



LOCAL ROADMAP

ROADMAP FOR SMART MANAGEMENT OF URBAN GREEN SPACES,

CITY OF ZADAR, CROATIA

D.T3.3.2 - Local Roadmap for implementing smart
and integrated UGS governance

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INTRODUCTION

The project "Urban green areas - smart integrated models for sustainable management of urban green areas for the purpose of creating a healthier and more comfortable urban environment" was approved within the 1st Call for Proposals from the Transnational Cooperation Program of Central Europe 2014-2020.

The project's objective is to improve the management of green areas in functional urban areas to make them more enjoyable for life. Green areas, besides serving leisure and sporting activities, make the air cleaner, reduce city noise and even improve the urban climate and also make the "lungs" of busy cities.

It is therefore wise to manage these green areas through the cooperation of inhabitants and authorities, using the tools of the 21st century, in the focus of the project "Urban Green Surface."

During the UGB project, we have made a small-scale pilot study within which we have included 5 different locations within the city, only public green areas, and covered 18,000 m². The pilot resulted in an [Interactive Green Cadastre](#) which makes it possible for the city workers to input data on various different plan species mapped on selected locations, and for the public to view the online Cadastre.

The Roadmap for management of urban green spaces serves as a reminder and as a guide to current generations that all green areas of the city will be inherited future generations. The main problem of managing green areas is the lack of finances to remedy this efficiently. The public is insufficiently involved and referred to management projects, which is a kind of a paradox, since the public is the main user of the aforementioned.

The Roadmap also points to the need to raise awareness about the importance of green areas due to the sociological, health, ecological, biological, aesthetic and economic value of greenery. Green space management requires the system to access and coordinate the action of all involved: international organizations, national, regional and local authorities, the economy, the non-governmental sector and individuals.

The City of Zadar is protecting its green infrastructure with the Environmental Protection Program of the City of Zadar as well as the Utility Infrastructure Maintenance Program in 2019. The Roadmap's action plans should be an excellent basis for continuing the activities that have started with the Urban Green Belt CENTRAL EUROPE project and in this way emphasizes Zadar as a good example of practice related to the protection, development and management of green areas, both at the local and regional level.

The role of this Roadmap is to provide an innovative solution for the problem of documenting, analyzing and managing the green areas within the city of Zadar, Croatia but also to establish a systematic cooperation between the public authorities and different community groups. Its goal is to identify, suggest and provide an efficient tool and processes for the intelligent assessment of the current green areas within the city, updating and correcting the collected data if necessary, mapping new areas and cross-referencing the available information. The Roadmap concludes with the creation of documents on a decision-making level which would govern the management of UGS on various levels.

BASELINE SITUATION

Urban green areas are public areas located in urban environments that are mostly covered by vegetation and are used for active or passive recreation or indirectly through the use of urban environments. They serve different needs of citizens, thereby improving the quality of life in urban environments. Green areas encompass different categories of urban and suburban greenery that are thoughtfully arranged around the city, some of which are interconnected to the trees as well as urban forests and greenery outside of the city. Urban greenery strengthens the city's identity, strengthens its attractiveness to life, work and tourism, and therefore such spaces contribute to the competitiveness of cities. The urban plan of the City of Zadar highlights public green areas (25 acres total), which have a significant role in the image and identity of the City. These are:

- Queen Jelena's Park;
- Park Vladimir Nazor - registered horticultural monument;
- Park of Our Lady of Health;
- Park Vrulje;
- Park Maraska and
- the park area along the coast of King Petar Krešimir IV.

The most dominant elements of urban green areas in the territorial unit are abandoned and neglected areas, private gardens and parts of urban forests less than 200 hectares. The total area of the elements of urban green areas on Zadar's territorial unit is 3696.8 hectares, which is about 517 m² per inhabitant. These high values of urban green areas are the result of undeveloped areas in the hinterland.

The presence of green roofs in Zadar is minimal. The main reason for the small number lies in the fact that the policy for creating or encouraging green walls and roofs is not sufficiently promoted; nor is it regulated at the territorial level.

Zadar lacks an organized, spatial database for any of the 21 types of urban green areas. Also, there are no accurate analogue data on their distribution in such areas. Therefore, the UGB project carried out a special research for the purpose of obtaining insight and establishment of reference conditions for elements of urban green areas of the Urban area of Zadar, with the emphasis on the use of geospatial technologies, above all GIS, GPS and remote research for the purpose of analysing the current state of the database on urban green areas. This was done through creating a new GIS database for urban green areas in the Urban area of Zadar and defining indicators for quality control of urban green areas.

The primary goal for the future is the creation of an information system for managing green areas with an integrated and accessible base of urban green areas. The public was involved in the urban planning process of green areas through public consultations during the preparation of strategic documents (Zadar Urban Development Strategy and Zadar County Development Strategy). However, the public should be involved in the planning of urban green areas to a much greater extent. Exclusion of the public provokes discontent and encourages an inertial environment related to the awareness of the importance of green areas. Involving the public in this area will raise the feeling of belonging and identification with the space that equals everyone, as well as the perception of the importance of green areas both for the microregion in which it is located and for the wider area.

In the context of urban green areas management, Zadar has a problem with an inadequate horizontal and vertical link between local and regional self-government, the private sector, the civil sector and the public. Most local and regional self-government institutions are located in Zadar and are under the direction of the City of Zadar, which is the founder or co-founder of 21 institutions and the owner or co-owner of 12 companies. The Zadar Department of Public Utilities performs tasks related to ensuring the continuity and quality of public services, maintenance of utility facilities and equipment, etc. The company owned by the City of Zadar, Nasadi d.o.o., is among other things responsible for maintaining public green areas. The public institution of Natura Jadera is a Nature Protection Act authorized for the management of protected areas of nature in the area of Zadar County. Natura

Jadera, in cooperation with numerous stakeholders, manages 13 protected areas in the Zadar County, as well as the areas covered by the Natura 2000 ecological network (except areas within NP Paklenica, PP Telascica, PP Vransko Jezero and PP Velebit). At the state level nature conservation activities fall within the competence of the Ministry of Environmental Protection and Nature and in the professional view of the State Institute for Nature Protection.

A major challenge for the efficient management of urban green areas is the lack of adequate spatial data that disables effective monitoring of trends through the system of indicators. In order to solve these, but also other important issues such as lack of financial support, lack of coordination of stakeholders in the management system, lack of professional staff and implementation of the GIS system, it is necessary to develop a Plan for Sustainable Management of Urban Green Areas.

VISION

The primary vision for this region, regarding the issues of managing and maintaining urban green areas, is to be able to have a centralized point of contact and needed green inventory for both the public authorities in charge of the area but also the public itself (the citizens). The evolution of the currently existing web-application created and implemented through the pilot project is the next step necessary, which would then provide an integrated, editable and accessible database of UGS, that would cover not only public spaces and street greens, but also include the privately-owned greenery. It should be designed/upgraded to make the control of green-space care and maintenance more effective from a business-management point of view, and on the other, it should simplify information processing for planning and information purposes within the Zadar administration and to the public. Along with the aforementioned, the processes would be set in place to create and strengthen the human capacities and community involvement in joint management of local UGS.

OBJECTIVES

OBJECTIVE 1. Next step development of the Green Cadastre

OBJECTIVE 2. Raising awareness on the protection of UGS

OBJECTIVE 3. Incentivizing development of urban green areas in private ownership

OBJECTIVE 4. Revitalization and landscape shaping of the UGS

OBJECTIVE 5. Strengthened human capacities for joint management of UGS

OBJECTIVE 6. Preparation of strategic documents on green areas management

SUMMARY

OBJECTIVE 1	ACTION TITLE	RESPONSIBLE	TIMELINE
NEXT STEP DEVELOPMENT OF THE GREEN CADASTRE	COLLECT A FULL-SCALE DATA INVENTORY DATABASE ON ALL AVAILABLE GREEN AREAS WITHIN THE CITY OF ZADAR	EXTERNAL EXPERT	2020-2022
	UPDATE THE EXISTING GIS-BASED INTERACTIVE APP TO CREATE OPEN ACCESS	EXTERNAL EXPERT	2021-2022
	CONNECTING THE GREEN CADASTRE INTERACTIVE APP TO AN EXTERNAL DATABASE OF PLANTS	EXTERNAL EXPERT	2021-2022
OBJECTIVE 2	ACTION TITLE	RESPONSIBLE	TIMELINE
RAISING AWARENESS ON THE PROTECTION OF UGS	2.1. EDUCATION FOR CHILDREN, YOUNG PEOPLE AND ADULTS	EXTERNAL EXPERT, CITY OF ZADAR, VOLUNTEERS	2023
	2.2. TREE PLANTING	CITY OF ZADAR, VOLUNTEERS	2023

	2.3. URBAN GREEN FEST	CITY OF ZADAR, VOLUNTEERS	2023
OBJECTIVE 3	ACTION TITLE	RESPONSIBLE	TIMELINE
INCENTIVIZING DEVELOPMENT OF URBAN GREEN AREAS IN PRIVATE OWNERSHIP	3.1. MEDITERRANEAN HOUSE AND MEDITERRANEAN GARDEN	EXTERNAL EXPERT, VOLUNTEERS	2023
	3.2. COMMUNAL GREEN GARDENS ON THE TOP OF THE BUILDING AND GREEN WALLS	CITY OF ZADAR, EXTERNAL EXPERT, VOLUNTEERS, COMMUNITY MEMBERS	2022-2023
OBJECTIVE 4	ACTION TITLE	RESPONSIBLE	TIMELINE
REVITALIZATION AND LANDSCAPE SHAPING OF THE UGS	4.1. BUILDING URBAN EQUIPMENT	EXTERNAL EXPERT	2022-2023
	4.2. VOLUNTARY ACTIONS OF CONDUCTING AND DISPOSAL OF WASTE	CITY OF ZADAR, EXTERNAL EXPERT, VOLUNTEERS	2021-2023
OBJECTIVE 5	ACTION TITLE	RESPONSIBLE	TIMELINE

STRENGTHENED HUMAN CAPACITIES FOR JOINT MANAGEMENT OF UGS	5.1. WORKSHOPS ON THE IMPORTANCE OF JOINT UGS MANAGEMENT	EXTERNAL EXPERT	2023
	5.2. MANAGEMENT OF GIS BASED TOOLS AND APPLICATIONS	EXTERNAL EXPERT	2023
OBJECTIVE 6	ACTION TITLE	RESPONSIBLE	TIMELINE
PREPARATION OF STRATEGIC DOCUMENTS ON GREEN AREAS MANAGEMENT	6.1. PARTICIPATORY STRATEGIC PLANNING - URBAN GREEN ZONE MANAGEMENT PLAN	CITY OF ZADAR, EXTERNAL EXPERT	2023

ACTIONS

Objective Title: NEXT STEP DEVELOPMENT OF THE GREEN CADASTRE	Objective Number: 1
Action Title: COLLECT A FULL-SCALE DATA INVENTORY DATABASE ON ALL AVAILABLE GREEN AREAS WITHIN THE CITY OF ZADAR	Action Number: 1. 1
Origin of the action: X Transfer <input type="radio"/> New Concept <input type="radio"/> Other	
Action description - What will be done.	
The current database with the green inventory data collected on the field will be expanded to include all public and private green areas. This is an action taken directly from the pilot project conducted through the early phases of the UGB project. All the data regarding public green areas would be collected and analyzed by contracting an external expert.	

The privately-owned greenery would be introduced to the database by the owners themselves, as the application itself would allow for the updates to be made by anyone.

Minimum viable action

Must have: Inventoried 30% of the city’s public urban green areas.
 Should have: Inventoried 50% of the city’s public urban green areas and 30% private areas.
 Could have: Inventoried 75% of the city’s public urban green areas and 50% private areas.

Responsibility - Who will implement the action?

External expert, City of Zadar, City green management service

Estimated budget and resources

1. External expert
2. Field service

Measuring success

Success will be measured by the percentage of inventoried green surfaces - 30% of the city’s public urban green areas.

Timeline - Start and end dates

2020-2022

City/region vision and beyond

This objective relates to objectives of City of Zadar’s strategic document in environment protection related to: setting up mechanisms and tools for green infrastructure management and classification of green areas in the city

Objective Title: NEXT STEP DEVELOPMENT OF THE GREEN CADASTRE	Objective Number: 1
Action Title: UPDATE THE EXISTING GIS BASED INTERACTIVE APP TO CREATE OPEN ACCESS	Action Number: 1.2.
Origin of the action: X Transfer <input type="radio"/> New Concept <input type="radio"/> Other	

Action description - What will be done.
<p>An external expert would be hired to upgrade and optimize the currently operational Green Cadastre in a way that it encompasses all the collected data from the Activity 1. 1.. It would also be open to the citizens in a way that it allows adding new data and information regarding their privately-owned green areas and/or report issues and suggestions regarding the state of the public greenery also by creating a public user account.</p> <p>This means that it's necessary to update the existing interactive Cadastre application to add new necessary features in a way that the public can input information on privately own greenery themselves (the possibility of creating user accounts by the public), report possible issues with the greenery (but also the app itself), upload photographs of the privately owned greenery.</p>
Minimum viable action
<p>Must have: To be able to report issues and input suggestions regarding the state of the public greenery by creating a public user account</p> <p>Should have: To be able to report issues and input suggestions regarding the state of the public greenery by creating a public user account. And also to input information on privately owned greenery themselves.</p> <p>Could have: Fully operational app with features described in the action description with a sustainable number of active users.</p>
Responsibility - Who will implement the action?
External expert, City of Zadar,
Estimated budget and resources
<ol style="list-style-type: none"> 1. External expert 2. City of Zadar 3. Green management services 4. Expenses of the cadastre updates
Measuring success
A minimum of 10 interventions on reported issues via cadastre
Timeline - Start and end dates
2021-2022
City/region vision and beyond

This objective relates to objectives of City of Zadar's strategic document in environment protection related to: setting up mechanisms and tools for green infrastructure management and classification of green areas in the city.

Objective Title: NEXT STEP DEVELOPMENT OF THE GREEN CADASTRE	Objective Number: 1
Action Title: CONNECTING THE GREEN CADASTRE INTERACTIVE APP TO AN EXTERNAL DATABASE OF PLANTS	Action Number: 1.3.
Origin of the action: <input type="radio"/> Transfer <input type="radio"/> New Concept <input checked="" type="radio"/> Other	
Action description - What will be done.	
<p>The optimized version of the Green Cadastre would be connected to an external application with a comprehensive database of greenery. When a member of the community wants to insert a new plant in the Cadastre they would be able to take a photo of the plant in question and the external app would provide correct information about the item, which could then be placed into the Zadar's Green Cadastre.</p> <p>Example: https://play.google.com/store/apps/details?id=com.teamsoa.gardenanswers&hl=en</p>	
Minimum viable action	
<p>Must have: Community members are able to get comprehensive information on the searched plants and greenery.</p> <p>Should have: Members of the community are able to insert a new plant into the cadastre via photograph and short description of the location.</p> <p>Could have: All the features described in the action description.</p>	
Responsibility - Who will implement the action?	
External expert, City of Zadar, Green management services	
Estimated budget and resources	
<ol style="list-style-type: none"> 5. External expert 6. City of Zadar 7. Green management services 8. Expenses of the cadastre updates 	
Measuring success	
A minimum of 50 registered users of the Green Cadastre app.	

Timeline - Start and end dates
2021 - 2022
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to: setting up mechanisms and tools for green infrastructure management and classification of green areas in the city. This objective also relates to another one of the document which is related to raising public awareness of the importance in protection the local green landscapes.

Objective Title: RAISING AWARENESS ON THE IMPORTANCE OF PROTECTION OF UGS	Objective Number: 2
Action Title: EDUCATION FOR CHILDREN, YOUNG PEOPLE AND ADULTS	Action Number: 2.1.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>The knowledge on environmental protection and sustainable use of natural resources, improvement of environmental management, environmental pollution prevention, awareness raising and public involvement in decision-making and implementation measures, are of extreme importance.</p> <p>The activity will be centered around education for children, young people and adults who will also talk about the principles of environmental protection. Each workshop will focus on the following principles of environmental protection:</p> <ul style="list-style-type: none"> ● principle of precaution, ● the principle of preserving the value of natural resources, biodiversity and landscape, ● the principle of replacement and / or replacement, ● the principle of eliminating and remediating damage to the environment at source, ● principle of cooperation, ● the principle of "polluter pays", ● the principle of access to information and public participation, ● the principle of encouragement and ● the principle of access to justice <p>The content of the workshops will be adjusted to the age group of the participants and the field of interest. Workshops be developed in an interactive and engaging way for each of the age groups in collaboration with relevant NGOs in this field. The aim is to target participants with no previous engagement or particular knowledge in this field to gain real impact in raising awareness.</p>	

Minimum viable action
<p>Must have: Four workshops must be organized and members of all age groups must participate. For main principles are selected as “must-know” principles:</p> <ul style="list-style-type: none"> - principle of precaution - the principle of preserving the value of natural resources, biodiversity and landscape - the principle of "polluter pays" - the principle of encouragement <p>These principles are selected as the basic principles of knowledge on environmental protection which makes them appropriate for the participants to gain an introductory knowledge in this field.</p> <p>Should have: Seven workshops should be organized and all age groups should participate. Additional three principles are added to the list of the four “must-know” principles:</p> <ul style="list-style-type: none"> ● the principle of access to justice ● the principle of replacement and / or replacement, ● the principle of eliminating and remediating damage to the environment at source <p>These principles should be implemented in the same format as the first four and represent additional knowledge on the topic.</p> <p>Could have: All of the principles of environmental protection will be elaborated through 9 separate workshops. Doing this, full impact in the objective of raising awareness could be reached as participants could then hold a more detailed knowledge in this field.</p>
Responsibility - Who will implement the action?
External expert, City of Zadar, Volunteers, relevant NGOs of Zadar
Estimated budget and resources
<ol style="list-style-type: none"> 1. Cost of experts holding the workshops 2. Renting space for the workshops 3. Promotional material 4. Educational material; books, brochures etc. 5. Refreshments for participants
Measuring success
A brief survey of measuring satisfaction with provided information will be distributed among the participants to measure the success of organized workshops.
Timeline - Start and end dates
2023
City/region vision and beyond

This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: RAISING AWARENESS ON THE IMPORTANCE OF PROTECTION OF UGS	Objective Number: 2
Action Title: TREE PLANTING	Action Number: 2.2.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>The World Environment Day is celebrated on June 5, with the aim of promoting the importance of environmental protection and public call for action. Every year global action is being held for the benefit of the environment through different themes. The idea is that, aside from the "default" actions within the themes, planting trees is carried out as an action for the future. Kindergartens, schools, faculties, institutions and associations will plant a tree for which they will care in the future.</p>	
Minimum viable action	
<p>Must have: At least three trees are planted by aforementioned institutions with a follow-up plan for taking care of the tree in the future</p> <p>Should have: At least five trees are planted by aforementioned institutions</p> <p>Could have: at least five trees are planted by aforementioned institutions with a follow-up plan on taking care of the trees</p>	
Responsibility - Who will implement the action?	
City of Zadar, Volunteers, City institutions, NGOs, Green management services	
Estimated budget and resources	
<ol style="list-style-type: none"> 1. Trees 2. Tools 3. Promotional material 4. Refreshments 5. Green management services 	
Measuring success	
Success of this objective will be reached when at least three trees are planted along with a follow-up plan for taking care of the tree in the future.	
Timeline - Start and end dates	
2023	

City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: RAISING AWARENESS ON THE IMPORTANCE OF PROTECTION OF UGS	Objective Number: 2
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Action Title: URBAN GREEN FEST	Action Number: 2.3.
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Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other
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Action description - What will be done.

In order to incentivize community members to start participating in actions directly related to the improvement and joint management of urban green areas and promote the activities already done within the framework of this Roadmap, a Green Fest will be organized.

The activity was taken from the pilot project realized within the UGB project considering the feedback provided by the participants who expressed their excitement and interest for future organizations of the UG Fest. The program will consist of various workshops regarding environment protection, music numbers, outdoor activities for those who like physical recreation, acting plays for children etc.

Minimum viable action

Must have: At least three hundred participants will attend the Urban Green Fest
Should have: At least 350 participants will attend the Urban Green Fest
Could have: At least 400 participants will attend the Urban Green Fest

Responsibility - Who will implement the action?

City of Zadar, Volunteers, NGOs

Estimated budget and resources

1. Festival organization
2. Promotional material
3. Performing artists
4. Refreshments

<ul style="list-style-type: none"> 5. Appropriate licences 6. Festival staff
Measuring success
Three hundred attendees proven by the attendance sheet, at least.
Timeline - Start and end dates
2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: INCENTIVIZING DEVELOPMENT OF URBAN GREEN AREAS IN PRIVATE OWNERSHIP	Objective Number: 3
Action Title: MEDITERRANEAN HOUSE AND MEDITERRANEAN GARDEN	Action Number: 3.1.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>There is a significant amount of green areas in private ownership In Zadar city area. The mission is to give the population more incentive for the revitalization of existing green areas and the creation of new ones. Mediterranean cultures will be used to make the landscaped gardens in the spirit of the climate. Properly arranging the gardens becomes an important part of the living space that adds to the housing, thus providing the opportunity for recreation, expression of creativity and generally contributes to a better psychophysical state of the individual. The city of Zadar will provide funds to garden owners to support the creation of green courtyards within the residential building. Two workshops will be held in order to make the yard owners better acquainted with the processes of creating and maintaining the greenery.</p> <p>The first workshop will deal with plants that can be cultivated. Participants will be informed about the anatomy and cultivation of Mediterranean herbs and crops, gardening, the use of appropriate tools as well as the prevention and suppression of plant diseases. After the workshop, seedlings will be shared so that owners of private gardens can start using it.</p> <p>At the second workshop, interested owners of private green areas will be informed and taught about irrigation systems. Irrigation systems ensure responsible natural resource management so that water usage is optimal and ecologically justified. In the area of Zadar and Zadar County, there are a number of competitions to choose the most beautiful gardens, and these competitions could be raised to a higher level.</p>	

Minimum viable action
<p>Must have: A minimum of 30% house gardens are landscaped in the Mediterranean spirit</p> <p>Should have: A minimum of 40% house gardens are landscaped in the Mediterranean spirit</p> <p>Could have: A minimum of 50% house gardens are landscaped in the Mediterranean spirit</p>
Responsibility - Who will implement the action?
City of Zadar, External expert, Green management services
Estimated budget and resources
<ol style="list-style-type: none"> 1. Educators 2. Plants 3. Refreshments 4. Transport 5. Educational facilities 6. Photographers 7. Promotional material
Measuring success
At least 100 people will receive plants and plant them into their gardens. Also, at least 100 participants will attend the workshops.
Timeline - Start and end dates
2022 - 2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: INCENTIVIZING DEVELOPMENT OF URBAN GREEN AREAS IN PRIVATE OWNERSHIP	Objective Number: 3
Action Title: COMMUNAL GREEN GARDENS ON THE TOP OF BUILDINGS AND GREEN WALLS	Action Number: 3.2.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	

Action description - What will be done.
<p>Roof gardens improve climatic conditions in urban environments, create an ecosystem that absorbs carbon dioxide, releases oxygen that purifies air, provide lower temperatures in the summer and more winter temperatures in buildings and natural insulators. The roof thus becomes a habitat for birds and insects, opens up the possibility of collecting and recycling rainwater and reducing the amount of rainwater that goes into the sewage system. The green roof increases the overall energy efficiency of the entire building.</p> <p>Green walls reduce the effect of thermal islands in cities and protect the facade from decay. Workshops will be held on urban gardening and composting. At the workshops, participants will be informed about the way planting plants and compost production will be used for their plants. Composting is a natural process that by means of microorganisms transforms bio-waste into compost, fertilizer - food for plants. Compost improves soil structure, soil is thinner, more water capacity and prevents its drying. Composting reduces the need for artificial fertilizers that reduce the quality of water and soil and endangers the health of humans, plants and animals. For roof gardens, as well as for private gardens, can also be organized a competition in arranging and maintaining.</p>
Minimum viable action
<p>Must have: A minimum of 10% of buildings will have a communal green garden and an urban green wall on the top</p> <p>Should have: A minimum of 15% of buildings will have a communal green garden and an urban green wall on the top</p> <p>Could have: A minimum of 20% of buildings will have a communal green garden and an urban green wall on the top</p>
Responsibility - Who will implement the action?
City of Zadar, External expert, NGOs
Estimated budget and resources
<ol style="list-style-type: none"> 1. Educators 2. Plants 3. Compost containers 4. Refreshments 5. Transport 6. Educational facilities 7. Photographers 8. Promotional material
Measuring success
A minimum of 30 participants will attend the workshops. At least 20 compost containers will be distributed and there will be at least 30 gardens and green walls developed.

Timeline - Start and end dates
2022 - 2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: REVITALIZATION AND LANDSCAPE SHAPING OF THE URBAN GREEN AREAS	Objective Number: 4
Action Title: BUILDING URBAN EQUIPMENT	Action Number: 4.1.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>Urban equipment includes equipment for city parks and playgrounds, as well as bus stalls, benches, garbage cans, bicycle racks, advertising racks, flower pots, fences, partitions and hatch covers, and telecommunication installations. It is being changed by evolving the technology and the needs of users, or the social context that depends on the appearance of urban equipment. People want and feel comfortable in the outdoor environment they spend most of the day. Urban elements are a factor in urban planning because they revive public spaces and are indicators of the culture of living and the city spirit. Existing equipment will be refined and refreshed; the overdue equipment will be replaced by a new one.</p> <p>A survey will be conducted to investigate the needs of citizens with regard to urban equipment and on this basis will equip urban green areas. It will track, fence, arrange new playgrounds, set up new info on the plant and animal world and green areas as well as waste sorting cans.</p>	
Minimum viable action	
<p>Must have: Each city park will have garbage cans with recycling partitions and a bicycle rack</p> <p>Should have: In addition to that, each city park will have solar lighting system</p> <p>Could have: All of the city parks will have arranged at least one running/walking track</p>	
Responsibility - Who will implement the action?	

City of Zadar, External expert, NGOs, Green managements services
Estimated budget and resources
<ol style="list-style-type: none"> 1. Necessary equipment 2. External expert 3. Promotional material
Measuring success
One action plan and one strategic document signed by the Authorities able to endorse it officially.
Timeline - Start and end dates
2022 - 2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: REVITALIZATION AND LANDSCAPE SHAPING OF THE URBAN GREEN AREAS	Objective Number: 4
Action Title: VOLUNTARY ACTIONS OF CONDUCTING AND DISPOSAL OF WASTE	Action Number: 4.2.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>A person's activities influence the state of the environment: the purity of air, water and land, the concentration of greenhouse gases affecting climate change, the amount of waste they generate. Often, in public green areas and urban forests, garbage can be found almost everywhere.</p> <p>Volunteer actions to collect waste and fix urban green areas will be carried out at the beginning of each annual season. Waste will be collected and sorted by type, composition and size. In addition to the collection of waste, activities will also be carried out on plants that will be trimmed, fertilized and protected.</p> <p>During volunteer activities, there will also be workshops for children and adults on home recycling and composting and the use of recycled materials.</p>	

Minimum viable action
<p>Must have: Each community will have a volunteer based cleaning and taking care activity each three months</p> <p>Should have: Each community will have a volunteer based cleaning and taking care activity each two months</p> <p>Could have: Each community will have a volunteer based cleaning and taking care activity each month</p>
Responsibility - Who will implement the action?
City of Zadar, External expert, Green management services, NGOs, Volunteers
Estimated budget and resources
<ol style="list-style-type: none"> 1. Cleaning, trimming and other equipment 2. External expert for the activity 3. Refreshments for the volunteers
Measuring success
Success of the objective is achieved if each community area has held at least one cleaning activity each three months.
Timeline - Start and end dates
2022 - 2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: STRENGTHENED HUMAN CAPACITIES FOR JOINT MANAGEMENT OF URBAN GREEN SPACES	Objective Number: 5
Action Title: WORKSHOPS ON THE IMPORTANCE OF JOINT UGS MANAGEMENT	Action Number: 5.1.
Origin of the action: X Transfer <input checked="" type="radio"/> New Concept <input type="radio"/> Other	
Action description - What will be done.	

Considering that one of the main issues with successful integration of and adherence to management plans is the factor of underdeveloped human capacity, the activity will address this issue with a series of workshops. They will be aimed at creating a solid foundation of knowledge concerning the importance of urban green management across multi-stakeholder levels.

The stakeholders invited to these workshops will be from all stakeholder levels that are in any way connected to the question of UGS – public utility companies, local authorities, (non-government) environmental agencies and local community activists.

Minimum viable action

Must have: One workshop per year will be organized with the participation of at least 10 stakeholders in the field

Should have: Two workshops per year will be organized with the participation of at least 10 stakeholders in the field

Could have: Three workshops per year will be organized with the participation of at least 10 stakeholders in the field

Responsibility - Who will implement the action?

City of Zadar, NGOs, External expert

Estimated budget and resources

1. External expert appointed for the workshop
2. Workshop material
3. Refreshments for the participants

Measuring success

This objective is reached if at least one workshop is organized per year. To achieve success in this objective, each workshop must include at least 10 relevant stakeholders.

Timeline - Start and end dates

2022 - 2023

City/region vision and beyond

This objective relates to objectives of City of Zadar’s strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city’s vision of informed and interested public that is actively engaged in green area management.

Objective Title: STRENGTHENED HUMAN CAPACITIES FOR JOINT MANAGEMENT OF URBAN GREEN SPACES

Objective Number: 5

Action Title: MANAGEMENT OF GIS BASED TOOLS AND APPLICATIONS	Action Number: 5.2.
Origin of the action: <input checked="" type="checkbox"/> Transfer <input type="checkbox"/> New Concept <input type="checkbox"/> Other	
Action description - What will be done.	
<p>This activity will be aimed at public organizations that are directly invested in UGS management, public communal companies and local decision-making authorities. The focus will be on the understanding how GIS based applications work and how they can be used for more efficient governance and management of not only green areas in the city, but future infrastructure analysis and development. The aim of this objective is to familiarize members of local stakeholders with possibilities of implementing GIS tools. This will be done by engaging an external expert who will organize the content of educational workshops. This will be done in collaboration with City of Zadar and relevant institutions and authorities in green management.</p>	
Minimum viable action	
<p>Must have: At least one workshop per year must be organized for at least 20 members of relevant local organizations and institutions in the field of UGS management and its related topics. One workshop per year presents an introductory level to the knowledge of GIS implementation.</p> <p>Should have: At least two workshops per year must be organized for at least 20 members of relevant local organizations and institutions in the field of UGS management and its related topics. Two workshops per year present an a more detailed introduction into the knowledge of GIS implementation.</p> <p>Could have: At least three workshops per year must be organized for at least 20 members of relevant local organizations and institutions in the field of UGS management and its related topics. Three workshops per year present an extensive introduction into the knowledge of GIS implementation. If case of reaching this action level, it is expected to have local members of the field to seek further education on the matter.</p>	
Responsibility - Who will implement the action?	
City of Zadar, External expert, Volunteers	
Estimated budget and resources	
<ol style="list-style-type: none"> 1. External expert 2. Workshop material 3. Refreshments for the participants 	

Measuring success
At least one workshop per year organized with at least 20 participants from relevant local organizations and institutions in the field of UGS management and its related topics
Timeline - Start and end dates
2022 - 2023
City/region vision and beyond
This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

Objective Title: PREPARATION OF STRATEGIC DOCUMENTS ON THE MANAGEMENT OF URBAN GREEN AREAS	Objective Number: 6
Action Title: PARTICIPATORY STRATEGIC PLANNING - URBAN GREEN ZONE MANAGEMENT PLAN	Action Number: 6.1.
Origin of the action: X Transfer <input checked="" type="radio"/> New Concept <input type="radio"/> Other	
Action description - What will be done.	
<p>Strategic planning is the process of determining the organization's long-term goals and identifying the best ways to achieve these goals, and is achieved through the adoption and implementation of multi-year planning documents. Strategic planning is a roadmap towards a harmonized vision of development with optimum allocation of resources and easier communication of development goals.</p> <p>Planning will be implemented in a participatory manner involving the mobilization of stakeholders and target groups of the local community and their engagement in needs detection processes, formulation of priorities and joint management of development interventions.</p> <p>Strategic Document will have the title Urban Green Zone Management Plan. This plan will be a key document that will help develop and manage green areas and direct their proper development in the future.</p>	
Minimum viable action	

Must have: A developed strategic document must be the short-term strategic document with the span of implementation of 2 years

Should have: A developed strategic document must be the short-term strategic document with the span of implementation of 4 years

Could have: A developed strategic document must be the middle-term strategic document with the span of implementation of 6 years

Responsibility - Who will implement the action?

City of Zadar, External experts

Estimated budget and resources

1. External expert
2. Development material
3. Promotional material
4. Public release and event organization
5. Refreshments for the event of document presentation

Measuring success

The success of this objective is reached when a short-term strategic document with the span of 2 years time of implementation is finished and publicly presented.

Timeline - Start and end dates

2022 - 2023

City/region vision and beyond

This objective relates to objectives of City of Zadar's strategic document in environment protection related to raising public awareness of the importance in protection the local green landscapes. This objective goes along with city's vision of informed and interested public that is actively engaged in green area management.

This objective also relates to objectives of City of Zadar's strategic document in environment protection related to: setting up mechanisms and tools for green infrastructure management and classification of green areas in the city