



TROJA II REPORT

Dorien DIERKX
Stephan van der LINDE
Dimitar NACHEV
Merel SCHELTEMA
Bingnan SONG
Kuddusbek TASHPULATOV

JUNE 25, 2016
WAGENINGEN UNIVERSITY AND RESEARCH CENTER

Table of Contents

Chapter 1. Introduction	1
Chapter 2. Key Research Findings.....	2
2.1 Environment.....	2
2.1.1 Physical Characteristics	2
2.1.1 Networks.....	3
2.1.3 Societal Presence.....	4
2.2 Organisation	6
2.2.1 Metropolitan Plan.....	6
2.2.2 Stakeholder Analysis.....	7
2.2.3 Public Perception.....	9
2.2.4 Management and Maintenance	11
Chapter 3. Scenario Development and SWOT Analysis.....	13
3.1 Themes	13
3.2. Scenario Development	14
3.2. SWOT Analysis.....	15
Chapter 4. Conclusion	17
References	18
Annex 2.1	19
Annex 2.1.1 - Grid map for observations	19
Annex 2.1.2 - Table for interviewees	20
Annex 2.1.3 - Methodology.....	22
Annex 2.1.4 - Ecology – Species available within the area:	23
Annex 2.1.5 - Arnstein’s Ladder of Citizen Participation	24
Annex 2.1.6 - Land use map Troja II	25

Chapter 1. Introduction

The main objective of this report is to identify opportunities and threats for addressing potential future developments of the Troja II hillside. Troja II is located north of the historical city centre, the location is indicated in the map underneath. The western part of Troja II falls within the Troja Municipal District, while the eastern part is within Prague 8.



Figure 1. Map of Troja II

Data was collected through several methods, these include questionnaires, observations, and interviews with experts and stakeholders. Secondary research included the study of literature, policy documents, and with the so-called layer approach. Other methodology details can be found in Annex 2.1.3.

This report is structured as follows: the first chapter contains this introduction, followed by the second chapter which shows the results from the analysis and collected data. This chapter is split up into two main themes: environmental and organizational. The environmental theme will mainly adopt an adaptation of the layers approach and will look at the physical layer (ecology, functions, and services), the network layer (transport, connectivity, bio-corridor, human accessibility), and the occupational layer (ownership and land use) (van Schaick & Klaasen, 2011). The organizational theme focuses on current and future policies, management, stakeholders and public perception. The third chapter contains scenario's and a SWOT analysis of the current situation.

Chapter 2. Key Research Findings

2.1 Environment

2.1.1 Physical Characteristics

Geology

The river Vltava runs through the city of Prague and deposited alluvial soils over the centuries on the banks, the most fertile soils can be found along these banks (Královec, 2006). The thickness of the soil layers varies between two meters and deeper than ten meters. The main soil layers consist of loamy or sandy soil, mostly deposited by historical fluvial deposits. Some locations contain (small) deposits of mica schist nodules or calcareous loess.

Hydrology, land degradation and landslides

For Prague hillsides rainwater retention is very important and one of the most important services that should be improved (Interview 6). Although, some mention this for the total Prague area, others indicate that there is no direct need for rainwater retention in Troja. From interview 7 it becomes clear that landslides are not occurring regularly in the Troja district and neither in Prague. This can indicate the state of the hillsides and that sufficient amount of vegetation that prevents landslides.

Ecology

Troja II is partially covered by the protected park, Drahaň-Troja Natural Park. This park contains several areas with different protection levels, within Troja II the protected area Trojská can be found. The Drahaň-Troja Natural Park contains many animal species and over 1000 vascular plant species (Hrčka, 2007). Trees and bushes provide enough food for birds, rabbits, and wild pigs (Interview 7), also a lot of insects can be found (See Annex 2.1.4). In interview 7 it is mentioned that the orchards are ideal to feed species, especially for insects, there is an orchard in The North of Troja II. However, possible development of the orchard or neighbouring area could be a threat to various species. Although animals do not influence the state or quality of the vegetation, the quality and amount of vegetation influences the amount of animal species (Interview 7).

Vegetation type & biodiversity

History

The Trojská Nature Monument, is a protected area shaped by the presence of rare insects, wasps and bugs, which can survive at that spot due to the microclimatic and soil conditions (Hrčka, 2007). Generally speaking, areas get a protected status due to the influence of historical aspects of nature, although, the presence of red list species also contributes to the establishment of protected nature zones (Interview 7). Historically no pine trees grew on the Prague hillsides (Interview 7), most of the trees were deciduous trees with different kinds of shrubs and plants.

Current situation and Invasive species

Currently, some pine trees can be found in Troja, this is partially influenced by the botanical garden (Interview 7). Air pollution and eutrophication of the soil allowed species with other nutrient demands to penetrate the area (Hrčka, 2007). Both invasive as indigenous species present in Troja II can be found in the Annex.

Visual quality of green and environmental quality

Generally speaking, the visual quality of the green can be described as, relatively green mainly with dense vegetation and constructions at some points. The hillside has a limited external view scope due to the built-up character of the area. On top of the hillside, there are some private houses

situated on places that offer a scenery over the city, however, these views are often blocked from public access. Interestingly to note, agreements are made with the collected owners of plot 778 that the scenery of the hillsides must be open for the public.

Hence, green layers of the forest make the hill an attractive scene for the residents living to the south of the area. Some green areas are densely forested with trees and shrubbery, whilst some are more open. A large variety of green is present, although a lot of litter is also present. Observations conducted at locations F10, H9, G10 and J8.

Air quality

Troja II has relatively low emission levels of NO₂, while the pollution limit is 40 µg/m³ (geoportal website). In the Troja II area quantities can be found from under 20 µg/m³ up to 30 µg/m³. Although, concentrations of NO₂, and SO₄ are mostly higher than the limit but still better than in other parts of Prague (Interview 7). The rich amount of vegetation on the Troja II hillsides can be considered as beneficial for the air quality.

Microclimate

The microclimate is an interesting aspect in Prague, due to the hills there can be quite some differences between locations and their microclimate. The hillsides are really good ventilation routes to combat the urban heat island (Interview 6). The function in relation to the microclimate of the hillsides is partially related to the topographical location of Prague, the hillsides are as formative as the river itself (Interview 17).

2.1.1 Networks

Bio-corridors

Bio-corridors form linkages between green areas that allow animals to move from one place to another, thus enhancing biodiversity. However, the connectivity of the bio-corridors differs between areas and often lacking (Interview 7). The bio-corridors in general are poorly maintained and the quality is relatively low but there are opportunities for good routes (Interview 6).

There are lots of opportunities to increase the potential of bio-corridors, additional corridors could enhance biodiversity for instance (Interview 7). Other opportunities can be found in the linkages and the services they provide for the hillsides and the city of Prague in general. Bio-corridors are not only beneficial for flora and fauna, recreation, flood control, living habitats and many other services and functions benefit from the development and maintenance of these corridors (Interview 6).

Currently, it seems that the bio-corridor in Troja II functions relatively well in most areas. Mainly due to low accessibility possibilities for humans, the area provides plenty of development opportunities for the flora and fauna.

Infrastructure and public transport

Cars have relatively good access to the area. However, since there is not much housing on the hill itself, especially in the Northern part, there is not a big necessity for many roads. The noise in Troja II is mostly related to the amount of infrastructure present. Mainly in the southern parts there is a higher noise level than in the north and north-west. Hence, the state of the roads seems to be better in lively areas than in parts with less activity.

Public transport in Troja II is not so well connected compared to other parts of Prague. Only on the Southern borders of the area are several bus and metro stops. The Northern areas of Troja II can only be reached by car, or by foot when walking up the steep, unpaved, hills.

External accessibility

The hillside has a relatively bad external accessibility from the perspective of public transport as there are 3 tram and 1 bus stop adjacent in to the Southern edges of the area, and parking spaces are absent. The accessibility for pedestrians is limited as there are not enough sidewalks around and in the area. Especially in the southern part of the area, it is dangerous for pedestrians to walk along the tramline. The same can be said about the cyclists, who have difficulties cycling around the area.

Internal accessibility

Internal accessibility can be classified as poor. Only areas with houses have maintained roads for cars and people to move. The walking trails across the hills are not known even to the residents of the hill. The existing paths are hardly maintained and some were formed due to natural forces such as water streams, and therefore are neither safe, nor pleasant, to walk along. The cyclists have no possibility to cycle across the hill. Existing roads in the north of the hill only lead to individual houses and are poorly maintained.

2.1.3 Societal Presence

Tourism and recreation

Troja II borders Troja I, thus is near the botanical garden and the Prague zoo which together draw over 1.5 million people per year (Interview 9). Because the main bus route 112 runs along the southern border of Troja II, many tourists pass by. However, the potential of the area is undeveloped for recreation and it is not a tourist destination itself. For Prague's hillsides, there is an opportunity to create a link between them and culturally valuable hotspots. Furthermore, *"local recreation can also be linked to environmental education activities by creating and maintaining paths through the areas"* (Interview 6). There are possibilities of acquiring knowledge from the signs next to protected areas, which give information about existing species. There are opportunities for the hill to be used for educational purposes by schools (Interview 4, 9). However, this is impeded by the limited accessibility to the area.

Land use

The hillside has two main uses - private housing and forest cover. Private plots with residential buildings are predominantly located in the south-western and in the eastern areas. There are over 70 plots with residential housing. Troja is considered as one of the most attractive locations in the city and the hill Troja II has high value. Therefore, the intention of most owners of the individual lands without residential buildings is either to construct a residential building, or to sell it at a high price (Interview 17). Forest cover can be seen in the middle of the area. It is located in both private and public lands (See Annex 2.1.6).

Human use

Based on data from the questionnaires (Figure 2), it is visible that most people visit hillsides for nature walks and rarely for other activities. Other activities such as sports, picnic, cultural activities, etc., are much less common. One of the reasons for a lack of usage of the hill can be related to the availability of closely located squares, plazas or open spaces. Map in Annex 2.1.6 indicates 7 squares and open spaces that are located close to the Troja II hillside. And observations showed that 3 of them were exceptionally crowded on sunny days.

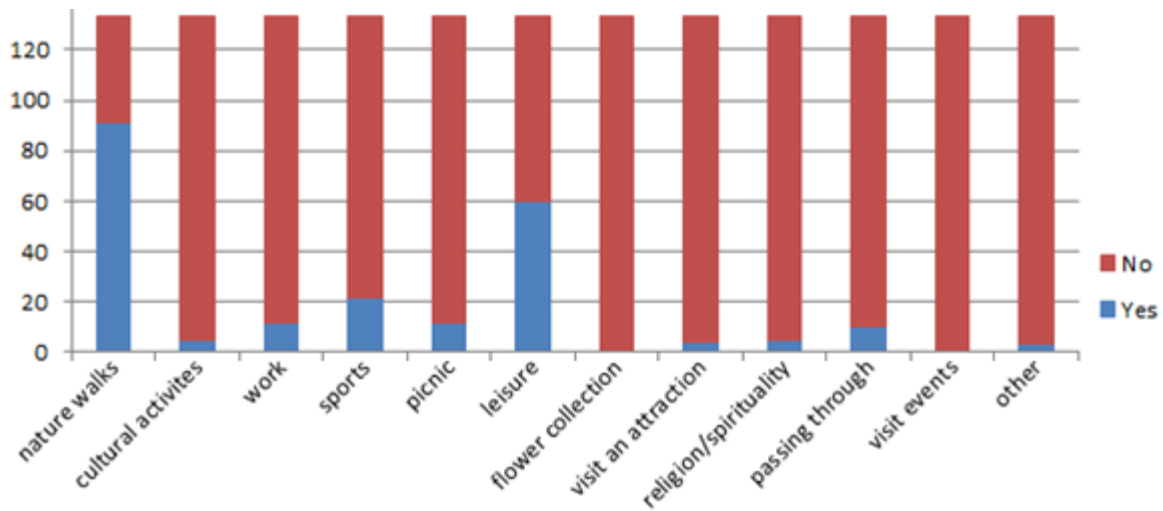


Figure 2. Uses of the Troja II hillside in 12 categories based on 133 questionnaires

Ownership

The ownership of the area can be characterized as mostly private. The southern side of Troja II is lined with private houses which also form a type of barrier to access the public areas as it is not clear that there is public space beyond that area. The ownership of the area is also complex due to the multiple owners of the area (See Figure 3).

There are 6 main owner groups that have been identified based on Czech cadastral information. There are many individual owners of smaller plots or groups of owners that have been identified using the grey colour. The ownership of the area directly relates to the maintenance. The private spaces especially in the southern areas are predominantly occupied by luxurious houses or embassy buildings with very well maintained private gardens and areas next to the road. In the eastern parts the ownership is also mostly private, ranging from luxury high rises to normal low-rise buildings. In this area, there are multiple neglected public spaces, owned by private actors. Deeper into the middle of the area there are public sites. However, many of these “public” sites are also fenced, and therefore not accessible. Based on information obtained during interviews with officials from both IPR and the Troja Municipal District, these were often built legally before the enactment of the current land use plan. Due to the high importance of ownership rights, governmental authorities have limited ability to enforce the most recent regulations (Interviews 9 and 35). As the purpose of some private actors’ ownership of plots in the area is to achieve speculative profits in the future, many plots remain completely unmaintained.

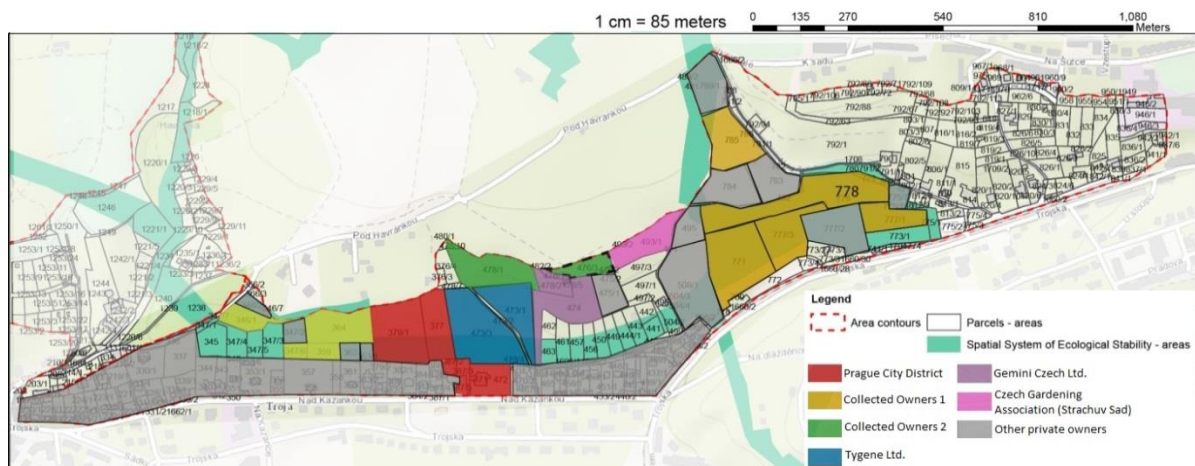


Figure 3. Ownership map

2.2 Organisation

2.2.1 Metropolitan Plan

Being ordered by the municipality and prepared by IPR, the Metropolitan plan is set to replace the current Strategic plan when approved by the District Municipalities and the City. Therefore, it is one of the key sources of information for the future development of the area (Interview 35). Figure 4 below shows the proposed Metropolitan plan map of the Troja II area.

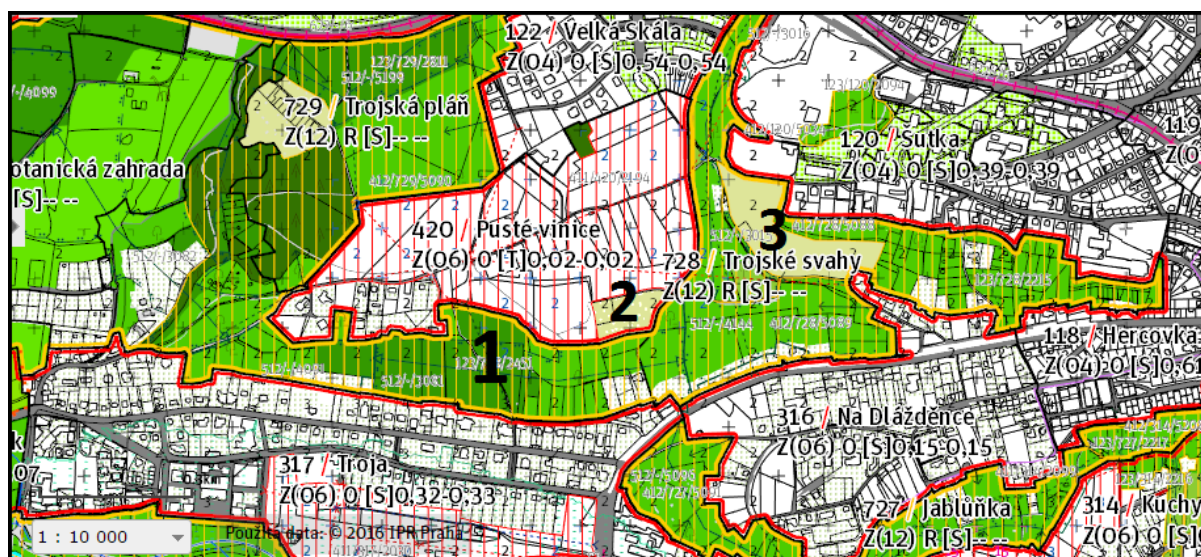


Figure 4. Metropolitan plan for the Troja II area.

Zone 1: This green zone covers the predominant part of Troja II and is protected from urban development. However, the yellow grid lines indicate that the park may be developed in order to increase its value for recreational use. The plan further specifies that the increase in value can be achieved through improving internal accessibility and facilities, and that the developed environment has to be in line with the character of the location. Furthermore, the definition of the width of the bio-corridor in the southern part of Troja II is subject to change. It will effectively be significantly widened, with the provision that governmental authorities would have the flexibility to modify it, as long as a certain minimum width is not breached (Interview 35).

Zones 2 and 3: An important finding for the area is also that both these zones remain designated for allotment gardens, i.e., the construction of only very small buildings is permitted.

2.2.2 Stakeholder Analysis

In this subchapter, the decision-making power and overall influence of the key actors as well as their interrelations (Figure 5) are discussed in order to support the identification of potential opportunities and threats for future developments within the area.

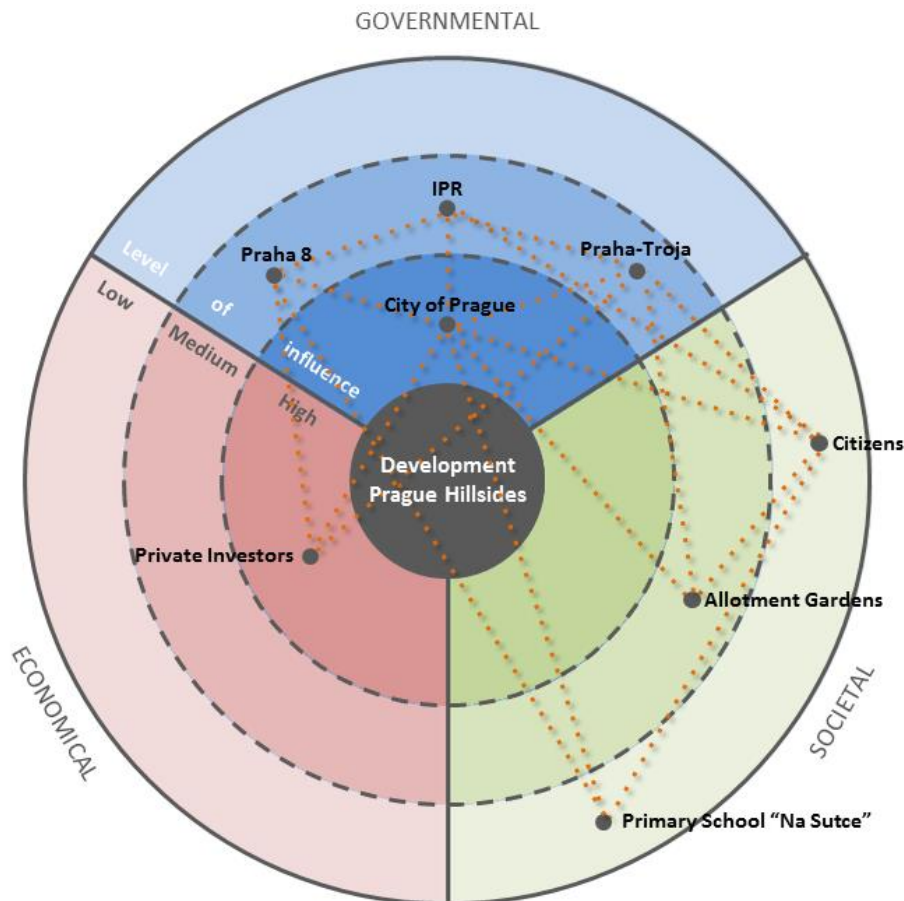


Figure 5. Stakeholder level of influence and interrelations.

Prague Municipal Government – This actor is the primary decision-making authority with regard to strategy and planning on a citywide scale. As such, it is responsible for the formulation of the overall vision for the future development of the city. However, several interviewed stakeholders, including governmental officials, expressed the opinion that the current land use policy is significantly fragmented and lacks such long-term perspective. One of the key instruments at the disposal of the municipal government is its supervisory power in relation to the formulation of a new land use plan. Indeed, as commissioner of the new Metropolitan Plan, it currently has the authority to reject the IPR-proposed policy document. Furthermore, it is also interesting to note that although the latter maintains a high level of political independence, the Prague City authorities have the power to appoint/dismiss the director of IPR. Lastly, the municipal government only has the obligation to *consult* the municipal districts in order to implement changes to the land use plan.

The Prague Institute of Planning and Development (IPR) – As discussed above, the IPR has limited formal decision-making power. However, it remains a key actor in terms of developing an overall vision and corresponding strategic planning for the future development of the area. Moreover, the institute’s technical expertise, as well as advocacy and practice of participative planning, further enhances its overall influence.

Municipal and Administrative Districts – The powers of the Municipal Districts (MDs) are mainly initiatory and consultative in terms of policymaking, with decision-making powers such as issuing building permits being delegated to the larger Administrative Districts (ADs) (Maier, 2003). However, primarily due to the ownership structure within Troja II, which is largely dominated by private actors partially as a result of mass privatization in the context of a lack of strategic planning, the influence of governmental actors is significantly reduced. Furthermore, outside of the obligatory public consultation process, collaboration with NGOs and civil society seems to be limited. Lastly, the low levels of cooperation and coordination among the MDs could be identified as an overall structural problem of governmental institutions.

Prague Troja District – A particularly distinctive feature of the vision for the future of the area of this MD is that it favours environmental preservation, and considers it a tool for improving the human environment as well. This seems to be a specific point of contention between this actor and the Praha 8 MD, which has rather sought to stimulate economic development in Troja II (Interview 9). Interestingly, Troja officials expressed approval of ideas regarding the potential use of the hills for orchards, vineyards or community gardens. Overall, the level of communication this actor has with the City of Prague was determined as satisfactory (Interview 9). However, cooperation with the neighbouring MDs of Praha 7 and Praha 8 has potential for improvement. Lastly, Troja officials acknowledged the need to enhance their cooperation with private owners in order to achieve significant future improvements in the green areas.

Prague District 8 - Based on the interviews conducted as part of this study, it could be concluded that this actor favoured urban development within the Troja II area in the past, although current administration leadership aims to put greater emphasis on environmental preservation overall (Interview 21). However, improvements seem to be sought in an ad hoc manner through individual projects rather than as part of an overall strategy. Furthermore, these projects focus on land owned by the district itself, and mainly concern its maintenance (Interview 36). Therefore, due to the lack of such land within Troja II, the involvement of this actor in the area remains low.

Strachův Sad Allotment Gardens, Troja II - Throughout the Czech Republic, gardening has long-standing cultural traditions and therefore maintains an important role in promoting life in concert with nature. This makes the allotment gardens within the northern part of Troja II a particularly interesting stakeholder to investigate. Being part of the nationwide Czech Gardening Association (Český zahrádkářský svaz), this actor has access to a wide network of more than 2600 member organizations and could potentially get assistance in relation to not only gardening activities, but also legal or financial issues. Furthermore, the organization has particularly strong connections with the Troja district municipality as its secretary is an employee of the municipal district administration. They look favourably towards the establishment of vineyards/orchards on the hillside, partially due to the existence of such historical traditions in the area, including on their plot. However, representatives of Strachův Sad are strictly opposing the construction of buildings larger than the ones in their allotment garden. (Interview 27)

Primary school (Základní škola Praha 8 Na šutce) - In order to determine the potential for future students' involvement in the area, including as part of an environmental education program on the hillside, it is interesting to also consider the position of nearby schools. Being partially situated within Troja II, the perspective of the *Základní škola Praha 8 Na šutce* is especially valuable for our analysis. The school has varied sources of funding, which include other stakeholders such as the municipality and the Prague 8 district, as well as the EU and the central government. This actor

already has experience with extra-curricular sports- and nature-related activities, which take place outside of its premises. Furthermore, they are also part of an initiative to promote the consumption of *locally produced* fruits and have experience of organizing gardening activities on the premises. However, the latter are no longer practiced due to the retirement of the responsible teacher. Naturally, this stakeholder does not have significant influence on the decision-making process, but could be involved and therefore positively *affected* by certain future developments in Troja II. (Interview 4)

2.2.3 Public Perception

The results from our data collection are grouped into 4 themes: current opinion, future improvements, willingness to participate, and role of media.

Current opinion (questionnaire results)

The current opinion can be analysed based on four aspects: general feeling, opinion on the physical aspect of the hillside, accessibility, and safety. In terms of their feeling, 69.2% of the citizens stated they feel healthier when they visit the hillside, and 73.7% feels happier. Their opinion on the physical aspect of the hill revealed that 58.6% of the citizens like the current state of the hillside. In addition, 85.7% thinks the hillside has beautiful scenery. 48.1% of the citizens think there is enough green public space on the hillside. However, 36.3% of the citizens feel that the hillside looks neglected, and in addition 77.4%, state they would like to see the hillside improved. Accessibility to and inside the area was also addressed, 72.1% state the hillside is easily accessible. Roughly the same amount, 78.1% claim they can move freely and easily within the area. This is contrast to our observations where we indicated that there was low external and internal accessibility in the area.

Media

Media attention of the hillside has not been substantial. However, the hillsides have the potential of being *“quite popular”* (interview 12, 2016), because riverbanks and parks are well received by the public. Overall, Troja II can be reflected to the public through social media, and mainstream media such as radio/TV talks. Controversial topics have a relatively strong influence in people’s engagement. For example, a heading that states *“cut all the trees on the hillside”* (interview 12, 2016) will motivate people to be against this notion since trees have a high value in society and contribute towards a higher quality of life.

As for questionnaire results, 39.9% disagree that the hills are often discussed in the media. In this case 44.4% ticked not applicable which again makes the result less credible. 50.4% also ticked not applicable in the statement addressing whether the hillside gets positive media attention. However 33.1% agrees with the statement.

Opinion on future functions

50.4% of citizens stated that if the hillside would be improved, they would visit it more often. Citizens were then provided with 6 different options of improvement, which they had to rank in order of importance. The options were sports facilities (e.g.: cycling paths), leisure facilities (e.g. picnic tables), cultural attractions (e.g. festival areas), nature (e.g. urban agriculture), safety measures (e.g. street lighting), and urban expansion (e.g. residences).

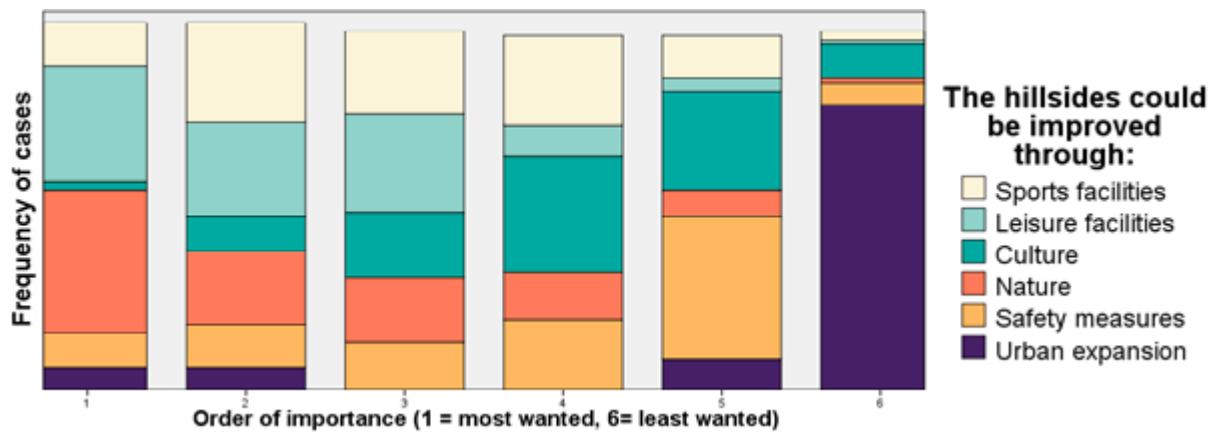


Figure 6. Options for improvement ranked by order of importance.

Leisure and nature was considered most important. Sports facilities are deemed second most important while culture has the highest score in the rankings 4. Safety is highest in the fifth ranking, which could resonate with the result that 69.1% stated they feel safe in the hillside. Lastly, urban expansion is the least wanted option.

Future participation and challenges

According to interview 12, Prague's current level of citizen involvement is right below citizen control on Arnstein's ladder of participation (1969) (See Annex 2.1.5), which indicates active involvement (interview 12). This ladder is also used as the theoretical framework to analyse the questions related to citizen involvement. The bottom level in the ladder is non-participation. In line with this, the results from the questionnaire show that the 43.6% believe the municipality should develop and maintain the hillside without public participation, compared with 41.4% who disagree with the statement. In the second level, tokenism, citizens are either informed, take part in consulting, or are actively involved in developments. Within this level 79.7% of citizens would like to be more informed about the development of the hillside. Regarding their consultation power, only 28.6% of citizens disagreed that the municipality is open to their concerns and ideas. However, half of the respondents, ticked not applicable in this question, which makes the result less credible. With regard to being more actively involved, 41.4% of citizens would like to cooperate with urban experts on planning issues of the hillside. As for participating in the activities and maintenance of the hillside, 47.3% of respondents would like to be more involved. The highest level in the ladder is citizen control. Here all participating actors have equal power, or full control. With this, 62% of citizens claimed to feel responsible for maintaining the hillsides, and a relatively equal number, 63%, think citizens should manage the hillside.

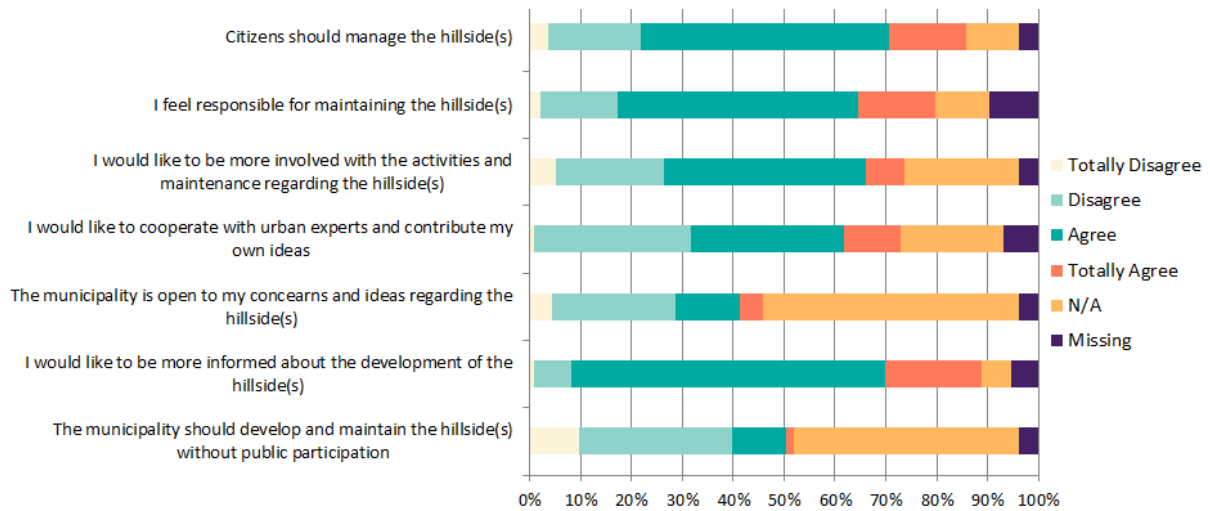


Figure 7. Summary of the answers based on the statements about level of citizen participation

In terms of challenges for future participation, interview 12 revealed that the citizens still maintain distrust in political institutions, which stems from the communistic era. This distrust is paired with a lack of confidence in the realization of planning projects (Interview 12). This resonates more with the older generations, ages 35 and above, whilst the younger generations are optimistic to participate due to having “travelled the world” (Interview 12). In order to improve the relationship with the older generations and to involve them, one needs to communicate with them on a regular basis. Encouraging them to express their opinion to the other participants and not the facilitator will create constructive dialogue, thus “positively manipulate people into cooperation” (Interview 12).

2.2.4 Management and Maintenance

The management of Troja II is directly related to the ownership of the area. The management can be divided according to public and private ownership (See Figure 8 below).

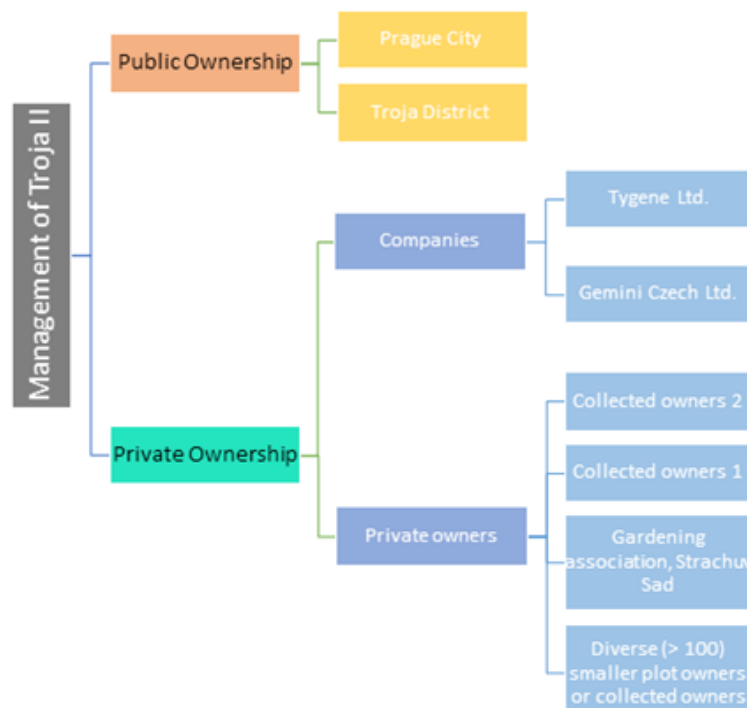


Figure 8. Management structure of Troja II

Overall maintenance has to be performed by the owner of the plot. The Troja district does not own plots within Troja II, however, it has an agreement with the City of Prague to maintain its plots within the area. On a larger scale, the general management and maintenance of the public area is rather unclear in Prague. Prague city and Troja district can only ask private owners to maintain their plots but they have no authority to force private owners to do so. This leads to neglect of maintenance, i.e. unused plots, which are fenced in the middle of the area or near the eastern bordering road as there are no consequences for not maintaining an area. Although maintenance and development of certain areas is necessary, we believe it is also important that it is considered that there is a fragile balance between nature and human use and that there are also important natural services to be gained by protecting and limiting access to an area.

The owners of the land on which an abandoned orchard is located cause problems due to lacking maintenance on the orchards and possible developments of real estate on the location of the orchards (Interview 9). There are some private arrangements to organize maintenance, i.e., the owners of plot 778 (See Figure 3) have agreements with goat shepherds in the neighbouring valley to let their cut grass be collected (Interview 27). There is an opportunity of using that method of maintaining the area for other areas as well.

However, lack of or poor communication, between potential users of the land and the owners who are willing to contribute to the maintenance, is a limiting factor. Furthermore, the Czech gardening association would like to maintain their access road, however, it maintained by the city and they are not allowed to do so (Interview 27). In addition, the safety and maintenance of the allotment gardens is sometimes an issue, as they are not always regularly used and there is no person in charge of checking the area daily. As a result, homeless people and thieves break into houses that are not well locked to steal food or equipment they can sell (Interview 27). There are good relations with the Troja police, which even has keys to access the two entrances to the gardens. However, to improve safety and maintenance of the gardens, the organization is looking for young people, willing to stay in one of the houses to keep an eye on the area, especially during the summer (Interview 27). This is especially important for the plots now owned by elderly people that are not used so regularly and require more assistance with maintenance than other private plots. Furthermore as the average age of owners is 55-70 this need for help in maintenance and safety can be expected to increase. In addition, there is a homeless person who temporarily occupies one of the houses in exchange for maintaining it. Such type of collaboration seems to be promising in terms of finding a long-term solution to the overall homeless persons issue and their societal isolation.

Chapter 3. Scenario Development and SWOT Analysis

3.1 Themes

Analysing the data obtained from the field research, numerous themes arose. The themes that emerged in every hillside were selected: governance and maintenance, development, functions, accessibility, attachment, safety and ecosystems. The scheme below is a summary of the thematic issues that arose in the Troja II hillside:



Governance and maintenance

- Fragmented ownership and limited public space.
- Less maintained plots due to owners' property speculation.
- No binding regulations for the management of private properties.
- Unclear maintenance responsibilities.
- Fragmented land use policy and lack of long-term perspective.



Development

- Diverse land uses: protected areas, forest, meadows and residential areas.
- Visions on the most appropriate balance between green and urban development differ among municipal districts.
- The majority of residents are unfavorable towards new urban development.
- The bio-corridors are under pressure by housing development.



Functions

- Most people visit hillsides for nature walks and rarely for other activities.
- Activities in public spaces are limited due to lack of well-maintained facilities.
- Presence of the allotment garden and viewpoint with high visual quality.
- Various stakeholders expressed interest in an urban environmental education program and a long-term solution for the homeless people.
- Several homeless people live on the hillside.



Accessibility

- The south is accessible via public transport.
- The Northern is only accessible by car or foot.
- Parking spaces are absent.
- Unclear or even lack of paths or signs inside.



Attachment

- Owners of the allotment feel attached to the area by being involved in gardening.
- The majority of residents feel happier and healthier on the hillside.



Safety

- The majority of respondents feel safe on the hillsides.
- Lack of street lighting and clear pathways make movement rather difficult and potentially unsafe during night.
- A relatively negative attitude is observed among the general public towards homeless people, as they feel it reduces safety.



Ecosystems

- Wide variety of flora and fauna.
- Biodiversity is supported by orchards, allotment gardens and vegetation.
- Presence of protected area Trojská.
- The orchard in The North is ideal to feed species.
- Low levels of air and noise pollution, compared to other areas in Prague.
- Sufficient vegetation for water retention.
- Bio-corridor functions relatively well in most areas, but is interrupted by existing barriers (fences and walls) and housing development on private plots.

3.2. Scenario Development

We developed the four scenarios using two out of the seven themes mentioned above: “Governance and maintenance” and “Development”. We placed some issues coming out of these themes on two axes and they acted as the foundation for the development of scenarios (see figure 18). This way four scenario quadrants appeared, each representing a possible future for the hillsides. For each quadrant there is a scenario storyline which describes how the future will unfold and addressing the remaining themes (Synthesis report, ch. 4.2.2). In particular, the y-axis divides the theme “Governance and maintenance” in two extremes: a ‘top-down’ or a ‘bottom-up’ approach. The first defines the initiatives and decision-making by governmental bodies for the wider public and the latter represents the decision-making by smaller group of people like civil society actors or local community organizations. The x-axis “Development” consists of nature development or urban development. The first indicates inclination towards green preservation and the latter describes more the built development of the hillsides and its surrounding areas.

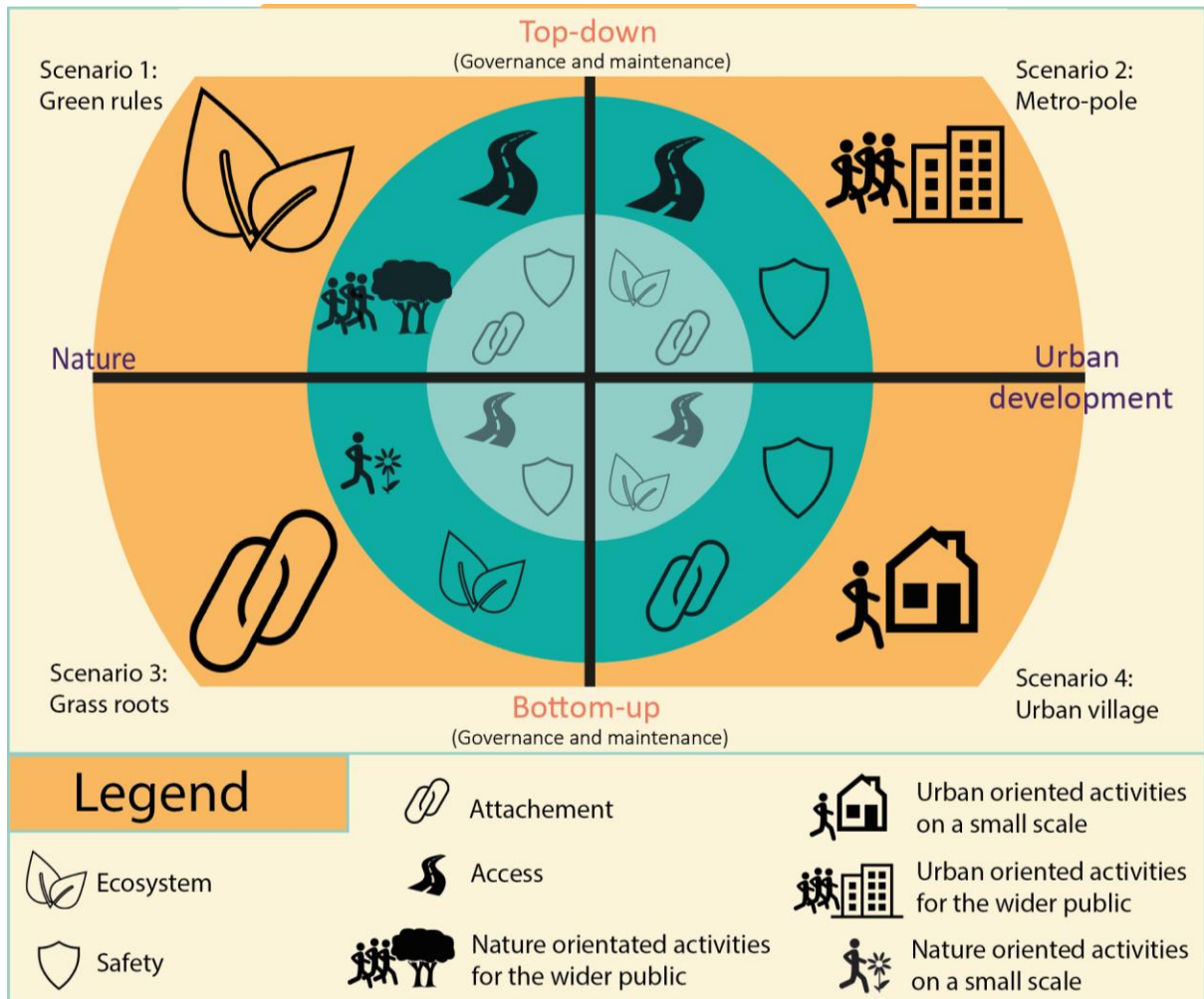


Figure 9. Overview of scenarios

However, maintenance in most plots of Troja II is missing, the existing management is rather done in a top-down approach with focus on nature oriented development.

3.2. SWOT Analysis

In order to uncover and utilize the potentials of the scenarios, a SWOT analysis is carried out. SWOT refers to the analysis of (S) strengths (W) weaknesses (O) opportunities and (T) threats that could influence the future of the hillsides. The first two aspects, (S) and (W), describe the pros and cons of the current situation of the hillsides. The second part, (O) and (T), relates to issues in the present situation that might facilitate or obstacle the implementation of a certain scenario. The SWOT analysis of Troja II can be found below, in Figure 10 below.

1

Green Rules

Opportunities

- Existing forest and protected areas make it more convenient to support the bio-corridor.
- Numerous parents and schools are willing to have environmental education activities
- Existing agreements with owners near viewpoint to keep land free of fences offers possibilities for improving connectivity.
- Willingness of participation from some NGOs offers possibility for low cost maintenance.
- Existing roads and paths offer potential for leisure purposes.

Threats

- Many privately owned plots and strong of ownership rights prevent enforcement of regulations.
- Built-up character limit the view scope and decrease the attractiveness.

Grass Roots

Opportunities

- Improving existing signs and paths to attract small scale tourism.
- Presence of green layers of forest can involve residents living in South
- Presence of private arrangements between private owners offers possibilities for low cost maintenance.
- Small-scale nature and leisure oriented activities increase attractiveness.

Threats

- Currently limited usage of hillsides decreases attractiveness for visitors with purposes of recreation and culture.
- Complex ownership limits the mobility inside the hillsides for humans and species.
- Pressure of housing development in South of the hill
- Citizen although willing to take initiative, may not receive support due to unclear political responsibility

3

Current situation

Strengths

- High diversity of animals and plants.
- High diversity of animals and plants.
- Accessible for cars in most of the area.
- High Number of Tourists passing by.
- Protected area for rare species.
- Orchard in The North provide provisioning services for species (e.g. insects and birds)
- Existing example on settling a homeless person in allotment garden.
- Well-functioning bio-corridor.
- Untouched vegetation.
- South facing hills.
- Favourable microclimate for humans, flora and fauna.

Weaknesses

- Low internal accessibility.
- Lack of maintenance
- Fragmented ownership.
- Fences limit connectivity and visibility.
- Lack of internal infrastructure.
- Perceived safety is lower due to homeless people
- Lack of quality public space in the whole area.
- Lack of long-term vision from government.

2

Metro-pole

Opportunities

- Property owners with investment purposes favor collaboration for urban development.
- Citizens favor sport development.
- Infrastructural improvements (e.g. public transport) in the North of the hill can provide better accessibility.
- Existence of viewpoints with high visibility can attract urban developers.

Threats

- High amounts of privately owned land prevent large scale urban development.
- More citizens prefer nature protection.
- Resents indicate in the questionnaires that they don't favor urban development.

Urban Village

Opportunities

- Presence of forest in the middle of the hillside offers possibilities for small scale urban oriented activities.
- The involvement of homeless people in allotment garden offers possibility for low cost maintenance.
- Existence of viewpoints and orchards can attract urban developers.

Threats

- Negative attitude of locals towards urban development.
- Localized responsibility/maintenance, which lead to fragmentation.
- Approving urban development can be delayed by the presence of Red list species.

4

Figure 10. SWOT analysis of Troja II

Chapter 4. Conclusion

The purpose of this report is to identify future opportunities for the Troja II hillside. We have explored the hillside through an integrated framework, which includes the analysis of policies and stakeholders, physical and ecological conditions, management and use, and the public's perception. The outcomes resulted in a scenario and SWOT development, which put forward four different future directions the hillside could follow, as well as opportunities and threats leading up to each scenario.

Our analysis revealed that trees and bushes cover our area extensively. The flora and fauna is very diverse, hosting both indigenous and foreign plant species, as well as being the habitat for different animals. Biodiversity is further enhanced by the allotment gardens and the orchards, which are considered strong points in the region. In terms of human use, we found that nature walks is the main activity. The majority of citizens who filled in the questionnaire also feel responsible for maintaining and managing the hillside. However, internal accessibility is hindered by unclear pathways, and gated private properties. Further weaknesses are the lack of qualitatively good public space, fragmented ownership and clashing visions between the two districts, making it difficult to determine future developments for the hillside.

Troja II could begin to improve by clearing walking paths, improving existing public space, and more maintenance. This would be a great start for further improvements which are determined by the outcomes from our research.

References

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners*, 35(4), 216-224.

Geoportal Praha (2010) Map Application. Retrieved June 17, 2016, from <http://www.geoportalpraha.cz/en/map-applications>

Hrčka, D. (2007). *Rostliny přírodního parku Drahaň-Troja*. Prague: Grada Publishing.

Jeroen van Schaick & Ina Klaasen (2011). The Dutch Layers Approach to Spatial Planning and Design: A Fruitful Planning Tool or a Temporary Phenomenon?, *European Planning Studies*, 19:10, 1775-1796, DOI: 10.1080/09654313.2011.614387

Královec, J. (2006). *Country Pasture/Forage Resource Profiles CZECH REPUBLIC*. Rome, Italy: Food and Agriculture Organization of the United Nations.

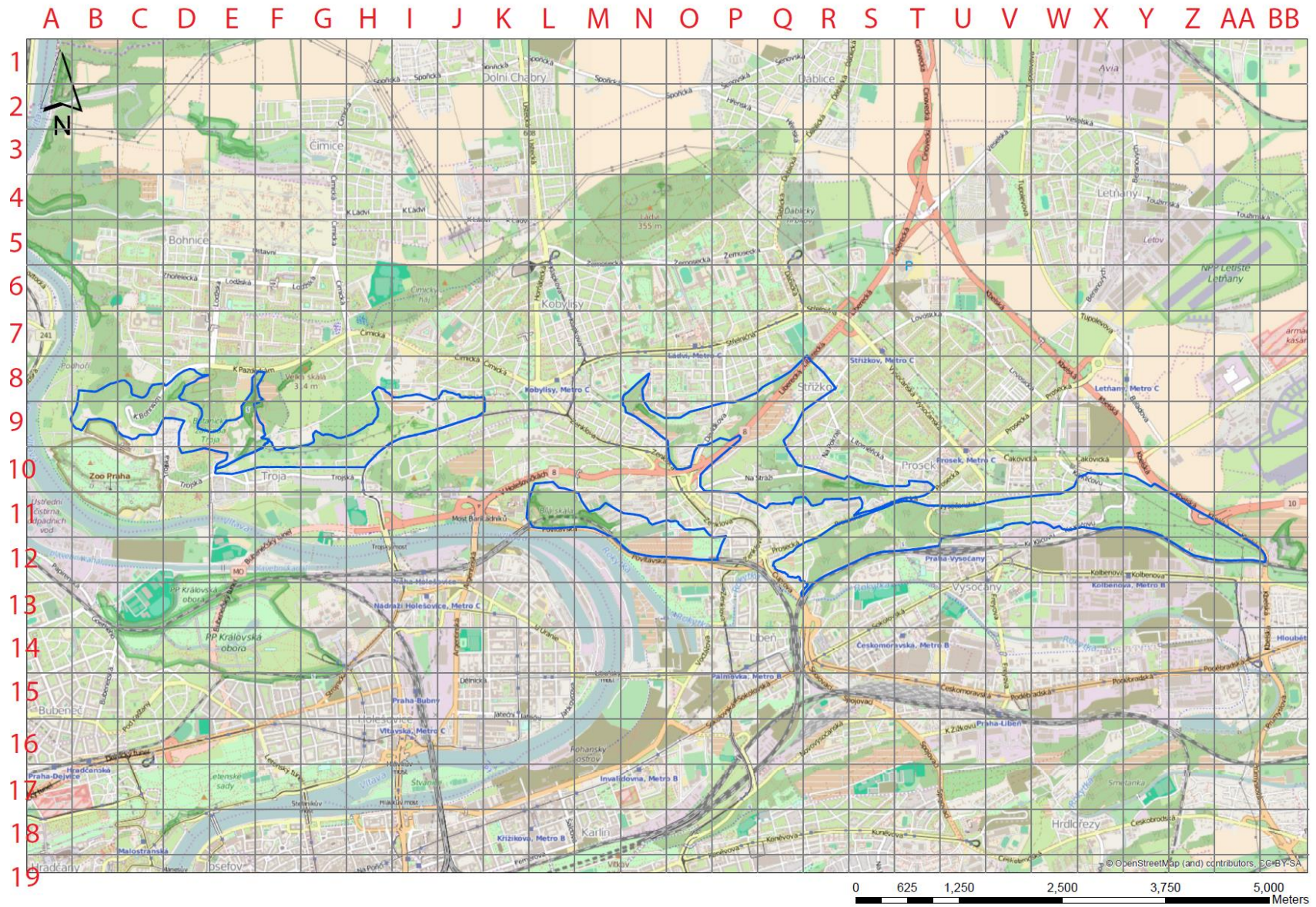
Maier, K. (2003). The Prague Metropolitan plan. In W. Sallet, A. Thornley, & A. Kreukels (Eds.), *Metropolitan Governance and Spatial Planning: Comparative Case Studies of European City-Regions* (pp. 205-229). London: Spon Press.

Tomášek, M. (1997). *Soils*. Retrieved June 17, 2016, from http://envis.praha-mesto.cz/rocnky/chruzemi/cr2_antx/chu-pudy.htm

ZO CSOP Krivatec (2010). *Přírodní památka Trojska*. Prague: Ekocentrum Krivatec.

Annex 2.1

Annex 2.1.1 - Grid map for observations



Annex 2.1.2 - Table for interviewees

Interview №	Interviewees
Interview 1	Representative of hospital
Interview 2	Representative of IPR
Interview 3	Lecturer of the university in the faculty of Civil Engineering
Interview 4	Representative of School
Interview 5	Representative of IPR
Interview 6	Representative of IPR
Interview 7	Representative of the municipality
Interview 8	Representative of sports center
Interview 9	Representative of the district of Troja
Interview 10	Manager of the site
Interview 11	Allotment gardens coordinator
Interview 12	Representative of public perception department IPR
Interview 13	Representative of IPR
Interview 14	Representative of IPR
Interview 15	Representative of IPR
Interview 16	Representative of IPR
Interview 17	Landscape architect
Interview 18	Representatives of allotment garden
Interview 19	Representative of municipality
Interview 20	Representative of botanical garden
Interview 21	Representative of district 8
Interview 22	Representative of IPR

Interview 23	Representative of municipality
Interview 24	Representative of apple orchard
Interview 25	Representative of Zoo in
Interview 26	Representative of vineyard in Vysočany
Interview 27	Representative of allotment gardens
Interview 28	Representative of Prague 7
Interview 29	Representatives of NGO
Interview 30	Representative of community garden
Interview 31	Representative of Prague 9
Interview 32	Representative of NGO
Interview 33	Representative of Prague 8
Interview 34	Representative of NGO
Interview 35	Representative of IPR
Interview 36	Elderly residents
Interview 37	Local Roma people

Annex 2.1.3 - Methodology

This consultancy centers on the perspectives of citizens, experts and physical as well as social observations, together with a theoretical foundation.

In total 616 questionnaires were carried out. The sample size is large enough to draw general conclusions, but the significance of the results depends on the response and type of respondents per geo-area.

First phase - Three weeks preparation

The terms of reference, provided by IPR Praha, and the theoretical foundation of different Master's-programmes have been the core of the first three weeks of the European Workshop. With maps and GIS-data provided by IPR Praha, there has been made a theoretical construct that helped us prepare for the data collection during the field trip to Prague. A basic understanding was created about the area due to the division of groups; geo-groups and expertise-groups. Five geo-groups were responsible for carrying out research of their respective geo-area. Within each geo-group, there are five different expertises: Policy and stakeholder analysis, Green Infrastructure - physical and ecological analysis, Green Infrastructure - management practice and use analysis, Public perception analysis, and Scenario development. Every participant of the workshop therefore belongs to either an vertical (geo-area), and a horizontal (expert) group. In order to coordinate the exchange of information between groups, a management team was made. This team keeps the overview throughout the workshop, and makes sure everything is done the right way.

Second phase - Two weeks Prague fieldwork

At the start of the fieldwork we prepared a presentation for IPR, to summarize our work in the previous three weeks, show our working structure and get feedback on the research so far. During the study, 616 questionnaires, 39 interviews, and social and physical observations have been done. These were carried out during different times of the day and in multiple locations per geo-area in order to cover the diversity of the area. The location of where the questionnaires, and observations, have been done are marked in a grid map. The field study was ended with a presentation of our preliminary results near the riverbank of Vltava river. This involved a presentation with the use of posters, a discussion and also an exhibition of the findings of every geo-group about their respectable geo-area.

Note: The various perspectives and opinions stakeholders might have can result in biased information. This, however, will be nuanced by making use of a stakeholder matrix in the geo-reports.

Last phase - Three weeks

Using the data collected in Prague, the 5 geo groups wrote a detailed analysis. Within these reports the strengths and weaknesses of the current situation of the areas were identified using the structure of the Dutch layer approach. This analysis resulted in the geo-reports. These geo-reports are the foundation for the synthesis report. The synthesis report can be seen as the ultimate analysis on the area. The current situation on Prague hillsides has been analysed quantitatively (statistics) and qualitatively. A scenario study and SWOT-analysis will point out the possible pathways IPR Praha can follow in order to reach a desired outcome.

Annex 2.1.4 - Ecology – Species available within the area:

Plant and tree species:

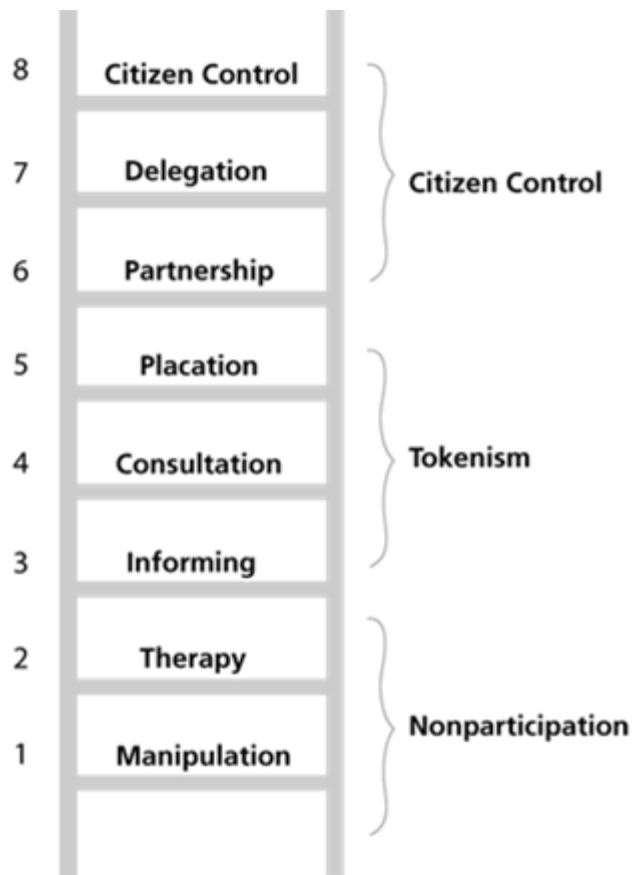
Prostemma guttula, *Crioceris asparagi*, *Crioceris duodecimpunctata*, *Galeruca pomonae*, *A. penetrans*, *A. rufulum*, *A. ruficrus*, *Titanoeca quadriguttata*, *Iphiclides podalirius*, *Polyommatus coridon*, *Trichodes aparius*, *Issoria lathonia* (ČSOP Křivatec, 2010).

Arrhenatherum elatius, *Calamagrostis epigejos*, *Prunus spinosa*, *Robinia pseudoacacia*, *Quercus rubra* (Hrčka, 2007).

Animal species:

Bromus erectus, *Festuca rupicola*, *Melica transsilvanica*, *Rosa gallica*, *Veronica teucrium*, *Achillea pannonica*, *Achillea setacea*, *Stachys recta*, *Medicago minima*, *Thymus pannonicus*, *Thymus praecox*, *Trifolium alpestre*, *Eryngium campestre*, *Centaurea stoebe*, *Hylotelephium maximum*, *Sedum album*, *Sedum sexangulare*, *Coronilla varia*, *Falcaria vulgaris*, *Bupleurum falcatum*, *Nigella arvensis*, *Anagallis foemina*, *Polycnemum arvensis*, *Caucalis platycarpus*, *Ornithogalum kochii*, *Crataegus* sp. Div., *Prunus spinosa*, *Rosa canina*, *Rosa gallica*, *Stachys recta*, *Sedum album*, *Coronilla varia*, *Thymus pulegioides*, *Melica transsilvanica*, *Ornithogalum kochii*, *Salvia nemorosa* (ČSOP Křivatec, 2010).

Annex 2.1.5 - Arnstein's Ladder of Citizen Participation



Arnstein's Ladder (1969)
Degrees of Citizen Participation

Annex 2.1.6 - Land use map Troja II

