



# **How to tell your city's story**

## **Connecting Nature Framework**

### **- Sarajevo –**

Project partner: Sarajevo Economic Region development Agency SERDA with support of City of Sarajevo





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## Connecting Nature Framework

### STEP 1 - Identify the city context

Sarajevo is capital and largest city in Bosnia and Herzegovina, a city located in the valley, surrounded by mountains, situated along the Miljacka River in the heart of the Balkans, a region of Southern Europe. Sarajevo has a rich and long history of religious and cultural diversity, which experienced its development in the 80s of the last century (e.g. Winter Olympic Games in 1984).

During the nineties of the 20th century Sarajevo experienced the destruction and for 1,425 days (from April 1992 to February 1996), the city suffered the longest siege of a capital city in the history of modern warfare, after that the recovery is still slow.



Due to the destruction, Sarajevo has encountered a number of problems in several segments, there is an evident problem of pollution, especially in the winter, deforestation, turning green areas into parking lots and buildings, and illegal construction that affects airflow, which exacerbates pollution. Sarajevo faces the problem of traffic and heating that affect pollution as well, and this problem requires systemic changes, not short-term solutions.

Now, Sarajevo is characterised with a lot of new buildings for living and business purposes, but often, these buildings are built on green areas within the municipalities and local communities, often not respecting urban planning. This approach creates additional issues, such as lack of wind, creating high pollution and fog in winter periods.

Sarajevo, as a modern city, is a complex of buildings for various purposes: architectural and infrastructural buildings, free spaces, water surfaces, green plantations, etc. However, the city cannot be defined as a mechanical sum of its constituent elements, but a connected whole, which is constantly growing and evolving. The character of the interconnections of the components of that system is complex and determined by numerous factors. However, the basic condition for its normal functioning is ecological unity. A certain balance of environmental factors, which form the area of the city, primarily determines the living conditions of the inhabitants.



It is important to mention Sarajevo administrative organisation, which directly determines jurisdiction of the government of the city level. Area<sup>1</sup> of the City of Sarajevo covers four municipalities: Stari Grad, Centar, Novo Sarajevo and Novi Grad. City Council consists of representatives of these municipalities.

There are some excellent examples of the creation of the green areas in the city. In some municipalities such as Novi Grad former military objects are transformed into multifunctional park “Safet Zajko”. The Park is intended for education, sports and recreation, with beautiful green areas. These initiatives have positive feedback from citizens.



*Former military object “Safet Zajko” (before)*



*Former military object “Safet Zajko” (after)*



*View on Sarajevo and cable car*

Many projects and initiatives from the private and public sector have been implemented in recent years, but they are mostly pilot activities that are not replicated yet. Usually, these are small scale projects, but even though they are “small”, they are very important for a city and citizens. Some of these projects are solar panels, solar benches, bike paths, etc. The City of Sarajevo as a local self-government

unit supports all types of projects and initiatives especially capitals such as the Sarajevo Cable Car.

As a city, Sarajevo unfortunately does not have enough green areas. Large green spaces are located on the hills around the city (Trebević Hum, Barice etc.). Small parks,

<sup>1</sup> Canton Sarajevo consists of 9 municipalities



promenades and green corridors along the roads are only green areas in the city. These surfaces are maintained by KJKP PARK (Cantonal Public Utility Company PARK).

One of the ways to improve the environment is to raise green areas. In order for green areas to be able to fulfil health, microclimatic and aesthetic functions, it is of great importance to connect them into a single system of greenery, which must be set on certain organizational principles.



*Sarajevo during winter*

There is evident increasing concentration of population in small areas. This causes the appearance of various sources of atmospheric pollution (soot, gases, dust, etc.) Plants are among the rare living organisms that can resist the effects of air pollution. Therefore, the positive role of plants is reflected not only in the decorative-aesthetic role,

but also in a number of other functions, of which most importantly sanitary-hygienic and cultural-educational.

Need for nature-based projects and their long-term significance for the city and its inhabitants is still not sufficiently developed within all layers of government- from municipal and city level, cantonal, entity and finally state level, there is no strategic goal for the environment, particularly NBS is not recognised as a priority. Bearing in mind that the development of the city is a constant process, there are great opportunities for such solutions, which should be an integral part of the plans of all levels of the state.

## **STEP 2 - Define the goals of your nature-based solution**

The development of a resilient city pleasant for the life of citizens of all ages and the satisfaction of their needs is one of the goals of the City, but also of other institutions. The City of Sarajevo faces challenges in achieving these goals (often insufficient financial resources, shared competencies, political factors, etc.). These challenges faced the Agency, as well, and they were taken into account in defining the exemplar.

The visit of Osmos in November 2018 identified the main challenges and problems in the city, but also identified and interviewed various stakeholders, which provided the basis for further work.

Several exemplary options were considered internally and discussed (energy efficiency, environmental protection, etc.).



Within the workshop with Nua Horizon (held in February 2020), the Agency and the City defined an exemplar that included several factors: economic, social, environmental, etc., and due to events in the recent history of BiH and the city, another additional factor was taken into consideration, and that is peace and reconciliation. Thus, the first idea of the example was a park of friendship/ future on the border between the two cities, but after considering the

administrative requirements and due to the complicated bureaucracy, the second idea was approached.

Bearing in mind that there is a lack of green areas, the exemplar envisages the design and implementation of an urban garden with sensory park, which will have multifunctional purposes. Also, the goal is for the exemplar to have a cross-generational exchange (youth, elderly people), to be inclusive (for sensitive groups e.g. children with disabilities) and to have an educational character as an added value.

The urban garden with sensory park will be implemented on a green area, and it is in accordance with the urban plan of the city, but also with a strategy of the development of the Sarajevo Canton. Also, as an important step, SERDA proposed NBS as one of the priorities in development strategy of the Municipality of Novo Sarajevo (in its territory the urban garden will be placed) and it is accepted, and later strategy is adopted by Municipal Council.

Implementation of the first urban garden with sensory elements will be done by established cooperation of two governmental levels, with involvement of NGO and international support and can be used as a model for larger projects in Sarajevo and other cities in BiH.

### **STEP 3 - Identify your target audience and other relevant actors**

Based on their previous experience and experience in other projects, the City and the Agency have defined an exemplar and prepared a document based on the process and using available tools, and with the support of project partners.

Although the City and the Agency have defined the key stakeholders, they have been generally identified during the development of the framework, the Sarajevo Team is still working on their concrete recognition and definition and how they can be involved in the implementation of the exemplar, as inputs from the various stakeholders can be valuable.



The Sarajevo Team did this by exchanging experiences with FRC - a peer to peer learning session was held with Glasgow, where we exchanged experiences, key stakeholders, but also the way how they will be engaged in the project (e.g. cooperation with universities, involvement of NGO dealing with environmental protection, cooperation with architects etc was mentioned as a good approach). Also, during communication with some of the project partners, the idea of additional cooperation between cities was raised in order to share experiences and good practices.

Also, support in defining the key stakeholders was provided by the partner Osmos. Through a conversation with Glasgow the Sarajevo Team realised it would be useful to do stakeholder mapping and then an engagement plan.

The Sarajevo Team gave the attention to the aspect of interest of key stakeholders, and to get involved in the project and how we can achieve mutual cooperation and connections that can maintain long term cooperation (e.g. with the university, Faculty of Science - Department of Biology), also, how to involve actors who can contribute to the project and development of the exemplar.

Work with Osmos started in December and it was continued in 2021 through their support in the application of tools (tools for engaging with stakeholders, type of interaction, approach) etc within the project. The workshop was held in May 2021 with the main aim to explore stakeholders, and provide us tools and exercises to better identify and connect with stakeholders (Sarajevo was the first city to complete this workshop)

More on:

[https://www.youtube.com/watch?v=8nm4C3CKmQ8&list=PLDKIXfg\\_m8sd5xuwllrkZDElcGsrYcW4C](https://www.youtube.com/watch?v=8nm4C3CKmQ8&list=PLDKIXfg_m8sd5xuwllrkZDElcGsrYcW4C)

#### **STEP 4 - Introduce your nature-based solution exemplar**

The exemplar in Sarajevo will be focused to include following segments: societal, economic and environmental, but also to connect different age groups.

The idea is to create an urban garden and sensory park which will have multifunctional purposes and will be open to all citizens, but it would be adjusted to special target groups.

The exemplar includes design and implementation of green garden and sensory park within the Secondary Vocational Education and Training School. Location of the School is in the Municipality of Novo Sarajevo, urban area, surrounded by the pedestrian lane by the river on the one side and busy street with residential area on the other side. Nearby the School there are other relevant institutions/organization: elementary school with children with disabilities, centre for healthy ageing, municipality, shops, kindergarten, elementary school etc. This surrounding is important for the purpose of the exemplar and main activities (urban gardening day, cross generational exchange etc).

Beside the establishment of the garden, exemplar will include use of the artistic tool developed within the project (e.g. Memory work, Eco Therapy, Immersion in Nature



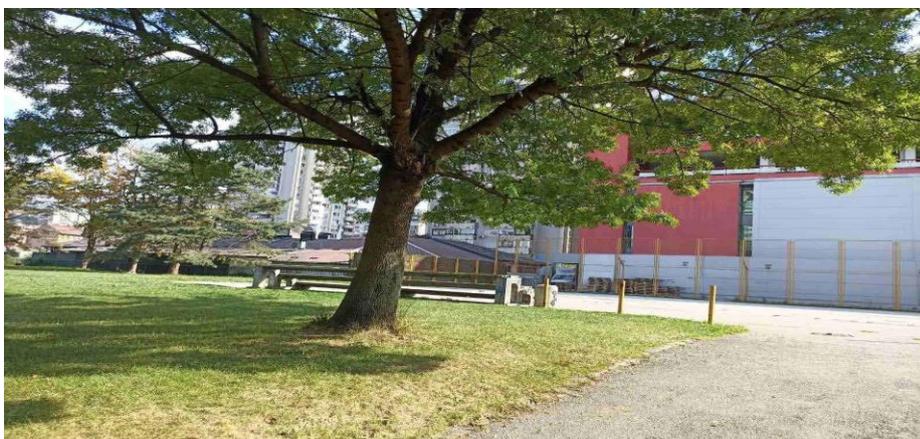
and Body Mapping). This tool will be implemented in order to connect people with the nature and inspire them to spend more time in nature and participate in activities envisaged in the urban garden. Also, the tool is recognised as appropriate to gather different generational groups (youth and elderly people) to share their experiences. In this way, it will foster intergenerational exchange, but also it will provide socialisation of the specific target groups who are often disconnected from the society (elderly).

The main aim of exemplar is to create a multifunctional green area within the urban part of the city, which will be a pilot project and replicable in other areas. Decision on the exemplar which includes implementation of a green garden is based on real needs of the city (lack of green areas), but also as a tool for solving issues detected by government such as air pollution due to heating system, traffic, deforestation etc.



*School yard*

Size of the area for the exemplar is approx. 1500m<sup>2</sup>, surrounded by a busy street and pedestrian lane/promenade, next to the river.



*School yard*

Beside the establishment of the garden, exemplar will include one additional important element - artistic approach to connect with nature (The Sarajevo Process) which is developed within the Connecting Nature project.



The green garden and sensory park will have double purpose: 1) it would provide multipurpose area for the pupils<sup>2</sup> of the School (urban garden will be used for learning and sensory park will be used for developing motoric skills of the pupils) 2) it would include various activities (e.g. urban gardening day) for various target groups in order to provide societal, economic and environmental segments, but also to contribute in solving issues of Sarajevo (air pollution, raising awareness on importance of nature in everyday life etc). Taking into account that urban garden and sensory park will be located in urban area of the city, and it is surrounded with streets open for traffic (creating pollutions and noise) with evident lack of the green areas, the exemplar will be oasis for local habitants and members of the school and other above-mentioned institutions/organisations.

In setting up the garden and the park, the partners will be municipality, school, centre for healthy ageing, company Greens (socially responsible company which employs persons with disabilities and produces microgreens). We will involve KJKP Park, public company in charge of greenery, for donation of seeds and plants. These are the main actors in implementation of the garden. For sustainability, beside these actors, it is important to involve other actors: Centre for Healthy ageing and elementary school for children with disabilities for creation of activity plan and various events and activities within the garden (e.g., "the urban garden day"). Important part of the activities will be co-production, ensured through The Sarajevo Process (the memory work, body mapping, eco therapy) which will have multiple values - creating connections between participant and benefits for health and wellbeing (stress release, calmness etc). It is planned develop "urban garden membership" and have symbolic badges or stickers, and data base of people who are participating at maintaining the garden. All these activities will be followed by a journalist who is active in writing articles about urban agriculture. And all activities will be filmed. We will suggest promoting this urban garden through social media (FB/Instagram) Urban Garden Sarajevo.

### **STEP 5 - Position this report Explain the big picture**

Taking into account the specifics of the city, as well as the needs and challenges it's faces, and the problem it currently has, exemplar is one of the steps, but also a way to contribute to solve the city problems and to improve the quality of life.

Thus, the Sarajevo Team started from the exemplar goal, activities that are needed to achieve the goal, and through the definition of activities, the Sarajevo Team came to a set of needs that will enrich the exemplar and implement it in a way that has multiple purposes.

Connecting Nature framework allowed the Sarajevo Team to fantasize, and to go a step further and think long term and to see the exemplar as one of the steps in its development and upgrading.

It covered main phases:

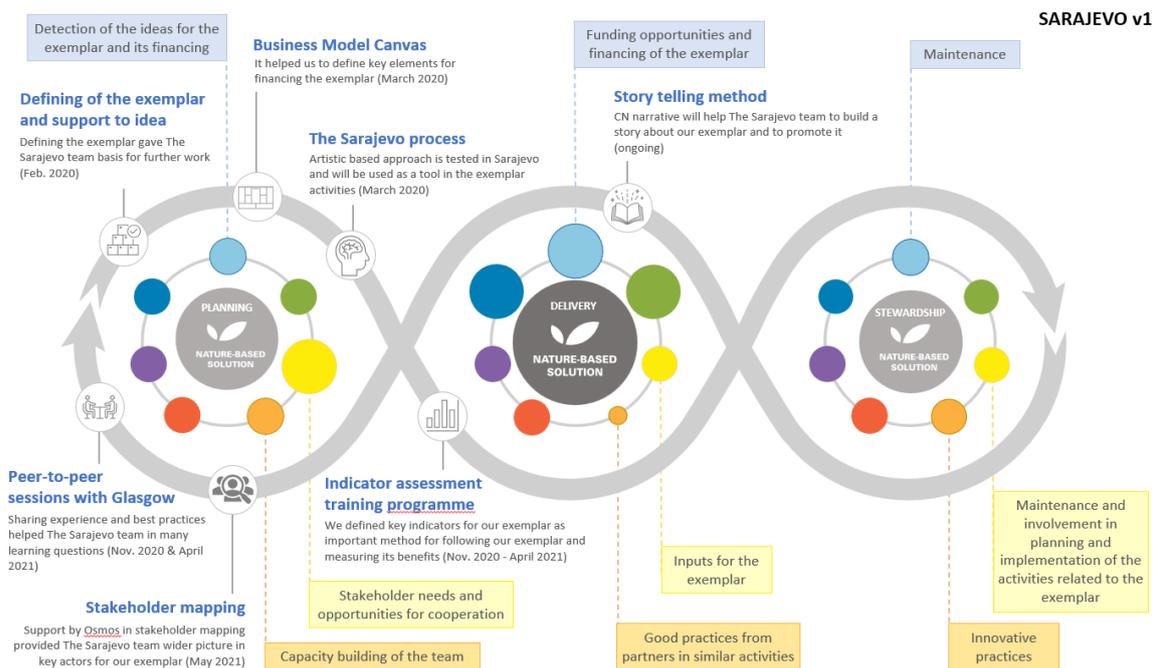
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<sup>2</sup> School attendants are children with intellectual and/or physical disabilities

Planning phase: included detection of ideas for the exemplar and its financing – defining the exemplar provided the Sarajevo team basis for further work, including peer-to peer sessions with FRC Glasgow – sharing experience and best practices helped the Sarajevo Team in many learning questions and stakeholder mapping – gave the Team wider picture in key actors for the exemplar; Business Model canvas helped the team to define key elements for the financing the exemplar and The Sarajevo process – artistic based approach firstly tested in Sarajevo, which will be used as a tool in the exemplar activities.

Delivery phase: included activities regarding funding opportunities and financing the exemplar, ex-change of good practices in similar activities (Glasgow, Poznan, A Coruna) and inputs for the exemplar – stakeholder needs and opportunities for cooperation; indicator assessment training programme – defining key indicators for the exemplar as important method for measuring the benefits.

Stewardship phase will involve maintenance of the exemplar and its replication in other areas of the city, but also ambition to create sustainable model for the design and implementation of the urban gardens and its recognition as strategic project of the city/canton.



The co-production, as one of the elements of the Framework was great tool for the Sarajevo team to get reflections, opinions, to ex-change ideas and good practices and to apply in the exemplar defining. It helped the team to solve certain dilemmas on the exemplar (e.g. financing, involving experts etc – were topics with peer to peer sessions with City of Glasgow).

Main transformation points in this process are shown here:



## Transformation points



**Defining of the exemplar and support to idea**



**Stakeholder mapping**



**Business Model Canvas**



**The Sarajevo process**



**Peer-to-peer sessions with Glasgow**



**Indicator assessment training programme**

What is important to point out is that exemplar, even when implemented, can be upgraded and different functions can be added for different target groups.

The innovative aspect has been there since the beginning of the development of the framework, through the participation of several people and departments, sharing ideas and brainstorming, but also considering exemplar from more angles and what effects we achieve with its implementation.



## Co-production

### STEP 1 - Define the goals of the co-production process

The Goal for co- production is to have legitimacy of process, to mobilise and empower local actors. The Sarajevo Team intention is to include all relevant stakeholders in the process. In the process design, relevant experts are needed. During the development of the CN framework and Business model Canvas, Agency and City staff determined various stakeholders who could contribute to its design and development. In the planning phase, it is important to see what stakeholders need and what opportunities are for collaboration. In the delivery phase, the Sarajevo Team will gather their inputs for the exemplar and later we work on maintenance and further development of the exemplar. This approach will also provide new experiences and learnings to the team.

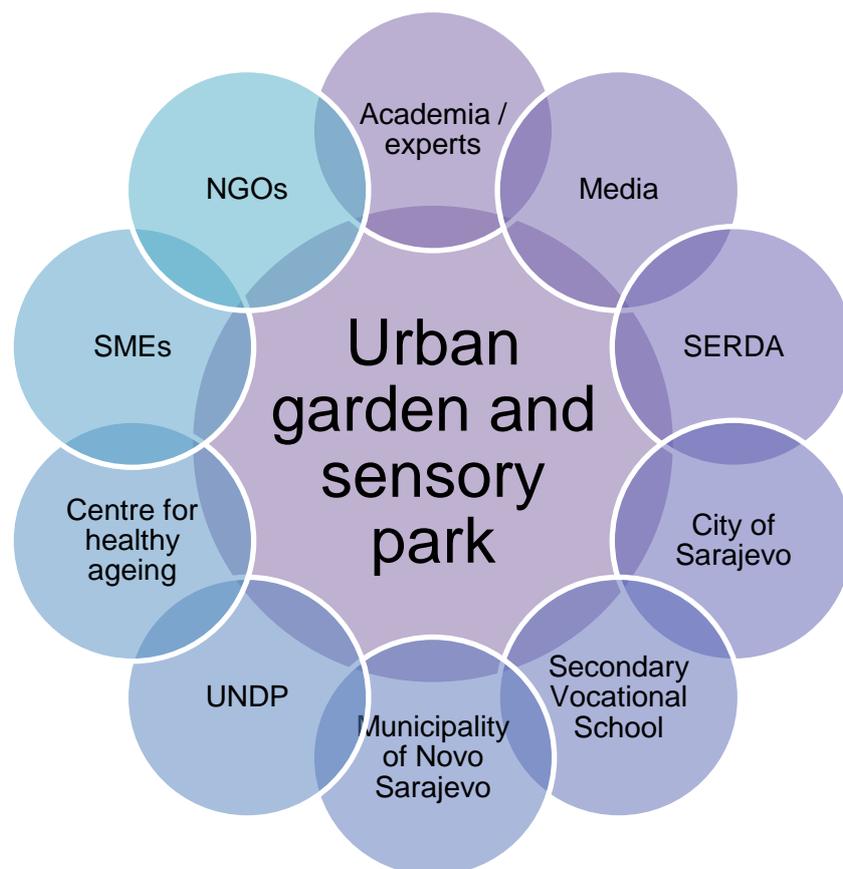


This will also provide adjustment of the exemplar to the needs of the specific target groups (e.g. inclusion of children with disabilities).

Usual practices in project design and implementation include targeted stakeholders which are directly involved in the project and have direct benefits (financially or other kind). Wider picture of the stakeholders and target groups is not included or its involvement is very limited.

New practices show that better effects and results are achieved if we include different actors in different stages of the projects (depending on several factors such as interest, possibility of contribution, final goal etc). In this way sustainability can be ensured, but also replication is easier. Therefore, the Municipality of Novo Sarajevo was informed and invited to support the exemplar. Also, it is important to encourage community engagement in all phases, as they have jurisdiction in some important aspects (permits etc).

Our exemplar in the co-production process in the very early phase included staff of the Agency and the City, with different profiles and experience in order to ensure a wider picture of the exemplar and to have a comprehensive approach (economists, architects, legal advisor etc).



## **STEP 2 - Use the design principles to flesh out the coproduction goals and structure**

During the co-production process, taking into account the exemplar, the project team became aware of inclusivity needs. On one side, the exemplar can be implemented with not so much involvement of various stakeholders (in order to avoid possible problems



or disagreements), but on the other side, this approach will not generate effects of the design and development of the exemplar.

For the project team, the exemplar is a new innovative project in Sarajevo, which can be recognised as valuable, therefore, our main intention is to ensure smooth implementation and its sustainability and upgrade.

The team will work on following principles:

- inclusivity - firstly through stakeholder mapping, by involving different age generations, local citizens;
- openness: by providing various activities available to the stakeholders and beneficiaries and building trust among them;
- legitimacy: by institutional support of the local community.

### **STEP 3 Plan the co-production steps and activities**

Urban garden with sensory park can be implemented in several phases and can include more objectives (not only infrastructure works, but it can also be an exemplar of environmental protection and provide tools for social cohesion, cross generation networking etc). Also, as Sarajevo has a wide number of the gardens around and between buildings, this exemplar can be replicated in other locations. It is important to mention that during Osmos visit to Sarajevo, lack of quality green space in the city is identified as one of the issues, and that urban gardening can be one of ways to improve the local social cohesion.

Certain activities are implemented before designing the exemplar, actually, based on these activities, the Team was able to define the exemplar and its main elements:

Finance and business model - identifying opportunities for financing was done during the workshop and the team identified some of the financing opportunities such as embassies, local funds etc. The main ideas were: collaborating with ambassadors, the Sarajevo team have prepared a proposals for the Czech and Slovak embassy. As a result, the team submitted several applications for funding submitted e.g. Slovak embassy, Czech embassy (but this is challenging because many funds go to covid relief).

Initial meeting with the Municipality and the School - in the initial phase it was important to present the idea and to get approval, then to set the size and shape of the urban garden in order to establish cooperation between key actors, agree on main project activities, timeline and necessary resources in order to explore other funding options. Key actors in this activity are: SERDA, City of Sarajevo, Municipality Novo Sarajevo, Secondary Vocational Education and Training School, Centre for healthy aging. This was done through informal meetings + tour around the School + viewing of the location of the urban garden and collaboration on draft design of the exemplar with main elements. In this phase speaking informally creates a more positive vibe for future collaboration.



Identifying SMEs active in greenery: SME Greens, Public Institution Park etc), with support of local experts (architect, horticulture) in order to involve experts for the implementation of the exemplar. This was done through SME survey to identify businesses, difficult to attract interest in the planning phase, hopefully easier in the delivery phase.

Inter Department collaboration within the partner institutions etc: involving middle management, making sure to first build the reaction and later "ask" for help and informing the high management level for approval.

Urban garden and sensory park can be implemented in several phases depending on several factors: available budget, conditions for implementation (weather, school plan etc) and it will promote wider objective (not only preparatory and infrastructure works, but also it will be exemplar of multiple combined aspects - environmental protection, tool for social cohesion, place for learning and rehabilitation etc).

Activities will be implemented in the following phases:

- Establishment of cooperation between key actors (SERDA, City of Sarajevo, Municipality Novo Sarajevo, Secondary Vocational Education and Training School, Centre for healthy aging) with agreement on the exemplar design and its content<sup>3</sup>, implementation dynamic, main project activities, and necessary resource
- Implementation of the project on selected area with project added values (work with children and elderly people – intergenerational exchange, social inclusion of pupils with disabilities)
- Cooperation with other city municipalities in order to implement similar project in other schools, centres for healthy ageing and other organisations (kindergarten etc)
- Promotion and raising awareness of NBS and its multiple benefits
- Advocate for improvement of institutional framework for NBS implementation on municipal and city level
- Based on the experience of this exemplar, identify and design draft of sustainable model for NBS design and implementation

As supporting partners can be involved: UNDP, University of Sarajevo (relevant faculties), SMEs (to promote its products/services and provide it for the exemplar) and NGOs dealing with environmental protection, youth etc.

Project partners will include Public enterprise Park (which maintains green areas within the city and canton) and/or some private SME which will provide materials and later maintain the garden in the future.

The exemplar would be presented to the relevant ministries (for environment, education, economy) in order to replicate and implement urban gardens in future. City “ideal” governance model for long-term management of the exemplar will be a

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<sup>3</sup> Exemplar shall be adjusted to the pupils with physical/mental disabilities (e.g. included tactile path, outdoor furniture adjusted to the wheelchair etc).



combination of the city and citizen managed urban garden. Local governance would provide a budget for managing and maintaining the urban garden (higher investments and works) and citizens would manage its parts during urban garden activities (cleaning, seeding, watering etc).

#### **STEP 4 Select the co-production tools**

The co-production process included brainstorming, exchange of ideas, and discussion on various approaches and the sense of jointly working on the same idea helped us to develop the idea of the exemplar which is multidimensional and multifunctional.

An important co-production tool that was firstly implemented in Sarajevo is an artistic based approach called the Sarajevo Process.

The Sarajevo Process (Pilot) is a co-creative arts-based engagement approach that has been developed by Connecting Nature partners in Trinity College Dublin and University of East London, in collaboration with cities. The process draws on our memories, places us in nature and captures our embodied experiences to help us tell our stories with/in nature.



*The Workshop “Sarajevo process”, Body mapping*

The Process was implemented in March 2019 in Sarajevo within the small group, including methodological process is composed of the following elements:

- Memory-work
- Immersion in Nature and Embodied Reflection
- Eco-therapy practices
- Body Mapping



The Sarajevo process will be key part of the Sarajevo exemplar in order to enable key stakeholders and in the city to tell the story of nature/NBS in Sarajevo, to engage with citizens to tell their stories and to use these stories to help the co-creation process for NBS and to design NBS to address a particular challenge in the city.

More concrete – the Sarajevo process was tested during public consultations on the exemplar with multiple purposes: to provide inclusiveness of the specific target groups into society (children with disabilities/other marginalised groups), to provide intergenerational exchange (youth and elderly people) and to raise awareness on nature importance for health and well-being.

The public consultations were organised in November 2021 in The School, including pupils and representatives of the Centre for healthy ageing. The Sarajevo team had to take specific approach to each target groups, and to adjust the story to their special needs and levels of understanding. Certain elements of Sarajevo process were very helpful in this task. For example, Memory Work, part of the Sarajevo process, was perfect for elderly people from the Centre for healthy aging. They used their photos and their reflections on their photos when they were connected with nature, to inspire themselves and others for visioning of our Urban Garden of the future. This tool was very successful in our co-production and co-designing process, and it helped the Team to get some great innovative ideas for the design of the Urban Garden. More on: <https://www.youtube.com/watch?v=wJXqTg2-Yew>.





It is important to mention that creation of the exemplar is continuous work and it requires changes and improvement in order to design it and implement it properly. Some of the processes which helped the Sarajevo Team to improve initial exemplar idea are: peer-to-peer sessions with Glasgow and their valuable inputs, OSMOS stakeholder mapping where we defined the most important actors for development of the exemplar in terms providing knowledge, financing, implementation phase, maintenance etc.

### **STEP 5 - Reflect on the co-production process and results**

As a result of the joint work of the Agency and City, the exemplar is developed which satisfy more factors: it is in line with local, city and cantonal plans, it is in line with EU recommendations, contributes to health and well-being, can contribute in solving Sarajevo's issues (pollution, lack of green areas in the urban area), it promotes importance of the green zones in everyday's life of the city habitants and it is also focused on inclusive approach to the children with disabilities/marginalised groups and their integration into society.

The results of the co-production processes are: we were to build relations, we now recognise the main actors of the processes through stakeholder mapping and are able to present usefulness of NBS for the target group e.g. The School will see benefits for its users.

Main opportunities recognised are: many new elements to the co-production method: learning about the method & opportunities for implementation, we have experience

with CP but are still learning and broadening our horizon, linking the project to the SDG's makes it easier to connect it with our strategies (Sarajevo) and EU level strategies. (legitimacy, justification), indicator assessment training: makes our processes measurable, impact visible helps to build relations because we have data to prove that it's working, urban gardens are a great tool for connecting people, providing green spaces. This became really clear during the pandemic.

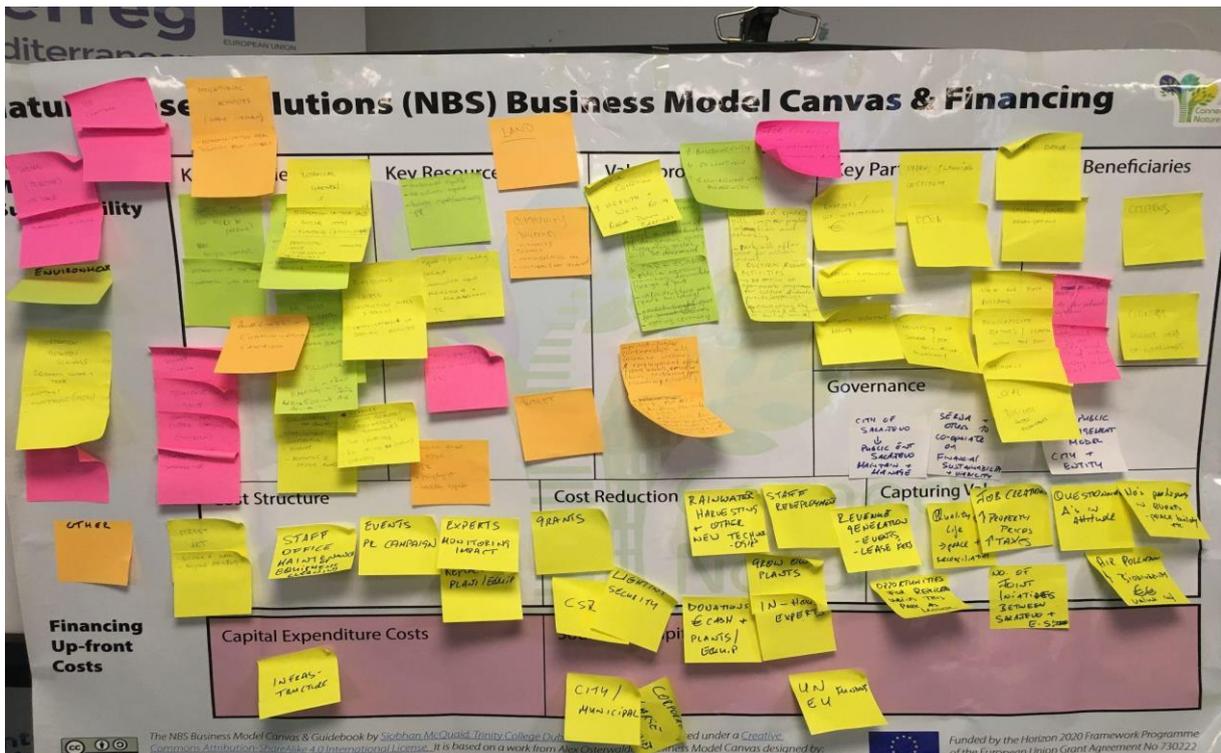
Main barriers that the Sarajevo Team faced are: history of NBS in Sarajevo - not successful so far and lack of knowledge of NBS - opportunities of NBS are not well known.

Impact of COVID on co-production in city: challenging to approach groups (citizens, children, elderly) because of covid. We were able to have online meetings with specific groups e.g. landscape architect, financial aspect: the team is waiting for approval of the proposals submitted for several calls (the goal is to find the funds to implement the exemplar fully), it is also challenging to work with vulnerable groups such as elderly.

Regarding The Sarajevo process, it is planned to be used within the exemplar with various stakeholders groups. Taking into account COVID-19 and restrictions, with the partners, it will be discussed on possible models of implementation of the Process.

### Financing and business models

Business Model Canvas workshop was held in Sarajevo, in February 2020 by Horizon Nua, which helped us to identify main financing opportunities and models for or exemplar. It helped the Sarajevo team to think wider and to apply comprehensive approach to this important section of the exemplar.



Business Model Canvas for Sarajevo exemplar



During our work on Business Model Canvas, special attention was on financing the exemplar, as the Team determined it as one of the possible obstacle (based on experience and current situation on COVID).

Therefore, during and after work on BMC, following financing opportunities were identified: involvement of government in order to provide systematic support (financing, technical preconditions, permits etc),

- by involving SMEs active in environmental protection in order to support them, but also to provide quality implementation and maintenance of the urban garden,
- to invite NGO sector to integrate their experience in designing the urban garden, and most important
- financing through available domestic and international funds.

Based on the knowledge and experience gained during the workshop, we identified environmental, social, economic and other values the exemplar will create.

The exemplar will create following environmental, social, economic values:

*Environmental:* improved accessibility to green spaces, air temperature reduction (for micro location, biodiversity increase, air pollution decrease, raising awareness on multiple benefits of NBS, community accessibility educational component of importance on environmental protection, more green areas in urban area

*Social:* cross generation networking, creating cooperation with various stakeholders, social cohesion, creating cooperation with various stakeholders, inclusion of marginalised groups, Community involvement in NBS implementation

Socio-cultural life in the city is increasingly transferred to open green spaces. Parks, squares, gardens and other categories of greenery contribute to the development of social life and provide the city population with the opportunity to gather in nature, connecting the useful with the beautiful.

*Economic:* new business attracted, public-private partnership promoted

Possibility of establishment of public-private partnership which is undeveloped and not used often. The exemplar will provide partnership between public institutions and private companies and NGO. The exemplar will also contribute to increase of the work for SMEs active in environmental protection and creation and implementation of the green solutions, especially if the exemplar is replicable. Although this kind of the project cannot be fully sustainable without support of the key actors in the process, additional activities can be planned, which can ensure economic value, e.g. use the garden for workshops, exhibitions, artistic projects etc. For example, in the city centre, between three buildings, there is a yard which is transformed into a concept store and café, with a lot of events during the summer, but the place is enriched with trees, flowers and herbal plants etc. Some of the events organised are: promotion of local products, art workshops etc which have elements of community building, support to local producers, artists etc. In terms



of the exemplar, it is important to mention that some of the SMEs started promotion of the planting and have their own products. For example, company Greens has its own plants (herbal and micro greens) and their products (e.g. planting set "Plant yourself") can be used for the Sarajevo exemplar.

*Other:* environmental educational and promotional opportunities, community building, health and well-being, NBS recognised in strategic documents and public budgets



Also, the Sarajevo Team tried to look and determine some negative factors related to our exemplar.

There are no determined negatives associated with urban gardens, but there are potential risks, such as: lack of systematic support of the local communities, not enough interest of the stakeholders, and proper sustainable maintenance of the green garden.

Urban garden and sensory park can be implemented in several phases depending on several factors: available budget, conditions for implementation (weather, school plan etc) and it will promote wider objective (not only preparatory and infrastructure works, but also it will be exemplar of multiple combined aspects - environmental protection, tool for social cohesion, place for learning and rehabilitation etc).

Activities will be implemented in the following phases:

- Establishment of cooperation between key actors (SERDA, City of Sarajevo, Municipality Novo Sarajevo, Secondary Vocational Education and Training School, Centre for healthy ageing ) with agreement on the exemplar design and its content, implementation dynamic, main project activities, and necessary resources
- Implementation of the project on selected area with project added values (work with children and elderly people – intergenerational exchange, social inclusion of pupils with disabilities)
- Cooperation with other city municipalities in order to implement similar project in other schools, centres for healthy ageing and other organisations (kindergarten etc)
- Promotion and raising awareness of NBS and its multiple benefits
- Advocate for improvement of institutional framework for NBS implementation on municipal and city level
- Based on the experience of this exemplar, identify and design draft of sustainable model for NBS design and implementation

Due to limited budgeting for this purpose, The Sarajevo team decided to design exemplar in three phases which can be completed independently, but after implementation of all three phases, exemplar would have additional elements providing added-value and more content for users.

Three phases would roughly include:



- *Adjustment of the location (levelling of the ground, entrance adjustment, infrastructure works and equipment) with multiple purposes, activity plan will be established*
- *Exemplar additional elements (sensory elements and equipment for motoric skills etc) to ensure assistive technology*
- *Exemplar additional content (climbing wall, sensory room etc) to provide sensory integration*

Major ongoing costs are determined as follows: design of the urban garden, procurement of equipment, plants and seeds, preparation of the ground, expert for planting, promotion, costs of organisation various activities e.g., "urban gardening day", artistic based workshops (memory work, immersion in nature etc) or similar. Some of the costs in the initial phase can be reduced by involving relevant actors (public institution Park and SME Greens for donation of the seeds and plants), and maintenance can be done by staff of the School.

Costs can be reduced by involving project partners staff (mainly the School in managing and maintaining the exemplar) and various NGOs who are familiar with volunteering of its members and using funds available for BiH.

Possible measurable indicators:

- Economic: number of SMEs involved, number of events for SME promotion,
- Environmental: accessibility to green areas, decrease of air pollution, more biodiversity and green spaces;
- Social: evaluation/questionnaire for users (quality of content, impact on quality of life), number of participants events etc.

For the purposes of establishment of indicators, within WP 1, a set of indicators is developed and Impact assessment plan is created for the exemplar.

SERDA and the City made first steps in possible financing of the exemplar and applied for co-funding to the embassy of Czech Republic and Slovak Republic in BiH, evaluation results are still expected. Also, as opportunity for co-financing, UNDP is recognised and several meetings with their representatives were held. Cooperation is established for the activity of public consultation on the exemplar design, which were held in December 2021.

Also, SERDA and the City of Sarajevo started a series of workshops with OSMOS in order to identify key stakeholders - their identification and mapping. Within these workshops, capital is also identified which will help us to target stakeholders which can contribute to the financing part of the exemplar.

During the exemplar definition and planning of its implementation, main learning outcomes on financing, business and governance models have emerged:

1. Engagement of various stakeholders for design and implementation of the exemplar is comprehensive approach which will ensure that all elements of the exemplar will be included



2. Involvement of financing actors for exemplar implementation and sustainability through budget planning for maintain the exemplar and replication in other territories
3. Providing initial funds for the exemplar is first step which will ease further funding (pooling resources)
4. Creation of sustainable and replicable model can be one of the priorities of the local communities
5. Management plan for the exemplar will define mid- and long-term main steps in managing and maintaining the exemplar
6. Raising awareness on importance of NBS will have impact on NBE development

## **Governance**

### **STEP 1 - Make the case: aligning nature-based solutions with the wider goals of a city or a community**

During OSMOS visit to Sarajevo, following governance and decision-making process is determined: Planning is effective at a policy level however has lacked ambition and capacity at the urban design, implementation and regulation level. -Many layers of bureaucracy. With Sarajevo being the focus of investment, tourism, business and identity, it lays to claim by all levels of government. Due to the layers of government, there is a huge overlap of competences. This shows a serious trust deficit that causes each level of government to second guess the intentions of the others. The result is a diffusion of competencies and poor investment in qualified and competent administrative staff to handle complex projects. Politicians have a vested interest in divisive rhetoric, which harks back to the tension fabricated over three decades ago. However in practice religion plays little into the administrative level where there is even a noticeable balance between male and female staff. The deputy ministry contains stable technical staff that are not bound to politics and help deliver long-term projects. Policy and planning is irrelevant if developers are not punished for illegal development. This is in part due to corruption of local officials (who are paid little) and corruption of decision makers. The developers are said to be aggressive and reprehensible which has resulted in physical harm to building inspectors.

This issue is important to mention in order to take them into account during the development of the exemplar and to avoid some obstacles during its implementation.

As noted earlier, City and the Agency developed the exemplar based on real needs of the city, but also in line with the strategic goals of all levels of the government, as the exemplar is one of the steps in solving main issues and challenges of the BH cities (Sarajevo is not the only city fighting with the pollution - bigger cities as Zenica, Tuzla, Banjaluka, Maglaj etc have the same issue).

It is important to mention that the City of Sarajevo, although sometimes do not have authority for certain things, its management is determined to work and implement strategic projects which can enhance the city such as Smart City Initiative, Future cities of SEE, Energy efficiency at Primary school Saburina, Trebević Cable Car etc.



## STEP 2 - Current status of the location

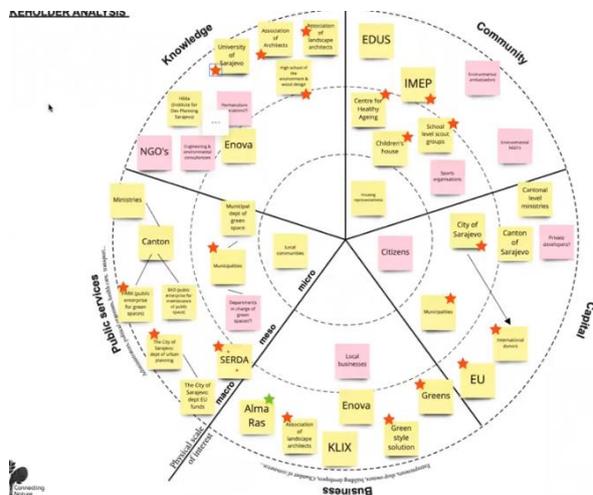
Location for the exemplar implementation is in the city urban area, Municipality Novo Sarajevo, close to the city centre and will be implemented based on agreement with the School. It is surrounded with residential buildings, on the one side there is a street (24h open for traffic), on the other side is the promenade next to the river Miljacka. In this environment, the exemplar will be located, and it perfectly fits to enrich this area and to provide more activities for inhabitants.

The place is managed by Secondary Vocational Education and Training School, which has a yard for their purposes. Management of the School maintains this area (cutting, cleaning etc).

## STEP 3 - Who are the required partners

The work in the identification of the relevant actors/stakeholders started in 2018 by Osmos visit to Sarajevo. Preparation activity included identification of the stakeholders: public services, business, capital, knowledge and community, where the Sarajevo team identified the most important institutions/organisations. The Osmos conducted exploratory interviews and created the report.

The aim of the exploratory stage of interviews was to recognise stakeholders who can be part of a longer stakeholder engagement process - to become more active partners and to support project activities.



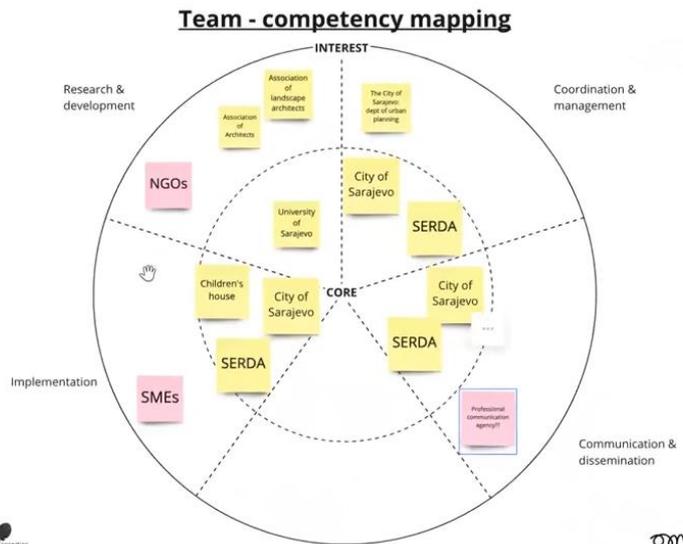
Taking into account complicated administration/jurisdictions and lack of knowledge on NBS in Bosnia and Herzegovina, the Sarajevo team asked for support of Osmos in more depth identification of the stakeholders, especially in terms of financing and who to use existing resources and how to engage them in the all phases of the exemplar.

Osmos supported project partners by organising the workshop on stakeholder mapping and engagement and open innovation team. The workshop was organised in 2020 and helped the Sarajevo team to check already identified stakeholders and to see opportunities for cooperation for more institutions/organisations on micro, meso and macro level.



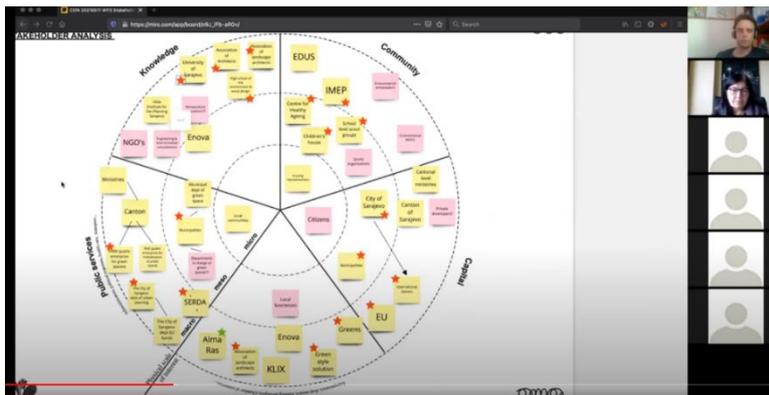
Penta helix stakeholder analysis included recognition of the most important actors and benefits they can provide to the exemplar, but also their level of interest in the project activities (collaborative/opposed, active/passive).

The Team – competency mapping included identification of the core team including research and development, coordination and management, implementation and communication and dissemination and their level of interest.



Also, Osmos completed the topic on end users' identification, creation of their profiles and persona as one of the tools which help to be more specific and targeted in order to find the most appropriate way to reach them.

The gained knowledge Sarajevo team used to motivate additional stakeholders to contribute to the project – e.g. the team had meeting with Faculty of architecture in order to provide expert's opinion and suggestions of the exemplar, the team also confirmed earlier conclusion of necessity to have institutional support and to include local government in the exemplar, the team also identified most important SMEs active in environmental protection who can further develop if they also gain knowledge and practices on NBS.



Workshop on Stakeholder mapping

The mentioned workshops and brainstorming provided the Sarajevo team clear picture on necessary elements of the exemplar and what to take into consideration, but also it affected to the exemplar in the most positive way - to introduce some innovative aspects within the exemplar in order to include more

target groups (e.g. initial meeting with the Municipality led the team to the location of the exemplar - school and discussion with management of the school opened cooperation with their experts for the inclusion of the children with disabilities and how to integrate them into society).

Therefore, the Sarajevo team after completing the workshop with Osmos got main actors identified, the structure of the open innovation team, main target groups, end users and got new tools for the stakeholder engagement.



The workshop was excellent way to gain new knowledge and practices which can be used in all phases of the project and stakeholder engagement provided systematic identification, analysis, planning and implementation of actions designed to influence stakeholders and to include them in more active and long-term way.

Based on gained knowledge and advices from Osmos, but also other partners (e.g. City of Glasgow) The Sarajevo Team identified Key partners in the first phase: SERDA, City of Sarajevo, Municipality Novo Sarajevo, Secondary Vocational Education and Training School and Centre for healthy aging as main operational and implementing partners. The exemplar can be implemented within these institutions. Also, as the exemplar includes urban garden, it is necessary to include public or private enterprise for providing materials for the exemplar. Project partners will include KJKP Park (which maintain green areas within the City and Canton) and/or some private SME which will provide materials and to promote its products/services and provide it for the exemplar and other local companies who can contribute to the exemplar (e.g. [www.farmer.ba](http://www.farmer.ba), online shop of domestic products, where the exemplar can be promoted and their users can be invited to join). Currently, The Sarajevo Team works on operationalisation of cooperation with key actors.

As supporting partners can be involved: UNDP, University of Sarajevo (relevant faculties), and NGOs dealing with environmental protection, youth etc.

Later the exemplar would be presented to the relevant ministries (for environment, education, economy) in order to replicate and implement urban gardens in future. City “ideal” governance model for long-term management of the exemplar will be combination of the city and citizen managed urban garden. Local governance would provide budget for managing and maintaining the urban garden (higher investments and works) and citizens would manage its parts during urban garden activities (cleaning, seeding, watering etc).

In later phases, relevant ministries on other state levels will be included, as well as various potential donors. Taking into account planned promotion, embassies and other international organisations will be target groups for project involvement.

Currently, it is planned to design the exemplar through phases and additional stakeholders will be attracted in creating a bigger picture of the exemplar and its replication to other areas.

#### **STEP 4 - How will you work together?**

SERDA and the City have long term successful cooperation and the City provides support within the project in order to achieve greater results. For both institutions it is important to strengthen their capacities and to gain new knowledge, therefore project staff is determined to fully commit to the project and the exemplar. Within other projects, both partners already established cooperation within various institutions and organisations. In order to create something sustainable and valuable, different partners will be included (depending on the phase -Agency and the City will consider tides to create internal plan for their engagement - who, when and what for to engage). For this, it is not only important to ensure the financial aspect of the



project, but also it is our goal to create a model for the exemplar within which can be adjustable (depending on real needs of each area) and replicable, but also the goal is to create something which can be upscaled.

### **STEP 5 What will you need to succeed?**

In order to be successful, main preconditions shall be fulfilled: joint interest of main actors and real need for the activities, which are achieved. Project partners (The Sarajevo Team) have the knowledge and skills to monitor and implement activities, as well as to act on risks and possible problems in a timely manner.

For these reasons, the project partners have formed a team that has prior knowledge and is dedicated to project implementation, and will include other relevant stakeholders: architects, horticultural engineers, urban departments, and will introduce a segment of education.

Also, partners who can contribute to economic value will be involved, and we expect the exemplar will support the development of the economy and small businesses.

What is especially specific for Sarajevo exemplar is the implementation of the Sarajevo process which is an artistic based approach and connection with nature. This will be especially important and useful, and we expect it to have effects in cross generational exchange. The Sarajevo process can be used within the exemplar, but also among project partners in order to strengthen connections and to share experience.

### **Impact assessment**

#### **STEP 1 - Engage in structured reflection on NBS impacts, pathways and trade-offs**

When it comes to the strategic goals of the City of Sarajevo and Canton Sarajevo, it is important to mention that the last Development strategies were until 2020, therefore, the new ones are in the process of development (for both levels).

The City and the Canton, as well as other levels of government in BiH, are aware of modern times and the need for development of the city and urban areas, but on the other hand, development in all segments can lead to negative impacts on the lives of citizens.

In this regard, the first strategic goal in **Development Strategy of the City of Sarajevo 2016-2020** was defined, as well as the need for development of green areas in the city, as one of the long-standing problems, but also the protection of existing ones.

Strategic goals of the mentioned strategy are:

1.	Protection, development and promotion of historical features and cultural contents of the city in the function of building Sarajevo as a world tourist destination
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2.	Revitalization of Sarajevo as the World Winter Olympic Centre
3.	Reform of the constitutional - legal position and administrative - territorial organization of the City
4.	Support to the education system in the areas of non-formal education, lifelong learning, education of persons with disabilities, vocational guidance and specialized educational programs
5.	Creating a favourable business environment
6.	The balance between urban development and environmental protection
7.	City administration reform

Although the strategy is due date, we believe strategic goals regarding creation a favourable business environment and the balance between urban development and environmental protection will be focus of the new strategy. This is important because these goals are directly related to the exemplar. Also, the Sarajevo Team is indirectly involved in creation of the new strategy, therefore, NBS will be proposed as one of the priorities within city's strategic goals.

At the cantonal level, the quality of people's lives in the context of the environment is especially emphasized (Development Strategy of Canton Sarajevo 2016-2020).

It is also important to mention **Strategy<sup>4</sup> of the Municipality of Novo Sarajevo** (integrated version until 2023), which foresees following strategic goals:

Develop the economy with a focus on the creative industry and the developed service sector
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Improve the quality of life and safety of citizens
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<sup>4</sup> Strategy of Municipality of Novo Sarajevo 2021-2027 is in draft version



Improve environmental protection based on the model of developed European cities

The Sarajevo team proposed NBS and green infrastructure as one of the priorities of the new Strategy of Municipality of Novo Sarajevo, the proposal is adopted and integrated in the Strategy draft.

**Green Action Plan of Sarajevo Canton 2021-2025** foresees following goals:

- Improve air quality in line with EU standards
- Improve water efficiency with sustainable water services for all users Improve and maintain the condition of surface and groundwater in Canton Sarajevo in accordance
- with water management plans of the Federation of BiH
- Protect and improve soil quality in the entire Sarajevo Canton
- Expand and improve the provision of high quality and affordable green areas
- Reduce greenhouse gas emissions
- Maintain and improve natural environmental resources by protecting biological diversity throughout the Sarajevo Canton and Reducing the impact of human activities on biological diversity

It is important to mention that Sarajevo team with the support of the project partner Helix did comparison of the strategic goals of the above-mentioned documents with UN SDG.

Providing systematic support to NBS shall be one of the main tasks of the governments of all levels (depending on project scale) and relevant institutions (ministers, institutes for development etc), with inputs from relevant stakeholders (NGOs, education organisations etc) to create useful measures which provide long-term sustainable growth. This approach can be led by the government (but there is a factor of bureaucracy) in all phases involving stakeholders when and where appropriate. Important task in the development of NBS is their maintaining and their impact which must be measured. Therefore, when developing strategic goals and priorities in this segment, the baseline shall be well known and a set of indicators developed, following a methodological framework for this kind of document

## **STEP 2 - Choose appropriate indicators**

Project partners participate in the series of webinars dedicated to the impact assessment and determining appropriate indicators for the exemplar. This process was



lead by project partner UDC and the Sarajevo Team participated in 5 webinars, organised in Building blocks.

Building Block 1 included linking City's strategic goals with the UN development Goals (SDGs) and NBS description. Important part of this Building block was development of the Sarajevo's Theory of change – defining NBS objectives, NBS actions needed, expected results and determining assumptions, synergies and trade-offs.

Building Block 2 was focused on choosing appropriate indicators (primary indicators, environmental, economic, social etc.).

The Sarajevo team defined some of the indicators related to the exemplar.

Determined measurable indicators related to the Sarajevo NBS are:

- Economic: number of SMEs involved, number of events for SME promotion,
- Environmental: accessibility to green areas, decrease of air pollution, public green space distribution, species diversity, community accessibility, biodiversity increase, air quality change;
- Social: to develop general wellbeing and happiness, mental health, solidarity between neighbours, tolerance and respect, environmental education opportunities;
- Participatory and governance planning: diversity of the stakeholders involved, transparency in co-production, community involvement in NBS implementation.

Within the Building Block 3 The Sarajevo Team was focused on development of data plan for Impact evaluation, where for each chosen indicator baseline data, source, granularity and periodicity was determined.

Building Block 4 Implementing the Data plan covered new data collection of the exemplar scale from the methods proposed in the CN Indicator Reviews and the Building Block 5 Integrating evidence into policy process which included type of evidence for the chosen indicators (documentary report, visual chart) and to whom the city will communicate the impact of the NBS (scientific partners, economic sector, higher political levels, media or citizens).

For the purposes of establishment of indicators, within WP 1, set of indicators is developed and Impact assessment plan is created for the exemplar.

The Agency and the City of Sarajevo defined the indicators that will be monitored and measured, in cooperation with project partners and with the support of the University of Slovenia.

## **Nature-based enterprises**

### **STEP 1 - Awareness and strategic alignment**

The economic development of the City but also the entire country is one of constant challenges that Bosnia and Herzegovina faces. The reasons are multiple- complete



devastation of the city in the war, weak allocation for the real sector (SMEs), lack of systematic support from the state for SMEs and poor monitoring of investments.

Traditionally, the wood processing and metal processing sector, as well as the tourism sector, are the most developed in the whole BiH; while in recent years the IT sector has also experienced development. Support through grants is mostly aimed at companies from these industries, especially at companies who export their products/services on other markets (regional and international).

Small businesses also strengthen the economy of a country, and countries with more developed economies rely on small (family) businesses, so support is directed to start-ups from the initial phase to the maturity phase. In addition, small businesses, in addition to financial, need other types of support - strengthening human capacity, marketing, networking etc. There are private initiatives that provide these types of

support for SMEs - the creation of common platforms, the organization of promotional events, fairs, etc.



*Activities organised within the yard in the city centre*

For example, in the city centre, between three buildings, there is a yard which is transformed into a concept store and café, with a lot of events during the summer, but the place is enriched with trees, flowers and herbal plants etc. Some of the events organised are: promotion of local products, art workshops etc which have elements of community building, support to local

producers, artists etc. In terms of the exemplar, it is important to mention that some of the SMEs started promotion of the planting and have their own products. For example, company Greens has its own plants (herbal and micro greens) and their products (e.g. planting set "Plant yourself") can be used for the Sarajevo exemplar.

When it comes to the strategic goals of the City, it is important to mention that the last Development strategy of the City is until 2020, therefore, the new one is in the process of development. Higher level of the city is cantonal level and there is a similar situation. Current Development Strategy of Canton Sarajevo for the period 2021-2027 is in draft version, but data presented here are used from draft version, which is expected to be adopted until this year.

Vision of the development of the Canton Sarajevo: "Sarajevo Canton is a European, dynamic and creative region, prosperous for the citizens of all generation, comfortable living and lucrative business", and strategic focuses are defined in line with the vision.

Following strategic focuses are defined:

1. Functioning of the employment system and competitiveness of the economy



2. Availability, quality and sustainability of public services (health, education, social policy, culture and sport)
3. Environment and public infrastructure for the purposes of the sustainable development and raising quality people's lives
4. Efficiency and accountability within the public sector

and it will be implemented through following strategic goals:

1. Improve the competitiveness of the economy and increase employment
2. Create conditions for inclusive socio-economic growth and decrease poverty and improve accessibility and reliability of all public services (health, education, social politics, culture and sports)
3. Responsible environmental management, space, natural and infrastructure resources
4. Improve efficiency and accountability public sector

For each strategic goal, measures are identified with indicators expected (baseline and expected value). It is important to note that the strategic goals of Canton are in line with strategic goals of the Federation of BiH and in line with sustainable development goals in BiH.

Strategic goals directly and indirectly affect development of the SMEs as they create conditions for economic growth. This is important for all sectors, but especially for NBEs since NBS are underdeveloped in BiH and still do not have importance as they should have.

It is important to mention that SERDA and City of Sarajevo started activities to involve NBS into local and city strategic documents.

Namely, SERDA, as a member of the team for creation of the Strategy of Municipality of Novo Sarajevo, proposed two projects:

- ✓ within Strategic goal: To improve quality of life and safety of citizens - project "Development and implementation of urban gardens that encourage inclusion, community engagement, and social and economic activities at the local level" and
- ✓ within Strategic goal: To improve infrastructure and environmental protection following the example of developed European cities - project "Development and implementation of green infrastructure in the Municipality of Novo Sarajevo".

Therefore, planned NBS will contribute to achieving of the strategic goals, especially taking into account that this model will be replicated to other areas. Activities related to the NBS will be focused to SMEs, citizens, NGOs and public sector in order to involve them in NBS planning and implementation. As already mentioned, there is lack of SMEs directly active in NBS - usually they are involved in some green solution, therefore, after their identification, relevant SMEs are involved to contribute in development of the NBS, but also to recognise activities useful for their development (e.g. raising awareness on NBEs and economic benefits etc).



## **STEP 2 - Building alliances**

As already mentioned, companies from non-traditional sectors, dealing in environment, green solutions or similar, are not represented in BiH in large numbers, and in their work they have various obstacles. It is especially difficult for such companies to position themselves on the market and reach their consumers. However, the latest trends are focused on environmental protection and ecology in all segments (lifestyle, nutrition, physical activity etc) and citizens' awareness of these segments is developed (but insufficient), but NBEs are increasingly represented in the market. This refers to NBEs that deal with horticulture, green areas, etc. These NBEs are active in developing and providing innovative solutions (e.g. for city challenges such as lack of green infrastructure), but there is still no systematic support to these kind of activities and no dedicated budget in public budgets. So, usually these NBEs are looking for opportunities by themselves from available funds (UNDP, EU, local etc).

NBEs that deal with other forms of environmental protection in the last 10 years have been on the market and deal with energy efficiency, pollution reduction, etc.

Companies that deal directly or indirectly with nature-based solutions have experts and staff who can contribute to the development and implementation of examples, especially bearing in mind that experts in companies are also professors who deal with scientific research.

In this regard, more attention to NBS and therefore to NBEs is necessary, as it has multiple benefits: economic development, environmental protection, social cohesion, health benefits etc and it shall be recognised by government to start investing and to focus on its promotion.

Taking into account the fact that NBS are not strategically recognised in BiH, there is no funding for these purposes. At lower levels of the state (municipal, city, cantonal etc) there is certain progress of implementation of NBS, but until now mostly unsuccessful due to few reasons (unadjusted NBS for the environment, lack of practical knowledge on NBS functioning and no maintenance secured). There is a causal relationship between development NBS and NBE – therefore lack of knowledge on NBS (purpose, benefits etc) is the main reason why SMEs in this sector are not recognised as one of the key factors for their development.

Urgent need for NBS in Sarajevo (and whole BiH) can be solved by investing and supporting NBEs, especially taking into account Sarajevo problems (air pollution, fog and smog, air temperatures, lack of multifunctional green spaces etc). This can be part of strategic documents and action plans for support of local economy and SMEs, but also part of the documents related to the city development. It can be done by recognising importance of NBS for the city and then creation of measures for the NBEs (raising knowledge, good practices, cooperation with EU SMEs etc).

In this regard, more attention to NBS and therefore to NBEs is necessary, as it has multiple benefits: economic development, environmental protection, social cohesion, health benefits etc. Also, more attention shall be focused on raising knowledge how to support NBEs, especially in public institutions and policy makers (all levels).



### **STEP 3 Planning, implementing and monitoring a customised support programme**

The NBE strategy is still in the development phase, and during the NBE survey, SERDA and the City identified the most important NBEs and invited them to participate in the project, and they registered on the NBE platform, which provides new opportunities for cooperation. It is important to point out that local SMEs will establish cooperation with companies from other countries, and thus transfer good practices and implement new solutions.

During the design of the exemplar (and we expect the same during the implementation), the city and the agency will rely on the experiences of partners, good practices and transfer it to BiH, in order for the example to be successful and sustainable.

The agency and the city have already had initial conversations and sessions with some of the partners regarding the implementation of the best exemplar solutions (Glasgow, A Coruna etc). Also, in order to share knowledge, we attended a webinar about an innovative program by the South Dublin County Council to deliver natural play spaces in the county, including the issues to overcome in delivering them and the benefits to children and communities. This is especially important, since our example is intended for all generations.

The exemplar can be defined as NBS for public and urban spaces (sub-sector: Green areas, parks and gardens) and main challenges faced are: lack of sufficient knowledge on NBS and financing of environmental projects (lack of funding).

Based on experience gained within the project, following goals of NBE programme are defined:

- Strengthening capacities of the NBE
- Designing sustainable model for design and implementation of the urban gardens.

This goal can be achieved through following elements/activities:

- Co-production process and collaboration with public and private sector, with the support of international organisations, embassies etc. in raising awareness of necessity of the NBS (and its benefits)
- Developing concrete measures for support to NBS (and NBEs)
- Promoting public-private partnership
- Creating and organising educations and trainings on 1. Environmental protection 2. Fundraising (EU funding, local funds etc).

### **Planning a programme to support nature-based enterprises**

Through the NBE strategy, the city and the agency will define the inclusion of NBEs, not only in the implementation phase, but also in the example maintenance phase. Also, since the goal, through this example, is to create a basis, ie. model for the establishment of urban gardens, the partners consider ways to include projects of this



type in the planning documents and the provision of funds through the budgets of municipalities, city and canton.

Since there is no strategic and systematic support to the NBEs and their active development, it is important to start with strengthening capacities of the NBE, dedicating grants for their solutions and to include them in designing sustainable model for design and implementation of the urban gardens.

Therefore, some conclusions raised regarding NBEs:

1. Development of NBS will lead to development of NBE
2. Local governments shall introduce NBS as strategic goal and support SMEs active in design and development of NBEs
3. Sharing good EU practises and networking can build capacities of the NBEs

### NBE Strategy Summary Table

NBS	NBS Phase	Type of NBE Involved	Challenge	Goal of NBE Programme	How will this be achieved?	Partner	What does success look like and how will you measure it?
Urban Gardens	ALL	NBS for public and urban spaces (sub-sector: Green areas, parks and gardens)	Lack of sufficient knowledge on NBS  Financing of environmental projects (lack of funding)	Strengthening capacities of the NBE  Designing sustainable model for design and implementation of the urban gardens	Co-production process and collaboration with public and private sector, with the support of international organisations embassies etc. in raising awareness of necessity of the NBS (and its benefits)  Developing concrete measures for support to NBS (and NBEs)  Promoting public-private partnership  Creating and organising	SERDA City of Sarajevo Municipality of Novo Sarajevo Government of Canton Sarajevo with its relevant institutions (Ministries for environmental protection, for economy etc, institute for development planning)  And support of specific actors: Schools, Centre for Healthy Ageing UNDP	No of SMEs with NBE elements  Value of the support for NBS and NBEs  Institutional recognition of NBS and NBE (in strategic documents, plans)  No of NBS developed  No of NBS implemented (including additional indicators: No of participants  No of activities



					educations and trainings on 1. Environmental protection 2. Fundraising (EU funding, local funds etc)	Feedback)
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## Reflexive monitoring

### STEP 1 - Rethink what learning process you need to achieve the goals of the nature-based solution

#### Goals

Through learning process (which is continuous) SERDA and City of Sarajevo defined main challenges of the city (air pollution, traffic, heating etc) Also, we identified of state of the NBS in Sarajevo (successful and unsuccessful), and our exemplar which is urban garden and the sensory park, its main purpose, technical details (size, location, surrounding etc.), our ambition, and we determined main issues/challenges we are facing.

#### Learning questions

Within the reflexive monitoring process, key learning questions were identified (who to involve, how to finance it etc), some of them are regarding issue on funding of the exemplar, process of involvement of target groups and stakeholders, technical details on exemplar and organisational and maintenance details regarding the urban garden.

Also, as part of the process, we provided a Dynamic learning agenda where our team defined main critical turning points, learning questions, CN framework element and follow up actions for each defined turning point. Our DLA defined in more detail these issues and transferred them into learning questions which were part of discussion with peer to peer learning sessions with Glasgow.

#### Learning environment

Our main take-away of using of the reflexive monitoring not only for our exemplar, but for our daily work, that for our exemplar would be useful to do stakeholder mapping and make an engagement plan. We also defined the workshop plan; the communication plan; visibility for the exemplar, as documents we need.

Our learning environment is created to follow daily tasks and to be easily fitted in our schedule. This approach provides us continuous updates on project progress. For some activities the project team has to follow internal procedure and project rules, so it is



work which is done within more daily activities. This environment provides us informal discussions (daily, weekly) by phone or email. Project team has long term cooperation (SERDA and City of Sarajevo) which provides better and smooth communication. More formal approach is required with other departments and institutions, but also with high levels in the institutions.

## **STEP 2 - Define the roles within the project team**

### **Roles within the Reflexive monitoring team**

Our Project team, as core team, has been established on projects beginning within the Agency and the City in order to establish a basis for successful implementation of the project. The project team consists of three managers who lead the process and follow all procedures, communication etc. Within the process, colleagues with specific knowledge are involved, depending on the phase (architects, urban planning department etc). The main principle of the work is a joint and flexible approach in defining activities and steps for their implementation. The core project team is also monitoring team, ensuring smooth implementation of the activities and reflexive monitoring system in every phase.

### **Stakeholder involvement**

During Osmos workshop in February 2020, we discussed about Open Innovation team and its structure. This helped the project team to think about additional team members for the purposes of the design and implementation of the exemplar (e.g. we included architect from SERDA).

The conclusion was that partnerships will be essential to ensure that this pilot project can be launched, suitably funded and will engage the extensive range of local actors that are required or impacted by this kind of project. As there are many actors that could be involved in the long term, it is important to select a small but agile team for the pilot project. Involving too many partners may lead to complexity and confusion, while not involving the right partners from the beginning may also result in conflict.

We agreed to select a small group of those actors directly involved (those doing work, that own the land or are financing the project) while having a larger communications network to ensure that the development process can engage new actors in the long term.

In the forthcoming period, we will work on defining key stakeholders in Sarajevo and involving them concretely in the project.

### **Support on working with Reflexive Monitoring**

Also, very helpful in reflexive monitoring process is support from project partners DRIFT and Glasgow, especially in DLA and its experience, but also communication with University of Slovenia, A Coruna City regarding sharing knowledge and processes regarding exemplar funding and indicators related to the exemplar. Other participants in the RM process are also other departments in City of Sarajevo, SERDA, University of Sarajevo, NGOs as possible partners regarding the exemplar.



In our work and using RM tools we use available project documents, attend webinars and use experience with other projects but also we have experience in using DLA within other projects.

### **STEP 3 - Recording important events and analysing critical turning points**

Dynamic learning Agenda was prepared by the core project team, led by project manager from City of Sarajevo, based on our work and our exemplar definition.

process of creating DLA was interactive, followed by short discussions, sometimes by phone/email in an informal way, with the main aim to update each Sarajevo team member on a daily basis. Our approach is that one of the team members create a rough draft after the informal meeting, then we have another session to discuss and to complete the DLA.

<b>Critical turning point/Event</b>	<b>Learning question</b>	<b>Connecting Nature Framework element</b>	<b>Follow-up action</b>
Choosing the place for Urban Garden and sensory park	What place would suit the best targeted goals of the project?	Technical solution	<p>After assessment, contacting the School, owner of suitable green space (Playground for children</p> <p>Playground for dogs</p> <p>Busy street</p> <p>Promenade next to the river</p> <p>Centre for healthy ageing</p> <p>Elementary school near by for children with disabilities</p>
Designing the Urban Garden and sensory park	<ul style="list-style-type: none"> <li>- What kind of expertise do we need?</li> <li>- How do we approach the designing process?</li> </ul>	Technical solution	Choosing the right experts and stakeholders who will participate in the process of the Urban Garden and sensory park designing



	<ul style="list-style-type: none"> <li>- Who are the stakeholders?</li> </ul>		
Finding funds to get Urban Garden and sensory park operational	<ul style="list-style-type: none"> <li>- How do we get initial funds to get started?</li> <li>- How do we create sustainable model?</li> </ul>	Finance and business models	Apply for relevant funds and develop self-sustainable model for the work of the Urban Garden and sensory park
Involving target groups (children, elderly, citizens)	<ul style="list-style-type: none"> <li>- How do we approach target groups?</li> </ul>	Co-production	Approaching relevant institutions which gather our target groups (schools, Centers for healthy aging...)
Designing the Workshop Plan	<ul style="list-style-type: none"> <li>- Who should participate in the design of the workshop plan?</li> <li>- Who should implement the Workshop plan?</li> <li>- How do we get funds for Workshops?</li> </ul>	Finance & business models, Entrepreneurship	Define who will design and who implement the Workshop plan, and who will it be funded
Opening the Urban Garden and sensory park	<ul style="list-style-type: none"> <li>- Who will be the official owner of the garden?</li> <li>- Who will manage the Urban Garden and sensory park?</li> <li>- How will it be funded?</li> </ul>	Technical solutions, Governance, Finance & business models, Entrepreneurship	Define the ownership and management of the Urban Garden and necessary funds



<p>Consistent Urban Garden Mondays (workshops)</p>	<ul style="list-style-type: none"> <li>- Who will be managing the workshop from inviting the participant all the way to assessment?</li> </ul>	<p>Reflexive monitoring, Impact assessment</p>	<p>Define workshop management who will run the whole process</p>
<p>Promoting Urban Garden and sensory park as role model for the use of green spaces</p>	<ul style="list-style-type: none"> <li>- Who to include in designing of visibility plan?</li> <li>- What social networks to use?</li> <li>- Who will be in charge of promotional activities?</li> </ul>	<p>Co- production</p>	<p>Define visibility plan and who will be in charge for its implementation</p>

### **Peer-to -Peer learning sessions feedback on DLA**

We presented our DLA to our FRC Glasgow in first peer-to-peer meeting. We created DLA and short presentation of the Sarajevo exemplar. The DLA was delivered to the Glasgow team before the meeting, it served us as a guide of the meeting and we heard about their experiences and we got some good advices. The second session was also productive, they provided us good directions and practical advices we are following now.

For example, we discussed with Glasgow about funding and involving with stakeholders. They advised us to include the university, e.g. university of Architecture, natural science faculty for indicators, look for synergies / mutual cooperation. FA follow-up action we took was to contact NGO consisting of professors from University of Architecture, who would contribute to the design.

### **STEP 4 - Use learning sessions to identify learning outcomes**

#### **Opportunities and barriers**

As we mentioned earlier, we used reflexive monitoring processes in our daily work and it is a great tool for developing activities and to properly have phases of planning, co-production and finally implementation.

Some challenges associated with the process can be organisational - for example sometimes it is hard to organise other colleagues and partners involved to communicate with them - we all have other obligations aside the project, sometimes hard to find the time to suit everybody.

As added value, in our daily work RM helps us to see different perspectives of the project - something like brainstorming, helps to bring in different perspectives.



Widens our views and perspectives, which helps to minimise additional problems and risks. From the beginning we can better anticipate problems and react on them.

### **Lessons learned from Peer-to Peer learning sessions**

As one of the examples of the learning process within the RM is applied advice shared by Glasgow: "Is it worth noting that when going through the process of identifying partners, record what you're doing, and the lessons learned along the way, so you have a record of what happened. It is also good to set some key objectives to measure against. Sometimes we are guilty of not thinking or planning for this sort of thing at the beginning of a project, we have had to do a lot of work on this" (RM Session no. 2). Based on this advice we think recording approaches can help us in the future - the idea is to make a replicable model, a solid basis (our experience) so the next garden can be improved.

Within the sessions, Glasgow shared their experiences with the process, which was quite academic, and the terms are not straightforward, therefore, they simplified the process and made it easier and more friendly (MR session no. 1). We were advised not to be afraid to adapt it and to apply it to the local level.

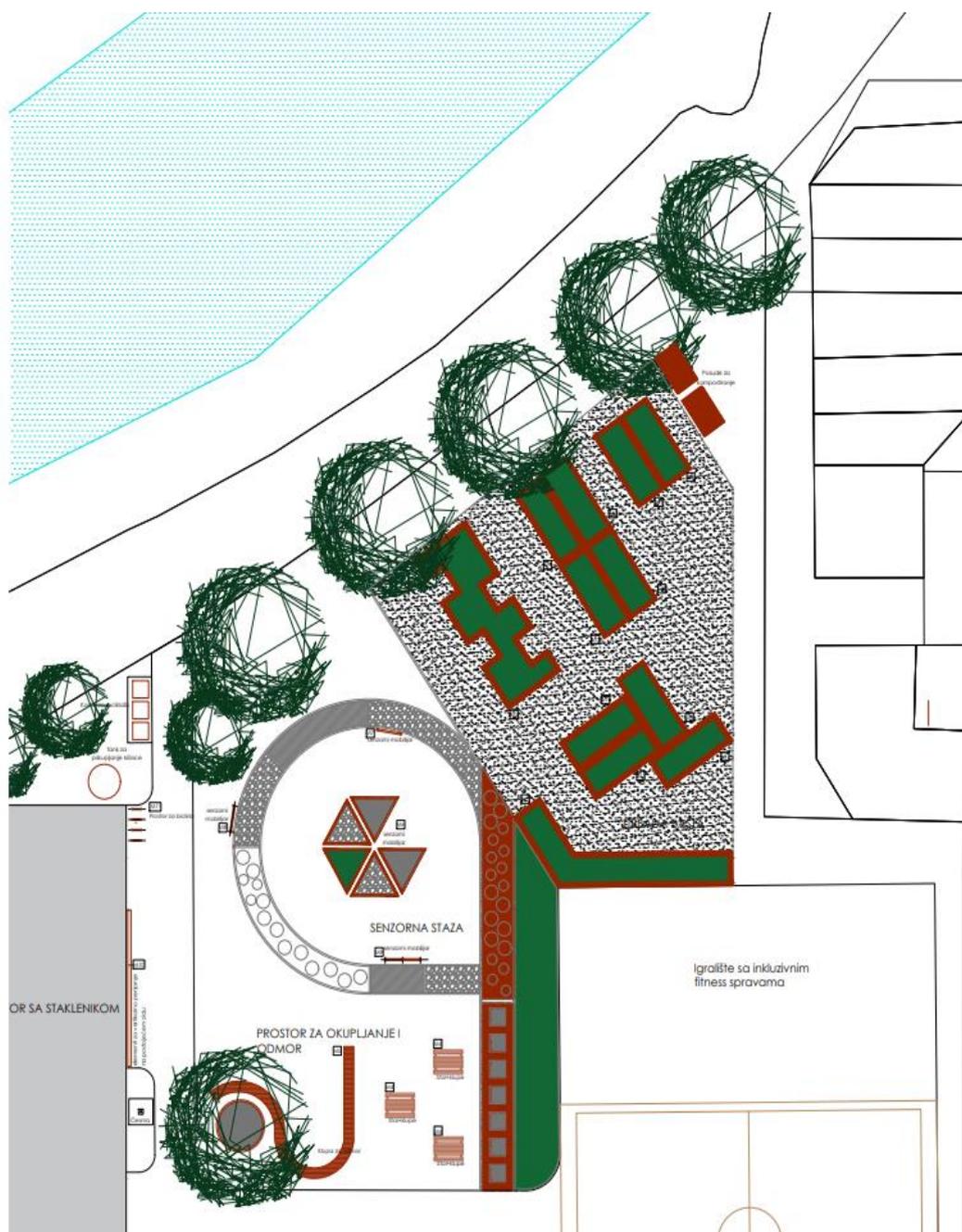
Therefore, our daily work now helps us to see different perspective of the project - something like brainstorming, it helps us to see different perspective, it widens our views and perspectives, good thing, good way to minimise additional problems and risks. From the beginning we can better anticipate problems and react promptly.

### **Technical solutions**

#### **STEP 1 - Define the nature-based solution**

Sarajevo exemplar idea is to create an urban garden and the sensory park at the spot (approx. 1500m<sup>2</sup>), and to have various activities for different target groups (e.g. one day in a week dedicated for "urban gardening", activity which will be opened to all citizens).

The Sarajevo exemplar will have multifunctional purposes and will be open to all citizens, but it would be adjusted to special target groups.



The exemplar will have double purpose:

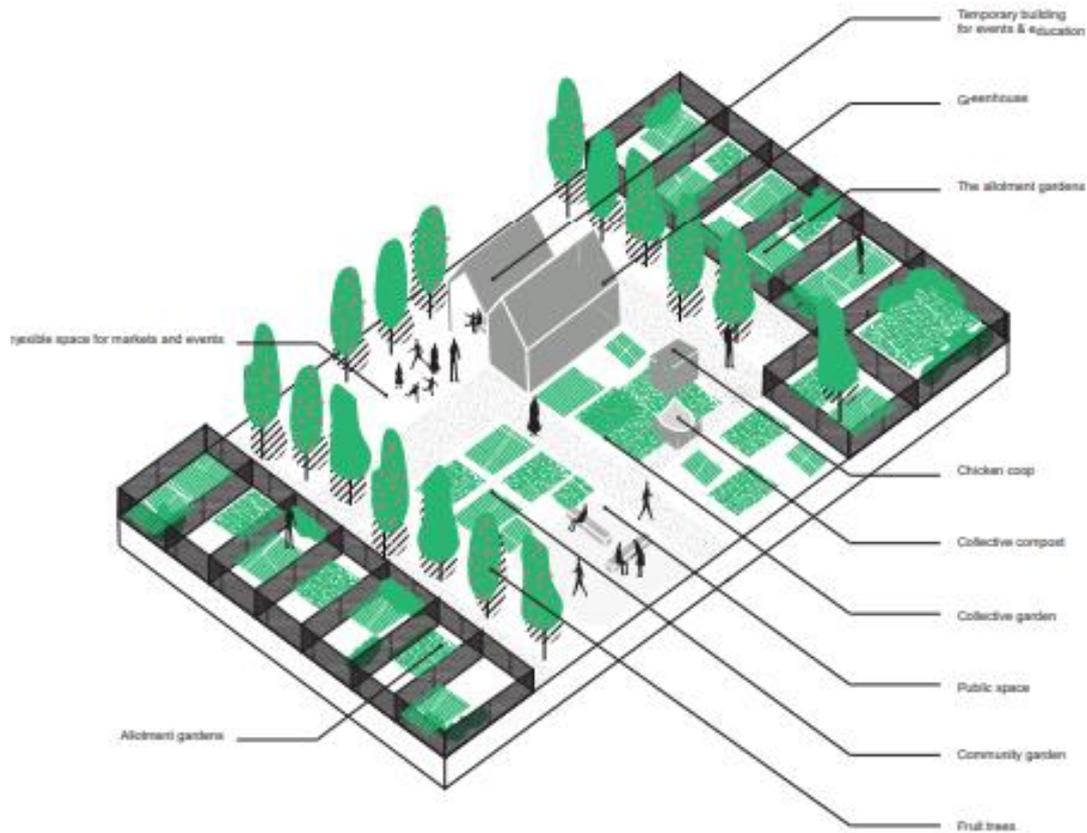
- 1) it would provide multipurpose area for the pupils of the School (urban garden will be used for learning and sensory park will be used for developing motoric skills of the pupils)
- 2) it would include numerous activities for various target groups in order to provide societal, economic and environmental benefits, but also to contribute to solving environmental issues of Sarajevo.

Beside the establishment of the garden, exemplar will include artistic approach (Memory work and Body Mapping).



The green garden would include various activities (e.g. urban gardening day) in order to provide societal, economic and environmental segments, but also to contribute in solving issues of Sarajevo (air pollution, raising awareness on importance of nature in everyday life etc). Taking into account that urban garden will be located in urban area of the city, and it is surrounded with streets open for traffic (creating pollutions and noise), urban garden will be an oasis for local habitants and members of the Children's house and centre for healthy ageing.

During Osmos workshop, participants also discussed the garden model, as community gardens can come in a range of formats: The allotment garden, The community managed garden, The cooperative garden and community managed park. Osmos presented a description of each of it, its weaknesses, strengths, application and some of the examples. We discussed the format of our exemplar and we agreed it will be a community managed park.



Sarajevo has many green public spaces which are not well used. Even though the time of COVID-19 pandemic brought an increased number of personal gardens in front of houses, buildings, in various public green spaces, it also showed the need to educate people how these spaces can be used in the best interest of both citizens, but also biodiversity of the city. Creation of a unique Urban Garden with sensory park within the School will provide a platform for education, inclusion of children with disabilities, for intergenerational exchange of knowledge and cooperation between children and elderly, and it is meant to be a role model for other local communities on how green spaces can be put in functional use. We would also involve social companies

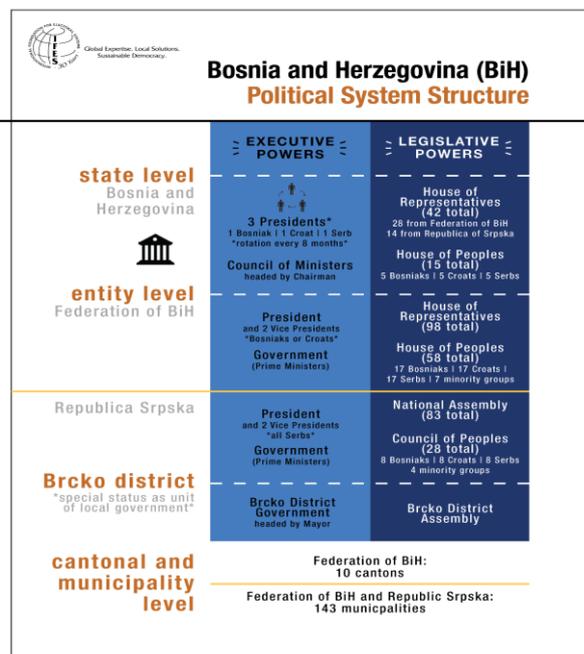


(e.g. Greens), which gathers people with disabilities who produce microgreens, seeds, vegetables and spices. Therefore, in terms of the target groups, we will actively involve marginalized groups, persons with disabilities, elderly people, children, women. Every Monday (or some other day in the week) will be declared Urban Garden day, when we will organize different kinds of workshops in the Urban Garden. Apart from that, every citizen will have the opportunity to come and work in the Urban Garden. Special invitations for workshops will go to schools and Centers for Healthy Aging, which are located nearby, in order to encourage intergenerational interaction. The whole process will be presented and promoted through social media, with the aim to make it a role model for other communities, and we hope to see many similar urban gardens in the future.

## STEP 2 - Develop an understanding of the landscape context and ecosystem services needs

To understand city context, it is important to mention complex state organisation and governmental levels within the country. This also takes a role during planning activities and understanding jurisdiction of each governmental level.

State administrative structure, including all levels is shown:



Sarajevo is near the geometric centre of the triangular-shaped Bosnia-Herzegovina and within the historical region of Bosnia proper. It is situated 518 meters (1,699 ft) above sea level and lies in the Sarajevo valley, in the middle of the Dinaric Alps. The valley itself once formed a vast expanse of greenery but gave way to urban expansion and development in the post-World War II era. The city is surrounded by heavily forested hills and five major mountains. The highest of the surrounding peaks is Treskavica at 2,088 meters (6,850 ft), then Bjelašnica mountain at 2,067 meters (6,781 ft), Jahorina at 1,913 meters (6,276 ft), Trebević at 1,627 meters (5,338 ft), with 1,502 meters (4,928 ft) Igman being the shortest. The last four are also known as the Olympic Mountains of Sarajevo (see also 1984 Winter Olympics). The city itself has its



fair share of hilly terrain, as evidenced by the many steeply inclined streets and residences seemingly perched on the hillsides.

The Miljacka river is one of the city's chief geographic features. It flows through the city from east through the center of Sarajevo to west part of the city where it eventually meets up with the Bosna river. Miljacka river is "The Sarajevo River", with its source (Vrelo Miljacke) 2 kilometres (1.2 miles) south of the town of Pale at the foothills of Mount Jahorina, several kilometers to the east of Sarajevo center. The Bosna's source, Vrelo Bosne near Ilidža (west Sarajevo), is another notable natural landmark and a popular destination for Sarajevans and other tourists. Several smaller rivers and streams such as Koševski Potok also run through the city and its vicinity.

The city has an urban area of 1,041.5 square kilometres (402.1 sq mi). Veliki Park (Great park) is the largest green area in the centre of Sarajevo. It's nestled between Titova, Koševo, Džidžikovac, Tina Ujevića and Trampina Streets and in the lower part there is a monument dedicated to the Children of Sarajevo.

The average yearly temperature is 10 °C, with January (−0.5 °C on average) being the coldest month of the year and July (19.7 °C on average) the warmest.

Air pollution is a major issue in Sarajevo. According to the 2016 World Health Organization's Ambient Air Pollution Database, the annual average PM<sub>2.5</sub> concentration in 2010 was estimated to be 30 µg/m<sup>3</sup> based on PM<sub>10</sub> measurement, which is 3 times higher than recommended by WHO Air Quality Guidelines for annual average PM<sub>2.5</sub>. There are no recent direct long-term PM<sub>2.5</sub> measurements available in Sarajevo and only estimates can be made from PM<sub>10</sub>, which is the less health relevant than PM<sub>2.5</sub>.

Sarajevo's large manufacturing, administrative, and tourism sectors make it the strongest economic region of Bosnia and Herzegovina. Indeed, Sarajevo Canton generates almost 25% of the country's GDP.

Major urban challenges are:

### **Air quality**

Main sources of pollution: Heating of small residential buildings, Mobility; large number of private cars with low fuel efficiency, Industry - Topographical factors reinforced by tall buildings that block air circulation. No skyscraper should have been constructed in certain areas. This has not been respected due to short-term profit motives. - Lack of official and reliable measurements. Last detailed analysis was in 2013 and should be done on a yearly basis to identify precise sources of the pollution and effect of policy measures.

### **Waste Management**

Landfill of municipal waste at Smiljevići - Lack of alternatives: - Incineration difficult due to impact on air quality - No culture of waste separation - Wastewater management has received a lot of attention and investment, but still remains a challenge (obsolete water network, asbestos in pipes, old methods for chlorination)

### **Risk of natural catastrophes: floods, landslides, fires**



Catastrophe in 2014. Funds of the current budget were not sufficient to cope with the damage. Reallocation of funds and international solidarity were necessary. - Risk mitigation activities focus on addressing the symptoms (water levees) and not the disease (deforestation + impervious surfaces). - Increased risk of landslides due to erosion and deforestation. This risk is addressed through physical interventions such as support walls. - All these risks will increase due to climate change (higher frequency of extreme weather events such as heavy rain falls).

### **Urban regeneration**

Management challenge of the transformation of obsolete functions (military, industrial). focus on the transition to commercial and residential uses. - Large amount of informal development. - Poor building regulation due to: - lack of building inspectors - risk for existing inspectors (due to aggressive building owners) - bribery and corruption of public officials. - Lack of vision and master planning for urban regeneration. - Poor translation of policy and regulation into tools.

### **Lack of quality green space in the city**

Concerns about no proper park in the city centre. - No encompassing green space strategy at any scale (municipal, city, canton) - Municipalities prioritise development of new buildings that need parking spaces to the detriment of green spaces or green infrastructure

### **Mobility**

Public transport company in weak financial position: vehicles from donations (average is 17 years old). - Car-based mobility creates a shortage of parking spaces in the city centre - Link between air pollution and car mobility - Poor Road network: congestion and slow movement of vehicles. Cars and public transport share the same space. - Active mobility does not reach outside of city centre (bikes only for recreational use) - Concerns over transport safety - Dependence on car mobility exacerbated by housing development on the outskirts

### **STEP 3 - Embedding multiple functions into the planning, delivery and stewardship of the nature-based solution**

The exemplar design phase included co-production process with various stakeholders to hear their opinion and needs, but the most significant inputs for technical design are given by the School staff, especially related to the urban garden and sensory park elements. Special concern was given to the safety and practical issues of the urban garden, taking into account target groups.

Also, technical design of the exemplar included some of the priorities of the city and municipal needs (green areas, inclusion, decrease of air pollution), so some of the solutions are included in the exemplar.

### **STEP 4 Monitoring and evaluation Stewardship management**

The exemplar is developed according the School inputs, following needs of the inhabitants and the specific target groups and due to need for project with these elements. Therefore, the exemplar is in line with the School activities and plans, so



managing maintenance of the exemplar will be organised within the School capacities (e.g. the School has technical staff for the green area maintenance, expert staff for the planting etc).

The intention of the project Team, the School and the municipality is to do upgrade of the exemplar in the future with new elements and new activities and the School management is open for new ideas and ready to provide their support in that process.

Taking into account comprehensive approach in the defining and designing the exemplar and involvement of the key actors, there is a low risk that the expected benefits will not delivered.

### **STEP 5 Build an evidence base to promote nature based solutions to a wider catchment**

Taking into account the future plans for upgrading the exemplar, it will be necessary that managing and maintaining the urban garden is followed from the technical side, so it shall be part of the planning and procurement, especially regarding the equipment for the stewardship.

The key lessons learned during defining the nature-based solution are: it is necessary to include relevant profession in each stage and in each part of the exemplar, needs of the target groups are one of the most relevant factors to consider, every phase of the exemplar shall take into consideration sustainability issues (e.g. in choosing materials, taking into account external factors – in our case climate etc).

**Drafted by The Sarajevo Team:**

Belma Pašić, SERDA

Nermina Suljević, City of Sarajevo

Lejla Bešliagić, City of Sarajevo