BOOK OF ABSTRACTS

I. SESSION DESCRIPTION

ID: S8b

Planning nature-based solutions while keeping people's preferences in mind

Hosts:

	Title	Name	Organisation	E-mail
Hosts:	Dr.	Jiří Louda	Jan Evangelista Purkyne University in Usti nad Labem, Czech Republic and IREAS, Institute for Structural Policy, Czech Republic	louda@ireas.cz
		Jan Brabec	Charles University, Prague, Czech Republic and Jan Evangelista Purkyne University in Usti nad Labem, Czech Republic	brabec@e-academia.eu
Co-hosts:	Dr.	Daria Sikorska	Warsaw University of Life Sciences, Poland	daria.sikorska@gmail.com
	Dr.	Karsten Grunewald	Leibniz Institute of Ecological Urban and Regional Development in Dresden, Germany	k.grunewald@ioer.de
	Dr.	Jan Macháč	Jan Evangelista Purkyne University in Usti nad Labem, Czech Republic	machac@ieep.cz

Abstract:

Incorporating ecosystem services (ES) into planning and decision making processes in both cities and landscape has become increasingly important as a result of the urbanization, population growth and climate change. Implementation of nature-based solutions (NBS), including green and blue infrastructure projects (GBI) in cities, has played an important role in dealing with the current and future challenges faced by modern society. For effective ecosystem services governance and NBS implementation, it is important, that the implemented NBS/GBI designed by spatial and urban planners and approved by decision makers reflect the preferences of residents. A consensus among stakeholders is needed. However, this is not the situation in many cases. The planners and decision makers are often focused primarily on regulating ES, but these are rarely identified and valued by other stakeholders, especially residents, who better recognize cultural ES such as

recreation or aesthetics, rather than indirectly received benefits from blue-green infrastructure, such as flood control or climate regulation. This often results in disparities among different groups of stakeholders involved in the spatial planning process in cities. Especially in the case of public land the preferences of residents regarding the use of land should be considered to prevent situations in which the implemented NBS are not accepted by residents. In such case an opposition may arise against NBS implementation on public land, or against spending public money for buying-out private land. Private landowners might also refuse to sell their land for future NBS implementation.

The preferences of the residents frequently remain underrepresented in the planning process, while taking the public opinion into account is an integral part of the acceptance. Shaping the GBI/NBS in a way which is not viewed positively by the residents may undermine the positive role of the NBS in the eyes of the public. To prevent this, it is possible to use numerous methods for assessing people's preferences. Basic methods including various types of surveys in which the respondents assess the perceived level of ES provisioning often provide only average scores. As many current surveys show, preferences vary and not all solutions fit all people. Average scores can be very misleading and might not correspond to individual preferences, which will often be grouped into several conflicting groups. These results then provide a compromise that in fact might not be preferred by any group. Advanced methods for assessing preferences can solve this problem by allowing evaluating preferences of different groups of people. This kind of output could assist the planners to design a suitable set of NBS broadly accepted by the ES beneficiaries, but only if the preferences assessment results are successfully incorporated.

Goals and objectives of the session:

The goal of this session is to present various approaches to preference assessment towards NBS/GBI that may be used by planners to incorporate peoples' opinion into the planning process. We invite contributions that will:

- present examples of various (novel) approaches/methods to preference assessment towards nature-based solutions/green and blue infrastructure in case studies
- show practical utilization of the preference assessment outputs in planning/decision making processes (e.g. in urban planning)
- discuss barriers of transferring outputs into planning practice
- share experience with survey design, data collection and evaluation

Planned output / Deliverables:

Depending on the session participants' interests and quality of contributions, selected papers could be published in the in the open access Special Issue of Sustainability Journal or a collaborative paper based on the session conclusions will be developed. Special Issue details: https://www.mdpi.com/journal/sustainability/special_issues/green_spaces

Related to ESP Working Group/National Network:

Sectoral Working Group: SWG 8 – ES in Conservation

II. SESSION PROGRAM

Date of session: Wednesday, 9 June 2021
Time of session: 11:00 – 17:30

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
11:00 11:08	Jiří	Louda	IREAS/Jan Envagelista Purkyne University	Introduction
11:08 11:21	Daria	Sikorska	Warsaw University of Life Sciences	Less is more – how informal green spaces can improve urban green space availability and decrease maintenance costs
11:21 11:34	Edyta	Łaszkiewicz	University of Lodz	Green spaces are my places: the interplays between place attachment, greenery features and environmental justice
11:34 11:47	Ralf-Uwe	Syrbe	Leibniz Institute of Ecological Urban and Regional Development	The value of urban nature for health and wellbeing as ecosystem service – an empirical comparative study for three cities in Germany and Czechia
11:47 12:00	Lenka	Suchá	Czech Academy of Sciences	Combining participatory scenario building with vulnerability analysis modelling as a tool for supporting nature-based solutions implementation: the case from the Czech Republic
13:30 13:45	Jan	Brabec	Charles University in Prague & Jan Evangelista Purkyne University in Usti nad Labem	Do residents' preferences hinder provision of ecosystem services from green and blue infrastructure? Evidence from Czechia and Germany
13:45 14:00	Bart	Immerzeel	Norwegian University of Life Sciences	Appreciation of Nordic landscapes and how the bioeconomy might change that: results from a discrete choice experiment
14:00 14:15	Lysander	Fockaert	KU Leuven	Local support for agro-environmental measures in Flanders and the role of knowledge and environmental attitudes
14:15 14:30	Marek	Hekrle	Jan Evangelista Purkyně University in Ústí nad Labem	Public perception of different nature-based flood protection solutions: lessons from field research in Czechia
14:30 14:45	Liselotte	Hagedoorn	VU University Amsterdam	The role of ecosystem-based adaptation in reducing vulnerability to climate change
14:45 15:00	Daniele	La Rosa	University of Catania	From preferences of social groups to planning and management solutions of green spaces in Bucharest

Time	First name	Surname	Organization	Title of presentation
15:30 15:42	Bradley	Loewen	Norwegian University of Science and Technology	Balancing resilience and inclusivity: Nordic-Baltic experiences of participative planning for urban resilience through nature-based solutions
15:42 15:54	Renata	Włodarczyk-Marciniak	European Regional Centre for Ecohydrology of the Polish Academy of Sciences	Public participation in the design of contemporary green cities. Coping with challenges and obstacles of the process in Łódź - the city of central Poland
15:54 16:06	Anna	Wilczyńska	Warsaw University of Life Sciences	Ecosystem services of blue spaces in Warsaw – users perspective
16:06 16:18	Celina	Stanley	Leibniz Institute of Ecological Urban and Regional Development	meinGrün - an app that combines supply and demand for informing urban green space planners
16:18 16:30	Amy	Phillips	Vrije Universiteit Brussel	Use-related and socio-demographic variations in urban green space preferences
16:30 16:42	Sophie	Peter	Senckenberg Biodiversity and Climate Research Center BiK-F	Cultural worldviews consistently explain bundles of ecosystem service prioritisation across rural Germany
16:42 16:54	Aris	Jansons	LSFRI Silava	Social perception of riparian forest value: case study in Latvia
16:54 17:06	Ondřej	Cudlín	Global Change Research Institute CAS	Proposal of "nature-based solutions", supporting the sustainability of the ecosystem service provision in the Krkonoše National Park (Czech Republic)
17:06 17:18	Josep	Pueyo-Ros	Catalan Institute for Water Research	The Edible Game: A participatory approach to foster edible nature-based solutions
17:18 17:30	Jiří	Louda	IREAS/Jan Envagelista Purkyne University	Discussion

III. ABSTRACTS

Abstracts are ordered based on the session program. The first author is the presenting author unless indicated otherwise.

1. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b – Planning nature-based solutions while keeping people's preferences in mind

Less is more – how informal green spaces can improve urban green space availability and decrease maintenance costs

Presenting author: Daria Sikorska

Other author(s): Piotr Sikorski, Edyta Łaszkiewicz

Contact: daria_sikorska@sggw.edu.pl

Urban green spaces (UGS) offer a wide range of ecosystem services to urban residents, improving their health and well-being. However, the resources of formally designated UGS, such as parks and forests, are underprovided, resulting in unequal access to UGS. On the example of Warsaw, we explore how informal green spaces (IGS) can reduce inequalities in the distribution of UGS. We also identify the share of greenery bereft of cultivation and discuss the cost-effectiveness of unmaintained vegetation vs cultivated from the point of view of the residents and city managers. The UGS identified as most available to residents were multi-family housing (highly available to 8.01% of residents), grasslands and agriculture (8.58%), greenery along roads and railways (5.35%), non-forested vacant lots (1.23%), and forested vacant lots (1.03%), while parks and green squares are highly available only to 1.41 residents. According to green areas managers, UGS that require most cultivation (on a scale of 1-7) are - greenery associated with the multi-family housing (4.67), grasslands and agriculture (2.67), road and railway greenspace (4.33), parks and squares (5.67) while in vacant lots the maintenance is minimal, similarly to nature reserves (1). Based on NDVI analysis we found that spontaneously regenerating vegetation, which results from lack of cultivation, can be found in urban parks, while areas considered to be wild, such as vacant lots, can be to a high extent cultivated. The actual costs of maintaining UGS generally correlate with the share of spontaneous green space, but this is not the case for parks and squares, whose main maintenance costs are far beyond the level of average. We postulate supporting various types of unmanaged green areas in the cities, as contributing to the reduction of inequalities in access to UGS and generating fewer costs to greenery managers while being positively perceived by the public.

Keywords: ecosystem services, equity, wastelands, environmental justice, spontaneous vegetation, urban planning

2. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b – Planning nature-based solutions while keeping people's preferences in mind

Green spaces are my places: the interplays between place attachment, greenery features and environmental justice

Presenting author: Edyta Łaszkiewicz

Other author(s): Daria Sikorska, Piotr Sikorski, Karolina Dobrosz

Affiliation: University of Lodz, Poland

Contact: edyta.laszkiewicz@uni.lodz.pl

The strength of people's identity with a place, their emotional attachment and feelings of belonging to a given place is commonly named as 'place attachment'. Such emotional belonging is highlighted as one of cultural ecosystem services provided by urban green spaces. Although previous studies evaluated the existence of greenery can positively affect the strength of place attachment, there are still unanswered questions regarding how green space features can support or weaken individual's place attachment. The aim of this research is to evaluate the association between greenery features and place attachment. For this purpose, we use five-dimensional model of place attachment which enables us to separate different aspects of place attachment such as place identification, place dependence, family belongings, friends belongings and bonding with nature. Then, we ask city's inhabitants in the online survey about their preferences regarding greenery and these five dimensions of place attachment. Based on their answers we evaluate which dimensions of place attachment are associated with the existence of greenery and what are the green space features that support emotional attachment. We discuss our results in the context of environmental justice.

Keywords: place attachment, urban green spaces, environmental justice, cultural ecosystem services

3. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b – Planning nature-based solutions while keeping people's preferences in mind

The value of urban nature for health and wellbeing as ecosystem service – an empirical comparative study for three cities in Germany and Czechia

Presenting author: Ralf-Uwe Syrbe

Other author(s): Ina Neumann, Karsten Grunewald, Patrycia Brzoska, Jiři Louda, Lenka Dubová, Olaf Bastian

Affiliation: Leibniz Institute of Ecological Urban and Regional Development, Germany

Contact: r.syrbe@ioer.de

The quality of life in cities critically depends on the planning and shaping of urban living space, in particular the urban nature. By providing a wide range of ecosystem services (ES), urban nature essentially contributes to the wellbeing of city dwellers and plays a major role in the avoidance of frequent diseases since it gives a valuable impact on health. We tried to identify the effects of urban nature on human wellbeing particularly regarding to the health effects. The research question was what types and characteristics of urban green space are appreciated by city dwellers to draw up recommendations for practice in such a way that they offer better living conditions. We also identified obstacles and opportunities to support public health regarding needs of citizens. By personal interviews, we asked for the opinions and assessments on urban green spaces. About 700 people were addressed in Dresden (Germany), Liberec and Děčín (Czechia) to find out and compare how the respondents experience and value the effects of urban green spaces. The results prove a high valuation of urban greenspaces for self-assessed health status. Most of the respondents feel more relaxed (74 %), happier (69 %), physically better (59 %), more energetic (52 %), and able to concentrate (44 %) after spending time in urban green. Parks, urban forests and rivers or reservoirs were identified as the favorite types of urban green spaces in all three cities; the most natural and less intensively maintained areas were preferred. The paper examines the connections between the quality of green spaces and the feelings and effects they generate on visitors. The appreciation of elements of the urban green as well as their recreation and health effects have been identified and mapped; similarities resp. differences between the cites and countries were shown.

Keywords: ecosystem services, landscape elements, social survey, questionnaire, urban green space

4. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Combining participatory scenario building with vulnerability analysis modelling as a tool for supporting nature-based solutions implementation: the case from the Czech Republic

Presenting author: Lenka Suchá

Other author(s): Simeon Vaňo, Helena Duchková, Petr Bašta, Martin Jančovič, Eliška K. Lorencová, Davina Vačkářová

Affiliation: Global Change Research Institute, Czech Academy of Sciences, Czech Republic

Contact: sucha.l@czechglobe.cz

Currently, several cities in the Czech Republic have adopted or are preparing a climate adaptation strategy with an emphasis on implementation of nature-based solutions (NBS). Stakeholder co-operation combined with scientific knowledge can support effective climate adaptation and NBS planning. While participatory processes allow the inclusion of stakeholders' perspectives, spatial modelling of climate vulnerability enables to target areas under different climate pressures. Therefore, the interplay of participatory scenario building and vulnerability analysis created a space for co-development of shared knowledge that is respectful to both, stakeholders' viewpoints and scientific outcomes. This contribution aims to discuss the use of participatory scenario building methods in the context of vulnerability analysis that aims to support NBS in urban climate adaptation planning. Drawing on the case studies from Czech three major cities - Prague, Brno and Ostrava, we aim to present a combined methodology of participatory workshops, carried in fall 2019 and winter 2021 with a vulnerability analysis of urban land and society to heat waves. The workshops' methodology addressed the need for stakeholders' engagement in NBS planning through their active participation in exploratory and normative scenario building by using foresight methods of envisioning and backcasting. Building on these workshops, GIS modelling was adopted for the development of land-use scenarios concerning NBS implementation for the years 2030 and 2050. Such an approach enabled structural thinking over the needs, challenges and opportunities with regard to NBS planning and implementation. The co-developed scenarios provided a basis for vulnerability analysis, based on the scenarios and Shared socioeconomic pathways, which identified both, resilient and vulnerable areas of the future city. Therefore, the combination of participatory scenario building with vulnerability

analysis modelling represents a suitable tool to generate possible strategies on NBS and climate adaptation actions.

Keywords: collaborative process, stakeholder workshop, land use planning, vulnerability to heat waves, urban adaptation

5. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Do residents' preferences hinder provision of ecosystem services from green and blue infrastructure? Evidence from Czechia and Germany

Presenting author: Jan Brabec

First author: Jiri Louda

Other author(s): Jan Machac, Lenka Dubova, Karsten Grunewald, Ralf-Uwe Syrbe, Patrycia Brzoska

Affiliation: Charles University in Prague & Jan Evangelista Purkyne University in Usti nad Labem, Czech Republic

Contact: louda@ireas.cz

Accelerating climate change, growing share of the urban population, and reduction of urban sprawl by increasing urban development density influence quality of life in cities. Green and blue infrastructure elements (GBIEs; e.g., parks, green roofs, streams, ponds) may represent measures that help cities with adapting to the climate change effects (e.g., urban heat island, floods, droughts) and at the same time bring a wide range of co-benefits positively influencing urban residents' well-being. GBIEs take different forms – from genuine nature form over nature-based form to semi-natural form – that differ not only in aesthetics, but also in the amount and quality of ecosystem services (ESs) provided. Nature and nature-based forms of GBIEs typically provide ESs to a greater extent – especially when it comes to water regulation, habitat creation or recreation. City residents' preferences regarding individual forms of GBIEs are only starting to be systematically studied but recent works showed that city residents are aware of the benefits provided by GBIEs and that they are willing to pay for building, extending and maintenance of these elements. However, decision makers in many cities often miss this information and

therefore the implementation of GBIEs may be opposed by them. Their arguments include e.g., lack of space for GBIEs in urban area or fear of "wilder" look of nature-based forms and its perception by residents. Our study focused on residents' preferences regarding specific forms of GBIEs (urban park and stream) in one German and two Czech cities using a discrete choice experiment. The results of a logit model showed that residents' preferences for a nature-based form were significantly higher than for a semi-natural form of GBIEs for both parks and streams in all cities. Such findings could reduce the risk of conflicts and unacceptability of newly planned GBIEs or revitalization of the current ones.

Keywords: green and blue infrastructure, ecosystem services valuation, choice experiment, preferences, nature-based solutions

6. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Appreciation of Nordic landscapes and how the bioeconomy might change that: results from a discrete choice experiment

Presenting author: Bart Immerzeel
Other author(s): Jan Vermaat, Artti Juutinen, Eija Pouta, Janne Artell
Affiliation: Norwegian University of Life Sciences, Norway
Contact: bart.immerzeel@nmbu.no

Surface waters and their catchments provide societal benefits through cultural ecosystem services like recreation and appreciation of nature. The supply of cultural services depends on landscape characteristics like the extent of forested area, water clarity and the intensity of land use. These attributes vary spatially and will likely be influenced by a possible transition to a bioeconomy, i.e. a shift towards more use of renewable, biological resources like forestry products. Using a discrete choice experiment, we quantified survey respondents' preferences and willingness to pay for changing landscape attributes in six Nordic catchments and explored how different characteristics of both the landscape and respondents affect these preferences. Results from a mixed logit (MXL) model analysis show preference for a more equal distribution of agriculture and forest, improved water clarity, increased area used for nature reserves, reduced flood

frequency and increased employment from agriculture, forestry and fishery. Variation in preferences between study areas is significant in several of these attributes, and likely linked to respondent and catchment characteristics. Since these attributes can be affected by the transition to a bioeconomy, policy makers should take into account the effects of this transition on the supply of cultural services by considering the effects on welfare generated by cultural services when implementing land management policy.

Keywords: bioeconomy, cultural ecosystem services, catchments, discrete choice experiment, willingness-to-pay

7. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Local support for agro-environmental measures in Flanders and the role of knowledge and environmental attitudes

Presenting author: Lysander Fockaert
Other author(s): Liesbet Erik
Affiliation: KU Leuven, Belgium
Contact: lysander.fockaert@kuleuven.be

With about 50% of the Flemish landscape being used for agriculture, the pressure of food production on (semi-)natural ecosystems is quite high. There are several options for farmers to take care of nature on and around their farms. For many of these, farmers can receive subsidies. Public support and appreciation provide important incentives for farmers to manage the landscape sustainably. Whereas a lot of recent studies focused on public demand for ecosystem services and appreciation of aesthetic elements in rural landscapes, less research is done on particular agro-environmental practices and society's evaluation of farmers' efforts. With a Discrete Choice Experiment, the population's preferences for certain practices in a rural, but intensively managed area were determined, more specifically for flower and grass strips, wooden landscape elements, mechanical weeding, mating disruption and voluntary creation of nesting places for bees, birds and mammals. Each of these practices were highly appreciated by the residents, although with significant heterogeneity and relatively large differences between certain

practices. Mechanical weeding was clearly preferred over the other practices, reflecting stronger public demand for a decrease of input use than for semi-natural elements on the farm. Another remarkable find was the high preference and WTP for easy-to-implement practices such as voluntarily providing nesting places for bees, birds and mammals, in decreasing order of value. The role of environmental attitudes and knowledge in support for the practices was assessed by extending the mixed multinomial logit model to hybrid choice models, one with latent variables for each of the two assumed dimensions of environmental attitude, Preservation and Utilization, and one with a General Environmental Attitude variable. Attitudinal interaction effects were found for several practices, mostly for mechanical weeding and a general aversion for the status quo. Only illusory knowledge, rather than actual knowledge, had a significant impact on environmental attitude.

Keywords: discrete choice experiment, agro-environmental practices, hybrid choice model, environmental attitude, knowledge

8. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Public perception of different nature-based flood protection solutions: lessons from field research in Czechia

Presenting author: Marek Hekrle
First author: Jan Macháč
Other author(s): Jan Brabec, Alena Vacková
Affiliation: Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic
Contact: hekrle@e-academia.eu

Nature-based solutions (NBS) are increasingly recognized as a viable alternative in a set of measures that help with mitigating the negative impacts of climate change such as floods, soil erosion and drought. In the case of planning NBS for flood protection on agricultural land, planners and decision-makers often put emphasis primarily on regulating or provisioning ecosystem services (ES) such as flood risk mitigation, water retention, erosion protection and food provisioning. However, residents often focus mainly on cultural ecosystem ES such as

aesthetics. What may be a clear objective for planners and decision-makers may not necessarily be perceived as aesthetically positive by residents and therefore might be less supported. This contribution presents the results of a survey that explored residents´ preferences towards various NBS and types of cultivated crops (TCC) that may be implemented as flood protection measures on agricultural land. Perception of nine commonly considered NBS and three TCC was examined. An image-assisted questionnaire survey and a discrete choice experiment were used, with focus also on residents' willingness to pay. Data were collected through face-to-face surveys (n = 256) with residents of the Oleška river basin, Czechia. Among examined NBS and TCC, afforestation and grassing along the stream were best perceived by residents from the purely aesthetical point of view and, together with dry polders, they were considered also the most relevant solutions for flood mitigation. Based on the discrete choice experiment, implementation of any studied NBS was perceived better than a situation without any NBS. Residents seem to be willing to pay to have additional NBS implemented in the landscape. Local residents' preferences should be reflected as one of the criteria in selecting the available NBS elements that will be efficient in fighting climate change and will be well accepted by the public at the same time.

Keywords: nature-based solutions, public preferences, ecosystem services, choice experiment, willingness to pay

9. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

The role of ecosystem-based adaptation in reducing vulnerability to climate change

Presenting author: Liselotte Hagedoorn
Other author(s): Philip Bubeck, Paul Hudson, Luke Brander, My Pham, Ralph Lasage
Affiliation: Institute for Environmental Studies (IVM), VU University Amsterdam, Netherlands
Contact: liselotte.hagedoorn@vu.nl

Developing countries are increasingly impacted by floods, especially in Asia. Traditional flood risk management, using structural measures such as levees, can have negative impacts on the livelihoods of social groups that are more vulnerable. Ecosystem-based adaptation (EbA) provides

a complementary approach that is potentially more inclusive of vulnerable groups, such as the poor and women. However, there is a lack of disaggregated and quantitative information on the distribution of benefits of EbA. This paper provides a quantitative analysis of the differences in preferences for EbA benefits across income groups and gender. We use data collected through a survey of households in urban and rural Central Vietnam which included a discrete choice experiment on preferences for ecosystem services. Preferences are measured in monetary and non-monetary terms to avoid issues that may arise from financial constraints faced by respondents and especially the more vulnerable groups. Our results reveal that lower income households and women have stronger preferences for the majority of the EbA benefits, including flood protection, seafood abundance, tourism, and recreation suitability. These findings are the first to confirm that EbA is inclusive to social groups that are more vulnerable to floods. The benefits of EbA provide the opportunity to support poverty alleviation and gender equality, thereby reducing vulnerability to floods for the vulnerable groups in society. These results provide crucial insights for future implementation of EbA projects and for complying with the Sendai Framework and Sustainable Development Goals.

Keywords: ecosystem-based Adaptation (EbA), gender equality, poverty alleviation, discrete choice experiment, payment vehicle

10. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

From preferences of social groups to planning and management solutions of green spaces in Bucharest

Presenting author: Daniele La Rosa
Other author(s): Mariacristina Sipala
Affiliation: University of Catania, Italy
Contact: dlarosa@darc.unict.it

This work evaluates the preferences of social groups regarding green spaces in the light of the important role that they play in the contemporary urban context. Considering the loss of green spaces in Bucharest after the fall of the communist regime, this work focuses on green spaces

with the purpose of identifying planning and managing solutions that can meet the demands of various social groups, minimize unequal access green spaces and increase accessibility to the existing ones. After an analysis of the current state of green spaces in Bucharest, the users' preferences have been assessed through the administration of a questionnaire survey, structured to reach all types of users of parks in Bucharest, i.e. as many social groups is possible. The purpose of the questionnaire is to evaluate park accessibility and to discover the most important factors that influence the preferences of the social groups that use the parks. The results obtained from an analysis of the responses provided are then interpreted to define planning scenarios aimed at increasing existing features of the green and spaces, or including additional features, according to the requests/preferences/issues raised by the users. The results of the analysis have been elaborated, taking into account three different points of view, with the purpose of understanding the link between social groups and parks and identifying the major problems as well as users' favourite park features. On this basis, a planning and management proposal was designed. The results of the analysis show that parks are generally appreciated by their users, but that they also need some important improvements and continuous maintenance. They also reveal that the presence of facilities and equipment in parks are related to the preferences expressed by users, since the preferences and the problems are mainly related to the parks rather than the social groups using them.

Keywords: urban planning, preferences, cultural services, accessibility, social subjects

11. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Balancing resilience and inclusivity: Nordic-Baltic experiences of participative planning for urban resilience through nature-based solutions

Presenting author: Bradley Loewen
First author: Bianka Plüschke-Altof
Other author(s): Helen Sooväli-Sepping, Anni Müüripeal
Affiliation: Norwegian University of Science and Technology (NTNU), Norway
Contact: bradley.loewen@ntnu.no

Against the trend towards increasingly participative planning and nature-based solutions for urban sustainability, the paper examines attempts of urban planning practitioners to involve stakeholders in urban regeneration projects. In particular, the focus of the paper lies on the structural factors that shape agency for resilience planning. Urban greenspaces are seen as sites where high-level social and ecological ambitions such as the United Nation's Sustainable Development Goals (SDGs) meet small-scale planning in urban areas. Using interviews with planning practitioners and supporting documentation, we explore the benefits and challenges of participatory visionary planning for urban resilience amongst four cases of the Interreg Augmented Urbans project, which oversees urban regeneration projects using nature-based solutions in Tallinn (Estonia), Helsinki (Finland), Cēsis (Latvia) and Gävle (Sweden). In the current analysis, Tallinn is treated as the primary case, while the others are used as comparators. Preliminary findings highlight the complexities of putting planning's master signifiers such as 'resilience', 'sustainability' and 'participation' into practical use. On one hand, the challenges of citizen participation and coordination of various actors and interests are highly shaped by national contexts and planning cultures (incl. neoliberal urban development and post-socialist legacies), which set certain paths for the agency of the planner that can be seen as a barrier to the replicability of urban regeneration projects. On the other hand, the findings vividly show the balancing between inclusive and resilience-based goals of planning as a common problem to all cases. This is manifested in, for example, lawn mowing debates that accompanied urban regeneration projects, as an underlying dilemma between both planning ideals. From the need to balance inclusivity and resilience, we highlight the role of the planner in ensuring the sustainability of both process and outcome of urban regeneration, taking into account varying and limited capacities across countries.

Keywords: participative planning, planner perspective, urban regeneration, sustainable urban development, contested urban space

12. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Public participation in the design of contemporary green cities. Coping with challenges and obstacles of the process in Łódź – the city of central Poland

Presenting author: Renata Włodarczyk-Marciniak

Other author(s): Kinga Krauze, Katarzyna Perlińska, Aneta Krzewińska, Agnieszka Kretek-Kamińska

Affiliation: European Regional Centre for Ecohydrology of the Polish Academy of Sciences, Poland

Contact: r.wlodarczyk@erce.unesco.lodz.pl

Modern city planning in the face of climate change requires the implementation of green and blue infrastructure (BGI) in harmony with the needs of residents. Consultation with end users in the design process ensures not only better planning and meeting their needs, but also probably co-responsibility for the new place. Łódź suffers from environmental (heat waves, flash floods, smog), social (aging, depopulation) and spatial (neglected and dense city center) problems that coexist with insufficiently equipped, unevenly accessible and low quality urban green spaces (UGS). Due to characteristics of the inner city, efforts to improve the quality of residents health and well-being can be based on small local interventions that will support the provision of different ecosystem services. Therefore, we asked residents how they perceive the spaces in their neighborhood beyond formal UGS (e.g. streets, backyards, abandoned/ruderal area) and what benefits it should provide. To find answers, we conducted surveys, workshops and non-invasive observation of people customs. In addition, we followed the ongoing discussion on UGS to test community engagement and attitudes, and contrasted them with decisions and actions taken by city authorities. The presentation will show opportunities to provide greenery beyond formal UGS, the needs and views of residents in this area, and lessons learned from the process of citizens engagement in designing of urban public green space towards a sustainable city.

Keywords: public participation, informal green spaces, citizen engagement, awareness and perception

13. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Ecosystem services of blue spaces in Warsaw – users perspective

Presenting author: Anna Wilczyńska

Other author(s): Izabela Myszka, Simon Bell

Affiliation: Institute of Environmental Engineering, Warsaw University of Life Sciences, Poland

Contact: anna.wilczynska@emu.ee

Blue infrastructure (BI) is a concept that describes all water ecosystems and elements such as sea, lakes, rivers, brooks, or ponds. These spaces are an inseparable part of an urban tissue: historically, economically, ecologically, or socially valuable, yet been in many cases forgotten and abandoned. At the same time, there is more and more evidence on their great importance for human health and well-being, education, and enjoyment (Kati and Jari 2016; Blue Health Horizon 2020). Considering that evidence, since 2019 we have studied 427 water elements in Warsaw resulting in three clusters: regularly managed areas, areas without defined functions, abandoned and forgotten places (urban wastelands). Moreover, we have conducted the geo-questionnaire in which we were referring to the non-monetary evaluation of benefits: ecosystem services perception, tangible and intangible values as well as functionality and accessibility of blue spaces. It is important because the perception of benefits (feeling of the influence) (Camps-Calvet et al. 2016) as well as values and meanings (as place attachment) might increase the use of blue spaces and following that influence our social fulfillness and physical and mental health. We have collected 527 full answers which were analyzed statistically and spatially showing patterns in use and preferences as well as the perceived values and ES of Warsaw blue areas.

Keywords: ecosystem services, public participation, PPGIS, blue infrastructure

14. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

meinGrün - an app that combines supply and demand for informing urban green space planners

Presenting author: Celina Stanley

Other author(s): Robert Hecht, Patrycia Brzoska, Sercan Cakir, Kerstin Krellenberg, Martina Artmann

Affiliation: Leibniz Institute of Ecological Urban and Regional Development, Germany

Contact: c.stanley@ioer.de

The recreational value of urban green spaces (UGS) depends not only on natural elements but also on man-made features. These features vary in their importance for different UGS users. The different demands and expectations from UGS users should be acknowledged by urban and green space planners. The perception and the valuation of different features of a range of users should therefore be considered, as they may differ between socio-cultural groups. The meinGrün app presents a novel tool for citizens that has the potential to also support urban planning in designing UGS. Our approach combines UGS users' demands derived from three consecutive surveys with UGS supply via their features, thus enabling an estimation of the suitability of UGS, e.g. for certain activities. Using various open and municipal data and a multi-criteria decision analysis, suitability scores were calculated, forming the app's basis. The app is currently being tested in two German cities but can be extended depending on data availability and quality. The app offers decision support for UGS planning, as it is possible to determine at the site level how well an UGS meets the specific needs of different user groups. This can be used to identify supply deficit areas related to user demands and determine those UGS that should be upgraded in the future. Additionally, the app offers the possibility of collecting implicit and explicit user feedback. In this way, planning-relevant questions can be addressed, such as which criteria UGS users search for or how users perceive UGS, e.g. in terms of aesthetics. We will present our approach and the development of the meinGrün app, considering user demands, and address the implications for urban planning. Furthermore, we share experiences on questionnaire design, data collection, and discuss how to integrate the results into UGS planning practice.

Keywords: green space features, green space planning, green space supply, green space user demand, app development

15. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Use-related and socio-demographic variations in urban green space preferences

Presenting author: Amy Phillips

Other author(s): Ahmed Khan, Frank Canters

Affiliation: Vrije Universiteit Brussel, Belgium

Contact: amy.phillips@vub.be

Green infrastructure and the ecosystem services it supplies heighten urban resilience to pressures related to demographic growth and environmental change. Much research has focused on assessing the supply and monetary valuation of provisioning and regulating ecosystem services. Cultural ecosystem services have been studied to a lesser extent, though they are essential for understanding the relationship between urban green and well-being. The interactions between supply, demand, and benefits of cultural ecosystem services for urban citizens are complex and depend on multiple factors, including the density and layout of built-up area, as well as the physical characteristics and accessibility of public green spaces. Adding to this complexity are the social practices and cultural context in which people use, experience, and value their contact with nature. It is through this unique lens of interconnected characteristics that individuals perceive and assign value to green space. Although challenging, it is critical for sustainable urban design that the non-monetary value of urban green spaces is understood. This knowledge is useful for designing urban spaces that fulfil the diversity of demands for urban green and its related benefits. Our research focuses on deepening the understanding of the relationships between ecosystem service supply and benefits and how this relationship is mediated by social inequalities, and people's use, perception, and valuation of urban green spaces. Online surveys were conducted in the Brussels Capital Region to determine how different socio-cultural groups use large and small urban green spaces, how they experience these spaces, whether these spaces fulfil their needs for urban green, and if there are conflicts of use in these green spaces. Insights from the survey are combined with a typology of the physical and social characteristics of the urban landscape to define which nature-based solutions would be most beneficial to implement throughout the region.

Keywords: cultural ecosystem services, urban green spaces, nature-based solutions

16. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Cultural worldviews consistently explain bundles of ecosystem service prioritisation across rural Germany

Presenting author: Sophie Peter

Other author(s): Gaëtane Le Provost, Marion Mehring, Thomas Müller, Peter Manning

Affiliation: Senckenberg Biodiversity and Climate Research Center BiK-F, Germany

Contact: sophie.peter@senckenberg.de

There is an increasing pressure on the Earth´s ecosystems and their capacity to provide multiple ecosystem services (ES). This has led to significant interest in understanding how ecosystems can be managed to provide services for multiple interest groups simultaneously. While the cause of trade-offs on the supply side are already being studied in detail, little social scientific investigation into more fundamental social drivers of ES priorities has been done. This presentation focuses on the results of a quantitative survey conducted in three study regions of Germany, as part of the large-scale and long-term project “Biodiversity Exploratories”. We identified underlying socio-cultural (e.g. worldviews, nature perception, and environmental risks) and socio-demographic factors (interest group, political party preference) that are consistently related to the ES priorities of individual regional stakeholders (e.g. farmers, foresters, locals, employees from the tourism sector, etc.). By using this approach we identified consistent relationships between individual ES priorities, cultural worldviews, interest groups and political affiliations. These “cultural types”, which relate to the cultural theory of risk, differ in their attitudes towards society, as well as nature, their ES priorities, and their view of how nature must be managed. Their identification may help to provide a general framework for the social classification of stakeholders in ES research, and in turn may help in forming strategies of ecosystem services and NBS governance.

Keywords: cultural worldviews, ecosystem service priorities, interest groups, landscape management, survey

17. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people’s preferences in mind

Social perception of riparian forest value: case study in Latvia

Presenting author: Aris Jansons

First author: Mārcis Saklaurs

Other author(s): Silva Šēnhofa, Anželika Šteina, Līga Liepa

Affiliation: LSFRI Silava, Latvia

Contact: aris.jansons@silava.lv

Forests bordering rivers and smaller streams are often protected with a goal to minimize influence of land-management on water habitats. As such, they also provide connectivity between biodiversity hotspots in the landscape. However, studies related to water habitat quality had suggested a need for management of these forests in particular circumstance. Sustainable management considers not only ecological, but also social values. Therefore, aim of our study was to assess the social perceptions of riparian forests. Survey had been carried out among the inhabitants of the region of Latvia with rather dense network of streams, including 734 respondents (61% woman) with various education level, age and economic background. “Forest and water” was not among main subjects responded were worried about, and was equally important as “Climate change”. Also, respondents were significantly more concerned about the state of the streams, not about the state of the riparian forests. Also, in comparison to other forests, riparian were visited less often. The most popular activities (majority of respondents noted) related to these areas were walking (observing the nature) and swimming. The areas were most often (times per season) visited for walking and fishing. For the later, respondents were overcoming further distance on average and spent more money per one visit. Respondents were significantly more concerned about the fish habitat quality than about the recreational (visual) or financial value of the riparian forests or even fishing possibilities. The primary value of the riparian forests from social perspective is water habitat quality, well-being of fish species, instead of the forest itself. That needs to be considered when planning or avoiding any particular management measure in these areas.

Keywords: hemiboreal forest, visual quality, coastal forest, habitat management

18. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

Proposal of "nature-based solutions", supporting the sustainability of the ecosystem service provision in the Krkonoše National Park (Czech Republic)

Presenting author: Ondřej Cudlín

Other author(s): Radek Plch, Jan Purkyt, Jiří Jakubínský, Magda Edwards-Jonášová, Václav Jansa, Pavel Cudlín

Affiliation: Global Change Research Institute CAS, Bělidla, Czech Republic

Contact: cudlin.o@czechglobe.cz

High pressure from tourism, the development of hard tourism infrastructure and intensive forest management in the past under the influence of climate change reduce the ecosystem service provision in the protected area of the Krkonoše National Park. The aim of our study was to find out what ecosystem services in the natural and cultural landscape should perform to meet the needs of local residents and tourists and to propose measures based on "nature-based solutions", supporting their sustainability in the context of ongoing climate change. We also conducted a questionnaire survey of several stakeholder groups (e.g. tourists, local residents, state administration) to find out what ecosystem services of natural and cultural landscape in the national park are crucial for them, what are the main pressures for their sustainable use and which of the proposed measures they prefer. According to them, meadows and forest ecosystems in the national park should primarily provide regulation ecosystem services (e.g. preservation of biodiversity and wilderness) and cultural ecosystem services (preservation of historical landscape character). According to the groups of stakeholders addressed, the main pressures include the expansion of ski slopes and lifts in landscape and the enlargement of recreation centres. Preferred measures included support for regular mowing of meadows through subsidies, modification of the existing woody composition to close to nature, exclusion of clear-cut logging, preservation of the landscape character and adaptation of tourist activities (e.g. development of cultural and educational activities). However, a third of respondents do not support the reduction of measures in the current state of forest game and emergence of new activities in the field of tourism. The addressed stakeholder groups believe that especially the measures based on "nature-based solutions" will help to ensure sustainable ecosystem service provision in the Krkonoše National Park, in the face of climate change.

Keywords: nature-based solutions, protected areas, climate change, questionnaire survey, stakeholders

19. Type of submission: Abstract

S. Sectoral Working Group sessions: S8b - Planning nature-based solutions while keeping people's preferences in mind

The Edible Game: A participatory approach to foster edible nature-based solutions

Presenting author: Josep Pueyo-Ros
Other author(s): Joana Castellar, Joaquim Comas, Alexandra Popartan, Lluís Corominas
Affiliation: Catalan Institute for Water Research, Spain
Contact: jpueyo@icra.cat

Urban agriculture has grown in popularity in the Global North over the last 10-15 years, which can be deployed as allotment gardens, rooftop gardening, living walls and urban orchards among others; these can be considered edible Nature-Based Solutions (eNBS), which supply provisioning services (i.e. food) in addition to regulating and cultural ecosystem services (ES). However, the widespread implementation of eNBS is hindered by the limited capacities in estimating their benefits, fulfilling the needs of multiple stakeholders. Within this context, the goal of this communication is to present how a serious game can be used to provide a scenario simulation to showcase eNBS' co-benefits and, thus, fostering their upscaling by a participatory planning approach. Specifically, we present the Edible Game, a serious game which allows players covering different stakeholders' roles building eNBS in a 3D-model of their city, while they play simultaneously in a shared session. The game is designed through an iterative process, i.e. after each game session, the users' evaluation is gathered through direct observation and a questionnaire; and this feedback is used to design a new version of the game. The core of the game is that in any player's actions, they get an outcome evaluated against 8 indicators based on Urban Challenges from Eklipse framework: heat stress, water storage capacity, green areas accessibility, NO2 absorption, people involved in eNBS, fair access to green areas, green jobs in eNBS and food sovereignty. To win the game, a player must fill her progress bar, which is a weighted average of the indicators in line with the interests of the role that the player chose

(municipality, neighbour's organization, consumer's cooperative or conservationist NGO among others).

Keywords: edible NBS, serious game, urban agriculture, urban challenges, urban planning