


ENHANCEMENT OF CULTURAL ECOSYSTEM SERVICES IN THE PARK FOREST GRMOŠČICA - ZAGREB, CROATIA

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| Section |  <p>CLEARINGHOUSE 中欧城市森林应对方案</p> <p><i>This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 821242</i></p> |
| 1 | TITLE OF CASE STUDY AREA: Park Forest Grmoščica - Zagreb, Croatia |
| 2 | <p>INTRODUCTION</p> <p>The Park forest Grmoščica is a 53.3 ha park-forest area (of which 10.79 ha are privately owned). The highest point is at 240 m above the sea level. Locals use it for recreational purposes as well as for practicing extreme sports such as downhill mountain biking. Grmoščica is also a project area of Interreg Danube's project URBforDAN (Management and Utilization of Urban Forests as Natural Heritage in Danube Cities) (6/2018-4/2021). The area has been somewhat neglected in terms of not responding to the needs of the local community for recreation (lack of infrastructure, facilities, park equipment, potential conflicts among visitors). An additional problem is existence of landslides due to clay excavations in the past. Within the URBforDAN project several workshops with stakeholders and onsite surveys with visitors were conducted to support participatory planning and management, a practice that can be considered as innovative in the local and Croatian context. The project also built recreational infrastructure to increase the recreational and educational value (service) of the park forest.</p> |
| 3 | <p>KEY FACTS AND FIGURES OF THE CASE STUDY AREA</p> <p>Biogeographic region¹: Continental Surface area: 53.3 ha Country: Croatia Region/Province: City of Zagreb (NUTS-3 level), Continental Croatia (NUTS-2 level)</p> |

¹ <https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3>

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| <p>4</p> | <p>LOCATION MAP(S)</p> |
| <p>5</p> | <p>NAME OF MUNICIPALITY AND WEBSITE ADDRESS City of Zagreb https://www.zagreb.hr (in Croatian) https://www.zagreb.hr/en (in English)</p> |
| <p>6</p> | <p>LEAD ORGANISATIONS:</p> <ul style="list-style-type: none"> • City of Zagreb • Croatian Forests Ltd. |
| <p>7</p> | <p>LOCAL CONTACT(S) Sergej Šimpraga URBforDAN Project manager (City of Zagreb) Zagreb, Croatia City office for Agriculture and Forestry E-mail: sergej.simpraga@zagreb.hr</p> <p>Ninoslav Matošević URBforDAN Project manager (Croatian Forests Ltd.) Zagreb, Croatia E-mail: ninoslav.matosevic@hrsume.hr</p> |
| <p>8</p> | <p>PRINCIPLE UF-NBS (Urban Forests for Nature-Based Solutions) ACTION(S) Provision of new infrastructure/facilities:</p> <ul style="list-style-type: none"> • New forest paths were constructed with all needed equipment for walkers/runners and bikers • New biking trail • New educational trail with info boards will be set to enhance its educational service • Mini football pitch constructed • Quiet area established |
| <p>9</p> | <p>OTHER PRINCIPLE NBS ACTION(S) – non-UF</p> <ul style="list-style-type: none"> • Implementation of participatory approach through engaging local key stakeholders in form of workshops, public discussion and visitors' survey |

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| | <ul style="list-style-type: none"> • Educational activities (forest pedagogy) in “green classroom” (the existing green classroom facility will be extended) • Direction signs how to get there and information sharing with tourist board • New parking lots at the entrances | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | <p>LOCAL STAKEHOLDERS LIST ONLY</p> <ol style="list-style-type: none"> 1. Governing authorities: City of Zagreb, City Office for Agriculture and Forestry, 2. Associations: local citizens associations, sports associations (bikers) 3. Citizens: recreational users (visitors), private forest owners, small business owners, 4. Municipalities: City district Črnomerec, city district Podsused-Vrapče 5. Public/private institutions: Public institutions: City office for Agriculture and Forestry, City office for the Strategic Planning and Development of the City, City districts with local interest, Croatian Forests Ltd. 6. Park planner and authorities: Planner: Croatian Forests Ltd., Forest Administration Zagreb, Unit Hortikultura (in the process of changing the name into Urbano šumarstvo (Urban Forestry in English)); Authorities: Office for Agriculture and Forestry of the City of Zagreb 7. Technicians for park maintenance/monitoring and to educate and support citizens: (Croatian Forests Ltd., Forest Administration Zagreb, Unit Hortikultura (name to be changed into Urbano šumarstvo)) | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | <p>UF-NBS FRAMEWORK</p> <table border="1"> <tr> <td>a.</td> <td>UF-NBS typology</td> <td>Urban forest</td> </tr> <tr> <td>b.</td> <td>Integration</td> <td>n/c</td> </tr> <tr> <td>c.</td> <td>Network/connectivity</td> <td>n/c</td> </tr> <tr> <td>d.</td> <td>Multifunctionality</td> <td>UF services (provisioning, regulating, and supporting) are combined with provision of cultural services mainly recreational and educational services.</td> </tr> <tr> <td>e.</td> <td>Multi-scale</td> <td>n/a</td> </tr> <tr> <td>f.</td> <td>Strategic planning processes</td> <td>Planning and management of Grmošćica and other Urban Forests in Zagreb is based on the Forest Management Plan (2014-2023) made by Croatian Forests Ltd. since all Zagreb’s park-forests are considered as part of one management unit. URBforDAN project introduced participatory approach into UF management planning through organising workshops, public discussion and surveys with visitors.</td> </tr> <tr> <td>g.</td> <td>Inter- and transdisciplinary</td> <td>n/c</td> </tr> <tr> <td>h.</td> <td>Social cohesion and biocultural diversity</td> <td>The visitor survey was developed on the project level by the Slovenian company ZaVita, translated into Croatian and distributed via the 1KA platform for online surveys. The same questionnaire was used for an on-site face-to-face survey with visitors. Workshop participants also filled in the survey. Altogether 149 people participated in the survey between November 2018 and April 2019. However, only 99 completed the survey fully (91) or partially (8) and this data was further analysed. Senior citizens were underrepresented (only 6%), highly educated overrepresented (67%). About 40% come from the up to 3 km radius, and half from more distant areas. The highest share of respondents came by car (41%). About the same share cumulatively came on foot and by bicycle. Duration of visit 1-2 h (56%). Most important reported activities (multiple response and ranking) were spending quality time with family, riding a bicycle, pet</td> </tr> </table> | a. | UF-NBS typology | Urban forest | b. | Integration | n/c | c. | Network/connectivity | n/c | d. | Multifunctionality | UF services (provisioning, regulating, and supporting) are combined with provision of cultural services mainly recreational and educational services. | e. | Multi-scale | n/a | f. | Strategic planning processes | Planning and management of Grmošćica and other Urban Forests in Zagreb is based on the Forest Management Plan (2014-2023) made by Croatian Forests Ltd. since all Zagreb’s park-forests are considered as part of one management unit. URBforDAN project introduced participatory approach into UF management planning through organising workshops, public discussion and surveys with visitors. | g. | Inter- and transdisciplinary | n/c | h. | Social cohesion and biocultural diversity | The visitor survey was developed on the project level by the Slovenian company ZaVita, translated into Croatian and distributed via the 1KA platform for online surveys. The same questionnaire was used for an on-site face-to-face survey with visitors. Workshop participants also filled in the survey. Altogether 149 people participated in the survey between November 2018 and April 2019. However, only 99 completed the survey fully (91) or partially (8) and this data was further analysed. Senior citizens were underrepresented (only 6%), highly educated overrepresented (67%). About 40% come from the up to 3 km radius, and half from more distant areas. The highest share of respondents came by car (41%). About the same share cumulatively came on foot and by bicycle. Duration of visit 1-2 h (56%). Most important reported activities (multiple response and ranking) were spending quality time with family, riding a bicycle, pet |
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| | | | walking, jogging. The majority did not perceive that their activities might create a conflict with other users. Visitors supported the installation of new equipment and infrastructure, mostly new walking and bicycling paths, access to drinking water, benches and tables, toilets, outdoor workout equipment, new educational trails and info boards. |
| i. | Governance arrangements | I. Project management structure. | Project coordinator – City of Ljubljana Altogether 16 partners from 10 countries. Croatian partners: City of Zagreb Croatian Forests Ltd. |
| | | II. Local community engagement and the nature of their engagement. | The members of the local community were engaged in public discussion and stakeholder workshops as participatory approaches for UF (Urban Forestry) planning and management. The nature of their engagement was to participate in workshops and to give their own ideas and proposals regarding Grmoščica. As part of the project activities an online survey with different user groups was also administered to better understand how they use the park forest and learn about their needs and suggestions for improvement. Project activities to be implemented by the end of the project: Downhill mountain biking race and workshops with children and young adults (forest pedagogy). A representative of the local community group participated in a promotional video and talked about the history of the city district including the urban forest Grmoščica. |
| | | III. City-scale and/or region-wide governance for the project and/or UF-NBS (city and regional stakeholders and character of their engagement) | City of Zagreb is one of the project partners alongside Croatian Forests Ltd. City-scale governance for Grmoščica, as well as other UF in Zagreb is under the City Office for Agriculture and Forestry. Croatian Forests Ltd. do the planning and management of urban forests and other state-owned forests in the city of Zagreb. The City is financially supporting the management of UF based on agreed annual plans and monitors the implementation of those plans. |
| | | IV. National and international governance context (national and international stakeholders and character of their engagement) | First level control on the national level monitors the project implementation. The Interreg Danube Programme (Joint Secretariat) monitors the project implementation at the project level. |
| | | V. Other (specify) | n/a |
| j. | Institutional frameworks | I. Project staff responsibilities. | City of Zagreb's project staff: Project manager (1 person) <ul style="list-style-type: none"> • Planning and organisation of project's activities • Quality control Communication manager (1 person) <ul style="list-style-type: none"> • Planning, organisation, and implementation of project's communication activities • Informing project manager about progress and |

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| | | | <p>problems with communication activities</p> <p>Financial manager (1 person)</p> <ul style="list-style-type: none"> • Planning, organization, and implementation of project's financial activities • Informing project manager about progress and problems with financial activities <p>Croatian Forests Ltd. project staff:</p> <p>Project manager (1 person) Financial manager (1 person) Communication manager (1 person) Forestry professionals (5 persons)</p> <ul style="list-style-type: none"> • Professional advice on where to put trails and equipment • Development of the content of educational boards • Inputs to the Integral plan for park-forest management • Organisation of workshops and discussion for the public • Forest pedagogy with children and young adults <p>Technical staff (10 persons)</p> <ul style="list-style-type: none"> • Woodwork (wooden benches, wooden staircase steps, wooden educational boards, etc.) • Soil work with machinery • Construction of equipment and facilities on site |
| | | II. Project Management Committee (Y/N) if Y. | Y – consists of representative of project partners (project managers of project partner's organisations) |
| | | III. Frameworks <u>above the project</u> that exert influence on the project and/or UF-NBS e.g. Municipality, National Forestry Department. | <p>Ministry of Agriculture, Directorate of Forestry, approves all forest management plans.</p> <p>Ministry dealing with nature protection gives guidelines for nature protection and Croatian Forests Ltd. needs to get approval for their forest management plans from this ministry who checks that all the rules and principles of nature protection are included in these management plans.</p> |
| | | IV. Private companies that work on behalf of/or are embedded within the project. | ZaVita – Slovenian company subcontracted by the lead partner (City of Ljubljana) to help with stakeholder engagement – training partners on how to implement workshops with stakeholders, designing a visitors' survey. |
| | | V. Trade representative organisations that are involved in the project | n/a |
| | | VI. Regulatory frameworks that the project operates within (i.e. bylaws, municipal laws, national laws, licences and leases, partnership | <p>Forest Act (NG 68/18)</p> <p>Forest Management Plan for Forest Management Unit Park-Forests of the City of Zagreb (2014-2023)</p> <p>Annual programmes for management of Zagreb's park forests</p> <p>Safety requirements (standards) for recreational equipment (children playgrounds)</p> <p>Rules for construction of facilities (observation deck, mini football pitch)</p> |

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| | | agreements etc) | |
| | | VII. Other (specify) | n/a |
| k. | Economic frameworks | I. Community fundraising | n/a |
| | | II. Project delivered services and monies raised by project | The assessment and mapping of forest ecosystem services was conducted based on the national and FAO's approach. |
| | | III. City, regional general funds | European Union's Interreg Danube transnational programme secures 85% of project budget and 15% is co-funded by project partners. City of Zagreb as one of the partners contributes with 15%. |
| | | IV. Special funds e.g. National Lottery, Challenge funds | n/a |
| | | V. National government funds | n/a |
| | | VI. Private sector investment | n/a |
| | | VII. International funds e.g. European Union structural funds, LIFE + etc. | European Union - Interreg Danube Transnational Programme (85%) |
| | | VIII. Other (specify) | n/a |
| i. | Sino/European comparative relevance | | <p>The URBforDAN project is an example of a transnational approach to urban forest management. This project is a good example of inter-city collaboration of relatively small European countries who work together to enhance UF planning and management practice (addressing recreational, educational and tourist services, implementation of participatory approaches).</p> <p>The City of Zagreb through the URBforDAN project enhances urban forest planning and management by introducing participatory approaches. For the Chinese context, the project area is rather small. However, implementation of participatory approaches in urban forest management and planning, visitor monitoring and knowledge on urban forest governance may be relevant for Chinese partners and stakeholders.</p> |
| m. | UF-NBS valorisation | | <p>Common practice is that forest management plans are presented in a form of public exhibition (all interested can see the draft forest management plan before approval in the offices of the forest management company) or public presentation (date and time set, all interested can join the presentation and give comments). This applies for forest management plans for both public and private forests. According to forestry professionals these public presentations are not attractive to the public (not attended by many people). This is how interested party have insight into the forest management plan, provide comments and ask for clarifications. However, this fulfils rather an informing than an involving purpose and the participants are not</p> |

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| | | | <p>involved in the planning process. Public involvement in the form of workshops and participatory discussions, surveys with potential and actual visitors, collecting the ideas from the public in terms of what kind of content to put in public green space and where, their satisfaction with existing state of urban forests, such as the ones conducted within URBforDAN project, is rather innovative for the Croatian forestry sector in the segment related to urban areas.</p> <p>Public participation in project activities is a sign that people want to be included, that they have something to say. It is very important to include users and stakeholders into UF planning process, especially in urban areas, where forest areas are highly important. This example can be considered as good practice in UF planning and management that should be replicated beyond the project lifetime in other urban forests and other green space.</p> <p>The implementation of recreational and educational facilities contributes to meeting the visitors' needs.</p> |
| | n. | Procurement of UF-NBS | <p>The location of the case study and general activities were planned in the phase of the project proposal by project partners. CF did all the activities related to the establishment of recreational facilities and infrastructure.</p> |
| | p. | Ecosystem services (list the three most important services being provided in no more than 50 words) | <ul style="list-style-type: none"> • Recreational services • Educational services • Regulating services |
| | q. | Renaturing | n/a |
| 12 | <p>LESSONS AND TRANSFERABILITY</p> <p>Including stakeholders into the development of Integral Park-forest Management Plans can yield better solutions and avoid possible conflicts afterwards. The URBforDAN project did exactly that with stakeholder workshops and public discussion for users of the Grmošćica Urban Forest. Planners gained better insights into visitors' needs and their support for implementation of agreed activities. Also, the URBforDAN project with its transnational nature can improve decision making on local level based on shared knowledge and know-how among project partner cities. This is a good and transferable example of how to use local and transnational knowledge to improve UF management and planning.</p> | | |
| 13 | <p>REFERENCES (Harvard style)</p> <p>European Environment Agency (2012). <i>Biogeographic regions in Europe</i>. Available at: www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-1 (Accessed: 18 September 2014).</p> <p>Interreg URBforDAN Project. Available at: www.interreg-danube.eu/approved-projects/urbfordan (Accessed: 22 June 2020).</p> <p>URBforDAN Project (Croatian website). Available at: https://urbfordan-hrsume.webnode.hr (Accessed: 22 June 2020)</p> <p>URBforDAN Training on Participatory Approach. Available at: http://www.interreg-danube.eu/uploads/media/approved_project_output/0001/38/72d2a1e918d30cf7ee7c5ee810c9bb3896f82702.pdf</p> | | |

(Accessed: 25 June 2020).

Kičić, M., Marin, A.M., Vuletić, D., Kaliger, I., Matošević, N., Šimpraga, S., Krajter Ostoić, S. Who are the visitors of park-forest Grmoščica and what do they want? Results of a quantitative exploratory survey. SEEFOR (South-east European Forestry), under review.

Posavec, S., 2020. Integrirani višenamjenski plan upravljanja urbanim šumama Grada Zagreba (Integral multipurpose plan for Zagreb's park forests). PPT presentation, 15/09/2020.