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EUROPEAN UNION

**Danube Transnational Programme**

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**URBforDAN Strategic Plan  
Park forests - City of Zagreb**



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# 1. Strategic part of the Integrated Multi-use Management Plan (IMMP) with guidelines for its development

## 1.1 Introduction

### 1.1.1. The objective of strategic plan

The aim of the Strategic part of the IMMP plan is to identify demands towards urban and peri-urban forests (UPF), potential conflicts between different forest uses, to define strategic long-term management objectives in UPF, and to define priorities amongst management objectives and ES. The strategic part also defines management guidelines that represent the basis for the definition of operational goals and measures.

### 1.1.2. The planning process and participation

For the preparation of the strategic plan, different stakeholders were taken in consideration, like experts from the state forest company, city of Zagreb administration, and faculty of Forestry University of Zagreb experts in different scientific disciplines.

Other available documents were analysed like forest management plan for urban forests city of Zagreb, international and national strategies. Also, the Development strategy of the city of Zagreb 2020, ZagrebPlan development strategy city of Zagreb, goals and development priorities 2020, Strategy of urban agglomeration development 2020 were analysed.

### 1.1.3. Legal basis

Forest management unit "Park šume Grada Zagreba" is located on the City of Zagreb area. State forest company Croatian forests Ltd., department Zagreb, working unit Horticulture is responsible for implementation of the management plan. Forest management plan is based on the Forest Law (Official gazette 140/05, with last amendments in 2018), and Forest management regulations.

Other laws and bylaw acts are included in the preparation of the management plan:

Law on nature protection - (Official gazette 80/13)

Law on forest reproductive material (Official gazette 75/09, 61/11, 56/13, 14/14);

Law on game management (Official gazette 140/05, 75/09.,153/09, 14/14)

Law on fire protection (Official gazette 92/10)

Law on water (Official gazette 153/09.,63/11.,130/11, 56/13, 14/14)

Law on roads (Official gazette 84/11, 22/13, 54/13, 148/13)

Law on spatial planning (Official gazette 153/13)

Law on state measurement and cadastre (Official gazette 16/07, 124/10, 56/13)

Law on waste management (Official gazette 94/13)

Regulation of tree marking, wood assortments, transport document and forest order (Official gazette 116/06, 74/07, 55/0925/11)

Regulation on fire protection (Official gazette 33/14)

Regulation on forest protection (Official gazette 121/06, 25/11)

Regulation on land cadastre (Official gazette 84/07,148/09)

Nature protection constraints are implemented.

The last General management plan for City of Zagreb is adopted in year 2013, and cover Medvednica mountain forests and area that is under the planned space organisation, protection of natural, cultural, historical values. Changes and amendment of the general plan are made in years 2015, 2016 | 2017.

Key legal documents are: Law on environment protection, Forest Law, with Regulation on forest management.

On national level, goals are prepared based on National strategy of environment protection, Strategy of water management, Strategy of sustainable development, Strategy of waste management and Strategy and Action plan of biological and landscape diversity Republic of Croatia.

Europe 2020 goals included in Strategy for smart, sustainable and inclusive growth, Building green infrastructure for Europe (2013.) and EU Green Infrastructure Strategy (2013.), EU biodiversity strategy EU 2020., Birds and stands directive.

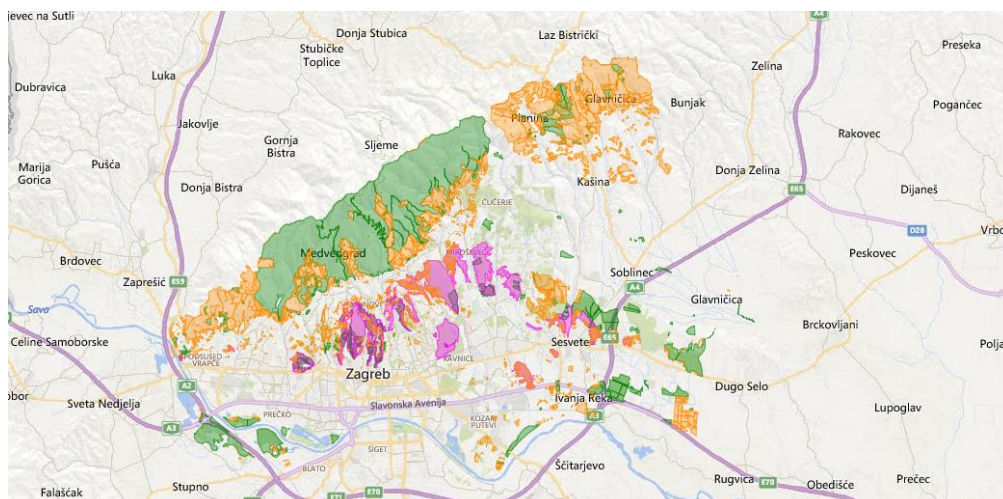
On city level there are Development strategy of city of Zagreb 2020, ZagrebPlan development strategy city of Zagreb, goals and development priorities 2020, Strategy of urban agglomeration development 2020.

## 1.2 Analysis of the state of the art

### 1.2.1. Basic data on the strategic area

Urban forests in City of Zagreb are situated on 20 separate locations and cover more than 1000 ha, distributed mostly over northern parts of the city at the lowest south, southwest and south east slopes of Medvednica Mountain. They are surrounded with urban settlements and family houses, making them under pressure for conversion to urban area, which would considerably influence their functioning. Also, they are an integral part of Zagreb's green areas and represent attractive places for both citizens and visitors.

Forest management unit "Park šume Grada Zagreba" consists of bigger or smaller forest areas distributed over the northern part of the City of Zagreb with length more than 20 km. According to the Forest management plan from the total area of 395,08 ha, there are forest with special purposes and park architecture 2 ha, forest covered area 369,74 ha, productive bare land 24,79 ha, unproductive bare forest land 0,37 ha, barren land 0.18 ha.



Source: [www.hrsume.hr](http://www.hrsume.hr)

Picture 1: City of Zagreb forest map (green=state forests, orange=private forests, purple=Management unit Urban forests Zagreb)

Property distribution in forest management unit according to the cadastre units of Urban forests City of Zagreb (in ha), are presented in table 1:

<b>Cadastre unit</b>	<b>State property</b>	<b>Church</b>	<b>Public land</b>	<b>Other legal subjects</b>	<b>City of Zagreb</b>	<b>TOTAL</b>
Centar	36.51			2.10	3.52	42.13
Črnomerec	47.45			41.84	6.43	95.72
Gornje Vrapče	39,64				0,10	39,74
Gornji Stenjevec					4,48	4.48
Gračani	16,53			0,99	5.18	22,70
Granešina	23,57			39,12	4,18	66,87
Maksimir				2,90		2.90
Markuševac			0,92	38,17		39.09
Mikulići						0.00
Remete					9,09	9.09
Šestine	51,38	1,12	0,07		6,23	58,80
Vrapče					13,56	13.56
<b>TOTAL</b>	<b>215,08</b>	<b>1,12</b>	<b>0,99</b>	<b>125,12</b>	<b>52,77</b>	<b>395,08</b>

Annually sanitary felling (dry and damaged trees, over aged trees with weak vitality) in management unit is 1901 m<sup>3</sup>, what could serve as an indicator of health condition and stand degradation. Average annual cut is 2610 m<sup>3</sup> (years 2014 – 2018), as a result of extreme weather conditions (windbrakes).

62 % of the growing stock are sessile oak, beech (8,8%) and hornbeam (12,8%). There are also some black locust and chestnut trees. Due to the heterogenic stand structure there is a need to implement restoration with combination of natural regeneration in small areas with long term rejuvenation period, and introduction of forest reproduction plants on forest gaps.

In relation to the planning of regeneration intensity at the urban forest management plan level, a more complex and challenging part of planning is the selection of appropriate species for regeneration. This is particularly expressed in conditions of spatially heterogeneous structure of the forest, potentially mature stands for regeneration and the multi objective approach of forest management in urban forests.

The planning of appropriate regeneration dynamics should be based on selected criteria for urban forests which provide primarily more ecosystem services (like recreation, tourism, aesthetic etc.) than growing stock value.

### 1.2.2. Ecosystem services in UPF

The main ecosystem services relevant for the selected strategic area in Forest management unit “Park šume Grada Zagreba” are evaluated through the national methodology for evaluation of non-wood forest functions. Air quality and recreation and tourism are the main ecosystem services provided in the focus area.

**Table: Summary of the most important ES (In the table, you should include all the ES you mapped with 1<sup>st</sup> and 2<sup>nd</sup> rank and the area in ha)**

Ecosystem service (ES) – area (ha) and % of entire forest area – only 1 <sup>st</sup> rank and 2 <sup>nd</sup> rank	Individual objective/ES	Area (ha) and % of entire forest area
Provisioning ES	11_Timber production	307,72 ha (78,14 %)
	12_Non-timber products	
	13_Provision of drinking water	
Regulating ES	21_Local climate mitigation	307,72 ha (78,14%)
	22_Local air quality	92,18 ha (23,4 %)
	23_Protection against noise pollution	
	24_Regulation of floods	
	25_Protection against erosion	42,13 ha (10,7 %)
	26_Waste-water treatment	
Supporting ES	31_Nature protection	2,00 ha (0,5 %)
Cultural ES	41_Recreation and tourism	109,29 ha (27,8 %)
	42_Scientific / educational	53,00 ha (13,5 %)
	43_Cultural heritage	1,18 ha (0,3 %)
	44_Protection and improvement of human environment	93,98 ha (23,9 %)

The highest proportion and importance in ecosystem services has local climate mitigation and timber production (78.14%), due to the planned sustainable forest management with urban forests.

Urban forest is important and has very strong effect on the potential for recreation and tourism (109.29 ha). There are walking paths, several biking trails in the park area, and plans are to develop green infrastructure with the outdoor gym, downhill biking polygon and panoramic viewpoint.

Third important service is protection and improvement of human environment and air quality, due to the strong influence of urban forests on the air quality and absorption of pollution. Air quality in Zagreb has II category, i.e. has pollution from NO<sub>2</sub>, flying particles less than 10 micrometer, benzo pyrene, particles lower than 2.5 micrometer, and ozone which could irritate respiratory system together with the city smog. Trees have influence on decreasing gaseous air pollutants through the absorption of some parts of the pollution through the leaves (phytoremediation).

### 1.2.3. Target groups

State Forest Company is responsible for the provision of forest management plans in urban forests management unit.

Private forest owners are responsible for provision of forest management according to the Law on Forests and guidelines from Forest Advisory service in Ministry of Agriculture.

City administration in Department for agriculture and forestry is responsible for the implementation of city General urban plan document and strategy.

State administration like Ministry of environment protection and energy, Ministry of Agriculture, Ministry of construction and physical planning which is responsible for the implementation of national strategies and development goals accepted in the national parliament, government and EU regulations and directives.

The main target group should be citizens in area around the Park Forest, because they are the main users of the green area and they are receiving the main benefits for improvements of life quality.

Faculty of Forestry and Forest research institutions should provide education workshops with relevant stakeholders to raise awareness about the importance of urban forests and needs for the integrated sustainable forest management and urban forest planning in protected areas.

## 2. The strategic priorities

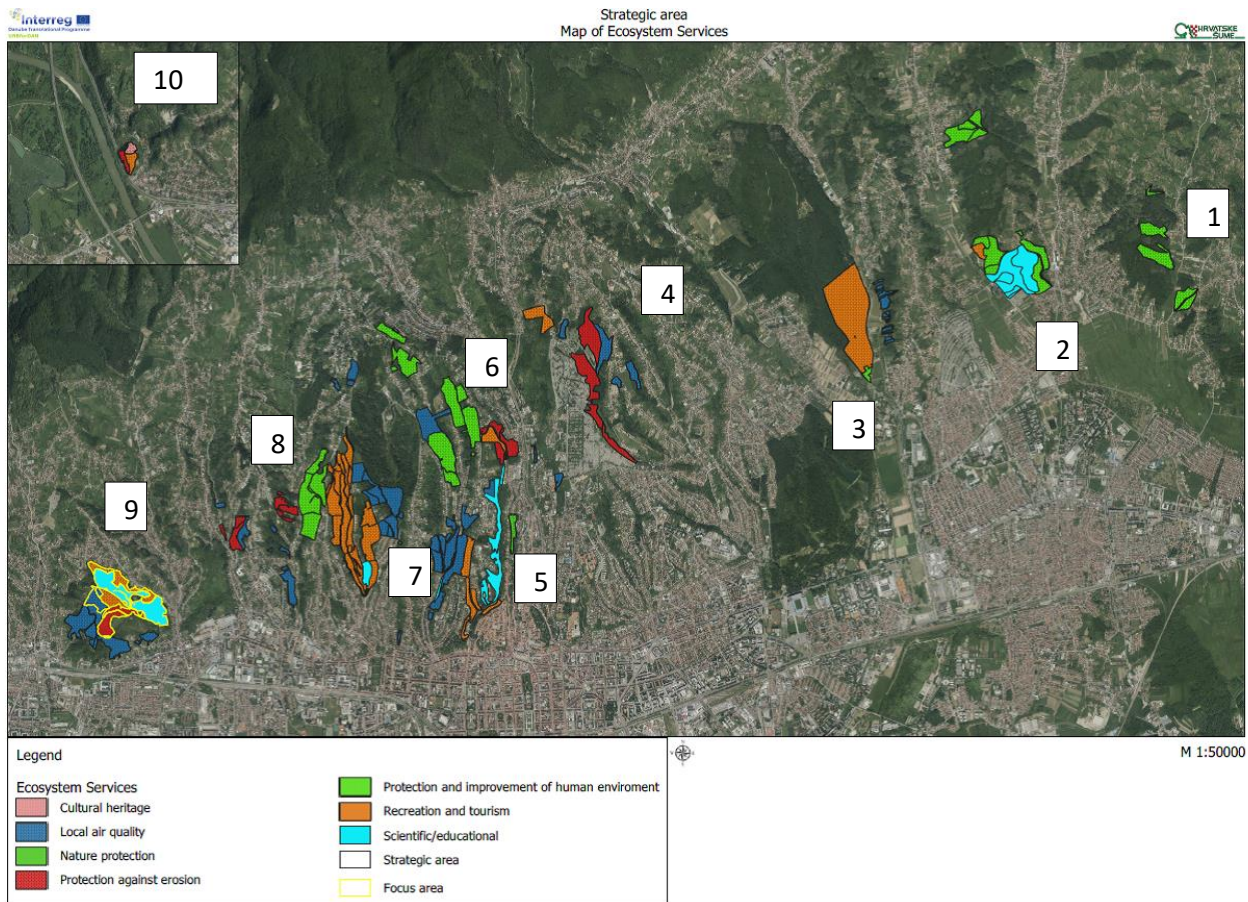
Sustainable management with natural resources is a basis for quality functioning and sustainable development of the city of Zagreb. Strategic plan should improve the quality of all of the environmental issues through the encouraging protection and conservation of natural resources, their rational use for energy and care about the climate changes. There are several development needs and issues, like the lack of systematically evidence the environment conditions, lack of coordination between different responsible institutions, and lack of public perception of citizens about the questions and nature protection issues.

- 1) Sustainable urban forest management: there is a need to develop guidelines for urban forest planners and managers on how to implement new approaches with a connection of the environmental and social services in urban forests
- 2) Mitigation of negative impacts: due to the climate changes, vulnerable stand conditions due to the climate changes (abiotic and biotic factors), negative influence of urbanisation and construction sector on urban forests, there is a need to establish financial needs (funds) and smart regulation approach for reduction of many negative impacts
- 3) Integral forest management: need to provide forest inventory with indicators which should be provided in coordination with policy makers in local, national or international levels to implement new integrated forest management goals in urban forest, improvement of the forest management in the state and private forests
- 4) Recreation/aesthetic function: improvement of urban forests benefits (products and services) and new innovative concepts (like art park, tactile park, education trails...), need to identify priorities for future research; revitalisation of existing recreation areas
- 5) Education: there is a need to increase understanding of the urban forest benefits together with science-based research and education as a tool for decision makers in the evaluation of the ecosystem services as benefits provided to the citizens

## 3. The spatial development concept of UPF

Urban forests in the City of Zagreb are important and have very strong effect on recreation and tourism. There are several biking trails in the park, and plans are to develop green infrastructure with the outdoor gym, downhill biking polygon and panoramic viewpoint.

Zagreb should promote image of a “green and sustainable city”, what could be ensured by the existence and development of natural amenities (i.e. gardens and parks), with provision of additional recreation services, thematic parks, infrastructure etc.



Possible conflicts are among the private forest owners which are interested to sell their property, or construction sector pressures for urbanization of green areas in high quality apartment's area.

Sustainable forest management (uneven age forest management according to the Forest law regulations) in selected districts is one of the main functions which is included through the whole forest management area. Recreation, education, esthetic functions and integral forest management are highlighted in some specific districts depends of the stand quality, position and management plan.

1. Management district: Spust/Ravenac/Branovec

This district has problem with uncontrolled waste disposal.

2. Management district: Grad Mladih/Granešina

Area has significant influence on recreation, education and integral management due to the activities in relation with City of Zagreb programs to attract citizens in educational programs «school in nature» for younger generations. Hrvatske šume d.o.o. is working on horticultural maintenance like sanitary felling and recreational equipment.

3. Management district: Dotrščina

Area has recreational service, with Memorial Area. City of Zagreb with state forest company, has surveillance and control of maintenance.

4. Management district: Mirogoj/Remetski kamenjak/Gorice-Fučkov jarak

Due to the extension of the cemetery Mirogoj, area has problem with erosion and waste disposal.



5. Management district: Tuškanac/Zelengaj

Area has significant esthetic function (among the others), because of the position close to the main city roads and urban villa area. Educational path and maintenance is responsibility of state forest company. This district is important for the integral forest management plan with different stakeholders (state, private, citizens, recreational users..).

6. Management district: Prekrižje/Kraljevac/Orlovac

Area with significant recreational, esthetic and sport activities, also with urban villas. This district has direct connection with the Nature park Medvednica.

7. Management district: Jelenovac/Vrhovec

Problems with landslides and erosion. Area has projected recreational area with playground. Maintenance is provided from state forest company together with the City department for nature protection.

8. Management district: Šestinski dol/Gudura

Area has active and potential landslides. Minimal recreational function. Forests has protection function. Potential for integral forest management with private forest owners.

9. Management district: Grmoščica

There are plans for education and improvement of recreation functions with school in nature.

10. Management district: Susedgrad

There is an Old town Susedgrad with recreational and educational potential what could be done with City department for cultural heritage and nature protection.

## 4. Strategic management objectives and guidelines

Strategic goals about the management of urban forests should be in line with National strategy of environment protection, Strategy about the water management, Strategy of sustainable development of Republic of Croatia, Strategy and Action plan about the protection of biological and landscape diversity of Republic of Croatia, and Strategy of energy development of Republic of Croatia.

Strategic priorities:

1. Sustainable urban forest management (according to the Forest law, uneven age forest management, sanitary felling with small breeding areas).
2. Mitigation of negative impacts on forests
3. Integrated forest management
4. Recreation/aesthetic function
5. Education

## Priority 1: Sustainable urban forest management

<b>Strategic objective</b>	<b>Objective 1: Forest management according to the sustainable management principles</b>
State (SWOT)	<b>Strengths</b> -Effective management with natural resources according to the sustainable development principles is one of the main pillars in future strategic development of the city.
	<b>Weaknesses</b> - In the city area it is a main problem with huge urbanisation close to the forest area that has influence on green area reduction.
	<b>Opportunities</b> - Growing global awareness about the environment protection, and the use of EU funds and programmes as sources to improve energy efficiency and opportunity for improvement of environmental condition and energy efficiency.
	<b>Threats</b> - Issues with coordination and communication between the different state and local (regional) bodies, with different strategic documents are important in environment sector. Unsolved communal infrastructure in many cases.
<b>Guideline 1</b>	<b>Cross-sectoral approach with different stakeholder's consultations to increase implementation of new strategies in sustainable management of urban forest.</b>
Detailed directions:	<p>-To identify key structural and functional elements of ecosystems which will be used for estimation of biodiversity conditions (criteria and indicators of sustainable forest management)</p> <p>-Support for the programmes/projects from private owners associations to increase awareness about the importance of flora and fauna protection and development of non-wood forest products</p> <p>-Forest management according to the sustainable management principles in a way to preserve forest functions (better productivity, stability and resistance of forest and forest areas, ensure quality autochthonous material, development of forest infrastructure, afforestation...)</p> <p>-Restoration and protection of erosion development as a result of different activities</p>
Responsible entity:	State forest company Hrvatske šume d.o.o. and private forest owners
Needed participation:	Municipality councils, citizens, private forest associations, NGOs
Coordination with other ES:	Forest resilience on climate changes.
Positive outcomes:	Better management and forest maintenance of forest areas in private ownership, natural regeneration on small devastated forest areas, conversion of degraded stands
Negative outcomes:	Conflicts with construction sector
Legal basis	General urbanistic plan city of Zagreb and Forest management plan for urban forests
<b>Guideline 2</b>	<b>To ensure financial funds for private and state forests and active participation of private forest owners in protection of biodiversity and ecosystem services</b>
Detailed directions:	-Support for the programmes/projects from private owners associations to increase awareness about the importance of flora and fauna protection and development of non-wood forest products

	<p>-Forest management according to the sustainable management principles in a way to preserve forest functions (better productivity, stability and resistance of forest and forest areas, ensure quality autochthonous material, development of forest infrastructure, afforestation...)</p> <p>-Restoration and protection of erosion development as a result of different activities</p> <p>-Support from the local administration in forest management due to the higher management costs and specific tasks</p>
Responsible entity:	State forest company Hrvatske šume d.o.o. and private forest owners
Needed participation:	Municipality councils, citizens, private forest associations, NGOs
Coordination with other ES:	Forest resilience on climate changes
Positive outcomes:	<p>Improvement of forest management and forest maintenance in private forests</p> <p>-Afforestation of devastated forest areas</p>
Negative outcomes:	Conflicts with construction sector
Legal basis	General urbanistic plan city of Zagreb and Forest management plan for urban forests

## Priority 2: MITIGATION OF NEGATIVE IMPACTS ON FORESTS

<b>Strategic objective</b>	<b>Objective 1: To decrease negative impact on forest stands and identify the role of other sectors on park forests sustainability</b>
State (SWOT)	<p><b>Strengths</b> – long-term and sustainable management according to the management plans, knowledge, management experience</p> <p><b>Weaknesses</b> – lack of financial needs (funds) for improvement of stand conditions, lack of knowledge about the new negative forest impacts</p> <p><b>Opportunities</b> - reduction of the negative impacts through research based activities in urban forests (silviculture and forest management)</p> <p><b>Threats</b>- negative influence of urbanisation and construction sector on urban forests, decreased income from assortments sale, additional costs in protection activities, decreased or lost ecosystem services like landslides. City infrastructure which threaten green areas (roads and communal infrastructure). Light and noise pollution, overuse of road condition chemicals which have influence on flora and fauna</p>
<b>Guideline 1</b>	<b>Activities in protection from abiotic and biotic factors</b>
Detailed directions:	<p>Cost benefit analyse due to the prevention and negative effects</p> <p>Making of a map with threatened park forest areas due to the urbanisation</p> <p>Making of a detailed activity plans in damage restoration</p> <p>Estimation of the restoration costs and future management costs</p> <p>Long term surveillance on forests to increase knowledge about the forests and forest land condition, natural and anthropogenic factors, climate change influence on forests and forest land, biodiversity</p> <p>In city (urban) planning documents include sustainable forest management, biodiversity and landscape diversity with protection measures due to the construction pressures</p> <p>-Support for urban forestry in a way to ensure financial means for forest recovery endangered with dryness and natural disasters</p>

Responsible entity:	<i>State forest company Hrvatske šume d.o.o., City of Zagreb</i>
Needed participation:	<i>State forest company Hrvatske šume d.o.o., City of Zagreb, Faculty of Forestry, Croatian forest research institute</i>
Coordination with other ES:	
Positive outcomes:	<i>Timely and adequate response on threats for sustainability and vitality of urban forests</i>
Negative outcomes:	<i>Increase load of work and additional high costs of implementation</i>
Legal basis	<i>General urbanistic plan city of Zagreb and Forest management plan for urban forests</i>
<b>Guideline 2</b>	<b><i>Estimate and evaluate influence on urbanisation in forest area</i></b>
Detailed directions:	<i>Decrease of uncontrolled and illegal use of green forest areas Making of maps with endangered park forests Making of activity plans Estimation of restoration costs and future management Costs benefit analyse Influence on construction and extension of existing roads, conversion of existing forest paths in accession roads to urban areas Timely response on General urbanistic plan changes Introduction of recreation infrastructure in park areas In the city (urban) planning documents include sustainable forest management, biodiversity and landscape diversity with protection measures due to the construction pressures</i>
Responsible entity:	<i>State forest company Hrvatske šume d.o.o., City of Zagreb</i>
Needed participation:	<i>State forest company Hrvatske šume d.o.o., City of Zagreb</i>
Coordination with other ES:	<i>Protection against erosion which cause landslides, what should be solved with regulation on floods and waste water treatment</i>
Positive outcomes:	<i>Timely and acceptable reaction on urbanisation threats for forest vitality decrease, decrease of pollution, water streams regulation</i>
Negative outcomes:	<i>Additional work load, additional costs of implementation, long term property rights processes</i>
Legal basis	<i>General urbanistic plan city of Zagreb and Forest management plan for urban forests</i>

### Priority 3: INTEGRATED MANAGEMENT

<b>Strategic objective</b>	<b><i>Objective 1: Implementation of integrated park forest management</i></b>
State (SWOT)	<b><i>Strengths</i></b> -existing coordination in implementation of protection activities and implementation of management plans <b><i>Weaknesses</i></b> –changes of law regulation environment and responsibility of different public bodies, compliance of different sectors in implementation of management strategy <b><i>Opportunities</i></b> – improvement of management plans implementation, better park forest services, attraction of additional means and projects for improvement of park forests quality <b><i>Threats</i></b> – hard and difficult coordination among the different interest groups

<b>Guideline 1</b>	<b><i>To create continuous communication between public and local administration</i></b>
Detailed directions:	<i>Cross-sectoral approach with different stakeholders consultations to increase implementation of new strategies in sustainable management with urban forest Implementation of smart regulation principles with informative, policy and economic instruments Define existing bottle necks in implementation of forest management plans To create protocols for information exchange Coordination and planning between science and practice</i>
Responsible entity:	<i>State forest company Hrvatske šume d.o.o. Ministry of Agriculture (Forest advisory service) Ministry of environment protection City of Zagreb, and city departments Fund for Nature protection</i>
Needed participation:	<i>Municipality councils, citizens, private forest associations, NGOs</i>
Coordination with other ES:	
Positive outcomes:	<i>Better and easy implementation of law, faster information exchange, mitigation of different sectors pressure, timely response on issues in management plan implementation</i>
Negative outcomes:	<i>Inclusion of different sectors create additional and different interest from different stakeholders Need for additional experts engagement of knowledge and staff in coordination</i>
Legal basis	<i>General urbanistic plan city of Zagreb and Forest management plan for urban forests</i>
<b>Guideline 2</b>	<b><i>To establish continuous communication among the users and park managers</i></b>
Detailed directions:	<i>To improve communication with users through social networks like Facebook and Instagram Direct communication on the field with explanations about the management goals Public presentation of management plan activities among wider audience and on the field Active participation of city community councils Presentation of positive outcomes from the forest management quality improvement of park forests Implementation of smart regulation principles with informative, policy and economic instruments Define existing bottle necks in implementation of forest management plans To create protocols for information exchange</i>
Responsible entity:	<i>State forest company Hrvatske šume d.o.o. Ministry of Agriculture (Forest advisory service) Ministry of environment protection City of Zagreb, and city departments Fund for Nature protection</i>
Needed participation:	<i>Municipality councils, citizens, private forest associations, NGOs</i>
Coordination with other ES:	

Positive outcomes:	<i>Better effectiveness of plan implementation Less conflicts among users and managers Timely response on issues in management plan implementation</i>
Negative outcomes:	<i>Inclusion of different sectors create additional and different interest from different stakeholders Need for additional experts engagement of knowledge and staff in coordination</i>
Legal basis	<i>General urbanistic plan city of Zagreb and Forest management plan for urban forests</i>

#### Priority 4: RECREATION

<b>Strategic objective</b>	<b><i>Objective 1: Improvement of availability of recreational services</i></b>
State (SWOT)	<p><b><i>Strengths</i></b> –distribution of urban forests in the City of Zagreb area, diversification and accessibility of urban forests, regular maintenance and management</p> <p><b><i>Weaknesses</i></b> –insufficient revitalised recreation infrastructure for recreation, inefficient information for the citizens about the possibilities for recreation and outdoor activities, difficult access to the green areas, lack of parking space in the accession zones</p> <p><b><i>Opportunities</i></b> –to improve and ease access to the attractive green areas for the citizens and visitors, higher use and organisation of public transport for visitors</p> <p><b><i>Threats:</i></b> surrounded with urban settlements and family houses, making them under pressure to decrease the area which considerably influences their functioning</p>
<b>Guideline</b>	<b><i>To analyse visitors needs in recreation areas</i></b>
Detailed directions:	<p><i>Making of plans and maps with different recreation types in urban forests</i></p> <p><i>To provide survey regarding evaluation visitors of satisfaction with ecosystem services</i></p> <p><i>Making of plans about the costs for implementation of different recreation services</i></p> <p><i>Revitalisation of infrastructure elements needed for recreation</i></p> <p><i>Implementation of new innovative recreation concepts and models</i></p>
Responsible entity:	<i>State forest company Hrvatske šume d.o.o. and private forest owners</i>
Needed participation:	<i>Municipality councils, citizens, private forest associations, NGOs</i>
Coordination with other ES:	
Positive outcomes:	<i>Popularization of forest branch, higher number of users</i>
Negative outcomes:	<i>Bigger number of visitors could cause the reduction of forest management and injuries accidents of visitors</i>
Legal basis	<i>General urbanistic plan city of Zagreb and Forest management plan for urban forests</i>

## Priority 5. EDUCATION

<b>Strategic objective</b>	<b>1: To attract different age population groups in terms of educational services</b>
State (SWOT)	<b>Strengths:</b> existing management plans, qualified staff, good knowledge and management tradition
	<b>Weaknesses:</b> discrepancy between different law regulations, unclear responsibility of different institutions
	<b>Opportunities:</b> easier implementation of management plans, higher support from the local population, inclusion of private forest owners, easier communication with public
	<b>Threats:</b> Lack of interest from private forest owners, needs for additional educated staff for dealing with marketing and communication with different NGO
<b>Guideline 1</b>	<p><b>To create education programmes</b></p> <p>Detailed guidelines:</p> <p>Preparation of education programmes with locations and users list for different target groups</p> <p>Creation of education infrastructure, and personalize education on site</p> <p>Introduction of education programs depends of target groups (different contents and tailored)</p> <p>-To offer professional, administrative and financial support for education/professional training for private forest owners on lifelong education</p>
Responsible entity:	State forest company Hrvatske šume d.o.o., Grad Zagreb
Needed participation:	Faculty of Forestry, Ministry of Science, Croatian forest research institute, civil society, private forest owners, public
Coordination with other ES:	42_Scientific / educational 43_Cultural heritage 44_Protection and improvement of human environment
Positive outcomes:	Educated users; Higher use of urban forests; Proper forest management in private forest owners forests, Decrease of public pressure
Negative outcomes:	Higher work load and costs
Legal basis	Forest management plan, GUP; Forest Law
<b>Guideline 2</b>	<p><b>Use of media for public education</b></p> <p>Detailed guidelines:</p> <p>Creation of communication plan with media, journalist education, education through social networks, training/education of trainers</p>
Responsible entity:	State forest company Hrvatske šume d.o.o., City of Zagreb
Needed participation:	Journals associations; PR agencies; NGO, Faculty of Forestry
Coordination with other ES:	42_Scientific / educational 43_Cultural heritage 44_Protection and improvement of human environment

Positive outcomes:	<i>Educated users; Higher use of urban forests; Proper forest management in private forest owners forests, Decrease of public pressure</i>
Negative outcomes:	<i>Higher work load and costs</i>
Legal basis	<i>Forest management plan, GUP; Forest Law</i>

## 5. Governance

In development of urban forest governance, a mix of forest policy instruments that incorporates a broad range of instruments should be developed, according to the Smart regulations principles (Van Gossum et al., 2012). Consequently, governments need to provide the legal framework to ensure urban forest management by removing legal constrains, e.g. to develop easier and transparent procedures for ownership transfer and also prevention of further fragmentation of forest properties in the Forest Act (i.e. forest plots of less than 5 ha are not permitted to split) is required. Information and extension services may be equally effective and even more efficient than regulative approaches. Informational general forest policy instruments with financial support should encourage private forest owners to create or join private forest owners associations and recognize benefits from management with their forests especially in urban areas.

Implementation of the EU Forestry Strategy is a dynamic process, as stated in the Council Resolution. The strategy encourages a participatory and transparent approach involving all stakeholders, while recognizing the wide variety of ownership regimes within the Community and the important role of forest owners. Today, this approach is becoming mainstream practice in national policy and decision-making in the forest sector. Because of that, the all relevant stakeholders should be taken in to the consideration as it was mentioned before like state forest company, city administration, state administration, citizens through the municipality councils, NGOs, universities and research institutions.

The state and city interest in the management with forest and forest land should be encouraged through the biodiversity protection with continuous maintenance and forest silviculture measures according to the Law on forest and Law on nature protection, for the benefit of the urban population and life quality.



## 6. References

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- 10) Forest Law - Official gazette 140/05, amendments in 2018
- 11) Law on nature protection - (Official gazette 80/13)
- 12) Law on forest reproductive material (Official gazette 75/09, 61/11, 56/13, 14/14);
- 13) Law on game management (Official gazette 140/05, 75/09.,153/09, 14/14)
- 14) Law on fire protection (Official gazette 92/10)
- 15) Law on water (Official gazette 153/09.,63/11.,130/11, 56/13, 14/14)
- 16) Law on roads (Official gazette 84/11, 22/13, 54/13, 148/13)
- 17) Law on spatial planning (Official gazette 153/13)
- 18) Law on state measurement and cadastre (Official gazette 16/07, 124/10, 56/13)
- 19) Law on waste management (Official gazette 94/13)