



Urban Green Belts (UGB) project WPT Activity T3.3

Joint methodology for FUA-level
Roadmaps

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I.Introduction.

(Summary : The chapter describes the concept of greenery in the urban and public space. Shows how important is an element of sustainable development. Defining the public area as a place to meet the needs of residents. And also the influence of greenery on the development and healthy relationships, the well-being of every organism living in this environment. Green as a typically aesthetic function. Thaa main essence of roadmap is to keep in mind the greenery around us.)

1. Introduction

Over the last years there has been a significant economic development of cities. This is visible on the basis of population growth statistics, which translates into an increasing need for housing, services, office and, as a consequence, dense urban development.

In order to balance the existing situation, as well as taking into account the fact that in contemporary construction aspects of sustainable development are becoming more and more important, the city's policy is also changing. One of these changes is the emphasis on the care of green spaces. They play an important role for residents on many levels, including psychophysical. Municipal greenery plays a very important role also because of the aspect of ensuring its accessibility for residents. Greenery should respond to modern human needs. It is not only a decorative, aesthetic role, but also a valuable space in terms of sport, recreation and health.

This document creates a common methodology of action for partners, it not only describes the role of greenery in the functioning of the city and the region, but also aims to show a wide range of initiatives, methods and tools related to both existing green areas and newly designed areas. It presents intelligent models for sustainable management of urban green areas, which are a response to contemporary human needs in the city.

The solutions and projects indicated in the document can be applied in practice, implementing them through the roadmap structure, whose task is to facilitate understanding of project procedures and carrying out a partner step by step through the investment process.

2. Greenery in public space

2.1. Urban green space and public space

Urban greenery is defined in a general way, as undeveloped areas within the city, occupied by planned and maintained or natural vegetation complexes. These areas contribute to improving the quality of life in cities and maintaining biodiversity - they are habitats of many species of plants and animals. Greenery in cities is an element of urban composition - affects the nature and appearance of streets and squares, shapes and organizes the interior of the city.

Urban greenery is an extremely important element of sustainable development. It performs the following functions: ecological, technical and health, the most important of which is the improvement of aerosanitary conditions, lowering the temperature within the "urban heat island", infiltration of rainwater and suppression of noise. The presence of such areas has a positive effect on the aesthetics of the place. Greenery also has social and economic

functions, including: recreation, recreation, tourism. It also positively affects the physical and mental health of people.

In the modern world more and more often we are dealing with a deficit of greenery in the city. The current spatial policy of cities is not focused on the creation of new green areas,

and these areas, which could be transformed into city parks, are occupied by developers. Another threat is the progressing urbanization, population growth and the so-called urban sprawl or "melting" of cities. The consequence of this process is the reduction of green areas in the center and on the outskirts of cities.

Public space is defined as an area of special significance for meeting the needs of residents, improving the quality of their life, conducive to establishing social contacts due to its location and functional and spatial features, defined in the study of conditions and directions of spatial management of the commune.

The space of urban greenery as well as public space should be a priority in shaping and developing cities. They should also be widely available and attractive to fulfill their role of activating and integrating the community. This space in different form and scale can operate both locally and in the scale of the whole city or agglomeration. The problem of contemporary cities, including the example of Krakow, is the exclusion of people from public and green spaces. This happens through the creation of closed housing estates or office areas, the transfer of small trade to shopping centers, which are not generally considered to be centralizing in the sense of creating valuable external surfaces, as well as architectural barriers and improper activities in the city scale.

Urban green space works properly if it is properly managed and requires constant control and supervision. It is also important, apart from taking care of its aesthetic side, to use it in a dynamic way, eg by arranging events and other initiatives that may positively affect its functioning in the city. Properly managed green space raises the quality of the city.

2.2. Impact of greenery on human health and environmental protection - health function.

a. Horticulture and human health.

The impact of plants on our lives began to be studied at the beginning of the 18th century. Benjamin Rush said that in psychiatric therapy plants play a significant role, which is why he is sometimes called the father of hortotherapy. The first clinic, which was opened in 1817 in Philadelphia, had vegetable gardens in which patients worked. In Poland, hortotherapy is not an officially recognized method of therapy and rehabilitation, but sometimes it happens that it is used as an element supporting conventional treatment, in facilities that have green spaces. This is one of the aspects that directly illustrates the importance of green for a human being by touching such an important issue as health. Hortotherapy can be active and passive. Passive lies in walking among greenery, while active in joining in her active care. Hortotherapeutic gardens should be prepared in such a way that they are accessible to people with disabilities. Hortiterapia detaches humanity from modernity and reminds us where we really come from. In Krakow in March 2017 at the University of Agriculture the first Polish postgraduate studies in hortiotherapy and horticulture began. A sensory garden is an example of a method that reflects the direct impact of greenery on human health and well-being. Gardens are picked up with all senses by a man playing the role of both therapy and science. Gardens can have various forms of financing from EU funds to local initiatives.

The healthy environment in which we live is the overriding goal that every partner should strive to achieve.

Example for partners:

In the Małopolskie voivodeship, a sensory garden was established in Muszyna, as a public and free facility, a part of the Zapopradzie spa park. Muszyna is a well-known health resort in the Lesser Poland voivodship. Intensely, plants interact with non-visual senses, through educational games, builds local bonds. The garden is divided into seven zones, i.e. a health garden with exercise machines, a garden with fragrance-intensive plants, a sound garden with materials specially selected to intensify audible sounds, a garden of taste with fruit trees and bushes, a biblical garden. In the garden there is also a special zone for lovers in which you can plant your tree.

b. Environmental protection in the city.

The ideas of environmental protection in urban space are closely related to the assumptions of the city's sustainable development. The basic program and spatial activities include urban and architectural solutions that take into account the economical management of land, water, energy, raw materials, building materials, as well as increasing the comfort of living of the residents.

Assumptions related to environmental protection in the city can be performed as:

- own tasks of a poviát / commune, i.e. those projects that will be financed in whole or in part from resources at the disposal of a commune or poviát,
- coordinated tasks, i.e. financed by enterprises and external funds at the disposal of provincial and central authorities and institutions or institutions operating in the poviát, but directly subordinate to the voivodship or central authorities.

Caring for environmental protection is the overarching goal when introducing new investments, and the aim is to apply good practices that have an impact on improving the environment in the region / area with which the partner is associated.

The goals set out below can be used to implement the investment through the roadmap method.

The main objectives related to environmental protection can be implemented through:

- reduction of the negative impact of the built environment on nature, protection of the area, flora and fauna, water, atmosphere, non-renewable resources,
- shaping a healthy and safe living space for residents,
- energy and material savings, taking into account the criteria related to energy consumption for their transport, production and operation. Analysis of the possibility of their subsequent use or processing, or biodegradation.
- using renewable energy sources and other unconventional sources,
- recovery of the natural landscape in degraded places,
- the idea of developing the city "inward", to limit the expansion and its disperse, and thus to occupy areas that may have a natural value,
- intensification of urban development, at the expense of freeing the green space,
- conducting pilot projects, which are the result of cooperation of designers, officials, social activists and residents themselves, to determine an adequate concept of activities and to check the adopted model through its assessment based on the selection of technologies, materials, energy value or social profit.

Example for partners:

In the case of the city of Krakow and the Małopolska region, the aspect of the health impact of green areas on people is particularly important due to the high level of pollution. The priority for actions is above all the fight against smog, which in recent years has been steadily growing in Polish cities, including the Małopolska region. Air pollution, which is smog, arises from the release of harmful chemical compounds into the atmosphere, such as sulfur oxides and nitric oxide as well as solid substances, i.e. suspended particulates as well as carcinogenic polycyclic aromatic hydrocarbons (PAHs). The latter are organic chemical compounds whose main sources are coal as well as crude oil and its derivatives (asphalt, coke, gasoline). They also release in tobacco smoke and during wood burning.

Krakow introduced an action plan based on co-financing for the replacement of coal stoves and prevented the implementation of new facilities with coal heating. Other activities are the gradual introduction of anti-smog vegetation in the green space. In one of Krakow's parks in 2017, the Smog Free Tower was piloted - a 7 meter high tower that uses patented ionization technology for air purification. The tower was funded by a private investor, one of the Polish banks and it is an outdoor installation by Dutch designer Daan Roosegaarde. The technology used allows you to filter 30 thousand. m six. air per hour. The tower uses less electricity than a domestic boiler. Its effectiveness has been confirmed by the Polytechnic Institute in Eindhoven. It forms a bubble of clean air within a radius of several meters.

2.3. The impact of greenery on the well-being of man - a function of social and leisure.

a. Building social bonds.

Greenery directly affects human behavior in a given community. The creation of adequate green spaces positively affects the aspect of family life, human development. Likewise, the lack of appropriate space can have a negative impact on human development and lead to regressive behavior in society.

A well-designed green space builds social ties with neighbors, educates, stimulates cooperation, establishing new social contacts, and developing family life. However, improperly designed green spaces can create social conflicts and the occurrence of pathological behaviors.

Building social ties is one of the goals that should be adopted when implementing actions and investments based on the roadmap method by all project partners.

Example for partners:

As part of the "Krakow in Green" project, various events have been held in Krakow's parks in recent months to activate the residents of Krakow and attract them to the parks. The city would like the parks to become, as it once was, the centers of social life, bringing together and engaging residents, positively influencing the recreation of social ties between neighbors and not only. Building social ties is also done by gradually changing the space of wasteland or greenery in Kraków, which was not developed in attractive and valuable in the social perception of recreation and sports areas.

Streets are often the only and natural meeting places for neighbors, residents of tenement houses or quarters. The idea is to make some of Krakow's streets more friendly and chamber. Social ties are created only in favorable conditions. When there is no place to stay or sit there is no way to talk to a neighbor, you can not find a meeting place, because he

lacks a name or a feature that you would call it hard to find an excuse to talk. Social ties allow for better use of existing resources, for faster and more purposeful assistance to the needy. Small local communities are stronger in the face of problems and constant changes in the world around them.

b. Relaxing rest.

Greenery is also a pleasure after a hard day at work, rest and recuperation, both can be an active recreation in the form of sport or passive as aging. It can also introduce an aspect of intellectual arousal such as an open-air reading room combining pleasure with usefulness. Creating a friendly, space-saving green space is one of the goals that should be adopted when implementing activities and investments based on the roadmap method by all project partners.

Example for partners:

On the example of Krakow, it can be pointed out that the initiative of urban relaxation in greenery is implemented by introducing the so-called urban furniture in areas where they have been missing so far, and also by increasing the attractiveness of green areas.

2.4. The influence of greenery on the appearance of the city - aesthetic function.

a. Landmark for the city.

Green space on the scale of the region as well as the city is also its business card and significantly raises its aesthetics and the perception of a given area by other territorial units, cities, states. Here, in addition to the value for city residents, there is a significance for the tourism development of the area. Giving a new identity for a city can be one of the benefits when planning new green areas. A simple example is eg. Guenewa is a city that every tourist associates first with a fountain and a green floral clock.

It is also worth mentioning the inclusion of greenery in the city's spatial planning. Study of conditions and directions of spatial development, Local plan as tools for shaping green spaces in the city.

Creating a landmark for the city is one of the goals that should be adopted when implementing activities and investments based on the roadmap method by all project partners.

Example for partners:

*Krakow has many attractive regions that are popular with residents. The most characteristic landmark is *Blonia*, which is a contemporary reminiscence of the pasture. In summer, residents come there with deckchairs or towels or spend time actively playing team games. From the area you can see the *Kościuszko Mound*, one of the few Cracow mounds, and the most by its location visible and popular. There is a zoo nearby. Our activities should be more actively launched to improve the quality and accessibility of natural areas, which also have a chance to gain a higher status, but this is still not due to the lack of proper infrastructure.*

b. Greenery as a place of dialogue between different cultures in the city.

It should also be emphasized that a properly designed green space is the perfect nucleus of cultural events in the city, where the opera lover under the stars can meet a representative of

the subculture at the skate park. Such diversity generates many opportunities, teaches tolerance and dialogue.

Enabling dialogue of cultures in the area of green space is one of the goals that should be adopted for the implementation of actions and investments based on the roadmap method by all project partners.

Example for partners:

Development of the Holy Island Margaret in Budapest is a place thought out in such a way that various cultural events can take place simultaneously at different levels, eg. A youth concert, a literary evening, an ecological picnic, a day of sport.

II. Description, structure and scheme of the model roadmap

(Summary : Defining the area of operation. Range on the administrative scale. Taking into account documents and legal acts in defining the problem. Aspects taken into account in the analysis of: social communication, educational activity, statistics, and source-funding inventories. Sketching types of goals. Defining what a roadmap is and how to build it. Diagram of conduct in the context of a document which is a road map. Implementation of activities. Examples of green solutions solving problems - suggestions. Describing the city's cooperation with the private sector - investors. Examples of actions and objects aimed at improving the situation in the green space.)

1. Selection of the area and topic of the study.

1.1. The basic area of activities - City and its commuting zone

The basic area of activities is the city, which according to the FUA definition should be considered along with its impact zone, understood as a commuting zone. It is determined individually for each of the UGB partners because it depends on geographical conditions, but also on environmental and cultural conditions or economic reasons.

On the basis of the roadmap method, the area of operation and its impact zone should be defined in each case. In this case, it may constitute the FUA or a part limit depending on the size of the investment / operation.

Within the UGB project, partners are representing public administration units. Territorial units are the territories directly involved in the project activities. In most of the cases it is only a segment of the FUA but in certain cases it can cover the whole FUA as well.

Example for partners:

The Kraków agglomeration - a monocentric agglomeration in southern Poland, in the Małopolska province, including the central city of Kraków and surrounding urbanized communes. Depending on the concept and adopted delimitation criteria, agglomerations live from 1 million to 1.402 million people.

1.2. Range of activities on the scale of the administrative division unit

The scope of activities on the scale of the administrative division unit may or may not coincide with the adopted zone of activity of City and its commuting zone. This is important because often activities are possible and efficiently implemented on the basis of activities related to local self-government. Voivodship is understood as a unit of administrative division and a fundamental territorial division of the government administration, which may also constitute a territorial self-government unit. The method of formation and the rank of administrative divisions results from the assumptions made by the states regarding the reforms in force in a given country.

Within the sub-chapter, the territorial scope should be brought closer to the administrative division and the geographical and cultural characteristics of the area should be concise.

Determination of the scope of activities is important in relation to the analysis of the state of research, the method of financing and administrative work, eg obtaining agreements and necessary permits for the implementation of investments / activities in the roadmap method.

2. Key words.

a. Sustainable development.

Sustainability is development that satisfies the needs of the present without compromising the capacity of future generations, guaranteeing the balance between economic growth, care for the environment and social well-being.

At the environmental level, sustainability prevents nature from being used as an inexhaustible source of resources and ensures its protection and rational use. Aspects such as environmental conservation, investment in renewable energies, saving water, supporting sustainable mobility, and innovation in sustainable construction and architecture, contribute to achieving this environmental sustainability on several fronts.

At the social level, sustainability can foster the development of people, communities and cultures to help achieve reasonable and fairly-distributed quality of life, healthcare and education across the globe.

According to the definition included in the Act on protection and environmental development, sustainable development is "(...) socio-economic development in which, in order to balance the opportunities for access to the environment of individual societies and citizens - both contemporary and future generations - there is a process of integrating political and economic activities and social with conservation of the natural balance and durability of basic natural processes "

b. Sustainable management of urban green spaces

Actions aimed at including management of green areas development in the city management policy in accordance with the principles of sustainable development

c. Methodology.

The procedure in accordance with the scheme.

d. Functional Urban Area (FUA)

The OECD, in cooperation with the European Commission and Eurostat, has developed a harmonised definition of functional urban areas. According to this a functional urban area is a functional economic unit characterised by densely inhabited "urban cores" and "hinterlands" whose labour market is highly integrated with the cores. The definition originating from labour market and commuting considerations provides a spatial delimitation beyond administrative borders which is relevant for a multitude of thematic fields, such as for example transport (e.g. commuting, transport flows etc.), economic development (e.g. labour market, strategic positioning, etc.), environment (e.g. air/water quality, soil sealing, urban sprawl, etc.), social (e.g. health care, social housing etc.).¹

e. **Partnership of the UGB project.** A project in which European Union partner cities participate, working together to create smart methods of green areas management in the city in order to create a healthy and friendly environment for the residents of the city.

3. Type of documents

Before starting the action, one should become acquainted not only with the geographical and cultural situation, but also with the state of the documentation, which may be helpful for further work. Due to the specifics of each Project Partner.

The idea of introducing projects and actions aimed at achieving the determined effects should be observed from the concept phase, through its implementation and the long-term effect. This should be done at different levels and with the use of national control authorities, if any. Thanks to this, a wider context of observation can be obtained. This control also takes place at the economic and financial level, which allows us to look at activities in many aspects.

Proper analysis of the state of research, whether the analysis of applicable regulations, documents, materials that relate to the subject area partner for the area are of great importance, or the feasibility study of the adopted investment / action. This is the moment when the partner analyzes various variants, programs and tasks based on the indicated documents. This is the process of the initial stage of analysis for the roadmap method.

a. Planning documents

Attention should be paid to the developed documents, when implementing both a specific action plan and thinking about what we can do in the light of planning considerations. They may contain elements relevant to the assumptions, and may be used as a starting point to develop these assumptions.

Example for partners:

In Krakow, among others, the elaboration of the Mon. "Directions of development and management of green areas in Krakow in 2017-2030", the author of which is the Environmental Development Department of the Municipality of Krakow in cooperation with the urban landscape architect and the Krakow Municipal Greenspace Authority. The study is a perfect example of how the whole process of creating new green spaces can be carried out, starting from analyzes ending with the concept of greenery development in the city.

b. Reporting documents regarding the analysis of the existing status

Partners should become familiar with the studies that have already analyzed the existing state and the manner of conducting the investment. These materials can be helpful, through the statistics contained in them, details, research and defined problems, which are also related to the topic of urban municipal greenery.

Reporting documents of the control type are of great importance, because from them we can draw conclusions about not only the possibilities, but also about the problems that may befall us in the investment process. Each partner is obliged to read the documents / studies available in his country.

Each of Project Partner, in the process of improving the management of green areas, should take into account the results of control of the relevant superior authorities for a given country

Also when Project Partner has a procedures for conducting tenders for the design and maintenance of greenery, standards for the implementation of greenery and planting lawns and its care, plant material standards, nature protection, rules for removing greenery, environmental compensation, protection of greenery during construction works. Those described standards should be used as an element of education eg. for developers, housing cooperatives, road builders, units whose task is to maintain greenery.

When we are thinkig about inventory of green areas a document or information that includes quantitative recognition and types of tree and bush species, their location and their dendrometric parameters, such as trunk circumference, tree height, crown range, and health condition is necessary for proper management of green areas.

4. Objectives

This document serves to create a common methodology for roadmap to ensure that our cities are shaped in an environmentally friendly manner and in accordance with contemporary solutions for conducting a sustainable development policy.

These goals are related to the adopted assumptions of the UGB project. The goals are derived from the question asked at the beginning of the partnership - How could the green spaces be managed smartly?

The Green Infrastructure, community involvement and multi-level governance for the urban environment green spaces smartly

The immediate goal of the document is to show a smart model for an effective and sustainable management system of urban green areas. This objective has been included in three main pillars concerning the way of intelligently assessing areas, building them based on the participation of social parties and using the public sector.

An indirect goal is to create intelligent tools to help find solutions in shaping greenery in an attractive, intelligent and human-friendly city.

In order to be able to implement the above objectives, it is proposed to use planning by building next steps based on the roadmap method. The idea of building such maps will be developed in chapter 5.

The division of the pillars refers to three levels of action.

Pillar I: Evaluation: urban green spaces and infrastructure

Preparation of intelligent methods for assessing urban green areas and tools together with an integrating approach to the so-called green infrastructure, understood as a network of natural and semi-natural areas, including man-made ones (eg cycle paths, green roofs) in spatial planning to improve environmental performance and mitigate the effects of climate change.

Pillar II: Involvement of residents

Strengthening the participation and involvement of the community in the decision-making processes related to planning, creation and maintenance of urban greenery.

Particular attention should be paid to the participatory approach, i.e. the involvement of key beneficiaries (stakeholders) for policy development including representatives:

- local communities and residents,
- the construction sector,
- NGOs,
- the private sector,
- government.

Pillar III: Capacity building

Preparation of transnational models leading to sustainable, integrated management of urban green spaces by strengthening the capacity building of the public sector.

- vertical cooperation = multi-level management (between different levels of national, regional, municipal and local administration);
- territorial / horizontal horizontal cooperation (between neighboring FUA municipalities);
- intersectoral cooperation (between various departments of the commune, sectors).

5. Roadmap methodology

5.1. What does roadmapping mean?

Roadmapping is a relatively new tool for strategic technological planning and decision support. Intuitive associations and some of the graphic interpretations of roadmapping may resemble a network of transport connections.

A roadmap is a flexible planning technique to support a strategic and long-range planning, by matching short-term and long-term goals with specific technology solutions. It is a plan that applies action forecasting to identify appropriate emerging technologies or innovative actions. It is a known technique to help manage the fuzzy front-end of innovation. It is also expected that the roadmapping techniques may help to create a sustainable development environment. Here roadmaps can be combined with other foresight methods to facilitate systemic change.

Roadmapping can be treated as a certain pattern of behavior, which allows for a broader description of the problem being solved. Creating informational structures helpful in the representation and analysis of areas of interest to the roadmapping organizer in the context of the interrelations of the analyzed objects. Properly planned and carried out roadmapping can indicate how to build visions of the future for complex economic, social, scientific and ecological systems.

Below each Project Partner can find points which are important to think when preparing own roadmap.

A. What should be included in a Roadmap?

Different environments require different types of roadmaps. And each type typically has a **unique set of components**. When considering which kind of roadmap to build, it is important to think about **who the roadmap is for** and **how it will get used**. Knowing this will help you determine the right structure and information to use for your roadmap.

The following components are often used in roadmaps:

1.Idea/method/information - product

A product can be a service, idea, method or information that satisfies a need or a want. It has a combination of an attributes such as: benefits, features, functions, that a seller offers a buyer for purchase.

- **it could be integrated in an existing environment , air , development strategies;**
- **it could be the annex of an official document (ex. Padova);**
- **it may have a modular structure integrating all TWGs methods, therefore all the results of the project, filled with recommendations.**

2.Goals

Goals are measurable, time-bound objectives that have clearly defined success metrics associated with them. They are included in a roadmap to show the critical accomplishments required to make the vision a reality.

- **the territorial level could be: state (Salzburg), regional (Malopolska), city (Maribor), district (Hegyvidék, Prague) - level depending on the partners.**

Examples of direct goals of such a method can be:

- acquiring, collecting and processing knowledge about environmental factors (economic, ecological, social, scientific and technical, etc.) in which organizations implementing projects operate and developing on this basis their quantitative and qualitative models,
- studying the interrelations of environmental factors, including the identification of their dynamics based on previous observations,
- classification of the causative factors of processes taking place in the environment, enabling determination of future opportunities for making decisions related to the impact on the environment and their consequences,
- creating a vision of the future (forecasts, trends, scenarios)

The ultimate **goal** is to develop **decision-making rules that optimize the quality criteria relevant to the roadmapping** implementing organization. Depending on the formulation of the decision problem, these rules may take the form of a **strategic plan, a list of priorities or an operational plan related to a specific project.**

3.Action

An action represents step for new or improved functionality in the district/city/region/.

4. Time

Each type of roadmaps typically include dates. The time scale used depends on the level of detail required and can range from months and even years.

Roadmaps are even more useful when they **clearly explain how and what** will be prepared. **Status indicators** for **goals, initiatives and others** are a great way to **highlight the current state of a plan**.

B. How to build a Roadmap?

To build a roadmap it is really important to **know what the goals are and the initiatives that you are going to invest in to get there**. Thus **each partner should consider actions** below to prepare a Roadmap:

- Define your strategy

When think about a roadmap the most important issue is to establish a “goal first” approach and steps how to achieve. A vision contains details of who its users are, what they need, and when to do it.

- Show details

Select which actions to highlight and choose whether to present internal or external data on action. Keep all parties informed.

Example: For citizens views, you can show the theme, plan ect. Which for them will be interested. Internal stakeholders will want to understand the strategic importance, conveyed through goals and initiative.

- Prioritize your actions!

It is **essential for those who prepare a roadmap to have clear priorities**. It is also crucial for others to understand what is important.

- Share your roadmap

Communication is essential to building each roadmap. It is also important to keep board, organizations ect. inform about the roadmap. Various stakeholders in the board, organizations, ect. are going to require different levels of information. **When the roadmap has its view - share it with key stakeholders and discuss it with citizens.** .

5.2. Analysis of work on the roadmap method

The Roadmap should contain the **order of activities planned for the specific purpose**. Its main assumption is **to indicate the possibility of using various activities, elements, recommendations and adapting them to the realities related to partner cities**. The materials that have already been created can help in this.

The following analysis provides a wide range of implementation options and is based on indicating a step-by-step diagram that will guide us through the whole investment process when we are dealing with the implementation of a building or land development.

The following information should be taken into account when creating your own roadmap.

a. Strategy definition - Analysis of the existing state

This is an important process that allows to precisely determine in which condition there are green areas in the studied area. To do something you need to recognize what is the condition of existing areas of already made greenery. It should be examined what are the types of greenery in the studied area and in what quantities. What has already been done and what still needs to be done, improve.

The first step is to select a specific area for activities and determine its ownership structure. Along with the geographic and environmental analysis, one should become acquainted with the resolutions in force in the given area or other documents that constitute the basis for action. The analysis of the compliance of the undertaking with the plans in force may affect the shape of the investment.

Along with the analysis of the existing state, it is important to monitor green areas, such as existing ones, whose status should be controlled, as well as those that are created, and those that are unintended or construction risks. The protection of green spaces is not always legally established - this happens individually on a national or local scale, depending on the Project Partner.

b. Strategy definition - Analysis of problems and future needs

On the basis of the analysis of the existing situation, one should draw conclusions about what is missing, which should be improved. We can define specific needs for the area under examination, make valorisation. It is an individualized process for each Project Partner.

Below examples of problems that can be treated universally:

- **Ecological transport and integration of infrastructural green belt**

The existing infrastructure should develop without neglecting this dedicated ecological means of transport, such as bicycles. In the case of bicycle paths, the main problem is maintaining their continuity. The most appropriate solution is to isolate the path and separate the traffic from the pedestrian and pedestrian as far as it is physically possible. It is important

from the point of view of greenery to take care of the green belt, which usually separates the vehicular and pedestrian-bicycle lanes. This is a space that usually requires intervention and can be treated, despite the usual modest width, as creative as the parks. An appropriate solution is, apart from the communication link of the city, to include bicycle paths in places attractively located in the natural space, thanks to which these areas will be more easily accessible to the community.

A good example is the attractive and developed network of paths in Czech Moravia, where paths are varied with thematic attractions - elements of recreation and education.

- **Greenery on plots within residential buildings**

Uncontrolled urbanization leads to the solution of social ties, which result in a lack of a sense of security among people and well-being in the environment.

Contemporary residential development often develops with the omission or marginalization of green areas. Despite obliging the investor or developer to implement green spaces, if they arise, they are treated secondary and are not properly maintained. You should find methods to control the care of such greenery, as well as improve the methods of reviewing so that the greenery was a value for the inhabitant in this field.

- **Urban suburbs, as an area without properties**

Noticeable is the lack of green areas arranged in the suburbs of the city caused by suburbanisation and uncontrolled spatial development, chaos, lack of infrastructure and green areas of recreation, generally available.

- **Distributed green areas in the city**

An important aspect that concerns urban greenery, regardless of their location, is the arrangement of dispersed greenery. This is particularly visible in suburban zones. The possibilities of integrating green areas must result from detailed analyzes of their status and identification of problems.

- **Tree cutting**

The problem of tree felling concerns partners to varying degrees, but it is directly related to the locally applicable law that applies to tree management. Outside of protected zones and when the tree is not a natural monument or it is not advisable to protect the section, it is possible, provided that a replacement plant is used, but it is often not sufficiently controlled eg after the time when it should be verified if planting is maintained. Attention should be paid to the greater awareness of investors and to sensitize them on this subject. Avoiding tree felling while investing is not always possible, but planting control and the greenery project itself are already.

- **Availability of green areas**

One of the ideas of shaping cities is the idea of developing the so-called inwards, i.e. increasing the building intensity, but leaving the natural area around. Currently it is

difficult to implement, because as a rule, the development of cities has become dispersed and uncontrolled. The built-up spaces were also chaotic. Hence, and taking into account the divisions of records it is difficult to create larger green spaces in the most urbanized parts of cities, and the ideal to which one should strive is to increase the availability of greenery for residents so that it can reach it within 15 minutes of walking. The solution is the small green areas in the USA, already known throughout Europe, called the pocket parks. The creation of such parks can take place on various principles, from private activities, through participation, to investments in the whole city.

- No space for new greenery

Greening roofs is an ideal solution when the city is strongly urbanized and there is no space or the possibility of greater use of space at ground level. Then, by introducing greenery on the roof, we increase the possibilities of generating fresh air, we improve the microclimate. Still, the regulations do not oblige the investor to such solutions.

The recommendation is to seal the regulations, eg with the use of existing studies in the city, as for Krakow through the provisions of the Local Spatial Development Plan or the application of tax breaks and other incentives to increase the greening of buildings.

c. Identification of the idea and the cell

It is necessary to set project goals, which result from the developed possibilities of undertaking the project based on the investor's needs.

Both general and specific objectives can be adopted - depending on the complexity of the project.

The example below shows the achievable goals of the partners related to the topic of urban greenery. Each partner should define his own goals. The following list is a proposal that you can use.

The main goals related to greenery can be:

- Restoration of biological diversity
- Limiting the presence of plants belonging to invasive alien species
- Increasing the area of developed green areas
- Reduction of the degree of degraded urban green areas
- Reduction of emissions of pollutants emitted to the environment
- Reduction of street noise
- Reduction of surface runoff of water and increase of surface water purity
- Increasing the attractiveness of green areas for residents
-

The overarching goals related to social activities can be:

- Deepening cooperation at the level of the power-citizen
- Commitment of the community to activities in favor of the city
- Building social bonds
- Involving the private sector to support the city's activities
- Improving green areas management at the structural level

The main goals can be - here we choose what we would like to implement as part of the roadmap:

- Implementation of a social garden in a wasteland in the city district
- Development and renovation of green areas in the urban landscape
- Pocket park for the district
- Theme park for the city
- Integration of green suburbs
- Intelligent system of managing trees with new investments

d. Feasibility study

The technical solutions proposed in the initial recognition process were based on the currently binding regulations for the area in which the project will be carried out. The adoption of appropriate parameters both in the design and implementation phase will ensure investment of adequate quality and durability.

Technical feasibility will be ensured by:

- application of tested and used solutions on the market,
- availability and high quality of materials proposed for the investment,
- constant supervision over the implementation.

e. Determination of the institutional structure of implementation

In order to implement the project, a representative of the city authorities appoints a team to be composed of: Coordinator, Rapporteur, Accountant. The coordinator responsible for the work and functioning of the Team, management and control over the Team's employees, and the preparation of the project implementation strategy will be responsible for the ongoing implementation of the project.

The team will be responsible for:

- formal and substantive supervision over the proper implementation of the undertaking, in accordance with the adopted and approved schedule
- risk management at the project level
- information and promotion at the project level and contacts with the media
- maintaining contact with representatives of the financing institution
- preparation of reports, applications for payment and other documents
- project evaluation, including relevance, efficiency, effectiveness, impact and durability
- storing project documentation

f. Financial analysis

The financial analysis should be carried out in accordance with the regulations in force in the given area as part of the implementation of investments related to the designated objective. Financing of investments can be made from the municipal budget, or taking into account subsidies in accordance with the rules in force in a given area.

g. Time analysis

The time range that we set ourselves for the implementation of the project is important. It must be prepared on the basis of a market analysis, which may differ significantly in relation to Project Partners, but also to the moment in which the economy and economy of a given

Partner's country are located. Here it is also important to know the procedures that must be followed to achieve success. Often these are elements conditioned by the law.

For example, in a project for the construction of a building or land use, it is up to the official time to obtain the appropriate arrangements and permits, to prepare the procedure for selecting the contractor and then to implement it based on the availability of materials and employees.

Time analysis is most often related to financial.

h. Determining the level of involvement of the private sector - Green participation

Participation is a set of activities and methods for citizen participation in identifying and solving problems and subtracting their decisions. The basis of the action is recognition of the legality of the democratically elected authority and partnership with groups of residents.

In the area of urban greenery, participation involves the participation of citizens directly or through NGOs, etc., for making decisions about planned plantings, maintenance and care, and possible removal of greenery in the city. Also, with a suitably tailored project, these activities can be more complex and take various forms from acquiring information through participation in consultation of decisions to co-managing the investment.

Each partner city should choose the appropriate form of participation from the presented examples in chapter II.8

The possibility of participating at various levels of cooperation:

- Information and social trust

In the current system of managing the greenery, the aspect of communication with its recipient is very important, which will be satisfied with knowing what is happening in its area. Therefore, apart from the activity itself, it is absolutely important to keep information on the activities carried out. Not every resident would like to participate in consultations or take an active part in the relationship, but everyone should have easy access to materials related to the activities carried out. We need to inspire social trust. An attractive form of promotion is, apart from dry news, introduction of news in new media, such as social media portals and traditional posters or solutions building trust, like meetings and other events that accompany the creation of space - these are effective forms of establishing a dialogue with the recipient. In the case of offices, it is worth changing the technocratic approach to communication.

- Public consultation

The purpose of consultations is to strengthen cooperation between the city and its inhabitants so that they can have an impact on emerging investments. In some cases, in the form of obtaining opinions about plans or specific projects coming into effect, in others in the form of a more active participation.

In addition to information, the authorities give citizens the opportunity to express their opinions or participate in the decisions made. Public consultations are an organized event and an ideal way to obtain opinions, information from entities, persons or institutions directly affected by new investments. Plans for these projects may be included in projects such as legal acts, various types of programs, strategies, but also budgets of public entities.

The proposal of forms of consultation depends on the inventiveness of their organizers. These can be meetings at the organizer's office or at the place where the investment relates, they can be combined with other events, or they can be in a field form, such as walking, physical activities, open workshops.

- **Co-decision**

Codecision is a higher form of participation because of the partnership between the authority and the subject, citizen or institution. It takes place in the form of a division of competences and, as a result, responsibility for making decisions and actions. It is a real impact on the investment.

Such participation may also consist in the management of the investment by the inhabitants, or its implementation, whether due maintenance is the care of greenery, cultivation of flowers, etc. It is recommended that this relationship of authorities and citizens exist and was popularized because it is beneficial for both parties and makes the city closer to society.

- **Partners' involvement**

Commitment and cooperation with the partner side, eg institutions, companies or developers, may bring more efficiency than isolated actions of administration units. You can get results in the form of effectively collecting money for the creation of investments, greenery, etc. The developer can also take care of an adjacent area, for example by introducing a small architecture. A marketing company can carry out an effective marketing campaign. The broad formula of partners' cooperation brings the most benefits in the process of shaping urban greenery

- **A wide range of forms**

The key element in the idea of participation is the introduction of the project's individualisation factor, which we implement. Participation can take many forms and their basis is always the exchange of information. The search for solutions within the framework of intersectoral cooperation stimulates the search for innovative ways of managing the green space of cities and the manner of its financing.

i. Action: Integrated planning and design.

The stage begins the practical part of the implementation of the plan, which includes planning, fundraising, programming and design. For the proper determination of the assumptions of this stage, one should take into account previous analyzes and elements of participation that we used. At this stage, it is best to use the knowledge of other specialists in specific fields or create a multidisciplinary team to perform a specific investment.

The recommendation is helpful when planning to become acquainted with the possibilities of using existing studies or gaining knowledge about the possibility of obtaining facilitations, eg in procedures, in order to be able to implement solutions in a quick and appropriate manner. Acquiring funds depends on the relationship in which the project is carried out. There may also be an option that the project will be fully included in the city budget. Here the most important thing is to do individualized studies on a specific project, its location and its purpose, and the interest and involvement of other entities, developers or companies or institutions that would like to participate in the project.

Designing should be based on cooperation with qualified and experienced people, whose other, similar realizations guarantee that the submitted project will meet the expected effect. The selection of a person, persons and companies may be subject to a tender, competition or other form, legally applicable, in accordance with the policy of the Project Partner. The project, if the regulations of a given Project Partner require it, should obtain all the required arrangements, opinions and a building permit. Due to the different nature of regulations in partner cities, this situation is treated individually and should be developed in detail on the basis of regulations in force in the given area.

Attention should be paid to having persons familiar with the subject in the team ordering the project to be able to perform the verification and appropriate reception of the obtained project documentation

j. Action: Public consultations

After the project is completed by authorized and knowledgeable people, it is time to re-consult the public to verify whether the proposed needs of residents have been included in the project. It is also an element that inspires public trust and makes the community part of the project, regardless of its impact on the final shape of the investment

k. Action: Implementation of the project.

The implementation of the project is possible through financing from private funds, the public sector or in a combined way. This depends on the idea of obtaining financing, which was discussed in the planning section.

In the case of a project investment, project implementation is understood through the implementation of a specific project based on the prepared documentation and within the existing partner city the possibility of selecting a contractor, for example, through a tender based on project documentation or the formula "Design and build".

l. Intelligent management.

Creating a green space is the first important stage, while nurturing and caring for it is another challenge.

Management of the created green space should be developed already at the planning stage. The choice of the administrator is usually dependent on the nature and purpose of the area. These may be areas related to infrastructure, parks, pocket parks, allotment gardens, etc. It is necessary to anticipate not only the form of control of the area's use, but also to define the top-management way so that it is effective and enables the benefits of greenery and the accompanying infrastructure.

At this level you should also constantly refer to the cells indicated in the previous stage. With reference to the point on participation, an important issue to consider is enabling citizens or teams that will include citizens to co-manage created places. It introduces an element of expectations, or defined ones, such as the goals of building ties in society and deepening the good relations between the power and the citizen.

m. Feedback.

An important element of implementing a given solution is feedback or the project has been successful. It is a process of demonstrating the benefits of the process. Verification is possible on the basis of community surveys, newspaper articles, market research, interviews, debates with residents.

5.3. Roadmap - structure of an example implementation

The methodology and structure of the roadmap should be treated universally and it is possible to apply to any separate investment. Its general nature also allows it to be adapted to specific locations and needs of each Project Partner.

Each PP should define his place, his investment idea and his goals that wants to achieve.

To show Project Partners how it can be done based on example of existing projects in italic - the implementation of one of the a ideas - the idea of a social garden to achieve the goal - to revive and integrate the community and enrich the existing natural area within the city.



Figure 1: UGB Model Roadmap

a. What are we doing?

The most important aspect is to know why and what we are doing and what we want to achieve.

As part of the roadmap, we will carry out activities related to the implementation of a specific project which will be done by each PP.

Example:

The case of the inter design is a social garden connected to a green amphitheater.

b. Why are we doing it?

The overriding goal to be achieved is to improve the functioning and management of green spaces in the City and commuting zone, creating areas of the FUA that are involved in the Urban Green Belts (UGB) project. This is possible by establishing systematic cooperation of public authorities at all levels and non-governmental entities, and by involving community groups to co-create the project.

Our discussed activity is enriched by the existing green area with attractive development through the use of cooperation at levels: city authorities - district council - local community - cultural institution.

c. What are our GOALS for roadmap?

The model roadmap has a universal character and allows for flexible use by PP for specific purposes, which will be set within FUA.

The base targets are centered around three main pillars.

Pillar I: Evaluation: urban green spaces and infrastructure.

Preparation of smart methods for assessing urban green areas and tools together with an integrating approach to the so-called green infrastructure in spatial planning to improve environmental performance and mitigate the effects of climate change.

Pillar II: Involvement of residents.

Strengthening the participation and involvement of the community in the decision-making processes related to planning, creation and maintenance of urban greenery.

Involvement of key beneficiaries (stakeholders) for policy development including representatives:

- local communities and residents,
- the construction sector,
- NGOs,
- the private sector,
- local government.

Pillar III: Capacity building.

Preparation of transnational models leading to sustainable, integrated management of urban green spaces by strengthening the capacity building of the public sector.

- vertical cooperation = multi-level management (between different levels of national, regional, municipal and local administration);
- territorial / horizontal horizontal cooperation (between neighboring FUA municipalities);
- intersectoral cooperation (between various departments of the commune, sectors)

Example which defines goals based on the above pillars:

- *implements the plan of the local plan, supplementing the park's greenery function, but lacking specific solutions that increase its attractiveness (pillar 1)*
- *engages the community at various stages of participation through social consultations, workshops, and to manage the garden, which is the subject of the project (pillar 2)*
- *it analyzes the cultural institution to cooperate in the effective use of the amphitheater, and at the same time to expand the cultural offerings for the inhabitants (pillar 2)*
- *events that will take place in a new place will attract local audience and not only what will make active space on a multilevel scale (pillar 3)*

d. Focus on Benefits.

The overriding advantage is solving PP problems, which resulted from previous analyzes of own studies and observations resulting from the research works carried out during the UGB project. (used the tools and methods which are existing in UGB and lessons learned after pilots)

The detailed benefit is the acquisition of knowledge, thanks to the exchange of information, sharing own experiences and meetings between PPs under FUA. This knowledge enabled the development of a common methodology, based on the adopted most important aspects of activities, referring to designated GOALS.

To present detailed benefits, we can refer to the structure of the pillars.

Pillar I: Evaluation: urban green spaces and infrastructure.

Indication of smart methods for assessing urban green areas and tools with an integrating approach to the so-called green infrastructure in spatial planning to improve environmental performance and mitigate the effects of climate change.

- It is indicated that the GIS modeling tool is indispensable. GIS (Geographic Information System) is a computer system in which a connection between alphanumeric information (database) and information is created geographical (computer graphics graphic file). These applications allow you to store and retrieve information as 'themes' or 'layers' of the map. The maps themselves are made on the basis of aerial photographs. When collecting information layers in the field, they are added to the GIS application. Some PPs use this tool, others are recommended to use it. This is a significant facilitation in the field of inventory and control of green areas.

- Other applications are targeted at citizens as recipients of green spaces. Good communication is today the basis for cooperation between the citizen and the authorities. The UGB project focuses on good practices, hence the implementation of mobile applications is the right step to improve communication and improve the image of relationships between entities.

Not only can the application allow you to observe what is happening in the city, but to allow contact with the authorities. Agglomerates may report problems such as garbage collection, cleaning the area, acts of vandalism or suggest their suggestions for use by local greenery boards.

Example is the application implemented in Krakow by the Management of the City Greenery "Collectively".

Pillar II: Involvement of residents.

Strengthening the participation and involvement of the community in the decision-making processes related to planning, creation and maintenance of urban greenery. Benefits are specified in the following categories:

- **Involvement of local communities and residents.**

Participation can be used in a flexible way on different principles, which are based on the way and nature of the entity's participation in cooperation with the authorities. The benefit of participation is the strengthening of social ties, as well as improving the power-citizen relationship. The unquestionable benefit is the result of cooperation, that is, the effective and effective management of urban zoning spaces.

Local communities and residents are engaged by submitting proposals for new investments or revalorisation existing under FUA, while maintaining the existence of individualized regulations for each PP. These can be participative programs, like the civic budget on the example of Krakow, where we both report and vote for specific projects. The Local Initiative can also be implemented on the basis of reporting individual ideas to the authorities.

Another form of participation is active participation, during meetings, workshops and picnics, the aim of which is to get to know the opinion of the inhabitant and its real impact on the further shape of the discussed issue, be it physical space or waste management.

The highest form of participation is participation in the design or management of an area or activity related to green areas. It is possible on the basis of agreement on the basis of a contract between the community and the authorities, and can be treated flexibly, depending on expectations, from one side. It is also a real activity, so a plus for the city if the municipality is ordered is also a relief to the authorities. The main advantage is the strengthening of social activity.

- **The construction sector**

The participation of the construction sector brings a scarce benefit to both the city and it. It is a cooperation based on improvement in the implementation of investments with the possibility of using local products and materials, which is also important considering the conditions of sustainable development. Support for local businesses is also an element of promotion region and companies themselves. Thanks to this, it is also possible to achieve the final budget benefits for the city/

- **NGOs**

Institutions of non-governmental organizations can be involved in cooperation with the city on many levels. Their activities in the field of greenery and sustainable development offer primarily marketing and promotion of urban solutions. It is important that such institutions closely communicate with the City Hall and keep up to date with news in the field of information about funds, co-financing, shares and other similar events. Cooperation with NGOs also improves contact with the community.

- **The private sector,**

The cooperation between the city authorities and the private sector takes place on two levels. Marketing campaigns and encouraging the community to participate in the greening of the city is the starting point for further activities, which is the involvement of private companies to co-create the green environment of the city. The most important aspect of such involvement is primarily the co-financing of investments. It can also take place through participation and participation in specially organized events. An example of benefits for the city authorities and for PPs is the partner system. On the example of Krakow and the introduced system of partner packages, which offers purchase of specific green initiatives, such as bird boxes, tree plantings, or apiaries in the private space of the recipient.

- **Local**

The indicated FUA area may not necessarily coincide with the administrative division. It is important to work for good cooperation over these divisions of the city authorities with the authorities of neighboring municipalities, including those outside FUA. In this field, important in cooperation is to establish internal agreements that will enable the implementation of larger projects, such as green corridors and linear parks, which most often use inactive road or rail infrastructure, and improve the routes of cycle paths that integrate areas on the scale supra-local. The intangible benefit is a cohesive and properly managed green area.

Pillar III: Capacity building.

Preparation of transnational models leading to sustainable, integrated management of urban green spaces by strengthening the capacity building of the public sector.

- **vertical cooperation** = multi-level management (between different levels of national, regional, municipal and local administration);
- **territorial / horizontal** horizontal cooperation (between neighboring FUA municipalities);
- **intersectoral cooperation** (between various departments of the commune, sectors).

Cooperation should be based on agreements, plans and other studies that will enable the widest possible action. The basis here are studies and plans, which should be prepared for the whole country and, to varying degrees, also for specific regions.

Intersectoral cooperation is also possible as part of obtaining funding for the implementation of the investment. The benefit is the strengthening of engagement and relations between various sectors and levels of national administration as well as coherent action for the sustainable development of cities.

The benefits are confirmation of the goal we want to achieve and can be compared with our project as:

- enrichment of the area with an attractive green space with respect for the environment, and through appropriate planting and management of trees with improvement of the natural environment, based on work with GIS technology (pillar 1);
- deepening cooperation between the authorities and citizens (pillar 2);
- involvement of the local community for cooperation and integration (pillar 2);
- involvement of companies and cultural institutions to act for the benefit of the city (pillar 2);
- obtaining the value on a multilevel scale (pillar 3).

e. Who are our targets for roadmap?

Each Project Partner need to think of their own targets.

In the case of detailed projects implementing specific solutions, roadmaps are dedicated to the city authorities or local self-governments.

In the case of example, the addressee of the roadmap is a client, or partner, but a properly implemented map can be a useful element eg. during meetings with the local community or companies / institutions.

f. Define strategy and action

The choice of strategy and actions carried out is closely related to the topic of our task. Roadmap should indicate several possible options to obtain a result, to see which one is the most profitable for us and on what angle - here the priority of the priorities we are guiding and the determinants associated with them is of great importance. For example, they may concern the size of the area of activities, the nature of cooperation between structures, budget, method of financing, quality of materials, etc. The idea of roadmap is to analyze the possibility of carrying out the task and carrying out a simulation of these activities from the starting point, that is the adopted idea, by indicating the goal, until successful implementation of activities and finally verification of benefits.

In the case of the implementation of our pilot project, which is the development of the site with a construction object, we must assume that we must carry out the whole investment process, which in a nutshell may look like this:

- choose a designer who will carry out the first concept;
- coordinate the concept eg: use social workshops;
- involve companies from the construction sector, enabling participation in the financing method or in other ways;
- make appropriate technical documentation of the project with obtaining all opinions and permits;
- choose a contractor to finally complete the project.

g. Time and budget

The duration and budget of the project should be specified in the roadmap. In the case of a complex investment process, the duration and budget consist of individual stages. It can be assumed that these are activities related to strategy and action, as well as the budget affects various parties. As part of this issue, it is important to adopt a financing method that may

result from available money in the city budget, obtaining funds eg in Europe or attracting private sector sponsors, or using participative activities.

Example: project allows the use of various financing methods, as we assume that it is attractive and will attract private sponsors and link to the cultural institute (the amphitheater will be used by the theater institution) will enable co-financing from a pool of money related to the Minister of Culture or city authorities. Determination of the time of its implementation will be based on a market analysis of similar projects. The time of executing the project documentation and its implementation will be performed based on agreements with selected companies and burdened with the provisions on contractual penalties, which will be the collateral for the investor.

h. Structure

The Roadmap structure is closely related to the way it is performed, duration and effect. As part of the roadmap, you can implement long-term projects whose objectives are general or specific tasks related to the design and planning of architectural and urban planning, when we want to create, for example, a new green area or degraded revitalization. The degree of detail of the plan points depends on the PP and the stage at which it works. It can be a general scope that concerns preparation of the road from an idea to a concept, or precise, when we analyze all the steps needed to run an investment.

To sum up, to successfully implement a roadmap for PP's own purposes, a few basic issues based on model steps should be identified:

- indication of the area;
- analysis of the area and documentation;
- analysis and reference to existing plans;
- defining the needs and problems related to the enterprise;
- variant analysis of the mode of operation;
- analysis of financing methods and planning;
- using the participation method and determining on what fields we will use it;
- defining the issues of the undertaking;
- starting the stage of social consultations and other activities of selected methods;
- implementation of the design concept;
- verification of the design concept with the use of social consultations or other methods of participation that we took into account;
- preparation of project documentation and obtaining the necessary permits, arrangements, etc.;
- performance of a tender or other form of finding a contractor for the project using the involvement of other private and construction sectors;
- implementation of the undertaking, taking into account good practices of sustainable development;
- selection of the project manager using the participatory method, if it is justified;
- supervision and control over the proper operation of the undertaking.

The above points are a set of detailed steps that can be used when preparing a roadmap for a specific task that PP will deal with. It is also possible to indicate to each of these points the time in which a given phase will take place and who is responsible for it, eg: stage of the design concept

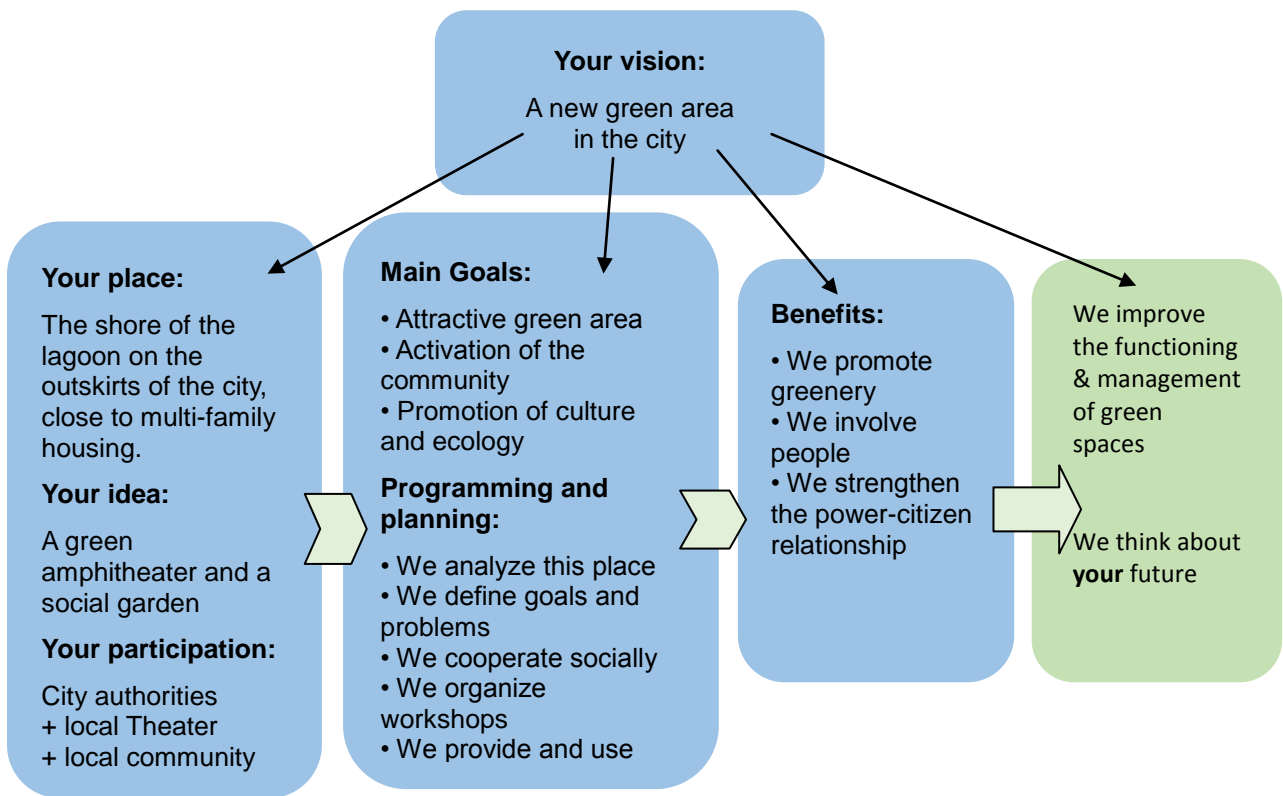
The concept will be carried out by the design office, which will be selected as part of the competition. The competition will be prepared by the Awarding Entity, eg the city authorities and written down with the relevant regulations and program, which clearly specifies the needs of the Employer and indicates the area and the budget provided and the duration of implementation. Design bureaus will process anonymous projects for 4 months, which they will submit to the Ordering Party, and this together with the jury appointed by him during the month will choose the proposal that meets his needs to the greatest extent.

i. Visualization of the roadmap graphic

This sub-chapter presents a **graphical** record of **the roadmap, which can be shaped differently and contain such** "tiles" that are of interest to the Project Partner.

For example, the analyzed implementation of the investment of a new green area, in this case the "Green Amphitheater with a social garden" created in cooperation between cultural institutions and city authorities, using methods of public engagement, construction sector and private sector.

Roadmap illustrates the behavior of graphic visualization in order to achieve the most important goals and benefits for PP.



II. Methods, tools and methodological guidelines.

(Summary: This chapter show you methods and tool which are existinig and can be used when preaprain you raodmap. More accurate introduction of methods and methods of action. Division into three pillars can hel choose the right tools (of course there more them available in our models from TWG). Procedural actions. Creating teams. Participation as a part of society. Multi-level cooperation.)

1. Actions within Pillar I

Assessment: urban green spaces and infrastructure.

Preparation of smart methods for assessing urban green areas and tools together with an integrating approach to the so-called green infrastructure in spatial planning to improve environmental performance and mitigate the effects of climate change.

1.1. Planning documents containing appropriate records regarding green areas.

a. Applying existing legal provisions and developing top-down standards.

The basis for the implementation of solutions for urban greenery are: presidential ordinances, strategic documents and dedicated green management records in local programs. Additional documents form internal implementation procedures, both at the municipal level, adopted by city presidents and at the level of individual management units (not requiring approval by city presidents)

Example for partners:

On the example of Krakow - the city develops using the documents of the Local Spatial Development Plan and Study of conditions and directions of Spatial Development of the Commune and their general provisions regarding green areas, which were defined as park areas, infrastructure or otherwise. The documents also determine the way of shaping greenery for urban investments on the scale of public, service and residential construction. The downside is that not all areas of the city have such plans for today.

b. Developing urban development strategies with regard to urban greenery.

Urban development strategies that all partner cities should have include the general nature of the records and development directions, should include guidelines for green areas and the concept for the development of green areas in the future.

c. Inventory of trees.

The basis for activities related to green policy in cities should be to protect what is currently a green reservoir of a given city or municipality. The existence of tree inventory is very important, because it allows you to specify other documents, recommendations, for the management of trees in the city. The policy of felling trees is separate for each Project Partner. If a partner does not have such an inventory, it is recommended that it is performed on a regular basis, while giving opinions on municipal investments.

1.2. Procedural actions.

a. Unification, simplification of greenery regulations, environmental protection.

Currently in Poland, there is a lack of uniform regulations in, for example, the scope of environmental protection. It is necessary to check this issue with individual partners and seek as much as possible changes in this area and cooperation with the authorities responsible for the creation of laws.

Applying entries in architectural and urban contests about the need to create public green spaces for residents is another idea to be considered by partners, which is a method of introducing greenery in public facilities.

b. Creating precise records in Local Plans that eliminate the possibility of overinterpretation.

One should consider improving the methods of planning at individual partners, for example by introducing entries into planning documents imposing the performance of green roofs, vertical gardens or other equivalent solutions in spaces with a high urbanization rate.

Provisions regarding the protection of green areas by building pressure should be constructed in such a way that they eliminate the possibility of over-interpretation or bypassing. It is necessary to start cooperation with plagiarists at individual partners responsible for creating legal regulations.

Another issue is the hard protection of existing greenery areas. Procedures should be introduced to improve the implementation of planning documents in cities, regions that will protect green areas of a partner in whole, not only partially.

2. Activities within Pillar II.

Involvement of residents.

Strengthening the participation and involvement of the community in the decision-making processes related to planning, creation and maintenance of urban greenery.

Involvement of key beneficiaries (stakeholders) for policy development including representatives:

- about local communities and residents,
- about the construction sector,
- of NGOs
- about the private sector,
- about government.

2.1. Creating special teams that deal with greenery

Within the framework of more effective management of greenery, teams consisting of scientists, officials, residents or representatives of non-governmental organizations should be established, whose task would be to give opinions on projects, develop standards and help in investment processes in a wide field, including organization of competitions and public tenders.

Example for partners:

In Krakow, the Task Force for Green Conservation is an example, which is in the process of developing standards for the removal of trees and compensatory plantings, aimed at minimizing the discretion of decisions on their removal. The standards will determine the requirements for compensatory plantings (to be adopted by the decision of the Mayor of the City). They are to be available to all investors, so that recommendations and requirements can be included in investment projects.

2.2. Public-private partnership with impact on urban greenery

The development of pro-ecological thinking, which is illustrated by the trend in the understanding of increasing human awareness in the area of his life and work. Then it is possible to implement internal procedures by private sector investors to increase the natural value of the investment by creating an attractive green space for the resident or recipient. In this field you can see the use of greenery in the form of walls and green roofs.

Example for partners:

On the example of Krakow, the tendency to implement investments with the assumption of being eco-friendly is visible in recent years. In the case of office and service buildings, it is simpler because there are international multi-criteria ecological certification systems Breeam, Leed, Well, which offer specific tools to improve the investment process and investors are more and more willing to use them. The result is buildings that are not closed in relation to the passers-by, as well as attractive green management. There are also worth mentioning examples in which there is cooperation between the city authorities managing one area and a private investor who is a "neighbor" to set up one common area integrating greenery. Cooperation of the private sector with the city is important because it enables continuity and completeness in the development of a larger area.

2.3. Multidisciplinary teams.

As part of specific, individual activities, it is possible to create multidisciplinary projects, whose participants can be both qualified people, architects and planners, interested persons, activists and city office site, or other activists associated with the city structure or the municipality.

2.4. A bottom-up initiative - a civic budget.

As part of bottom-up initiatives, solutions are proposed that encourage the local community to be active by reporting and then voting to participate in the creation of the city. Through the appropriately prepared resolutions it is possible to implement a concept based on participation.

2.5. Participation and value of social consultations

Good practice, commonly used in partner cities, can also be social consultations, thanks to which residents can get acquainted with newly planned municipal investments. Properly conducted consultations (both in terms of form and timing of their implementation) help to prevent conflicts at the stage of investment implementation. Some cities express the need to systematize this process in the case of planned new investments: the question is at what stage and how to involve residents in the consultation of a given investment, so that it is as effective as possible and least threatened by delays in its implementation.

Tools that can use partner cities include the GIS platform, applications, workshops, work teams, residents' forums, websites, and online surveys. Also important are actions that directly involve the community, ie composting programs in apartments, jointly organized exhibitions, ecological picnics, joint tree planting, including residents in the care of greenery.

In Padua, citizens can take care of the green area, they can donate a tree, participate in cultural and recreational activities, for example, "Padua flourishes". Associations can participate in park management. In Padua, a study was also carried out on citizens' perception of the suitability of green areas.

The recommendation is to create a document, helpful in conducting the consultation process so that it is closed in time and effective.

2.6. Participation of companies in greenery - sponsorship packages

As part of the intersectoral cooperation for greenery, attention should be paid to engaging private companies, developers and investors. It is necessary to individually develop model solutions and motivational tools for the private sector in co-financing green areas based on partner policy.

2.7. Promotion of greening the city

Activities focused on changing attitudes, thinking and familiarizing gestors (architects, designers, developers, etc.) with the possibility of introducing new solutions and technologies in investment processes. These solutions should take into account existing greenery and save it. Contractors should incorporate projects into greenery existing, modernize, among others networks, enabling planting in places where it previously seemed impossible. At each municipal investment, a dialogue with designers and contractors should be carried out, resulting in adaptation of the investment plan to the existing greenery, which should be kept (decision prohibiting removal) or which should be created (under compensatory plantings and / or assumptions resulting from the resolutions , depending on the policy of a given Project Partner). Dialogue is a solution different from indicating compliance with documents that rigidly impose specific solutions, but allows for a compromise between the parties.

2.8. Co-financing for private persons or institutions for the creation of green spaces.

It is an important aspect from the point of view of eg rural tourism, agritourism. It is a space of activity that allows private individuals to create interesting green assumptions in the city, suburban and rural areas. It is necessary to investigate what the procedures in this regard are with the partners and try to improve them. Verification of projects containing green spaces applying for co-financing should be carried out with due diligence with particular attention to the quality of green spaces. It is necessary to consider partnering between a private investor and the city with such assumptions and providing access to green areas accompanying residents.

Example for partners:

In Poland, unfortunately, it is not yet a developed form of creating green areas, but you can find examples of realizations such as the gardens of the restored Topacz Castle in Wrocław that have been made available to the residents. An interesting assumption is, for example, the Mill at Wodnik Slamy in the Czech Republic near the city of Opava, where picnics are organized and residents use green areas, for example, for walking with children or eating a meal at a local restaurant.

3. Activities within the pillar III.

Capacity building. Preparation of transnational models leading to sustainable, integrated management of urban green spaces by strengthening the capacity building of the public sector.

for vertical cooperation = multi-level management (between different levels of national, regional, municipal and local administration)

for territorial / horizontal cooperation (between neighboring FUA municipalities)
for cross-sectoral cooperation (between various departments of the commune, sectors)

3.1. The management structure of green areas should be determined

The management structure of green areas in partner cities is similar. Specify the specific institution and specify the areas it manages. Most often these are areas that are not only administratively but also visually can be read as public. Further division may occur at the level of the city and communes and areas of road infrastructure of various categories and greenery of the decorated parks. Maintenance of green areas, at schools, outpatient clinics, etc. is the responsibility of the site administrator. An unfavorable solution is the management of areas by many units, it causes chaos and lack of proper communication, thus the problems of effective management of a given area. The number of units managing the greenery should be limited and their consistency should be limited.

3.2. Multi-level cooperation at the level of urban planning

Multilevel cooperation should be most visible in the work on plans and studies that pertain to planning at the national or voivodship level. Not all provisions should be local, concerning detailed solutions, but it is important to integrate them with common and homogeneous action at many levels, ie at the level of the city, commune, powiat, voivodship and country. An example is the existing in Poland and limiting buildings, but for the noble purpose, the Natura 2000 program, which includes networks of areas under nature protection on the territory of the European Union. It is the youngest form of nature protection connected with the accession of our country to the European Union. The aim of the program is to preserve certain types of natural habitats and species that are considered valuable and endangered throughout Europe. Joint action to preserve the natural heritage of Europe based on uniform law aims to optimize costs and increase the environmental benefits.

The basis of the Natura 2000 program are two EU directives - the Birds Directive, adopted in 1979, and then replaced by the 2009 Directive and the habitat (habitat) directive of 1992. The entire Natura 2000 network has more than 26,400 areas covering more than 318 thousand. km² of sea surface area and over 788,000 km² of land area, which is 18% of the area of the European Union. Areas of special bird protection are determined by each state individually. In order to add terrain as a special protection area for birds, the presence of species of birds contained in the so-called the Birds Directive in Annex 1, or use it as a place for wintering or stopping during migration. The European Commission controls the compliance of designated areas with the so-called network. IBA. In practice, any area that meets the scientific criteria of the IBA must be designated as an area of special protection for birds.

IV. SUMMARY

The importance of urban greenery is not a questionable issue, but over the years, the way we talk about it and how we perceive it has changed. This is not just the space of recreation and walking. The list of their use options is long. They are a place of sports activity, but also cultural events in a different field, and their way of shaping can be extremely creative and original. However, they still need both adequate protection and sound management.

Progressive urbanization does not offer many new spaces, because this is not the economic potential of the developer or investor. The role of the green guard remains in the hands of the city authorities. Authorities at various levels, nationwide and local have the opportunity to act in the area of regulations and spatial planning to control what is the most valuable for people. Protect green areas, use them appropriately, and revalorize them. This action is often difficult, but it is a difficult task.

This document, apart from analyzing the possibilities of activities at the planning level, notes that the potential in the community also exists. Participation is a method under which, to varying degrees of dialogue and cooperation between the authorities and the citizen, it is possible to achieve an additional benefit in the field of shaping and managing urban spaces. This community is the recipient of urban space and it can decide how it looks. Through smart methods of operation, as applications can be a co-participant in its management, through workshops and meetings, it can really decide what it looks like, and through the implementation of social gardens take an active physically involved in increasing attractiveness and creating a healthy urban environment. It is also a voice of opposition for developers, having a real impact on the way they are carried out and investments in their surroundings, requiring that the objects are accompanied by a high quality green space. This document also includes tips on specific solutions that can be implemented to enrich our cities, where we have a limited amount of biologically active areas and where it could function better.

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