“It’s Not Easy Being Green: A Budapest Story”

Synthesis Report

WUR Consultancy Group
Wageningen University

Title:	“It’s Not Easy Being Green, A Budapest Story
Subtitle:	Synthesis Report
Publication date:	October 23, 2015

Authors:	S. (Silvia) Alunni, R.C.L. (Renske) Anema, O. (Olimkhuja) Askarov, D.R.Q. (Razan) Binti Pg. Mohamad Rosli, E.T. (Ester) Budding, C.L. (Chiara) Crosta, F.G. (Fabricio) Del Rio Valdivia, A.S. (Alexandra) Drozdowska, A.E. (Alemtsehaye) Ferede, M.M. (Marloes) Fröling, T. (Tommaso) Gaifami, L.L. (Leroy) Gilbert, A.J. (Anja) Guijt, N. (Nina) de Haan, M. (Michelle) Jansen, A.A.C. (Amandine) John-Herpin, W. (Wendy) Liefting, M.E.A. (Moniek) van der Liende, H. (Hui) Liu, G. (Gabriele) Midolo, A.R. (Afia) Mukta, A.A. (Aleksandra) Rudyak, L.U. (Laura) Schröder, J.M. (Jasper) van Smeden, M.G.J. (Marjolein) Soethoudt, K. (Kritsanu) Thipnoy and K.J.A.M. (Kiki) Zondag.

Course:	European Workshop Environmental Sciences and Management ESA 60312 Academic year 2015/2016 Period: 31 August - 23 October 2015
Institution:	Wageningen University Environmental System Analysis Group
Visiting address:	Droevendaalsesteeg 3, Lumen buiding (A wing; 2nd floor)
Postal address:	P.O. Box 47, 6700 AA Wageningen Tel: 0317-484033 / 484812

Coordinators:	Ir. Karen Fortuin Dr. Sophie Rickebusch
Supervisors:	Ir. Astrid Hendriksen Roy Remme Dr. Ir. Bas van Vliet

Commissioner:	Contemporary Architectural Centre (KÉK - Kortárs Építészeti Központ)

Disclaimer: This report is produced by students of Wageningen University as part of their MSc-programme. It is not an official publication of Wageningen University or Wageningen UR and the content herein does not represent any formal position or representation by Wageningen University.

Preface

This research is commissioned by the Contemporary Architectural Centre (KÉK) to gain more insight into the current state of Urban Green Spaces in Budapest. The WUR Budapest consultancy group consists of 27 students that executed the 8-week research in both Wageningen, The Netherlands and Budapest, Hungary. The report does not only give elaborate data and recommendations per district but also several scenarios and action plans to create a greener living environment in Budapest in cooperation with stakeholders.

We would like to thank Monika Kertész and KÉK for their choice to collaborate with Wageningen University and for their input during the preparatory stage of this research and the fieldwork. Furthermore, we are grateful to Astrid Hendriksen, Roy Remme and Bas van Vliet for their constructive lectures, feedback and guidance during the project. We would also like to thank Antonia Cangosz, Dorottya Simon and Réka Tekeres for their help in the Hungarian translation during the project and Kristóf Szabó for his input during the fieldwork.

Finally, we would like to thank the following persons and organizations for their participation in this research by participating in interviews: Gábor Péter, Éva Beleznay, Vice Mayor of Budapest, Bert van Hove, Karin Peters, Professor Ornamental Horticulture, Chief Gardening Department (District VIII), Logan Strenchock, Adam Mako, Levente Polyák, Réka Szabó, Thomas Mezösi, Főkert, HuMuSz, Municipalities of Districts, Regional Environmental Centre, Mindspace, Food not Bombs, Clean Air Action Group and the Budapest Department of Urban Planning.

Enjoy reading this report,

The Budapest consultancy team of Wageningen University

Executive Summary

Aim

The following report is the result of a consultancy project on Urban Green Spaces (UGSs) in Budapest. The project is commissioned by Kortárs Építészeti Központ (KÉK) - Contemporary Architecture Centre. The aim of the project is to examine the current situation of UGSs in the city of Budapest, and to provide scenarios to promote the social value of green areas.

Methods

In our analysis, different tools have been used: questionnaires to citizens (570), expert interviews (21) and observations in parks (28). The data collection focused on five specific districts of Budapest - VII, VIII, IX, XI and XIII. The information collected has been analysed in each specific geo-report (see Annex H-L).

Findings

From the data analysis, six main concepts regarding UGSs were identified: *Maintenance*, *Information Distribution*, *Cooperation*, *Ownership*, *Accessibility* and *Usage*. The content of the scenarios displayed in this report is developed based on these concepts. The scenarios are then further categorized according to two variables: the state of UGSs in Budapest, ranked from static to dynamic, and the actors' attitude towards UGSs, considered in terms of either individual or collective behaviour.

The categorization made according to the variables led to the elaboration of four different scenarios, named after board games: Solitaire (Individual & Static); Twister (Individual & Dynamic); Clue (Collective & Static); Party & Co (Collective & Dynamic). The Solitaire scenario represents the current situation of the city of Budapest and displays the results derived from data analysis. The main findings identified are:

- the general accessibility of UGSs due to their strategic location and a good connection with the means of transport;
- the multifunctionality of public parks, used by locals to perform different activities,
- the detachment of citizens from the political life of their district, regardless of some positive attempts of municipalities, along with a low social participation in UGSs related activities, incentivized by the relatively low outreach of NGOs.

Recommendations

In order to move from Solitaire to the other scenarios, an action plan has been elaborated. Such plan contains different strategies, based on the data analysed, as well as possible consequences at the environmental and socioeconomic levels. Subsequently, the recommendation section turns the strategies into fruitful suggestions for KÉK. The main recommendation encourages KÉK to take a resolute lead in initiatives concerning UGSs, using its role of NGO to partner other organizations for a productive and effective cooperation that can provide KÉK with a stronger stand before the local authorities. Other remarkable recommendations are:

- improving information distribution by making use of offline channels, like flyers and, posters, along with the more modern and technological channels,
- incentivizing citizens' involvement by organizing events like workshops and other interactive activities.

Table of Contents

1. Introduction

Urban Green Spaces (UGSs) play a pivotal role in urban development and are crucial for the improvement of people's quality of life. In this report, UGSs are green spaces located in an urban environment, such as public parks, community gardens and green inner courtyards. They provide a space for relaxation, social gathering and a healthy place to spend leisure time. Moreover, UGSs have a positive effect on the environment and therefore on the health of Budapest citizens, since UGSs are able to, among other things, improve air quality and absorb noise (van Hove, 2015). However, the value of green spaces in Budapest's central districts seems to have been underestimated in the last decades (Kondor & Horvath, 2008). The World Health Organisation (WHO) suggests that every city should provide its citizens with a minimum of 9 m^2 of green space per person (Pogány et al., 2014). This threshold value does not match with the current situation in Budapest, especially concerning downtown districts. In fact, in the city centre there is only 1 to 4 m^2 of green space per inhabitant and the existing green spaces are often in poor conditions (Pogány et al., 2014).

1.1. Purpose of the Report

The aim of this report is to analyse the current situation of UGSs within Budapest and develop a set of four scenarios, which turns different strategies into suggestions for KÉK, the Contemporary Architecture Centre. The action plan consists of strategic actions that the client (KÉK), in collaboration with its stakeholders, can implement to improve the current state of UGSs. Some of these strategies can be implemented in the short term, while others will take more time and require multiple stakeholders to join their efforts. Moreover, the action plan encompasses and highlights also the main s*ocio-economic* and *environmental* consequences that are likely to arise from the various strategies if implemented. Such outcomes are an important part of the action plan, as they represent the social, economic and environmental benefits that justify the improvement of the current situation of UGSs in Budapest.

1.2. Study Area

In this research, the current situation of the UGSs of Districts VII, VIII, IX, XI and XIII is analysed (see Annex H-L). The researched districts differ in the number of UGSs, area coverage and management. The Budapest Municipality is decentralized and the districts are not only geographically bounded, but also politically through different jurisdictions. This means that also the maintenance and management of UGSs are organised by different parties in Budapest. For this reason, every district faces different challenges and offers diverse opportunities when it comes to UGSs. For instance, District VII (Erzsébetváros) can be described as a densely populated area and one of the most popular hotspots for tourists. However, this district experiences an insufficient amount of UGS for locals, even though their general level of maintenance is good (see Annex H).

District VIII (Józsefváros) used to be one of the most degraded areas of Budapest until the last decade, and has recently become a multicultural melting pot involved in several rebuilding projects. These projects were mainly aimed at the social and economic restoration of buildings and/or UGSs. In spite of this, both the quantity and quality of existing UGSs do not seem to be sufficient to meet the demand of the locals for a healthy living environment (see Annex I).

A more recently developed area is District IX (Ferencváros), which flourished in the 80's to improve housing for the citizens. In the same years, it also experienced an increase in the amount of new green spaces: new public parks were created, while the municipality promoted the establishment of a public-private ownership of UGSs that were enclosed within flats (see Annex J).

District XIII (Angyalföld-Újlipótváros) is characterised by a good amount of parks, courtyards and trees along the streets. The two biggest green parks of the district, Szent István Park and the Margit Island Park, are also attracting many tourists every day. However, if one takes into account the WHO recommendations, there is no sufficient amount of green space per inhabitant (Pogány et al., 2014) (see Annex L).

On the other hand, District XI (Újbuda) seems to have an adequate amount of green areas available to residents. Spread through the district, some quarters include flats and apartment buildings, which sometimes have courtyards and other types of public space among the flats. In addition, the rural part of District XI is rich in green-covered areas and consists of the Buda Hills, forests and some agricultural lots (see Annex K).

In this report, the findings and data collected in these districts are meant to represent the current situation of UGSs of Budapest as a whole. Such generalization is made because of the fact that many districts face the same challenges and/or offer similar opportunities when it comes to UGSs. At the same time, some districts provide also examples of best practices which could be further improved and extended to the entire city.

1.3. Methodology

During the fieldwork in Budapest, information about citizens' perception of UGSs was collected through questionnaires. For this purpose, a total number of 570 questionnaires were filled out in the five districts that were analysed. Overall, 268 questionnaires were distributed in public parks, while 302 were administered in the main streets of the different districts. The underlying idea was to obtain a close to 50/50 division between questionnaires handed out in parks and on streets in order to get representative results independently of people's location. The questionnaire can be found in Annex A.

Moreover, 21 people from different spheres of expertise were consulted through face-to-face or email interviews. These consultations provided us with a clearer overview of both the city and the individual district situation regarding UGSs-related topics. The interviews were conducted with different categories of stakeholders, like district officers, the Vice-Mayor of Budapest, university professors, citizens, representatives of governmental and non-governmental organisations. All these experts provided important inputs for the purposes of this report. The list of interviews can be found in Annex B and the protocol used for them in Annex C.

In addition to the questionnaires and interviews, 28 field observations in green spaces were carried out. Such observations were useful to collect information upon the activities performed in UGSs and their general level of maintenance. The used framework can be found in Annex D.

Furthermore, an interactive workshop with the stakeholders present during the field presentation of this project to the client was conducted. The outcomes of such workshop were collected and used to visualise personal opinions about the current situation of UGSs within Budapest and the preferred future situation. From all the gathered data, four scenarios describing the present and potential future situations of Budapest UGSs were identified. Afterwards, these storylines were analysed to develop the action plan, which was designed to bridge the gaps between the present and future situation of Budapest green spaces. In conclusion, the strategies explored in the action plan were used as inputs for the recommendations to the client.

1.4. Reading Guide

The second chapter deals with the framework on which the four scenarios are based. In the third chapter, the four different storylines are illustrated. These four scenarios describe the present and potential situations of Budapest UGSs. They are meant to visualise current challenges and future opportunities offered by Budapest green spaces. Each storyline has a different name that has been borrowed from a board game to reflect upon the social and developmental aspects of UGSs. Chapter 4 is dedicated to an action plan that is meant to bridge the gaps between the current status and the potential developments of such spaces. This chapter also presents an overview of the main findings, as they came up through questionnaires, field observations and interviews conducted in the five districts analysed. City's best management practices are part of the action plan as well. This section displays best practices related to UGSs management that can be found both within Budapest and outside Hungary. Furthermore, Chapter 5 draws the general conclusion of this project and chapter 6 provides recommendations for KÉK. Finally, five geo-reports, one for each district investigated, can be found in the Annexes H to L. These geo-reports are meant to represent Budapest as a whole, concerning UGSs problems and opportunities. Moreover, the data gathered in all geo-reports are district-specific, thus they can provide KÉK with a better insight of the challenges faced in those areas.

2. Scenario Framework

The scenarios developed illustrate the current situation and three potential futures, taking into account six concepts that are based on issues we came across during data collection in the field. These concepts are used to describe the content of each scenario and differ according to the variables displayed below (Figure 1). The concepts will be explained more specifically after the framework.

The horizontal axis describes the state of UGSs in Budapest with the extremes of *static* on the left and *dynamic* on the right. In a *static* state, UGSs are constant in terms of physical state and stakeholders are working in a consistent way to maintain the current state, in a way they have found that works well. In a *dynamic* state, UGSs are subjected to change and development, because the involved stakeholders are open to new initiatives and look out for opportunities for improvement. In line with this, the policy framework enables initiatives from various parties and of various forms to take place.

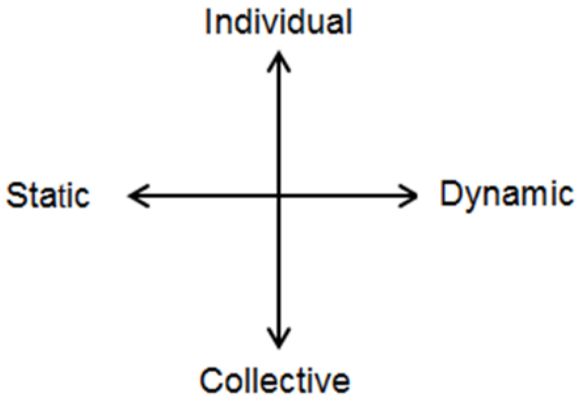


Figure 1: Scenario Framework

The vertical axis describes how people, both citizens and other stakeholders, act as part of the community of Budapest. On the top, stakeholders act *individualistic*, to their own goals and without involving other stakeholders. On the lower end, people act *collectively*, working together in groups to achieve common goals. People feel connected to each other and act accordingly.

Concepts

The most relevant concepts encountered during the fieldwork, based on UGSs related issues, are: *Maintenance, Information distribution, Cooperation, Ownership, Accessibility and Usage*. These concepts were selected to represent and summarise the most relevant findings, as emerged from questionnaires, field observations in parks and interviews with different experts.

The concept of *Maintenance* includes all the activities performed in parks by companies or voluntary workers that dispose waste and maintain plants and facilities in UGSs. The scenarios describe different levels of maintenance, from the decentralized to the centralized system of maintenance.

Information distribution deals with the degree of outreach of NGOs toward citizens, in terms of local awareness of NGOs activities in the districts, events organization, participation and management. The analysis takes into account a wide range of possible cases, from nominal to widespread information distribution.

Cooperation concerns the relationship between the three main stakeholders identified: local authorities, NGOs and citizens. By investigating each bilateral link, within the assessment range established, different degrees of cooperation are displayed, ranging from unbalanced to balanced.

Ownership refers to who has the property of a specific UGS. It can be either public, private or semi-public.

Accessibility addresses the barriers citizens do or do not come across when entering an UGS, especially in parks. Barriers can be intended as material (i.e. fences), geographical (i.e. low reachability, low connection of an UGS with public transport) and in terms of transparency (i.e. no clear display of opening times in case of a private UGS). In this regard, the degree of accessibility is assessed ranging from a secluded to an open UGS.

The *Usage* of UGSs focuses on the functionality of such areas. The functionality can be assessed through a range of levels going from monofunctional to multifunctional. A multifunctional UGS is a green area with enough facilities and spaces devoted to different kind of activities that can be performed by a wide range of users in a limited amount of space. A monofunctional UGS only allows one (or few) type of activity to be performed.

3. Scenarios

To reflect upon the four scenarios and to make the reading more appealing, each storyline was assigned the name of a board game, i.e. *Solitaire, Twister, Clue* and *Party & Co* (see Figure 2). These names are metaphors that are meant to describe the different interplays and dynamics among the various societal characters, such as the municipality (Budapest or District Municipality), NGOs and citizens of Budapest.

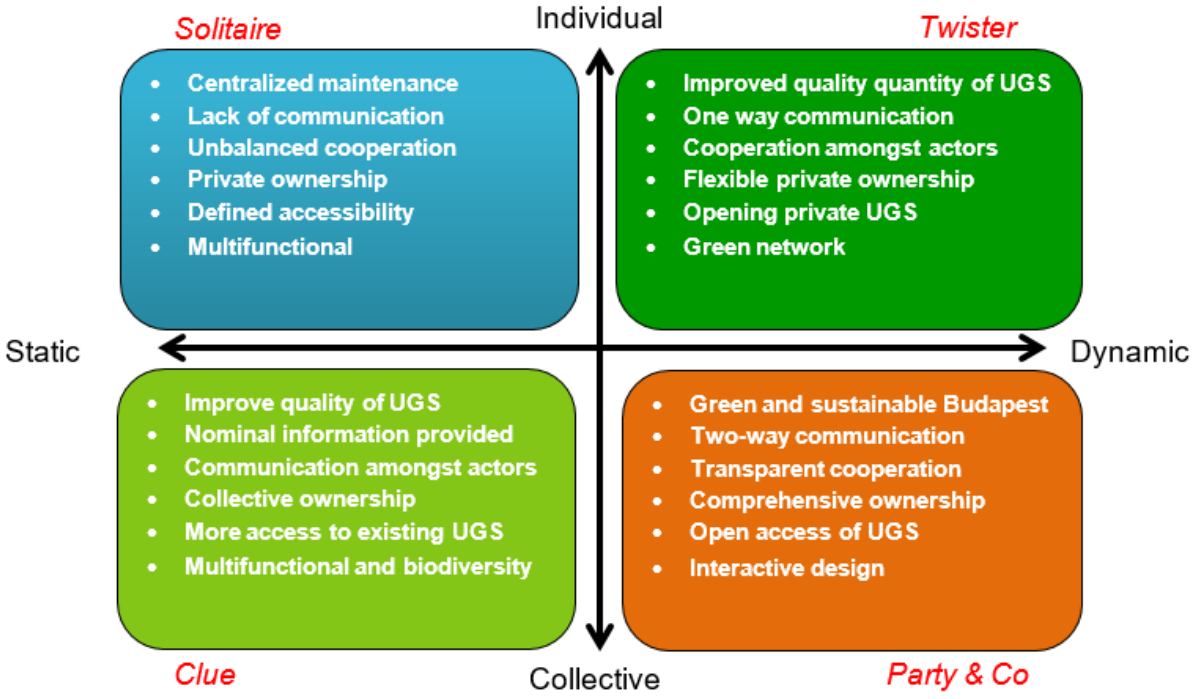


Figure 2: The scenario framework in its more elaborated form. The horizontal axis represents the change of UGSs and the vertical the change in social cohesion. The bullet points describe the different concepts per scenario, these are *Maintenance*, *Information distribution*, *Cooperation*, *Ownership*, *Accessibility* and *Usage*. The terms that are mentioned describe the situation but don't represent extremes of the axis.

Solitaire is placed on the top left quarter of the axis and the definition of solitary comes from the old French and is defined as 'exist or living without others'. It stands for a scenario that does not rely on significant deviations from the current status. The metaphor is applicable for the current situation because the different actors in society act solitary, without communicating with each other, and the situation is not completely *static*. How this can be seen in Budapest is described in detail in Section 3.1 SOLITAIRE - Individual & Static.

On the other hand, *Twister* as game is *dynamic* and *individua*l and is located in the top right quarter. In *Twister*, the players need each other for an optimal gameplay but they can only win as an individual. Thus, within Twister there is a constant change of the situation and in order to play you need to adapt. So the metaphor points to a scenario with constant UGS developments and actors adapting to new situations. Section 3.2 describes TWISTER - Individual & Dynamic.

As a third scenario there is *Clue* where there is a *static* situation in which actors work together. This scenario reflects upon a situation in which actors work together to reach their goal of getting most out of an existing situation. Here, the actors have the goal to improve the current state of UGSs and they need each other herein. To such a future situation is referred in Section 3.3 CLUE - Collective & Static.

The fourth scenario contains a *dynamic* and *collective* situation, where *Party & Co* refers to. This scenario is displayed in the lower right corner. The stakeholders work together in a *dynamic* situation. Thus, new situations are created constantly and together issues are solved. The scenario is an interactive play between all actors in society and Section 3.4 PARTY & CO - Collective & Dynamic describes this situation.

3.1. SOLITAIRE – Individual & Static

The *Solitaire* scenario is *individua*l and *static*: it describes a situation in which citizens act as individuals, not engaged in *collective* activities, and the status of UGSs is steady, with no concrete development plans concerning green areas.

In this scenario, most UGSs in the city centre are easily accessible as they are located close to residential areas and there is a highly developed public transport system. About 70% of the citizens of Budapest live within 500 metres from the closest UGS (Budapest Főváros Vagyonkezelö Központ, 2011). Most parks are open and freely accessible during the day and closed during the night, to keep certain people out of the area, like homeless people, drug dealers and users (Chief gardener District VIII, 2015; Municipality District XI, 2015). Consequently, the fences create a safer feeling for the citizens. In some parks there are guards or surveillance cameras present, which increases the feeling of safety, but they are often expensive.

The parks are multifunctional, as they are devoted to different kinds of activities that can be performed by a wide range of users in a limited space (Observations). In general, the multi functionalities in public parks are directly linked to the multigenerational purposes. The park facilities are designed for all age groups: playgrounds for children, sport fields for teenagers and young adults, and benches for adults and elderly people (Observations). Related to this, the question '*What kind of activities they performed in UGSs'* from the questionnaire showed that 36% of the youth attend to events. For young adults this attendance rate is 27% and 21% for adults. For elderly people only 17% attend to events in UGSs (see Figure 3).

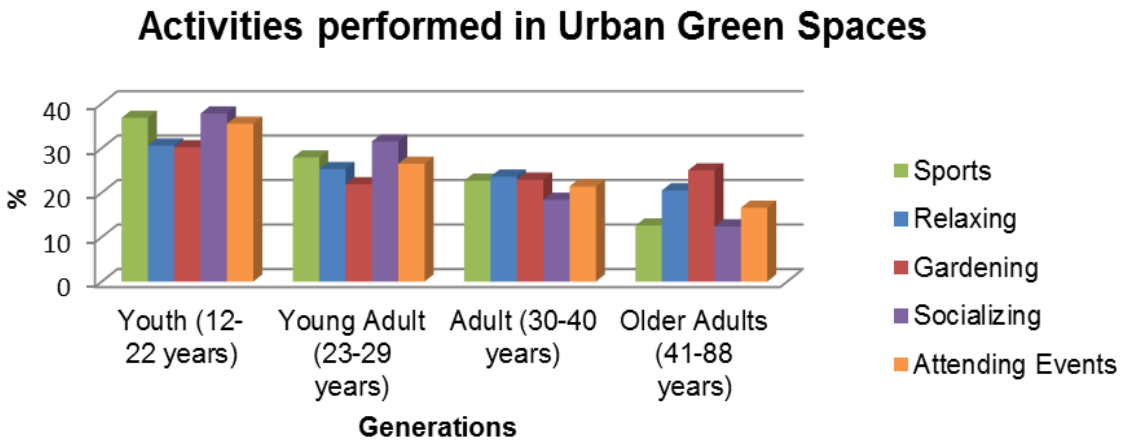


Figure 3: Activities performed in UGSs per age category.

Parks are generally owned by the Central Municipality or District Municipalities (Főkert; Chief gardener District VIII, 2015). The parks that are owned by the Central Municipality are maintained by Főkert, while the parks owned by the District Municipalities are maintained by local companies (Főkert; Chief gardener District VIII, 2015). Most parks are well-maintained, the facilities are in a good state and there is little waste observed in the parks. This is partly due to Főkert's involvement of volunteers to reduce the litter in parks (Főkert, 2015).

The community gardens are closed and only accessible with permission; therefore, and because there is limited space for community gardens, they are used by a limited number of people. They are located in lots that otherwise would be parking space or empty areas and they are usually owned by private actors. Furthermore, the District Municipalities support only a few of those gardens (Gábor, 2015). In some cases, NGOs are in charge of assigning lots to participants and making sure the garden is taken care of. In other cases, taking care of the garden is done in cooperation with the participants (Community garden expert, 2015).

The courtyards are either public or private spaces surrounded by buildings, with exclusive access. In some cases these are fenced, and they are usually owned and maintained by the District Municipalities. Residents of some buildings do have the possibility to autonomously maintain their internal courtyard. In some cases this is successful, since residents, given both their enthusiasm and the incentives given by the Municipalities, are willing to take care of the green areas surrounding their house. The questionnaire results showed that 50% of the respondents would like to participate in the management of UGSs in their neighbourhood. If the commitment of residents is short-term and there's not enough incentive coming from the Municipalities, courtyards are not taken care of well enough (Main architect District IX, 2015).

Overall, citizens experience a threshold in influencing the Municipalities. They have opinions about the planning and realisation of green spaces but they cannot influence the decision-making process. Only in district XI and XIII the Municipalities make efforts to actively involve citizens (see Annex K and L). Questionnaire results showed that per district between 51 and 83% of the citizens would attend events if they were informed about it.

Environmental NGOs have an interest in making the city greener, but they experience a weak cooperation with the Municipality of Budapest as well as with citizens to initiate this movement. Moreover, also NGOs do not have much contact with the District Municipalities and are not involved in the decision-making procedure, even though they could be important stakeholders. Indeed, NGOs organise events to increase environmental awareness and encourage social cohesion. The involvement of citizens with NGOs can be stronger; this is confirmed by the results of the questionnaire that showed that 79% of the citizens do not know any NGOs concerning UGSs in Budapest.

3.2. TWISTER – Individual & Dynamic

The *Twister* scenario focuses more on *individual* than *collective* contribution to social cohesion. Willingness to change is extant here and stakeholders act individually to make things happen.

In this scenario stakeholders are motivated to develop both the amount and quality of UGSs in their districts. The Budapest Municipality, District Municipalities and NGOs are all striving for a greener Budapest and work towards this goal on an *individual* level. The stakeholders work actively on developing both new and already existing green areas. The Budapest Municipality is flexible with regards to rules and regulations, thus allows for diverse plans to be realized. New organizations are welcome to make their contribution to a greener Budapest, leading to many organizations being active. The large amount of active organizations stimulates them to be innovative, to think in possibilities and to think 'out of the box'.

Citizens are interested in spending time in UGSs. More specifically, people like to use green spaces for individual activities like walking, running, reading, etc. Citizens generally don't visit UGSs for social purposes. Activities are being organized to encourage people to make use of UGSs and to implement and take good care of green in their surroundings. The activities being organized are of a large variety, resulting from the large amount of organisations behind them. Additionally, information about these events is distributed in a large variety of ways. Both the activities and the outreach of the actors are designed to reach citizens who prefer to behave individually.

The Budapest Municipality is willing to provide individuals with the necessary tools to optimize their green spaces. The District Municipalities and Főkert are mainly responsible for the maintenance of the UGSs and citizens are increasingly interested in contributing. Citizens can take up the responsibility of maintaining specific UGSs, which is being stimulated by the Municipality of Budapest, who readily provides citizens the necessary tools to optimize their green spaces.

Ownership is diffused among stakeholders. Many different stakeholders seeking to use UGSs and the existing UGSs being owned by many different stakeholders, gives a complex situation. Stakeholders on both sides are flexible and innovative, leading to a very *dynamic* situation in terms of *usage* and *accessibility*. Privately owned green spaces are occasionally opened up for organized activities of various kinds and for various users.

The situation with many stakeholders being eager to own and use UGSs and to realize new ones results in many UGSs of different forms and with different uses. Parks can be very multifunctional, while others have a more specific function or are designed for a specific form of usage. UGSs can also be designed for the mere benefit of nature to have a place to thrive. Furthermore, a specific focus is on creating a network of connected UGSs through which both people and animals can move from one UGS to the others without having to cross roads with dense traffic. Such a network will be highly appreciated by citizens.

3.3. CLUE – Collective & Static

This scenario describes a *static* and *collective* situation, since the current situation of UGSs will not change. However, all the relevant stakeholders are more actively involved in their management and use. Therefore, UGSs are managed by either the District Municipality or Főkert, but there is room for other parties as well. This leads to a situation in which everyone has the opportunity to participate and contribute.

Moreover, in this storyline citizens are very interested in using UGSs as locations for social gathering. Such desire is supported by an amount and type of information that can be defined as nominal and designed to target specific categories of citizens, like the youth and the adults. Indeed, updates about the activities organised in UGSs are broadcast through the main available media sources, like Facebook and NGOs' web pages. By consulting NGOs' web pages, people have the opportunity to spread the word to family members and friends about upcoming events. Regarding Facebook users, citizens share events on their Facebook profile and invite other friends to join them. Pictures, videos and informative text about the activities organised in UGSs can catch the attention of a wide number of people. Through word of mouth, more citizens are involved and encouraged to visit UGSs.

Additionally, this scenario focuses on increasing the functionality of existing UGSs. To optimise the use of existing spaces, both ecological and social needs will be satisfied. This means that park facilities, provided for user's entertainment, are placed in a rich and biodiverse environment. In this way, playgrounds for children, sport facilities and picnic areas are placed side by side with green spots covered with different species of plants and flowers.

Next, a higher degree of accessibility is assured, and this makes UGSs more attractive for the residents. The reachability of parks will be similar to the *Solitaire* scenario. Thus, current bus, metro and tram stops are located within sight of UGSs and citizens can easily reach those spaces. Moreover, the signs placed in front of the main entrances clearly display opening hours of each green space. At the same time, security cameras and fences around parks and children playgrounds make users feel safe. Furthermore, when UGSs are open and reachable for everyone, ownership becomes 'collective' and the entire community feels responsible for those spaces. This fosters a sense of belonging to the local community and thus a motivation for self-maintenance of UGSs. In this way, green areas turn into multifunctional and multigenerational places, where people from diverse age groups gather to perform different activities.

3.4. PARTY & CO – Collective & Dynamic

The *Party & Co* scenario represents a potential future in which *individual* actors are closely linked to each other in a sort of cooperative game where multiple skills, talents and attributes are required from each player to overcome trials, threats and quarrels. In this scenario, District Municipalities, citizens and NGOs form a socio-political network that aims for the same common goal of realizing a green, sustainable and healthy urban environment in Budapest.

The Government of Budapest has changed its priorities. UGSs are now a much more relevant topic on the political agenda and therefore the Municipalities receive a greater amount of funds for the development of green areas. Municipalities take the role of innovators, continuously looking for strategies to improve UGSs according to what society and the biophysical environment demands from them. NGOs are also pioneers of new ideas

and initiatives. They act as a communicative interface between citizens and District Municipalities. Citizens are actively interested in the topic of UGSs and perceive that their involvement is important and appreciated by other parties. There are plenty of possibilities also for minorities to get involved in collective actions.

Information is distributed widely among actors. Regularly, meetings are organized where ideas can be shared among the different stakeholders. Concerning regular consultation meetings with citizens, NGOs and District Municipalities discuss developments regarding UGSs and ensure a two-way information flow. All the institutions involved in UGSs management work transparently and they inform citizens about their rights and responsibilities in order to legitimate them to take part in the decision making process. The possibilities for citizens to steer the decisions concerning plans and programs lead to civic virtue, a sense of self-identity and a change in their social practices in relation to the new urban environment. Information concerning upcoming events about UGSs is distributed via a wide range of media, such as flyers, social networks, banners, leaflets, television, radio, etc.
From an administrative point of view, decentralization is maintained in the geopolitical structure of Budapest. Administrative decentralization is efficient and cost-effective as a consequence of the improvements in transparency and in the ability of institutions to supply better services. Citizens perceive the decentralized system as a tool to have a say in local politics and to lighten the bureaucratic burden of private UGSs regulations. This means that they have multiple options to implement greens in their surroundings without having to deal with too many regulations.

High levels of cooperation allow Főkert, the District Municipalities and private owners to provide an optimal maintenance service, avoiding overlap and money wastes. In this scenario there is also an active participation of civil society in maintenance: there is a high number of citizens taking responsibility for the maintenance of a specific piece of green space.

Ownership is comprehensive in the context of UGSs of Budapest. Both public authorities and private parties own UGSs and the owners of UGSs are flexible regarding activities that take place in their areas and people who visit at which times. Thus, accessibility of both public and private spaces is dynamic. Landowners and users communicate well with each other and they feel connected. UGSs are not only being used by people performing regular activities, but also by NGOs or groups of citizens to organize special events such as festivals and parties that bring people together. So, while ownership is diffused among actors, non-owners feel appreciated and involved and thereby connected to the UGSs. This type of comprehensive ownership contributes to a *dynamic* and *collective* use of UGSs in society.

UGSs are multifunctional and multigenerational. They contain an urban environment where efficient space management allows people to perform a great variety of activities. UGSs are able to endorse ethnic minorities and poor people, playing a pivotal role in community building and social equality.

4. Action Plan

The following action plan encompasses a set of different strategies, which have been developed upon the present challenges and opportunities faced by the different districts. In this report, the purpose of those strategies is to bridge the *Solitaire* storyline, containing the current situation, with the other three storylines, by means of potential best practices observed in Budapest. Moreover, the recommendations that arise from this action plan are meant as a guideline which KÉK can use to improve the current situation of UGSs.

An important aspect to take into account when executing the action plan from the *Solitaire* to the *Party & Co* scenario is that a movement on the social cohesion axe or the UGSs axe should be implemented first, to obtain a *Collective* and *Dynamic* situation. Moreover, a movement from *Static* to *Dynamic* should be performed first, followed by a movement from *Individual* to *Collective.* Or the other way around; first more *collective* followed by more *dynamic* movement (see Figure 4).

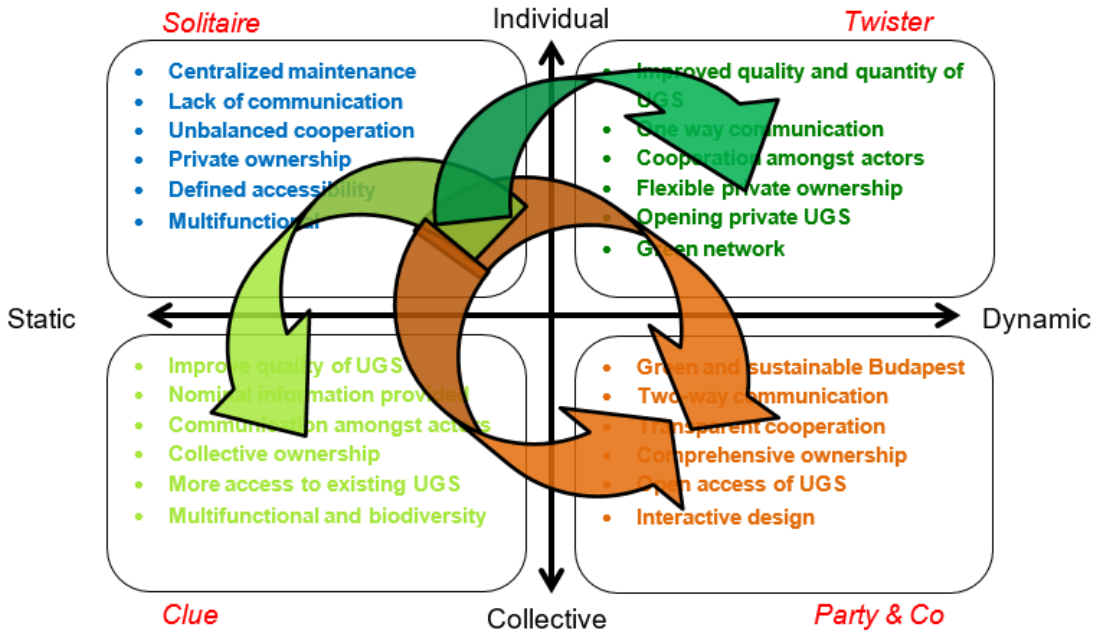


Figure 4: The green, lime and orange arrows represent the bridges of the Solitaire scenario towards Twister, Clue and Party & Co.

4.1. Stakeholders perspective on current and future situation

At the meeting with KÉK on 2 October 2015, an interactive session was held with the stakeholders that were present. Here, four of the identified concepts were presented as scales, namely *Accessibility, Usage of UGSs, Ownership and Social Cohesion*. The stakeholders were asked to put stickers on the scales according to their opinion on the current and ideal situation of Budapest as a whole. This process visualized the ideal situation of UGSs in Budapest according to these stakeholders' perspectives. This information can be used as evidence for the necessity of transitioning to a different situation and shows which potential alliances can be made between those stakeholders. An important note is that these opinions are not directly translatable to the scenario framework, so they cannot be used as an argument for choosing a certain scenario.

A division between the different types of stakeholders was made, namely *NGOs*, *Municipality* and *Other*. It can be seen in Figure 5 that the results of the *Other* category have quite a large spread, while the results of the *Municipality* and *NGOs* are in general close to each other. This means that the views of these stakeholders are much alike. The horizontal lines visualise the variance between three of the concepts present on the x-axis. Also, variances are generally larger in the current situation than in the ideal situation, which can partly be explained by the heterogeneity between districts. Even though the results show variances on the x-axis, it can be agreed upon that a slight shift from secluded, private and monofunctional UGSs towards open, public and multifunctional UGSs is wanted. However, evidence is delivered for stakeholders preferring a future where the behaviour of both citizens and involved actors is more collective than is now the case.

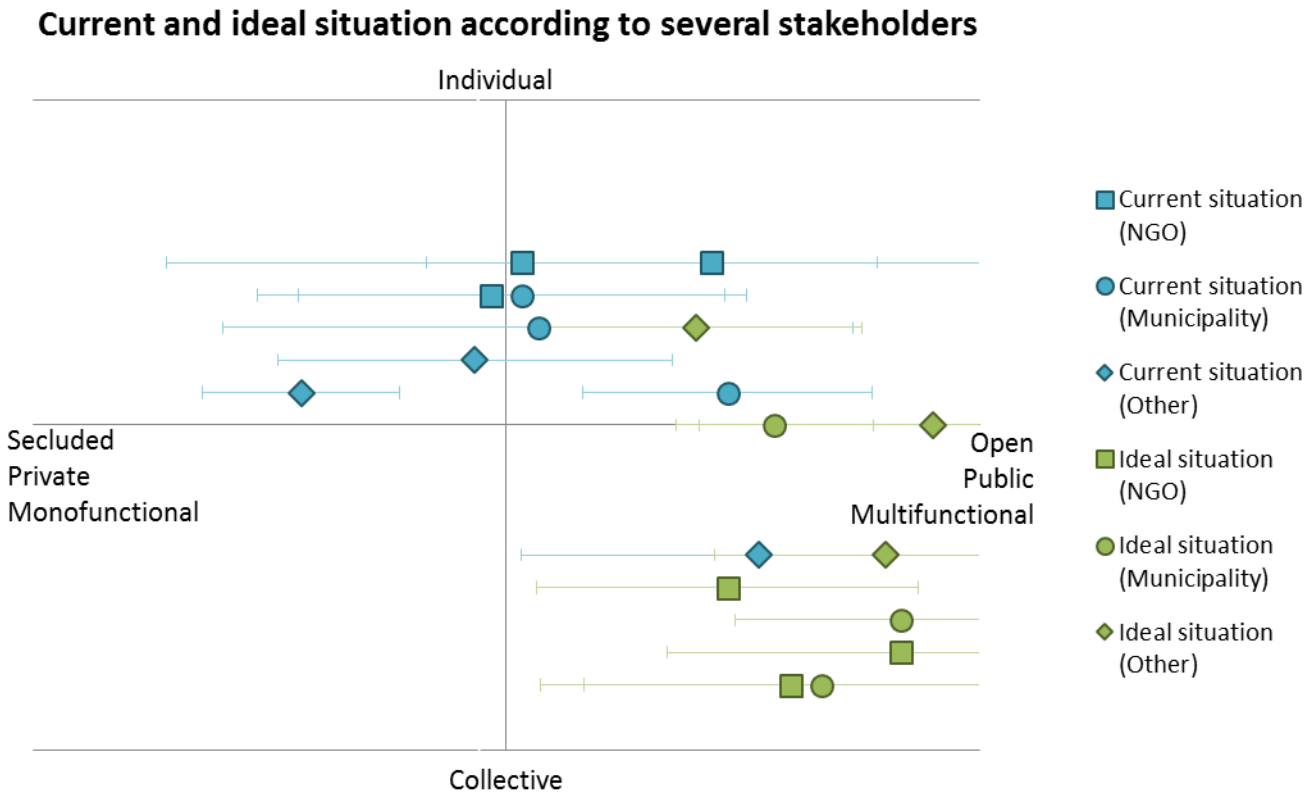


Figure 5: Results from the interactive session with several stakeholders: evaluation of current and ideal situation.

The results of the fieldwork showed that, in this current situation, citizens and involved stakeholders behave in an individual manner and that closed, private and monofunctional UGSs are not uncommon. However, the results of the interactive session showed that the stakeholders that were present have a different view. All in all, they seem to agree on the individuality of citizens and stakeholders, but in contrast to our findings, state that UGSs are quite open, public and multifunctional.

Although the current situation might be subject of discussion, it seems clear where to go. The quadrant where most stakeholders put their stickers on the ideal situation is collective, open, public and multifunctional. The results show that currently most stakeholders seem to agree that a shift in usage and design of UGSs is required, and that a more collective behaviour of citizens and stakeholders is preferable. It also became clear that most of the present stakeholders think likewise and that variances in opinions can be explained by a difference in interpretation or a particular view on the obstacles that need to be overcome. Most stakeholders seem to agree upon the fact that concepts can differ per situation, especially per district, and that solutions need to be fitted to this - as long as people are working together with a common goal in mind.

4.2. From Solitaire to Twister

Moving from the *Solitaire* to the *Twister* scenario, the gap that has to be filled concerns the passage from a *static* to a *dynamic* situation of UGSs, while taking into consideration the *individual* attitude of stakeholders.

As far as *Maintenance* is concerned, the main goal is to provide Budapest with improved quality and an increased amount of UGSs. In this regard, a first strategy would be for NGOs and Municipalities to provide more opportunities and resources - in the form of financial incentives, tools and knowledge - to citizens, in order to encourage them to individually take more initiative for the development of UGSs.

In District XIII and IX, the District Municipality allows residents to autonomously manage the green space surrounding their house, but the outcome in terms of locals' commitment differs. In District IX, residents can either let the local authorities take care of the management of the inner courtyard for a monthly fee of 140 HUF or for the residents to be responsible for the management themselves (Szűcs, 2015; Baranyi, 2015). From the observation made, substantial differences between courtyards managed by the Municipality and those autonomously managed by the residents have been observed: the former were in very good conditions, very neat and well organized, while the latter looked very disorganized and untidy. According to the main architect of District IX, none of these projects have been successful (Szűcs, 2015).

In District XIII, residents can choose to take care of the small piece of land in front of their building. However, the council of residents can apply for a small compensation for this work and there are also check-ups from the municipality to make sure that the work is properly done. The residents are left free to choose themselves what they want to do with the piece, and an extra money prize is awarded to the 20 best initiatives (Gábor, 2015). From the observation, the green areas autonomously managed look very neat and well looked after. So, when providing citizens the option to self-maintain, adding measures like providing them with financial or other compensations may increase the quality of the UGS maintenance.

The provision of more resources directly influences the *Cooperation* among the three main actors. Local authorities and NGOs can encourage a change in the mind-set of citizens regarding UGSs by implementing different education initiatives. Such initiatives include workshops, activities involving children, preferably carried out in UGSs where both theoretical and practical skills can be acquired: for instance, by organizing workshops about food and composting in a community garden. The final goal is to overcome the current

individualistic stakeholder relationship by promoting a more participatory cooperation among actors. It is also important for the different stakeholders (municipality, NGOs and citizens) to critically evaluate the effectiveness of already-implemented projects or policies, and critically revise them in case of poor and ineffective results, like the previously-mentioned bad practice in District IX.

Information distribution can be improved by broadening the spectrum of sources, enabling municipality and NGOs to more effectively stimulate and enlarge locals' participation. Evidence is provided by the cross tabulation analysis of the questionnaire, which correlates the frequency of event attendance and the willingness of respondents to attend events if informed. Results show that 69% of respondents stated at the same time that they are not usual participants of organized events, but they would be keen on attending such events if better informed. In this context, handing out flyers would still represent the main information distribution channel, together with information emails. However, one important focus can be put in improving specific websites: for instance, the use of social networks, such as Facebook, could be extended or merged into a broader information platform to provide an overview of multiple stakeholders regarding UGSs. Another effective strategy would be to implement signs at every UGS in Budapest by including additional information about the content, history, owner, maintenance and responsible person for the specific area, in order to improve the connection between citizens and their surrounding green spaces.

Ownership and *Accessibility* might seem connected because both suggest strategies that propose a flexible policy support to develop new privately owned UGSs. The *Accessibility* also includes a strategy to display more clearly the opening hours for community gardens or other secluded UGSs and to include the possibility to rent parts of UGSs for private activities. This is thereby connected to the *Information distribution* signs strategy, where necessary information is displayed.

A last strategy in bridging the *Solitaire* and *Twister* scenarios regards the *Usage* of UGSs. In order to improve the connections between UGSs, the creation of "green pathways", consisting of planting trees or other plants along the streets, would make it more enjoyable for citizens to go from one place to another. In this regard, District XI is planning to implement a project in Gazdagrét, the southern area of the district. This location is characterized by residential buildings: in this context, the municipality wants to improve the facilities and to develop green walking ways that can connect all buildings, making it more delightful for residents to enjoy their own living space (see Annex K).

Consequences:
When implementing these strategies, several important consequences could directly and/or indirectly influence the *socio-economic* and *environmental* state of Budapest. Indeed, as far as the *socio-economic* aspect is concerned, a better usage and accessibility of UGSs leads to an increase in the number of people who use these areas. This, together with better information distribution from the municipality and NGOs towards citizens, may encourage citizens' participation in the activities organised in UGSs. As a result, local residents have the chance to get to know their neighbours and this can foster their sense of belonging to the community. Furthermore, it has already been proved that green neighbourhoods are more economically attractive than non-green areas. This situation might be beneficial for local businesses, such as restaurants and bars, and it might also ultimately lead to higher housing

prices. Indeed, as stated by Kolbe and Wüstemann (2014), apartment prices are significantly affected by the amount of surrounding open green spaces.

In addition, when referring to the *environmental* consequences, a higher number of UGS spread throughout the city is able to reduce both air and noise pollution (van Hove, 2015). This can be an important achievement for Budapest, as the concentration of nitrogen dioxide (NO_2) and particulate matter (PM_{10}) are often exceeding the threshold value set by the European Union (Pogány et al., 2014; Regional Environmental Centre, 2015; Clean Air Action Group, 2015). This is caused by among others traffic, which is expected to increase the coming years (Regional Environmental Centre, 2015). To have an idea of the different values of NO_2 and PM_{10} from 2005 to 2013 for the five districts are analysed, see Annexes H to L. Moreover, a greener city minimizes the amount of solar radiation that is reflected back to the atmosphere, thus contributing significantly to reduce the urban heat island effect. Such effect is another serious issue in Budapest, since it is often the cause behind severe heat waves in summer and related premature deaths (Regional Environmental Centre, 2015).

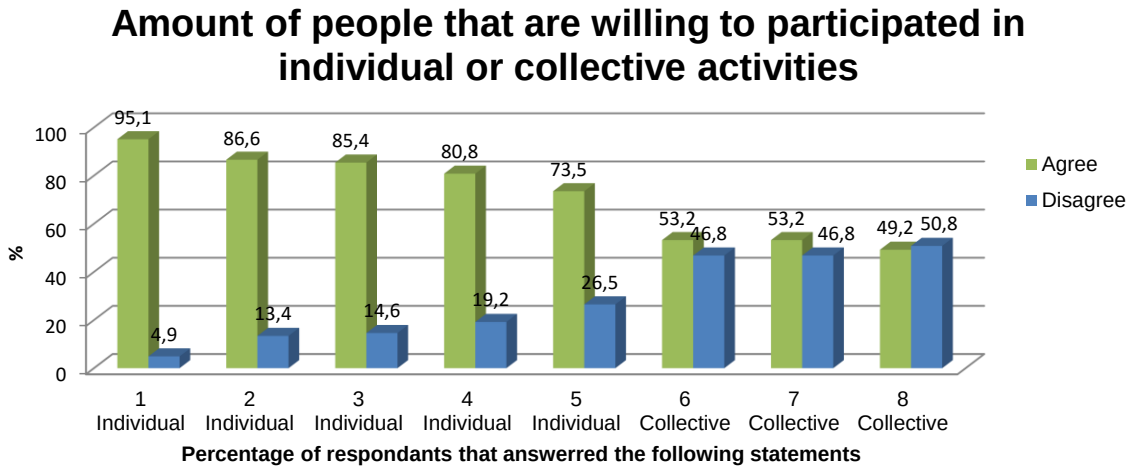
4.3. From Solitaire to Clue

This action plan is designed to bridge the current situation in Budapest, described in the *Solitaire* scenario, with the *Clue* scenario. To this end, no change in UGSs development is expected. Indeed, as there is little room for new UGSs in the most central districts of the city, the main focus is on the optimisation of already existing green areas, in terms of both functionality and biodiversity. Furthermore, moving from *Solitaire* to *Clue* means shifting from an *individualistic* to a *collectivistic* mind-set.

The current system for the maintenance of UGSs could shift towards a more open and well-balanced context, which makes room for other stakeholders and provides opportunities for everyone to participate. As a first idea, NGOs, together with maintenance companies, could act as facilitators in the setup of a maintenance system which allows citizens to work in UGSs on a voluntary basis. Such a system will help to change existing UGSs to places that reflect the needs of the community**.** By encouraging local citizens to take part in these activities, a sense of belonging and motivation for self-maintenance of UGSs is achieved.

Moreover, different kinds of gardening events could be organized. These events can be communicated to the public, stressing their multifunctionality: “spending a relaxing afternoon with friends and at the same time contributing to a greener environment”. Different parties could be invited to these events and organisations should facilitate the role of educators who provide trainings, informative sessions and workshops for citizens that are willing to learn about gardening, self-sufficiency, maintaining green spaces or even on how to create a green space. In this way, all these actors together could be part of a network that wants to contribute to a greener city, while at the same time works towards increased social cohesion.

Inviting people to join a social event can be a helpful way to enhance social cohesion. Indeed, as can be seen from questionnaire results, there exists a strong need for encouraging citizens’ participation in social activities; 87% of the respondents from all age categories enjoys reading about the environment; 81% likes watching environmental documentaries and 73% would like to grown their own vegetables. However, when it comes to social activities, only 53% of the participants would work and attend workshops in a community garden with the neighbours (see Figure 6).



1 Urban Green Spaces in my neighbourhood increase my quality of life (Individual)
2 I like reading about the environment (Individual)
3 I would support development excisting UGSs (Individual)
4 I would support the existing Urban Green Spaces in my neighbourhood (Individual)
5 I would like to grow my own vegetables (Individual)
6 I would like to work in a community garden with neighbours/friends/family (Collective)
7 I would like to attend workshops in community gardens (e.g. gardening, re-using waste, self-sufficiency) (Collective)
8 I would pay more taxes if more Urban Green Spaces were developed (Collective)

Figure 6: Questionnaire results about the opinion of respondents on several statements.

An effective idea to stimulate the involvement of locals could be represented by the creation of social hotspots close to and/or inside a community garden or a park. Furthermore, it could be useful to create an appealing and welcoming atmosphere in which people can gather to meet with each other or to relax.

The present level of communication among the different societal characters is not sufficient to assure good *Cooperation*. A joined effort of multiple stakeholders will result in a *collective* Budapest. Therefore it is essential to improve communication and transparency between citizens, NGOs and municipality. A stakeholder platform could be an interesting tool for NGOs. It is important that all NGOs in Budapest interested in a greener city-centre get together to discuss. Both the central and District Municipalities should be encouraged to join such a platform. This platform could contribute to a consensus between different parties and perspectives. An example about this is HuMuSz, which is currently cooperating with six other organizations throughout the whole country in an established alliance (HuMuSz, 2015). Alliances of organizations with similar goals can have a larger influence than single NGOs.

According to questionnaire results, 78% of the citizens in Budapest would participate more in the activities organised in UGSs if they were better informed. This suggests that the way in which *Information distribution* is conducted is not sufficient. Better information distribution could establish more social cohesion. This is confirmed by questionnaire outcomes, which show that almost 90% of the respondents consider organised events in UGSs important to create a sense of belonging to the community. Moreover, 82% of the participants enjoys the feeling of being part of a community. NGOs could think about more effective promotion of their events by using a wider range of media tools. Also the existing channels could be exploited more effectively. This can potentially also be done by an external marketing communication managers. Websites to communicate activities, like Facebook, should be updated frequently. Furthermore, in order to gain more inputs, KÉK could invite its followers

to send their ideas and use a selection of the best and most suitable ideas for specific projects.

Regarding *Ownership* and *Accessibility*, privately owned UGSs could be opened to citizens who share those spaces and want to help with their maintenance. This situation is already present in District IX, were the residents are allowed to manage courtyards themselves (Szűcs, 2015). Nevertheless, if correctly implemented, this could enhance the establishment of a sense of *collective* ownership, which facilitates social interaction among citizens.

The existing park facilities are designed for individual activities rather than interactive activities, representing a limited current *Usage*. The questionnaire confirmed that UGSs are not seen as places for social gathering, as almost 74% of the respondents do not visit UGSs to socialise. Parks can be designed in a way that facilitates interaction. For instance, from observations, District XI has already placed some tables and benches which are used for meeting friends and playing cards. Moreover, the district municipality created a “senior park”, which is specifically designed to address this category of citizens (Municipality District XI, 2015). Finally, to make things more interesting for the younger generation, a safe poisonous garden can be created. A nice example is given by the Alnwick Poison garden located in Alnwick, UK (Figure 7). They give tours and educate people about plants and, properly because of its safety; the garden is locked during the night (Alnwick garden, 2015).

Figure 7: A picture from the Alnwick Poison garden (UK) (Alnwick Garden, 2015).

Consequences:

When implementing these strategies, several important consequences could directly and/or indirectly influence the *socio-economic* and *environmental* state of Budapest. A two-way communication system, together with enhanced cooperation and transparency among the main societal actors raises awareness about the importance of green spaces for citizens. In addition, the provision of a higher amount of information regarding activities organised in UGSs, as well as park design that invites to interactive use, can encourage citizens’ participation and further facilitate social cohesion. Furthermore, well-maintained parks are more attractive, especially for people who are looking for a new place to live or start a business.

On the *environmental* side however, there are some concerns regarding air and noise pollution. Since car use is expected to increase (Regional Environmental Centre, 2015),

while UGSs are not increasing, it can be stated that air and noise pollution will continue to increase, representing an everlasting problem for the inhabitants of Budapest. This could become a serious issue in Budapest since air pollutants such as NO_2 and PM_{10} are in 2015 already exceeding the European Standards (Regional Environmental Centre, 2015; Clean Air Action Group, 2015).

The urban heat island effect is another environmental issue related to the scarcity of UGSs (Regional Environmental Centre, 2015). If the number of green areas does not increase, there will not be any increase in UGSs cooling capacity.

4.4. From Solitaire to Party & Co

Shifting from the *individua*l and *static* condition of the current situation into a *collective* and *dynamic* future is a challenging task, because significant changes have to be undertaken. Reaching this scenario can be done by passing through the *Clue* or the *Twister* scenarios. Both pathway are valid choices and require to focus more on the *dynamic* approach (via *Clue* scenario) or on *collectiveness* (via *Twister* scenario).

Making administrative decentralization effective requires a reform from the government to reduce money waste and ineffectiveness of public administrations. This reform should subdivide tasks and duties of the different administrative levels of Budapest, namely the municipality of Budapest and the municipalities of the districts, in order to minimize overlaps and vacancies in administration (Főkert, 2015; Vice Mayor, 2015; Municipality District VIII, 2015). It is also necessary that the local government changes the priorities on the agenda, giving UGSs more space in terms of public funding and political debate (Főkert, 2015).

Regarding *Maintenance*, in this scenario, citizens will feel a sense of belonging and hence, motivation for self-maintaining the UGS. Citizens are likely to properly maintain UGSs as these are considered as their own property (Municipality District IX, 2015; Municipality District XI, 2015). However, some problems in self-maintenance might arise. According to the Chief architect of District IX, courtyards which are maintained solely by citizens in the long term are usually maintained less effectively than courtyards administered by the municipality (see Chapter 4.2).

To reach the *Party & Co* scenario, *Cooperation* between different actors has to be stimulated. NGOs like KÉK can act as key actors to first arrange collective meetings with members of the municipality and secondly to get citizens involved via effective advertisement. The organized meetings have to be held regularly to keep all parties informed and to thus be able to learn from each other and to join forces to achieve common goals. Citizens have to be involved actively by giving them the opportunity to elect representatives and to let them join the meetings. In this way, citizens can have increased influence in decision-making processes regarding UGSs. From the interviews with the municipalities and the vice mayor of Budapest, it is clear that citizens of Budapest don’t feel cohesion or mutual trust and they do not want to be involved in the policy making process. From the questionnaires, only the minority of citizens (38%) agreed about being included in UGSs management. However, also 78% of people agreed that they would enjoy being part of a community. This reflects a potential interest of people to actively participate in social life and build trust inside communities. Allowing citizens to choose representatives who actively communicate with NGOs and governments can be a step towards more citizen participation. The community planning of Mátyás square is an example of a UGS development project in

which active participation of citizens gave good results (Municipality District VIII, 2015; see Annex I).

To get citizens more actively involved and to enhance *collective* social cohesion, *Information distribution* can be changed in the following way. An interactive platform in the form of a website can be created, via which all involved actors, like governments, NGOs and citizens, can communicate. This website should be updated regularly with clear information on current developments regarding UGSs and upcoming events, as well as information on possible ways for citizens to contribute. The platform should be inviting for citizens, motivating them to join existing initiatives, but also to come up with new ideas and to start realizing them. Currently involved actors should be easily approachable, which can be achieved by creating a web page with all involved organizations, their activities and their contact details. If meetings are being organized in which the different parties come together, as suggested before, the possibilities of attending these meetings should also be clear. Agendas and minutes of those meetings can also be placed on the website, to increase transparency and thereby credibility. Wide ranges of information sources such as flyers, social networks, banners, leaflets, television, radio, etc. should also be used to inform citizens about events.
In information distribution, all different age groups should be considered, so everyone can get involved. There can be specific sections on the information platform website especially for children and teenagers, for example.

Accessibility of UGSs is already high in Budapest (see Chapter 3.1). Good practices of accessibility due to public transportations are present in District XIII (see Annex L). District VIII has also a good accessibility for pedestrians thanks to small parks located in highly populated quarters (see Annex I). An important improvement for UGSs accessibility is to change the urban planning practices by redesigning infrastructures like streets and parking places. Consequently, people feel encouraged to use bicycles more often, especially in peripheral districts, where accessibility to UGSs is more difficult due to less transportation compared to the city centre. That would also significantly improve the air quality and reduce money waste coming from inefficient public infrastructures (Municipality District VIII, 2015).

Owners of UGSs should be stimulated to be flexible concerning activities performed in green areas. This not only concerns the type of activities, but also which people are allowed on which times. Landowners should be stimulated to open up their spaces, to make them more publicly accessible. In some areas or cases opening up completely might not be feasible, because of e.g. safety. But in these cases there could be a possibility to have regular opening times, and next to that, the opportunity for citizens and organizations to rent or use these public areas outside regular opening hours. Citizens and organizations can send in a request with a description of how they are planning to use the area, either for a private gathering or for a more publicly accessible event. The owners of the area can then decide whether this would be feasible, how many guards would be needed etc., and accept or decline the request accordingly. Possibly, the owners can use this format to generate income. This income can then be used for maintenance or further development of the UGS. Hosting events in UGS can also lead to more publicity and therefore visitors. Motivating landowners to be more flexible can be done by illustrating the potential benefits and giving practical advice.

Reaching *multifunctionality* is not a priority because most of the UGSs are already multifunctional (see “Usage of UGSs” in Annexes H to L). The main issue is to make this

multifunctionality more *collective* and less based on *individual* activities. This means that the large variety of activities performed in Budapest UGSs should also include social activities. The main goal therefore is to transform UGSs of Budapest in a key instrument for social cohesion and socialization. A good strategy would be to organize events that bring people together in UGSs. An example is the NGO HuMuSz who organizes educational events in both their own garden and in UGSs to create awareness around waste and strengthen the sense of community (HuMuSz, 2015). Moreover, the results of the questionnaire showed that 90% of people agree on the fact that events in UGSs would strengthen the role of community in social life. Events organized can be concerts, festivals, exhibitions, workshops, sport and cultural activities and these events can be organized by municipalities, NGOs and citizens.

Another approach is to redesign UGSs to the need of users and the generation they belong to. Different generations perform different activities, which means that UGSs can be tailored to the different needs of age groups (see Figure 3). Collective multifunctionality can also be reached through the activities performed with urban gardening. 44% of people would like to work in a community garden with friends or their family and 46% would like to attend to workshops inside community gardens. Urban gardens are therefore a potential starting point to bring people together and in the same time to increase the number of activities of a multifunctional UGS. Currently, the general frequency of performed activities decreases from the youth (12-22 years) to the elderly (41-88) age category. However, gardening activities fluctuate around 30% and 20% among all categories, decreasing less significantly compared to other activities (see Figure 3). This means that implementing and promoting urban gardens can be a good measure to involve all generations.

Consequences:
When implementing these strategies, several important consequences could directly and/or indirectly influence the *socio-economic* and *environmental* state of Budapest. Regular meetings between NGOs, municipality and citizens are being held and there is an interactive information platform in which all age groups are included. These measures make sure that citizens are up to date regarding upcoming events in UGSs, and that they feel encouraged and empowered to more actively participate and take initiative. These and other made changes will lead to a more collective feel among citizens and to more citizens being actively involved.

Landowners and other stakeholders will get more flexible regarding their policies and practices concerning UGS usage. This will give more opportunities for citizens and other parties to participate, leading to a more dynamic situation in which people act collectively.

Furthermore, enhanced quality of UGSs can make a neighbourhood more attractive to live in or start a business as well as rising prices of real estate, as was stated by Kolbe and Wüstemann (2014). Furthermore, citizens volunteering in maintenance of UGSs can reduce costs of maintenance, which is beneficial for municipalities.

Environmental aspects such as air and noise pollution can be reduced by UGSs. When the number of UGSs increases, so will their positive effects. The urban heat island effect can also be reduced by UGSs, reducing temperature in the city during summer. More small UGSs have a larger cooling than a few large ones. It is for the municipality to decide whether or not UGSs are going to be implemented and what the effect will be.

5. Conclusion

In this report, the current situation of Budapest is analysed and used as the basis for the scenarios and corresponding action plans, which contain strategies that KÉK and other actors can implement to change the state of UGSs. The four scenarios combine either an *individual* or *collective* mind set of stakeholders, with either a *static* or *dynamic* development of UGSs.

The *Solitaire* scenario (*individual* and *static*): The UGSs are maintained by a limited number of actors and there is a lack of coordination between them. There is little communication between the Municipalities, NGOs and citizens, both on planning processes and the organization of events. The *Solitaire* scenario represents the current situation in Budapest. This situation can be changed by creating a more *dynamic* management or a more *collective* mind-set. These changes are possible because citizens would like to attend events if they were more informed (*Twister*), work together in UGSs (*Clue*) and be actively involved in the management of UGSs (*Party & Co*). KÉK can choose a desired scenario and work towards the situation that the scenario represents.

Twister (*individual* and *dynamic*): All actors work individually towards a greener Budapest and the UGSs are planned according to a top-down approach. To shift from the current situation towards *Twister,* a mind-set change is necessary. This can be achieved by education and improvement of specific information distribution channels. Also, to enhance voluntary maintenance of UGSs, more resources should be provided. To increase the multifunctionality of UGSs, an expansion on the possibility to use them for private activities is needed.

Clue (*collective* and *static*): There is limited space for new UGSs; therefore the available spaces are devoted to different kinds of functions and activities that can be performed by a wide range of groups. To get from the current situation to *Clue,* a maintenance system which allows citizens to work on a voluntary basis is needed. Also it is necessary to improve communication and transparency towards citizens. Information should be distributed via multiple media forms, targeting all age groups and the design of parks should aim to facilitate social cohesion.

Party & Co (*collective* and *dynamic*): Budapest is a collaborative environment where a platform of actors comes from both governmental institutions and civil society, and has the common goal to innovate the social and biophysical urban environment through multifunctional UGSs. To get from the *Solitaire* to *Party & Co* scenario it is required to use the strategies of either the *Twister* or *Clue* scenario first. From *Clue* to *Party & Co,* more *dynamic* approach for green is needed which can be achieved by giving UGSs more space in terms of public funding and political debate. To move to *Party & Co* via *Twister,* more *collectiveness* is required: organize events that gather people in UGSs and increase citizen's participation.

KÉK has an important role in making the city greener, making the existing green more effective and creating a more *collective* mind-set. The city of Budapest is moving towards a more *dynamic* management of green: there are pilot projects where citizens can maintain a courtyard or other green spaces (see Annex J, L). There are also examples where parks are designed together with residents of the area (see Annex I). Furthermore, there are examples of the creation of more green at roads and green walking zones between buildings.

6. Recommendations

This section describes what KÉK can do to change the situation regarding UGS management. KÉK is recommended to select one of the scenarios and work towards it. The results of the interactive session can be used to gain a sense of direction but, since there was a small sample of stakeholders present, it is not entirely representative. However, it is recommended to use the results of this session (see Figure 5) to identify directions various actors prefer. In this way, possible alliances could be found and it should be clear what situation is most preferable by the majority of actors. Since the majority in the interactive session, including the members from KÉK, seem to prefer a more open, public, multifunctional and collective state of UGSs, these recommendations are based on these preferences.

An important ingredient for all the scenarios is information distribution. KÉK is already developing new ways to address its public. It is good that KÉK's new website has an English and French version, with enough opportunities for citizens to contact on projects or to become involved. Citizens are willing to participate in projects with UGSs so KÉK should continue to find ways to address its public with Facebook, the website and other media. To address a wider public, KÉK should make use of an external marketing specialist and also use offline media such as advertisements, posters and flyers. KÉK should also provide contact information, opening hours and upcoming events at the entrance of community gardens.

KÉK should focus on organizing more educational initiatives, where people can learn about the importance of UGSs for health, environment and aesthetic reasons. These initiatives can take the form of workshops and interactive activities, and they should aim to target the widest range of people, from children to elderly. Taking as an example the already-implemented workshops in community gardens, such as "HOGYAN KOMPOSZTÁLJUNK?" organized in District IX but cancelled due to bad weather; KÉK should arrange activities that can merge both theoretical and practical learning. For instance, a nice way of involving children could be to organize activities concerning vegetable planting; first, by teaching different kinds of vegetables organized in simple categories such as colour, and then trying to plant some seeds in the garden, helped by their parents. It is an occasion for everybody to learn practically in a fun and motivating environment, sharing and gaining knowledge.

KÉK could contact city planners to design or improve parks where the facilities invite for social activities, such as benches suitable for groups. Another possibility is to cooperate with municipalities to involve citizens in park design. Citizens who are involved in this process are more likely to use it and feel part of the community. Parks are then also more likely to fit with the demands of the users. KÉK could cooperate in this process and share ideas with Főkert or the district UGSs maintenance companies to increase citizen participation in the maintenance of UGSs. This can reduce the Municipalities' maintenance costs allowing more funds to be available for green spaces and public maintaining of a park or courtyard can also enhance social cohesion.

Another important factor is cooperation between KÉK, Municipalities and other NGOs. KÉK should reach out to NGOs in Budapest with a similar view on the use of UGSs and take a leading role in developing a stakeholder platform for the distribution of ideas, working together with NGOs on convincing the Municipalities to adapt urban planning or greener policies. A strong point of KÉK is throwing big parties so they could hold network events to bring different actors together.

A/B/C -

Annex A Questionnaire

1. How often did you visit the Urban Green Spaces stated below within the last 6 months? In this questionnaire we define Urban Green Spaces as all publicly accessible green spots in Budapest. Cross the box that applies to you.

	More than 3 times a week	1-3 time(s) a week	1-3 time(s) a month	Less than 1 time a month	I did not visit any
Courtyards	☐	☐	☐	☐	☐
Public parks	☐	☐	☐	☐	☐
Community gardens	☐	☐	☐	☐	☐

2. Regarding your personal use of Urban Green Spaces, cross all the boxes that are applicable to you.

☐They are nearby

☐I like to spend my free time there

☐I like being in a public space among people

☐There is less noise than in the streets

☐I think that it is healthy

☐I do not visit Urban Green Spaces

3. How often did you do the following activities in Urban Green Spaces during the last 6 months?

	More than 3 times a week	1-3 time(s) a week	1-3 time(s) a month	Less than 1 time a month	Not at all
Doing sports	☐	☐	☐	☐	☐
Relaxing	☐	☐	☐	☐	☐
Gardening	☐	☐	☐	☐	☐
“Socializing” or “meeting up with friends or meeting new people)”	☐	☐	☐	☐	☐
Attending organized events (e.g. workshops, concerts, fairs)	☐	☐	☐	☐	☐

4. To what extent do you agree with the following statements?

Organized events in and/or about Urban Green Spaces (e.g. workshops, concerts, readings, fairs, sports event)

	Strongly agree	Agree	Disagree	Strongly disagree	Don’t know
I think there are many events organized	☐	☐	☐	☐	☐
If I was better informed about organized events I would go more often	☐	☐	☐	☐	☐
Organized events are important to the community	☐	☐	☐	☐	☐
I would like to participate in the management of Urban Green Spaces in my neighbourhood	☐	☐	☐	☐	☐
Visiting Urban Green Spaces can help to meet new people	☐	☐	☐	☐	☐
I enjoy the feeling of being part of a community	☐	☐	☐	☐	☐

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
Organic waste separation is important to me	☐	☐	☐	☐	☐
Organic waste separation is supported by the municipality	☐	☐	☐	☐	☐
I use organic waste to make compost	☐	☐	☐	☐	☐
I like reading about the environment	☐	☐	☐	☐	☐
I like to watch documentaries about the environment	☐	☐	☐	☐	☐
I would like to grow my own vegetables	☐	☐	☐	☐	☐
I would like to work in a community garden with neighbours/friends/family	☐	☐	☐	☐	☐
I would like to attend workshops in community gardens (e.g. gardening, re-using waste, self-sufficiency)	☐	☐	☐	☐	☐
I would support the existing Urban Green Spaces in my neighbourhood	☐	☐	☐	☐	☐
Urban Green Spaces in my neighbourhood increase my quality of life	☐	☐	☐	☐	☐
I would pay more taxes if more Urban Green Spaces were developed	☐	☐	☐	☐	☐

5. According to you, what are the most important environmental issues in Budapest? Please, rank the following issues from the most important (1) to the least important (5).
....Noise pollution
....Air pollution
....High temperature
....Waste management
....Flooding

6. Can you mention any organizations that are active in Urban Green Spaces in your city?

☐ Yes, namely .....

☐ No, I can't name any

General questions

Gender: ☐ Male ☐ Female

Year of birth:
.....

If you live in Budapest, in which district do you live?

☐I	☐II	☐III	☐IV	☐V	☐VI
☐VII	☐VIII	☐IX	☐X	☐XI	☐XII
☐XIII	☐XIV	☐XV	☐XVI	☐XVII	☐XVIII
☐XIX	☐XX	☐XXI	☐XXII	☐XXIII	

☐ I don't live in Budapest

What is your occupation status?

☐Employed ☐Student ☐Unemployed ☐Retired

What is the distance (in metres) from your home to the nearest Urban Green Space?

☐ <100 m ☐ 100-500 m ☐ 501-1000 m ☐1001-1500 m ☐ >1500 m

Thank you for the response!

Annex B List of Interviews

Beleznay, E. Former chief architect of Budapest and vice president of the Hungarian Architecture Centre. September 29, 2015. Budapest, Hungary.

Chief Gardener. Department District VIII. September 28, 2015. Budapest, Hungary.

Clean Air Action Group. NGO. September 23, 2015. Budapest, Hungary.

Community Garden Expert. September 27, 2015. Budapest, Hungary.

Food not Bombs. NGO. September 27, 2015. Budapest, Hungary.

Főkert. September 23, 2015. Budapest, Hungary.

Gabor, P., Head of Environment Department, District XIII Public Service. September 29, 2015. Budapest, Hungary.

Gombos, A. Department of Urban Planning, Municipality of Budapest. October 7, 2015. Email correspondence.

Hove, van, B. Assistant Professor, Air Quality, Wageningen University. September 17, 2015. Wageningen, The Netherlands.

HuMuSz. NGO. September 23, 2015. Budapest, Hungary.

Mako, A. September 28, 2015. Budapest, Hungary.

Mezösi, T, Owner of Street Food Karavan. September 24, 2015. Budapest, Hungary.

Mindspace. NGO. September 24, 2015. Budapest, Hungary.

Municipality IX, September 23, 2015, Budapest, Hungary.

Municipality XI. September 25, 2015. Budapest, Hungary.

Peters, K. September 17, 2015, Wageningen, The Netherlands
Professor, Ornamental Horticulture/ Floriculture and Dendrology, Corvinus University. September 22, 2015. Budapest, Hungary.

Polyak, L., Architect. September 25, 2015. Budapest, Hungary.

Regional Environmental Centre. NGO. September 24, 2015. Budapest, Hungary.

Strenchock, L., Environmental and Sustainability Officer at Central European University. September 25, 2015. Budapest, Hungary.

Szabó, R. Environmental Officer – District VII. October 11, 2015. Email correspondence.

Vessey, P. Gardener at Street Food Caravan. September 24, 2015. Budapest, Hungary.

Vice Mayor of Budapest. September 28, 2015. Budapest, Hungary.

Annex C Semi-structured Interview

This annex includes the interview protocol and formulated questions that were used during the preparation of the interviews. The interview protocol includes the general structure of an interview. The formulated questions were constructed by the main topics that came up in the preparation phase of the project. For every interview, questions were selected from this list based on the expertise of the interviewee to be sure that all necessary information would be gathered.

INTERVIEW PROTOCOL

Preparation

- Look to the topics and pick relevant questions, so be critical! When possible print questions or write them down.
- Discuss on forehand who is going to ask questions and who is going to make notes.

During the interview

- Clearance in your question, for instance.
    - Example 1: Major of district X, ask questions about the district.
    - Example 2: Expert on air pollution, ask for air pollution about the whole of Budapest.
- Notes
- Use a recording device
- Give the present

Direct after the interview

- Make a rough transcript of interview
- When things are unclear use the stored audio file of your recording device
- Put the recording and transcript on Sharepoint in the correct folder (Shared documents --> Contacts + interviews --> Interview transcripts + recordings --> map of stakeholder)

QUESTIONS

Introduction questions

- What is the mission of your organisation, and does it have a specific focus area?
- What is your role within this organization? What are your responsibilities?
- What activities is this organization involved in regarding UGS?

Air quality

- How is the air quality in Budapest?
    - Do you know where we can find more information about the amount of particulate matter in Budapest?
- Do UGS cause a change in air quality?
    - If yes: are people aware of these potential benefits of UGS on air quality in Budapest?
    - How does influence of UGS change throughout different seasons? *(Trees loose leaves...)*
    - Do many small UGS contribute a similar effect as a larger UGS?
    - Are there any quantitative data about this air quality change caused by UGS?

- How do you think the air quality in Budapest will develop in the future? *(Why? Based on...?)*
- In your opinion can UGS be used as a tool for air quality improvement in Budapest?

Temperature regulation
- Do UGS in Budapest influence the local climate?
- Do you think there is a difference in temperature regulation between parks and community gardens?
- Do many small UGS contribute a similar effect as a larger UGS?
- What are the factors that increase temperature in the city?
- In your opinion can UGS be used as a tool in encountering future temperature changes in Budapest?

Traffic/noise quality (reduction effects)
- How do UGS influence the sound quality/noise pollution in Budapest?
    - How does this change throughout the year? *(Trees lose leaves...)*
    - Do the different kinds of UGS (parks/community gardens/courtyards) contribute differently to noise reduction?
- Does Budapest use UGS to mitigate air and noise pollution?
- Do you think noise nuisance will increase in Budapest in the future?
- In your opinion can UGS be used as a tool in encountering traffic/noise nuisance in the future? *(Considering possible noise nuisance increase.)*

Citizen awareness
- Are people/citizens aware of the benefits of UGS? In terms of air quality, temperature regulation and noise reduction.
- Do you have any advice in promoting the benefits of UGS to the citizens?

Economic interest
- Where do UGS in Budapest find their sources of financing?
    - Are there some sponsors which provide a financial support to UGS?
    - Are there subsidies from the municipality to support UGS?
    - Do you perceive the money invested by the municipality in supporting UGS to be enough?
    - Why would an organization be interested in (financially or non-monetarily) supporting UGS?
    - How much money is invested in supporting UGS on average?
    - What do you think would be the effect on UGS if there would be more financial support?
- How UGS contribute to the economy of the city?
    - Is generally an urban garden economically profitable?
    - Is UGA in your opinion economically beneficial for Budapest?
    - What are the economic costs and benefits of UGS?
- Do UGS provide alternative source of income or job opportunities?
- Would you be interested in the development of UGS? How would you imagine your contribution to be?
- How do you think UGS can contribute to the economy of Budapest in the future?

Resources

- Where do you get the information you collect? Do you have access to databases? Do you have any intern expert?

Community Cohesion

- How do UGS effect social interaction in Budapest?
- What are important factors in community building? How would this be incorporated into UGS?
- Are you satisfied with the current UGS in the relation to social aspects?
- Do you perceive social-cohesion as an issue of concern in Budapest (district)? How could your organisation/the municipality start UGS Management?
- How do you expect citizens to welcome "future plans that your organisation will implement"?

Citizen empowerment

- How can citizen empowerment be improved in Budapest through UGS?
- Do you think UGS are publicly accessible?
- For what activities/purposes is this UGS used? (E.g. gardening/education/workshops)

Media ability in spreading info

- Which are the media tools that you usually use to spread information about your organisation/your projects?
- Which kinds of media are usually used to spread information about UGS?
- Do you think the use of media is useful to scaling up information about UGS?
- How do you think media instruments can support the promotion of UGS in the future?

Political Interest (Agenda, Mission, Focus)

- (Also in Role topic) What is the mission of your organisation, and does it have a specific focus area?
- What are the main topics/projects the organisation is dealing with at the moment?
- If UGS/social cohesion/bio-waste management/education is mentioned: ask for elaboration.

Interactions among stakeholders

- Were there any partnerships in the past, current with other organisation, groups, companies etc. for the development?
    - If yes, do you have criteria for selecting your partners?
    - If yes, did some of these partnerships include UGA, bio-waste management, social cohesion/education?
    - If yes again, could you tell us their names?

Effectiveness of Organic Waste Regulations

- Are there regulations/laws concerning the organic waste management?
- Are there facilities to process the OW?
- How is organic waste collected and disposed?
- In what districts is organic waste management implemented?
- Do you perceive the current organic waste management regulations to be insufficient?
- How is citizens' behaviour monitored/controlled in relation to the OWM?

- How do citizens think about organic waste management?
- How easy is it for citizens in Budapest to process their OW?
- EU Article – Why is there a rejection among the citizens regarding organic waste management?
- In your opinion, how do you think a change in organic waste management be beneficial for Budapest in terms of social cohesion/environment/economy? What is needed then? Is it plausible for OW management to be implemented as a policy measure for future development of UGS?

Effectiveness of Urban Green Space Regulations

- What are regulations concerning Urban Green Spaces?
- Do you perceive those regulations to be effective?
- Are there activities or projects that are currently taking place regarding UGS regulations? If yes, by whom?

Community Gardening

- Why is the community garden at this location? (criteria)
- Why did you start with CG?
- Who is managing the garden(s)? (ownership) / How are the gardens managed?
- Are the current gardens successful?
- How did you promote the community gardens?
- How do people get involved in community gardening?
- Are there ideas/initiatives for new community gardens?
- Were there problems /conflicts with (governmental organizations)?
- What was the previous land use of the CG?

Urban planner

- Do you think there is more green needed per district?
- What is your opinion on urban green spaces?
- Would you agree on more urban green spaces in (temporary) empty fields?
- Is it difficult to change the land use plan?

Urban planner municipality

- Has community gardening potential for the development of Budapest?

Other

- Are the current policies (UA/ Bio-waste mgt.) working in the research area?
- Are they cost effective?
- How can they be improved?
- Community garden group consideration (How people work to manage community garden)
- Liability
- Services provided by municipalities (Size of compost facilities, number of compost bins)

Annex D Observation Frame

Description:

1-2 persons – observation of people's activities at one location
1-2 persons – general observations of UGS
1 person – sketch of UGS

Time span for activity observation: 30 min

Date and time of observation	
Location (District, Type of UGS)	
GPS coordinates	
Name of observer/ Group	

Sketch of UGS and note direct surroundings (also take photos, not more than 3 and write down the photo id. Nr. + owner of the camera!):

Legend:
/// - Water
O - Tree
X - Scrubs
___ - Roads
- Indicate man-made objects with arrows

Activity of Visitors in UGS (**including gardens**):

Weather	Choose from every subgroup the best option. a) No clouds, some clouds, completely cloudy. b) Dry, showers, continuous rain c) Drizzle, rain, storm

Age Categories:
Baby: 0-2 years
Child: 3-11 years
Teenager: 12-20 years
Young **A**dult: 21-30 years
Adult: 31-60 years
Elderly: 61-120 years

Number of People		**Nº Person, Gender (F/M), Age Category (see below)**	**Activity**
Example	*4*	*1, F, YA* *2, M, A* *3, F, E* *4, Unknown, B*	*1-3 – playing Frisbee* *4 – sleeping*

General Observations around the Urban Green Spaces (UGS)(**including gardens**):

Aspects	**Instructions**	**Notes / observation**	**Interpretation**
Closest option of public transport	Estimation of walking distance from the public transport to the entrance of the UGS, in meters. And the type of public transport (metro, bus, train etc.)		
Parking	Is there parking availability for cars? (Yes/No)		
Neighbourhood	Is the park situated in a residential area? (Yes/No) If so, what kind of buildings? (flats, single houses, apartment complex, shops, etc.)		
Road types connecting/ surrounding to the UGS	Walking, cycle-line, cars, bus lane, other (specify), that lead to UGS		

General Observations around the Urban Green Spaces (UGS)(**including gardens**):

Aspects	Instructions	Notes / observation	Interpretation
Area size	When you have a GPS use this to get the area size (use GPS units). If your group does not have a GPS device use estimation, cell phone app **and** google maps. In m^2 If the area is too big to walk around use google maps.		
Facilities	Types of facilities (Benches, toilets, playground, sports court, catering facilities etc.) Name the ones that are present.		
State of maintenance	Note if objects (like benches, fences ect.) are damaged (yes/no) Note if there is trash on the ground? See indicator sheet for litter scale.		
Vegetation	Types of vegetation present: Grass, scrubs, trees, flowerbeds (estimation of coverage in %) Space can be covered with more types at once		

Extra Observations **only** in Urban Gardens (UG):

Aspects	Instructions	Notes / observation	Interpretation
Production type	Types of production present; Food (vegetables, fruits, herbs),flowers,other (specify) (estimation of coverage in %)		
Water source	Define the water source for the UG; Taps, houses, (rain)water basins, well, other (specify)		
Self-watering Irrigation system	present ; Yes/No		
Soil origin	Natural (directly in the ground) or Man-made constructions (pots, bags etc.)		
Organic waste	a) Presence of compost pile (yes/no). b) Presence or the use of mulch (yes/no).		
Organic waste	Count number of compost piles and their size: small (<0.5x0.5m), average (in between), big (>1.5x1.5m)		

Observations in Open Spaces (not an Urban Green Space yet):

Aspects	**Instructions**	**Notes / observation**	**Interpretation**
Type of current land use (surface coverage)	Describe, as possibilities are endless. Take pictures of the open space. Write down the photo id. Nr. + owner of the camera.		
Type of current land use (activities)	Describe, as possibilities are endless. Take pictures of the open space. Write down the photo id. Nr. + owner of the camera.		
Area size	When you have a GPS use this to get the area size (use GPS units). If your group does not have a GPS device use estimation, cell phone app **and** google maps. **In m^2** If the area is too big to walk around use google maps.		

If you are missing any observation-points for this specific location, please write them down here. This can be anything that you find relevant, such as extreme slope, etc. etc..

Annex E Table of Scenarios

	Solitaire	Twister	Clue	Party & Co
Maintenance	Centralized maintenance	Improved quality/quantity of UGS: citizens are more encouraged to take part (as individuals), but still a centralized issue	Improve quality of UGS: Municipalities and other entities (NGO's) take majority of the responsibilities (citizens minor)	Green and sustainable Budapest.: Complete decentralisation where there is collective maintenance actions amongst all 3 stakeholders
Communication	Lack of communication (citizens are often uninformed)	One way communication(municipality, NGOs to citizens)	Partial/one way communication: communication through available media (Facebook e.g.). Not all age groups are reached.	Two-way communication: everybody is communicated to and is up to date. And is able to voice their opinion (citizens)
Cooperation	Unbalanced cooperation (scale discordance)	Cooperation amongst actors: Municipalities and NGO's	Communication/Cooperation amongst actors: Municipalities and NGO's use input from citizens through passive means of involvement (inquires, questionnaires etc.).	Transparent cooperation: active involvement of all stakeholders (open discussion session, active involvement of citizens)
Ownership	Private ownership: There are private owners.	Flexible private ownership: UGS still private but more open to the non-owners (have multiple owners)	Collective ownership: shared responsibilities but main owners are still deciding on activities and procedures	Comprehensive ownership: ownership moves from private space to a public space where ownership is equally divided amongst individuals and open to all public.
Accessibility	Defined accessibility: accessibility is restricted to the owners	Opening private UGS: UGS still private but more open to the public (e.g. specific times)		Open access of UGS: Open access and reachability to all citizens. There is no hierarchy
Design	Multifunctionality	Green networks	Multifunctionality and biodiversity	Interactive design: active involvement of all stakeholders (open discussion session, active involvement of citizens)

Annex F Table of Action Plan

Topic 4.2	**Solitaire to twister**	**KEK**	**Municipality**	**Other actor**
Maintenance	Provide more resources - in the form of financial incentives, tools and knowledge	X	X	
Cooperation	Implementing different education initiatives	X	X	
Information distribution	Broadening the spectrum of media sources	X	X	
Ownership	Information signs on who to consult for entering secluded UGS			Owner UGS
Accessibility	Information signs on opening about opening hours of UGS			Owner UGS
Usage	Create green pathways	X	X	Citizens

Topic 4.3	**Solitaire to Clue**	**KEK**	**Municipality**	**Other actor**
Maintenance	Maintenance system for maintenance by citizens on voluntary basis	X		Főkert
Cooperation	Stakeholder platform	X	X	HuMuSz
Information distribution	Marketing managers	X		Marketing organization
Ownership	Open privately owned UGS	X		Főkert
Accessibility	Information signs about opening hours of UGS			Owner UGS
Usage	Group benches and toxic garden	X	X	Főkert

Topic 4.4	**Solitaire to Party& Co**	**KEK**	**Municipality**	**Other actor**
Maintenance	Self-maintenance of UGS by citizens			Citizens
Cooperation	Collective meetings	X	X	
Information distribution	Interactive platform	X	X	Citizens
Ownership	Flexible access and openingtimes UGS		X	Owners UGS
Accessibility	Redesign infrastructure to encourage using bicycle lanes	X	X	X
Usage	Redesgn UGS according the need of users		X	X

Annex G Summary of Consequences

Socio-economic

- Education: learning by doing, in terms of gardening and awareness of where food comes from
- Social cohesion: community building
- Parks are reflecting more what citizens need when they are involved in the decision making process.
- Volunteering of citizens can reduce maintenance costs
- Green neighbourhoods are more attractive to live in or start a business
- might be beneficial for already existent local businesses
- Increasing housing prices: Kolbe and Wüstemann (2014), apartment prices are significantly affected by the amount of surrounding open green spaces

Environmental

- Reduction of air pollution: filtering of air pollutants such as PM10 and NO_2 which are in the centre exceeding European standards.
    - Indirectly: reduction of respiratory diseases and premature deaths.
- Reduction of noise pollution: absorbing noise and thereby creating quieter places in the city. In 2014 between 12-15 dB exceeding of European standard.
- Reduction of urban heat island effect: green spaces absorb heat and thereby reduce heat in near urban spaces. Cooling capacity of UGSs
    - Indirectly: reduction of premature deaths related to heat.

GEO-REPORT DISTRICT VII

Gilbert Crosta	Leroy Chiara	920827264110 910524165070
Ferede	Alemtsehaye	711206238080
Askarov Amena	Olim Renske	910215019090 910830015030
Zondag	Kiki	910424989110

WUR Consultancy Group

Wageningen University

Abstract

The aim of this geo-report is to investigate the current situation of Urban Green Spaces (UGS) within District VII. To this end, 93 questionnaires have been administered to local residents, so as to learn about people's perception of urban green spaces and other related issues. Field observations and interviews with experts have been used as another important source of information.

Analysis results show that urban green spaces in District VII are all easily accessible. However, their number is very limited and possibilities deriving from empty, privately owned spaces should be seriously taken into consideration. Moreover, questionnaire outcomes demonstrate a clear correlation between green spaces and their role in improving people's quality of life, also in relation to the various activities that can be performed there. However, it emerged also that such areas are not recognized by residents as places for social gathering, probably due to the small number of organised events. Another issue is represented by the low degree of involvement of the citizens at the municipal level.

Finally, the recommendation section provides solutions for the different challenges described in such geo-report, together with an example of best practice retrieved from District VII itself and represented by the "Street Food Karavan" (Kazinczy utca 14).

Table of Contents

Introduction

1.1. Purpose of the Report

The aim of this geo-report is to analyse the current situation of urban green spaces (UGSs) within District VII of Budapest, in order to find evidence to support city's best management practices. In light of this, such report will focus on four themes, which are relevant for the scope of this research. Thus, topics related to urban planning, usage of UGSs, environment & public health and cooperation & communication will be investigated. In particular, urban planning will study the availability and accessibility of UGSs. The usage of UGSs will be focussed on the frequency of activities performed, the level of maintenance of UGSs, as well as the degree of security and multifunctionality of parks. On the other hand, environment & public health will investigate issues related to air quality, noise quality, the urban heat island effect and organic waste management within the VII neighbourhood. Additionally, cooperation & communication will research the challenges encountered by the different stakeholders within the district in relation to UGSs. After a short explanation of the methodology used to gather information in District VII, chapter 2, 3, 4 and 5 are meant to provide insights from the four themes mentioned above. The last section of the report, represented by chapter 6 and 7, is devoted to the conclusion and the recommendations that can be derived from the different issues previously discussed. In chapter 7, there is also a description of a best practice in relation to UGSs found within District VII. Such practice fits well within district main challenges and can serve as a source of inspiration for the future development of new urban green spaces.

1.2. Study Area

As a brief introduction of the area of interest, it is possible to say that District VII, also known as Erzsébetváros, is located in the Pest side of the Danube. In total, 54,129 people live in this district and the population density is 29,357 inhabitants/km². The VII District covers an area of 2.09 km² (Hungarian Central Statistical Office, 2015). Overall, local residents can easily reach the green spaces of the neighbourhood, as the distance of UGSs from residential areas is generally less than 500 metres.

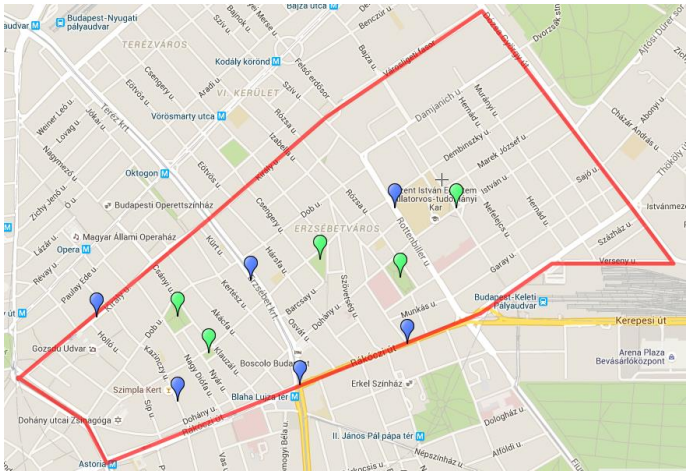


Figure 1: Map of District VII. Blue and green spots indicate the streets in which questionnaires were administered. Blue spots represent the streets, while green spots indicate the location of green areas.

1.3. Methodology

In order to understand how people perceive urban green spaces in District VII in relation to the four themes previously discussed, 93 questionnaires were administered throughout the district. Local citizens were asked to fill in the questionnaires addressing the situation of UGS, organic waste management and environmental issues in their own district. More specifically, 35 questionnaires were conducted in the 5 parks of the district, while 58 questionnaires were administered in the main streets (Figure 1).

2. Urban Planning

Urban planning in this context is defined as making UGS functional by considering their availability and their accessibility for the citizens of Budapest. Both of these factors will be discussed in this chapter.

2.1. Availability

In District VII there are not a lot of green spaces, in fact there are only 4 public green parks present which are Klauzál tér, Rószák tér, Almassy tér and Kethly Anna tér. In the observations, also the surface area of these parks was measured. We observed that all of these spaces are not very large, with Rószák tér being the largest one covering 8683 m2 and the second biggest one is Klauzál tér, which covers 8519 m2. Next to these public parks, a small community garden was found in Kazinczy utca, at the back of permanent food court Karaván. There were also courtyards found, but these were not always publicly accessible. Availability will be discussed using the following topics; Existence, Sufficiency, Ownership, Funding and "Space waste".

Existence

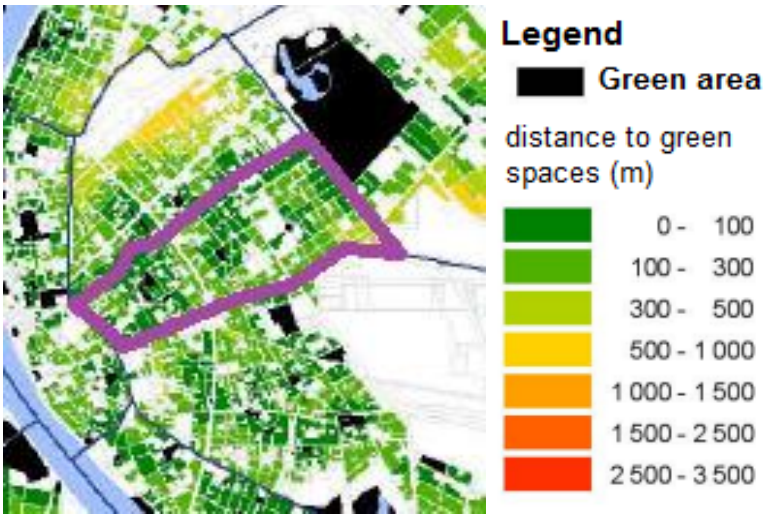


Figure 2: Distance to Urban Green Spaces in Budapest (Pogány et al., 2014).

Pictured above *(Fig. 2)* is a map that shows the urban green spaces and the distance to them in Budapest. As can be seen there are no, or very small, black areas which indicate that there are only a few small green areas in District VII. However, the largest part of the district is coloured green which shows that a green space is often not further away than 500 metres.

District VII is already working on increasing the amount of green. In 2014, for example they implemented a new row of 20 deciduous trees in Klauzál utca and 15 trees in Madách tér. They also renovated Almássy tér by spreading a new top soil. These are just some examples of what the district is doing on green surface development and maintenance.

Sufficiency

According to the WHO a city should have on average 9 m2 green per citizen but a report from the municipality of Budapest indicates that in the city centre this might only be 1-4 m2 green per citizen (Pogány et al., 2014). According to the Hungarian Central Statistical Office (2013), there were, in 2013, 55,370 people living in District VII and the total green area was

27,497 m2. This means that there is an average of 0.5 m2 of green area per inhabitant. However, this district is not strictly residential, there are many citizens travelling though and it is often visited by tourists. Information that was obtained out of the questionnaire even shows that only 30% of the people in District VII actually live there. Including all these other people, the average amount of green per citizen would even be less. This means that the amount of green spaces currently available in District VII is not nearly enough to suffice for a healthy living environment. In an interview conducted with Reká Szabó (2015), environmental officer within District VII, she indicates that the district is aware of this problem and that they have incorporated green space development in their Integrated City Development Strategy (ITS). This strategy has two main elements, which are the renewal and quality improvement of existing green spaces and the development of new UGSs.

"Space waste"

There are more than a few empty lots and courtyards in District VII, most of which are not used yet (or used to full capacity). According to Éva Beleznay (2015), architect and member of the HuGBC, the existence of the empty lots is because of some big renovation plans of more than 100 years ago that were never carried out. There was supposed to be built a boulevard between Király utca and Dób utca from the city centre to the Városliget Park. The regulation and zonation plans of this area are still there, which is why many property owners do not invest in renovation and let the buildings go to waste.

This means that there are quite a lot of empty lots found in this district. Currently some of these lots are used as a bar or restaurant (such as bar and club Szimpla Kertmozi (Kazinczy utca), parts of lunchroom Mazzel Tov (Akáfca utca) or restaurant Kandalló Kert (Klauzál utca)). However, other lots are not yet used at all and this can be seen as "space waste"; where a space has more potential than how it is used now. Reká Szabó (2015) agrees with the fact that these vacant allotments could be used for green space development. She also talks about using for example roofs or vertical walls for green space development, so as to make an optimal use of the space available in District VII.

Funding

At the moment the public parks are owned by the municipality and thus funded by it. Nevertheless, there is a difference in public funding and private funding. Currently, there are resources available within the district, which are specifically used for maintenance of green spaces, green space development and environmental monitoring. However, when starting a new citizen initiative it is often necessary to have private funding because there would be no support from the municipality for that. According to Levente Polyák (2015), architect and board member of KÉK, it is now hard for citizens to start up their own project because they miss the resources – which is a hard barrier to overcome. However, Thomas did start the garden with a small personal investment of less than €1000 and a little sponsorship from the local gardeners-shop.

So although private funding can happen, it is a possibility that some citizen initiatives strand on the fact that there is no funding. In the questionnaires, it was also asked if citizens would pay more taxes if this would help to contribute to more green in the city. There was an as good as even distribution of people who agree with that (34%) and people that did not agree (38%). 24% of the people did not know.

Ownership
According to several stakeholders that were invited to the presentation at KÉK, there are no, or as good as none, public green spaces in Budapest city centre that are privately owned. Most of the green spaces are owned by the municipality, except for a few green spaces that are owned by a private company. In District VII however, there was a privately owned public urban garden found at the back of the food court Karaván. Thomas Mezösi (2015), one of the founders of this initiative, stated that he hires the lot from a private owner. The court used to be a private parking space but the woman who owns it decided to sublet the place so as something could have been done with it. This is a good example of a privately owned public UGS.

2.2. Accessibility

The accessibility of an UGS is important to determine whether an UGS will actually be used. Accessibility in this context exists out of four main topics, being: Reachability, Openness, Permission and Safety. These will be discussed in the following paragraph.

Reachability
Because this district is so close to the city centre there is a lot of public transport available and green spaces are thus always easy to reach by public transport. From the five different public parks, we observed in our district, no connection to bus, tram or metro was further away than 300 meters. The parks were not hard to find and were in all cases connected to both a walking route and a car lane. In most cases, it was also easily possible to access the spaces by bike. All of them had parking facilities in the direct surrounding. According to our questionnaires 73% of the people that were in District VII thought that no UGS was further away than 500 meters, which makes it easier to reach as well.

Openness and Permission
All of the five parks that have been visited had fences around them, though varying in height. While conducting the observations, the fences were not closed – except for one entrance in Kethly Anna Tér. However, whether the fences are closed during the night is unknown.

All the public parks that have been visited were open for everybody. The urban garden at the back of Karaván was also open for anyone. The only UGSs that have been found not open for everyone were a few courtyards, which were for example meant for an elderly home. Next to this, it can be said that the UGSs in District VII were mostly open for everyone.

Safety
Safety is determined by factors such as the presence of maintainers or cameras, but negatively influenced by, for example, drug addicted and/or homeless people. All the parks visited were very tidy and although it was not possible to observe many maintainers at that moment, it gave an impression of a safe and clean environment. In Klauzál tér however, there were a few people sleeping on the benches but because there were also maintainers present this did not seem to be unsafe. However, it is unknown how this situation was perceived by local visitors. Because District VII is in the city centre, it cannot be avoided that there are certain people at the UGSs who might cause an unsafe feeling for others. In this specific district, the presence of maintainers and a generally tidy environment does help to mitigate such possible feelings.

3. Usage of UGS

Urban green space provides many advantages such as recreational use, preservation of the natural resources, public health, community building. In District VII, green spaces are limited compared to other districts. It has been observed that in District VII there are only five public parks and a beautiful community garden named “Street Food Karaván”. From the interviews with the food truck restaurant initiator and the head gardener of the community garden, it was possible to understand that such initiative started in cooperation with KÉK. However, they did not get any advice or technical support from any organizations or NGOs later on (Mezösi & Véssey, 2015). Meanwhile, gardeners were much interested in continuing gardening in the area and did one of the best practices in the district by creating a nice vegetable garden and herb walls using old building materials. Currently, they have plans to increase the area coverage and to use roofs for roof gardening. This community garden plays an important role in supplying the food court with spices, herbs and vegetables. In addition, the garden is used as a demonstration site for the customers, which enhances a learning-by-seeing process. The five parks in the district provide multiple benefits such as possibilities for formal and informal sports, exercises, playing, relaxing, and socialization and so on. In addition, from field observations, the urban green spaces have multifunctional advantages not only for physical health and socialization of the citizens. Indeed, they also provide a lot of environmental benefits. However, in District VII all these advantages are not sufficient because of less greenness of the area.

3.1. Performed Activities

Based on the analysis of observation frames, many locals visit parks to do exercise or sports, walk their dogs or just walk through, to play cards or other games, as well as playing in the playground, to read a book or newspaper, to relax - simply by having a nap or just sitting on the bench, to eat food, to socialize and to chat and talk on the phone. The most performed activities in our district are relaxing and socializing, both 29% accordingly. The least performed activity is still walking the dog (8%) and doing exercises (9%) *(Fig.3).*

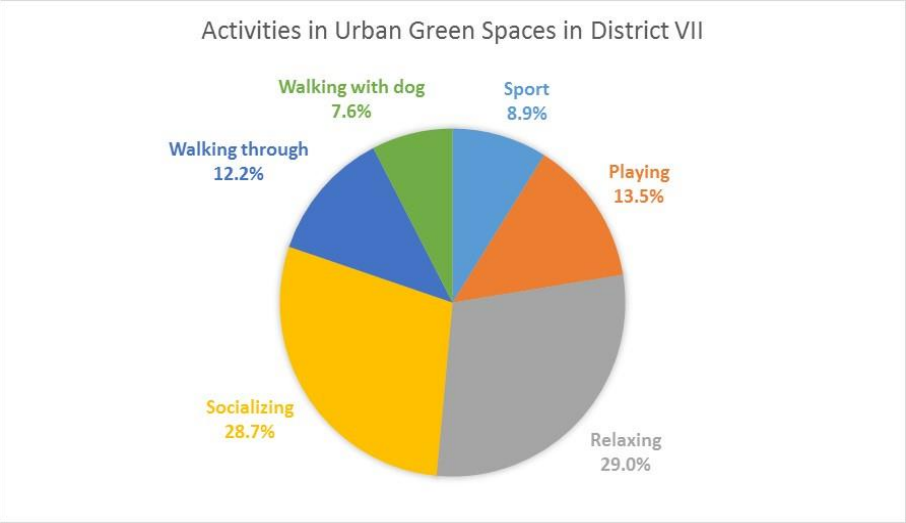


Figure 3: Number of activities observed in 5 public parks in District VII (inpercentages).

3.2. Multifunctionality

In District VII, urban green spaces, namely public parks are used for multiple purposes: from sports to walking, chatting to eating, and reading to sleeping. Most parks have fenced walking areas for dogs, which creates commendable opportunities to use the park. A community garden in the “Street Food Karavan” is also used for socializing, relaxing, eating and mainly for educational purposes. As different plant species grow in such garden, there is effective visual learning about environment and plants.

3.3. Maintenance

There are changes that need to be emphasized in most of the parks: good exposition to the sun helps the vegetation to grow well; especially cooling effect of the trees and plants that ameliorates air quality. As the parks are located in the centre of Budapest, plants have been taken care of, waste management and cleanliness of the parks are well maintained. Moreover, a community garden was well maintained and used most of its resources sustainably and in an efficient, but also creative way.

3.4. Security

All the parks are surrounded with gates and fences, also police officers and security guards are securing the parks, controlling the safety in the parks. Only in a few parks, few gypsies and some homeless people were observed. Likewise other districts, drug dealers in District VII UGSs were not spotted. A community garden is secure and accessible to any visitors of the “Street Food Karavan”. The community garden does not have any fences to keep plants “safe”, as the garden is at the back of the food trucks. People, usually young families take their children there to show how vegetables are grown.

4. Environment and Health Effects

This section provides an overview of the environmental challenges experienced daily by citizens in terms of air quality, noise pollution, urban heat island effect and organic waste management within Erzsébetváros. According to an interview with Réka Szabó (2015), environmental officer for District VII, the district municipality is already addressing such environmental issues through the local Environmental Programme (2011-2017). However, questionnaires, field observations and interviews with other experts claim that, since such challenges persist, a lot of work still needs to be done.

4.1. Air Pollution

According to the Regional Environmental Center, REC (2015), traffic in the streets of the city accounts for 40% of air pollution in Budapest. The high values of PM2.5 and PM10 are caused by private, public transport and industrial activities.

Evidence gathered from observations demonstrates that District VII is always busy with cars and buses during the day. Erzsébet körút, as well as Rákóczi út, are the busiest streets in the district, since they represent the main roads to reach either the city centre or the highway. However, the number and size of green areas located in this district do not seem sufficient to have a substantial impact on the emissions generated by vehicles in such congested roads.

As stated by the Budapest Environmental Assessment Status (Pogány et al., 2014), air quality in the city is most problematic in terms of specific pollutants, such as Nitrogen Dioxide (NO2) and Particulate Matter (PM10). If we look at the VII District, here represented by the monitoring station located in Erzsébet tér, we can see that the average annual NO2 concentration has exceeded the annual limit of 40 µg/m3 set by the European Union for all the years for which data are available (2005, from 2007 to 2011) (Fig.4). Regarding the average annual PM10 concentration registered by the Erzsébet tér monitoring station for years 2005-2013, we can see that 4 years out of 9 registered a value that exceeds the annual threshold set by the European Union, which is 40 µg/m3. In the remaining years, PM10 concentration does not exceed the European threshold, but it is still very close to such limit, fluctuating from 32 to 37 µg/m3 (Fig.4). To address this issue, the district municipality is willing to create vehicle-free areas, together with the promotion of cycling habits and development of new green spaces (Szabó, 2015).

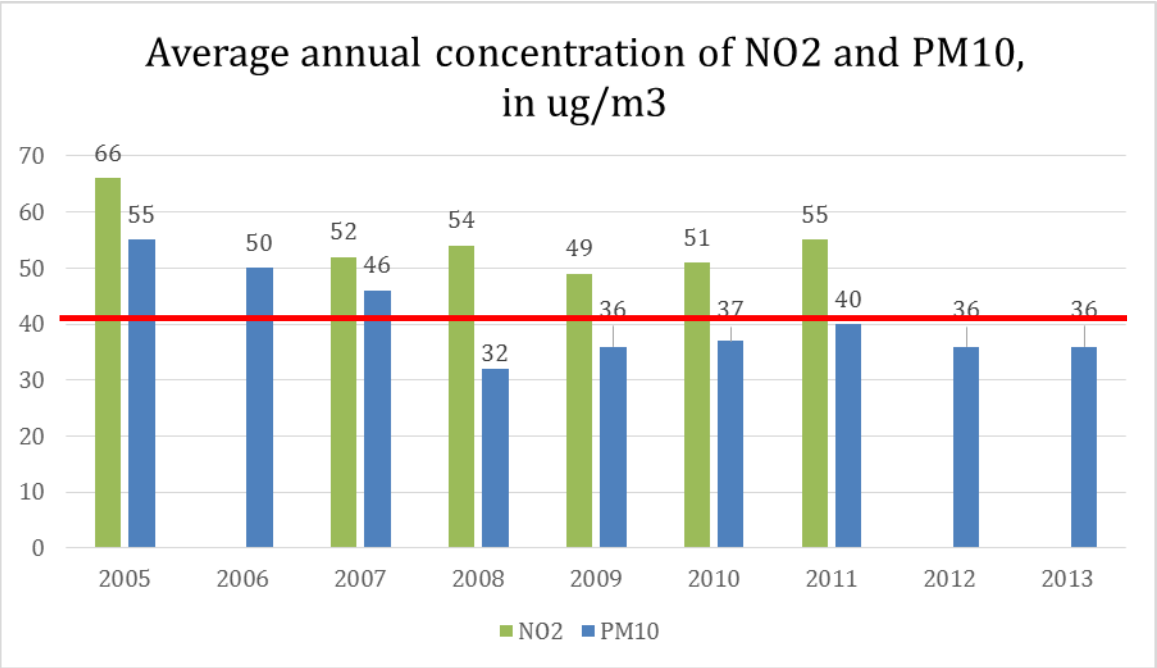


Figure 4: Average Annual Nitrogen Dioxide (NO2) and Particulate Matter (PM10) concentration value. The red, straight line indicates the threshold value set by the European Union for both pollutants, which is 40 ug / m3 (Pogány et al., 2014).

4.2. Noise Pollution

According to the World Health Organisation, noise pollution is one of the most important environmental problems in Europe, next to air and water pollution (Onder & Kocbeker, 2012). Noise pollution in Budapest is mainly caused by vehicles and traffic, especially in places that are characterised by narrow streets. Therefore, in areas where traffic congestions are frequent, i.e. in streets and road junctions, the noise level rises up to 75-80 db, which is 12-17 db higher than the standard level of noise or acceptable value (Pogány et al., 2014). In Budapest, about 33% of the total population cope daily with a noise level that is above 65 db, which ultimately creates an impact on human health, such as ischaemic hear diseases (Pogány et al., 2014).

Since District VII is located close to the city centre, it is characterised by a high level of noise. The observations conducted in the area confirmed what is stated above. As most of the roads are very narrow and surrounded by high and large buildings, noise can easily concentrate in the streets. Furthermore, according to field observations, the district is noisy because there are only a few green spaces that can effectively act as buffer zones (van Hove, 2015).

This fact seems to be confirmed by the results of the questionnaires. Indeed, only a small number of participants declared to visit urban green spaces to avoid the noise of the city. If we rank the reasons why people visit green spaces in District VII, we can see that at the first place the respondents choose the answer “because I like to spend my free time there”. On the contrary, “because there is less noise” comes just at the third place (Fig.5). The reason behind it could be related to the small size and numbers of parks within District VII.

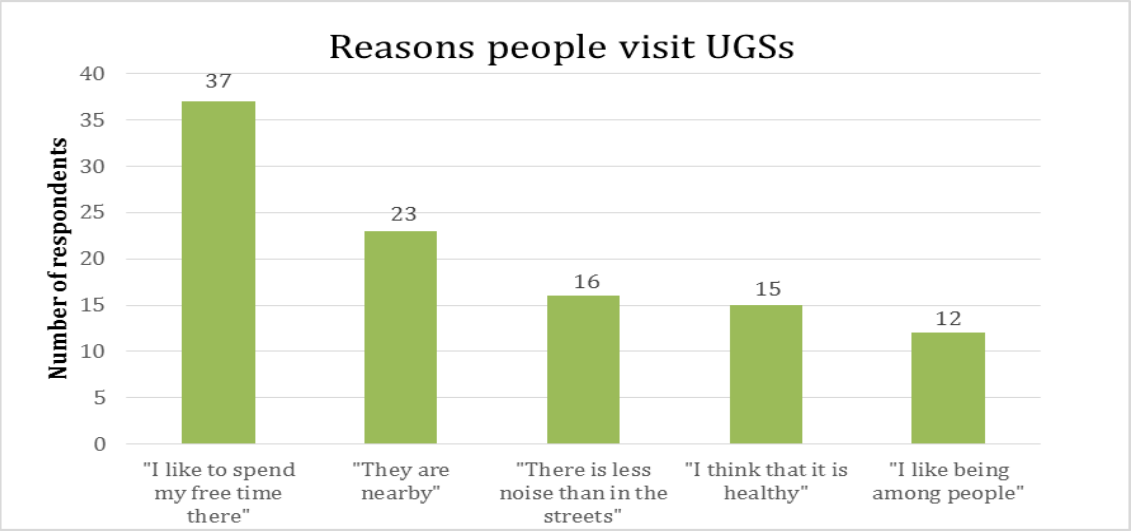


Figure 5: The graph shows the number of respondents based on their preferences for using urban green spaces in District VII.

As Réka Szabó (2015) stated, district municipality is already trying to reduce noise pollution by means of stricter control of the regulations concerning noise and vibration, especially during night-time. Another measure aims to improve sound insulation of windows and doors. However, in such interview the effectiveness of vegetation in addressing this problem is not mentioned.

4.3. Urban Heat Island Effect

In Budapest, as the Buda side is richer in green areas than the Pest side, the heat island effect is more severe in Pest (Pogány et al., 2014). Indeed, the average temperature in Buda is usually 5-6 Celsius degrees lower than the mean temperature in Pest (Pogány et al., 2014). This matches also with the information provided by REC (2015), which claims that urban green spaces are able to reduce the temperature up to 3 Celsius degrees within the city. In this way, it is possible to prove that green areas are able to make up for the heat island effect mainly caused by paved surfaces.

In fact, green areas are beneficial to minimize this effect by intercepting solar radiation and producing shade. However, since District VII have only a few green spaces, it is more prone to such environmental issue. In addition, as mentioned above, in this district most of the buildings are high and narrowly arranged along the streets. This means that the reflected radiation gets trapped on the urban surfaces and it is not able to return to the atmosphere. Such radiation is ultimately absorbed by walls and enhances urban heat release. Moreover, as the built and/or paved surfaces in the district are composed of water-resistant materials, like asphalt and concrete, they do not reflect back the radiation. On the contrary, they absorb a significant amount of solar radiation from the atmosphere, which is released later as a form of heat that leads to the urban heat island effect.

To minimize the negative impact of this effect, the municipality wants to improve the asphalt-cover of the roads by using an environmental-friendly asphalt-recycling system, namely Nu-Phalt technology. Moreover, the district Environmental Programme aims at the construction of some fountains to improve the micro-climatic conditions of communal spaces (Szabó, 2015).

4.4. Organic Waste Management

FKF (Főkert) Zrt is in charge of the selective collection of residential waste within District VII. The organic waste from households can be placed in separate, specific bags, which will be collected by this company. Moreover, FKF receives a compensation from the municipality for composting green waste generated in public spaces (Szabó, 2015). However, Szabó (2015) also stated that there is not any regulation and/or law regarding organic waste management at the district level.

This seems to match well with the information gathered from the questionnaires. Indeed, statistical analysis of the answers suggests that almost 94% of the respondents thinks that organic waste separation is important. In addition, nearly 67% of the participants claims that the municipality effectively supports organic waste separation. Nonetheless, composting does not seem a popular practice in such district. Indeed, 46% of the respondents does not re-use organic waste to make compost (Fig.6). Such outcomes lead to the assumption that, if the municipality provides residents with the necessary information about composting, a higher number of residents and/or the municipality itself could be able to produce compost. This can ultimately be used as a good organic fertilizer for flowers, plants and crops present in UGSs.

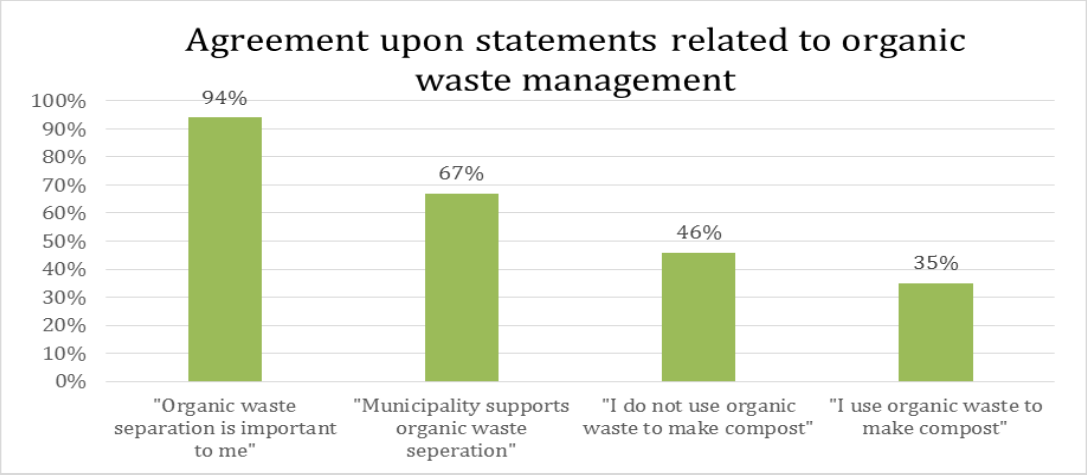


Figure 6: The graph shows the percentage of respondents in relation to organic waste separation and production of compost from organic waste.

4.5. Conclusion

Overall, the results from the questionnaires highlighted the importance of urban green spaces for the citizens. Indeed, the greatest majority of the respondents agreed upon the effectiveness of green spaces in improving people's quality of life. These findings go along with the concepts and facts provided by literature study and the interviews had with experts in air quality, noise pollution and urban heat island effect. Hence, it is possible to state that urban green spaces have a significant impact on residents' physical and mental health, meaning that this factor should be always kept in mind by decision makers in urban planning. As regards organic waste management, from the questionnaires it turned out that the overall degree of satisfaction expressed by the respondents in terms of waste management is good. In fact, the citizens confirmed that the municipality of District VII is currently supporting separation of organic waste, but it is not giving enough support as regards composting practices.

5. Cooperation and Communication

Cooperation and Communication between citizens, NGOs and local authorities is crucial to the greening of Budapest. However, a general ineffective link between stakeholders is established in most districts of Budapest (including District VII). The following section will elaborate on the most important topics relating to this specific theme. Information given in this section is predominantly gathered through interview transcripts, questionnaires and informal discussions with locals.

5.1. Empowerment

There is relatively low public participation on the subject of UGSs development in District VII. This became evident through a spontaneous interview with Peter Vessey while visiting a community garden in this area. The area includes international food trucks and in the backyard a small area devoted to gardening. This development was a citizen undertaking with minimum assistance from the local authorities who loaned the land for a period of 3 years. It was also mentioned that this undertaking was done with no assistance from any NGOs operating in Budapest. When asked the interviewee on the reasoning that is impeding UGSs development in this district he mentioned financial instability and little to no empowerment to be the determining factors contributing to this low public participation. This statement reoccurred multiple times in other expert interviews in other districts, thus this issue is not only relevant for District VII, but to more districts in Budapest. Questionnaires and informal local dialogues where conducted to determine cooperation and communication of citizen demands and usage of UGSs with contradictory results.

Citizens visiting UGSs to socialize/meeting up and attending organized events is comparatively low (~48% not actively attending, compared to ~17% actively attending) (Fig.7). Meanwhile, the demand for organized events towards increasing the usage of UGSs is increasing (collectively more than 60% who strongly agree or agree and 21% who do not). As depicted in figure 8 citizens of District VII are inclined to work together and would more frequently participate in events relating to urban gardening if they were better informed and thus stimulated to a more active participation. This would, in the long run, increase social cohesion in the district. Indeed, more people would cooperate on a daily basis to an extent where future UGSs would be used more as a social gathering place, leading to a shift from the current situation where they are not used in such a manner (Fig.7).

Local authorities also have issues on the matter of communication and cooperation towards citizens. Specific to District VII there is no apparent data e.g. interviews conducted, however comments made by REC and Peter Vessey indicate this to be an issue for a great part of Budapest. There appears to be barriers between the local authorities and the local citizens where they feel they have limited say in matters occurring in their district. This, coupled with the monetary importance the authorities place on property development, leaves little room for social beneficial projects like UGSs development. The absence of an environmental & health ministry and the dissemination of its tasks into other ministries further demonstrated the municipal interest in the matter. This, alongside the fact that citizens' preferences towards UGSs development have not being addressed indicates that there is a big gap in meeting citizens' demand at the municipal level concerning their wants. The current parks therefore do not completely correspond with the needs of the questioned citizens in the sense that they do not accord with the elements in figure 8. Communication with the local authorities may be

limited due to the hierarchical feel of the locals which further inhibits the potential cohesiveness that otherwise could have been established in District VII.

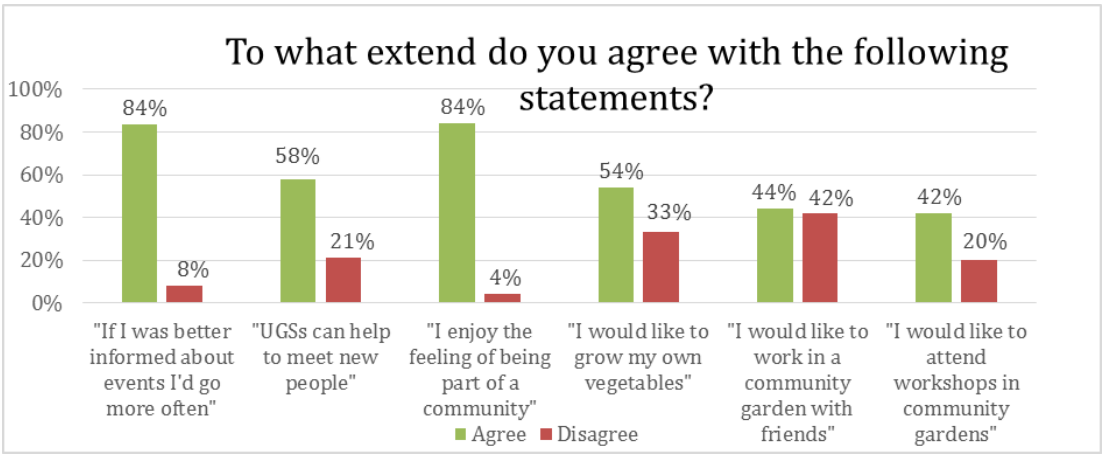


Figure 7: Sample of the current usage of UGSs for District VII.

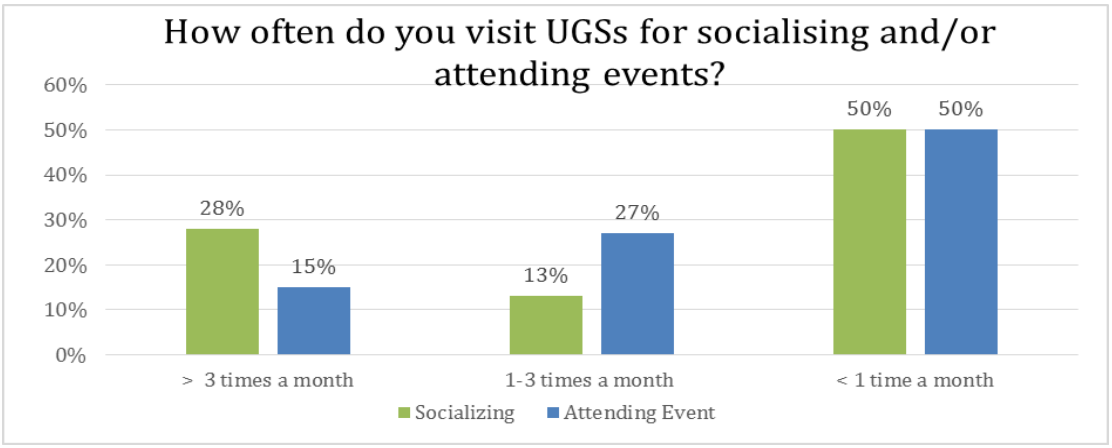


Figure 8: The degree of demand for events and activities relating to UGSs development.

5.2. Cooperation

No known NGOs involved in the promotion of UGSs development where found in District VII. Combining this lack of active NGOs and the overall little to no cooperation between citizens, NGOs and municipalities in Budapest furthermore reflects the communication shortcomings amongst these 3 stakeholders. This was made clear through an interview conducted with REC (2015), who were already looking at the matter of uniting different NGOs to form a bigger platform.

5.3. Outreach of NGOs to Citizens

When conducting questionnaires in District VII, it was specifically asked to the respondents whether there were any specific NGO that they might know operating upon environmental issues. The majority of the respondents could not mention any NGOs, which says something about citizens' perception of NGOs. An interview conducted with the vice mayor of Budapest also indicated the ineffectiveness of NGOs in attaining public credibility to have an impact on municipal level. Public credibility of NGOs in Budapest specific to the case of UGSs development is fairly low in District VII and should therefore be subject to increased efforts towards attaining its public credibility. This not only to strengthen the organization as a whole but also to be politically relevant as citizen representatives in a district which is in need of a voice.

6. Conclusion

This report analysed the current situation of urban green spaces (UGSs) within district VII. The analysis was performed focussing on the themes urban planning, usage of UGSs, environment & public health and cooperation & communication. Information was predominantly gathered through interviews, questionnaires, informal discussions with locals and observations from the fieldwork. In the following section, a conclusion will be given on the different topics combined.

In general, Erzsébetváros can be described as a densely populated district. It is also one of the most popular districts among tourists as it offers many restaurants, pubs and shops. Overall, in Erzsébetváros there are not a lot of green spaces. In total, the district counts four small parks and a green spot, named Bethlen Gábor tér. These four parks are Kéthly Anna tér, Klauzál tér, Almássy tér and Rózsák tere, the latter as part of Saint Elizabeth Church. Their size varies between 1113 m2 and 8683 m2. It was found only one small community garden, located in the backyard of the “Street Food Karavan”, accessible for everyone.

From the results gathered in the urban planning section (chapter 2), Erzsébetváros is characterised by many empty lots that are mostly privately owned and could offer opportunities for green spaces. Accessibility did not appear to be an issue in the district. Bus, metro and tram stops are well distributed over the area. Moreover, within the district there exists a good connection between commercial and residential parts. The connection between these areas and the parks is also well organized. In general, bus and/or metro stops are very close to the parks, with an average distance of 200 metres.

According to chapter 3, dedicated to the usage of UGSs, it is possible to conclude that the activities performed most often in district VII are relaxing and socializing. In addition, public parks belonging to the area of interest show a good degree of multifunctionality, together with a good level of maintenance. Regarding safety and security issues, all parks are fenced and often monitored by guards.

Results gathered from the environment & public health part (chapter 4) lead to the conclusion that many challenges related to environmental issues still need to be overcome, in spite of the new measures introduced by the local authorities. In fact, air and noise pollution are still important problems in district VII, mainly due to the proximity to the city centre and the high traffic level. On the other hand, the urban heat island effect is caused by the significant amount of paved areas and high buildings, together with the lack of green spaces. Organic waste management seems to be well organised by the local government, even though composting is not a popular practice among citizens.

From cooperation and communication between citizens, NGOs and local authorities (chapter 5), it can be concluded that in general there is an ineffective link between these stakeholders. There appears to be barriers between the local authorities and the citizens, as they feel to have a limited say in matters occurring in their district. Finally, as the majority of respondents to the questionnaire could not mention any NGOs active in their district, this seems to say something about NGOs’ degree of public credibility.

7. Recommendations

From the results of the observations, it emerged that there are many empty small lots in district VII, which can be used for urban green spaces. In light of this, local authorities, in collaboration with NGOs and citizens, should increase their efforts to use this empty space. In addition, since most of these empty lots are located between Király utca and Dób utca, it might be a good opportunity to create a network, or maybe even a tourist route, between such lots (e.g. creating the “forest of Budapest”). Similarly, since district VII is located in the city centre, there might be a significant interest in combining green with culture. To this end, making multifunctional green spaces may be combined with a social or creative hotspot. Furthermore, creating a mechanism of incentives (i.e. small grants, materials and prizes) for citizens will foster their participation in urban green development.

To improve the environmental problems in district VII and in the whole Budapest as well, from an interview with Bert van Hove (2015), we learnt that it is advisable to plant tree species which have diverse effectiveness in capturing particulate matter and filtering NO2 and/or other air pollutants. Moreover, dr. van Hove stressed the fact that many small green spaces spread all over the district can have a better effect on air quality than a single huge park in the outskirts of the city. Therefore, using small lots of empty spaces is more beneficial in this sense. In addition, the impact of urban green spaces on noise pollution should become an issue of primary importance and should not be underestimated in urban planning. According to van Hove (2015), planting trees closer to the house rather than to the road is preferable for reducing air pollution locally, especially in the busiest streets of the district. In addition, it is preferable to plant trees that act as buffers around highly noise-polluted places, such as cement factories and airports. Even though free space in the district is limited, it is possible to use flat rooftops for roof gardening. In fact, as Bert van Hove (2015) and the owner of the “Street food Karvan” confirmed (Vessey, 2015), green rooftops contribute a lot to decrease noise pollution locally and can also improve air quality at the neighbourhood level.

On the other hand, since district VII is characterised by narrow streets overcrowded with parking lots, it would be strongly advisable to reduce traffic in the city centre by imposing taxes, reducing number of cars in the streets especially during peak hours, constructing ring roads especially for heavy vehicles and encouraging citizens to use public transports and bicycles.

Additionally, regarding organic waste management within the district, we found an example of best practice in relation to organic waste separation and re-use. Indeed, in Kazinczy utca 14 there is the “Street Food Karavan”, a combination of different truck restaurants that use herbs and vegetables from a community garden located in the backyard. Here, the residues from cooking and garden maintenance are collected together and used to make compost. This compost is later used as an effective organic fertilizer for their community garden. Therefore, responsible organizations or local authorities can share this experience with other district or Budapest as a whole. However, for better implementation of urban green planning, there should be participation, cooperation and network between citizens, NGOs and local government in all districts, like is already occurring in district VIII and XIII. For example, the NGO Mindspace, in collaboration with a café (Lumen), was able to increase cooperation and communication between citizens, by creating a social hotspot to spread information.

In addition, the interviewee Gábor Péter (2015) uses a range of approaches to involve citizens in municipal decisions in district XIII (e.g. questionnaires, brochures, citizens associations, etc.). These tools are used to better inform and involve citizens, leading to better communication flows and cooperation amongst stakeholders. Similarly, reorganization of NGOs with the same goal is crucial to increase not only their outreach to citizens but also to increase cooperation between the 3 stakeholders, namely local government, NGOs and citizens. As most NGOs in Budapest according to REC (2015) tend to move as individualistic entities, they are not able to acquire as much public credence as when they would with collaborative efforts. This is especially relevant for district VII, where current scale discordance impedes effective decision-making and consensus on the different societal levels. These discrepancies could be mitigated through the above-mentioned practice of uniting NGOs that share a common goal. In doing so, the communication stream between citizens and the local authority becomes louder, clearer and much more effective with the NGO's as mediators.

Annex I Geo-Report District VIII

GEO-REPORT DISTRICT VIII

Guijt	Anja	920705290050
van der Liende	Moniek	890703516040
Midolo	Gabriele	920622571050
Rosli	Razan	910110173050
Rudyak	Aleksandra	920927714070

WUR Consultancy Group

Wageningen University

Abstract

This report presents the assessment of the current state of Urban Green Spaces (UGSs) of district VIII of Budapest. Data is collected with observations, interviews and questionnaires and focused on themes such as urban planning, the usage of urban green spaces, environment and public health and the cooperation and communication between NGOs, local citizens and the municipality of district VIII. The district has developed a lot in the past decades due to multiple rehabilitation projects that also improved the state of UGS, of which the car-free Mátyás tér park can be seen as a best practice. However, the quantity and environmental quality of UGS are still insufficient to meet the demand needed to provide a healthy living environment for the citizens of district VIII. The area covered by UGS is small especially in the west of the district and there is a little space left to develop new parks. The multifunctional UGS are well visited by citizens of all ages and the high-level of maintenance and security result in clean and secure meeting places for citizens. To improve environment and health conditions, adjustments can be made by planting more trees and high bushes in streets and parks to purify the polluted air, to provide shade during heat waves and to absorb noise that exceeds the EU standards. More cooperation and communication between NGOs, citizens and the municipality of district VIII is needed to get a clear view of the wants and needs of all stakeholders and an integrated strategy to manage UGS in district VIII.

Table of Contents

1. Introduction

1.1. Purpose of the report

This report will present the findings and conclusions found while researching the current state of the urban green spaces (UGSs) in district VIII. The district describes interesting features concerning urban planning, the use of the UGSs, environment and health aspects and the communication and cooperation between stakeholders which interrelate with the amount and quality of green and ultimately the living conditions in the district. This report poses to inform and advise commissioner KÉK and related stakeholders on best practices and improvements to be done in district VIII.

1.2. Study area

As can be seen in Figure 1, district VIII (Józsefváros) can be divided into 11 spatial quarters and is rather small, the 4th smallest district of Pest. The western palace quarter consists of palaces and has little space for green while the eastern quarters contain Orczy-kert, Budapesti Botanikus Kert (Botanical garden) and the Kerepesi cemetery (Fiumei úti Sírkert) (Alföldi & Kovács, 2008). The district is enclosed by busy roads such as Muséum krt, Rákózsi ùt, Kerepesi út, Hungaryia krt, Könyves Kalman krt. and Üllöi út that are used to travel from and to the adjacent inner city, district 5.

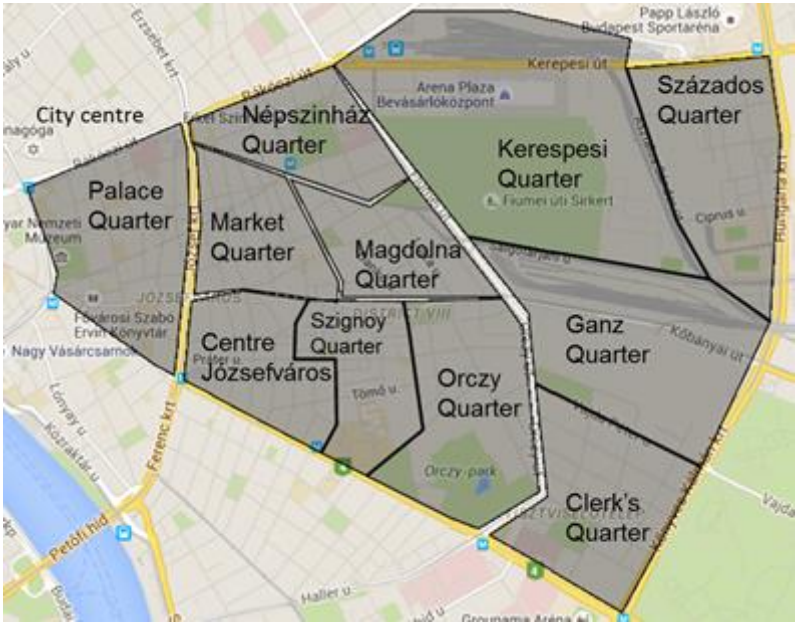


Figure 1: Location and quarters of Józsefváros (adopted from Google maps).

Until few decades ago, Józsefváros was characterized by serious problems related to poverty and criminality, especially in the central and eastern areas of the district (Alföldi & Kovács, 2008; Kondor & Horváth, 2008). There was a fear of segregation due to the arrival of Romani people and the suburbanization of local Hungarians (Kondor & Horváth, 2008). The district developed since then as can be seen in the growth of high density building which, unfortunately, led to declining numbers of open spaces (Greenkeys, 2015). Nowadays, the district is a multicultural melting pot with entrepreneurs that see opportunities, which can bring an uplift in developments concerning UGSs (Alföldi & Kovács, 2008; Kondor & Horváth, 2008; Interview: Mindspace, 2015). Since 2008, district VIII is improving by three important rehabilitation projects; Európa Belvárosa Program, Corvin Promenade and the Magdolna Quarter program, which renovated the buildings and parks in Magdolna quarter such as

Mátyás ter, Teleki téri imaház and Kalvaria tér (Rév8, 2007; György, 2011). These projects have the aim to utilize UGS for social and economic restoration and this is the moment to check what the current state and additional value of UGS to district VIII is (Greenkeys, 2015).

1.3. Methodology

This research is based on several methods ranging from literature review to fieldwork such as questionnaires amongst citizens, interviews with experts and observations in UGS. The research group conducted 130 questionnaires in district VIII on several locations that can be seen in figure 2. The green triangles represent UGSs, the yellow triangle the mall with a green square behind it and the orange triangles are public spaces with no relation to green. These questionnaires are part of a database of 570 respondents of which N=60 originate from district VIII specifically.

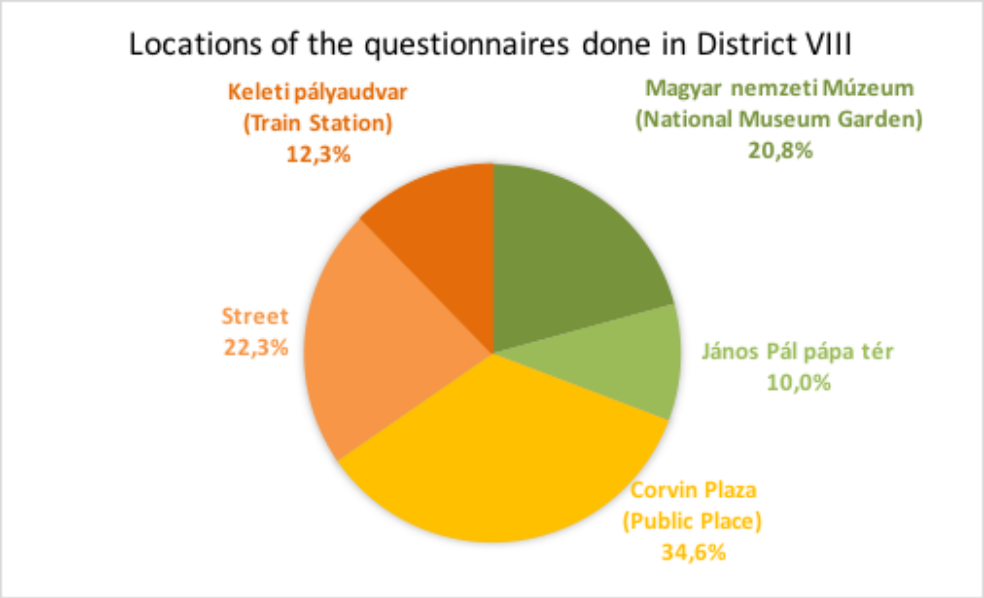


Figure 2: Chart showing the number of questionnaires collected in different locations of the district VIII.

Additionally, eleven observations were done in UGSs such as Magyar nemzeti Múzeum (National Museum Garden), Horváth Mihály tér, Budapesti Botanikus Kert (Botanical garden), Kálvária tér, Golgota tér, Orczy-Kert, Mátyás tér and twice in Loconsi ter and János Pál pápa tér. This method included observing the quality and amount of green and the activities done by citizens in urban green space but also noticing more general characteristics of the area concerning demographics, buildings and streets. Finally, a total of 19 interviews were carried out by the WUR consultancy group.

1.4. Reading Guide

The results in this report are structured according to the thematic issues encountered during the fieldwork; chapter 2 Urban Planning, chapter 3 Usage of Urban Green Spaces, chapter 4 Environment and Public Health and Chapter 5 Cooperation and Communication. The remainder of the report will be the conclusion (chapter 6), recommendations (Chapter 7) and in chapter 8 an overview of the sources that are used, including interviews.

2. Urban planning

This section discusses the urban planning of the VIII district. The urban planning includes the availability, the existence, sufficiency, if spaces could be used differently and funding and ownership. Also the accessibility: the reachability, permission and openness, of urban green spaces is discussed.

2.1. Availability

Existence

Per quarter (see Figure 1 of the Introduction) there are different kinds and availability of green spaces. In the Palace Quarter the main green space is the museum garden. This quarter's courtyards are in many cases covered with a roof. The Palace Quarter has no further green spaces, but a few recently developed pedestrian areas (squares) with a small green part (observations; Interview: Mindspace, 2015). On the other side of the Jozsef Korut, some densely populated quarters are located with a few green spaces. Nepszinház Quarter has János Pál Pápa tér, a relatively large park at a subway station. Orczy Quarter contains green spaces such as Orczy-kert and Ludovica tér. Kerepesi quarter includes the largest green space of the district: the cemetery which is clearly seen in Figure 3. Most other parks are located at the borders of a few quarters. The two community gardens are located in Józefváros Központ. Other urban green, such as trees at the sides of roads, is present in VIII district heterogeneously.

Figure 3: Green intensity index of district VIII (adopted from Budapest Föváros Vagyonkezelö Központ (2011).

Sufficiency

The VIII district is very densely populated. In 2003 there were 80 thousand inhabitants. In the same year there was 294 thousand m2 green space available (Hungarian Central Statistical Office, 2015). That is 3.8m2 per person while 9m2 is recommended (Budapest Környezeti Állapotértékelése, 2014). The amount of green spaces is low while the population density is high. The green intensity map (see Figure 3) shows that the green in the district is not located in the west, but more in the east of the district. Citizens however mostly use and live in the west part of the district which lacks UGS.

“Space waste”

According to the chief gardener of district VIII, the municipality wishes to reduce traffic and the broadness of the roads (Interview: Chief gardener, 2015). This could create more space for green. A large case of space waste is Orczy-kert, as it is a large green area but people do not use it as a park because there is a lot of waste from the construction work surrounding the park. Furthermore, empty plots are a problem for the municipality as they are used to dump garbage. Community gardens could fill these spaces and also bring people together (Interview: Chief gardener, 2015).

Funding and Ownership

The rejuvenation projects discussed in the introduction are partly financed by the municipality and by European Union Funding (Rév8, 2007; György, 2011). Most green spaces in district VIII are owned by the municipality. There are a few exceptions, the botanical garden which belongs to the hospitals, and Orczy-park which is owned by the municipality but the Ludovika Military Academy wants to make a campus and they are responsible for the maintenance (Interview: Chief gardener, 2015). Community gardens are located on location that are not used.

2.2. Accessibility

Reachability

In the map (see Figure 4) the Parks as for example Orczy-park and János Pál Pápa tér count as green areas, the Museum park and the Cemetery do not. As can be derived from this map most residents live close to a UGS, this can be parks or courtyards or other green. Most residents in district VIII also perceive the distance between their house and the nearest green space as small. 50% of the respondents from the VIIIth district state they live less than 100m from the nearest UGS. Some parks are easily reachable as the are located at Metro stations or can be reached with tram and bus. Other parks are within walking distance of public transport or residential areas.

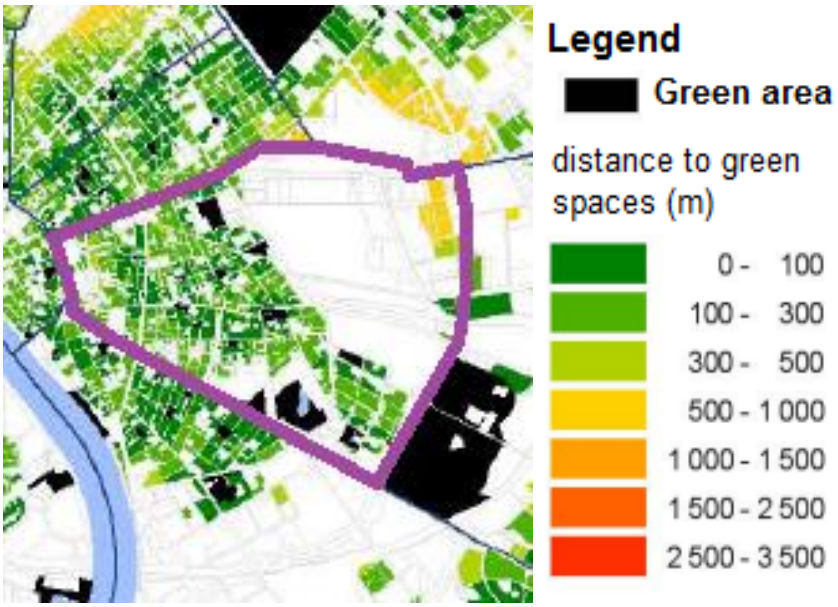


Figure 4: The distance of residential areas to green spaces for district VIII in 2011. (Adopted from Budapest Föváros Vagyonkezelö Központ (2011).

Living close to urban green spaces also increases the amounts of visits according to the questionnaires. When comparing the perceived distance to UGS to the amounts of visits to parks it is found that 75% of the respondents from VIII district that live less than 500m from green spaces visits parks often. This is high compared to 55% of the respondents that live further away. For community gardens similar results were found: 12 of the 13 respondents that work in community gardens every week state that they live within 500m of urban green spaces.

Permission and Openness

The parks are all public, but they close at night. Community gardens are limited accessible because you need to be a participant. Currently there is a waiting list to participate in community gardens in district VIII (interview: community garden expert). Also courtyards are limited accessible as you need to have permission or live there. For the botanical garden an entrance fee is needed to enter. Finally, there is also a large park on the cemetery which is not really used as an UGS, because of the uncomfortable location.

3. Usage of UGS

This section investigates to which extent UGS are suitable for the citizens of Budapest. The key issues identified and discussed are the type and frequency of activities performed in UGS, the level of maintenance, level of security for users and the multifunctionality.

3.1. Performed activities

VIII district is characterized by a high heterogeneity in the social status and income of people. The functionality of UGS, the type and frequency of activities varies spatially. Activities performed in the Palace Quarter are very different from activities in small playgrounds around Corvin Plaza's flats or in Magdolna quarter. Historical areas like Múzeumkert, in the Palace Quarter, or the Kerepesi Cemetery are used by people passively, namely without performing activities that improve the local social cohesion (like playing together or socializing with neighbours). The Múzeumkert is used by people almost exclusively for relaxation, it is a historical area that aims to strengthen the aesthetic values of the city centre. This park is visited by residents of other districts and tourists. On the other hand, parks in the central and eastern parts of the district are mostly used by people from Józsefváros (Interview: Chief Gardener, 2015). An example seen during observations is Losonci tér, a fenced park that is largely used by families living in the surrounding flats. From the observed activities in all UGS combined, generally district VIII shows a similar distribution of activities compared to the other districts: passive activities like relaxing (22%) and walking (24,7%) are done more frequently as can be seen in Figure 5 below.

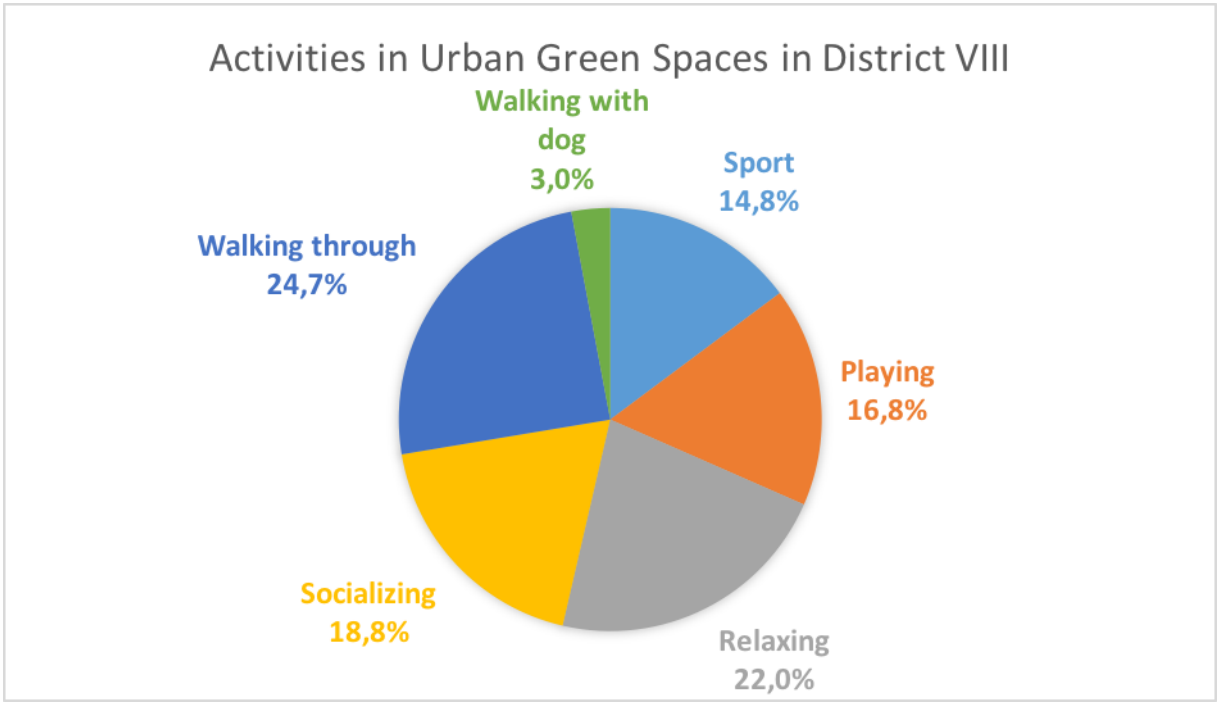


Figure 5: The performed activities that are observed in District VIII in which relaxing and walking are done most.

The frequency of usage of UGS is rather interesting: from our survey, 62% of the people that live in Józsefváros state that they visit public parks more than three times every week, which is a highpercentage compared the overall results (only 36%). Therefore, it can be stated that in Józsefváros local citizens are more active users of parks.

3.2. Multifunctionality

Multifunctionality of UGS is taken into account as an important parameter that influences people's usage of UGS. A multifunctional UGS is a green area with enough facilities and spaces devoted to different kind of activities that can be performed by a wide range of users. UGS with different functions are more resilient to what society demands from it. Examples of multifunctional green areas in Józsefváros are the fenced parks quarters: Rezső tér, Horváth tér, Losonci tér area, Golgota tér, Kálvária tér, Mátyás tér and Teleki tér. Their main functionality is to offer a shared green place for people of almost all ages that live in the main degraded areas. In these public parks the multifunctional scope is directly linked to the multigenerational scope. The parks are designed to have facilities for all the age groups: recreation grounds for children, sport fields for teenagers and young adults, and benches for parents and elderly people. It is not rare to observe all those categories of people at the same time in a park, usually interacting together. Large UGS like Orczy-park have a greater (potential) multifunctionality because large spaces can be used to perform several sport activities and to organize events. However, large parks are usually visited by a greater amount of people that come from different districts and social classes which makes the goal to improve the social cohesion of the single quarters of the district more difficult. Therefore multifunctionality should be a concept to relate to the objectives that each UGS has in the social context.

3.3. Maintenance

In Budapest the processes of management, planning and maintenance of urban green spaces are characterized by a strong decentralization of power and functions. According to most of the stakeholders interviewed by the consultancy group, inefficient decentralization is the main reason for potential maintenance failure of UGS in Budapest (Interview: Chief Gardener, 2015; Interview: Főkert, 2015). This is usually due to the overlap of functions or lack of consensus between different actors involved. As well as other districts, UGS maintenance in district VIII is managed by the municipality of Budapest (through Főkert) and the municipality of the district (through private companies). In Józsefváros, the district municipality is directly responsible for the funds received by the European Union and by the government for the creation of new green areas or projects related to UGS. Therefore, their role is much more oriented on UGS planning rather than maintenance. However, they are fully responsible for the maintenance of Rezső tér, Golgota tér, and Kálvária tér. Other parks, together with other urban green, are maintained by Főkert (Interview: Chief Gardener, 2015; Interview: Főkert, 2015). From the observations and the information collected by the interviews, the subdivision of the maintenance tasks seems to work efficiently in Józsefváros. A good level of maintenance in most of the public parks, especially the one managed by the district municipality was observed. Főkert has some problems to provide an efficient service because they are responsible for bigger parks of the districts, and that requires a greater amount of work. The main constraint for Főkert is the lack of funds to hire qualified personnel for specialized work (Interview: Főkert, 2015). District VIII has a good level of maintenance especially in those parks with fenced recreation ground: the presence of janitors or security guards is indeed a pivotal factor in the prevention of littering from users. Prevention from littering has also been improved through awareness campaigns among users (Interview: Főkert, 2015). The two community gardens in district VIII have different management. One is managed by the NGO, while the other garden is managed more democratically. The first garden generates therefor less social cohesion as participants do not need to be involved in the management (Interview: Community Garden Expert, 2015).

3.4. Security

Few years ago, public parks were used by drug dealers, drug addicted and homeless people. This problem jeopardized the use of UGS of District VIII (Rév8, 2007; György, 2011). The municipality solved this problem by introducing a security system for several parks and green areas (Interview: Chief Gardener, 2015). The main improvement was to build fences around playgrounds and sport fields and to hire security guards to monitor the access to the fenced area.

Most of the parks are outwardly unfenced but with protected playgrounds in it. Good examples are Rezső tér, Horváth Mihály tér and the Losonci tér area. To avoid abuse of the parks, the fenced areas are closed every evening. According to interviewed people and users, this security system is rather effective. People of the quarters near those parks perceive fenced area as safe places, in which also children and elderly people can safely participate in park activities. The success of these practices can also be related to the fact that Józsefváros is a district that changed a lot the last years. Criminality and social degradation are nowadays lower compared to the past decades.
On the other hand, this kind of security is rather expensive because of the employment of guards. The municipality of Józsefváros is therefore trying to respond to security issues also by using the UGS themselves as a tool to improve social stability. In other words, park renovations can be part of projects that aim to reduce poverty, social degradation and segregation of the inhabitants of the district. A clear example was the Magdolna Quarter Program in which the conversion of Mátyás square was a successful tool to improve the livelihood and security of the neighbourhood (György, 2011).

4. Environment and Health Effects

As mentioned in the introduction, district VIII is characterized by large differences, not only within the street view concerning buildings, green and streets but also when it comes down to demographics such as cultural background. These characteristics have large influences on natural environment but also on living conditions and related health issues. The combination and variety of research methods and gathered data has led to several district-specific insights which will be reflected upon in this chapter according to the topics air and noise pollution, the urban heat island effect and organic waste management.

4.1. Air Pollution

Due to the high accessibility of district VIII with public transport and the city centre on walking distance citizens make relatively little use of cars. The NGO Mindspace even mentions a “cycling-boom” and estimates an increase of 10% of citizens that use bikes over the last ten years (Interview: Mindspace, 2015). Additionally, during observations parking lots were never full and there was relatively little car traffic on the streets within the district. However, due to other traffic the district suffers from air as well as noise pollution. This is also substantiated by the State Environment Assessment Report of Budapest published in 2014; the air quality in the majority of district VIII is categorized as “heavy” and “seriously polluted”, which is categorized the same as the air quality in the inner centre (Budapest Környezeti Állapotértékelése, p.58, 2014). However, when considering two of the most important sources of air pollution, Nitrogen dioxide (NO_2) and Particulate Matter 10 (PM_{10}), the State Assessment shows a steady decline in both pollutants as seen in Figure 5. With this decline district VIII complies to the limit value of 40 µg/m^3 according to the European Standard (Budapest Környezeti Állapotértékelése, p.58, 2014; Interview: Clean Air Action Group, 2015).

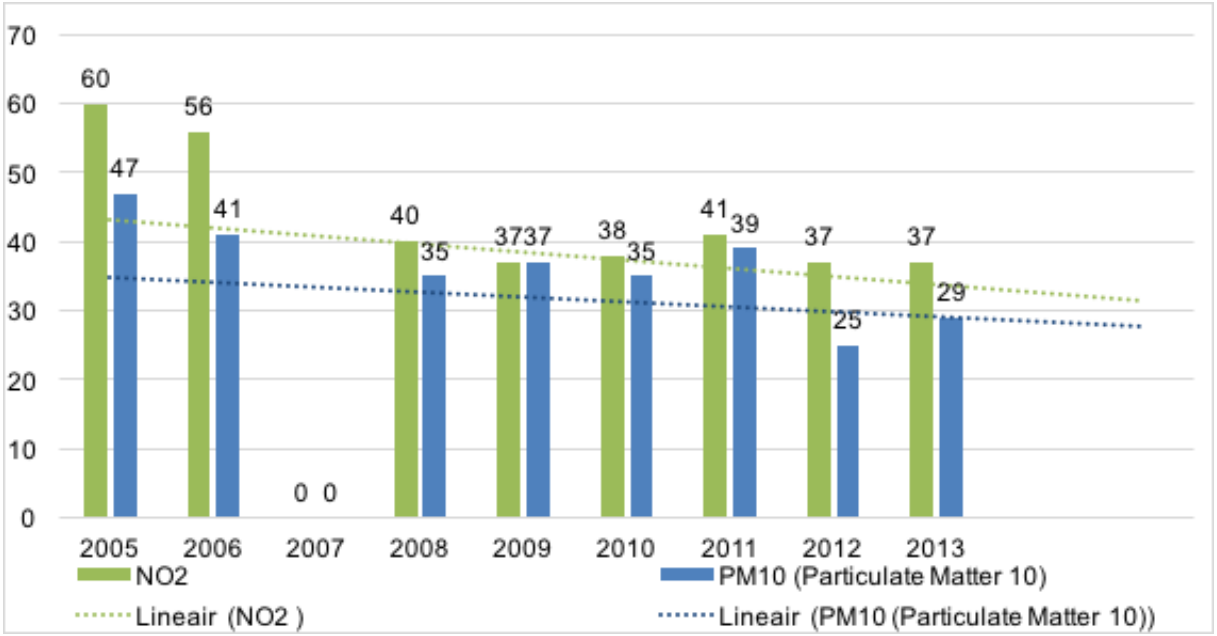


Figure 5: The annual average concentration of NO2 and PM10 air pollutants in district VIII, in which dotted lines show linear projected regression for the coming years. There are no measurements known of the year 2007 (Adopted from Pogány, Niedetzki et al, 2014).

This information shows that district VIII is not only coping with their own air pollution but also needs to assimilate the pollution of the traffic in the inner center. Several authors emphasize the important mitigating effect that the amount, quality and location of green spaces, i.e. green space density, have on air pollution (Buzási, 2014; Zupancic, Westmacott, Bulthuis, 2015, Interview: Bert van Hove, 2015; Clean Air Action Group, 2015). When combining this information with the observations one can classify the VIII district as having a low green space density despite the several mitigation measures that have already been executed (Alföldi & Kovács, 2008; Pogány, Niedetzki, Zsombor, Zétényi, Orosz, Attila et al, 2014; Interview: Mindspace, 2015). From all vegetation types, especially trees have the ability to filter multiple air-pollutants, including ground-level ozone, sulphur dioxide, nitrogen dioxides and particulate matter (Zupancic, Westmacott, Bulthuis, 2015). However, observations showed that trees were scarce in the small homogenous parks. An increased green space density means a better city-wide and local air quality which leads to decreasing health problems e.g. respiratory illnesses and eventually a better quality of life (Zupancic et al., 2015; Interview: REC, 2015). The David Suzuki Foundation (Zupancic, Westmacott, Bulthuis, 2015), suggests that low-income inner-city neighbourhoods are generally more vulnerable to green space-related health inequalities. This is especially important for district VIII that has been and still partially is subordinated to other districts in Budapest concerning multiple prosperity factors (György, 2011; Alföldi & Kovács, 2008; Rév8, 2007). The citizens of district VIII are well aware of the importance of UGS since 91% of the respondents from the questionnaire agrees with the statement that the UGS in their neighbourhood increase their quality of life.

4.2. Noise Pollution

Characteristics of district VIII such as tall buildings, narrow streets and enclosement by busy streets in combination with the traffic are prone to be a major source of noise pollution. It is well known that 33% of the Citizens in Budapest cope with noise pollution, i.e. a noise level above 65db with impact on human health. Parks are often used as a retreat from the busy and loud way of living in the city (Interview: REC, 2015; Pogány, Niedetzki, Zsombor, Zétényi, Orosz, Attila et al, 2014). However, the questionnaire results show interesting differences between Budapest and the VIIIth district specifically when asking about the reason why people go to UGSs. The most mentioned reason in both groups is that people like to spend their free time there. For Budapest as a whole the second reason to visit is because there is less noise than in the streets, while for district VIII this is on the 4th place after the reason that going to a park is healthy and the convenience that the UGSs are nearby. This can indicate that the citizens living in district VIII perceive to deal with less noise pollution or that the parks are just more favourable for other reasons than noise pollution as can be seen in the Figure 6 below.

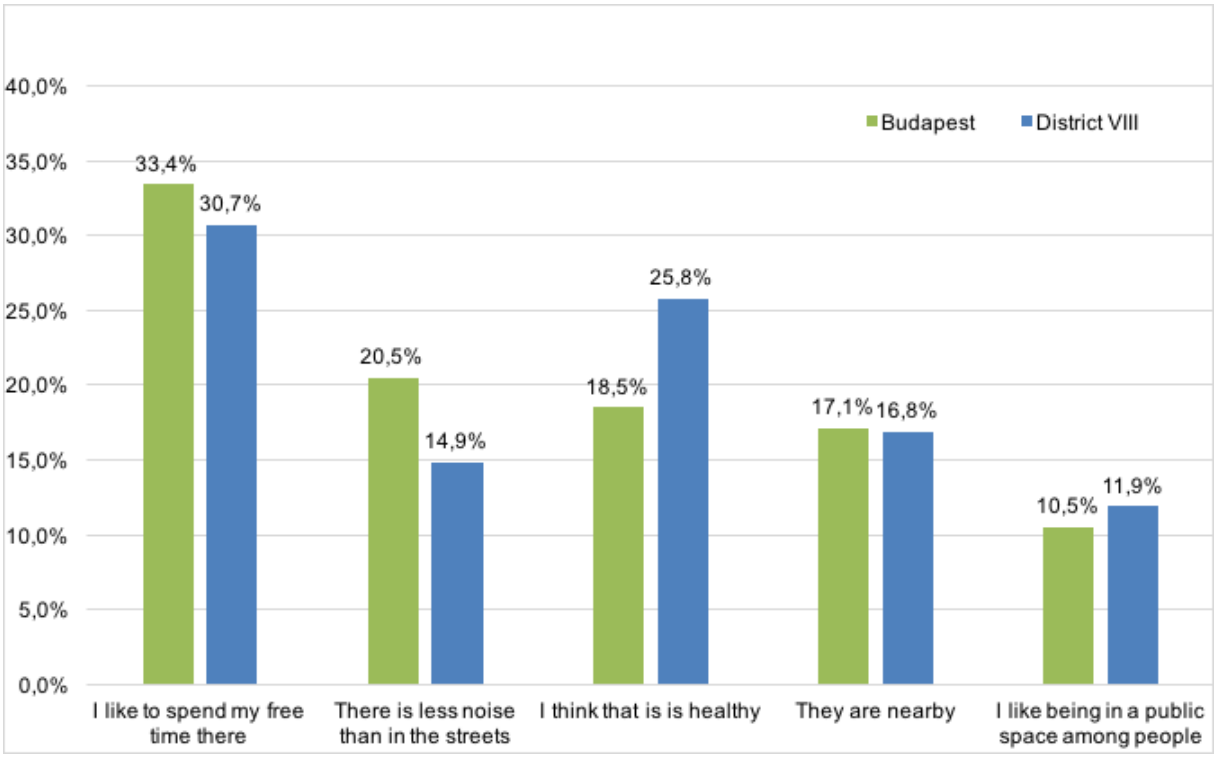


Figure 6: Questionnaire results showing the personal reasons why district VIII citizens visit their parks.

During the observations parks such as the Múzeumkert, Losonci tér and Budapesti Botanikus Kert (Botanical Garden) proved to be very quiet UGS compared to Golgota tér and Kálvária tér despite the fact that they all have adjacent busy streets in common. This result can be explained by the observed difference in enclosure by high bushes and trees that absorb the noise and function as buffers (Interview: Bert van Hove, 2015). The redevelopment of district VIII shows more tangible and direct result such as Mátyás tér, part of the Magdolna Quarter Program. The transformation of the park with a public space function to a pedestrian zone without traffic or parking made more space for the multi-cultural community of this specific part of district VIII (György, 2011; Rév8, 2007). This park can be seen as one of the best practices of district VIII, since it is not only developed in cooperation with the community but also a good example of creating a green, noise-free sanctuary where the community can come together to rethink the possibilities within the district (Interview: Mindspace, 2015). Despite the measures already taken the district still suffers from traffic from the main roads surrounding the district. This might come to an end when a measure to make the downtown districts into a traffic calming zone will be executed as part of the Spatial Management Plan of Budapest (Buzási, 2014).

4.3. Urban Heat Island Effect

Another function of the green space density, is the creation of essential, natural protection against extreme heat waves in the city. These are caused by the high amount of concrete and paved surfaces and together influence the severance of the urban heat island effect (Zupancic, Westmacott, Bulthuis, 2015; Interview: REC, 2015). According to the interview with Bert van Hove (2015), also narrow streets with high buildings, which feature a large part of district VIII, influence this effect through reflection of radiation between the buildings. More green in the streets and in public places such as parks can help to cool down the city and avoid high temperatures that lead to increased illnesses, hospitalizations and deaths

especially amongst older adults (Zupancic, Westmacott, Bulthuis, 2015; Interview: Bert van Hove, 2015; Clean Air Action Group, 2015). The research of the David Suzuki Foundation (Zupancic, Westmacott, Bulthuis, 2015), concludes that *"closely spaces and connected smaller green spaces can provide greater cooling effects to adjacent urban areas than large individual parks with open grass areas*". District VIII features such smaller green spaces but lacks the various plant species that can give the area heat mitigating capacities and resilience to drought (Zupancic, Westmacott, Bulthuis, 2015; Interview: Logan Strenchock, 2015). Furthermore, from the observations can be concluded that the newly renovated parks lack shadow-covered places to sit, which are found to be important because of the associated improved thermal comfort and relief from heat stress that trees provide at street level and neighbourhood scale (Zupancic, Westmacott, Bulthuis, 2015). The lack of shadowed places and variety of plant species indicate that there is a mismatch between the current state of the UGS and what is needed for the natural environment and health of local citizens in this district. The involvement of experts on this topic might lead to a better quality of the existing UGS in district VIII not only making them more resilient to heat but also decreasing air and noise pollution.

4.4. Organic Waste Management

According to the European Environment Agency (2013), the Hungarian government works hard to recycle and decrease municipal waste to get their projected 47% recycling rate for 2020 up to a 50% recycling rate target set in EU legislation for 2020 (European Environmental Agency, 2013). Although there were no interviews executed that gave more information about district VIII's waste management practices specifically, it can be assumed that the municipalities management is aligned with this common goal. This is confirmed by observations and questionnaire results. The streets and parks were very clean without litter and cleaning and maintaining activities were spotted almost every day. The majority of respondents, 90%, stated that they agree with the notion that they find organic waste seperation important. This indicates that citizens are aware of the importance of proper waste management. Concerning organic waste separation practices of the municipality of district VIII, 64% of respondents agrees and 15% disagrees with the statement that the municipality support organic waste separation. Consistent with interview with REC (2015), the questionnaire results show that relatively high number of respondent 20% does not know if the municipality supports organic waste separation. This indicates a knowledge gap concerning waste practices of the municipality and a lack of communication from the municipality towards citizens. Although the citizens of the district do not find composting important, i.e. 39% agrees to 49% that disagrees, good examples and influences are present in the district. The park Orczy-Kert, owned by the University, and the community gardens, owned by NGOs KÉK and Grundkert 2.0, have composting heaps and the latter gives surrounding neighbours and business opportunity to discard their organic waste (Interview: Chief Gardener, 2015).

5. Cooperation and Communication

The relationship between stakeholders can be performed in different ways according to their interests, power and wish to cooperate. It is important that municipality, NGOs and citizens have an active position towards the progressive development of their district. This chapter is dedicated to the cooperation and communication between different NGOs, citizens and municipality in district VIII.

5.1. Empowerment

According to the interview with the chief gardener of district VIII, the municipality is not completely aware of the needs of citizens due to the fact that they do not execute questionnaires to receive feedback. The chief gardener explains it by having not enough volunteers for helping them with handing out the questionnaires in the streets (Interview: Chief Gardener, 2015). The citizens of district VIII are perceived to be less active and show less initiative than would be expected (Interview: Chief Gardener,2015). The majority of citizens do not show much initiative in maintenance of UGS and prefer someone else does the job (Interview: Chief Gardener, 2015). The majority of people are not involved directly in political decisions because they perceive political power as a unilateral power that directly comes from the government. On the other hand, the political institutions usually stress out how this passive political attitude of citizens is the main cause of lack of empowerment of people.

The results from the questionnaires have shown that 79% of respondents would enjoy being part of the community and 82% considers the events that are organized in their district as important. The main attention of people was caught by the project organized by the municipality in Teleki tér where the citizens took part in the design of the park as part of “community planning”. The idea was accepted positively by the citizens and they started to consider the park as if it was their own property (Interview: Chief gardener, 2015).

5.2. Cooperation

The municipality is taking responsibility for conducting social and public programmes for people in poor and old parts of the district. Together with NGOs they conduct seminars, social development programs and projects to unite people and raise the social spirit of citizens (Corvin Promenade project). The goal is to teach them how to deal with gardening, to give them new knowledge in renewal of old places, advise how to use empty plots and turning them into green spaces (Rév8, 2007). The biggest part of transparency among citizens is introduced through these social programs and projects. They are organized by local NGOs and foundations that are interested in the topic of Urban Development. Unfortunately, the local government does not cooperate with any media broadcast for spreading information about these projects and events. The results from the questionnaires have also shown that 54% of the respondents would have attended the events that happen in their district, if they were more informed. It is also known that some organizations are already cooperating with each other such as Mindspace and REC (Regional Environmental Centre) (Interview: REC, 2015).

5.3. Role and Outreach of NGOs

According to the results of the questionnaires only 8 out of 60 people from district VIII know organizations that are involved in UGS availability in the city. However, among the names of the organizations none has mentioned KÉK, which means that despite the Leonardo community garden the citizens of district VIII are not yet familiar with the services that KÉK can provide for them. The NGO Mindspace deals with making a link in international networking initiatives and orientates on social innovations and knowledge management. A representative of NGO Mindspace points out that there are mostly negative feedbacks from the citizens on the current locations and usage of UGS in district VIII (Interview: Mindspace, 2015). From the feedback of citizens it is known that the district does not have a good connection with nature, and it has a lack of green spaces over the district (Interview: Mindspace, 2015). Also Rév8, the organizers of Magdolna project, were contacting the tenants directly at their homes and distributed information to local citizens through seminars and in the streets (Rév8, 2015). Furthermore, effort is put in the education for children, young people and adults, through programs such as the Erdélyi Primary & Secondary School, Kidpix „Digital Childhood" creative educational art program, etc (Rév8, 2007). Additionally, Mindspace also includes such a services in spreading knowledge and information by non-formal education and creative communication.

5.4. Communication

The founder of Mindspace cooperates with the Lumen cafe in district VIII for the organization of events to help people communicate to each other (thematic evenings, special occasions). Lumen cafe is used to get in direct contact with citizens and one of the places where people can spend time and be a little bit closer to nature (Interview: Mindspace, 2015).

The KÉK and Grund 2.0 community gardens located in district VIII are, unfortunately, most of the time closed. The municipality considers community gardens important, as they help to reduce the amount of empty plots in the district. The chief gardener personally supports organizations if they want to build more gardens in district VIII (Interview: Chief Gardener, 2015). Citizens are also motivated since 44% of the participants answered that they would like to participate in maintaining a community garden with their friends and family. Furthermore, 54% would like to grow their own vegetables and 36% would like to participate in management of UGS in their district. From these results it can be concluded that people are eager to take part in maintaining the UGS and grow their own products and take part in community gardening. Adam Mako (2015), uses courtyards in old buildings to create a pleasant atmosphere during the hot summer day (Interview: Adam Mako, 2015). According to him, there is currently no advertising for the development of UGS in Budapest but there should be more promotion through local media. Additionally, he suggested the idea of making more rooftop gardens, as they enhance the aesthetic value of the district and can help people to socialize (Interview: Adam Mako, 2015).

6. Conclusion

In the last decade, district VIII changed a lot and became a new quarter where criminality and social degradation are significantly reduced compared to the past. Despite the fact that several actions for the renovation of urban green spaces have been taken all over the district, there is still need and room for improvements. From the interviews, questionnaires and observations done for this research can be concluded that both the quantity and natural quality of UGS are not sufficient to meet the demand for a healthy living environment for citizens of district VIII.

The area covered by UGS is small especially in the west of the district. Additionally, the district has a high population, building-density and there is little space to develop more parks. That means the focus should be on increasing the quality of the current UGS.
Citizens of district VIII make more frequent use of parks than other residents of Budapest. It can also be concluded that citizens living close to UGS visit more often public parks compared to other people of the district. The UGS are well reachable by public transport and have good maintenance and security conditions. The district contains a high degree of multifunctional parks which are suitable to the social demand of every generation. From an environmental and public health aspect a more diverse natural development of the parks can help to reduce environmental problems and improve health conditions for citizens. This means more trees in streets and parks are needed to purify the polluted air and provide shade during heat waves and high bushes and plants to absorb the high noise level. The development of Mátyás tér into a zone without traffic in the Magdolna Quarter Program is a successful example where local air quality, noise pollution and social cohesion were improved. Concerning waste management, it can be concluded that the area is very clean except for empty plots that are often used as junkyards. Furthermore, the questionnaire revealed that, although there are two community gardens, there is still a high demand for community gardens.
Concerning cooperation and communication, the municipality of district VIII cooperates with several NGOs to organize social development and renovation programs. There are also NGOs that organize social events and programs without the involvement of municipality. NGO Mindspace can be seen as a best practice because they receive feedback from the citizens in district VIII daily via the Lumen Cafe. Unfortunately, there is little communication between the municipality of district VIII and citizens which gives them a limited view of the wants and needs of the citizens.

7. Recommendations

Based on the results and conclusions of this report there are a few aspects on which recommendations can be given for KÉK as well as her stakeholders. Previous successful rehabilitation programs in district VIII showed that these work most effective when they are executed by a combination of citizens, NGO's and municipality, which should also be KÉKs future strategy.

KÉK can organize meetings and events that act as multi-stakeholders platforms where overlapping problems and common goals amongst stakeholders can be discussed. Alliances with other NGOs such as Mindspace are important to create a larger platform amongst citizens and communicate more easily with the local municipality. The alliance can create a close network with the local media of district VIII they can communicate details of projects and the benefits of community gardening to the citizens. Regarding UGS, KÉK and connected NGOs should be more involved in the design, execution and maintenance of UGS to assure environmental and social effectiveness of the UGS. This recommendation is meant for ongoing practices but also for smaller projects such as Mátyás tér which can help to reach a balance between paved areas and green areas in the district. Aim for the creation of multifunctional parks in the western quarters in order to equalize the distribution of urban green spaces in the district. In addition, in order to also improve air quality and reduce noise pollution, there should be more diverse vegetation such as trees, high bushes and flowers planted in the district. Create smaller and connected green spaces to provide greater cooling effects adjacent to urban areas to mitigate the risks of global warming. Furthermore, when influencing the design of UGS also keep the short term improvements in mind such as creating seats in shadowed areas.

The transformation of parks to meet the wants and needs of all stakeholders needs good cooperation and support. Therefore, the municipality of district VIII should improve communication and transparency between them and the municipality of Budapest in order to solve administrative inefficiencies due to decentralization. To increase the involvement of citizens KÉK and connected NGOs should encourage local citizens to take part in the design and developments in these areas to provide a sense of belonging and hence, a motivation for self maintenance. Encourage citizens to utilize empty plots into UGS to prevent dumping of unregulated waste in these plots and also to allow interested people to join community gardening. Encourage independent management of the district's community gardens in order to increase social cohesion. Organization of events in the community gardens should be planned and executed by the participants itself and not by the organisation, to increase social cohesion. Creation of a platform is needed, in which citizens can easily find information and likeminded people to start their own initiatives and eventually a greening movement.

GEO-REPORT DISTRICT IX

Alunni	Silvia	910505013080
Del Rio Valdivia	Fabricio	821185177080
Fröling	Marloes	900704248080
Jansen	Michelle	910523393130
Liu	Hui	890706523070

WUR Consultancy Group

Wageningen University

Abstract

This report deals with the situation of Urban Green Spaces (UGS) in Ferencváros (District IX), Budapest. The analysis is conducted through four different themes: urban planning, usage of UGS, environment and public health, cooperation and communication. From data collection and analysis, a positive and well-organized urban planning of the district came up: the area is divided in specific locations with different necessities. Indeed, some areas are more problematic, especially the industrial and the southern parts of the districts, especially as far as the density of green areas per inhabitants is concerned. The parks analysed look well maintained and frequented by locals who perform different kinds of activities. The environmental issues encountered in the district change in respect of the specific areas. The southwestern area of the district has been observed to be the most critical part of the district in terms of air quality and noise pollution. The main issues identified regarding communication and cooperation among citizens – NGOs – Local authorities are the low involvement of citizens and the low outreach of NGOs. Such issues were confirmed by both questionnaire results and the interview conducted with the Municipality. The recommendation section provides incentives to increase green areas in future urban development plans, that will also have positive effects on the environment as a whole. Ways to enhance social cohesion and participation of locals in both the social and political lives are also provided in the recommendation part, together with advices on how to enlarge the effectiveness of NGOs in the area.

Table of Contents

1. Introduction

1.1. Purpose of the report

The purpose of this report is to display a concise description of the Urban Green Spaces (UGS) of District IX and its main characteristics. These characteristics are covered in the four main themes, formed during the analyses of the results of the fieldwork. The themes are based on the issues the WUR consultancy group came across during the data collection in the field. Each theme will provide recommendations for District IX with potential solutions based on the encountered issues.

1.2. Study area

The current urban planning strategy in District IX started in the early 80's, in response to the abrupt political changes in the country. The main goal was to improve housing for the inhabitants by renewing old flats, before placing them on the market. Besides this, there was an interest to increase the amount of green spaces, by creating new public parks or by maintaining a relation with the municipality but also using a public-private ownership of the UGS enclosed by flats.

The urban planning of District IX is divided into 4 areas, according to the specific needs and development possibilities of each area (see Figure 1). The inner District IX, as part of the city centre is used as business and residential area (yellow), where most of the flats were renewed using the new conception of public-private ownership of UGS. The middle District IX intended for residential usage (green). The outer District IX consists of an industrial area and old train facilities, with potential for industrial and office buildings (blue). The last is residential area, consisting of flats surrounded by green spaces (red).

Figure 1: District IX division: Inner (yellow), middle (green), outer (blue) and residential (red).

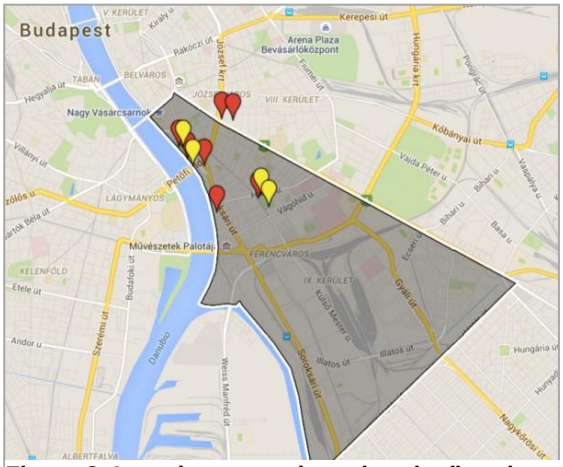


Figure 2: Locations questionnaires (red) and observation frames (yellow).

1.3. Methodology

The methodology used during this consultancy project makes use of three different tools, namely the questionnaires, observation frames and expert interviews, performed during the fieldwork (22 Sept – 1 Okt 2015).

In total, 90 questionnaires were carried out in the centre of District IX in different locations (see Figure 2). A basic distinction was made between two types of locations: questionnaires performed inside and outside the parks, in order to potentially include users and non-users of the UGS.

Five observations were conducted with an observation frame at two different locations: the Haller Park and the Nehru Park (see Figure 2). No observations of the community garden in District IX were performed. The Haller Park (5.5 ha) is located south of the district centre, in a residential area and surrounded by flat buildings, a hospital area, elementary schools and a church. The park has a 50% coverage of trees, 5% of scattered bushes and is furthermore 80% covered by grasses. The observations of this park were performed twice, during a morning and an afternoon on separate days. The Nehru Park (2.6 ha) is located west of the district centre, along the river Danube. The park has a 40% of trees, 15% covered by bushes in the North side of the park and for the rest covered 80% by grasses. Three observations were performed here during the first fieldwork week: one in the morning and one in the afternoon on separate days. Another observation was performed in the weekend on Sunday morning. The weather conditions during the observation on both weekdays were dry and clear in the morning and in the afternoon some clouds were present. On Sunday it was completely clouded.

Important interviews conducted for District IX was the one with the main architect Szűcs Balázs and Baranyi Krisztina, a member of the urban development, city management and environment commission of the District IX municipality. During the interview many aspects about the history, current urban planning and relationships of stakeholders of District IX became clear. Also the meeting with the Food Not Bombs organization was very helpful to get a better understanding of the interactions between different social groups.

In this report, four different analytical themes have been identified: urban planning, usage of UGS, environment and public health, cooperation and communication. The urban planning perspective focuses on the functionality of UGS by investigating their availability and accessibility. Availability is analysed by taking into account relevant aspects such as existence, funding and ownership, sufficiency and space waste; accessibility is assessed through the examination of the reachability, openness, permission and safety of green areas. An integrated analysis on the usage of UGS is conducted based on the activities performed by users, the maintenance and the security systems in action, and the multifunctionality of the areas. The assessment of the environmental and public health situation is conducted using critical issues like air pollution, noise pollution, the urban heat island effect and the disposal of organic waste. The political management of UGS, the social and political empowerment of citizens and the outreach of NGOs are key issues analysed in the cooperation and communication part, supported by a specific example of good and bad practice. After a sum up of the most crucial aspects of all themes, recommendations are provided for each of the issues encountered.

2. Urban planning

Urban planning in the context of this project is about making UGS functional by considering the availability and Accessibility for the inhabitants. The theme is divided in availability and accessibility, both topics related to the main characteristics of UGSs and their relation with urban planning in District IX.

2.1. Availability

To have an idea on availability, we have to start describing the existence and distance to UGSs, sufficiency in terms of available green area (m2) per inhabitant, funding and ownership to know how these UGS are being administrated and managed, and finally giving an overview space not being used (Space waste).

Existence

The existence of UGSs was analysed by walking across District IX and two sources of data. The first source is related to a map of distance to green spaces (see Figure 3), where you can find the public UGSs in black, distances from dark green (0-300 m) to light green (300-500 m), and yellow (500-1000 m) to red (over 2500 m). The second source is based on part of the questionnaire conducted to the citizens of District IX, “Perceived Distance of UGS” shown in the chart (see Figure 4), where 75% of the citizens perceived a distance of less than 500 m, and the 25% over 500 m to a UGS.

After having an overview, and comparing both sources it’s clear that UGSs exist and they are close to people living on residential areas in District IX. It’s also important to mention that most area (white area) of District IX is planned to be an industrial area and their facilities (see Figure 3).

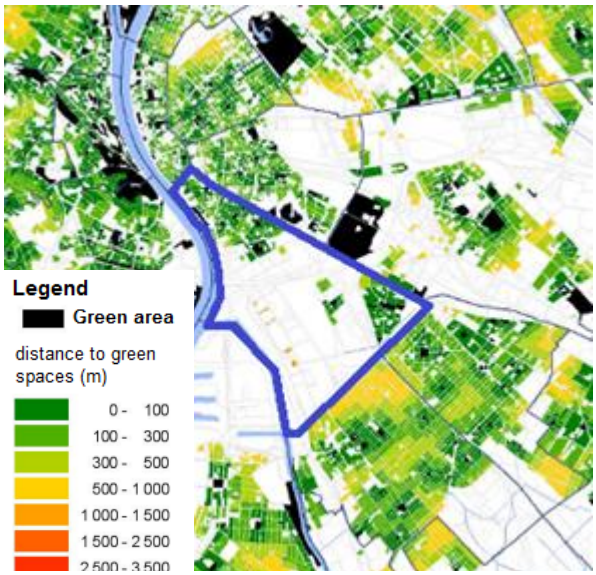


Figure 3: Distance to green spaces (m) in District IX (Budapest Főváros Vagyonkezelö Központ, 2011).

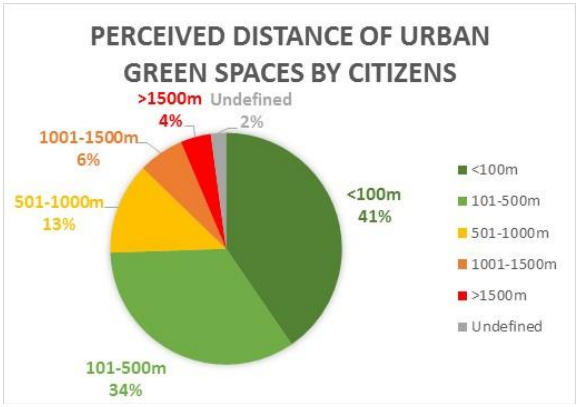


Figure 4: Perceived Distance of UGS by citizens in District IX.

Sufficiency

Sufficiency is related to available green area (m2) per person. According to the Budapest State of Environment Assessment 2014 the city of Budapest has an average of 5 m2 of public parks and public gardens per inhabitant. The lowest level recommended by the World Health Organization (Pogány et al., 2014) is 9 m2/person.

In district IX available area of UGSs per inhabitant is about 1,67m2/person. This value was calculated from data of the Hungarian Central Statistical Office (2003), where 1607m2 is the average of public parks and public gardens per 1000 inhabitants.

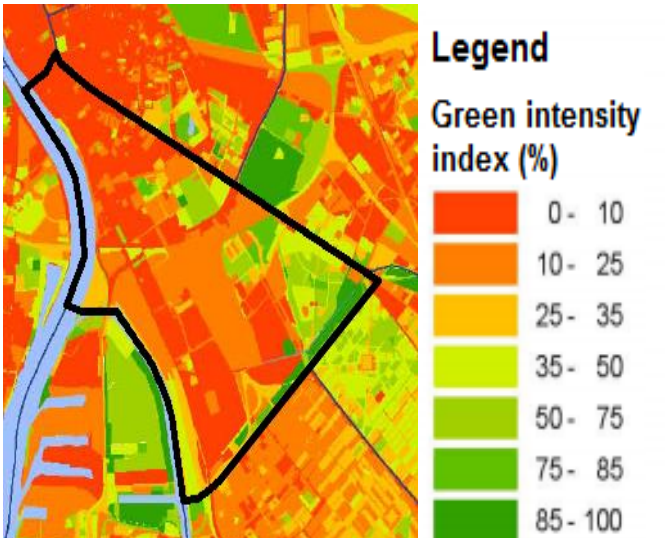


Figure 5: Green Intensity (%) in District IX (Source: Budapest Föváros Vagyonkezelö Központ, 2011).

Another way to express sufficiency, is the green intensity, in case of District IX, Figure 5 shows most of the area covered by orange and red, making District IX with a low green intensity level between 0 and 25%. The yellow to green areas have medium to high levels of green intensity (35-100%) and represent less than a quarter of the district.

According to existence, UGSs are perceived as close to people living in District IX, but when we also consider sufficiency, we find out that UGSs are close but they do not cover enough apace to consider District IX as the best healthy living environment for citizens.

"Space waste"

Space waste is a term used to identify empty or unused space. In relation to the issue, main architect from District IX municipality (Szűcs, 2015) pointed out that most of the empty fields available in the inner, middle and residential areas belong to private owners and thereby it's difficult to convince owners about convert these areas into UGSs.

Most of the space waste in District IX are brownfields and old train facilities in the outer District IX (industrial area), most of these belong to the municipality, and are planned to agglomerate office flats and industries. When we asked about potential development of UGSs in these areas, the answer was that part of these lots have high levels of soil contamination and the costs for cleaning them are too high.

Funding and Ownership

There are three types of funding and ownership for UGSs in District IX:

- Public: parks funded and owned by public institutions, examples for this are Nehru Park from the capital municipality and Haller Park from the District IX municipality.
- Public-private: courtyards enclosed by flats, where tenants can fund the UGSs themselves or pay a fee to the municipality.
- Private: people that own and fund their courtyards, balconies or rooftops.

One main problem of funding and ownership in public UGSs, is that some Parks in District IX belong to capital municipality, making it difficult to meet population demands by the District IX municipality. In terms of funding for maintenance the company Főkert (Főkert, 2015), does not get enough budget from the capital municipality to keep all parks in the best condition, or to do so at the same time and with same quality as maintenance companies from District IX municipality.

2.2. Accessibility

In this topic we want to describe how citizens can access UGSs, considering the usage of public transport (reachability), if physical access can exclude people from entering, and if there are restrictions for access.

Reachability

An important issue for accessing public UGSs is related to the use of public transport to reach them. In the field work we focused in Nehru and Haller parks, these two public parks are covered mostly by bus, tram or metro; but also by ferry, train (Nehru) (see Figures 6). It is important to mention that in case of Nehru Park, the main reason for its high reachability is caused by the location near the city centre and the Danube.

In case people want to walk to a UGS, most people on District IX (75%) (Figure 3) can have access to a public UGS by walking less than 500 m.

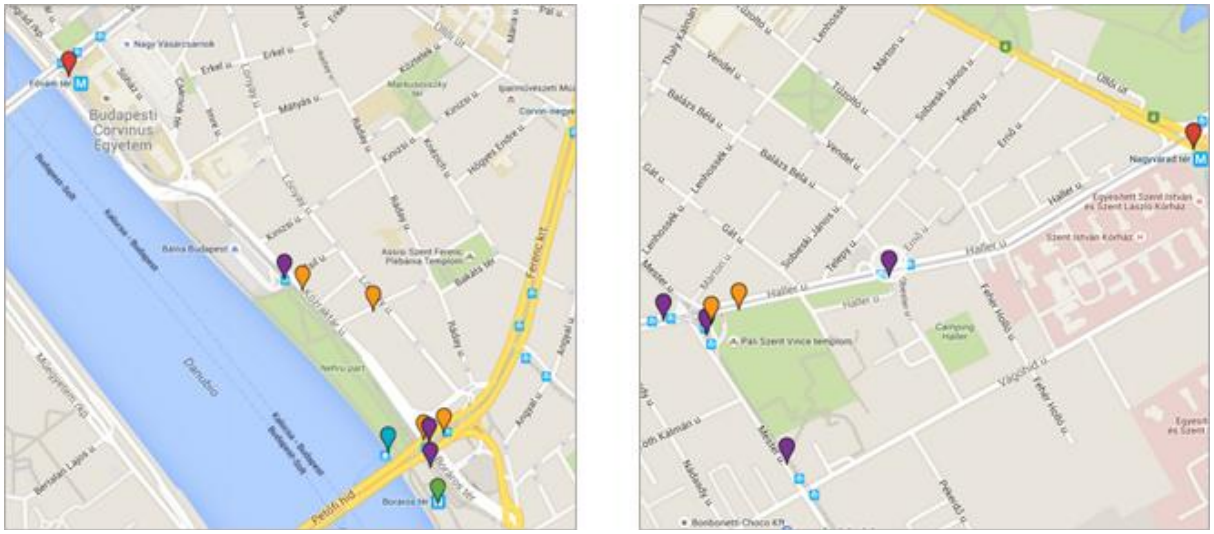


Figure 6: Reachability; Nehru Park and Haller Park public transport stops orange=Bus, purple=Tram, red=Metro, blue=Ferry and green=Train (Source: modified from GoogleMaps).

Permission and Openness

The public UGS in DIX are open every day for everybody, taking into account that most of them have different functions and facilities. It is important to mention that also disabled people can access public UGSs.

Generally there is no exclusion to enter public UGSs in District IX, but there are two examples of restriction. The first example are the courtyards enclosed by flats, these areas belong to the Municipality, but since all apartments have private owners, courtyards are restricted for the private owners only. The second example is Haller Park, where dogs are not allow to walk freely, but with a leash and in a restricted area where dogs can play and walk.

Safety

In an interview with people from the District IX Municipality (Baranyi, 2015), we find out that in the past some areas in District IX were unsecured. When they make changes in the urban planning, these unsecured areas were planned to become parks or new residential areas with schools, and all the necessary facilities to bring new people to the district by offering high levels of education, healthy environment and safety. Safety of UGSs in District IX is also related to the use of fences and/or presence of maintainers during the day, to avoid the presence of homeless people, drug dealers, alcohol consumption and other activities that make an UGS unsafe for most of the people.

3. Usage of UGS

3.1. Performed activities

During the observations performed in the two parks present in District IX, both passive and active usages became visible. A total of 255 separate activities were observed in both parks during a time frame of 30 minutes. The distribution of active (sport and playing) and passive usages (relaxing, socializing, walking and walking the dog) of the parks was quite equal (see Figure 7). Although both parks have a similar setup, the location of the parks is also important for the difference in usage.

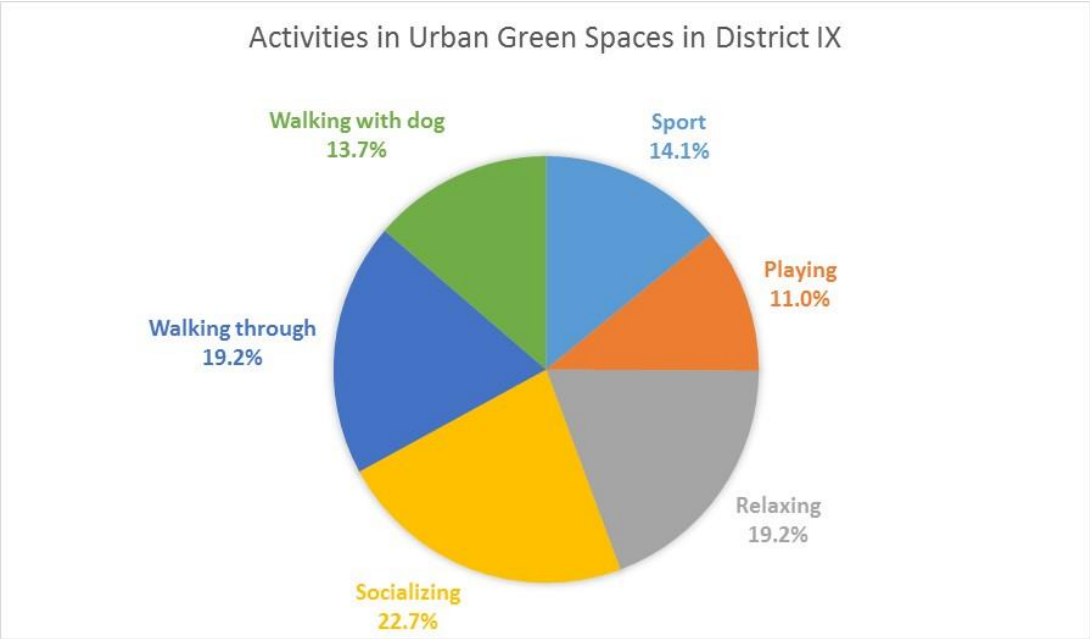


Figure 7: Division of activities in UGSs in District IX.

When observing the main activities in the Haller Park, walking (with or without dogs) and relaxing were mainly observed in the morning (15 individuals). Some young adult women with babies, an adult man with a dog and a couple of elderly women walking their dogs might indicate that the Haller Park is mainly used for passive activities in the morning by people not occupied by day jobs at that moment. One passive activity of a young adult man running was observed, but besides this, much less people performing active activities were present in the park compared to the afternoon observation. In a similar observation time frame, almost 4 times the amount of people (55 individuals) were present in the Haller Park in the afternoon, which can be related to the fact that people with a day job go to the park after work. The same passive activities were observed as during the morning, containing walking (with or without dogs) and relaxing but now also a lot more socializing was happening. More active activities of teenagers cycling and little children playing, were observed compared to the morning observation, which can assume that children go to the park to play after getting home from school.

Compared to the Haller Park, the Nehru Park was much more crowed during the morning observations (109 individuals). This can be indicated by the location of the park, which is much closer to the centre than the Haller Park, so more people are in the area. Also people might use this park for their breaks because it is close to their work. The type of activities were similar, containing walking (with and without dogs) and relaxing as passive activities, but the amount was much higher. Many relaxing people were reading or sitting on the benches along the river Danube. There were also more active activities observed in the Nehru Park than in the Haller Park, containing mostly runners. In the afternoon less people were observed (52 individuals) compared to the morning, which might indicate people working closer to the centre might go home directly after work. The people that use the Nehru Park were mostly relaxing or walking their dogs, which can assume that they live close by. This was also visible at the amount of adults playing with their children on the playgrounds, which was higher in the afternoon, when people are back from work and school. Other active activities contain cyclists on the cycling road because this road is crossing the park, which creates also a nicer environment for people going home from work on their bicycle. The weekend observation of the Nehru Park did not had any clear indications of reasons for activities. There were 65 individuals on a Sunday morning, but because the weather was not optimal. The main activities were passive (walking their dogs and relaxing). It can be assumed that activities would probably be more present on a nicer day with sunshine, because people can enjoy the river view from the benches.

From the questionnaires handed out in District IX in the parks and on the streets, it became clear that not all people live in this specific district. When people were asked the question ‘how frequently they visited courtyards, public parks or community gardens’, the frequency of more than 3 times a week for people that live in District IX was highest in the public parks (14 responses). For people that live outside District IX the frequency was also higher for public parks than for community gardens or courtyards (23 responses). When asked about ‘how frequent they perform sports, relaxing, gardening, socializing and attending activities in UGS’, the majority of people living in District IX, perform relaxing in the frequency of more than 3 times a week (10 responses), followed by attending events (4 responses). For people that lived outside of District IX, relaxing had the majority (15 responses) followed by sports (5 responses). Here it is visible that people living in District IX think about attending events in District IX, next to relaxing and people living outside of the district thinking more about sports in their own specific district, next to relaxing.

3.2. Multifunctionality

The multifunctionality of a park is assumed to have a positive effect on the number of people visiting it. During the observations, multiple playgrounds spread over the area were observed in the Haller Park. Also an elongated hill was located in the middle of the park, creating a playful space for children. A short runners track was located around the sport court (with soccer and basketball area) separated from the normal walking roads. There was a special fenced area for people to let their dogs run free. Also the number of benches along the walking roads makes it attractive for elderly people to visit.
The Nehru Park has a slightly different setup. Although the vegetation was comparable, there was only one playground and a sport court containing a soccer and basketball area. Besides its central location, the multifunctionality is still assumed to be good because a lot of different activities can be performed here.

3.3. Maintenance

The maintenance of the UGS differs due to the ownership. The parks are maintained by Főkert (the maintenance company employed by the municipality of Budapest) or the District IX municipality company.
In the Haller Park, during the observation, the leaves were collected on a big pile next to the church. The benches are quite old and not well maintained, but they still looked steady. The gravel on the roads was overgrown with weeds and the trashcans were sometimes demolished. The fences around the dog area were in good condition. Only sometimes a bit of trash was observed on the ground.

According to the interview with the main architect of District IX, the Nehru Park is owned by the capital municipality. So they are not responsible for the maintenance, although the municipality of District IX gets a lot of questions from citizens about the park. The maintenance of the Nehru Park is conducted by Főkert, the maintenance Company of the municipality of Budapest. During the observation on a weekday, a maintenance guy was working in the Nehru Park. Some of the benches were damaged and there was quite some broken glass in the grass. For the rest, the park looked very clean, with hardly any dog faeces present.
The main architect showed some examples of courtyards located in the district centre, that are part of their renovation project. There was a clear difference in appearance of the courtyard that was maintained by the municipality or by the residents themselves. The first one looked better maintained than the one the residents take care of. This can be a result of enthusiastic behaviour to manage their own courtyard in the beginning, but the lack of it after some time because no one really wants to put an effort into it, according to the interview with the local authority.

3.4. Security

There is no form of security fencing around both of the parks in District IX, making it accessible for everyone. This is mainly due to the renovation practices performed over the last decade. The surrounding residential areas of the parks were renovated and thereby lowered the criminality at the same time, according to the main architect.

4. Environment and Health Effects

From the data collected through questionnaires and interviews done in District IX, four main issues related to environmental and health benefits of UGSs have been identified and dealt with in this chapter: air pollution, noise pollution, urban heat island effect and organic waste management. Benefits from the mitigation of air pollution, noise pollution and augmentation of the UGSs to damp the effect of the urban heat island will also be explained in this part.

The situation of air and noise pollution and Urban Heat Island (UHI) effect is monitored and studied by the government, and results of such studies are published each year in the State Environmental Assessment (City Management Department, 2014). However, due to the lack of monitoring points, there is no solid data for the situation of air pollution, noise pollution and UHI effect in District IX. Therefore, the issues cannot be quantitatively described, only qualitatively by taking into account the observations performed in the district.

4.1. Air pollution

Urban air pollution is mainly a consequence of anthropogenic activities, including transportation and industrial activities. Most air pollutants are manmade and are the result of poor combustion of fossil or biomass fuels (e.g. exhaust fumes from cars, furnaces or wood stoves) (WHO, 2015). From the observations and the interview done in District IX, appears that most heavily industrialized factories have been shut down and only a few are operating at the moment (Szűcs & Baranyi, 2015). Therefore, the industrial sector is not likely to have a high impact on the air pollution level of the district.

Due to the absence of monitoring points, the air pollution situation of the district can be only analysed and assumed from observations of the level of traffic and the presence of active industries. A quite intense traffic flow has been observed in the southwest part of the city centre in District IX. Hence, it is presumable that this area has a high level of air pollution coming from transports. The middle area of the district, that hosts several residential buildings and a hospital, does not seems to have the same traffic intensity. Low traffic was observed also in the fourth area, mainly residential. As far as the post-industrial part of the district is concerned- almost half of the area in District IX - the low industrial activity is likely to positively affect air quality.

The presence of UGSs is also an important factor for the improvement of the quality of life, since it can negatively influence the level of pollutants in the air, with the consequent decrease of issue related to health, such as respiratory illnesses (Zupancic et al., 2015; Interview: Regional Environmental Centre, 2015). From the observations made, UGSs could be easily found in the areas of the districts, except for the southwest city centre, where only the open green area near the River Danube is a remarkable UGSs identified.

4.2. Noise pollution

According to the Budapest Környezeti Állapotértékelése, 2014 (City Management Department), noise pollution is one of the most important environmental problems, closely followed by air and water pollution. One of the main sources of noise observed in District IX is caused by traffic, especially in the southwest of the city centre of District IX. The presence of the two public park (Haller and Nehru Park) have an effect on the damping of the noise (and creating thereby a peaceful area). Plants are able to absorb or reflect noise. Therefore, UGSs are an effect measure to reduce traffic noise from crowed traffic roads in the city (interview, professor in Earth System Analysis from WUR).

The noise pollution in the post-industrial area in the middle of District IX is not particularly significant, because there are hardly any industrial activities going on (Szűcs & Baranyi, 2015). The only sound observed on location is the result of the railroad tracks present in the industrial area. But even this noise is not perceived to be a problem because residential areas are not located directly next to it.

Budapest Környezeti Állapotértékelése, 2014 (City Management Department), states that 33% of the total city population daily cope with a noise level above 65 db, which can result in an impact on human health. In order to mitigate this problem, the government of Budapest is trying to promote public transport, cycling and walking for short-distance travelling in Budapest. According to Szűcs and Baranyi (2015), the municipality is planning to build more UGSs in District IX, to provide citizens more liveable areas. The interview with Szűcs and Baranyi (2015) also highlighted that other districts have difficulties with the average UGSs, but in District IX this amount is still growing.

From the questionnaires, in total 20.5% and 17.3% of the respondents would like to go to UGSs owing to the reason that there is less noise and it is healthy to visit the UGS respectively. In District IX, the cross table to analyse the relationship between the district and the reason why they want to visit the UGSs because of less noise shows that 20 out of 207 of the respondents are likely to go to UGSs in District IX.

4.3. Urban Heat Island effect

Another function of the UGSs is to use them as an essential, natural protection against extreme heat waves in the city. From the observation, the forms of UHI effect consists of heat reflected from concrete, heat released from asphalt pavement and heat from the traffic including buses, cars and trains. In general the Buda side of Budapest is greener than the Pest side. Hereby is the heat island effect more sever in Pest. As a consequence, the average temperature in Buda is usually 5-6°C degrees lower than the mean temperature in Pest (Budapest Környezeti Állapotértékelése, 2014). From the observation in the southeast city centre and the middle area in District IX, there are busy and narrow roads, more traffic and relatively taller buildings than the other places in the district. Related to this, the two specific areas will have a higher UHI effect than other areas of District IX. The post-industrial areas occupying half of this district have less traffic flow but more concrete and pavements, the effect from UHI is not easy to determine. In the residential area, there are three or four story buildings surrounding UGSs. Therefore there will not be too much UHI effect.

However, green structures like trees have a cooling effect of the surrounding atmosphere. Shading the buildings by trees can already cause temperature difference of 7-12°C (interview, professor in earth system analysis from WUR). Due to the existence of UGSs, problems from UHI effects could be less around those areas in this district (Zupancic,et al., 2015).

4.4. Organic Waste Management

Currently there are only waste management treaties to separate plastic, metal, paper, and glass waste in Budapest. Policies and facilities for organic waste management plan have not been launched (interview, REC and HuMuSz, 2015). From the observation, in District IX, there is no specific container for organic waste and thereby dumped together with other waste. Due to the lack of promotion and education, most people do not separate the organic waste (interview, REC and HuMuSz, 2015). The results (see figure 7) from the questionnaires are then analysed to manifest the awareness and current situation regarding the organic waste management.

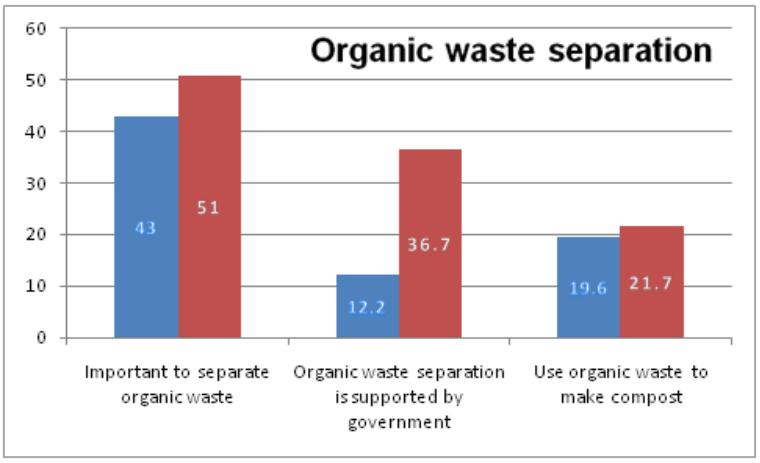


Figure 8, The agree or strongly agree ratio towards organic waste management

As is shown in (see figure 8), the value of blue bar represents the "strongly agree" choice, while the red one is "agree" on waste management issues. More than 90% of the respondents think it is important to separate the organic waste from the other waste. The environmental awareness about waste separation is noticeable from the results. However, the other two results about the governmental support and usage of organic waste as compost are only 48.9% and 41.3%.

Nevertheless, HuMuSz, is putting effort in promoting organic waste separation in District XI. Different workshops are being organized to share knowledge with people about organic waste separation. One of the practices is that HuMuSz provides the community with compost or access to some other activities in their gardens if citizens bring their organic waste to them (interview, HuMuSz, 2015).

5. Cooperation and Communication

The cooperation/communication issue is quite evident in District IX. From questionnaires, observations and interviews a series of issues regarding the relationship with and within citizens, Non-Governmental Organizations (NGOs) and local authorities have been identified. The singular administration structure of the city is a first aspect that directly influences the management of UGS and that indirectly affects the way locals live and experience such areas. Secondly, the social and political empowerment of citizens is an issue often raised during interviews, and it is a focus of questionnaire analysis. Finally, the role of NGOs as a vehicle between citizens and local authorities is pointed out.

5.1. Political Management of UGS

The first communication issue identified is the division of competences between the municipality of District IX and Municipality of Budapest regarding the ownership and maintenance of UGS, in particular of public parks. In matters like the management of UGS, the responisibility is divided between municipalities and districts regarding the type and the specific area of interest: big touristic parks are of competence of the Municipality, other green areas located in a district are of competence of the specific district, green areas spread throughout different districts have a shared competence (Vice-Mayor of Budapest, 2015). This can sometimes cause conflict and confusion in the management of the green areas, both between municipalities and towards the local citizens. For instance, the Nehru Park, which is located along the river Danube, is in District IX but it is owned by the capital municipality. Therefore, the park has an owner (Municipality of Budapest) and a specific maintenance company (Főkert). However, locals are often unaware of the fact that the central government of the city is in charge of the maintenance and ownership of the park. Therefore, when they want to make a complaint or highlight a problem, they go to the district, which cannot do anything for them since it is does not fall within its area of competence (Szűcs, 2015) (Baranyi 2015).

5.2. Social and Political Empowerment of Citizens

During the interview with the municipality of District IX, an issue often raised by local authorities concerned the general reluctance of Hungarians to actively participate in both the social and political life of the city (Szűcs, 2015) (Baranyi 2015). This attitude, also confirmed by the Vice-Mayor of Budapest, has been attributed to the individualistic mentality of Hungarians, given by the historical heritage of the country. As a consequence, this scarce sense of community impedes social cohesion (Vice-Mayor of Budapest, 2015). Accordingly, questionnaire results show that 44% of respondents does not consider socializing as one of the main activities performed in UGS**.** However, the social importance of UGS is widely acknowledged among residents of the district, with a wide majority of positive answers to questions concerning the possibility of meeting new people in UGS (68.1 % respondents) and the increase of quality of life derived from the presence of UGS (89.8% respondents). Moreover, 80% of respondents, when asked whether they enjoy the feeling of being part of a community, replied positively. The contrasting findings show that on the one hand, citizens would like and enjoy to be involved in a community as a whole; on the other hand, when they have the chance to act in first person, they either do not take the initiative or they eventually give up on their commitment (Szűcs, 2015) (Baranyi 2015).

The relative low willingness of residents of District IX to be involved in the management of UGS - only 48% of questionnaire respondents - in contrast with the extremely positive social value they attribute to UGS - 89.8% of respondents, could be a confirmation of the low political empowerment of citizens expressed by the local authorities (Szűcs, 2015) (Baranyi 2015) (Vice-Mayor of Budapest, 2015). A practical example of this reluctance of residents is the management of internal courtyards, as explained by the main architect of District IX during the interview. In District IX, residents can choose to either let the local authorities take care of the management of the inner courtyard or to decide to take the responsibility of the

management themselves. They all have to sign an agreement in which they state their commitment in managing the courtyard; in doing so, they do not have to pay the monthly fee of 140 HUF. Therefore, the courtyard is owned by the municipality of the district, but the residents have the authorization to use it in accordance with local authorities and all the residents of the surrounding buildings. However, from the tour made with the main architect, substantial differences between courtyards managed by the municipality and those autonomously managed by the residents have been observed: the former were in very good conditions, very neat and well organized, while the latter looked very disorganized and untidy. According to the main architect of District IX, none of these projects was successful. (Szűcs, 2015) (For further information on thepercentages, see Annex 2).

5.3. Role and Outreach of NGOs

The low social and political involvement of citizens has been attributed to the scarce activity of NGOs in the district. This directly connects to the outreach of NGOs toward citizens. Questionnaire results show that a low number of respondents living in District IX mentioned KÉK as an organization actively involved in UGS. As far as other organizations are concerned, only 25% of respondents mentioned the name of an organization active in the area. However, results also display an explicit willingness of people to participate in events if informed – 78.7% of respondents - and a relatively positive intention towards being actively involved in such events – 51% of respondents. (for further information on thepercentages, see Annex 2).

KÉK's outreach seems to be weak also towards other stakeholders of District IX: the representatives of the municipality of the district did not have any knowledge about KÉK, and they could not even mention other NGOs active in the district (Szűcs, 2015) (Baranyi 2015). A quite active NGO, Food not Bombs - an association that deals with collecting edible food from the left-overs of restaurants and companies, cooking it and providing it for free to locals, especially to poor people- had not heard about KÉK as well.

6. Conclusion

Regarding the purpose of this report, to display a concise description of the UGSs of District IX and its main characteristics, a couple of interesting aspects were detected through the analysis of District IX.
In general the urban planning of the district centre looks well organized and the existing parks are in good condition. Also the UGSs in District IX have a high reachability. The Nehru and Haller Park are both well used by the citizens for passive and active activities. However the remaining areas of the district are not included in the renovation plans of the municipality and have thereby a lower availability value compared to the availability of UGSs in the district centre.

The air and noise pollution in District IX are high in the southeast centre and middle area compared to the other places in the district. This can occur due to heavy traffic flows and the relating absence of UGSs in these areas. The Urban Heat Island (UHI) effect is a matter of concern related to the concrete buildings and roads and thereby is expected to be higher in the south east city centre and middle area because of its taller buildings and concentrated road network. The organic waste management in District IX is insufficient at the moment because there are no specific containers present for organic waste. The government has not yet paid enough attention to the organic waste separation issue.

The cooperation and communication among the three main actors (citizens, NGOs and municipality) present some weaknesses and gaps that should be filled, as well as opportunities for improvements. A first gap is represented by the low outreach of both KÉK and other NGOs in the district. Consequently, the low involvement of residents constitutes a weakness and obstacle in spreading social cohesion around UGS. From both the interview and the questionnaires, a different idea of the role of citizens towards UGS has been identified: on the one hand, from the local authorities, an individualistic perception of Hungarian people shows through; on the other hand, the point of view of citizens towards social cohesion and the importance of UGS is extremely positive. These two perspectives, if combined under the same grounds and mediated by a third party in between – the NGO -, can represent a great opportunity for improvement in the cooperation and communication between local authorities and citizens, incentivizing social cohesion as a consequence.

7. Recommendations

A good example of urban planning in District IX, is the idea to renew old flats with current urban patterns, increasing common area and its usage, to improve life quality and opportunities to new tenants. Future urban planning should consider to keep at least 9 m2/person of public UGS for a healthy living environment for Budapest.

Since UGSs are close to people, the next steep to improve this areas will be to make them look greener, by increasing green intensity in District IX UGSs and all possible areas like trees on streets, avenues and other public spaces. By establishing more UGSs in the southeast city centre areas, the problems of air pollution, noise pollution and UHI effects can decrease.

A suggestion for implementing organic waste management is to launch the promotion by NGOs of the reuse benefits of organic waste separation. Also implementing monitoring points for environmental aspects more often in District IX would be recommended. This way a closer track of environmental changes can be performed.

The results from the questionnaires related to the outreach of KÉK toward citizens' show that the majority of people is not aware of KÉK activities in UGS in District IX. Given the findings, KÉK could invest in a more intense and widespread public relation activity, by improving information distribution. This will help the organization to get in touch with more people, incentivizing them to join the projects, and expanding its network of contacts.

Citizen support and involvement could be even more incentivized by creating alliances with other NGOs through the implementation of projects based on specific common goals. A joint partnership would also give a stronger stand to NGOs, therefore it would be more likely accepted and supported by the local authorities. For instance, the meeting with Food Not Bombs was very interesting, and it was the description of a generous and productive way of gathering people. By reusing food from the leftovers of restaurants and factories, and providing it to people in need, the NGO performs at the same time a charitable and a social act, since food is a powerful means of social gathering. KÉK and Food not Bombs could use the common theme of food to get together and implement projects or activities. Such projects could involve, for instance, the food coming from the community gardens, that could be used in Food not Bombs activities. This joint partnership could benefit both NGOs: KÉK would reach a different target of people, that maybe would not have had the chance to get to know KÉK in any other way, and Food not Bombs would have an important partner to implement food-related projects.

Inviting people to join a social event can be another helpful way to enhance social cohesion and the sense of belonging to a community. An effective idea to stimulate locals' involvement could be to create social hotspots close to or in a community garden (such as the one owned by KÉK) or a park, in which people can gather to relax, providing them with an appealing and welcoming atmosphere. Specifically concerning the community garden located in District IX, taken into account the moderate willingness of locals to participate in events or to work in UGS, it could be nice to actively invite people to have a look at the garden, and to make sure to display the opening times in a clear way, in order to facilitate as much as possible the accessibility of the garden.

The contrast between the low willingness of residents of District IX to be involved in the management of UGS and the important social value attributed to UGS should incentivize KÉK to act as a channel between the municipality and the citizens. A practical and effective way to do so could be to provide a manual that clearly explains the steps to take in order to, for instance, create a community garden, or, in the specific case of the district, take care of internal courtyards, in both political and technical terms. In this way, the knowledge gap would be filled and the citizens could feel empowered by knowing how to act. Along with the theoretical know-how, appointing an ambassador, namely a person who has successfully

carried on projects in UGS such as community gardens or internal courtyards, can also be useful to spread the practical know-how, to advice and support citizens in the process. Once the initial enthusiasm has arisen and the necessary knowledge is easily available, an issue identified in the district is how to make such enthusiasm long-lasting: the example of the failure in autonomously managing internal courtyards is a proof of such lack of long-term commitment. In this context, a motivator, who could be a particularly interested person, coming from KÉK or simply volunteering, can help keeping the interest and involvement up in the long-term, trying to prevent residents from giving up on the management of their courtyard.

Annex K **Geo-Report District XI**

GEO-REPORT DISTRICT XI

Budding	Ester	921001143010
Gaifami	Tommaso	
de Haan	Nina	
Mukta	Afia	
Schröder	Laura-Marie	

WUR Consultancy Group

Wageningen University

Abstract

The aim of this report is to investigate the current situation of Urban Green Spaces (UGSs) in District XI of Budapest. Questionnaires were handed out to investigate the perception of inhabitants and observations have been performed to analyse the activities and characteristics of five different UGSs in District XI. Expert-interviews were conducted to gather information on current issues and developments in District XI. Results showed that inhabitants of the district perceive a low distance to UGSs and on average the amount of UGSs is sufficient for the amount of inhabitants. However, the distribution of green areas is not homogeneous throughout the district and some spaces can be used more efficiently. Different ownerships and a lack in financial resources are limiting factors for developing new UGSs. In general, UGSs in District XI are well-maintained and feature a wide range of facilities with different activities provided. However, according to findings, inhabitants use parks rather for passive activities, such as walking through or relaxing. More events organised in UGSs and a better information distribution could help to improve social gathering in those places. HuMuSz can be mentioned as a best practice from District XI with respect to waste management and communication with other stakeholders. In conclusion, District XI needs to implement more green buffer zones in order to tackle the problem of air and noise pollution. Furthermore, the cooperation between municipality, NGOs, and citizens should be improved and more information about waste management needs to be provided.

Table of Contents

1. Introduction

1.1. Purpose of the Report

The aim of this research is to determine the current situation of Urban Green Spaces (UGSs) in District XI of Budapest by analysing the themes of Urban Planning, Usage of UGSs, Environment & Public Health and Cooperation & Communication. Within these themes, the most relevant issues are addressed and best practices are determined. At the end, recommendations for improvement are formulated.

1.2. Study Area

Újbuda, the name of District XI, is situated in the south of the historical town of Buda. In 2013, this district had 147,275 inhabitants (Hungarian Central Statistical Office, 2015). Újbuda consists of a city centre, a sub-urban area and a rural area. In general, the southeast side of Újbuda is relatively flat, touching the Danube, while the northwest side has a more hilly character with the Gellért Hegy (figure 1: upper yellow mark) reaching as high as 235 m (Budapest.com, 2015). The Gellért Hegy, and its surrounding, such as Hotel Gellért and the Géllert Baths, is part of the city centre and a popular touristic attraction. This area is connected to Pest by the Liberty Bridge and since spring 2014 also by Metro 4 or M4 (DBR Metro Project Directorate, 2015). M4 has five metro stations in Újbuda with three of them in the centre part of the district. The end stations of M4 are Kelenföld vasútállomás close to Kelenföld Railway Station in Újbuda (figure 1, first left yellow point) and Keleti pályaudvar which is near Budapest Keleti railway station in district VIII (DBR Metro Project Directorate, 2015).

The city centre of Újbuda includes different types of residential areas. In the hilly area in the north there are mainly single heterogeneous villas with fenced private gardens, while in the southeast of the district the residential area is more homogeneous in architecture. In the past, this eastern side of the district was still part of the Danube River. New land was reclaimed and new buildings were developed in a uniform style (Beleznay, 2015). Here, one can also find university buildings of the universities BME, Corvinus and ELTE.

Spread through the districts, also some quarters are present that include flats and apartment buildings. Some of these include courtyards and others some public space in between the flats. In the sub-urban area of the district, there are a lot ‘large-panel system (LPS) buildings’ separated by relatively large public areas. The rural area consists of the Buda Hills, forests and some agricultural activities.

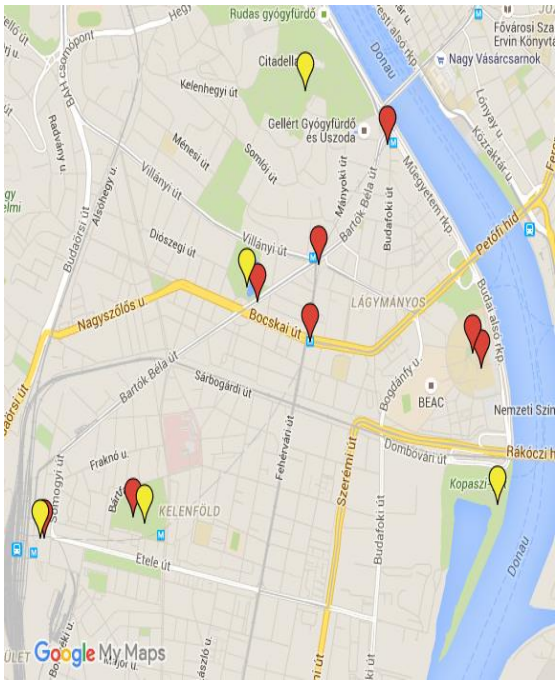


Figure 1: Locations of observations (yellow) and questionnaires (red).

In this report, the main focus will be on the above described city centre of the district (figure 1). Here, compared to the rest of the district, the building and population density are relatively high and land is very valuable. As a result, UGSs here face most challenges. In the following chapters, these UGSs are analysed in four most relevant themes: Urban Planning, Usage of UGSs, Environmental & Public Health, and Communication & Cooperation. Next, conclusions and recommendations are given that followed from these themes.

1.3. Methodology

Data were collected using four different methods: performing a desktop study, handing out questionnaires, performing observations and conducting interviews. The desktop study has been performed to collect data on the spatial situation of the district and historical information of Újbuda.

In District XI, a total of 115 questionnaires were handed out at 9 different public parks and streets (figure 1) to investigate the perception of inhabitants and visitors of the district regarding UGSs. However, not all respondents originated from District XI. Therefore, from all 550 questionnaires that were collected from all geo groups during the field trip only the ones that live in District XI were used for the analysis and evaluation (in total 55 questionnaires). Some of them did not answer all questions and therefore the amount of respondents analysed per question can differ.

Observations have been performed in the Bikás Park, Kopaszi gát, the Gellért Hegy and Feneketlen-tó and in the more paved area of Kelenföld station (figure 1) to analyse the activities in and characteristics of UGSs in the centre part of the district. They were observed twice – once during the week and once on the weekend – which gives a total number of 10 observations.

Lastly, three semi-structured interviews were conducted to collect information on current developments, environmental issues, and communication issues in District XI. These included interviews with representatives of HuMuSz, an environmental NGO focusing on waste prevention; with a professor from the Department of Floriculture and Dendrology of Corvinus University, and with a minister from the Department for Investment of the Municipality of District XI.

2. Urban planning

This chapter includes a brief description of the current situation of the urban planning in district XI of Budapest. Urban planning in this context is defined as making UGSs functional by considering their availability and their accessibility for the citizens of Budapest. Here, good practices as well as some existing problems are investigated and discussed.

2.1. Availability

Availability of UGSs can be divided into several topics. In this report, the following topics are discussed: existence, sufficiency, "space waste", funding and ownership.

Existence

District XI includes several public parks, community gardens and courtyards. Figure 2 shows that in the city centre, most inhabitants live closer than 300 meter to an UGS. This is strengthened by results of the questionnaire, which show that inhabitants of the district perceive their distance to the closest UGS under 500 meters (figure 3).

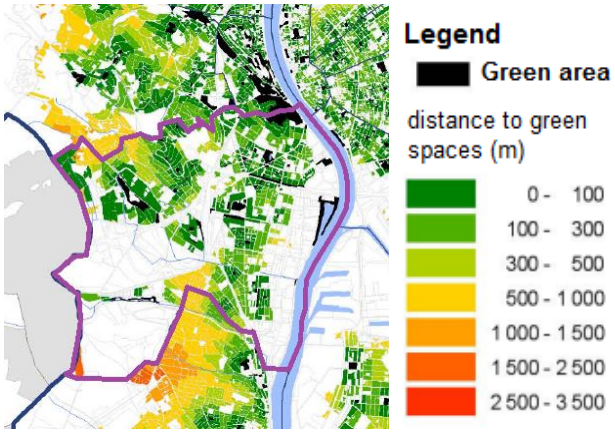


Figure 2: Map about distance from inhabitants of District XI to nearest UGS (BUDAPEST, 2011).

Sufficiency

According to the WHO, a city should have an available area of on average 9 m^2 green per citizen. As mentioned, the amount of inhabitants in 2013 was 147,275. In the same year, the total green area included 1,801,123 m^2. This means that there is an average of 12.2 m^2 of green area per inhabitant. In District XI, there is thus on average sufficient green per inhabitant. However, the amount of m^2 per person may be lower in the centre area: on the one hand, there are in the centre small spaces in between some buildings, while on the other hand there is also a large rural area present in the district.

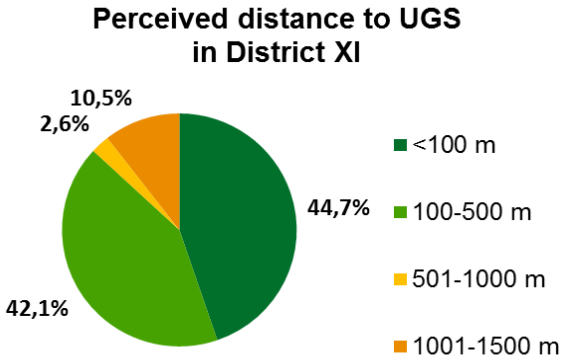


Figure 3: Perceived distance of inhabitants of District XI to nearest UGS (38 respondents).

"Space waste"

"Space Waste" in this report means that some areas are not or inefficiently used in District XI. The UGSs around the large-panel system buildings are not well developed and have much potency to improve the neighbourhood. District XI has the advantage that there is still space left for developing or improving new and existing UGSs. Moreover, the municipality of the district even wishes to improve some UGSs that are already present. Recently, they started a community garden and senior park with the intention to bring communities together. A new project is in the southern part of the district, called Gazdagrét, where high buildings are very close to each other. Here, the municipality is developing more facilities and a walking way in between all buildings to improve the living space of their inhabitants (Municipality XI, 2015).

Funding
A challenge in District XI is funding. Money is needed for every investment, but not enough is available. The EU, for example, gives priority to other regions in Hungary that are underdeveloped. The municipality of District XI tries to find ways in dealing with this, for example, by developing more community gardens: they are not expensive to develop and there is already a waiting list of inhabitants that want to participate in community gardening. Funding is also a challenge for the development of the UGSs between large-panel system buildings: developing all these spaces is expensive and time consuming (Municipality XI, 2015).

Ownership
Ownership is also an important issue in District XI: some areas belong to the municipality of Budapest, while others belong to the municipality of the district or private parties. In a project, an area may be available for the development of an UGS, but the surrounding area not. This is for example the case at Kopaszi Gát where the surroundings of the park were sold to private parties and the public sector was not able to defend the public interest (Beleznay, 2015).

2.2. Accessibility

UGSs may be available, but they also have to be accessible. If inhabitants cannot easily access or do not feel attracted to them, they may choose to not visit them. Accessibility can be influenced by several aspects, namely reachability, openness and permission, and safety.

Reachability
Accessibility by different modes of transport is also related to this. If a spot attracts more activity of people over the day, most modes of transport will be present and vice versa. In 2014, a new metro line was opened in District XI that is intensively used by inhabitants. A lot of spaces around the new stations had to be newly developed in the last ten years. Some of these include green spaces, like Bikás Park. Others include more pavements (Kelenföld station, and the squares at Szent Gellért ter and Móricz Szigmund körtér). These UGSs are relatively easy to reach and are in general surrounded by more activity. On the contrary, the Kopaszi Gát is not well reachable by public transport. The nearest tram and bus station is about a 20 minutes' walk from the park. The visitors mostly go there on foot or by bike or by car. This may exclude some groups of visitors and inhabitants are not just passing by. People only visit this park for leisure purposes.

During observation, not many people were present in this park. In summer this might be different, but still reachability may play a role in this.

The Kopaszi Gát may be not that well reachable, still the municipality tried to increase the accessibility. Not in a sense of transport, but in developing an area in which the river becomes more accessible to the inhabitants of Budapest (Municipality XI, 2015). In general, citizens are not able to reach the Danube very closely. Here, the district increased the accessibility by creating a beach at which visitors can relax along the water and enjoy it.

Openness and Permission
On these two topics, no issues exist in District XI. Openness and permission with respect to UGSs depend on the ownership: public spaces are open to everybody, while semi-public or private spaces are locked and only groups of people have the permission to enter.

Safety

The surroundings of UGSs may play a role in people's perception on safety: a residential area around an UGS can increase local inhabitants' safety feeling because of the community that is present (NRPA, 2015). At Kelenföld station, the sense of safety may be low because there are no surrounding communities (houses), while in Bikás Park it may be higher because it is surrounded by flats. This may also be connected to the amount of homeless people that are present. At Kelenföld station more homeless people were present than in Bikás Park, which can make inhabitants feel more uncomfortable. However, surroundings cannot always be taken into account because of the before described differences in ownership and this might be a challenge in urban planning.

3. Usage of UGSs

UGSs in District XI are used differently on the basis of inhabitant's need. Of the five observed places, four are in public parks and the fifth one is Kelenföld metro station. The Géllert Hegy is a park with an area of 40 hectares. Generally, the park is divided in two main parts: one part is more visited by the local people and the other part, the "Citadella" castle with a monument, is more visited by tourists. Other parks such as Feneketlen-tó (8 hectare) or Bikás Park (8.6 hectare) are quite large and mainly used by the local people. According to the observation, large parks (i.e. Feneketlen-tó) include more space and therefore more capacity than the small one (i.e. Kelenföld vasútállomás with 1 hectare). Almost 70%-80% of the park areas are covered by bushes and trees (field observation, 2015). Public green spaces in District XI are used for various purposes. From observations, public parks were mostly visited by elderly and young adults. Four key issues are related to analyse the usage of UGSs of the observed areas, namely the activities in UGSs, maintenance facilities, security aspects and multifunctionality of these UGSs.

3.1. Activities

Type of Activities

Figure 4 shows the observed activities performed in UGSs in District XI. Most of the people (35%) use the parks for walking through and walking with a stroller. Furthermore, people use the parks for relaxation (33%) such as reading, sitting on benches, enjoying the view, eating, etc. Moreover, people use the jogging track (i.e. in the Feneketlen-tó), modern sports facilities (i.e. in the Bikás Park) for doing sports (17%). In addition, people also utilize green spaces for socializing (10%) performing activities that improve the social cohesion, such as playing with cards, chatting with friends, playing with children, etc.

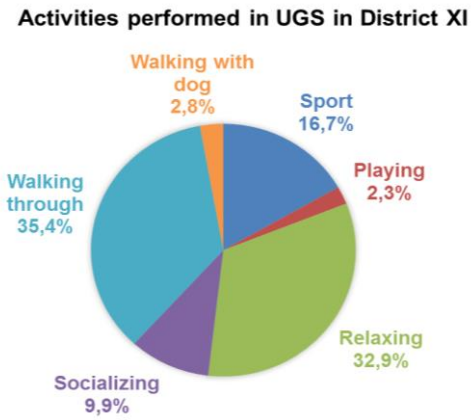


Figure 4: Activities performed in UGSs in District XI.

Frequency of Activities

Analysis from the questionnaire showed the frequency of activities performed in UGSs in District XI (figure 5). The frequency of activities has been divided in three categories for the analysis: *Often* (more than three times a week and 1 to 3 times a week), *rarely* (1 to 3 times a month and less than 1 time a month) and *not at all* (never). According to the results of the questionnaire, the respondents who come from District XI often use UGSs for relaxing (66%). They rarely go to UGSs to attend events (47%), for example workshops, fairs, concerts and socialize (29%). Apparently, a similarpercentage of respondents stated that they do sport in UGSs in the three different ranges of frequency (24% *often*, 26% *rarely* and 24% *not at all*).

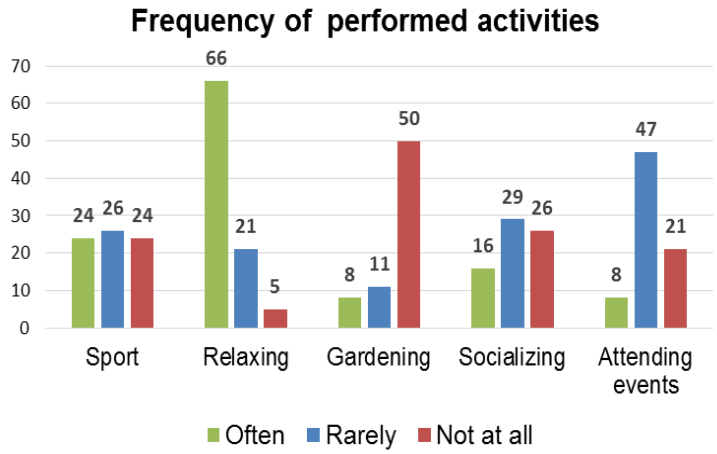


Figure 5: Frequency of activities performed in UGS of District XI.

Figure 6: Elderly playing cards or watching the game.

Even if observed users of the UGSs can come from different districts, and the surveyed come from the District XI, a comparison of observation and questionnaire results can be made. Both methods indicate that the majority of the citizens use the UGSs for relaxation and walking through, which specify the passive use, without performing activities, of UGSs. Furthermore, observations and questionnaires show that people rarely go to UGSs to socialize.

In Feneketlen-tó, elderly were observed who were playing with cards or watching the game (figure 6). Adults and young adults were involved themselves in group discussion (figure 7) that expand the local social cohesion. Also, a festival for children was observed in Feneketlen-tó during the weekend: children were drawing, jumping and playing with balloons (figure 8). Everyone was around the festival area and there were almost no people in the other places of the Feneketlen-tó park during this festival. On the contrary, in Kelenföld vasútállomás people used the green spaces only to pass through to take metros, buses or trams as well as used the benches just to wait for transports (figure 9).

Figure 7: Group discussion.

Figure 8: Festival for children.

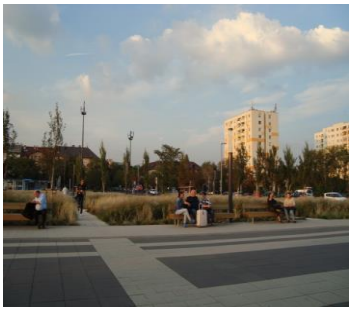


Figure 9: Kelenföld Vasútállomás.

3.2. Multifunctionality

Multifunctionality of UGSs is a key parameter that attracts people to use green spaces with different facilities. Evidence from the analysis depicts that citizens perform different activities in parks and use the parks for different purposes: parents spend their time with their children, elderly are playing cards with their friends, young adults use the parks for sporting, jogging, etc. Parks in the district are designed to ensure facilities for all the age groups. The public parks in District XI are fully equipped with the basic equipment such as benches, trash bins, jogging tracks, playgrounds, walking paths and toilets. For example, at every end of the slopes of ‘Gellért Hegy’, benches and trash bins are available. In addition, a playground with

slides is also present. During the observation, around 40 children were playing in this playground. Benches of the slopes were used by the tourists in the 'Gellért Hegy'. In Feneketlen-tó, a well-furnished jogging track and walking path were found as the best facilities to attract citizens. People also enjoy the beauty of the lake, which is located in the middle of the park. In Bikás Park, artificial slopes, water bodies and modern sporting facilities attract people for relaxation and recreation. Also, those green spaces (i.e. Feneketlen-tó, Bikás Park) allow people to organise different type of events such as workshops and festivals (Municipality XI, 2015). Moreover, the arboretum of the Corvinus University - a public park, which had a large variety of fauna species - was used for educational purposes (Professor at Corvinus University, 2015). From observation, UGSs with more green and a variety of facilities attract a larger number of users. While UGSs with less green and a limited number of facilities keep citizens away and permits the park only for relaxation (i.e. Kelenföld Station).

3.3. Maintenance

In District XI, the processes of management, planning and maintenance of UGSs are controlled by the Municipality of District XI and the Municipality of Budapest. While observing the parks, every park was found well maintained. From the interview with the Municipality of District XI, the representative gave examples of successful cooperation between the Municipality of District XI and different NGOs. Currently, the Municipality of District XI collaborates with Főkert, some private organizations and some NGOs on the issue of waste management. The investment officer of the Municipality of District XI (2015) stated that they face problems in maintaining the parks owned by the Municipality of Budapest, which is due to the different intentions of both parties. The interviewee also mentioned that the Municipality of District XI has faced lack of funding. Nevertheless, management of facilities and waste are indeed the most high-priced activities to perform and they can be improved by developing communication among the actors and raising awareness in the community.

3.4. Security

Most of the public parks in District XI are open and not surrounded by fences. However, Feneketlen-tó has a well-managed fenced playground. The playground is located in a corner of the park and far from the water body. Parents and security personnel were also taking care of the children. The observer found security personnel and police officers during the festival of the park. Other parks of the district are quite open. Nevertheless, the representative of the Municipality of District XI (2015) mentioned that they face problems with the presence of homeless people in the UGSs. This might prohibit the citizens to visit this park. Furthermore, the Vice Mayor of the Municipality of Budapest (2015) also reinforced the issue of homeless people in the UGSs of Budapest as a problem. The interviewee of Municipality of District XI (2015) told that they are working to find a way out to solve the problem as well as to make the UGSs more attractive.

4. Environment and Health Effects

In this chapter current issues regarding the environment and public health within District XI are discussed. This includes four main topics: air pollution, noise pollution, urban heat island effect, and organic waste management. As mentioned in the introduction, we only related those issues to the city centre of District XI.

4.1. Air pollution

Emissions caused by traffic account for 40% of air pollution in Budapest (REC, 2015). According to an interviewee from the Clean Air Action Group and the Environmental Assessment of Budapest from 2014, nitrogen dioxide (NO2), particulate matter (PM10), and ground level ozone (O3) are the main pollutants within Budapest originating from road traffic and industry (Clean Air Action Group, 2015; Budapest Környezeti Állapotértékelése, 2014; Zhang et al., 2013). Those pollutants affect public health and can lead to airway inflammation as well as to a restricted lung function (Shah & Balkhair, 2011).

Especially in District XI, air pollution caused by traffic is a major issue. Three highways and one motorway cross District XI. They lead into two main roads, Budaörsi út that leads into Bocskai út and Szerémi út, allowing a quicker access from the outer part to the city centre of Budapest. From the noise pollution map (figure 10 & 11) and also according to our observations, it can be concluded that the road Fehérvári út as well as the square Móricz Zsigmond körtér are characterised by heavy traffic of cars, buses, and trams.

Figure 10: Noise pollution map of traffic (the amount of noise during daytime in dB in the city centre of District XI) (Pogéany et al., 2014)

Figure 11: Noise pollution map of railways (the amount of noise during daytime in dB in the city centre of District XI) (Pogéany et al, 2014)

The severity of air pollution is also shown by a measurement station located at Kosztolányi tér, close to Bocskai út and Móricz Zsigmond körtér. Figure 12 illustrates the development of the annual average concentration of nitrogen dioxide (NO2) and particulate matter (PM10) from 2005 to 2013. It is clearly shown that the annual average concentration of NO2 in District XI in 2013 still exceeded the limit value of air quality standards of the European Commission by 5 µg/m^3 (Budapest Környezeti Állapotértékelése, 2014; European Commission, 2015) even though the annual average concentration of NO2 had declined by a factor of 1.5 within the last 10 years (figure 12). Also, the annual average concentration of particulate matter (PM10) in District XI exceeded the annual limit prescribed by the European Commission by 1-2% until 2008 (figure 12). From 2009 this average concentration reached a value above the annual limit. However, current moment-measurements show a high exceedance in this district (figure 13). Ozone exceeded its annual average concentration from the annual limit value by 1.8%. However, since 2010 this concentration reached an acceptable value.

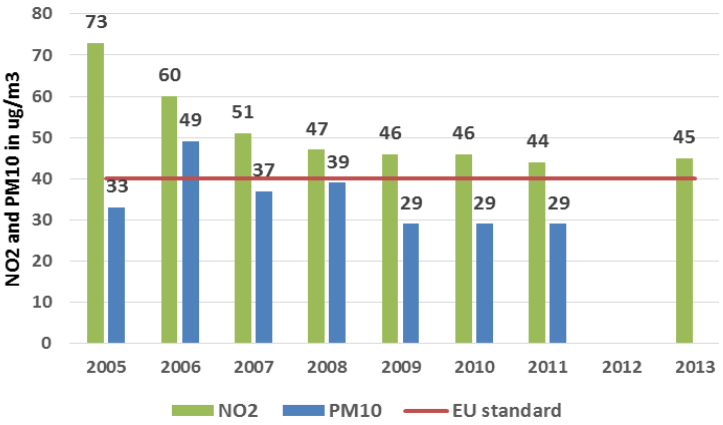


Figure 12: Concentrations of concerning air pollutants at Kosztolányi tér in District XI. The bar chart diagram shows the annual average concentrations of nitrogen dioxide (NO2) and particulate matter (PM10) in µg/m^3. The limit values set by the European Commission for those air pollutants amount 40 µg/m^3 (green line) (Budapest Környezeti Állapotértékelése, 2014).

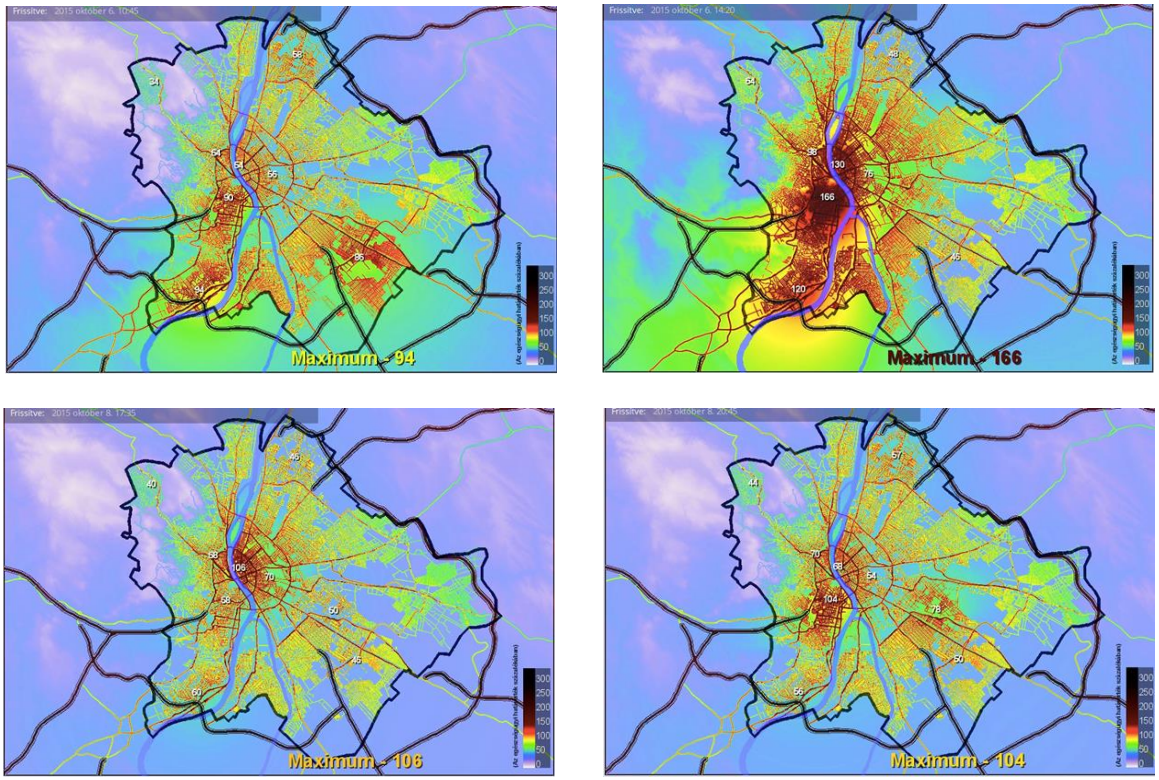


Figure 13: Moment-concentration of PM10 in Budapest (www.idokep.hu/szmog, visited at October 10, 2015)

4.2. Noise pollution

Noise pollution is a crucial issue in Budapest, and especially in District XI. Most main roads and highways exceed 65 dB during daytime as the environmental assessment of Budapest from 2014 proves (figure 10 & 11). This increases the risk for citizens to suffer from ischaemic heart diseases (Nicolopoulou-Stamati, Hens, Howard, 2005). The high noise level is due to heavy traffic and poor road conditions, as well as the narrow constructions of streets and the presence of railway lines (Pogány et al, 2014). Citizens are aware of the high noise level. In fact, over half of the questionnaire respondents in District XI escape from the noisy streets and like spending their free time in UGSs. The results of the questionnaires show that around 40% of the respondents in District XI agree that there is less noise than in the streets (figure 14) and 94% of the respondents hold the opinion that UGSs would increase quality of life (figure 15).

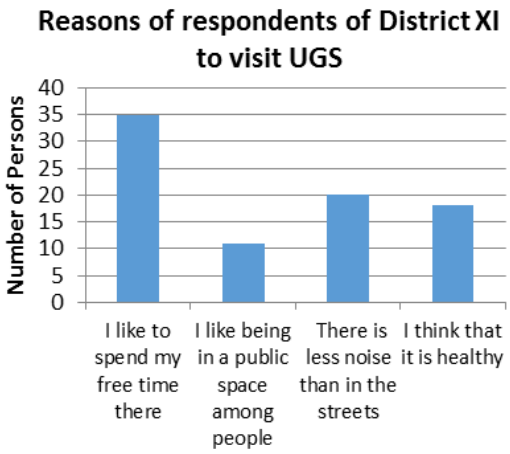


Figure 14: Reasons of inhabitants of District XI to visit UGSs (55 respondents).

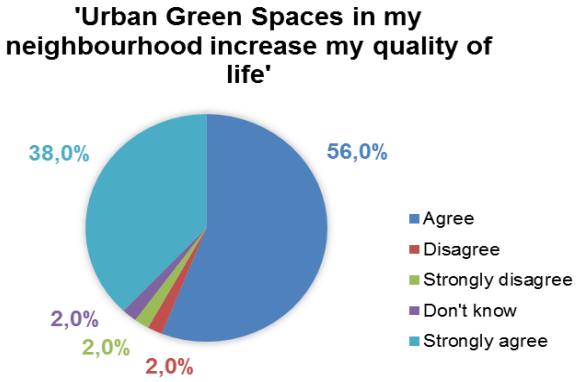


Figure 15: Opinion of inhabitants of District XI on statement 'UGSs in my neighbourhood increase my quality of life' (53 respondents).

During our fieldwork we discovered rather large green areas in District XI, such as Bikás Park, Egyetemisták parkja, Budai Arborétum, Gellérthegy, Feneketlen-tó, and Kopaszi-gát – the last two rather close to big roads. In an interview with Bert van Hove (2015), it was stated that plants are able to absorb or reflect noise, and it is useful to place large vegetation near sources in order to reduce traffic noise from busy roads in a city.

4.3. Urban Heat Island Effect

As is already known, there is a clear temperature difference between the city centre and the agglomerating districts. This is especially important during summer nights when this temperature difference can be up to 10°C (Clean Air Action Group, 2015; REC, 2015). Bert van Hove and the Professor Ornamental Horticulture (2015) state that green vegetation is able to produce a cooling effect for the surrounding atmosphere. Shading the buildings by trees can already cause temperature difference of 7-12°C.

District XI is situated in the green Buda-part of the city and might not be as much affected by the urban heat island effect as other districts in the Pest-part. According to the environmental assessment of Budapest from 2014, the average temperature in the Buda-part is 5-6°C lower than in the Pest-part of the city (Budapest Környezeti Állapotértékelése, 2014).

4.4. Organic Waste Management

Facilities for organic waste management are still not well established in Budapest, including District XI. This is in contrary to the questionnaire findings where 80% of respondents in District XI hold that organic waste separation is supported by the municipality (figure 16). According to the interviewees from the Clean Air Action Group as well as from HuMuSz (2015), a non-governmental organisation, there are facilities to separate plastic, metal, paper, and glass waste.

Organic waste separation is an issue that is not yet perceived by the Budapest society. During our questionnaires, it was observed that many participants, especially elderly, did not fill in the part about organic waste management. HuMuSz explained that people do not have enough information about organic waste management (HuMuSz, 2015). However, from the people that answered the questions about waste management in District XI, over 50% of the citizens strongly agree and in total 96% agree that organic waste separation is important (figure 17).

Nevertheless, HuMuSz is making effort to establish organic waste management in District XI. They also do workshops throughout Hungary in order to make people more aware of waste separation and waste prevention. HuMuSz provides community compost where citizens can bring their organic waste; in return they can take humus for their gardens or can participate in other activities (HuMuSz, 2015). According to our questionnaire results, about half of the respondents in District XI is making compost out of their organic waste (figure 18).

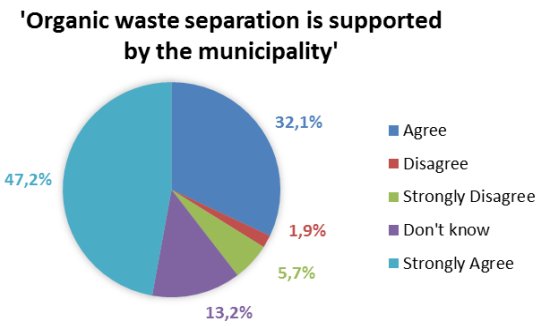


Figure 16: Opinion of inhabitants of District XI on statement 'Organic waste separation is supported by the municipality' (53 respondents).

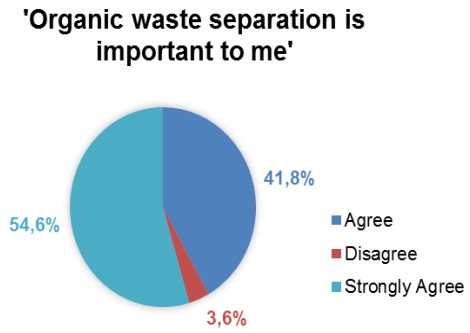


Figure 17: Opinion of inhabitants of District XI on statement 'Organic waste separation is important to me' (55 respondents).

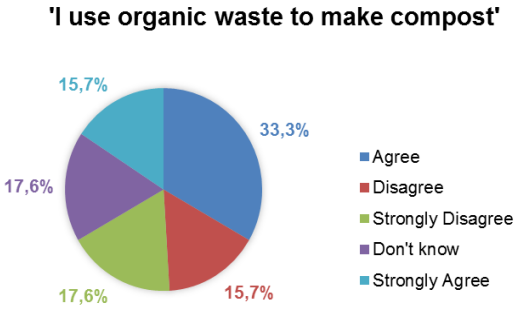


Figure 188: Opinion of inhabitants of District XI on statement 'I use organic waste to make compost' (51 respondents).

Cooperation and Communication

The most important stakeholders for realization, managing and usage of UGSs are citizens, municipality and NGOs. These stakeholders can have different interests and influences and have different roles. Relationships between different stakeholders can vary accordingly. Also, stakeholders can decide to act alone or cooperate to achieve their goals. In cooperation, communication is of high importance. In this section the existing relationships between citizens, municipality and NGOs are discussed.

4.5. Citizens and NGOs

Most information about the role of NGOs is retrieved from the interview with the NGO HuMuSz, which focuses on waste prevention and is situated in Újbuda. HuMuSz educates citizens of Budapest on waste and how to minimize it by organizing scholastic activities such as workshops and lessons. Those activities can be specifically for children, but other age groups are also being addressed. Events of HuMuSz can be organized in their own garden or at other locations, like community gardens nearby. HuMuSz' garden and HuMuSz' events are publicly accessible for everyone, in order to get as many people as possible involved in the community of the neighbourhood and make them feel part of it. According to the questionnaire results, apparently the citizens of Újbuda (78% of the surveyed) would like to feel part of a community (figure 19).

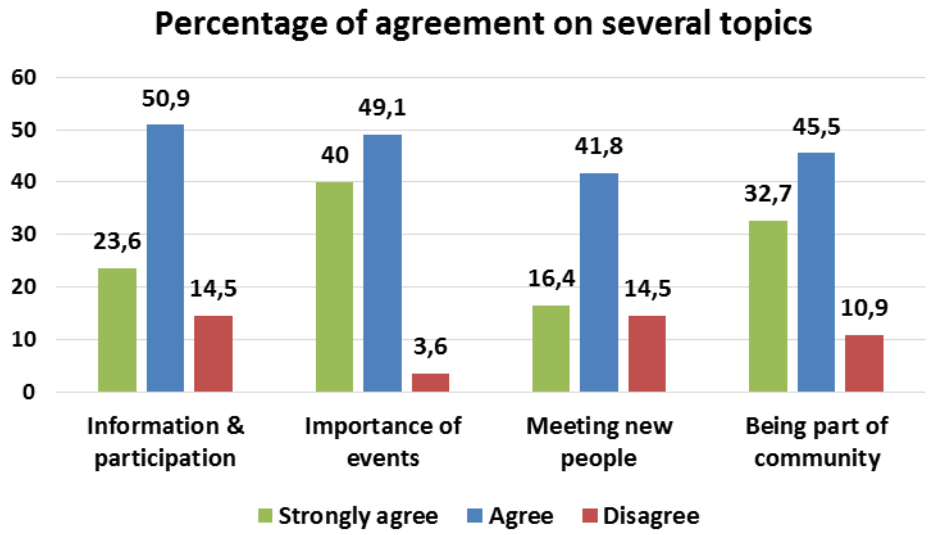


Figure 19:percentage of agreement on the topics 'Information & participation', 'Importance of events', 'Meeting new people' & 'Being part of community' (53 respondents).

What HuMuSz does can be indicated as an example of best practise to connect citizens with a NGO, which could be able to support them and create a sense of community around UGSs. Moreover, by organizing events they attempt to get citizens more aware about an important topic (waste prevention). These activities can be an opportunity for KÉK's programmes to collaborate with them and consequently to extend their outreach.

NGOs can also collaborate with other organizations. An example for this is again HuMuSz, which is currently cooperating with six other organizations throughout the whole country in an established alliance. Alliances of organizations with similar goals can have a larger influence than single NGOs. KÉK could maybe be part of the alliance as well and thus be closer to citizens and at the same time to other NGOs.

Almost all the residents of the District XI, who filled in the survey, agree (49% agree and 40% strongly agree) that organized events are important to the community (figure 19). Consequently, the organizations could collaborate to arrange events for the community, well-advertised and coordinated. A better organization behind the events and an efficient information distribution system can be the key to attract residents to the green spaces. In fact, the results of the questionnaire shows that most residents do not attend organized events at all (20%) or only less than once a month (49.1%) (figure 20).

Furthermore, the same questionnaire results show that the majority of the respondents rarely go to UGSs to socialize (43.6%), or do not go at all (23.6%) (figure 20). At the same time citizens apparently agree (41.8% agree and 16.4% strongly agree) with the fact that visiting UGSs can help to meet new people (figure 19). It may be that they feel the potency of green spaces as a place where to meet people and to create a community but there are some barriers, which limit them. For instance, the limited information, as the results from the questionnaires show: 74.5% of the people agree or strongly agree with the fact that they would participate more often to an event if they were better informed (figure 19).

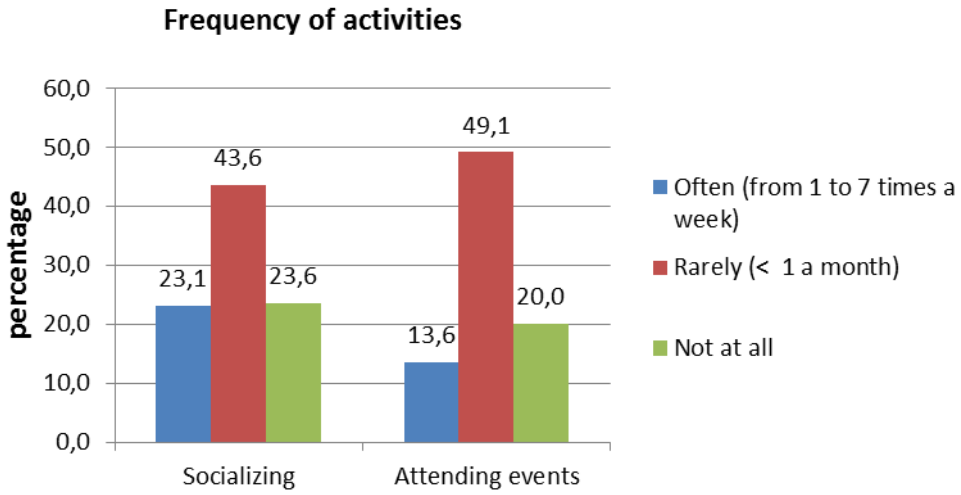


Figure 20: Frequency of activities (socializing, attending events) in % (42 respondents).

4.6. NGOs and Local Authorities

HuMuSz can also be seen as a model with respect to cooperation because of their good relationship with the Municipality of District XI. HuMuSz rents the land of their garden from the municipality, which takes care of the maintenance of the garden.

About the relationship between NGOs in District XI and the Municipality of Budapest, we know from the interview with HuMuSz (2015) that before accepting a new law, the Municipality of Budapest is obliged by the European Union to let NGOs of their choice review law proposals. This means that NGOs can influence the policy decisions: recently, the Municipality of Budapest provided a proposal for a new law on organic waste management to HuMuSz, so they could comment on the proposal. However, HuMuSz had only very few days for reviewing the law proposal. Because of the short time span that was given, HuMuSz assumes that the Municipality of Budapest was not truly planning on taking HuMuSz' comments into account. This, according to HuMuSz, is a shame, for they may have been able to give useful advice. Because of HuMuSz' role in the community of Budapest, they might have relevant information about citizens behaviour and opinions regarding organic waste management. This example shows that there is communication between the Municipality of Budapest and NGOs, but there are possibilities for improvement.

4.7. Citizens and Local Authorities

The interview with Lilian Csintalan (2015), investment officer of the Municipality of District XI, was worthwhile to clarify the relationship between citizens and local authorities. The interviewee told us that generally the citizens of District XI feel as if they have limited influence on local authorities' decisions. In order to increase the political empowerment of citizens, they give them the possibility to submit their requests and letters to the municipality. The Municipality of District XI also has local representatives who act as mediators between citizens and the municipality. Local representatives talk to citizens to get to know their wishes and communicate their findings to the Municipality of District XI (Municipality XI, 2015).

5. Conclusion

The analysis of interview transcripts, questionnaires, and observations of the fieldwork allows pointing out the main characteristics and issues of the current situation in District XI. The following section will explain the most relevant aspects of the themes and it will provide a general overview of the currently existing UGSs.

The analysed part of District XI is characterized by several green spots: four large green parks, three community gardens, and a small number of courtyards, mainly of private ownership. Inhabitants of the district perceive a low distance to these UGSs and statistics show that on average the amount of UGSs is sufficient for the amount of inhabitants. However, the distribution may not be equally divided over the centre and rural area: in the centre, the building density is very high, while the rural area includes a lot of green lots. According to questionnaires, respondents mainly use the UGSs in District XI for relaxation, walking by, walking with stroller and playing sports.

There are several projects in District XI, which have the goal to develop the existing green spaces or to create new ones. This is the result of an interest of the District XI Municipality in improving the city greenness. However, the issue of ownership seems to interfere with the Municipality's plans. At this moment, the ownership of different spaces in District XI is spread between public and private owners. Because of different interests of those parties, different land uses are preferred. For instance, in the case of Kopaszi Gát, the surrounding parts of the park were sold to private owners who established different companies, while others wanted to integrate this area more with the park. This may lead to a reduced accessibility for visitors of the park and therefore the park might attract fewer citizens.

In the study about environmental issues in Budapest, noise and air pollution have been investigated. Most citizens are exposed to a high noise level in District XI, especially when living next to the main roads and highways which mostly exceed 65 dB during daytime. The air pollution in District XI is mainly caused by heavy traffic. The concentration of air pollutants, like NO_2, is still in a not-acceptable range for European Union standards (above 40 $\mu g/m^3$). In the environmental theme, also waste management in District XI was analysed: interviews showed that it is not yet well established as no facilities are provided and citizens are not educated about waste prevention or waste separation.

Last, with respect to communication and cooperation, the communication between citizens and local authorities is limited. This is because citizens lack of empowerment toward the municipality. However, some practices that try to empower citizens are already present, for example the establishment of a mediator between those two parties. These practices should be more developed to improve the relationship between those two stakeholders. The cooperation between NGOs of this district, such as HuMuSz, and the Municipality of Budapest can be generally considered acceptable.

6. Recommendations

Noise and air pollution: vegetation as buffer zone

As mentioned, District XI suffers from a high level of noise pollution and air pollution. Here, it is recommended to position more high-growing vegetation, like trees or bushes, along heavy traffic areas, namely highways, main roads (like Budaörsi út, Bocskai út, Szerémi út, Fehérvári út) and busy junctions (like Móricz Zsigmond körtér). This can also be done along the railway, especially at Kelenföld station (the main railway station of District XI). In this way, the concentration of air pollutants could be reduced and residence areas could be sheltered from noise disturbance. The municipality should consider the function of vegetation as buffer zones when they plan the space.

Low budget projects by cooperation

Also a recommendation on funding can be given. First of all, the municipality should focus on projects for which a budget is easy available. Not- or inefficient used UGSs between large-panel system buildings can be for example developed by cooperating with the local community. In this way, the municipality is not the only investing party in these spaces and citizens can build up a community feeling by negotiating over their own plans for the space. Another possibility is a combination regarding the ownership of UGSs. The municipality could own the space but also cooperate with private investors. In that way, the UGSs could be equipped with the best possible facilities.

Alliances and citizens representatives

NGOs should establish alliances based on common goals to create a larger outreach towards citizens. In this way, both, NGOs and citizens, will have more influence on the political system. Information distribution should be improved in order to involve more citizens to the organized events. The establishment of an alliance can help to extend the outreach toward the residents. KÉK can also be part of the alliance and collaborate with other NGOs for the development and realization of its programs.

More ways to improve the social empowerment of citizens are to put priority on citizens' requests and having local representatives. In this way, the cooperation and communication between citizens and municipalities can be improved. Citizens will feel more involved and probably also get more active. This may also increase the community feeling. The sense of community may also get improved by making the gardens publicly accessible for everyone. This can help to get people involved in their own neighbourhood and make them feel part of it.

Education and communication on waste management

For waste management, better information distribution is necessary. The results from the questionnaire showed quite distinct opinions regarding waste separation in District XI and thus a communication lack between citizens and the local authority. It is therefore recommended to provide information on the website of the Municipality of District XI or to organize more educative workshops by NGOs, such as HuMuSz.

GEO-REPORT DISTRICT XIII

Drozdowska	Alexandra	880224200050
Liefting	Wendy	930329516090
Soethoudt	Marjolein	920112784110
Thipnoy	Kritsanu	830701829100
van Smeden	Jasper	861206771100
John-Herpin	Amandine	921024400140

WUR Consultancy Group

Wageningen University

Abstract

This report presents the field study findings of District XIII and is divided into four themes: Urban Planning, Usage of UGS, Environment and Health Effects, and Cooperation and Communication. It aims to describe the current situation and opportunities in District XIII.

Firstly it has been found that UGSs have a high availability in terms of existence, effective use of spaces, and funding, though 120.000 m² according to WHO recommendations. UGSs have a high accessibility in terms of reachability by public transportation, openness and safety. Accessibility of UGSs for dog-owners is limited due to the off-leash prohibition in public parks, and the explicit prohibition of dogs being in some specific parks.

When looking at the usage of UGS, most people visiting UGSs are relaxing and walking. Also, the multifunctionality of UGSs in District XIII is high thanks to facilities promoting the usage of UGSs for all age groups.

Environment and health effects like air pollution, noise pollution and the urban heat island effect are issues negatively affecting citizens in Budapest, the last two being triggers for citizens to visit UGSs. Also, the willingness of residents to separate organic waste is high.

Finally citizens are empowered to a high degree through involvement in decisions taken by the District Municipality, as well as through public participation and corresponding subsidies. However, the outreach of NGOs and communication about events are low and could be increased.

Table of Contents

1. Introduction

1.1. Purpose of the Report

The purpose of this geo report is to describe the current situation in District XIII (Angyalföld-Újlipótváros) in Budapest, Hungary regarding the following themes: Urban Planning, Usage of Urban Green Spaces, Environment and Public Health and Cooperation and Communication. Hereby it can contribute to a better understanding of the current situation of District XIII and also identify opportunities according to the themes. Also, this report can be used to make a comparison with the other districts under investigation. Urban Green Space (UGS) is defined as all publicly accessible green spots in Budapest. These UGSs can be parks, community gardens and courtyards.

1.2. Study Area

District XIII has 125.000 inhabitants (Gábor, 2015) and the surface area is 13,44 km^2 (Hungarian Central Statistical Office, 2015). It is located in the upper center of Budapest on the west side of the Danube and consists of three parts. Újlipótváros, the lower part is considered the inner center of the city. There, one can find a high number of malls, shopping centers and business offices. The part along the Danube is Vizafogó and is characterized by its high amount of companies and businesses (Gábor, 2015). The northern part Angyalföld is mainly a residential area for the working class (Budapestbylocals, 2015). Generally, the district is clean and well-kept (Globe Media, 2015) and there are many parks, courtyards and trees along the streets in District XIII (Gábor, 2015). The biggest green areas are Szent István Park and Margit Island Park which not only play a major role for the recreation of citizen but also for the attraction of tourists (Budapestbylocals, 2015). The study area is displayed in Figure 1.

Figure 1: Outline of District XIII, with red pointers indicating questionnaire handout points and yellow pointers indicating observation points.

1.3. Methodology

A triangulation method incorporating questionnaires, interviews and observations was used to retrieve data during a field visit between 21 September and 2 October, 2015. In District XIII 101 questionnaires were filled in total, with 51 of those being completed by people actually residing in the district. Within those 51 questionnaires, 23 took place in parks and 28 on streets. An overview of the questionnaire handout and observation points can be seen in Figure 1. Also, a total of 8 observations frames were completed in four different UGSs and one interview was held with the Head of Environmental Management in District XIII, Péter Gábor.

2. Urban Planning

In order to describe the current situation regarding Urban Planning, the theme is divided in two main parts: *Availability* and *Accessibility*. These are both, on their turn, divided into topics through which the themes are elaborated further.

2.1. Availability

Regarding the availability, *Existence* of UGS is the first topic that is addressed. In this chapter, questions like how much UGSs are there and what is the perception of the inhabitants on their distance to an UGS are discussed. The chapter *Sufficiency* investigates if these existing green spaces are sufficient by considering the relative amount of green per inhabitant in District XIII. The chapter *"Space waste"* contains the findings about where or in what kind of places District XIII have a waste of space and how the District Municipality is trying to reduce it. *Funding* elaborates on how District XIII funds or could fund the development of green spaces. Finally the chapter *Ownership* discusses about the influence of properties being public or private on the availability of UGSs.

Existence

According to the Hungarian Central Statistical Office, the total area of District XIII is 13,44 km^2 (Hungarian Central Statistical Office, 2013) of which 1,005 km^2 is maintained green area. The municipality of District XIII manages 881.000 m^2 of this green space, which are parks, recreational areas and also the green areas around streets, including 25.000 trees along these streets. The remaining 124.000 m^2 as well as the Margit Island area is managed by the City Municipality (Gábor, 2015).

A part of the questionnaire used in this project focused on the perception of the inhabitants on the distance from their home to the nearest UGS. The pie-chart below (**Fehler! Verweisquelle konnte nicht gefunden werden.**) shows that over 70% of the people who answered the questionnaire perceive the nearest UGS to be within 500 m and about 8% perceive it to be further then 1500 m. These results show that UGSs are "existent" in District XIII.

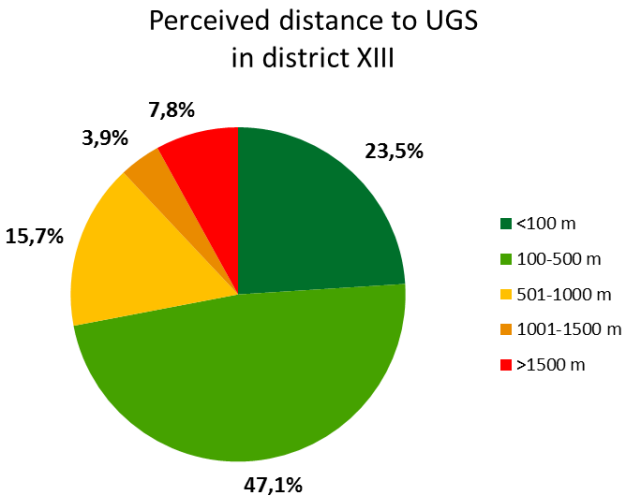


Figure 2: Percentage of inhabitants of District XIII answering the perceived distance from their home to an UGS, with 51 respondents.

Sufficiency

In the previous part, it has been demonstrated that UGSs are close for the majority of the inhabitants of District XIII. Also, it can be seen in the left map in Figure 3 that the actual distance from residential areas to UGSs in District XIII are often not further than 500 m which complies with previous results. However, when one compares this to the right map in Figure 3, a different image appears. This map shows the intensity of green in the district inpercentage. No parts in District XIII have an intensity between 85% and 100% and only a few areas show an intensity between 50% and 85%, one of those being the Margit Island Park. The majority of District XIII, and especially the residential areas, have an intensity of green below 25%.

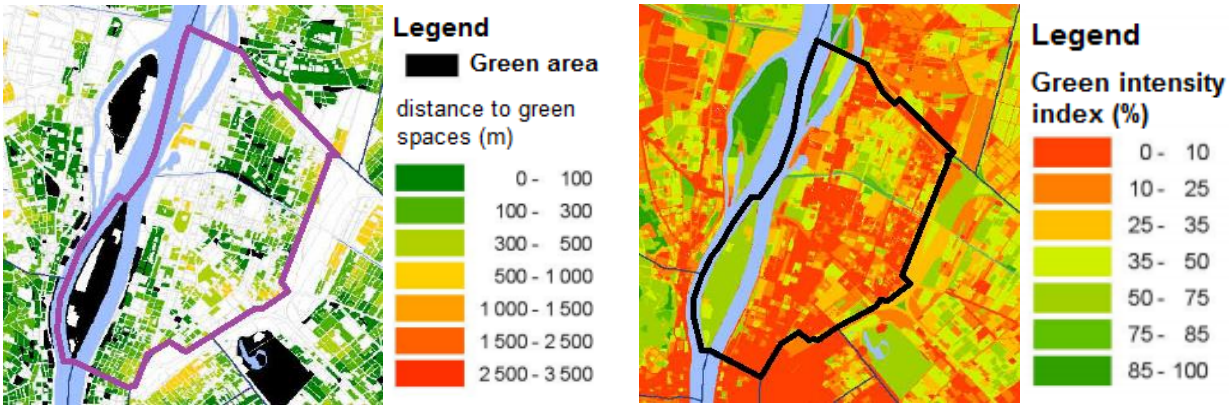


Figure 3: Distance to green areas (left) and intensity of green areas in % (right) in District XIII (Adopted from Budapest Főváros Vagyonkezelö Központ, 2011).

Furthermore, according to the World Health Organization, every inhabitant should have 9 m^2 of green area (WHO, 2010). District XIII counts 125.000 inhabitants who share 1,005 km^2 of managed green area (Gábor, 2015). This implicates an amount of 8,04 m^2 of green area per inhabitant. Compared to the recommended amount of green, the inhabitants of District XIII lack 120.000 m^2 of green area. All in all, these results indicate an insufficiency of UGSs.

"Space waste"

In general, many spaces are not used efficiently in Budapest: there are too many parking places, streets are too wide and there are unused open spaces. Thus, these spaces are considered "wasted" (Beleznay, 2015). While there are examples of "space waste" in District XIII, the municipality of District XIII has a way to deal with it. It gives the inhabitants the opportunity to use any of these open plots and to look after them. An incentive is even given by providing the people who decide to look after a plot with supplies like plants and tools. This way "space waste" is being reduced and public participation is increased (Gábor, 2015).

Funding

Regarding the funding opportunities in District XIII, they are high compared to other districts. “The municipality is rich because a part of the business tax paid by offices and international companies located along the river go directly to the District municipality. And there are many offices located in the district” (Gábor, 2015). The municipality has for the period of 2015 until 2019, an annual budget of 700 million HUF for the management of UGSs and an annual budget which varies between 426 and 737 million HUF for the development of UGSs (Helembai et al., 2015). Additionally, the municipality provides subsidies for the communities who are involved in the management of the community gardens. The budget for those subsidies is around 15 million HUF per year (Gábor, 2015).

Regarding the taxes paid by citizens, we asked people how much they agree with the following statement: “I would be willing to pay more taxes if more UGSs were developed”. More than 50% of the 46 respondents strongly agree/agree with the statement while less than 25% strongly disagree/disagree (Figure 4). This suggests that there is a tendency for citizens to support financially the development of UGSs in District XIII.

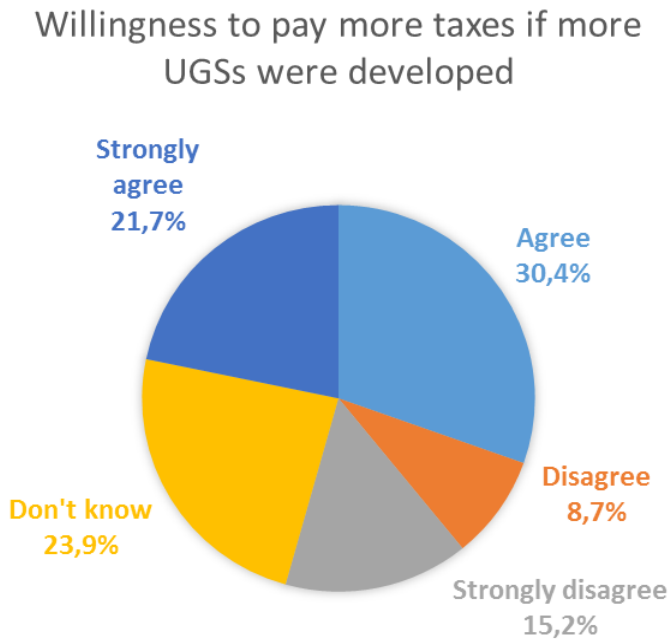


Figure 4: Result of questionnaire to the statement "I would be willing to pay more taxes if more UGSs were developed, with 46 respondents.

Ownership

Like in other districts of Budapest, UGSs can be owned either by the municipality of the district or by the city municipality. In District XIII, Margit Island Park and Szent István Park are owned by the city municipality (Vice Mayor of Budapest, 2015), 881.000 m² of green spaces by the district municipality (Gábor, 2015) and the rest by private parties. In general, the problem in Budapest is that most unused spaces are owned by private parties. These are difficult to convert into UGSs because the proprietaries are afraid to be financially disadvantaged (Clean Air Action Group, 2015).

2.2. Accessibility

Similarly to the previous theme, Accessibility is divided into sub-topics. The first topic *Reachability* is about the accessibility of UGS by public transport. In the second topic *Permission* is discussed whether certain groups or individuals are allowed to enter an UGS or not. Next, the topic *Openness* investigates if physical access to an UGS is given or not, thus, if UGSs are open or locked and if opening hours are limiting the accessibility. Lastly, *Safety* is about the perception of potential danger in UGSs which can restrain someone from accessing them.

Reachability

In Figure 5 and 6 is shown the reachability by bus, metro and tram of the four parks that have been observed during fieldwork. An orange pointer stands for a bus station, a red pointer for a metro station, a purple one for a tram station and finally, a blue pointer stands for a ferry dock.

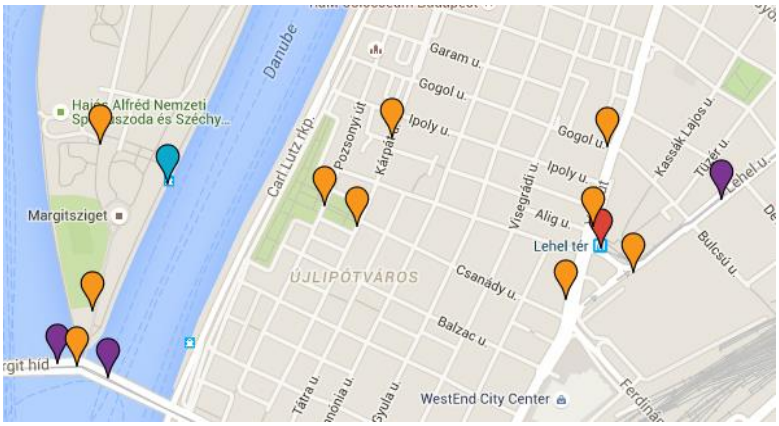


Figure 5: Reachability by transport of Margit Island Park (South-Part), Szent István Park and Bulcsú Park.

Figure 6: Reachability by transport of river side observation point.

Here, it becomes visible that the reachability of the observed parks is quite high. Bulscú park is the best reachable in regard to its low distance from the “Lehel tér” metro station. Apart, the other parks are all accessible by bus. Of the other green spaces that we didn’t observe but only walk through, all had a public transport connection at or less than two blocks away; Gogol street garden (1 bus), Tisza dog running space (4 buses), Dráva park (1 metro and 4 busses), Karpát playground (3 buses) and Duna terrace teenager playground (2 buses and 1 boat-bus). Generally, the green spaces in District XIII are well accessible in terms of transport.

Nevertheless, pedestrians are more likely to have difficulties in reaching green areas from where they live and therefore might need another form of transportation (Strenchock, 2015). While this was not the case in the green spaces that we visited, the study area was limited to the core of the district and so may not be representative of the district as a whole.

Permission

In regard to the topic of permission, the biggest conflicts exist between dog owners and policy maker. First of all, because dogs are not allowed to enter some of the UGS (Figure 7). Second, because dogs are not allowed to be without the lead in parks in general, even if the dogs are trained. For this reason, there is an experimental project going on in District XIII which is not a park, but more an "integrated park" where dogs are allowed to be off-leash. This project aims to prove that it's possible to let trained dogs without the lead in parks. Furthermore, the existing regulations are not necessarily being followed by the citizen (Gábor, 2015).

Figure 7: Examples of prohibition panels for dogs in District XIII.

The second permission issue concerns community gardens in the district. Since the municipality provides subsidies for the maintenance of community gardens but only the management board of the involved communities is permitted to apply for it (and therefore receives the money), some residents complain because they do the gardening and don't get the money. Thus, community members would encourage getting the permission to apply for the subsidies individually. However, there is also a positive aspect: individuals who are not part of any of the communities can make agreements with the maintenance company if they want to do some gardening in a specific spot. Then, the company gives the official permission and provide the needed tools and plants (Gábor, 2015).

Openness

While visiting the district, we didn't experience the situation of not being able to enter an UGS because it was locked. Nevertheless, some parks are closed during the night such as the Szent István Park which is closed from 9pm until 6am. Comparatively, the Margit Island Park is fenceless and therefore is open for access all the time.

Additionally, it can be mentioned that community gardens are not fenced in District XIII in contrast to other districts of Budapest where most of them are fenced and locked. Thus, openness is comparably higher which can have a positive influence on the local public participation. Indeed, this view is supported by Strenchock who said, "*What is the good in having a garden with a fence and barb wire around it?*" (Strenchock, 2015).

Safety

In District XIII, public opinion polls about their perception of the existing UGSs are regularly filled in by citizen. In these polls, people are asked to give marks from 1-5 for i.a. the safety of UGSs. With the results of the polls, the company responsible for the management of UGSs can monitor and improve the UGSs when needed (Gábor, 2015).

However, we noticed a highpercentage of homeless people in the Bulcsú Park which might affect the willingness of visitors to enter the park. In contrast to the Bulcsù Park, no homeless people were spotted in the Szent István Park but rather a high number of families, which can indicate a high safety of the place. Similarly, the Margit Island Park is overcrowded and suggests that people feel safe there (Gombos, 2015).

Lastly, we noticed that parks were often under video surveillance which might increase a feeling of safety. The picture on the left has been taken in the Duna-Terasz teenager playground (Figure 8).

Figure 8: Video surveillance panel in District XIII.

3. Usage of UGS

In District XIII, four UGSs have been observed for 30 minutes. The observed sites consist of three public parks, namely Margit Island Park, Szent István Park and Bulcsú Park, and one green spot which is not an official park located on the junction of the Danube river bank with Latorca Street and Árpád Bridge.

3.1. Performed Activities

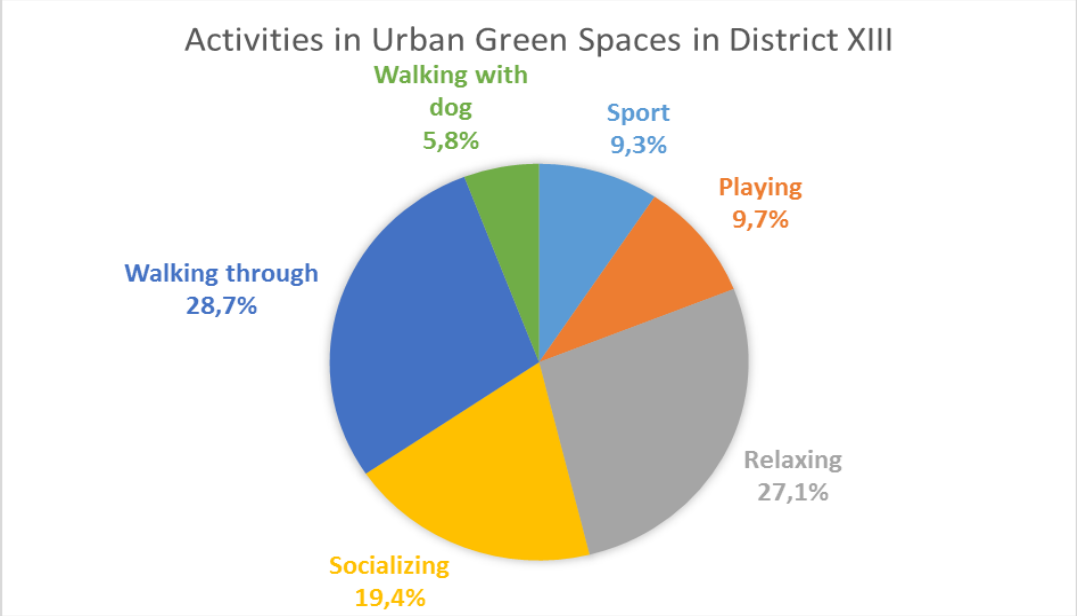


Figure 9: Activities in UGSs in District XIII, in percentages.

From the observation of these sites was found that public green spaces in the area are used for various purposes. In Figure 9**Fehler! Verweisquelle konnte nicht gefunden werden.** a pie chart shows the results of the observation: results indicate that parks are mainly used for walking. However, people use green spaces also for personal relaxation, such as sitting on bench, reading, eating, sleeping or smoking. In addition, people visit green spaces for socializing – chatting or discussing with friends or looking after their kids. Another reason for people to visit green spaces was the usage of these areas for playing. In all observed public parks, there is a playground for children to enjoy free time. Likewise, green spaces, especially large public parks (Margit Island and Szent István Park) were used as a place for doing sports or exercising, such as strolling and jogging. Furthermore, in every observed sites many people walked their dogs.

3.2. Multifunctionality

During the field visit in District XIII, several UGSs were visited, with either a specific use function or a multifunctional use depending on the target group. The first function of an UGS is providing a place for relaxation, thus all of visited sites served this purpose by providing basic facilities for such as benches or chairs.

In general, almost all visited green spaces are multifunctional. Besides a place for relaxation, they also provide a playground for children, sport courts, recreation spaces and walking areas. Moreover, a public park which had variety of flower species, Szent István Park, was used as an open air classroom to educate visitors as well. Therefore, UGSs in District XIII were used for activities for all age groups. Nevertheless, some green spaces were used for one specific purpose or target group. For example, there were special areas for people walking with a dog or there were areas only used as a playground for children activities.

3.3. Maintenance

There are two levels of responsibility in management and maintenance of UGSs in the district depending on the ownership of the area. The first level is the municipality of Budapest. Two big public parks, namely Szent István Park and Margit Island, and common green spaces beside main streets were managed and maintained by Főkert Nonprofit Zrt., a company financed by the Municipality of Budapest (Vice Mayor of the City of Budapest, 2015.) The second level is the district municipality that owns the public services company XIII. Kerületi Közszolgáltató Zrt (Gábor, 2015.)

All in all, from four observed urban green areas, three public parks were maintained well. Especially in the Bulcsú Park, equipment and facilities were still in a good condition because of sufficient financial support by the district. In the two public parks belonging to the municipality of Budapest, damage rate of facilities, i.e. benches, was approximately 10%. Nonetheless, observations were executed in the beginning of autumn, so there were plenty of leaves on the ground, this means that the frequency of maintenance should be based on weather and seasons. Unlike public parks, the green spot next to the Danube is not maintained at all. Such as litter on the ground, leaves, dried tree branches and plastic rubbish. However, this might be due to the fact that this is not an official park and that therefore, no party is responsible for its maintenance.

3.4. Security

The majority of the visited green spaces are surrounded by fences. The vice mayor of the City of Budapest explained that the city installed fences around playgrounds in order to prevent children from dog bites (Vice Mayor of Budapest, 2015). Furthermore, as mentioned in Chapter 2.2.4., closed-circuit televisions (CCTV) are ensuring the safety of users in some of the UGSs in District XIII.

4. Environment and Health Effects

Environmental and public health is identified as another important theme. Within this theme multiple topics came forward, such as: air pollution, noise pollution, urban heat island effect and organic waste management.

4.1. Air Pollution

Pollution of the air is mainly caused by transport, furthermore by construction work and industry to a less extend (Regional Environmental Centre, 2015; Clean Air Action Group, 2015). In **Fehler! Verweisquelle konnte nicht gefunden werden.**10 the annual average concentrations of PM10 and NO_2 are indicated. The European annual average standard for PM10 and NO_2 is 40 µg/m^3.

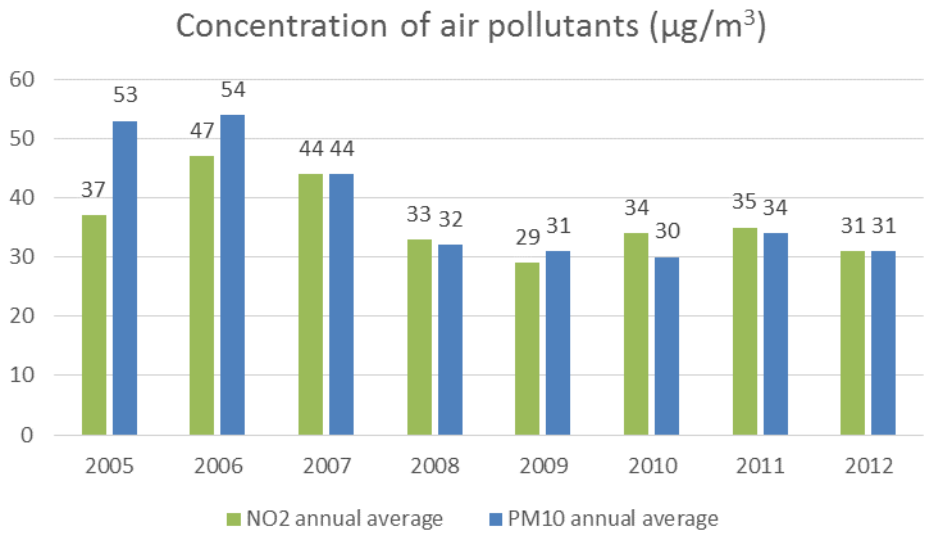


Figure 109: Concentration of air pollutants (Budapest Környezeti Állapotértékelése, 2014).

As shown in Figure 10**,** annual average values of NO_2 are fluctuating. However, the annual average concentration of both NO_2 and PM10 have decreased to values complying with the European standard.

According to Regional Environmental Centre, health problems related to air pollution increase respiratory illnesses. As an example they mention that there is an increase in asthma in young children and adults. Estimated is that 25% of the inhabitants of Budapest suffers from respiratory illness (Regional Environmental Centre, 2015).

4.2. Noise Pollution

Noise is defined as an unwanted sound that disturbs people or prevents people from hearing preferred sounds (Stansfeld, 2003). Noise pollution in Budapest is mainly caused by traffic. Along streets and road junctions, noise pollution can reach 70-75 dB, which is 12-14 dB higher than the acceptable level of noise according to the European standard (Pogány al., 2014).

Questionnaire results show that noise is perceived by respondents of the questionnaire as a problem: 29,4% out of 51 respondents strongly agree/agree with the statement “I visit UGSs because there is less noise”. These results suggest that noise is a form of environmental pollution in District XIII.

4.3. Urban Heat Island Effect

The Urban Heath Island effect is based on the theory that urban areas have a higher temperature than rural areas due to the higherpercentage of paved areas. This difference can be up to 10 degrees Celsius (REC, 2015). Increased temperature has effect on citizen health and contributes to premature deaths (Zupancic et al., 2015). Therefore, UGSs are deemed to decrease the urban heath island effect because they are unpaved. According to Gabor, the lower temperature in UGSs is the main reason for citizens in District XIII to visit them (Gábor, 2015).

4.4. Organic Waste Management

Within UGSs, with emphasis on community gardens, organic waste can be used as a organic fertilizer. During the field visit in District XIII no organic waste bins have been observed. However, questionnaire results show that 82,6% of the respondents thinks that the municipality supports re-usage of organic waste (Figure 11). Under the assumption that all respondents have the correct understanding of organic waste, it can be stated that there is a mismatch between municipality support, citizens use of organic waste to make compost and facilities to collect organic waste.

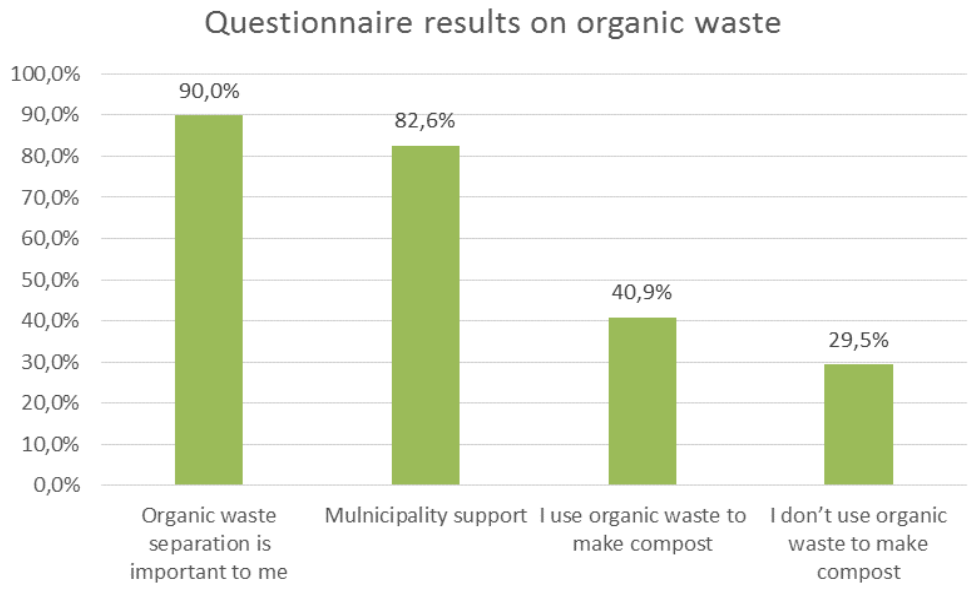


Figure 11: Questionnaire results on organic waste in District XIII, with 46 respondents per statement.

From all respondents, 90% think organic waste is important, 40.9% use organic waste to make compost and 29.5% do not. Therefore, an increase in facilities might lead to an increase in citizens using organic waste to make compost. Doing so, it creates awareness about the origin of their food and can be used as organic fertilizer. Furthermore it creates a smaller cycle of nutrients used to produce food.

5. Cooperation and Communication

5.1. Empowerment

Although there is a general low citizen empowerment throughout Budapest (Vice Mayor of Budapest, 2015), it can be considered higher in District XIII thanks to the District municipality's public outreach program and collaboration with local NGOs. According to Péter Gábor, the current Head of Environmental Management in District XIII, the District does public participation to gauge the wants and needs of the community to prevent complaints after new projects have been funded and completed. Initially, the District held public opinion meetings for new project developments but the turnout was very low so they have started also conducting public opinion polls (Figure 12) and questionnaires to see what the majority of citizens want and not just the vocal few. This is followed with opinion polls also being conducted after project completion to measure public satisfaction and improvement. Over all the District finds this process of having "public participation, questionnaires and forums" to be "quite successful" (Gábor, 2015).

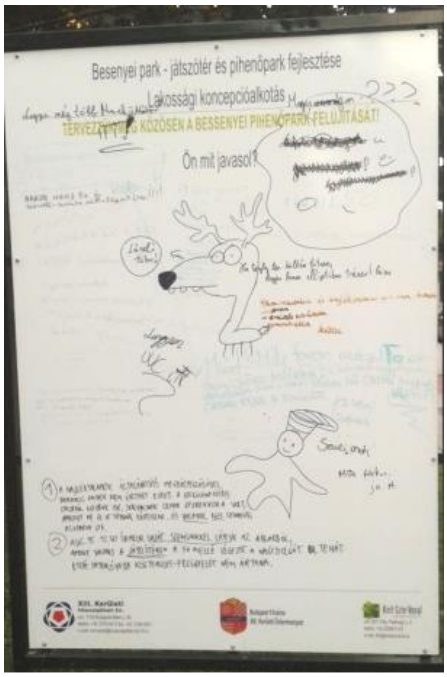


Figure 12: Public opinion polls in District XIII.

The governmental public services company, XIII. Kerületi Közszolgáltató Zrt, tries to involve citizens in simple maintenance of green spaces by organizing workshops and meetings, and the District also has funding to support community housing organizations (currently 108 communities participating) who would like to build and maintain gardens near their homes. Yearly, funding is given based on the square metres of the green space and the District continues to monitor the space and if necessary to maintain it. This maintenance fund can be increased if the green space is deemed within the "Top 20" in the district, motivating communities to maintain and improve their green spaces. For those not part of a community housing organization, the District offers individuals resources such as plants and tools. The District wants to be viewed as encouraging and welcoming for those wanting to become active and to "change how people are connected to their environment". It is trying to make citizens feel like they are the owner of public spaces, which would also encourage the voluntary maintenance of those areas, leading to less maintenance costs (Gábor, 2015).

5.2. Cooperation

District XIII works closely with a dog owner association to develop and improve UGSs for dogs. The association believes that if dogs are trained then they should not have to be on a leash, but the law is difficult to change so the District has created an experimental park to test if a dog training/license program is a viable alternative (Gábor, 2015).

5.3. Outreach of NGOs

When asked to list an NGO active in UGSs in District XIII,78% (out of 51) respondents originating from the district were unable to name any. Therefore, it can be stated that there is a lack of perceived NGO outreach in District XIII. The NGOs named in the questionnaire are Greenpeace (3), UNCLEAR (3), 13th District Adopt A Garden, Geocaching hu cito mozgatmal, Kerteszet, Keruiet, FLF, and Főkert, which is not actually an NGO.

5.4. Communication

Concerning the attendance to events organized within the district, 74% (out of 46) respondents living in District XIII declared having attended an event in the past 6 months. In general, 91% agreed/strongly agreed (out of 42) that organized events are important to community. However, 72% of respondents (out of 42) stated they would attend more events if they were better informed and 44% (out of 41) stating they would like to currently participate in UGSs in their neighbourhoods. This indicates that the information distribution in District XIII needs to be improved and would have a large benefit on social cohesion. Overall, it can be stated that there is great potential for community building if information distribution is increased.

6. Conclusion

This report aims to describe the current situation concerning UGSs in District XIII according to the four themes. The following text will highlight and conclude on what were found to be the most distinctive features of District XIII.

In District XIII UGSs are close and are perceived as close to the residential areas. However, by taking WHO recommendations into account, there is no sufficient amount of green area. Thus the existence of UGS itself is not a crucial point, but sufficiency is. Though, District XIII seems to be working on this. First of all, the municipality of District XIII not only has money, it is also putting (part of) this money into the development of UGSs. It is even doing this in multiple ways, by developing and maintaining UGSs themselves, by financially supporting communities that want to maintain an area and by providing citizens that are not in a community with tools to create and/or maintain a green area. Additionally, not only the district municipality is willing to fund the development of UGSs, but also the majority of citizens are by willing to pay taxes.

A current concern in District XIII that became evident during the fieldwork is the dog issue. In many parks dogs are not allowed or have to be on a lead, also some parks have special dog areas. This reduces the accessibility of a park and frustrates dog owners. The collaboration between the dog owner association and the municipality resulted in the experimental project with the ambition to allow dogs to walk free if they have a license. This collaboration and its result give a nice example of how cooperation with a district municipality can go and it contributes to more accessible green areas.

A high multifunctionality was found in the observed parks in District XIII. For every age group and type of people there are facilities in the parks. This high multifunctionality reflects the aim of the municipality to satisfy all citizens.

In regards to health issues in District XIII, residents are negatively affected by both the urban heat island effect and noise pollution and are therefore visiting UGSs: they are cooler and less noisy. Since the local authority in District XIII has on the top of its agenda the residents' satisfaction, those are additional reasons to fund the expansion and improvement of UGSs.

However, the local authorities funding mismatches citizens` interest for organic waste management. Currently, organic waste is not separated in District XIII although most residents are interested in it. An increase in facilities might lead to an increase in citizens separating organic waste and even using it to make compost.

Generally, citizens are very much involved in the development of the district's UGSs through questionnaires, public opinion polls, workshops and community gardening. Citizens' empowerment is high and individuals are welcomed and encouraged to participate in order to connect to their environment. The two main instruments for high participation are first, citizens' involvement in decisions and second, the provision of subsidies as an incentive.

Even though the outreach of the local authority is high in District XIII, the same doesn't apply for the outreach of NGOs. Most people are not informed about NGO's active in their district. Furthermore, there is a lack of information distribution about organized events in the district. Residents are willing to participate to events and declare that they would attend to events more often if they were better informed. All in all, there is potential for further community building in District XIII.

7. Recommendations

From the conclusions certain opportunities arose which are now converted into recommendations for KÉK, for the future development of UGSs in Budapest.

In view of the finding that District XIII is willing to be greener and is even already working on becoming greener, this district can be used as an example for other districts. Especially some of the ways how District XIII is doing this can be seen as best practices: the way the municipality spends its money, the way it stimulates citizens to use open spots and how it communicates with citizens to find out about their level of satisfaction. All these practices could be used as an example for other districts in order to later introduce them there as well.

While this district doesn´t need to be *convinced* to become greener, it is still possible to support the district with its development for reaching a sufficient amount of green area and for raising social cohesion in the district. An example of how these types of support can be combined is by organizing new events. For instance a dog/owner-get-together day. Since dog walking is such an issue in District XIII, there is a possibility to combine the drive for the development of free dog parks with the development of green space. Hereby, joining forces with the dog owner association could create the possibility to increase social cohesion and the amount of green. Moreover, the existing collaboration between the dog owner association and the municipality can be an opportunity for KÉK to expend their network and eventually create a working relationship with the municipality.

In District XIII the detected low outreach of NGO's combined with the high willingness of citizens to participate in events when more informed, creates an opportunity for KÉKs existing events to get more attention. A recommendation here would be not to focus on convincing the municipality of District XIII, but to focus on improving KÉKs outreach to District XIII citizens.

Annex M References

Alföldi, G., & Kovács, Z. (2008). *The future of our cities–joint responsibility and joint green action*. Városi Zöld Könyv–Urban Green Book, 100-103.

Alnwick Garden (2015). *The Poison Garden*. Retrieved 20 October 2015, from http://www.alnwickgarden.com/explore/whats-here/the-poison-garden

Budapest Főváros Vagyonkezelö Központ (2011). *Budapest városfejlesztési Koncepciója helyzetelemzés* (1st ed., Chapter 8). Budapest. Retrieved October 14 2015, from http://budapest.hu/Documents/varosfejlesztesi_koncepcio_2011dec/08_Terulethasznalat_Beepites.pdf

Budapest.com (2015). *Gellért Hill - Budapest Monument of art*. Retrieved 7 October 2015, from http://www.budapest.com/city_guide/sights/monuments_of_art/gellert_hill.en.html?sid=0m8cm5oj4efavon37db4n5a395

Budapestbylocals (2015). *Budapest Districts and Neighbourhoods Guide with Map*. *Budapest By Locals*. Retrieved 15 October 2015, from http://www.budapestbylocals.com/budapest-districts.html

Buzási, A. (2014). Will Budapest be a climate-resilient city? - Adaptation and mitigation challenges and opportunities in development plans of Budapest. *European Journal Of Sustainable Development*, *3*(4), 277-288.

DBR Metro Project Directorate (2015). *M4 főbb adatok - Metro 4*. *Metro4.hu*. Retrieved 8 October 2015, from http://www.metro4.hu/m4_fobb_adatok.php

European Commission (2015). *Air Quality Standards - Environment - European Commission*. Retrieved 13 October 2015, from http://ec.europa.eu/environment/air/quality/standards.htm

European Environmental Agency (2013). *Municipal waste management in Hungary*. Retrieved from eea.europa.eu%2Fpublications%2Fmanaging-municipal-solid-waste%2Fhungary-municipal-waste-management&usg=AFQjCNEhmv7l2_-vG1mpnbEP4q2faTMR2A

Eurostat (2014). *New Eurostat Website - Eurostat*. Retrieved 7 October 2015, from http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/data/database

Globe Media (2015). *Areas and suburbs in Budapest*. *Expat Arrivals - Local Info for Global Expats*. Retrieved 15 October 2015, from http://www.expatarrivals.com/hungary/budapest/areas-and-suburbs-in-budapest

Greenkeys (2015). *GREENKEYS - Budapest, Matyas ter*. Retrieved 7 October 2015, from http://www.greenkeys.org/en/pilot_projects/Budapest.html

Groenblauwe netwerken (2015). *Portland, Oregon, VS | Groenblauwe netwerken*. *Groenblauwenetwerken.com*. Retrieved 7 October 2015, from http://www.groenblauwenetwerken.com/projects/portland-oregon-us/

György, A. (2011). *Magdolna Quarter Program*. Presentation.
Helembai, M., Braun, J., Gábor, P., Juhász, C., Borbényi, Z., & Erő, Z et al.. (2015). *AngyalZÖLD+ stratégia és program 2015-2019* (1st ed.). Budapest. Retrieved October 14, 2015 from http://www.angyalzold.hu/web/uploads/angyalzold_plusz.pdf

Hungarian Central Statistical Office (2014). *Magyarország közigazgatási helynévkönyve 2014. január 1 - Gazetteer of Hungary 1st January, 2014*. Budapest: Hungarian Central Statistical Office.

Hungarian Central Statistical Office (2013). *KSH Statinfo v39 | Témakör választó*. Retrieved 9 October 2015, from http://statinfo.ksh.hu/Statinfo/haViewer.jsp

Kolbe, J., & Wüstemann, H. (2014). *Estimating the value of Urban Green Space: A hedonic pricing analysis of the housing market in Cologne*, Germany (No. 2015-002). SFB 649 Discussion Paper.

Kondor, A., & Horváth, D. (2008). Challenges and experiences of a participative green space development in Budapest-Józsefváros. *Urbani Izziv*, *19*(2), 174-182. http://dx.doi.org/10.5379/urbani-izziv-en-2008-19-02-008

Magrab, E., & Jackson, F. (1973). Noise control. *C R C Critical Reviews in Environmental Control*, *3*(14), 61-83.

Nicolopoulou-Stamati, P., Hens, L., & Howard, V. (2005). *Environmental health impacts of transport and mobility*. Dordrecht: Springer.

Onder, S., & Kocbeker, Z. (2012). Importance of the green belts to reduce noise pollution and determination of roadside noise reduction effectiveness of bushes in Konya, Turkey. Turkey. *World Academy of Science, Engineering and Technology*, 66, 639-642.

Pogány, A., Niedetzki, A., Zsombor, T., Zétényi, D., Orosz, I., & Attila, R. et al. (2014). *BUDAPEST KÖRNYEZETI ÁLLAPOTÉRTÉKELÉSE 2014* (1st ed.). Budapest: Budapest Főváros Önkormányzatának Főpolgármesteri Hivatala Városüzemeltetési Főosztály. Retrieved October 14, 2015, from http://budapest.hu/Documents/Bp%20K%C3%B6rnyezeti%20%C3%81llapot%C3%A9rt%C3%A9kel%C3%A9se%202014.pdf

Rév8 (2007). *Regeneration Program in Budapest - Józsefváros, Magdolna Quarter Program* (1st ed.). Retrieved October 14, 2015, from http://ujrev8.epiteszforum.hu/wp-content/uploads/2013/02/Regeneration_Program_in_Magdolna_Quarter_2007.pdf

Rév8 (2015). *About Rév8 Plc. | Rév8*. *Rev8.hu*. Retrieved 7 October 2015, from http://rev8.hu/english/about-rev8-ltd

Sanders, P. (2012). How Traffic Jams Affect Air Quality. *Environmental Leader*. Retrieved October 14, 2015, from http://www.environmentalleader.com/2012/01/05/how-traffic-jams-affect-air-quality/

Shah, P., & Balkhair, T. (2011). Air pollution and birth outcomes: A systematic review. *Environment International*, *37*(2), 498-516. http://dx.doi.org/10.1016/j.envint.2010.10.009

Stansfeld, S. (2003). Noise pollution: non-auditory effects on health. *British Medical Bulletin*, *68*(1), 243-257. http://dx.doi.org/10.1093/bmb/ldg033

Taylor, R. (1988). *Human Territorial Functioning*. Cambridge: Cambridge University Press.

WHO (2010). *Urban planning, environment and health - From evidence to policy action*. Copenhagen: The Regional Office for Europe of the World Health Organization. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0004/114448/E93987.pdf?ua=1

WHO (2015). *WHO | Background information on urban outdoor air pollution*. Retrieved 13 October 2015, from http://www.who.int/phe/health_topics/outdoorair/databases/background_information/en/

Zhang, L., Guan, Y., Leaderer, B., & Holford, T. (2013). Estimating daily nitrogen dioxide level: Exploring traffic effects. *Ann. Appl. Stat.*, *7*(3), 1763-1777. http://dx.doi.org/10.1214/13-aoas642

Zupancic, T., Westmacott, C., & Bulthuis, M. (2015). *The impact of green space on heat and air pollution in urban communities: a meta-narrative systematic review* (1st ed.). David Suzuki Foundation. Retrieved October 14, 2015, from http://www.davidsuzuki.org/publications/ImpactofGreenSpaceonHeatandAirPollutioninUrbanCommunities.pdf

Interviews

Baranyi, K. District IX Municipality. September 23, 2015. Budapest, Hungary.

Beleznay, E. Former chief architect of Budapest. September 29, 2015. Budapest, Hungary.

Chief Gardener Department District VIII. September 28, 2015. Budapest, Hungary.

Clean Air Action Group. NGO. September 23, 2015. Budapest, Hungary.

Főkert. Nonprofit ZRT. September 23, 2015

Food Not Bombs. NGO. September 28, 2015. Budapest, Hungary.

Gábor, P. Head of Environment Department, District XIII Public Service. September 29, 2015. Budapest, Hungary.

Gombos, A. Department of Urban Planning, Municipality of Budapest. October 7, 2015. Email correspondence.

HuMuSz. NGO September 23, 2015. Budapest, Hungary.

Mako, A. Beyond Budapest Tour Guide. September 29 2015. Budapest, Hungary.

Mezösi, T. Owner of Street Food Karavan. September 24, 2015. Budapest, Hungary.

Mindspace. NGO. September 25, 2015. Budapest, Hungary.

Municipality XI. September 25, 2015. Budapest, Hungary.

Polyak, L. Architect. September 25, 2015. Budapest, Hungary.

Professor. Ornamental Horticulture/ Floriculture and Dendrology, Corvinus University. September 22, 2015. Budapest, Hungary.

Regional Environmental Centre. NGO. September 24, 2015. Budapest, Hungary.

Strenchock, L. Environmental and Sustainability Officer at Central European University. September 25, 2015. Budapest, Hungary.

Szűcs B., - main architect District IX. September 23, 2015. Budapest, Hungary.

Szabó, R. Environmental Officer – District VII. October 11, 2015. Email correspondence.

van Hove, B. Assistant Professor, Air Quality, Wageningen University. September 17, 2015. Wageningen, Netherlands.

Vessey, P. Gardener at Street Food Caravan. September 24, 2015. Budapest, Hungary.

Vice Mayor of Budapest. September 28, 2015. Budapest, Hungary.