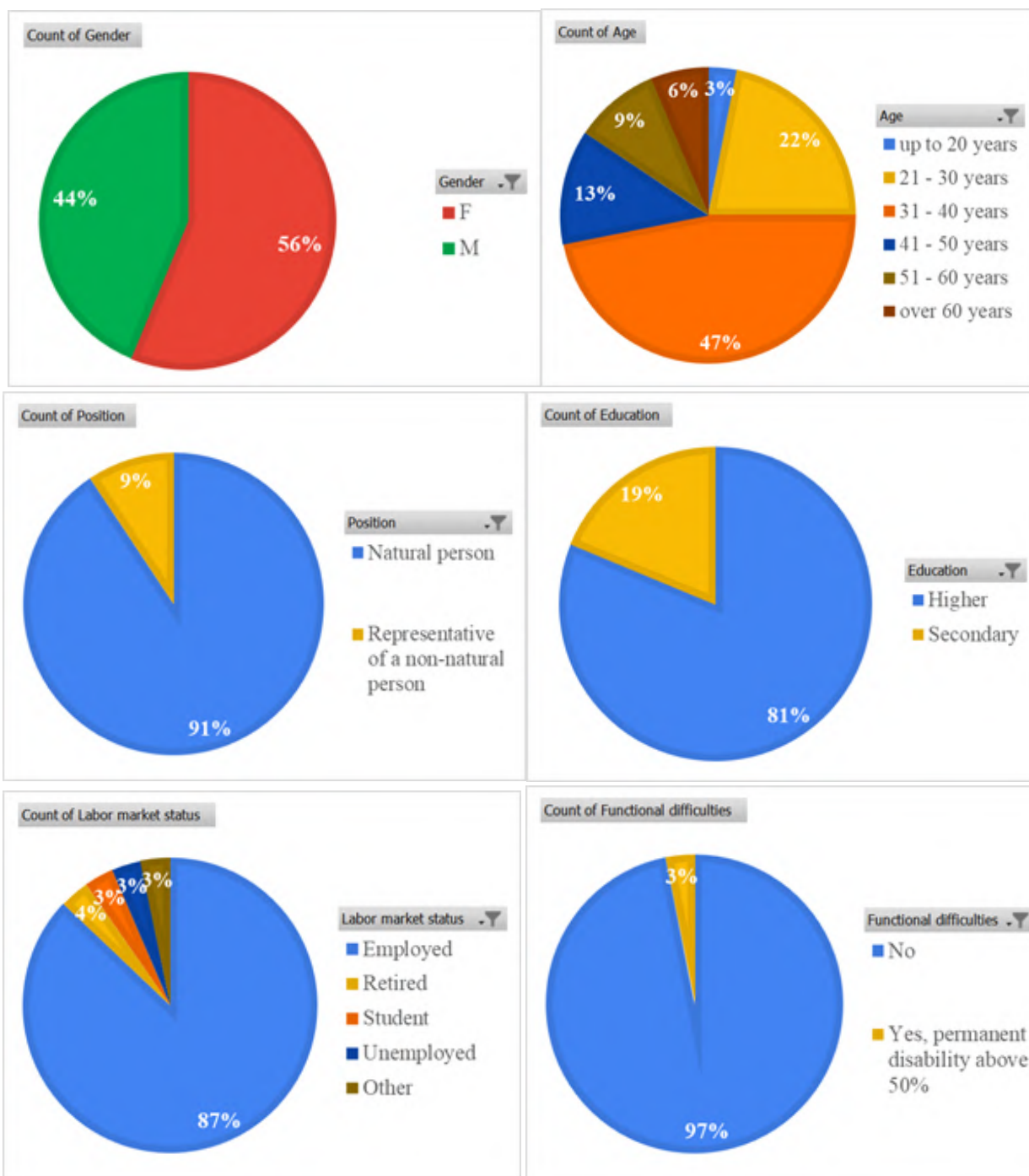


Figure 9. Representation of gender, age, position, level of education, labour market status, functional difficulties within the applicants for participation in SAB. Source: [Registration](#)

Only 4 of the civil society representatives joined the first in-situ meeting on 15.06.2021. The second meeting was held on 22.06.2021 online in order to be convenient for more participants and increase representation. Unfortunately, only 3 of them joined it and therefore a third meeting was scheduled for 29.06.2021. These unsatisfactory figures represent the discrepancy between stated willingness to participate and actual participation. It underlines the need for continuously engaging with citizens in order to maintain the level of civic engagement that would benefit both the Healthy Corridor design and implementation process and the local community. As a pilot initiative, the SAB will evolve over time and attract more people interested in the development of their district and recognizing the

potential of such a partnership for facilitating collaborative action and bridging the gap between the stakeholders involved.

Advisory Board tasks	Design		Construction				Monitoring			
	2021		2022				2023			
	07-09	10-12	01-03	04-06	07-09	10-12	01-03	04-06	07-09	10-11
Involving citizens in the co-design of the Healthy Corridor	xxx	xxx	xxx							
Involving citizens in the co-implementation of the Healthy Corridor		x	x	x	x	x	x	x	x	x
Participation in regularly scheduled meetings of the Advisory Board	x	x	x	x	x	x	x	x	x	x
Involving citizens in the final HC project public presentation			x							
Involving citizens in the grand opening of the HC							x			

Table 1. Indicative timeline for main Advisory Board tasks.

Note: “X” marks a single meeting/event

The SAB has already had 4 meetings and its work started with the approval of the rules for its work (Table 2) and the election of a chair and a secretary. After that the members have been informed by SofiaTask Force about the state of the Urbinat project and the advancement of the Urban plan in Sofia and discussed existing ideas and proposals.

SAB functions
<ul style="list-style-type: none"> • To address the community proposals and recommendations for project URBiNAT; • To promote active citizenship; • To debate on public policies that affect the urban regeneration of Nadezhda district; • To negotiate and seek a balance between different public interests; • To refer to Sofia Taskforce in case of public issues within the competence of the project; • To assist the communication links between Sofia Taskforce and the civil society; • To assist Sofia Taskforce and other participants in planning, design, implementation, monitoring and evaluation of the project activities.
SAB composition
<ul style="list-style-type: none"> • Any interested party, living, working, using services or passing by near the Healthy Corridor (no matter individual or organised), as well as any representative of Nadezhda district and Sofia Taskforce, can be a SAB member. • The nomination of members was subject to an open call, observing the equality and non-discrimination principles and selection criteria such as: proximity to the corridor, participation in previous initiatives in the area, engagement in community activity, diversity by gender, age, ethnicity, professional background, as well as functional diversity. • The board is a democratic structure. Each member reserves his independence and right to address Sofia Taskforce independently. Each member has the withdrawal right, without prejudice to its participation in the project. • The board is not a frozen structure. If necessary, new members can be accepted later in an open meeting by open voting.

Structure
<ul style="list-style-type: none"> • The activities of the board are intended to be organized by a chairman, vice-chairman and secretary. • For greater efficiency, smaller thematic working groups can be formed and different board members can moderate different board meetings. • Experts from other organizations may also be invited to participate in the meetings, according to their competences. SAB meetings will be open to journalists as well. Depending on the specific topics of the meetings, other experts from Nadezhda District Administration may also take part in them.
Work rules
<ul style="list-style-type: none"> • SAB meetings will be convened by the Chairman at least once every 2 months or when necessary, upon request from Sofia Taskforce or at least 1/3 of the board members. • The draft agenda and the date of the next meeting are to be proposed by SAB at the previous meeting. SAB members may propose items on the agenda. An item on the agenda shall not be included if support materials on the topic or arguments for the need for its consideration are not provided. Exceptionally, it may include for consideration additional issues related to the project and the Healthy Corridor, on which written proposals have been received no later than 7 (seven) days before the date of the next meeting. Written proposals can be received from the citizens and other interested parties at a publicly announced e-mail and post box address. • A SAB meeting will be legal if more than half of all members are present; in the absence of a quorum, the meeting shall be adjourned one hour later at the same place and with the same agenda and shall be held no matter how many members appear. • SAB decisions will be taken by a simple majority of the present members with the right to vote. In case of impossibility to form a majority due to an equal number of members supporting and not supporting the proposed draft decision, the vote of the moderator of the meeting shall be counted for 2 (two) votes. • The voting will be open and roll-call. • SAB members won't receive remuneration for their participation in the meetings. • SAB acts will be considered by the Sofia Task Force within 1 (one) month. Sofia Taskforce will issue an opinion within 2 (two) months. • SAB will be established with a validity period until the end of the co-implementation, monitoring and evaluation of the URBiNAT project.

Table 2. Rules of Sofia Stakeholder Advisory Board (SAB) for URBiNAT project.

3.3 NBS Implementation Planning - Healthy Corridor Promotion & Activation

3.3.1. NBS implementation

According to deliverable 4.2, Sofia Task force followed the territorial principle in planning the implementation of NBS proposals and provided four areas for focused intervention conceptualized under the four pillar topics of URBiNAT project: **movement, water, energy, greenery**. Each of them incorporating a specific bundle of NBSs with territorial or technological aspects, community participation aspects and solidarity economy aspects. They also refer to the topics of urban space and nature; culture and sports; education and environment; socio economy and solidarity practices.

According to the process for their implementation the NBSs planned for the healthy corridor in Sofia could be arranged in four groups (Table 3).

type of NBS	design	implementation	example
NBS planned as an element of the Investment project	contractor	contractor	Green assembly
NBS designed by Urbinat partners	IAAC	contractor	School greenhouse and open classroom
NBS planned within Urbinat	Idea competition	-	Mineral water swimming pool
NBS executed by involved partners	90th kindergarten "Vesa Paspaleeva"	90th kindergarten "Vesa Paspaleeva"	Tasty gardens

Table 3. NBS typology in Sofia according to the implementation process.

The majority of the NBSs that will be implemented in Sofia belong to the first group - they are planned as elements of the investment project; they are described in detail in the design brief and the technical specification for the design-and-build open public procurement procedure for the design and construction of the healthy corridor in Sofia. Their technical design and the implementation will be done by the contractor.

One of the NBSs with particular implementation is the school greenhouse and open classroom. It will be designed and its structure will be produced by IAAC - the partner from Barcelona in the URBiNAT consortium. The articulation of the design process is described in 3.2 above. The design has undergone a number of variations and is expected to be finalized in the autumn. The difference of its implementation is rooted in the legal obligation for the project to be authorized by a project team of architects and engineers licensed to practice in Bulgaria by the Chamber of Architects and the Chamber of engineers in the Investment Design in Bulgaria. Therefore, after the work of **IAAC** on the architectural design and the structure of the greenhouse is completed, it will be verified and the technical plans and drawings will be revised by the contractor (who will be contracted by Sofia municipality to design-and-build the Healthy corridor) for compliance with the legal framework in Bulgaria.

The Mineral water swimming pool is the NBS devoted to the water in Sofia Urban plan. As the budget for its construction exceeds the funds available within the URBiNAT budget, it will not be constructed within URBiNAT. The activities planned include an idea competition for the design and elaboration of technical design documentation in order for the project to be prepared for application in other national and EU calls for funding.

The tasty gardens are comparatively small NBS, but are one of the most popular choices of the citizens and are easily recognizable, very attractive and highly appreciated. They are implemented by the kindergartens in Nadezhda with financial support of UACEG under URBiNAT. With the active involvement of the headmaster of 90th kindergarten “Vesa Paspaleeva” in Nadezhda 4 and with the participation of the children, a new tasty garden has already been created in the yard.

3.3.2. From proposals to co-implementation: general guidelines

According to URBiNAT deliverable 4.2, Sofia co-designed the 23 NBS proposals for the Healthy Corridor and organised it in four groups: urban space and nature; culture and sports; education and environment; socio economy and solidarity practices. 16 subzones of territorial and technological NBS clusters, all of them organized in 4 main zones of intervention (Co-place, Health Energy, Aqua Vita, and Green Assembly) and 2 minor zones of intervention (Kindergarten N90 and the bridge over Suhodolska river).

These NBS proposed by citizens and local associations are integrated in the healthy corridor global strategy and represent a common vision for the study area. The solutions are part of a network of interrelated solutions integrated into the existing practices, projects, and municipal investments. (See D4.2.) The Sofia Healthy Corridor consists of a pedestrian link connecting park Nadezhda with Severen Park, which has to be partially upgraded, and constructed at some sections. The main approach to the intervention zones will be based on public works and rehabilitation and landscape design, including the following key procedures: approvals of detailed schemes for movable objects, development of the NBSs technical projects, issuing a construction permit for the Healthy Corridor and the zones of intervention. Sofia URBiNAT task force will start the development of each NBS in order to implement it until 2023.

The implementation of the territorial and the technological NBSs will follow a technical approach although citizens through the Advisory Board will follow, advise, and monitor the process by attending its regular meetings. Other NBSs (culture and sports; education and environment; socio economy and solidarity practices) will be developed and implemented with the support of the advisory board and the NGOs with the relevant expertise in close cooperation with the respective members of the Sofia task force. These processes will use participatory activities to guarantee the active engagement of the citizens, the appropriation of URBiNAT values and the integration of municipal framework programmes. In this sense, the process of development proposals towards a co-implementation stage should follow general guidelines and a roadmap of actions, that will be supervised by the Advisory Board and the Taskforce.

General guidelines - from proposals to co-implementation:

- Respecting traditions and existing practices and building upon them;
- Sensitivity to social problems and societal needs;
- Collective engagement in design;
- Diversity of actors represented and seeking for universal design solutions;

- Inclusion of vulnerable and not the usual suspects: women, children, the elderly, residents of the neighbourhoods;
- Being aware of the competition among users of public space and prepared for conflict resolution and dialogue;
- Co-production as a methodological approach based on the principles of information sharing, inclusion and punctuality in giving feedback;
- Combination of material and immaterial resources and solutions;
- Sustainability and funding based on community resources and public and private subsidies;
- Registration and systematization;
- Complementarity and synergies between solutions.

Road map of actions - development of NBS proposals:

1. Relation of the NBS with the local context
2. Description of the initiative
3. Objectives and expected results for the environment and for the community
4. Methodology and tools: co-dynamization, co-creation and co-production
5. Management and implementation
6. Stages and Timeline
7. Budget
8. Multidimensional sustainability: financial, in the community.

NBS implementation - the example of the School Greenhouse and Open Classroom

The co-implementation of IAAC designed NBS in 15th High School is following these steps:

- Discussion and approval of the proposal within Sofia Municipality team;
- Compliance check within Sofia Task Force concerning the proposed NBSs resulting from the co-diagnostic and co-design activities;
- Meeting between Sofia Task Force and IAAC - discussion of the development of the idea and the possibilities for its implementation;
- Provision of cadastral data, building boundaries and school plans by Sofia Municipality;
- Meeting between Sofia Task Force, IAAC and the headmaster of 15th High School - discussion on the proposal and possible uses, activation activities, participation by the pupils;
- Site analysis, concept and initial design proposal by IAAC were presented and discussed with Sofia Team;
- Presentation of the initial design for feedback to the experts and management of the Sofia Municipality team along with the other planned NBSs and the entire Urban concept;
- Feedback from the 15th school on the initial design;
- Second design proposal by IAAC - discussed with Sofia team;
- Detailed design brief prepared by Sofia team after a questionnaire about the details of the equipment and uses of the greenhouse was filled-in by the school administration;
- The design brief was discussed with IAAC regarding the scope, tasks and budget;
- Validation of the next design version by Sofia Advisory Board and by the school administration;
- Meeting between IAAC, Sofia Task Force and design team (on behalf of the contractor who will be selected by the procurement procedure) on coordination, elaboration of technical design and implementation of the school greenhouse;
- Provision of technical and practical guidelines for revision of the design in order to be in compliance with the regulations for design, construction and fire-safety in Bulgaria, etc;

- Elaboration of the final design of the NBS and design documentation;
- Submission of the design documentation for approval and construction permit;
- Planning the construction - budgeting and staging, schedule and type of participatory activities etc;
- Construction and co-creation activities;
- Activation of the NBS by the school club (gardening and botanics).

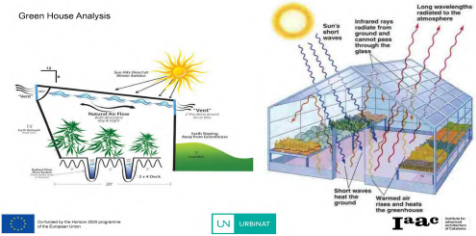
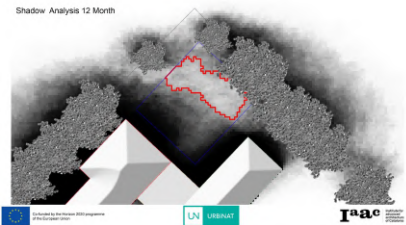


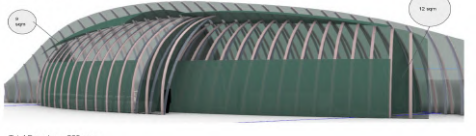
Stage	Example of the results
Thematic analysis	<p>Green House Analysis</p>  <p>The diagram illustrates the greenhouse effect. On the left, a cross-section shows solar radiation (short waves) entering the greenhouse, hitting the ground and plants, and being reflected back as long wavelengths (heat) that are trapped inside. On the right, a 3D perspective shows the sun's rays entering the greenhouse, with labels for 'Short waves' and 'Long wavelengths'. The IAAO logo is visible at the bottom right.</p>
Sun, shadow and temperature analysis	<p>Shadow Analysis 12 Month</p>  <p>The image shows a 3D architectural model of a building with a red outline, set against a background of trees and a sky. Below it, a 'Sun Analysis' diagram shows a circular sun path with a color-coded temperature scale ranging from 10.0°C to 30.0°C. The IAAO logo is visible at the bottom right.</p>
Initial design	 <p>The image shows a 3D architectural rendering of the initial design of the school greenhouse. It features a curved, ribbed structure with a transparent covering, set in a landscape with trees. The IAAO logo is visible at the bottom right.</p>
Use analysis	 <p>The image consists of two photographs showing the interior of the school greenhouse. The left photo shows a person standing among various potted plants. The right photo shows a close-up of a wooden planter box filled with green plants. The IAAO logo is visible at the bottom right.</p>
Second design version	<p>30 % opening of South Facades</p>  <p>The image shows a 3D architectural rendering of the second design version of the school greenhouse. It features a curved, ribbed structure with a transparent covering, set in a landscape with trees. The IAAO logo is visible at the bottom right.</p> <p>Total Facades = 265 sqm 30% open = 80 sqm Total SFR = 110 sqm Total Sides = 20 sqm 80 - 20 = 60 sqm to open from south facade or north facade</p>

Table 4. Results from the already completed stages of the design of the school greenhouse by IAAC.

3.3.3. Activation of the Healthy Corridor in Sofia

The activation of the Healthy corridor will be achieved through a series of events and activities, planned by the Sofia Taskforce and organised by an external Contractor on the basis of a public procurement procedure. The main objectives of the events are:

- to increase the awareness, transparency and publicity in the implementation and management of the project;
- to encourage the active participation of citizens and stakeholders in the planning, implementation and monitoring of project activities.

The planned events are in the format of workshops, exhibitions, outdoor events, conferences and other events requiring a logistical organization, incl. catering, technical support and other organizational activities. The events and activities are in the following groups:

- Events with citizens and stakeholders in the 4 main areas of intervention;
- Key events for the whole Nadezhda region;
- Meetings of the Advisory Board;
- International technical meetings with the project partners;
- Delivery of technical and information tools.

The logistic parameters of the main activities are listed in Table.5 (the general parameters of the events are indicative and depending on the specific needs of the URBiNAT project in Sofia, some of the basic parameters may vary).

Activity 1: Conducting events with citizens and stakeholders in the 4 main areas of intervention	
<p>In person version</p> <p>The events aim at engaging and involving citizens and stakeholders in each of the 4 main areas of intervention. The events will be held separately for each of the four zones, and each zone will host an average of 2 events of the following types</p> <ul style="list-style-type: none"> • 8 pcs. joint design events (2 events in each zone); • 8 pcs. events for joint construction (2 events in each zone); • 8 pcs. events for joint monitoring (2 events in each zone); <p>Characteristics of all 24 events:</p> <ul style="list-style-type: none"> • Duration: 3 to 4 hours; • Number of participants: up to 25; • Location and use of the premises: indoors or outdoors, provided by Sofia Municipality. 	<p>Online version</p> <p>The Contractor shall provide an opportunity for holding the events online in the event of force majeure imposed by the COVID 19 pandemic.</p> <p>Indicative period and term of implementation:</p> <ul style="list-style-type: none"> • 8 pcs. joint design events: in the period from the beginning of the contract under this contract to 08.2021 • 8 pcs. events for joint construction: in the period 11.2021 - 06.2022 • 8 pcs. joint monitoring events: until 10.2023 or until the end of the project.
Activity 2: Key events for the whole Nadezhda region	
<p>Activity 2.1: General event for presentation of the final project of the HC</p> <p>The event aims to present the final architectural project for HC to citizens and stakeholders for the Nadezhda district.</p> <p>Characteristics of the single event:</p> <ul style="list-style-type: none"> • Duration: up to 4 - 5 hours. • Number of participants: up to 60 participants. • Location and use of spaces: the event will be held indoors or outdoors, depending on weather conditions and more restrictive circumstances. 	<p>Online version</p> <p>The Contractor shall also submit an online version of the organization and conduct of the event in the event of force majeure imposed by the COVID 19 pandemic.</p> <p>Indicative period and term of implementation: 07.2021 - 10.2021</p>
<p>Activity 2.2: Final event for opening of the HC</p> <p>Type of event: promotional event in the form of outdoor festivities, in order to present the newly-constructed HC to a wider range of citizens and stakeholders in the area of "Nadezhda"; and to engage residents for its future use and maintenance, by including them in fun and educational initiatives related to the HC.</p> <p>Characteristics of the single event:</p> <ul style="list-style-type: none"> • Duration: up to 4 - 5 hours. • Number of participants: up to 80 participants. • Location and use of space: the event will take place in an open space near the route of the HC (e.g., in Severn Park), and it is possible to organize several initiatives that take place in series and/or in parallel to the main venue of the event (e.g., an appropriate place is the Green assembly that will be created as a part of the Urban plan for Sofia). <p>Organizing and conducting additional activities: the Contractor should prepare a concept - a program for the type of happening, presenting the ways in which it will be implemented (types of activities, service providers, etc.), and should include in the program at least 3 of the following activities aimed at children and/or adults:</p> <ol style="list-style-type: none"> 1. Game "Treasure Hunt": min10 questions / challenges with interesting facts from the route of HC (for children 8-12 y); 	<p>Online version:</p> <p>No online version of the event is foreseen.</p>

<ol style="list-style-type: none"> 2. Performance - social theater; duration min 2 hours, interactive - with proposals, topics and/or stories, both personal and important social topics from the audience (eg Forum Theater, Impro Theater, Playback Theater, etc. for children and adults); 3. Performance - music program, min 5 performances of children's and youth dance, singing and music ensembles and/or others. creative performances; lasting between 1/2h; 4. Sports events - min 5 sports (Football, Volleyball, Basketball Tournament, Jogging, Yoga, Skateboard, Street Fitness) Competition and other group events for children and adults; 5. Quiz for children with fun questions, with a famous presenter; min 10 fun questions; 6. Other - may be suggested by the contractor and should be approved by Sofia municipality. 	<p>Indicative period and term of implementation: in the period 09.2022 - 10.2022</p>
Activity 3: Meetings of Sofia Advisory Board (SAB)	
<p>Facilitation of the SAB (3.2 above)</p> <p>Characteristics of all 9 events:</p> <ul style="list-style-type: none"> • Duration: up to 2 hours. • Number of participants: up to 15 people. • Venue: indoors in the premises of the Nadezhda district, provided by the contracting authority. 	<p>Online version</p> <p>The Contractor shall provide an offer for online version in the event of force majeure imposed by the COVID 19 pandemic.</p> <p>Indicative period and term of performance: in the period from the beginning of the contract under this contract until 10.2023.</p>
Activity 4: International technical meetings with the project partners	
<p>Under the project terms, 2 technical meetings with representatives of the international project partners will be held during key phases of the design and construction of the HC. The first meeting will be held before the start of the construction of the HC, and the second meeting - after the construction of the HC. The meetings aim at presenting the results of the design, and subsequently the construction of the HC, incl. presentation of the selected NBS and the stakeholder engagement process.</p> <p>Characteristics of all 2 events:</p> <p>Duration: up to 2 days.</p> <p>Number of participants: up to 20 people.</p> <p>Venue: indoors, in premises provided by Sofia Municipality.</p>	<p>Online version: The Contractor shall provide an option and an online version of the meetings in the event of force majeure imposed by the COVID 19 pandemic.</p> <p>Indicative period and term of implementation:</p> <ul style="list-style-type: none"> • first meeting: in the period 06.2021 - 08.2021 • second meeting: in the period 12.2022 - 02.2023
Activity 5: Delivery of technical and information means	
<p>As part of the public procurement procedure for the Activation of the Healthy Corridor, a number of promotional materials will be supplied that will serve as carriers of information for URBiNAT and increase the visibility of the project in the Nadezhda district.</p>	
<ul style="list-style-type: none"> • Banners with folding stands and carrying case 100x200 cm • Branded tents • Branded T-shirts - material: 100% cotton • Branded notebook with paperback - size A5 • Pencils made of recycled paper • Prizes for events (eg keychains with USB, 4 GB or kinetic flashlights) • White recycled A4 paper 	<ul style="list-style-type: none"> • Multicoloured sticky notes • Markers of 4 colors in a set • Colored cardboards A4 • Flipchart paper • Exhibition materials • Stands for exhibition • Tripods • Folding tables • Chairs

Table 5. Detailed description and specifications of the planned activities related to participation in NBS co-design and co-implementation phases.

4. Urban Project implementation

4.1. Structuring the process

The Healthy Corridor in Sofia is planned as a large-scale, nature-based innovative structure that integrates “physical” and “soft” measures to ensure sustainability and mobilize actors and resources to achieve social cohesion. It is expected that it will improve the urban environment. The "physical" (infrastructural) measures implemented in the Nadezhda region will be studied and promoted in order to improve the living conditions of the citizens and to overcome the social and environmental challenges.

Based on previous experience and lessons learned, Sofia municipality has decided to **approach** the implementation of the Urban Concept for the Healthy Corridor in the form of an open procedure for design and build public procurement route. The conduction of an open procedure for the procurement guarantees high publicity and transparency in the public spending. This type of procedure aims at protecting public interest by promoting competition and creating equal opportunities for all candidates.

Two key elements (NBSs) of the Urban Concept demand a specific approach due to their characteristics and different scope of construction works and participants - The Mineral water swimming pool and the Greenhouse and open classroom. The process of their implementation will be different as described in 3.3.1 above:

1. School greenhouse and open classroom - will be designed by the project partner IAAC, the technical design documentation will be authorized by the contractor who will further do some works regarding the base of the construction and the technical installations, while IAAC will produce the structure;
2. Mineral water swimming pool - will be designed under Urbinat and will not be part of the design-and-build contract.

After a thorough and careful assessment, it has been decided that the public procurement will encompass the whole engineering¹ of the healthy corridor, as the object of implementation is only one and all activities are carried out in close proximity to each other. The division of the contract into separate positions could not be motivated, neither from the point of view of the activities, nor from the point of view of different sites. The implementation of engineering in the scope of the public procurement is an objectively inseparable process - in the scope of design it is necessary to achieve a complete and stylistically acceptable appearance of the site, including a common vision and concept for all components, and the scope of construction includes areas, interconnected in a common functional space. To achieve the desired results on time, the only possible way is to appoint one contractor with one schedule. Involvement of more than one contractor in separated positions would need a much more complex process of coordination by the Contracting Authority and mobilization of resources, which will lead to difficulties and danger of untimely and poor performance. In addition, the specificity of the subject of the procurement presupposes uniform decisions, which can be achieved only by the joint implementation of all activities of the public procurement.

Given the fact that the engineering is planned to be carried out in the same place, the presence of teams of different contractors on the subprojects would make it difficult to carry out the planned engineering. The implementation of engineering in the scope of the public procurement is an objectively inseparable

¹ In Bulgaria the design and build contracts have been referred to as “engineering contracts”.

process - the scope of the construction includes territories interconnected in a common functional space. By preparing a general assignment, a common vision and functionality with a view to future operation could be achieved.

The **structure of the procurement project** implementation was outlined in the technical specification of the procurement documentation. Considering the large scope of the Green Healthy Corridor in Nadezhda as well as the Concept for its development, approved by Sofia Municipality Council on 18.03.2021, the urban project is structured in one major project and eight subprojects:

Main project - the alley, designed as a backbone of the Corridor.

Subprojects - structures and areas located along the alley:

1. Reconstruction of the pedestrian bridge - the major connection of the neighbourhood to the Nadezhda park and one of the metro stations;
2. Green assembly - area for focused intervention, including the NBS proposals of green amphitheater, urban forest and spaces for social interaction and recreation;
3. Aqua vita - area for focused intervention, including the NBS proposals of school greenhouse and open classroom as well as utilisation of the mineral water for heating the structure and watering plants;
4. Spaces for social interaction and sport;
5. Children playgrounds;
6. Health energy - area for focused intervention, providing space for sport activities and social events;
7. Eco-parking;
8. Urban park - area for focused intervention including spaces for active and passive uses by the local community.

Sofia Municipality has developed detailed **requirements** for the design of the Healthy corridor (Table. 6), for the contractor (Table. 7) and for the construction (Table. 8). They have been set in the brief for the procurement procedure that was opened on 11.06.2021 and closed on 12.07.2021.

Legal requirements, content and scope
<p>The investment project must correspond to all normative requirements for design and construction according to the Spatial development act. During the preparation of the project, all regulatory requirements and instructions of the operating companies should be complied.</p> <p>The investment project must ensure the implementation of all types of construction and installation works and activities necessary for the implementation of the site, incl. detailed and precisely clarified in quantitative and qualitative terms construction and installation works, materials, furniture and products.</p> <p>The investment project must fully and comprehensively specify the technical requirements ensuring the use of high-quality materials, equipment and products synchronized with the relevant Bulgarian standards, provided with the relevant certificates, declarations of origin and permits for use in construction, according to the requirements of the Technical Requirements Act for products and its by-laws.</p> <p>The graphic parts of the investment project should fully clarify the design solution and ensure the unobstructed implementation of the construction. The explanatory notes in these parts should clarify and justify the adopted technical decisions, cite the normative documents used in the design and comply in the construction, the instructions for implementation, testing and operation. The technical investment project should be made in volume and content according to the approved design assignment and the current regulatory requirements.</p> <p>The investment project should be prepared in accordance with the provisions of the detailed urban plan, the rules and</p>

regulations for spatial planning, the requirements of Article 169, paragraph 1 and paragraph 2 of the Spatial Development Act. It should have mutual coherence between different parts, completeness and structural compliance and other specific requirements according to the purpose of the site.

The design proposal must be economically feasible and guarantee minimum operating costs. The design decision should contain a detailed summary of the quantitative and qualitative value account, which should not exceed the estimated value for the implementation of construction and installation works on the project.

The investment project in parts should be prepared by designers with full design qualification with valid certificates from relevant Professional organization, in full coordination between different parts of the project.

All project parts of the investment project should be prepared in accordance with the provisions of Ordinance № 4 of 21.05.2001 on the scope and content of investment projects and in compliance with the requirements of other applicable regulations.

The projects should be in coordination with the operating companies and control bodies. The coordination of the investment projects requires to check their compliance with the provisions of the detailed development plan and the rules and norms for the location of the construction and the allowable spatial parameters.

The investment project for the facility will be approved in accordance with Articles 144 and 145 of the Spatial Planning Law by the Chief architect of the Municipality.

When designing facilities, the requirements of ordinance № RD-02-20-2 of 26.01.2021 on determination of the requirements for accessibility and universal design of the elements of the accessible environment in the urbanized territory and of buildings and infrastructure, as well as ordinance № RD-02-20-3 of 21 December 2015 on design, implementation and maintenance of public service buildings in the field of education, science and the arts are to be taken into account.

Principles

Implementation of integrated territorial approach;

Development and application of innovative landscape solutions to create an individual look of the individual park elements and functional areas;

Renovation of the urban environment through construction of green spaces, introduction of new vegetation in the existing green areas and etc;

Improvement of the accessibility through elements of the pavement or other facilities in the park environment;

Building up a modern and attractive urban environment that provides the use of innovative materials and landscaping systems close to the natural ones;

Security and safety improvement in the areas;

Main tasks

The project must be developed on the basis of the integrated territorial approach, which aims constant upgrade of the physical and ecological environment. All zones and actions must be reviewed in detail.

The positive aspects of the existing infrastructure and installations must be developed and upgraded in regard to composition, materials, elements of the urban equipment and their implementation in the new urban environment.

Implementation of innovative solutions for:

- rainwater utilization;
- renewable energy generation;
- waste management;
- servicing pet owners.

The highlights of the project in its entire scope need to be related to:

<ul style="list-style-type: none"> • automated irrigation system; • park lighting on the alley and in all areas of intervention; • new long-term ornamental and shrub vegetation; • new park furniture; • accessible environment; • security and protection; • public awareness, etc.
Activities
<p>The design should:</p> <ul style="list-style-type: none"> • envisage interesting compositional solutions, using all the techniques of park art and modern technologies, the planting of groups of ornamental plants, considering the species composition with an interesting seasonal color; • take into account the vegetation with the soil and climatic conditions of the place, preferring traditional ornamental species, mainly of local origin. The predominant species should be deciduous, without completely excluding coniferous and evergreen deciduous. The newly designed vegetation should be mainly drought-resistant, not requiring additional irrigation; • provide contemporary materials, reducing the costs of maintaining green areas and assuming proper technological implementation (root limiters, drainage fractions, etc.); • envisage the functional zoning and area distribution with a clear organization of use of the territory; • offer an interesting architectural and design solution for the group with public service functions, in accordance with its location in a green urban environment; • study the possibility for construction of irrigation boreholes and the maximum use of rainwater. The detailed research and inspection should be in compliance with the latest modern technologies for irrigation in accordance with legal regulations, as well as with the various modern ways of managing the irrigation process. This will suggest new solutions for control, monitoring and operation of the irrigation system. • design and build drilling wells for irrigation purposes along the route of the corridor; • provide feathers for planting new vegetation, application of humus, leveling, grassing and other activities accompanying landscaping; • set measures and activities for ensuring accessibility of the environment in compliance with the requirements of the current legislation; • envisage the use of highly efficient materials, equipment, technologies to ensure efficient and trouble-free construction, operation, maintenance and repair - pavements, alley network, park development, architectural elements - light coatings, fences, sheds, pergolas, places for short-term rest and others; • offer appropriate park furniture /benches, pergolas, waste bins/ and large vegetation; • preserve the existing plants - forests and shrubs, single trees and shrubs, providing activities for their aesthetic design and improvement of their structure and health; • ensure fast and high-quality drainage of the alley network; • observe a natural style, close to nature, which fits well into the existing environment.
Design amendments
<p>The very important aspect that is included in the public procurement requirements is that on every stage and important decision during the project works, the Contracting Authority can make changes in the preparation of the project, after discussing it with the Advisory Board and after assessing the construction and operation costs.</p>

Table 6. Requirements for the **design** of the Healthy corridor according to technical specification in the public procurement documentation.

The activities set in the public procurement are not frozen yet, as the Contracting Authority (Sofia municipality) may demand for changes during the preparation of the conceptual design, after discussions with the Sofia Advisory Board and after assessment of the costs of construction and operation costs. The prepared investment project in the "Preliminary design" phase is subject to preliminary discussion by Sofia Advisory Board (SAB). This open and inclusive approach is innovative for Sofia Municipality.

Tasks
<ul style="list-style-type: none"> • Elaboration of Conceptual design documentation². The outcomes will be validated by the already established Sofia Advisory Board. • Elaboration of Detailed design documentation³ for relevant parts of the plan. It will be developed on the basis of the technical specification and recommendations by the Sofia Taskforce and Sofia Advisory Board. • Execution of construction and installation works⁴ as well as executing construction documentation. The planning of construction works will be proposed by the contractor and validated by the municipal administration, Sofia Taskforce and Sofia Advisory Board. • Author's supervision during the construction⁵. • Provision of a warranty period according to the national legal requirements. <p>The tasks/activities should be executed in compliance with the requirements set by the legal framework, the approved administrative procedures of Sofia municipality and the technical requirements, set in the procurement documentation. They should follow the provisions of the Urban Concept for the Green healthy Corridor in Nadezhda and the principles of the URBiNAT project.</p>
Planning the tasks and activities
<ul style="list-style-type: none"> • the individual stages of the procurement, as well as the way in which the citizens will be able to be involved in the design and construction process; • the distribution of responsibilities and activities between the key experts, the ways of communication with the Contracting Authority and the citizens, the coordination of the activities and other organizational aspects that are necessary for the quality and timely execution of the contract; • a linear schedule reflecting the sequence and duration of all major types of work and activities related to the implementation of the public procurement, including those that are suitable for implementation by citizens; • the distribution of tasks by experts for each of the activities; • the necessary resources for the implementation of each activity (materials, mechanization, workers, involvement of citizens, etc.) and the obligations of the expert (s) responsible for its implementation; • measures for internal control and organization to ensure quality execution of the contract.
Amendments
<p>An important element of the procurement procedure is the requirement that the Contracting Authority can demand changes in the project design on every stage and every important decision during the design works, but after proposed changes have been discussed within the Sofia Advisory Board and after assessment of the construction and operation costs.</p>

Table 7. Requirements for the contractor according to the public procurement documentation.

² Conceptual design is the first phase of developing an investment project according to Bulgarian legislation (Spatial Development Act and the current regulations). Depending on specific requirements, it could be sufficient for issuing construction permit.

³ Detailed design is the second phase of developing an investment project according to Bulgarian legislation. It is a prerequisite for issuing a construction permit.

⁴ On the basis of a developed and approved detailed investment project, in compliance with the requirements of all currently valid legal regulations in the Republic of Bulgaria.

⁵ Executed in scope according to art. 162 of the Spatial Development Act.

Main activities
<p>Activity I. Development of investment project in the "Conceptual design" phase. The prepared conceptual design will be subject to preliminary discussion with the Sofia Advisory Board.</p> <p>Activity II. Development of investment project in the "Detailed design" phase in relevant parts, according to the requirements of the Spatial Development Act and the current regulations. The detailed investment project will be developed on the basis of the technical specification.</p> <p>Activity III. Execution of construction and installation works on the basis of a developed and approved detailed investment project, in compliance with the requirements of all currently valid legal regulations in the Republic of Bulgaria.</p> <p>Activity IV. Author's supervision during the construction in scope according to art. 162 of the Spatial Development Act.</p>
Supporting participation
<p>All candidates should propose types of construction and installation works in which citizens could also participate, e.g. assembling wooden structures, planting trees, shrubs, flowers, etc.</p> <p>All candidates should agree to participate in project events aimed at supporting the co-design and co-implementation.</p> <p>All candidates should agree to comply with the decisions adopted by the Sofia Advisory Board.</p> <p>All candidates should agree to provide an opportunity for the zones to be built with the participation of people from local communities in order to comply with the requirements of the project.</p>

Table 8. Requirements for the implementation according to the public procurement documentation.

4.2. Administrative and technical procedures

Implementation of investment projects in Bulgaria follows a standard consequence of stages, defined by the legal framework (Figure 10).

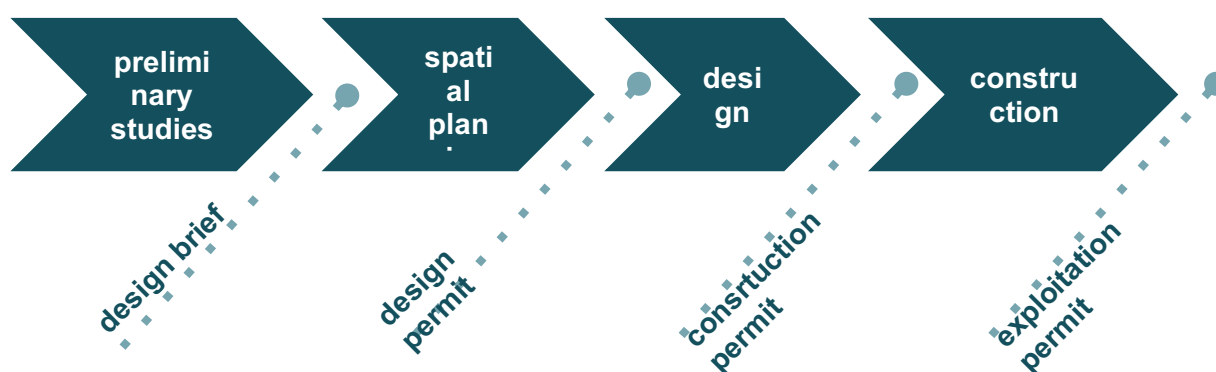


Figure 10. Stages of the implementation of investment projects in Bulgaria.

In the context of URBiNAT project, which plans an open procedure for design and build public procurement route, the major stages of the Urban Project implementation are public procurement, design and construction. The preliminary stages of preliminary studies and urban concept have been implemented under the activities of co-diagnostic and co-design, described in deliverables D 4.1 and D 4.2.



Figure 11. Stages of the implementation of the investment project of the Healthy corridor in Sofia. (Light blue - completed stages).

The tasks of the Sofia Task force have been distributed according to the project stages and the responsibilities of the municipal departments and directorates. The contractors responsible for 1) the design and construction and 2) the activation of the Green Healthy Corridor is also involved in the co-design and co-creation activities. This open and inclusive approach is innovative for Sofia Municipality and the experience gained will be essential for the future implementation of similar activities.

The innovative approach related to the establishment of Sofia Advisory Board and incorporating its activity, the participatory and co-design principles in the legally defined design process is illustrated in Figure 12.

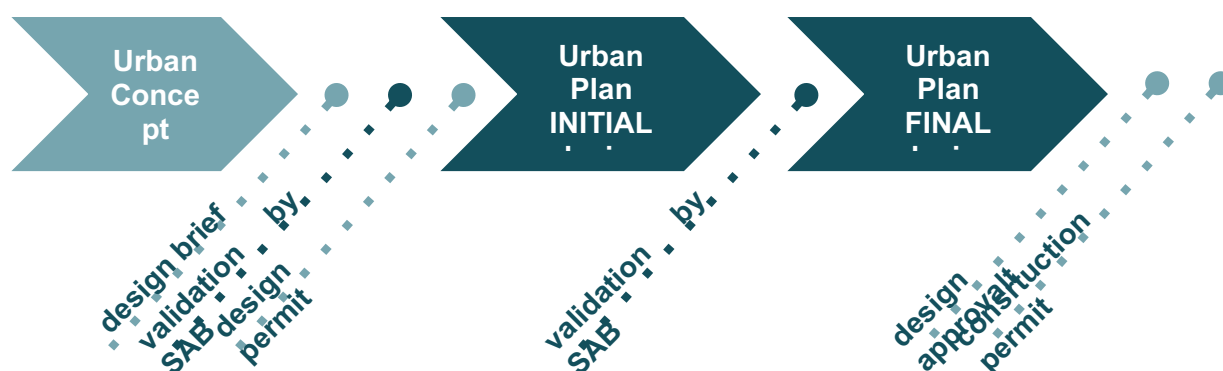


Figure 12. Incorporation of Sofia Advisory Board (SAB) in the design stages of the Healthy corridor project in Sofia.

The administrative and technical procedures regarding the implementation of the Green Healthy corridor refer to the stages outlined above. Regarding the structuring of the Urban project, the activities follow a specific track with diachronic schedules for the **two sub-projects** (School greenhouse - Figure 13 and open classroom and Mineral water swimming pool - Figure 14).

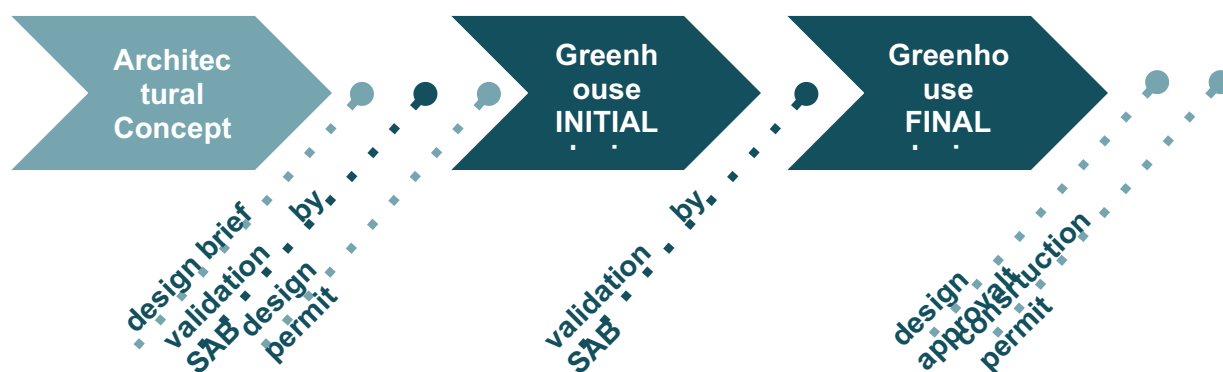


Figure 13. Stages of the design of the school greenhouse NBS - as part of the investment project of Healthy corridor in Sofia.

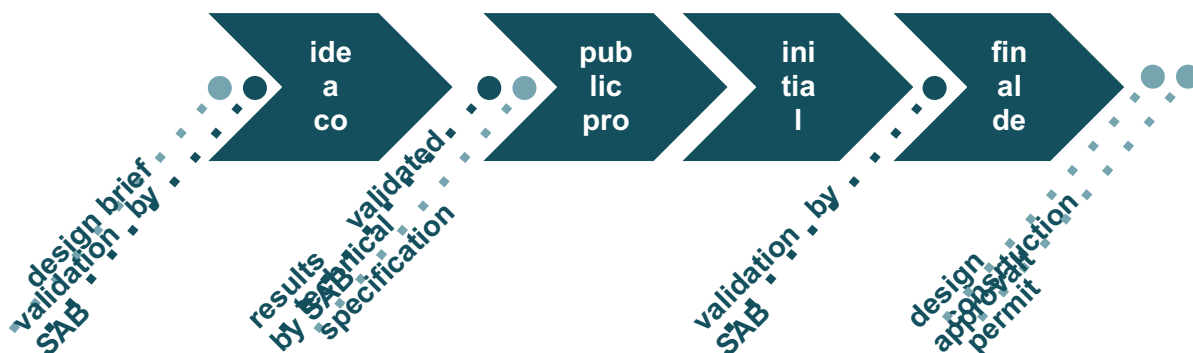


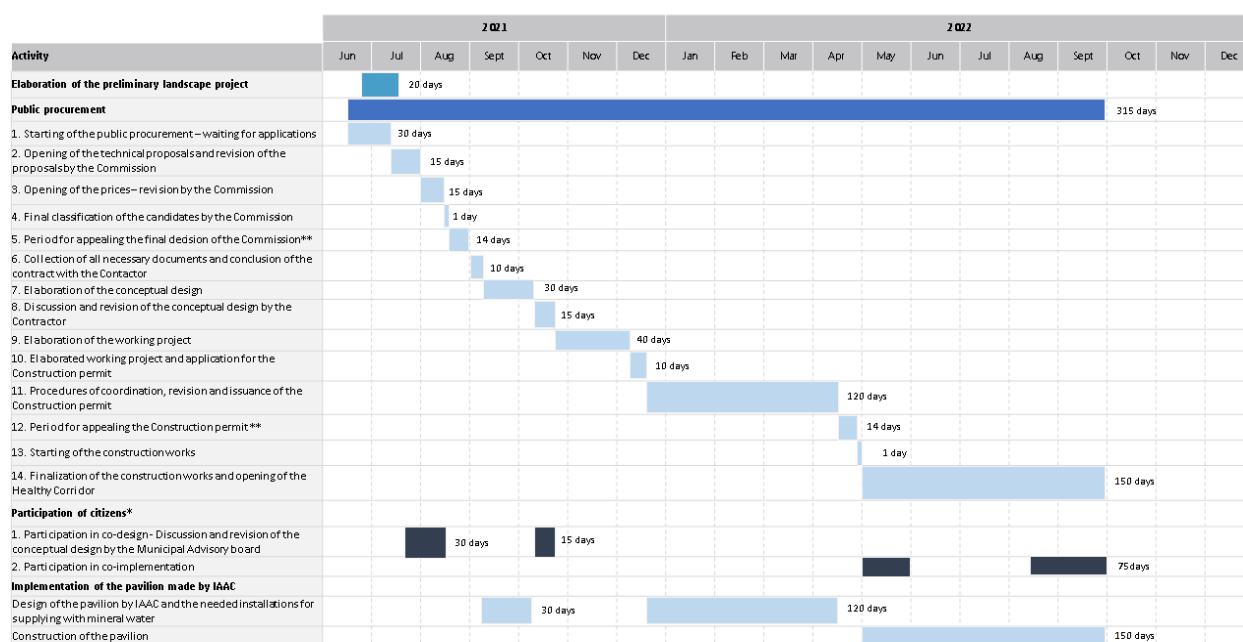
Figure 14. Stages of the design of the Mineral water swimming pool NBS.

The Mineral Water Pool project is expected to start with the preparation of an assignment for a student competition for innovative ideas. Based on the results of this competition, which will be evaluated by the residents, it is planned to compile a technical specification for conducting a public procurement for the preparation of an investment project in the "Detailed design" phase by applying innovative technologies and meeting the requirements of the URBiNAT project. It is also planned that the design will be discussed with the civil society.

The starting point of the implementation of the Healthy corridor in Sofia will be the contracting of a company (or consortium) at the end of the procurement procedure. The implementation includes the following steps:

1. Starting of the public procurement – waiting for applications
2. Opening of the technical proposals and revision of the proposals by the Commission
3. Opening of the prices – revision by the Commission
4. Final classification of the candidates by the Commission
5. Period for appealing the final decision of the Commission
6. Collection of all necessary documents and conclusion of the contract with the Contactor
7. Elaboration of the conceptual design
8. Discussion and revision of the conceptual design by the Sofia Advisory Board and taskforce
9. Elaboration of the detailed design project
10. Elaborated detailed design project and application for the Construction permit
11. Procedures of coordination, revision and issuance of the Construction permit
12. Period for appealing the Construction permit
13. Starting of the construction works
14. Finalization of the construction works and opening of the Healthy Corridor

Table of stages of the implementation of Sofia Healthy Corridor



* - the terms for the citizen participation are indicative because depend on formation of the Advisory Board

** - if there is appealing of the procedure the finalization of the project will be unknown

Figure 15. Timeline for the implementation of the activities included in the procurement procedure for the implementation of the Sofia Healthy corridor.

Meanwhile, with the adoption of the Work Rules by the Head of the project team – the Chief architect of Sofia Municipality, Sofia Advisory Board (SAB) will start working. The elaborated preliminary landscape project will be discussed with the members of the board and will be used as output data for the conceptual design that will be made by the Contractor selected to fulfil the whole engineering.

After contracting the contractor will start with the elaboration of the preliminary landscape project that should incorporate the requirements of the design brief and the results from workshops that took place in the intervention zones. After the preliminary design is validated by the Advisory board the design works will be completed with the elaboration of the detailed project (construction design). The Construction Permit will be given on the basis of the approved investment project by the Chief architect of the Municipality.

During construction works the contractor will be obliged to participate and cooperate in the co-implementation activities planned under the URBiNAT project in Sofia. The designers should also provide author's supervision during the construction phase which includes both construction and landscaping works.

step	involved team members / partners / etc.	implemented by (Municipal departments / contractor / etc.)
stage: PUBLIC PROCUREMENT		
Selecting procurement path	Deputy project manager of URBiNAT Sofia team Expert "Code of ethics and public procurement"	"Spatial planning and immovable cultural heritage" directorate "Public procurement and concession" directorate
Preparing public procurement	Expert "Territorial planning of the healthy corridor" Deputy project manager of URBiNAT Sofia team Expert "Code of ethics and public procurement"	"Spatial planning and immovable cultural heritage" directorate "Public procurement and concession" directorate
Collecting proposals	-	Online platform https://app.eop.bg/
Compliance check	-	evaluation committee
Evaluation of technical proposals	-	evaluation committee
Evaluation of prices	-	evaluation committee
Final rating of proposals	-	evaluation committee
Period for appealing the rating	-	-
Negotiating the contract, structuring the implementation	Project manager of URBiNAT Sofia team Deputy project manager of URBiNAT Sofia team Expert "Code of ethics and public procurement" URBiNAT Sofia team	"Spatial planning and immovable cultural heritage" directorate "Public procurement and concession" directorate
Preparing contract documentation	Deputy project manager of URBiNAT Sofia team Expert "Code of ethics and public procurement"	"Public procurement and concession" directorate "Spatial planning and immovable cultural heritage" directorate
Contracting		Chief architect of Sofia Municipality authorized by Mayor of Sofia municipality

stage: DESIGN		
sub-stage: PRELIMINARY ACTIVITIES		
Staging the design and implementation process (possibly before contracting)	URBiNAT Sofia team	“Spatial planning and immovable cultural heritage” directorate contractor
Collecting preliminary data	URBiNAT Sofia team	Urban and architectural department Utilities companies Contractor
Finalizing the architectural concept of the greenhouse (co-design)	URBiNAT Sofia team IAAC School administration	IAAC
Update of the design brief (co-design)	Sofia Taskforce Advisory board	
Design permit	-	Chief architect
Period for appealing the design permit	-	-
sub-stage: CONCEPTUAL DESIGN		
Initial design proposal	-	contractor
Validation of the design proposal (co-design)	Sofia taskforce URBiNAT partners Advisory board	
Elaboration and submission of design documentation	URBiNAT Sofia team	contractor
Approval of design documentation	-	Municipal expert committee Chief architect Urban and architectural department
additional subproject: SCHOOL GREENHOUSE AND OPEN CLASSROOM		
Initial design for the structure and architecture	IAAC	contractor

Validation of the initial design (co-design)	URBiNAT Sofia team IAAC School administration	contractor
Initial design for the structural base and water supply	URBiNAT Sofia team	contractor
Finalizing the conceptual design documentation	URBiNAT Sofia team	contractor
Construction permit for the subproject	-	chief architect of Nadezhda municipality
additional subproject: MINERAL WATER SWIMMING POOL (apart from the design and build procurement)		
Design brief for idea competition	Sofia taskforce Advisory board	Urban and architectural department “Spatial planning and immovable cultural heritage” directorate
Validation of the design brief (co-design)	Advisory board	-
Open idea competition for students and young professionals	Sofia taskforce Advisory board	“Spatial planning and immovable cultural heritage” directorate
Technical specification for detailed design of the swimming pool	Sofia taskforce	“Spatial planning and immovable cultural heritage” directorate
Validation of the specification (co-design)	Advisory board	-
Public procurement for detailed design of the swimming pool (Steps described above in stage: Public procurement)	Expert “Territorial planning of the healthy corridor” Deputy project manager of URBiNAT Sofia team Expert “Code of ethics and public procurement”	“Public procurement and concession” directorate “Spatial planning and immovable cultural heritage” directorate
Initial design for the swimming pool	-	Contractor - design of swimming pool

Validation of the initial design (co-design)	Advisory board Sofia taskforce	-
Elaboration of Detailed design documentation	-	Contractor - design of swimming pool
Approval of Detailed Design documentation	-	Municipal expert committee Chief architect Urban and architectural department
Search for financial sources for implementing the design	URBiNAT Sofia team	
in case of staging: CONSTRUCTION PERMIT		
Construction permit for specific stages of the project	-	Chief architect of Nadezhda municipality
Period for appealing the construction permit	-	-
sub-stage: DETAILED DESIGN		
Elaboration of Detailed design documentation	-	Contractor
Approval of Detailed Design documentation	-	Municipal expert committee Chief architect Urban and architectural department
construction permit (issued for each stage)	-	Chief architect of Nadezhda municipality
Period for appealing the construction permit	-	-
in case of staging: repeating the steps for DETAILED DESIGN stage for each subproject		
additional subproject: SCHOOL GREENHOUSE AND OPEN CLASSROOM		
Elaboration of Detailed design documentation	-	Contractor

Construction permit for the subproject	-	chief architect of Nadezhda municipality
Period for appealing the construction permit	-	-
stage: CONSTRUCTION		
opening the construction	-	Contractor Construction manager Municipal expert Construction supervisor
Participation events Co-implementation	URBiNAT Sofia Team	Contractor (activation)
construction of subproject 1	-	Contractor
Participation events Co-implementation	URBiNAT Sofia Team	Contractor (activation)
Construction supervision by project designers	-	Contractor
Investor supervision	-	Sofia Municipality
Elaboration of construction documentation	-	Contractor
Exploitation permit	-	Sofia Municipality Contractor
opening event co-implementation	URBiNAT Sofia Team	Contractor (activation)

Table 9. Administrative procedures, participatory activities and actors involved in the implementation of the Healthy corridor in Sofia. An indicative table of the process.

5. Conclusion and Achievements

Innovative Implementation procedures & process

Co-diagnostic & participatory activities	<ul style="list-style-type: none"> • Participation and inclusion had to be intentionally sought and facilitated through the stages of co-diagnostic and co-design, and later - within the Sofia advisory board; • Grounding on the local context, the implemented mixed-method approach combined traditional methods for information gathering and synthesis, inclusive participatory methods for gathering specific information about the area and its inhabitants; • All participatory activities implemented, along with the intensive consultations and validation procedures were gradually integrated into the established statutory planning process. Thus, this systemic and innovative experience for the municipality that can now be transferred and scaled-up; • Involvement of a great number of actors with different and sometimes controversial aspirations in the co-creation of the Healthy Corridor, created the possibility to integrate different experiences, expectations, and visions reflecting the local needs by respecting local identity and deficiencies. Yet the same achievement might lead to potential conflicts and privatization of public space beyond the URBiNAT time-frame; • Creation of a workflow between the actors involved and establishment of specific reporting and recording tools that facilitate the communication and decision making increased the efficiency of the teamwork.
Sofia Taskforce	<ul style="list-style-type: none"> • During the implementation of the co-creation phases Sofia Task Force had to handle a number of problems related to the context (Covid, elections), to the beneficiaries, to the physical environment, to the internal matters of the project team. Nevertheless, a workflow and effective communication between the entities involved has been established and the project's tasks were persistently implemented; • An innovative project as URBiNAT needs innovative approach and structures, as well as time for gaining experience. The co-operation within the taskforce for both partners (UACEG and Sofia Municipality) required devoted time and efforts in establishing an efficient partnership although they faced the evolving adaptation of the Sofia team structure according to the project needs.
Project team for the Urban plan: Design Process and Project Team	<ul style="list-style-type: none"> • The preliminary Urban Plan was developed by the Sofia municipality team and following the Design brief (prepared by UACEG) based on the findings from the Local Diagnostics and the results from the co-design workshops. This innovative approach to the organization allowed full integration of the participatory activities and provided an adaptive urban design sensitive to the dynamics of participation; • Regular meetings with the external expert (landscape architect) and the municipal team were key for the development of the Preliminary design of the Urban Plan; • The municipal technical experts were involved in the co-creation process and their feedback and knowledge was heard, discussed and readily incorporated in the project for the Healthy Corridor. • The Global strategy for the URBiNAT area, the Spatial concept of the Healthy Corridor and the Preliminary design of the Urban Plan were prepared in GIS.






Political involvement	<ul style="list-style-type: none"> • The first steps towards a new collaborative governance model have been made with the approval of the Urban Concept by the Municipal Council. The demonstrated political support was an essential prerequisite for the project implementation and for the implementation of the participatory approach in general. • The involvement of the Mayor of Nadezhda district and his team went beyond the pre-election campaigns and proved the long-term commitment to the URBiNAT project philosophy and ideas. • This close political involvement allowed for the recognition of the importance of URBiNAT for the municipality and especially for the Northern part of Sofia. However much less attention was paid to the leverage potential and the new opportunities created by the project.
URBiNAT project and Sofia Municipality	<ul style="list-style-type: none"> • Evolution and adaptation of the composition of the team of Sofia municipality involved in the URBiNAT project to the project needs was sensitive to the dynamics of the context and tasks within the municipality departments and bodies. Different experts have been involved during different stages of the project, their experience and expertise and the roles within the team have been changing accordingly. However, the continuity of the project implementation has been preserved; • The Direct involvement of municipal technicians since the very beginning of the project allowed slow but steady appropriation of the project inside the municipality and its directorates; • The participation in the URBiNAT project for Sofia municipality demanded additional time and new skills besides the regular tasks of the municipal departments. A real challenge is the need for capacity building on the NBSs and the benefits of their implementation among all municipal departments directly or indirectly involved in the project. In order to cope with these challenges, Sofia Municipality attracted external key experts in order to strengthen the project team. • Recognition of the fact that participatory activities and inclusive planning and design need capacity, time and resources beyond the day-to-day tasks of the administration • Communication of local/district administration with citizens, motivating, guiding, involving are realized needed actions that would ensure empowerment. Further studies and future efforts should be focused on building frameworks and formal arrangements for participation by clearly defining the places and times to enable participation. • Flexibility of teams' structure and of schedules are essential for providing capacity and setting up a managing framework for coordination and planning of an innovative project.
Procurement management	<ul style="list-style-type: none"> • The decision on the simple procedure with single position that allows uniform decisions which can be achieved only by the joint implementation of all activities of the public procurement avoided the possible difficulties and danger of untimely and poor performance and will guarantee the achievement of a complete and stylistically acceptable appearance of the site, including a common vision and concept for all components, and their functional and spatial connections. • The preparation of the public procurement documentation involved the cooperation and coordination between different municipal departments • The applied open and inclusive approach for design and build public procurement

	<p>route is innovative for Sofia Municipality. For the first time the activities set in the public procurement were not frozen, as the Contracting Authority (Sofia municipality) may demand for changes during the preparation of the conceptual design, after discussions with the Sofia Advisory Board and after assessment of the costs of construction and operation costs. The prepared investment project in the "Preliminary design" phase will also be subject to preliminary discussion by Sofia Advisory Board.</p>
Advisory Board	<ul style="list-style-type: none"> • Establishment of the Advisory board as main corrective and tool for inclusive participation in the course of the co-implementation and management of the Healthy Corridor; • Coordinated and appropriated by the municipality, the Advisory Board will co-monitor the developed solutions during and beyond URBiNAT; • However, the low level of participation and citizens involvement in the Advisory Board after its first meetings are challenges that should be appropriately met.





Table 10. Main achievements in the process of creating the Healthy Corridor in Sofia and the implementation of NBS.







6. Annexes






Co-creation process report/Feedback (fiche)

Session	date	Scope of the session	Goals/Methodology	Photo
Co-diagnostic				
M01	00/07/2018	Involvement Observation visits of the Local Taskforce to Nadezhda	Mapping Observation of the URBiNAT study area, passive territorial mapping and mapping of activities	
M02	06/11/2018 -	Involvement Meeting with the Deputy Mayor and the Mayors of Nadezhda and the neighbouring districts	Mapping Awareness raising among the elected politicians and discussion of the scope of the URBiNAT area, its connections with neighbouring territories, and common projects planned or underway	
M03	03/01/2019	Involvement Formal approval of the scope of the URBiNAT study area	Agreement local political actors for agreed on coordinated actions within the selected area of the 5 neighbourhoods for the co creation of the Healthy Corridor	
M04	08/01/2019	Involvement Meeting of Sofia Taskforce with local stakeholders	Mapping/Self-projection To present URBiNAT to NGOs operating at city level	
M05	17/01/2019	Involvement Meeting with the staff at the Municipal centre for Personal Development in Nadezhda	Self-projection To present URBiNAT to the staff prepare activities for the Sofia Meeting	





M06	23/01/2019	Involvement URBiNAT consortium - meeting the chief architect of Sofia and the mayor of Nadezhda district at Sofia the City Hall	Perceptions Awareness rising within the Municipal elected politicians and administration	
M07	23/01/2019	Involvement Visit to the Municipal centre for Personal Development in Nadezhda	Mapping/Selfprojection To present URBiNAT and engage children in the co-creation process To present some of the cultural activities to the consortium members	
M08	25/01/2019	Integration Workshop with local stakeholders during Sofia meeting of URBiNAT partners	Perceptions Cultural mapping among the municipal staff, local champions, and NGO-s operating on city level Training To share principles of for implementation of the Cultural mapping	
M09	01/02/2019	Involvement Formalization of the Sofia Task Force	Internal communication and Training To establish regular meetings in order to keep the municipal technicians and the Task Force on the forthcoming activities	
M10	05/03/2019	Involvement Local task force meets thermal water and swimming specialists	Perceptions/Co-design Discuss the innovative aspects and characteristics of the thermal water swimming pool as NBS. Establishment of a life-cycle strategy for implementation	






M11	20/04/ 2019	Involvement Public Kick-off in Nadezhda Institute of Culture	Presentation To present URBiNAT and engage citizens and stakeholders in the participatory process of local diagnostic Mapping/Self-projection cultural mapping and motivational interviews in small groups	
M12	09/05/ 2019	Involvement Meeting with headmasters and deputy headmasters of schools and kindergartens in URBiNAT study area:	Presentation To present URBiNAT and engage the municipal educational institutions and their pupils in the co-creation process	
M13	10/05/ 2019	Involvement Presenting URBiNAT to the Pupils' Parliaments in four schools	Self-projection To present URBiNAT and engage active pupils in the co-creation Ideation To collect concrete ideas outlined as mini-projects/initiatives	
M14	16/05/ 2019 18/05/ 2019 13/06/ 2019 15/06/ 2019	Observation Behaviour mapping at 19 locations within the URBiNAT study area	Mapping Observation and mapping of activities, users, and flows during working and nonworking day	







M15	28/05/2019 05/06/2019	Involvement Walk through combined with motivational semi-structured interviews and photo voice - three groups of pupils and one with the staff from Nadezhda district administration	Mapping/Self-projection To engage pupils - “sports champions” from the 153th sports school in the co-creation process To engage the staff from Nadezhda district administration Ideation To gather ideas and relate them to NBSs	
M16	06/2019 07/2019	Involvement 3 focus groups with the local administration staff, staff from cultural institutions, parents 1 focus group related to mineral water	Perceptions/Self-projection Cultural mapping Ideation To collect ideas for activities and projects	
M17	11/06/2019	Interaction Meeting with the Deputy Mayor the Chief architect of Sofia Municipality	Coordination Political and municipal experts' validation	
M18	11/07/2019 27/08/2019	Involvement Activities of the Mini Working Group “Work with pupils”.	Presentation and organization To Engaging pupils from the schools within the URBiNAT study area	
M19	17/09/2019 – 10/10/2019	Involvement and Sharing Exhibition on the Local Diagnostics in the 4 schools	Presentation/Self-projection To activate schools as horizontal partners To explain the opportunities to participate To negotiate further forms of collaboration during the co-creation process	
M20	12/2019	Involvement Survey on Health		






		Co-selection and Co-design		
C01	12/2019 – 02/2020	Integration Validation of the URBiNAT plots by the Municipal technicians	Coordination Validation of plots to be chosen for the Healthy corridor activities and the suitable NBS for each plot	
C02	24/01/2020	Involvement Focus group of professionals related to health, thermal, water, and swimming and its inclusive potential	Perceptions/Co-design Discuss the innovative aspects and characteristics of the thermal water swimming pool as NBS	
C03	01/03/2020	Integration Preliminary Mini catalogue of Sofia	Co-selection To select relevant context sensitive NBSs from URBiNAT's catalogue in order to use them as reference examples in the co-creation process	
C04	01-05/06/2020	Interaction local administration technicians and politicians from the district	Presentation Presentation of the local diagnostic	
C05	13/06/2020 - 27/06/2020	Involvement, sharing, and discussion Two-week exhibition in the public space in front of the Nadezhda Cultural Institute	Presentation Explaining and sharing URBiNAT's philosophy, achievements and steps forward Ideation Perceptions and Ideation To map perceptions and to collect ideas for NBSs	

C06	20/06/2020	Kick-off event Closing local diagnostics and opening of the Co-creation process	Presentation To present the Local diagnostics to the citizens	
C07	20/06/2020	Interaction Citizen workshops for 4 places of intervention	Ideation Collecting ideas through 4 workshops with citizens for 4 locations	
C08	07/07/2020	Involvement On-line seminar for the staff from the kindergartens in Nadezhda District	Presentation Introduction to the Edible Gardens of Learning. Transform Ideas for transformation of the kindergartens yards	
C09	27/08/2020	Interaction – Meeting with the Mayor of Nadezhda district	Validation Formal approval of the selected 4 areas for workshops with citizens and to discuss the possible interventions	
C10	27/08/2020	Involvement Radio interview (for Radio Sofia)	Presentation Interview on the URBiNAT's aims and open call for citizens to join the forthcoming workshops	

C11	27/08/ 2020	Interaction Citizen workshop at place of intervention “Co-place”	Perceptions/Ideation To collect solutions and ideas and relate them to NBSs	
C12	10/09/ 2020	Interaction Citizen workshop at place of intervention “Green Assembly”	Perceptions/Ideation To collect solutions and ideas and relate them to NBSs	
C13	24/09/ 2020	Interaction Citizen workshops at places of intervention “Aqua Vita” and “Health Energy”	Perceptions/Ideation To collect solutions and ideas and relate them to NBSs	
C14	10- 11/20 20	Interaction Preparation of the Urban Plan Design brief	Validation Design Summarize the local diagnostics for the purposes of the plan elaboration Define the scope and content of the Urban Plan	

			Summarize ideas and their expert validation	
C15	17/12/2021	Interaction Sofia task force meets the Headmistress of 15th school	Ideation Discussion on the needs of educational facility and its location within the school yard	
C16		Expert judgement Observation visits of the Local Taskforce to Nadezhda	Mapping and in-depth studies of the areas of intervention Observation of the URBiNAT study area, passive territorial mapping and interaction with citizens	
C17	02-03/2021	Interaction/coordination Internal validation among municipal technicians	Validation Agreement on NBS ideas to be channeled for implementation	
C18	13/01/2021 04/03/2021	Interaction Sofia Task force meets IAAC team	Ideation/Co-design Agreement of the design, functions and structure of the Greenhouse in the 15th school yard	
C19		Interaction Meeting with the headmaster of kindergarten 90 in Svoboda	Ideation/Co-design Discussing options for the layout and the technical parameters	
C20	18/02/2021	Interaction Presentation to the Sofia Municipal council	Presentation Sending the Report for the Healthy Corridor Concept to the elected politicians at the Municipal council	

C21	02/20 21	Interaction Elaboration of the rules of Sofia Advisory Board for project URBiNAT Local Task Force, WP3 and Sofia Municipality	Inclusion Ensure inclusion and participation for the next stages of the URBiNAT process	
C22	05/03/ 2021	Interaction Super Barrio workshop with pupils from 153 school	Presentation/Ideation To introduce the NBSs concept and to inform on their benefits To collect solutions and ideas for the area around the sports school through gamification	
C23	15/03/ 202	Interaction Headmistress of 15 school	Co-Design Co-design of the educational pavilion in the yard of 15 school	
C24	23/02/ 2021 17/03/ 2021 18/03/ 2021	Interaction Sofia Municipal council	Validation The Healthy Corridor Concept (plots for intervention and axis of the Corridor) approved By Commission on Ecology at the Municipal Council, By Commission on Spatial Planning, Architecture and housing policy at the Municipal Council and finally By the Municipal Council	
C25	04/20 21	Involvement Pupils from 15 th school	Perceptions/Ideation To test “learn for life - GIS for citizen participation - preparation of the workshop	 https://www.iied.org/pla-54-mapping-for-change-practice-technologies-communication
C26	01/06/ 2021	Interaction Technical meeting between Sofia municipality Urban Plan Team and IAAC	Co-Design Discussion on the requirements in the design brief for the educational pavilion in the yard of 15 school	

C27	04/06/ 2021	Interaction Citizen workshops at place of intervention “Health Energy”	Co-Design Co-design of the subzones and NBSs	
C28	05/06/ 2021	Interaction Citizen workshops at place of intervention “Co-Place”	Co-Design Co-design of the subzones and NBSs	
C29	08/06/ 2021	Interaction Technical meeting between Sofia Task Force and IAAC	Co-Design presentation of the revised concept and the administrative, legal and technical requirements to the design, and the possibilities for implementation of the educational pavilion in the yard of 15 school	
C30	11/06/ 2021	Interaction Citizen workshops at place of intervention “Aqua Vita”	Co-Design Co-design of the subzones and NBSs	
C31	12/06/ 2021	Interaction Citizen workshops at place of intervention “Green Assembly”	Co-Design Co-design of the subzones and NBSs	

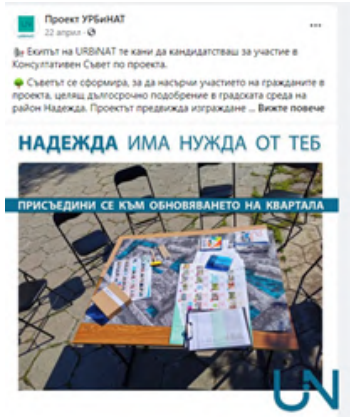

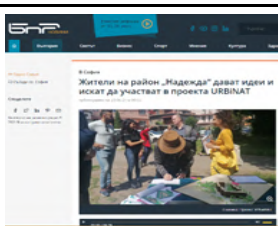

C32	15/06/2021	Interaction Advisory Board	Presentation and foundation First meeting	
C32	23/06/2021	Interaction Sharing results of the co-design and prototyping of the tasty gardens of learning in Kindergarten N 90	Co-Design Demonstration of the non-formal activities to the Mayor of Sofia and the Mayor of Nadezhda district	
C33	23/06/2021	Involvement Radio interview (for Radio Sofia)	Presentation Interview on the URBiNAT aims and results from the co-design workshops	

Table 11. The co-creation chronology.

NBS Implementation Strategy

Urban Plan Report Nantes

Lead partner	CES
Type	Demonstrator
Dissemination level	PU - Public
Work package	WP4
Deliverable	D4.3 / D 2.4
Due date	month 38 (31 July 2021)
Version	1.0

Project	Healthy corridors as drivers of social housing neighbourhoods for the co-creation of social, environmental and marketable NBS
Acronym	URBiNAT - Urban inclusive and innovative nature
	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776783

The content of this report reflects only the authors' view and the European Commission is not responsible for any use that may be made of the information it contains.

Nantes team

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Document history

Date	Version	Author	Summary of change
30th april 2021	V1	Nathalie Roguez-Villette, Philippe Bodénan	Analysis of the document plan
12th may 2021	V2	Nathalie Roguez-Villette, Philippe Bodénan	Identification and collection of relevant documents - Discussion
7th june 2021	V3	Nathalie Roguez-Villette	Development on document contents
18th june 2021	V4	Philippe Bodénan	Development on document contents
28th june 2021	V5	Katia Chancibault, Béatrice Béchet	Review
9th july 2021	V6	Nathalie Roguez-Villette	Writing of the introduction
28th july 2021	V7	Philippe Bodénan	Review

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List of figures

Figure 1. Articulation and connection between Urbinat and the Global project, plus articulation with the Urbinat taskforce.....	10
Figure 2. Organization of the coordination and follow up of activities and political validation instance.	10
Figure 3. Temporary signage and flyer to engage inhabitants for the green loop walkthrough (2020).	13
Figure 4. Thematic working groups of the municipality at Nantes.	23
Figure 5. New organization for the follow up and co-implementation of the NBS/new ideas in the healthy corridor.	23
Figure 6. Validation process of the Nantes' urban plan.	25

List of tables

Table 1. Entities that compose Nantes Taskforce, with identification of the main participant members and their roles.	7
Table 2. Proposition of roles in the municipal advisory board.	21
Table 3. Examples of services for which a “purchase order” contract exists.	26
Table 4. Difficulties met, questions raised and points of vigilance.	29

Table of contents

Part 4 - Nantes.....	5
1.Introduction	5
2. Taskforce for the implementation stage	6
2.1 Roles and Organization	6
2.2 Articulation within the task force and beyond.....	7
2.2.1 Complementary roles within the Nantes task force	7
2.2.2 An organization to support the implementation of the NBS in a territory of projects.....	9
3. NBS co-implementation process	11
3.1 NBS Implementation	11
3.2 The citizen engagement on previous stages	12
3.2.1 Co-creation process analyses.....	12
3.2.2 Co-creation process report/Feedback (fiche)	14
3.3 Strategies to Improve citizens engagement process	20
3.3.1 Municipal Advisory board: building on the dynamic of an existing group.....	20
3.3.2 Reactivate the district meetings, the place for exchanges between inhabitants and elected representatives	22
3.3.3 Rely on thematic working group for the implementation of the NBS.....	22
3.3.4 Reinforce the Local District Committee as the place for validation by elected representatives within Urbinat	23
4. Urban Project implementation	24
4.1 Administrative and technical procedures	24
5. Conclusion and Achievements.....	28

Part 4 - Nantes

1.Introduction

Nantes Métropole and the City of Nantes made the choice for Urbinat, as for many other projects of the community, to carry on the dialogue with the inhabitants and the co-design aspect. Indeed, the municipality is organised to carry out these very cross-cutting projects, which does not exclude difficulties. With co-construction as a way of doing things, the local authority has a close dialogue with the inhabitants, by district. The neighbourhood team and all of the technical services are integrated into these participation processes, not without difficulty, despite the tools put in place by the community (training in dialogue methodologies, support from specific services, etc.).

Thus, the co-diagnosis phase in Nantes was mainly based on putting into perspective the numerous reports, studies and citizen workshops in Nantes Nord. This led in particular to the adoption of the guide plan, a strategic document for the transformation of Nantes Nord that was co-constructed with the inhabitants.

Deliverable D4.2 reports on the first co-design phase completed in the autumn of 2020, and on the cross-referencing with initiatives directly stemming from the Nantes Nord area, which is very active in terms of associations. It is the role of the local authority to link these different initiatives, thus enabling them to enrich each other. The urban plan was then discussed with the urban planning team of the overall Nantes Nord project to ensure that the Urbinat urban plan was well integrated with the latter's recommendations and initial sketches. Finally, it was presented to the local councillors at the "Commission Locale de Quartier" (Local Neighbourhood Commission) on 23rd March 2021.

This co-design phase is not over. The health crisis has particularly impacted on the activities as they had been intended. In addition to the restrictive measures for organising events in workshops or in the public space, the local authority noted that the inhabitants rarely left their homes once the restrictions were lifted. The community's action was also refocused on social emergencies, namely providing food aid to the neediest.

The municipality strongly advocates the non-linearity of projects. A co-diagnosis phase may be necessary again when a proposal from the inhabitants emerges from a walkthrough. Thus, several intangible NBS proposed by the inhabitants must be further developed, in particular those related to physical activity and education. The municipality has chosen to focus the dialogue with the inhabitants on the facilities considering the construction deadlines of a finalised implementation before the summer of 2022 (the last year of the project being devoted to the joint evaluation of the project's impacts).

This first phase of co-design of the facilities strongly involved the studies and landscapes department of the green spaces department, which acted as a landscape consultant drawing up the plans for the facilities planned in the healthy corridor.

The Urbinat methodology was therefore adapted to the local participatory culture of Nantes and to the health crisis, which has exacerbated inequalities, be it the digital divide, isolation or the difficulties of single-parent families.

Furthermore, the phases defined in the methodology do not follow each other at the same time. Thus, while the co-design of the intangible solutions is not yet complete, the co-implementation phase is beginning for the food component, and in particular on the solidarity garden plot.

This phase will integrate even more strongly the associations and the actors of the territory. Indeed, as we have already indicated in the co-design phase, the community relies heavily on local stakeholders to mobilise the inhabitants or to organise participatory activities. They are privileged intermediaries.

2. Taskforce for the implementation stage

2.1 Roles and Organization

The Nantes task force is made up of Nantes Métropole, the City of Nantes and the scientific partner IRSTV, involved in each stage of the project implementation.

	Members/departments	Tasks
Nantes Métropole	Urban Development - Alain Yvrenogeu Eu-project coordination - Nathalie Roguez-Villette Public space management - Manuel Legeai	Technical coordination of the project Administrative coordination of the project Coordination of works on public space
Ville de Nantes	District team - Julie Boulestreau, Charlotte Cardinal Green spaces department - Laurent Le Gall Social & solidarity department - Françoise Grellier Public health department - Marion Gassiot	Citizen engagement Design and coordination of works in green spaces Link with inhabitants and associations, organization of activities around thematic of food and health Organization of activities around thematic of food and health
Scientific Local partner: IRSTV	Béatrice Béchet Scientific and administrative coordination Contributor to the urban gardens and agriculture group Philippe Bodénan Scientific coordination Contributor to the urban gardens and agriculture group Katia Chancibault Scientific coordination Contributor to the Water & microclimate group Sophie Herpin Contributor to the Water & microclimate group	-Scientific coordination, within the IRSTV team and as the local scientific partner of Nantes. -Contributions to the co-diagnostic -Participation to the coordination of the Urban plan -Specialists in territorial nature-based solutions -Three thematic working groups: <ul style="list-style-type: none"> • Water & microclimate • Urban gardens and agriculture • Participative sciences

	<p>Géraldine Molina Contributor to the Water & microclimate group</p> <p>Fabrice Rodriguez Contributor to the Water & microclimate and Contributor to participative sciences groups</p> <p>Etienne Chantoiseau Contributor to the Water & microclimate group</p> <p>Oscar Navaro Contributor to the Water & microclimate group</p> <p>Ghozlane Fleury-Bahi Contributor to the urban gardens and agriculture group</p> <p>Thierry Lebeau Contributor to the urban gardens and agriculture group</p> <p>Patrice Cannavo Contributor to the urban gardens and agriculture group</p> <p>Jules Kouadio Contributor to the participative sciences group</p>	
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Table 1. Entities that compose Nantes Taskforce, with identification of the main participant members and their roles.

2.2 Articulation within the task force and beyond

2.2.1 Complementary roles within the Nantes task force

Nantes Métropole and Nantes municipality for the coordination of the activities with the inhabitants

In Nantes, **co-creation and co-implementation** are coordinated by the municipality, in particular through the Nantes Nord district team.

The city of Nantes and Nantes Métropole have integrated open and collaborative governance as a way of doing since 2014, recognised in 2019 by the title of Innovation Capital by the European Commission.

A dedicated department at the metropolitan level pilots the dialogue strategy, develops tools and training for municipality agents and coordinates dialogue projects linked to public policies (e.g., major debate on the energy transition, etc.) at a large scale.

At the district level, the district team coordinates the dialogue with the inhabitants but all departments have integrated the open governance as a way of doing, with different levels of integration though.

The territory of the city of Nantes is divided into 11 large neighbourhoods, each with between 12,000 and 36,000 inhabitants. This territorial organisation is intended to promote greater proximity and a special link between users, public services and elected representatives. This is made possible by the daily work of the district teams, composed of 3 to 8 agents. They are the privileged interlocutors of the

inhabitants' thanks, among other things, to their knowledge of the sector. They facilitate the implementation of public policies and projects and encourage the participation of inhabitants.

Their strategic action covers three areas:

- monitoring the neighbourhood in order to identify and analyse its dynamics and weaknesses;
- developing and supporting initiatives from the residents;
- Monitoring the district development plans (SDQ), so that it takes into account both the expectations of the residents and the specific characteristics of the area.

Citizen dialogue is therefore present in all the missions of the Nantes Nord district team. It is an essential objective, to gather the expression of the inhabitants to feed the reflection and the decisions, from a citizen workshop, or from projects, by mediation on public spaces, in the heart of the district with the tools of dialogue like the citizen bus or the Mobilioprojet.

The participative workcamps around the plantations, the family or shared gardens are a way of doing well rooted in the practices of the green spaces' unit and the district team which will of course be put into practice in the healthy corridor.

The role of the municipality is also to ensure that the idea proposed by an inhabitant meets a need shared by others and to look for synergies on the territory to up scale the proposal.

Co-diagnostic

In Nantes Nord, co-diagnostic within Urbinat has been developed on very specific topics. Indeed, a one-year dialogue with inhabitants already took place from 2016 to 2017 with several workshops, walkthroughs and exchanges on public space where inhabitants expressed the difficulties and their wish for changes. It led to a strategic plan for the development of the district until 2030 that fed into the global nantes nord project and Urbinat. The co-diagnostic phase in Nantes concentrated on the application of the methodologies developed within the project (behavioural mapping, territorial mapping, questionnaire) and not on activities of co-diagnostic with inhabitants which would have compromised the past exchanges with the inhabitants who would not have understood that they were being questioned on subjects already discussed in 2016/2017. Thus, each spatial location that was targeted for Urbinat integrated this phase at its level.

Roles of the IRSTV

As local scientific partner, IRSTV facilitates the articulation between scientific and operational approaches within the project.

IRSTV supports the municipality to implement the methodological framework and tools developed in Urbinat. This role is important to transfer the research protocols and clarify objectives defined in academic context to municipal technicians that used to work at an operational level. Also, IRSTV researchers contribute with the municipality to report the experience of Nantes to the project. This regards both the local initiatives and the implementation of Urbinat actions. In this work, IRSTV brings an external view on municipal actions, for example by linking municipal actions with national framework and gives some highlights on domains linked to the fields of experience of the different researchers.

IRSTV represents Nantes at the Steering committee (SC). This consists in reporting the advancement of the Healthy Corridor project in Nantes and all activities related to Urbinat. As each member of the SC, IRSTV discusses the methods, but researchers also provide a critical view relating to the knowledge of the Nantes field and municipal agenda.

IRSTV has a direct contact with the inhabitants to present Urbinat. Researchers also participate and organize different activities with the public to share and sensitize to environmental issues on different domains such as soil, water, micro-climate or urban nature.

As a research partner, IRSTV actively participates in the assessment stage of Urbinat. By its expertise, IRSTV is more specifically involved in the evaluation of health effect and impact on well-being (task 5.3) both by analysing physical environment and people practices and perceptions. Building on a good knowledge of the field, IRSTV researchers develop and adjust their methods in Nantes and then develop in the other cities.

2.2.2 An organization to support the implementation of the NBS in a territory of projects

In the Nantes Nord area, the Urbinat project interacts with other urban projects (see Deliverable 4.2), and in particular with the Global project, which concerns the urban renewal of the entire Nantes Nord district.

The Global project will considerably transform the district. It is broader than the Urbinat project in terms of the spatial perimeter of intervention, the budget (121 million Euros), the time scale (2017-2030) and the scope of intervention (notably public spaces and housing). The two projects overlap in the Bout des Pavés-Chêne des Anglais district, where the Urbinat study area is located.

The two projects are being developed in a coherent and interlinked manner. (Figure 1)

The participation process is carried out by the same actors and addresses the same target audience. Some of the participation activities are even joint. The governance of the Urbinat project is based on the one of the global Nantes Nord projects (PGN²).

The technical management of the project also relies on many common actors, in particular within the technical departments of Nantes Métropole and the City of Nantes. Some actors are nevertheless more specifically involved in the Global project, in particular those involved in the renovation of the building. The design of the two projects is also aligned, but is carried out separately. The Global project relies on the work of a multidisciplinary design team (contractors). The Urbinat project is implemented by the municipal teams, mainly the green spaces department.

We can note the role of the taskforce to ensure and facilitate these links between the two projects.

Thus, to ensure optimal integration of the two projects, in addition to regular meetings, specific meetings have been organised with the urbanist team in charge of the implementation of the global project, directly with the departments leading the development, i.e., the Erdre et Cens proximity department and/or the Nature and Gardens department, or more recently with the whole task force.

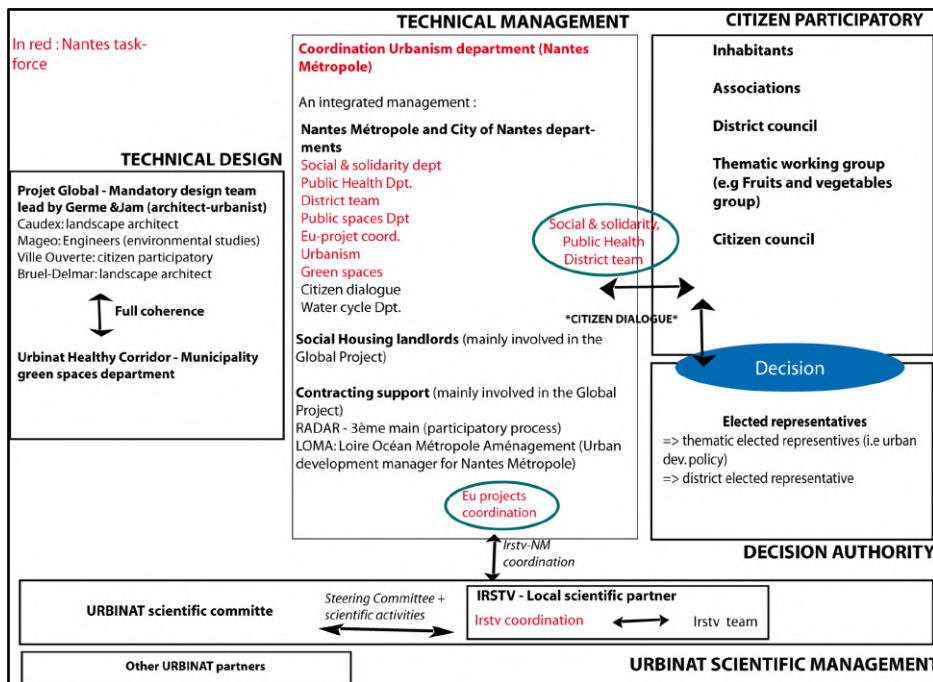


Figure 1. Articulation and connection between Urbinat and the Global project, plus articulation with the Urbinat taskforce.

Thus, every two weeks, the Urbinat task force participates in the operational groups of the PGN² in the presence of the other services of the municipality, the social landlords of the district and the landscaping team of the PGN².

In parallel,IRSTV and the coordinator of the Urbinat project of the municipality organise a bi-monthly meeting. ITEMS has been recently integrated in those meetings, allowing a better flow and sharing of information on activities for a better dissemination of Nantes activities inside Urbinat and of the project.

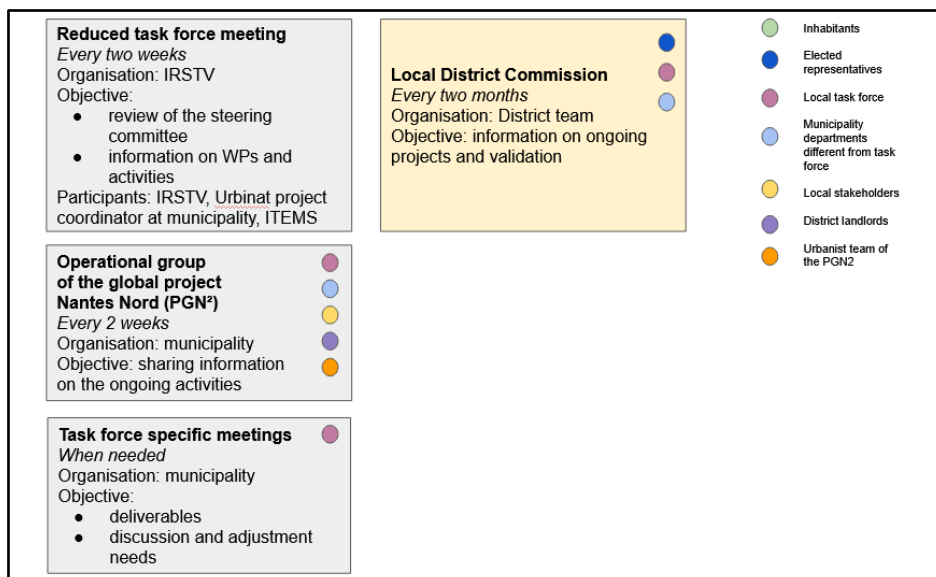


Figure 2. Organization of the coordination and follow up of activities and political validation instance.

The general organization will evolve for the implementation stage of Urbinat with the integration of the municipal advisory board and the thematic working group that will ensure the follow up of the activities.

3. NBS co-implementation process

3.1 NBS Implementation

The solutions proposed by the inhabitants and the local stakeholders are included in the general strategy of the district Nantes Nord, allowing exchanges and connections with existing actions and schemes for scaling up and stronger impact within the healthy corridor. They will be integrated in the general governance of the activities and projects of the district with a specific board created for the follow up of the activities of Urbinat by the inhabitants.

Development of the NBS/solutions proposed

Solutions are also not all at the same stages of the process. Some still need to be co-designed; others are ready for co-implementation. All will include participation of inhabitants/local stakeholders in the development of the proposed idea and follow the below principles:

- Building up on events and existing activities within the district for increased impact
- Diversity of publics
- Inclusion as a way of doing: activities open to all

This will allow to grow a larger community of practice, by never closing the door to new interested inhabitants and also

Gardening as a tool for co-implementation

Gardening was one of the topics on which there was the greatest consensus in the exchanges with the inhabitants and which also federates many associations in the district. In Nantes, 4 different types of gardens are or will be integrated in the healthy corridor.

Existing gardens

Family gardens

Created in the healthy corridor

A shared garden whose production will be shared among the inhabitants that are part of the gardening team

A solidarity garden plot maintained by a group of volunteer gardeners whose produce is intended for the most vulnerable families in the city

A solidarity garden plot maintained by the municipality gardeners whose production is also dedicated to the most vulnerable, with workshops coordinated by the green spaces' unit of the municipality with schools of the healthy corridor.

3.2 The citizen engagement on previous stages

3.2.1 Co-creation process analyses

The implementation of the co-creation process reveals a certain complexity linked both to the simultaneous presence of several projects within the same perimeter and to the non-linear dimension of the process, which implies managing different temporalities according to the subjects under discussion.

- Necessity to compose with multiple projects in the perimeter

Urbinat relies on initiatives and dynamics that are already in place, which can make coordination more complex but also add value to the project and emphasize its impact.

Nantes Nord is indeed a territory already in motion: the rehabilitation of social housing has begun, the construction of major equipment as the multidisciplinary health house will start this summer (2021) and the very dynamic local stakeholders and associations actively participate in the co-construction of the future district.

The ecosystem of actors is therefore abundant but also complex. The role of the municipality is to favour the synergies between stakeholders and projects to the benefit of the inhabitants.

- A non-linear approach

The municipality also defends a non-linear approach to projects. Firstly, participation is an iterative process. Some issues require a much longer discussion with the inhabitants than others. This has for consequence that the co-creation phase in Nantes is still not complete, as some issues have not been sufficiently explored, while on the other hand, other NBSs are already in the co-implementation phase. Secondly, the participatory process cannot be calqued to the project. There is a temporal gap between the remarks/proposals made during the participation activities and the achievements that will actually be realised in the project. (This gap exists even when the participation activities are well framed). On the one hand, the project integrates remarks/proposals that were formulated in previous participation activities. And on the other hand, not all proposals made will result in achievements, but will in turn become the starting point for subsequent projects.

The co-creation process was affected by known external factors (municipal elections) and by hazards such as the covid 19.

- Impact of the municipality elections

The municipal elections, the first round of which took place in March 2020 and the second round postponed to the end of June 2020 due to the health crisis caused by the Covid virus19, impacted the activities with the inhabitants.

The legal mandatory electoral silence of 6 months before the elections did not allow the organisation of activities for the co-creation of new solutions with the inhabitants between October 2019 and March 2020, and therefore postponed most of the co-creation phase which was supposed to start in April 2020, then again durably impacted by the Covid 19 health crisis.

- Impact of the Covid 19 crisis

The repositioning of the municipality's agents on emergency public service missions during Covid-19 lockdowns had an important impact on the planning of activities that were all canceled.

The Urbinat municipality task force has been particularly active during the lock-down, refocusing on the emergencies encountered in the district, with the setting up of a food aid circuit with the associations, the help for homeschooling, the translation, print and distribution of the “exit authorizations” into several languages, the phone calls to the most vulnerable as single parent families or single elderly person...

After the first lock down, it was observed that the inhabitants did not reclaim the public space and went out very little. The municipality organizes several events, and for Urbinat, an important engagement communication campaign to mobilize the inhabitants for the walkthroughs that were postponed from April to October 2020.











Figure 3. Temporary signage and flyer to engage inhabitants for the green loop walkthrough (2020).


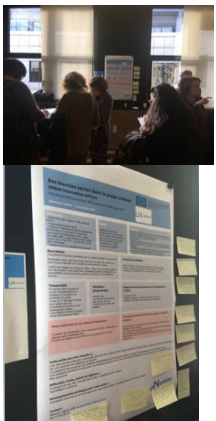


All these events have shifted the planning of activities in Urbinat. The municipality adopted a pragmatic approach, concentrating on the construction works within the healthy corridor and postponing the co-design of the immaterial NBS.





3.2.2 Co-creation process report/Feedback (fiche)




The table below includes all the activities with the inhabitants or actors of the territory that resulted in the urban plan. It does not include the multitude of informal exchanges that take place on a regular basis between the municipality and the associations or the other channels of exchanges within the district with inhabitants outside of Urbinat.





	Date	Public	Goals	Methodology	Photo	Fiche number
PROMOTE THE URBINAT PROJECT	30th January 2019	Elected representatives (thematic and district)	Presentation by the district elected representative of Urbinat to the thematic representatives of the municipality on ecological transition			1
	14 th May 2019	Inhabitants, district elected representatives	Presentation Introductory meeting: presentation of Urbinat to citizen and elected representatives	Public meeting		1.1
Co-creation of the urban park	Feb-March 2017	Inhabitants	Engagement and Diagnostic	Marking on public space Suggestion box on public space		2
	10 April 2017	Local stakeholders, associations, inhabitants	Diagnostic and dreams and wishes	First workshop on site to discuss the future of the place		2.1
	17 th May 2017	Inhabitants (children) and associations	Engagement and prefiguration of the place evolution	Participatory planting (fruit bushes, aromatic and ornamental plants)		2.2

	17 th May 2017	Inhabitants	Answer to the inhabitants suggestion	Walkthrough		2.3
	10 th April 2018	Mayor of Nantes Elected representatives Inhabitants Municipality technicians Schools	Prefiguration of the inhabitants' proposals	Participatory planting		2.4
	12th December 2018	Inhabitants	General presentation of the design of the place	Citizen bus, plans and drawings		2.5
	12th December 2018	Inhabitants	Choice of games and proposal of names for the urban park by the inhabitants	Citizen bus, plans and drawings Citizen vote for the name		2.6
	5th December 2019	Elected representatives, inhabitants and associations	Presentation of the implementation of the solutions, timetables, visuals...	District meeting (public meeting with citizens)		2.7
	14th May 2019	Inhabitants	Engage Collect views of inhabitants on healthy food issue	Visit of market gardening with inhabitants		3

Co-creation of the walking loo	16th May 2019	Inhabitants	Engage and co-design Workshop in the community center: what kind of walks in the district?	Workshop to map the wishes of the inhabitants.		3.1
	18th November 2019	Associations and technical staff of the municipality	Engage and co-design Health and nutrition seminar with associations and technical staff			3.2
	12th February 2020		Integration & engagement through experimentation of digital tools for participation Workshop SuperBarrio with teenagers at the media library	Experimentation of digital tools for participation : SuperBarrio		3.3
	10th March 2020	Municipality technicians	Engagement “Social cohesion” seminar with municipal technicians Engage and train municipal technicians with different expertises in proposing transversal solutions for Nantes Nord			3.4

	Summer 2020	Inhabitants	Engage after Covid19 lock-downs A communication campaign to raise awareness on the green loop and the future walkthroughs	Flyers & map of the loop		3.5
	29th july and 28th august 2020	Inhabitants	Engage & Self-Projection Experiment the green loop	Questioning panels and markings on public space		3.6
	25th september 2020	Local stakeholders, associations and municipality staff	Ideation and co-design Walkthrough with professionals (municipal services, and local stakeholders)	Walkthrough		3.7
	14th october 2020	Inhabitants	Ideation and co-design Walkthrough with inhabitants	Walkthrough		3.8

Engage- Ment for the re-opening of the Renards stream	2018	Inhabitants	Engagement	Drawing of the actual course of the stream on public space		4
	7th October 2020 10th October 2020	School of the healthy corridor Inhabitants	Engagement Perceptions Engagement activities Pedagogic activities on environment awareness. Fields: Renards Stream and Eglantiers community garden	Fête de la science: activities on soil, climate and water in relation with well-being		4.1
	14th October 2020		Engagement Perceptions	Pedagogic activities on environment (soil) awareness.		4.2
Validation process	1st December 2020	Task force	Design Technical instruction of the propositions of the walkthroughs	Online meeting Miro map		
	26th January	Task force Urbanist team of the global project	Design & Validate Adequacy between the two urban projects Urbinat and Global project Presentation of the green loop	Design & Validate Adequacy between the two urban projects: Urbinat and Global project		

	23rd March 2021	Elected representatives of the district Task force	Validate Sharing of the urban project and validation by elected representative of green loop project	"Commission Locale de Quartier" (Local district committee) Presentation to the elected representatives of the healthy corridor		
	18th May 2021	Inhabitants	Validate Presentation of the healthy corridor and update on the project	Spring of the project (annual participatory event) Mobiloprojet (utility vehicle converted with inhabitants for citizen dialogue in the district)	 	
Co-implementation	7th May 2021	Inhabitants	Co-implementation Start a group of volunteers to launch the dynamic on the gardens: presentation	Presentation of the "solidarity gardens" parcels and their functioning to the inhabitants of La Boissière		
	18th May 2021	Inhabitants	Co-implementation Start a group of volunteers to launch the dynamic on the gardens 1st participatory workshop	First workshop to seed and install the plantlets in the "solidarity gardens" parcel of La Boissière		
Co-design of the immaterial NBS	Exchanges with local stakeholders have started to deepen the immaterial propositions of the inhabitants regarding sport, education & social & solidarity economy. Exchanges take place through phone or virtual meetings mostly. They are not listed here since they are not subject to specific methodologies or objectives so far.					

3.3 Strategies to Improve citizens engagement process

As the co-creation phase suffered from several setbacks due to the Covid19 crisis, the task force adopted a pragmatic strategy

- concentrating the discussions with the inhabitants on the development of works needed within the healthy corridor;
- rely on the dynamic of the local stakeholders and associations for the mobilisation and engagement of inhabitants;
- adapt the governance of the project to the co-implementation phase.

3.3.1 Municipal Advisory board: building on the dynamic of an existing group

At the very beginning of the Urbinat project, the city of Nantes intended to rely on the citizen's council for the integration of inhabitants in the follow-up of the project. The citizen council is a compulsory body introduced by the programming law for the city and urban cohesion of 24th February 2014 in all priority neighbourhoods.

The goal was to:

- Strengthen existing citizen dynamics.
- Guarantee the place of inhabitants in all the steering bodies of the city contracts.
- Encourage shared expertise.
- Guarantee the place of inhabitants in all steering bodies.
- Create a space for proposals and initiatives based on the needs of the inhabitants.

Each citizens' council has two categories of members: residents of the concerned neighbourhood and representatives of local associations. The citizens' council must not be chaired or led by elected officials. Above all, the citizens' council is free to choose the subjects it wishes to address. For example, it has conducted a playground diagnosis in the city's political districts of Nantes Nord. They are systematically proposed to get involved in all the projects in the district, but they did not wish to integrate Urbinat. Furthermore, the citizen council is running out of steam and is criticised by residents for not being representative of the neighbourhood.

In order to avoid duplicating councils involving inhabitants and to ensure the long-term involvement of residents, it seems essential to offer inhabitants a global vision of what is happening in the district, on the cross-cutting theme of health, and therefore not to focus the group's work solely on Urbinat. This also allows cross-fertilisation between residents and/or associations with projects linked to Urbinat, which can increase the impact of the NBS of the Urbinat project.

From working group to Urbinat advisory board

Following the co-creation of a food market in the Nantes Nord district in 2015 and of the health centre in 2016, and in view of the health indicators that require a long-term dynamic, a nutrition working group was set up in 2017 with the major objective of increasing the consumption of fruit and vegetables among the most disadvantaged populations. At the crossroads of social justice and public health

issues, this group has been based on actions initiated by the territory's partners with the aim of creating synergies between actors and actions.

The working group first realised a co-diagnostic on the consumption of fruits and vegetables from February to June 2018 with the help of the municipality, local actors and inhabitants. This co-diagnostic brought out two axes to meet the expectations of the inhabitants to be able to consume more local fruit and vegetables:

- Financial accessibility, with the importance of being able to see and choose the products, and therefore the need to offer local sales outlets at an affordable price;
- Awareness-raising and mediation, with expectations of places and spaces of conviviality and social cohesion to address this issue, going beyond the single argument of health.

After the co-diagnostic, a positive food challenge launched in 2019 by Nantes metropole with a health dimension and built with the inhabitants has federated about ten inhabitants. Since then, the fruit and vegetable working group has continued to meet regularly.

Beyond fruit and vegetables, it is a global approach to nutrition and health that is being developed, taking into account the physical activity and environmental health aspect (example of the walks set up to discover the Urbinat walking loop and gardens).

The municipality therefore decided to rely on the fruit and vegetable working group, which brings together residents, local actors and municipal services around the theme of health to build the Urbinat municipality advisory board, benefiting this way from a well-established partnership and group dynamic. Several inhabitants of the working group also took part in hosting the Urbinat consortium meeting in Nantes in 2018 and in the walkthroughs.

Roles of the participants in the Municipal Advisory board

8 inhabitants and about 15 associations and local actors (CSC ACCOORD Boissière and Bout des pavés, Espace départemental des solidarités, Empowernantes, Casse ta routine, ACMNN, Paq la Lune, Du pain sur la planche, dietary therapist of the future health centre, district centre, cultive ton bio, secours catholique, CIME...) are member of this group.

IRSTV joined the group in March 2021.

Participants	Role
Inhabitants	Feedbacks on projects/actions Mobilisation of other residents
Direction de la santé publique/CCAS Françoise et Marion	Coordination and facilitator Drafting of the Minutes
Associations	Feedbacks on actions/NBS Sharing of events and support for the implementation of NBS immaterial Mobilisation of other residents
IRSTV	Observer Scientific and technical adviser

Table 2. Proposition of roles in the municipal advisory board.

Operating mode

At the next meeting in September 2021, it will be proposed to the group to co-construct a new *modus operandi* and to validate the new objectives to ensure the follow-up of Urbinat activities.

Frequency: meeting approximately once a trimester or more as required

Objectives identified so far:

Co-implementation: organisation of activities, identify synergies at the crossroads of the issues identified at the city/metropolis level and the needs and desires at the district level;

Coordination: sharing of information on events and activities linked to health within the district;

Information: sharing global information and news.

3.2.2 Reactivate the district meetings, the place for exchanges between inhabitants and elected representatives

The Nantes district meetings are the "general assembly of the neighbourhood", a place and a time where residents, district professionals and elected officials exchange ideas and ambitions, and together build responses to the needs and expectations of the inhabitants. The district meetings are a place for continuous dialogue between local elected representatives and residents. Each meeting provides an opportunity to take stock of current projects and news, to debate the issues and priorities, and to put forward ideas.

Objectives of the district meetings:

- to discuss the issues, projects and priorities of the neighbourhood among residents
- to propose ideas
- to initiate collective projects;
- to launch initiatives and exchange with elected officials in the neighbourhood on the actions of the city.

Since 2015, they have been organised twice a year in each district of Nantes in spring and autumn. They were of course directly affected by the Covid 19 health crisis and the 2020 and first half of 2021 editions have been cancelled. The objective is to relaunch the dynamic from Autumn 2021.

3.3.3 Rely on thematic working group for the implementation of the NBS

It is proposed to base the monitoring of activities and their co-implementation on the thematics defined during the systematisation of the proposals integrated into the healthy corridor. The municipality's technical services will coordinate these working groups, which, depending on the subject, will implement new exchanges with the inhabitants or plan co-implementation.

The frequency of meetings is left to the discretion of each coordinator.

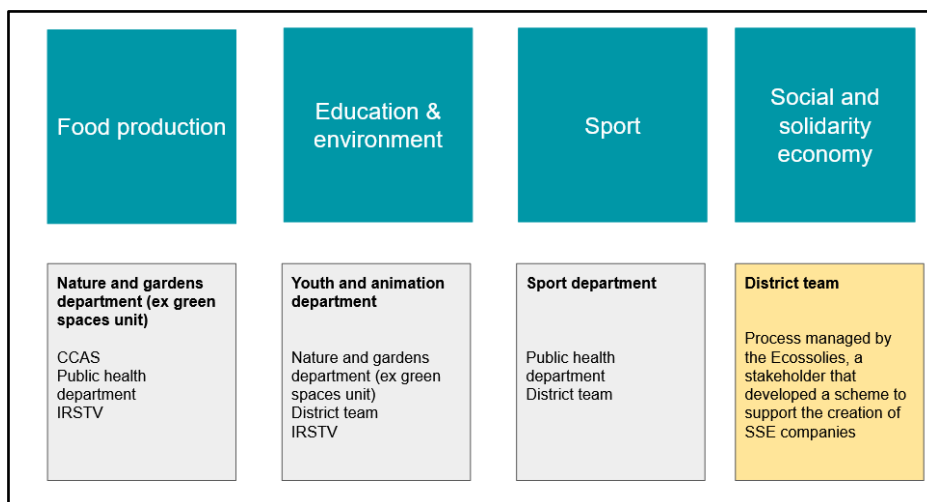


Figure 4. Thematic working groups of the municipality at Nantes.

3.3.4 Reinforce the Local District Committee as the place for validation by elected representatives within Urbinat

Led by the district deputy, the local district committees are organised in each district of the city of Nantes. They provide a forum for debate and for taking into account the territorial dimension in municipal action. They are a place for follow-up and questioning between the elected representatives and the municipality departments on all subjects concerning the district. They are also the place to seek for political validation.

The advantages of this organisation:

- Building on existing bodies that are already dynamic or have proven their relevance;
- Allowing a process that is always open with a call to the inhabitants of the whole district for co-design, co-implementation and eventually co-evaluation activities;
- Do not "burn out" residents with too frequent meetings that could impact on their long-term commitment;
- Include associations and other local stakeholders who are valuable intermediaries with the inhabitants.

The following diagram summarises the necessary dialogue between the different entities and the presence of the inhabitants as a determined group to keep the process open and inclusive.

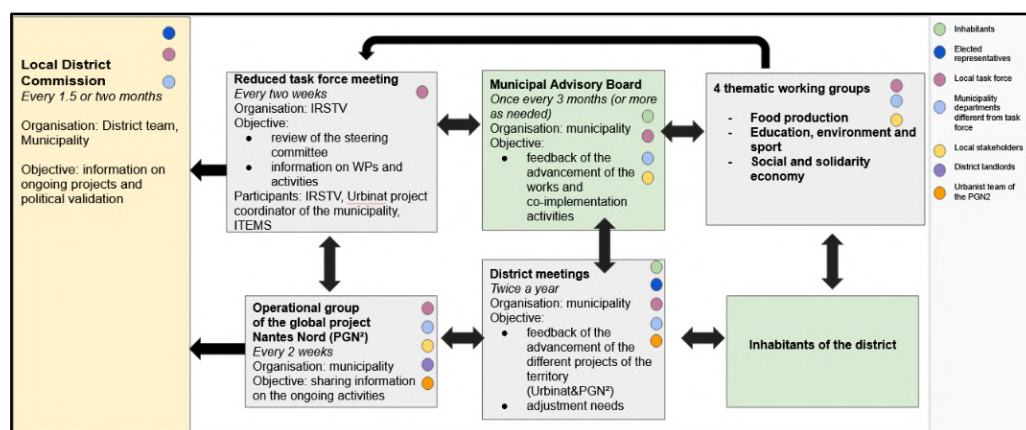


Figure 5. New organization for the follow up and co-implementation of the NBS/new ideas in the healthy corridor.

4. Urban Project implementation

The Urban project in Nantes has three components:

- An urban park: the Canada park
- The valorisation of the entrances of the Amande park
- A walking loop that links these different spaces in the district via a reworked, accessible and safe pathway

These elements will support several NBS, both material and immaterial.

4.1 Administrative and technical procedures

The implementation of the works for the creation of the healthy corridor are fully coordinated by the municipality.

Coordination of works on public space

Works on public spaces are coordinated by the proximity department Erdre et Cens.

At a metropolitan level, Nantes Métropole's territory is divided into 7 local centres called “proximity departments” responsible for the development and maintenance of public spaces, urban development, economic development and sanitation. They are the Metropole's technical intermediaries with the inhabitants. Alongside elected representatives and citizens, the “proximity departments” are attentive to the needs of the inhabitants.

Each proximity department is responsible for an area including at least one district of Nantes and one city of the metropolis, which allows the integration and tackling of common issues of this specific territory.

Within the framework of Urbinat, the Erdre et Cens proximity department is in charge of safety work on pedestrian crossings along the green loop.

Coordination of works on green spaces and parks

The work in the parks and green spaces is designed and coordinated by the Nature and Gardens Department, whose design department is involved in the landscaping part of public space work.

Work in green spaces, parks, children's playgrounds, allotments and shared gardens is the responsibility of the Nature and Gardens Department, which therefore coordinates in Urbinat the work on the pathways in the Parc de l'Amande, the entrances to the park in order to make it visible, and the development of the urban park.

It also works with the proximity department Erdre et Cens on the landscaping of pedestrian crossings.

Validation process

In order to ensure that the work is carried out before the end of the Urbinat project, the Canadian urban park was validated in advance by the elected representatives at the Local District Committee, so that the work can start in 2020.

All of the healthy corridor developments resulting from the local diagnostic, the participatory activities and the territorial studies, were presented at the following meetings for technical and political validation:

- a specific meeting with the landscape design and development team of the overall Nantes Nord project on 26th January 2021
- A presentation to the operational group on 18th March 2021
- A presentation to the local councillors at the local district committee (CLQ) on 23rd March 2021
- A feedback to the inhabitants during the spring of the project on 18th May 2021

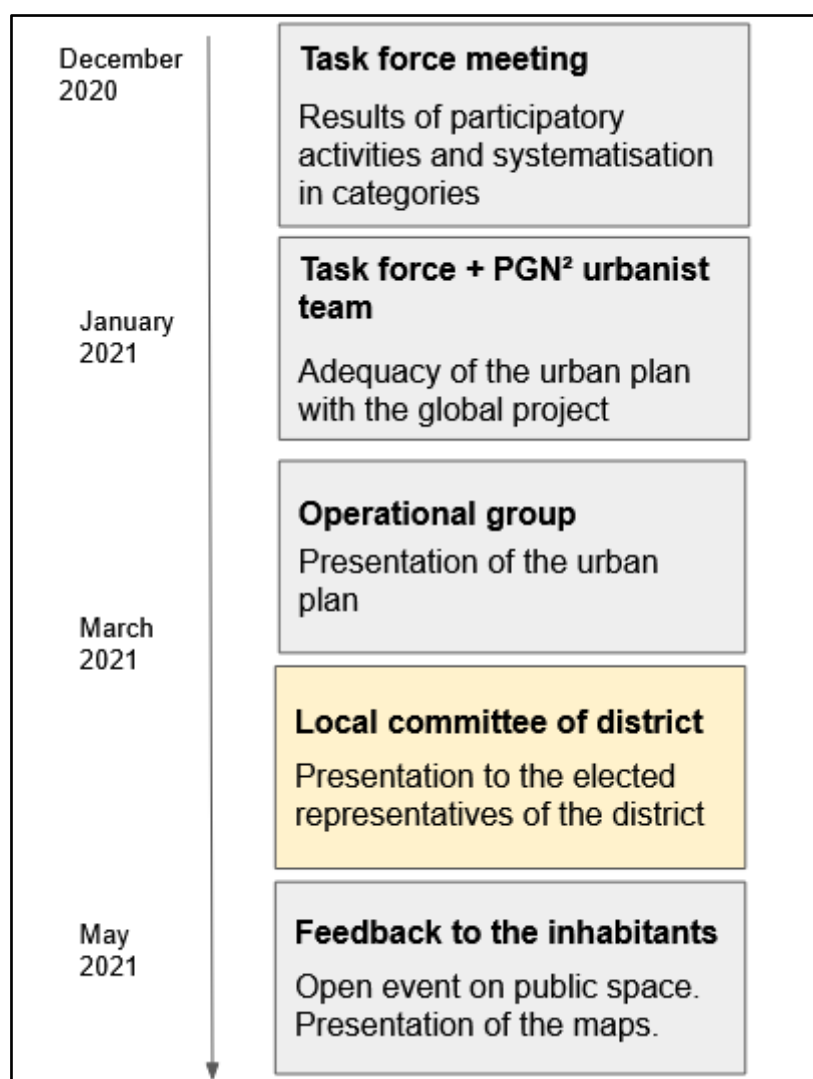


Figure 6. Validation process of the Nantes' urban plan.

Execution phase

The execution phase is currently under development. As stated before, the nature and gardens department (former green spaces unit) and the Erdre et Cens proximity department are in charge of the coordination of the works within the healthy corridor, which includes the design, the definition of the construction plan and the specific materials, to be able to define for each development and construction the most suitable procedure.

Construction of the healthy corridor

Indeed, there are three possibilities for implementing the developments in the healthy corridor:

- **in-house:** the preparatory work for the Canada garden was conducted by the municipality agents. The planting and turfing following specific work carried out by private companies is also done in-house.

- **by “purchase orders” procurement:** for a certain number of services, the municipality has contracted with companies via what is called a “purchase order procurement”. This is defined in Article 77 of the Public Procurement Code as contracts concluded with one or more economic operators and executed as and when the need arises by the issue of purchase orders. They enable public purchasers to make recurring purchases from one or more economic operators selected following a single advertising and competitive tendering procedure. They also allow them to benefit from the price determined by the public contract and from a greater reactivity of the selected operators. They correspond, in European law, to "framework agreements which set out all the terms" and which are referred to as "framework contracts".

The purchase order contract may be single or multi-awarded. Multi-awarding may be justified, for example, by the impossibility for a single company to carry out all the services or by the need to ensure security of supply. They are valid for a maximum of 4 years.

Public space	Green spaces/Environment
Supply of asphalt	Replacement and repair of wooden structures
Graffiti removal services	Maintenance of photovoltaic plants
Purchases of sand and aggregates	Provision of manufacturing, installation and maintenance of composters, animation and support for metropolitan residents on their use
Acquisition of street furniture	Production of reports on sustainable development
Supply of building materials / concrete materials for roads	Collection of bio-waste and support services to reduce food waste
Supplies of various woods and glass plastics	Inventory/diagnosis and detection of canker disease on Nantes Métropole's plane trees
litter bins, bags and dispensers for dog waste	Horticultural equipment and materials (small and portable)

Table 3. Examples of services for which a “purchase order” contract exists.

- **by specific procurement procedure:** for specific needs, the pilot department follows the procurement procedure depending on the nature of the works/services and the amount dedicated to the project. All the procurement, whatever their amount or procedure, must respect 3 principles: freedom of access to public procurement, equal treatment of candidates, transparency of procedures.

The case of the global project:

For particularly complex or large-scale development projects, the municipality may also decide to delegate the implementation of a development project via a development concession. There are several tools, but one of the most common is the creation of a ZAC, a concerted development zone, where the project is usually entrusted to a private developer.

In this case, the local authority makes the request for the creation of the ZAC and thus completes the procedure necessary for its creation: definition of the perimeter, ZAC programme, public facilities programme. It is also responsible for concluding any financial participation agreements and for approving, if necessary, the specifications for the transfer of land.

Regulatory consultation must be organised. The terms of the consultation must allow the public to have access to information on the project and the required opinions, and to formulate observations and proposals which will be recorded and kept by the competent authority. The local authority can, of course, go further in the consultation process and co-construct the project with the inhabitants, as was done for the global project. Several studies must then be submitted depending on the scope of the project: environmental studies, agricultural impact study, etc.

These different procurement tools and the internal capacities, in particular of the nature and gardens department, make it possible to launch the work as and when required. The residents' wishes are thus given shape. But this also creates a very heavy workload for the departments of the municipality and can create complexity in the coordination.

As a result, work in Nantes has already begun. While the urban park is almost complete, the work to make pedestrian crossings safe and to redesign the entrances of the park Amande are still in process.

The municipality expects to finish the works within the healthy corridor by October 2022.

5. Conclusion and Achievements

This deliverable on the NBS implementation strategy takes a particular position in the Urbinat methodology because it is situated at the articulation between the first stages of co-diagnosis, co-selection and the final stages of implementation and monitoring. In fact, it is a little too early to have a final evaluation, but the next stages can already be enriched and adapted thanks to the first lessons learnt.

In this conclusion, we also want to introduce the difficulties, doubts or questions that we met during the process. Some of them have been (partly) solved, others remain.

Among the difficulties encountered, it is important to distinguish:

- Circumstantial difficulties: linked to the adaptations necessary for an application in the specific local context, or linked to disturbances that are peripheral to the urban project like the election agenda or the covid crisis.
- Difficulties linked to profound changes in the way of “making the city”, precisely linked to the innovations of NBS and their implementation

Circumstantial difficulties highlight the need for flexibility of the method and ability of adaptation.

On the second point, changes associated with the URBINAT project are related to:

- A more integrative vision of urban renewal. The project no longer deals only with architectural and urban objects but takes into account all the dimensions of the neighbourhood as a place to live: public spaces, social links, health, employment, participation in political life, etc.
- Increase of inhabitant participation in all the stage of the project
- Public spaces and nature as a lever for the development and transformations of the neighbourhood. (This refers to the notion of NBS).
This breaks with previous ways of doing in urban renewal where green spaces were limited to an aesthetic and normative dimension to make "nice and clean".

These changes in the way of “making the city” have a significant impact. The table below gathers difficulties met, questions raised and point of vigilance:

	Difficulties met /questions raised /point of vigilance
Transversality	<ul style="list-style-type: none">• Need for technicians with different expertises to share a minimum urban culture (NBS, participation, etc.)• Shake up of professional culture and habits of technicians: require an appropriation by all (Currently, it is a motivation for some, but a constraint for others)• Increase of time spent on coordination• Need to adapt departments organization (see box below)• the consideration of wider scales and multiple themes leads to a certain complexity. We can wonder how many technicians have a complete overview of the project of Healthy corridor and have a good understanding of its articulations?
Increase of inhabitant participation	<ul style="list-style-type: none">• Participation implies a strong engagement of teams in communication, animation, coordination, reporting. These activities all together are highly time consuming• Municipal technicians like socio-cultural animators and urbanism of green spaces agents play an important role in the participation process by their knowledge of the territory. Nevertheless, they are not experts in participation. Specific skills are

	<p>required. In the Global Project, the city solved it by using services of a specialised agency (contractors).</p> <ul style="list-style-type: none"> • The complexity of the project raises the question on how to communicate about the project in a simple way? • Shake up of political culture and habits of elected representatives • Need for inhabitants to develop a culture of participation. Still under construction in Nantes.
Role of nature and green spaces to address urban issues - NBS	<ul style="list-style-type: none"> • the design and implementation rely on well-functioning transversal work in the project • The NBS concept is linked to an anthropocentric vision. This implies a vigilance not to oppose the expected benefits for the inhabitants and the ecological issues. (e.g., debate in Nantes on concrete paths in the Amande park that facilitate the access for inhabitants but that are also seen as a possible damage for an area with a high ecological quality).

Table 4. Difficulties met, questions raised and points of vigilance.

Example of the green spaces unit to highlight deep adaptations required for the change of paradigm in the way of making the city bringing by NBS.

On the scale of the urbinat project, the implementation of the Healthy Corridor and the difficulties encountered, allows us to identify indications of the need for profound changes, beyond the project, in the internal structure of the local authority's services.

Thus, it is interesting to note that, in parallel with the project, the Nantes green spaces unit undertook a profound rethinking of its organisational structure.

The green spaces unit has been scaled up to the “Nature and gardens” department joining the newly created General Directorate for the Ecological and Inclusive City made up among others by the Urban Development Department, the mobility department, the public space department, the water cycle department ... It means that the green spaces, the biodiversity, is now an essential component of the way of doing the city.

Its intervention area is also scaling up. Indeed, historically, green spaces units in France operate at a municipality level. Some of the units of the Department Nature and Gardens will from now work at the metropolitan scale, guaranteeing the coherence of the territory in terms of biodiversity, and thus providing the cities of the metropolitan area with their expertise.

The green space units are structured following:

- A department Research and Biodiversity that gathers expertise and capacity for action in the field of biodiversity. It works for the restoration of natural areas and urban renaturation, relying on the experiments of the Botanical Garden and basing its action on naturalist knowledge and scientific partnerships.
- One transversal department on trees and canopy (urban tree, metropolitan woods and forests)
- The study and landscape department, which is in charge of project management assistance for major projects, the appraisal of building permits, landscape quality, and cross-cutting relations with the urban development department, particularly its regulatory urban planning department.

The link between technicians of green spaces dpt. and inhabitants is strengthened in educational activities with schools in addition with plant-related events while keeping historical missions as coordinating allotment gardens, and mediating nature in the city.