RESTRICTIONS AND DEFICIENCIES IN THE IMPLEMENTATION OF DIGITAL PARTICIPATORY TOOLS IN SPATIAL PLANNING IN ESTONIA

PIIRANGUD JA PUUDUJÄÄGID DIGITAALSETE OSALUSVAHENDITE RAKENDAMISEL EESTI RUUMILISES PLANEERIMISES

MASTER'S THESIS

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OLEN KOOSTANUD LÕPUTÖÖ ISESEISVALT. LÕPUTÖÖ ALUSEL EI OLE VAREM KUTSE- VÕI TEADUSKRAADI VÕI INSENERIDIPLOMIT TAOTLETUD. KÕIK TÖÖ KOOSTAMISEL KASUTATUD TEISTE AUTORITE TÖÖD, OLULISED SEISUKOHAD, KIRJANDUSALLIKATEST JA MUJALT PÄRINEVAD ANDMED ON VIIDATUD.

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ABSTRACT

The general procedure of participation in planning in Estonia has not changed since the first Planning Act in force (1995). Estonia is known as the most advanced digital society in the world. (e-estonia, 2021) Digitalization has become a standard in the building sector. The standard of digitalization in spatial planning is also being developed and the development of a national system for the procedure of planning is led by the Ministry of Finance.

Public participation in spatial planning is regulated by the Planning Act (2015), which gives the formal framework and guidelines for participatory processes. The current participatory practice relies on traditional tools and methods. (Tillemann & Viljasaar, 2012; Viljasaar et al., 2012; Ministry of Finance, 2021)

This research aims is to give an overview of the current planning practices in order to map the restrictions and deficiencies in the Estonian planning system for implementing digital participatory tools and to find digital tools and methods which could be implemented in the participatory processes.

The work is composed in three main parts. Firstly the theoretical framework gives an overview of what is participation, how participatory processes have changed in spatial planning, what is communicative planning theory, the stages of participation, and an overview of digital planning support tools. The third of the theoretical framework looks at the context of Estonia and gives an overview of the Estonian Planning System and current practice.

The empirical part of the research aims to answer the question of how planners perceive participatory processes and using digital tools in participatory processes, and what are their expert needs in planning support systems. The research focuses on the problems and restrictions of using digital tools that arise from the current planning practice. The empirical part consists of two parts – the results of the empirical work and discussion.

From the results, it is apparent that the core of the problem lies in the legislative system, which sets the framework of a planning process and minimum requirements for communication channels. The framework situates public participation in the late phase of the planning process and therefore does not leave options for meaningful participation which would have an effect on the decision-making. Since collaborative practices take place outside of the system, it is important how planners perceive the importance of participation.

Amongst planners, the importance of participation is emphasized, but there is an apparent difference in how the planners view their position in communication with different stakeholders. The planners express the problems that currently derive from misunderstandings and frustration. It is believed that digital tools can be the solution for problems like reaching enough people and visualizing the planning proposal for better comprehensibility. Yet many planners do not have prior experience with digital tools and there is an implementation gap which needs to be overcome in order to implement it to planning practice.

ABSTRAKT

Kaasamisprotsesside korraldus ruumilises planeerimises Eestis ei ole alates esimesest kehtivast planeerimisseadusest (1995) palju muutunud. Eesti on tuntud kui kõige arenenum digitaalne ühiskond maailmas. (e-estonia, 2021) Digitaliseerimine on muutunud ehitussektoris standardiks. Ka ruumilise planeerimise digitaliseerimise standardit arendatakse ja planeerimismenetluse riikliku süsteemi arendamist juhib Rahandusministeerium.

Avalikkuse kaasamist ruumilise planeerimise protsessis reguleerib planeerimisseadus (2015), mis annab ametliku raamistiku ja suunised kaasamisprotsessidele. Praegune kaasamispraktika tugineb traditsioonilistele vahenditele ja meetoditele. (Tillemann & Viljasaar, 2012; Viljasaar et al., 2012; Rahandusministeerium, 2021).

Käesoleva uurimistöö eesmärk on anda ülevaade praegusest planeerimispraktikast, et kaardistada Eesti planeerimissüsteemi piirangud ja puudused digitaalsete osalusvahendite rakendamiseks ning leida digitaalsed vahendid ja meetodid, mida saaks rakendada osalusprotsessides.

Töö koosneb kolmest peamisest osast. Esmalt antakse teoreetilises raamistikus ülevaade sellest, mis on kaasamine ning osalemine, kuidas on osalusprotsessid muutunud ruumilises planeerimises, mis on osalusplaneerimine, osalemise etapid ja ülevaade digitaalsetest planeerimise tugivahenditest. Teoreetilise raamistiku kolmandas osas vaadeldakse Eesti konteksti ning antakse ülevaade Eesti planeerimissüsteemist ja praegusest praktikast.

Uurimuse empiirilises osas püütakse vastata küsimusele, kuidas planeerijad tajuvad kaasamisprotsesse ja digitaalsete vahendite kasutamist osalusprotsessides ning millised on ekspertide vajadused planeerimise tugisüsteemide järele. Uurimus keskendub digitaalsete vahendite kasutamise probleemidele ja piirangutele, mis tulenevad praegusest planeerimispraktikast. Empiiriline osa koosneb kahest osast - empiirilise töö tulemused ja arutelu.

Tulemustest selgub, et probleemi tuum peitub õigussüsteemis, mis seab planeerimisprotsessi kaasamisraamistiku ja miinimumnõuded kommunikatsioonikanalitele. Raamistik paigutab avalikkuse kaasamise planeerimisprotsessi hilisesse faasi ja ei jäta seetõttu võimalusi sisuliseks osalemiseks, mis mõjutaks otsuste tegemist. Kuna koostööpraktikad toimuvad väljaspool süsteemi, on oluline, kuidas planeerijad tajuvad osalemise tähtsust.

Planeerijate seas rõhutatakse koostöö tähtsust, kuid on ilmne erinevus selles, kuidas planeerijad näevad oma positsiooni erinevate sidusrühmadega suhtlemisel. Planeerijad väljendavad probleeme, mis tulenevad praegu arusaamatustest ja pettumusest. Arvatakse, et digitaalsed vahendid võivad olla lahenduseks probleemidele, nagu piisava hulga inimesteni jõudmine ja planeerimisettepaneku visualiseerimine parema arusaadavuse tagamiseks. Siiski puudub paljudel planeerijatel eelnev kogemus digitaalsete vahenditega ja on olemas teadmiste lünk, mis tuleb täita, et digitaalseid vahendeid planeerimispraktikas rakendada.

SISUKORD

INTRODUCTION

The regulation and the general procedure of participation in planning have not changed since the first Planning Act in force (1995). With the citizens general knowledge trends rising on the topics of mobility, quality of space, climate change and sustainability, communities are expressing a wish to be heard and included in the processes that have an impact on their everyday lives. Estonian society has reached a point where people are increasingly willing to have a say in the development of their environment. (Kljavin et al., 2019-20) Gathering collective information about the needs and values is important in developing a spatial plan that focuses on the needs of the stakeholders and guides future development in consideration of the communities, and landowners and developers. Participation creates social trust, which makes stakeholders willing to cooperate and work towards a common solution even in disagreement. (Hurlbert, 2015)

Participation is a redistribution of power. (Arnstein, 1969; Healey 1997; Innes, 2002) Participation begins with knowledge and understanding. On the basis of understanding, building ideas through meaningful conversations and discussions can lead to more thought out, conscious and versatile spatial plans. (Healey, 1997) Opinions need to be communicated properly to avoid misunderstandings and miscommunication. (Metspalu, 2013) Taking into account that a lot of communication and spending free time has moved from the physical space to virtual space, the participatory planning methods also need to evolve to meet the needs and ways of the new generation of citizens. (Innes & Booher, 2010) The usage of digital planning support tools can considerably change the way people are engaged in a spatial planning process.

Everyone's right to participate in the planning process is implicitly derived from the Aarhus Convention 1, in which article 6 requires the Member States of the European Union to ensure that the public has the opportunity to participate in environmental matters. to participate in environmental procedures. (Planeerimise põhimõtete..., 2016) The role of participation in Estonian spatial planning derives from its legislative requirements, which formal procedures make substantive participation difficult to carry out. The participatory processes have a weak impact on the decision making due to the participation processes only beginning closer to the end of the process by legislation.

AIM

This research aims to give an overview of the current planning practices to map the restrictions and deficiencies in the Estonian planning system for implementing digital participatory tools.

The theoretical framework gives an overview of what is participation, how participatory processes have changed in spatial planning, what is communicative planning theory and the stages of participation. The second part of the theoretical part gives an overview of digital planning support tools. The third part of the theoretical framework gives an overview of the Estonian Planning System. The focus is on the legislative framework requirements, how participatory processes are realised, what is the current planning culture and digital developments in planning.

The empirical part of the research aims to answer the question of how planners perceive participatory processes and using digital tools in participatory processes, and what are their expert needs towards planning support systems. The research focuses on the problems and restrictions of using digital tools that arise from the current planning practice.

RESEARCH QUESTIONS

1. What are the restrictions and deficiencies in the Estonian planning system and practice for using digital tools in participatory processes?

2. How are participation and participatory planning support tools and current participatory processes perceived by the planners?

3. Which digital tools can be implemented in the current planning system to benefit participatory processes?

RELEVANCE

In the Estonian context, the participation methods in spatial planning have been analysed and various guide materials for implementing the participatory processes have been published. (Tillemann, Viljasaar 2012; Metspalu, Pärn 2016; Pehk, Vaher 2011) The materials give proposals for conducting the participatory processes focusing on the currently used methods, but do not view the possibilities of implementing digital participatory methods. The role of the planner in conducting spatial plans (Metspalu, 2019) and the procedural problems have been analysed from the perspective of procedural aspects. (Green Paper, 2020)

The current digitization of spatial planning in Estonia includes a Planning Database, which will include all established plans and a Planning Procedure Information System for the procedural steps of the conduct of the spatial plans is currently being developed. (Planeermise digi..., 2016) While digitalization is ongoing for the procedural steps, participatory processes remain the same.

The current research views participatory spatial planning in the context of communicative planning (Healey 1997, 2003; Innes & Booher 2002) and provides suggestions for implementing digital participatory tools into the planning system for collaborative planning. The research aims to understand the problems and restrictions in the current planning system and practice which need to be acknowledged before the further analysis of the implementation of the digital planning support tools into Estonian participatory processes in spatial planning. The research also reflects the planner's perspective towards participation, the current methods and the readiness for implementing digital tools.

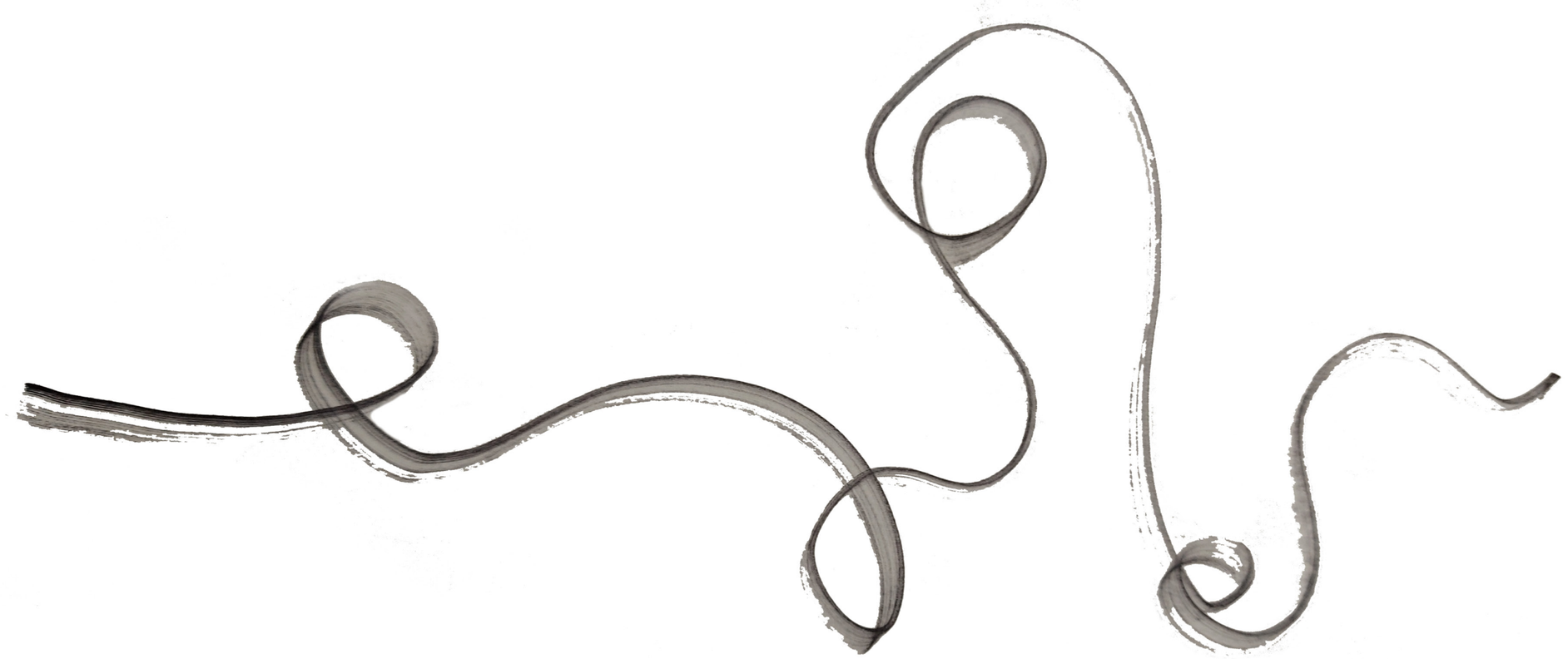


Illustration of a planning process

THEORETICAL FRAMEWORK

1 PARTICIPATION IN SPATIAL PLANNING

Participation in spatial planning means collaboration and communication with various stakeholders during the planning conduct. This chapter describes the definition, objective and importance of participation in spatial planning and gives an outline of different participation types - informing, consulting, involving, collaborating and empowering, mostly drawn from Arnstein (1969) and the International Association of Participation (IAP, 2014).

The collaborative planning theory, an approach to planning which prioritises collaboration between public and private spheres (Habermas, 1984) to create socially equal and quality places (Healey, 2003) is described to give further understanding of the participatory spatial planning intention and the planner's role in participatory spatial planning.

1.1 PARTICIPATION AND ITS OBJECTIVES

"There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process." (Arnstein, 1969, 216)

Participation means engagement of stakeholder groups within the processes that affect them. Participation is an important aspect of decision-making processes because it enables stakeholders to influence the outcome of the decisions that affect them. Participation also widens the perspective of the decisions and the scope of the discussion, benefitting from the possibility that the decisions made are more practical, and credible and serve the common values of stakeholders/participants. Collaboration between stakeholders and decision-makers helps to build trust, reduce conflict and create stronger ties in communities.

Arnstein (1969) linked participation to the redistribution of power. She argued that the power to be able to affect the decisions and being part of the decision-making process is the cornerstone of participation. Without the redistribution of power, the participation process remains inconsequential. (Arnstein, 1969) Healey emphasised the importance of social justice, arguing that stakeholders should be involved in both the problem definition as well have equal power over making decisions. (Healey, 1997, 2003)

Innes (2002) also linked collaboration with power and developed a theory about network power - an alternative form of power that emerges from consensus building and other forms of collaborative planning. Network power is a consequence of communication and collaboration between diverse participants - individuals, public and private agencies, and businesses in society, who are focusing on a common task. (Innes & Booher, 2002)

The principal reason for participation is contributing knowledge, competence, and information about the public purpose that decision-makers lack. (Fung 2006) Often the official decision and planning documents do not create an adequate knowledge base for an overall picture of the area and lack the locally important experiential knowledge. (Staffans et al., 2021) Participants add this valuable knowledge and opinions from their roles as parents, commuters, suburbanites, bicyclists, environmentalists etc, which might otherwise not be included. (Innes & Booher, 1999) Collaboration creates culturally diverse values and ways of life about local environments. (Healey, 1997)

The objective of participation can also be creating greater trust in government, and creating stronger democracy. (OECD, 2001) Public participation in planning increases the potential that the action of the government agencies reflect the citizens' needs and also supports good governance principles of openness, accountability, effectiveness and coherence. (McCall & Dunn, 2012)

Public participation is not an alternative to political representation or expertise, but it complements and operates in synergy with the representation to yield more desirable practices and outcomes. (Fung 2006) Participation creates social trust, which makes stakeholders willing to cooperate and work towards a common solution

even in disagreement. (Hurlbert, 2015)

1.2 PARTICIPATORY SPATIAL PLANNING

Planners' role and planning as a profession have changed considerably over time. In the 19th century, a planner was a visionary who drew up blueprints for new towns. Planning was more an art than a creation of a complex environment. During the 1960s this view became questioned and there was a common accusation that planners were insufficiently informed about the nature of reality. (Metspalu, 2019) By the 1960s planning thought changed to rational-comprehensive planning theory, where there is no collaboration with stakeholders and the common good is defined through a scientific method. (Mäntysalo, 2005) In the 1970s planning became a political process. (Metspalu, 2019) Advocacy planning theory put the planners into a role of an advocate who defines the historical, social and cultural habits, needs and values of the society and makes planning decisions based on the different value considerations. (Mäntysalo, 2005) Incrementalist planning theory proposed to broaden the knowledge base of planning by introducing various interest groups to the planning process (Mantysalo, 2005) planners achieved roles as moderators and negotiators who have to balance the needs and wishes of different stakeholders. (Metspalu, 2019)

The planner's role as a mediator was acknowledged and this encouraged the emergence of collaborative planning (Forester, 1989; Healey, 1997; Innes, 1999). Participatory planning (collaborative planning, communicative planning, co-planning) is an approach to planning that aims to involve as many people and stakeholders as possible and to gather their knowledge, values and needs for the future plan. It emphasises the communication and collaboration between people.

Communicative planning theory developed out of Habermas's Theory of Communicative action and communicative rationality. The concepts refer to the interaction of society members who seek to reach a mutual understanding and coordinate their actions by reasoned and rational argumentation, finding consensus based on cooperating towards a common goal. It promotes reaching common understanding and action in a group rather than strategic action for one individual. Communication between public and private spheres is considered a critical instrument. (Habermas, 1984)

Giddens' theory of structuration similarly sees the social system as an active process, constantly regenerated by the engagements of the actors. He separates practical consciousness, which is where people act without thinking along the lines of common social norms called mutual knowledge, and discursive consciousness, where actions are led by instinct and might be difficult to describe. Social structure is seen as a combination of patterns and practices, which mostly take place on the level of practical consciousness. (Giddens, 1984) Giddens' structuration theory focused attention on the qualities of interaction relations. (Healey, 2003)

Based on Habermas theory of communicative action and the concept of communicative rationality (Habermas, 1984) and Giddens's concept of the continual interaction between actors (Giddens, 1984) Healey builds a collaborative planning theory. (Healey, 1997)

She understands planning as an interactive process, a governance activity, occurring in complex and dynamic institutional environments, shaped by wider economic, social and environmental forces, to maintain and enhance the qualities of places and territories. (Healey, 2003) Healey emphasises the importance of social justice, which instead of just a socially equal outcome, means also a process of how the outcome was arrived at. (ibid, Harvey 1973). Stakeholders should be involved in both the problem definition as well as finding a solution, with equal power over the decision making, leaving the planner to be a facilitator between participant communications. (Healey, 1997)

Innes took a communicative ideal of consensus building and applied it to the communicative rationality articulated by Habermas (1984).

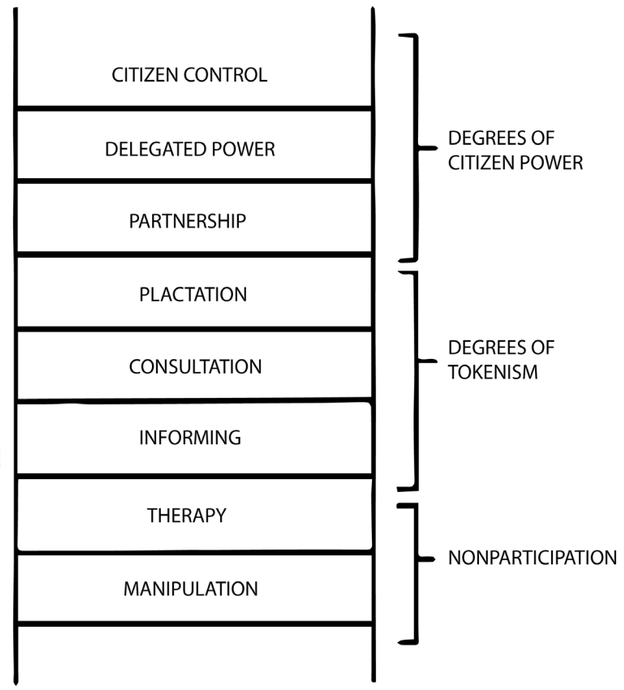
Consensus building aims to create a shared understanding and agree on a strategy to go forward with. (Innes & Booher 1999) Innes believed that planners are not neutral experts and she brings the legitimacy of the knowledge used into question, advocating for the shared knowledge or the stakeholders. (Innes & Booher, 2003)

Forester focused his research on the importance of communication and democracy. Forester highlights one very important principle that influenced the development of spatial planning: planning is for people. Who else are we planning for, if not the citizens who have to live in the environment created by these plans? That is why it is important to constantly remember in the planning process that planning is for people. (Forester, 1989)

1.3 PARTICIPATORY APPROACHES

Public participation approaches can be categorised as top-down or bottom-up approaches. The spatial planning system is an institutional system in which participation is organised by the decisionmaker. Therefore the top-down participatory levels and typology are explained in this research.

Arnstein (1969) developed a Ladder of Citizen Participation, levelling participation typology based on the degree of power of the participants. Not all the levels have the possibility of participation but are unifacially controlled by the powerholders. Manipulation and Therapy are not considered to be participation but rather serve the purpose of "educating" or "curing" the participants. Minimal information is given out to the participant and they are expected to agree without further elaboration. Some information is given, information might be distorted, and no opinion is asked. Arnstein (1969) considers participation starting from the informing stage, making the first communication between the powerholder and participant. Next step is consultation. These means enable participants to offer their opinions, but there is no actual guarantee that any of their voiced opinions are being used. The participants lack the power to actually make a difference and the participation can be seen as an empty gesture depending on the actions of the decision maker. Meaningful participation only starts when the participants are perceived as partners and they are given some power in the decision making. (Arnstein, 1969)



Ladder of participation. Adapted from Arnstein (1969)

OECD Handbook of public participation categorises the participation steps into 3 main steps - informing, consulting and active participation. (OECD, 2001) Active participation consists of collaboration and engagement in decision-making but does not include the notion to empower participants by giving them actual power over the decisions.

IAP (International Association for Public Participation) published a Public participation spectrum, which consists of 5 stages of participation. The IAP2 spectrum is an international standard for public participation. The 5 stages of participation described in the spectrum reflect the similar basic stages as the participation schemes before and. The five stages encompass increasingly different

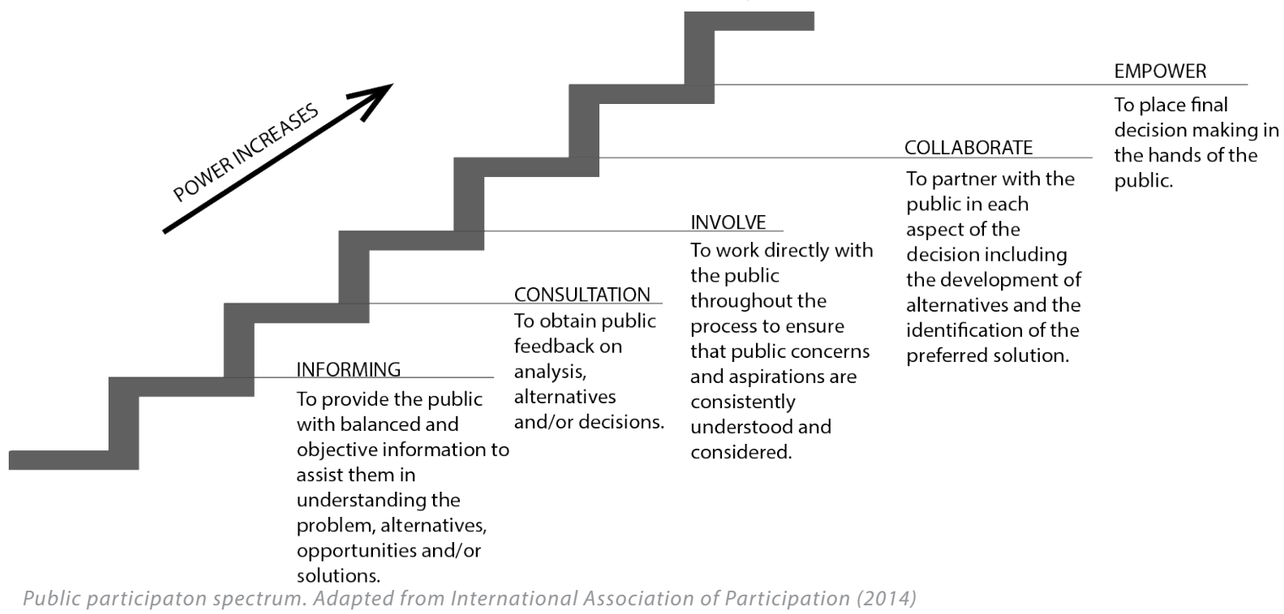
levels of engagement between the participants and decision-makers. (IAP2, 2014)

The hierarchical view on the spectrum, which has also been criticised on Arnstein's ladder (Hurlbert, 2015), leads to a presumption that the higher involvement stages are preferred over the lover involvement stages. The appropriate level of engagement or a best mix of stages is rather depending on the context and purpose of the participatory processes.

The typological participation representations of master principles have also been criticised for being too simplistic and disregarding the social and contextual varieties which greatly influence the engagement processes. (Fung, 2006) (Hurlbert, 2015)

Fung adds three important dimensions - the scope of participation, mode of communication and decision and extent of authority - and presents it as a Democracy cube. He makes the distinction between processes that are open to everybody and those which only selected stakeholders are invited, questions the representation of the public and interest groups, the competence of the participants and describes the five different selection methods of the participants. The dimension of communication affects the outcome and scope of participation. There can be either a one-sided communication where information is simply received from officials or a collaboration where information is exchanged between all parties. The third dimension describes the link between discussions and decisions. Are the decisions made without public input, are the decisions made based on proposals heard moments before in a public meeting or do the decisions rely on multiple negotiations, meetings and hearings (Fung, 2006)

A split ladder of participation, proposed by Hurlbert, adds levels of problem structuring, social learning, trust, management and governance to the ladder of participation to assess the conditions under which participation is likely to work. The split ladder of participation represents four typical circumstances with different goals of stakeholder participation. The bottom half of the ladder shows the low levels of participation and the top half shows the high levels of participation. The split ladder represents the idea that participation might not always be necessary, might not always be useful and might not always lead to consensus, but participation can be effective and efficient when the suitable method is chosen. (Hurlbert 2015)

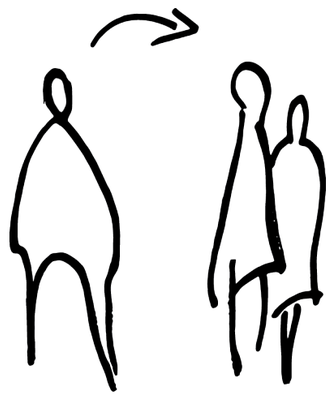


Public participaton spectrum. Adapted from International Association of Participation (2014)

Participatory approaches have been described in different ways. They have been described simply, through a typology of engagement processes, as well as by adding important aspects to the description of processes that influence the choice and outcome of the process. The master typologies of participation remain a good way to overview the methods in a planning process, yet the other aspects like the scope of the participants, the means of communication, the influence of the discussion over decision-making, legitimacy of the decisions, social knowledge, trust of the authority etc need to be taken into consideration when designing a participatory process.

1.4 STAGES OF PARTICIPATION / PARTICIPATION TYPOLOGY

The stages of participation and usability of digital tools and methods in this work are categorised and studied based on the previously described typologies, mostly relying on IAP engagement scope: informing, consulting, involving, collaborating, and empowering. (IAP2, 2014, 2018) The methodological scheme of participatory planning consists of five generic steps: initiation, planning and design, implementation, evaluation and maintenance. (Horelli, 2002) The levels of participation vary in terms of the phases in the planning cycle. Each of the stages carries a different purpose and outcome of participation. The other aspects are taken into consideration based on the analysis of the Estonian planning system, planning culture and planners's views and expectations on participatory processes in analysis and discussion.



"Information is a source of power in the planning process." (Forester, 1989)

Informing is described as one-way communication, where information essentially flows in one direction. (OECD, 2001, Arnstein 1969, Illing & Lepa 2005). It is an announcement from the administration through which people are told what has been done and what will happen. Informing is one of the levels of participation, it is a one-sided and passive method, from the planner to the public. (Metspalu, 2013). Informing can be the most important step towards legitimate citizen participation, yet informing can also be turned into a superficial means of communication by providing incomprehensive information, irrelevant information and irrelevant answers to the points made by the participants (Arnstein, 1969).

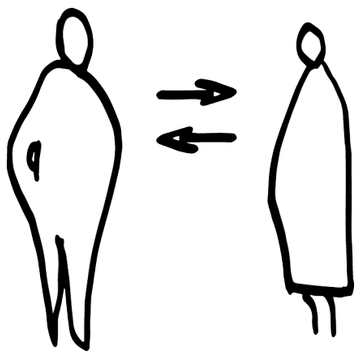
The purpose of informing can be sharing information about a process or decision with the purpose of keeping people informed, but not with the intention to ensure that people get involved. The information should provide outcomes of the process and deliberation of the decision-making.

If the purpose of informing is to get people involved in a process, then the shared information should provide participants with balanced and objective information in order to assist them in understanding problems, alternative solutions and opportunities. (IAP2, 2018) For further collaboration to be efficient and effective, the informing phase needs to give ample and sufficient information, not only informing but also explaining the problem, sharing knowledge and giving the participants an understanding of the wider scope of the problem. (OECD 2001)

Sharing information can be either active or passive activity. The authority can either simply put the information in their selected channel and presume it reaches people, or in addition, share the information more directly to selected stakeholders. (OECD, 2001; Fung, 2006)

The means of informing are endless. Some of the traditional means include information channels like news, radio, and government websites; ensuring access to documents, registries, and catalogues; physical information channels like posters, letters, and leaflets. (OECD, 2001)

Despite informing being described as a separate method of participation, it is the pillar of participation, without informing, other forms of participation are impossible to achieve. (Illing & Lepa, 2005)



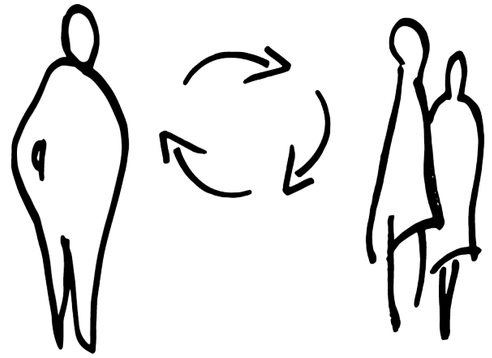
Consultation means asking for and receiving citizens' feedback. (IAP2-2, 2018) It is a limited two-way communication where the extent of participation is determined by what and how much is asked from the participants (OECD, 2001).

Consultation is efficient for identifying problems. (Illing & Lepa, 2005) Citizens may provide their feedback, but it is not ensured that this feedback is taken into consideration and that it has any effect on the final decisions. (Arnstein, 1969) Consultation can either be open to everyone through open questionnaires or targeted to selected stakeholder groups. (Fung, 2006)

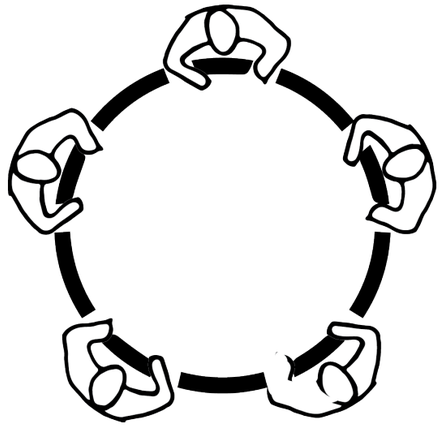
Consultations are usually done in a written form by sending documents for commenting, questionnaires or opinion polls, but can also be done in public hearings, focus groups, interviews, referendums, panels etc. The purpose is to receive comments, suggestions and opinions on the asked questions. (Illing & Lepa, 2005) Usually written consultation forms are selected due to verifiability.

The main shortcoming of consultation is that the asked questions can only be simple and direct, and in the same way the information gathered through consultation can only be simple and superficial. The consultation is also time and resource consuming. (Illing & Lepa, 2005) It is easier to get quantitative data rather than qualitative data by the traditional methods.

Despite being an open form of engagement, it does not allow for a real debate between the public sector and stakeholders. (Illing & Lepa, 2005)



Involvement means working directly with the stakeholders and ensuring that public concerns and aspirations are understood and taken into consideration. (IAP2). It is a two-way communication that encourages discussion and provides an opportunity to influence the outcome of the project. (IAP2, 2018) For citizens to be able to participate in an informed dialogue, they need to be informed and have a high level of information. (Illing & Lepa, 2005) Obtaining information about the needs and values of the participants can potentially smoothen the planning process and reduce the number of conflicts. (Kahila & Kyttä 2010)



Collaboration creates a dialogue between the authority and stakeholders. People participate in the project interactively. Collaborative planning means an active, two-way communication-based process. Active communication involves the exchange of information, understanding, sharing and having mutual influence. (Metspalu, 2013) Collaboration is based on the idea of partnership, where participants take an active role in proposing policy options as well as have a possibility to evaluate and choose from the possible solutions and have a say in decision making. (OECD, 2001) The stakeholders work as a team, incorporating their input and advice, and formulating solutions and options together. (IAP2, 2018) Making the final decision is the responsibility of the powerholder, but the decision is greatly affected by the collaborative work. (IAP2, 2018, Fung 2006, OECD 2001)

Collaboration is a partnership between the participants and powerholders (decisionmakers). In this form, the decision making is shared. Meaningful collaboration presumes that participants make decisions based on rationality, knowledge and logic. This requires acquiring ample and balanced information. This emphasises the importance of sharing information in a way that is comprehensible for the participant. (Arnstein 1969)

Collaborative means are designed to create deliberation. Participants have access to and absorb educational background material, exchange perspectives, experiences and reasons with each other and develop their individual and collective interests. (Fung 2006) Collaborative processes foster discussion and the discovery of new design options.

Some of the traditional forms of collaboration include forums, consensus conferences, and visioning.

"Decision making in a complex urban development project, for example, often results from interactions among multiple arenas, such as planning agencies, stakeholder negotiations, neighbourhood councils, and public hearings." (Fung 2006)

Empowerment is delegating the final decision-making to the collaborators, giving them the power to decide. (Fung, 2006) Empowerment is delegating decision making to the stakeholders. (IAP2, 2018) Delegated power is when participants are given the means and power to make decisions. (Arnstein, 1969) Empowering gives power to the participants, creating a network power, which emerges from building consensus and collaborative planning. (Innes & Booher, 2002)

Empowerment isn't always desirable and in many cases, the consultative and collaborative role is more appropriate for the stakeholders. For example, decision making in urban development projects results from interactions among various expertise in different fields. (Fung, 2006)

Empowerment relies on the previous participatory processes. The participants need to be well informed, included in the process and be the collaborators of the process - possessing enough information to make knowledgeable decisions.

2 DIGITAL PARTICIPATORY TOOLS AND METHODS

2.1 RELEVANCE

Technological devices and access to the Internet has become broadly available to people. Smartphones, tablets, 3D-rendering software, virtual reality, social media and gaming are part of people's everyday lives. Using digital tools has become important alongside traditional methods due to the transition of everyday tools into digital forms, the standard of using 2D and 3D software for architecture and spatial planning, the standard of Building Information Modelling and the smart city phenomenon. The move of participatory tools from the physical to the digital world offers a variety of new possibilities for collaboration in the spatial planning process.

The Internet as an open medium provides an efficient means of cooperation and information exchange between the involved parties. (Staffans, 2004) Using digital tools, such as social media platforms, forums, and PPGIS have the possibility to create a flexible and comfortable basis for the beginning of the discussion, dialogue and collaboration. The strongest aspect of digitalization is the ability to reach a wider audience and involve a much larger stakeholder variety by reaching user groups that are otherwise out of reach with traditional participation formats, be it for geographical, social, or cultural reasons.

Information and communication technologies (ICTs) have greatly changed how people communicate, interact and share information and thus methods for participation in urban planning should also be changing (Innes & Booher, 2010). Web-based methods can make participation more democratic in comparison to traditional methods, because they free participation from the limits of time and place, and can reach large numbers of participants. (Kahila & Kyttä 2010)

Saad-Sulonen (2012) conducted a study of three participatory planning cases which used digital technology in Helsinki and found that mostly the digital content was created for either gathering information, dissemination of information, documentation and broadcasting and deliberation, but it was not used for planning activities themselves. She also found that residents responded positively to using online tools, because it gave them flexibility in terms of the time and place of discussion. (Saad-Sulonen 2012)

Other advantages include the ability to gather and analyse data more extensively and efficiently, make data and documentation easily accessible to the public, support transparency of the process and visualise the data and ideas comprehensively and understandably. Digital tools, such as digital mapping tools, GIS, 3D modelling and virtual exploration enable people to experience and understand planned space and environment in new ways. (Wallin et al, 2010)

The creation and sharing of digital media content are considered to be a central element of communication in the emergent participatory digital culture. (Saad-Sulonen, 2012). Brown and Kyttä (2014) find that participants are less likely to engage in the planning process if their role is limited to simply providing information rather than contributing in a more consultative or collaborative role. (Brown & Kyttä 2014) Digital technologies enable everyone to be a producer rather than a passive consumer of the information. (Saad-Sulonen, 2012; Jenkins, 2006)

The generation born into digitalization expects the same kind of high-quality usability, flexibility and reliability from digital services provided by public administrations that are gained from commercial platforms. (Staffans et al. 2010)

A survey was conducted by Nummi (2018) which showed the perceived usefulness of digital participatory tools in Finland. It showed that some of the digital tools which are used in practice are not considered to be useful enough (web sites, social media), while digital tools like 3D models, virtual reality, and extended reality are not established in practice but are considered to be useful. The most useful and established tools were feedback systems and web-based questionnaires. (Nummi, 2018) This shows the need for the exploration of implementing digital participatory tools into spatial planning.

2.2 STAGES OF PARTICIPATION/ TOOLS AND METHODS

Different stages of a planning process require different needs to be fulfilled by the participatory processes. Digital tools here are described according to the characteristics and aspects they have and how they fit into the different stages of participation described in the previous chapter.

Using digital tools offer new methods and possibilities to conduct the collaborative processes and capabilities to enhance the participatory stages to be more informative, inclusive and collaborative.

INFORMING, ELEVATING

"Public must have their questions and concerns addressed if relationships are to be built, and, if the genuine dialogue is to occur." (Kent & Taylor 1998)

Arnstein criticised the informing to be mostly one-sided. (Arnstein, 1989) One of the core issues in the participatory planning process is communication between citizens and planners. Overcoming those distances can be supported by digital media and information and communication technologies. (Halttunen et al., 2010). ICT can give a platform to stakeholders to comment and discuss not only straight with the planner, but also amongst each other.

Digital tools offer wider possibilities for spreading and receiving information. (Saad-Sulonen, 2012) The core principle of informing is creating a dialogic loop - it is essential to create information that goes both ways, that the organisation sharing the initial information also answers the questions and opinions about the topic and gives further explanations if needed. Another principle is the usefulness of the information. (Kent & Taylor 1998) In spatial planning it is important to share information about not only the proposal of the plan, but also the possibilities of participating, informing about the achieved results and informing about the developments of the process. (Horelli, 2002)

It is considered important that information on planning is provided openly and that alternative solutions are debated in an early stage of the planning process. Residents appreciate the option of giving feedback early on in the process. (Staffans et al., 2010) It is also noted that officials should participate in the discussions more visibly, signalling the stakeholders the value of the discussion. (Ibid) Currently, online discussions are fairly unconnected to the decision-making and planning processes and are often informal online discussions where the planners and city representatives do not take part. (Staffans et al., 2021)

While ICTs have a lot of potential to facilitate two-way interactions between powerholders and stakeholders, studies show that the application of the tools to foster interaction, collaboration and co-production of ideas and solutions has not been used much. (Zavattaro & Sementelli, 2014; Kent & Taylor, 1998) Some of the underlying issues and difficulties are said to be the lack of structure (Bryer & Zavattaro, 2011), difficulties in extracting useful information out of the data (Lin & Geertman, 2019) and the validity of the information (Marti et al., 2019).

The usage of social media is perhaps the most researched digital participation tool and method. (Bryer & Zavattaro, 2011; Zavattaro & Sementelli, 2014; Kent & Taylor, 1998; (Nummi 2017, 2018; Marti et al., 2019)

The term social media is understood as technologies that can be used to facilitate social interaction, create possibilities for collaboration and enable deliberation across stakeholders. Those technologies include networking tools, blogs, wikis, media, sharing tools and virtual worlds. (Bryer & Zavattaro 2011) In this paper, social media is recognized as networking tools and media sharing tools like Facebook, Twitter, Instagram etc.

Social media has a social interactive capacity, but the possibilities of interactiveness are not often used in the actual implementation of the tools. The tools are not necessarily collaborative.

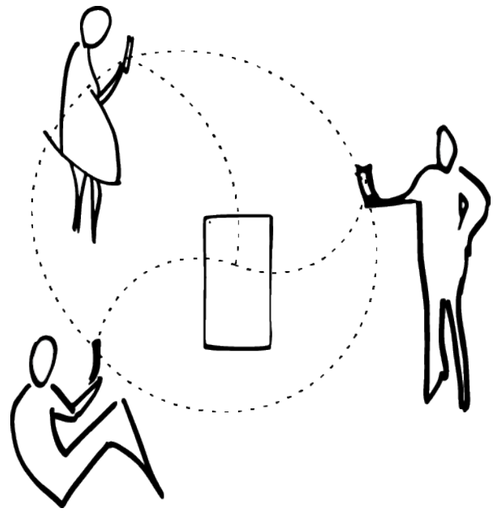
The traditional media tools like blogs, and web pages may also create a basis for interactive communication but are mostly used for sharing the information rather than waiting for feedback. Social media allows information to flow both ways - from the informer (planner) to the stakeholders and vice versa in an uncomplicated way. (Bryey & Zavatto, 2011)

Bryer and Zavatto (2011) argue that the actual implementation of social media may not achieve possible levels of interaction and collaboration because, despite the potential, it is currently used as a one-way information sharing. It is simply used as another means to control information. It is common that citizens' comments are left unanswered and are not taken into consideration. (Bryer & Zavattaro, 2011) The administrators of social media can leave a faulty image of openness and transparency if they are active posters on their accounts, but are not interested in the feedback. (Kent & Taylor, 1998) The dialogue, comments and opinions in social media need to be taken seriously, collected and analysed as means of gathering knowledge about the stakeholder needs.

In addition to interaction tools, social media can also be used as a data source for understanding how people behave, move and interact with each other. Using user-generated media data for the analysis of the space to understand a public's view of existing spaces. Currently, there is a lack of reliable social media analysis tools which has prevented the utilisation of social media data in urban planning. (Nummi, 2017)

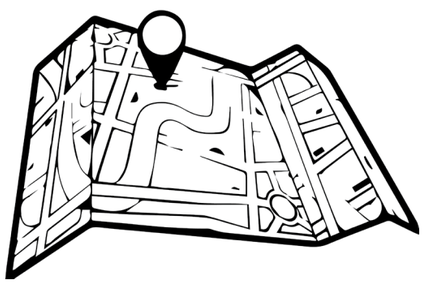
The difficulties of using social media platforms as a basis for interaction lie in the marketing of this information. Making a Facebook post when the follower base is low does not reach the audience that might be needed. One solution for this could be to make the sites attractive for repeat visits with updated information, changing issues, online questions or online experts to answer the visitor's questions. (Kent & Taylor, 1998) Social media view count should be considered as an important factor in showing how many people the information has reached, and, if needed, promote the spreading of the information so that it would reach more people.

The flow of information between different actors in collaborative planning is critical. (Healey 1997) The potential of using social media in participatory processes is wider than it is used. Information sharing is a great starting point but for the usage of the maximum potential of social media, the administrative body has to understand and value the potential dialogue and collaboration and actively participate in the discussion.



CONSULTATION

Consultation in spatial planning is the most commonly used form of participation. It is limited to two-way communication, where people are asked to give feedback. (IAP-2, 2018) Through the usage of digital platforms, a consultation can take the form of involvement, where discussion is encouraged and the dialogue influences the outcome of the project. Information communication technology tools such as PPGIS can be used as means to enhance transactions and knowledge creation with stakeholders in the planning process. (Brown & Kyttä, 2014)



GIS, PPGIS, SOFTGIS

GIS (geoinformation system) is a spatial systematic tool that creates, manages and analyses geographical data. GIS platforms are widely used by planners. GIS is used to gather input and transform the gathered data into a form which can be then used as an input for decision making. (Sedogo & Groten, 2000) GIS incorporates layers of geographical data about the elevation, transportation, landscape etc. For the missing data about social, historical and cultural information PPGIS and SoftGIS have been created.

PPGIS and SoftGIS are essentially web-based map questionnaires, where information is shared through visual map space and information from the residents can be given location-specifically by making points on the map. (Kahila & Kyttä, 2010) Participatory mapping relies on the ability of the participants to recall their experiences. (Brown & Kyttä, 2014)

Implementing PPGIS software in participatory planning has evolved to solve questions like -How to capture, integrate and translate the perceptions, needs and objectives of all local stakeholders into feasible plans? How to efficiently structure the gathered information in order to integrate it and improve it in the planning process? (Sedogo & Groten, 2000) How to generate effective knowledge from spatial data? (McCall & Dunn, 2012) How to analyse and present the experiential knowledge sufficiently and in digestible ways? (Kahila & Kyttä, 2010)

Participatory mapping and PGIS are used on a local level to gather local knowledge (people's cognitive maps, experiences, culturally significant places, history etc). GIS uses sketch maps, topographic maps, remote sensing images, aerial photographs and other geo-referenced material for spatial representation. In PGIS the problem, need, and idea mapping is done by asking stakeholders to contribute their knowledge to the prepared plan. (McCall & Dunn, 2012) Key objectives also include describing the connection to a place, identifying qualities, values and conditions of a place, identifying behavioural patterns and everyday practices in the location and identifying the preferred developments and land use in the area. (Brown & Kyttä, 2014)

Participation GIS (PGIS) and public participation GIS (PPGIS) both promote the inclusion and empowerment of participants, but PGIS is mostly used in developing countries in rural areas, focusing on social learning, community engagement, encouraging community identity, empowerment and creation of social capital, while PPGIS is used in developed countries, in urban-centred populations focusing on enhancing participation processes to improve the quality of land-use decisions. (Brown & Kyttä, 2014)

McCall and Dunn (2012) analysed and assessed Participatory GIS (PGIS) tools in terms of the principles and criteria of good governance (accountability, legitimacy, respect, equity, competence). They found that incorporating GIS into local knowledge building increased the respect for the governed, while not putting unrealistic

technological expectations on communities.

Kahila and Kyttä (2010) introduced a softGIS method, which aims to build a bridge between the residents and urban planners by allowing the residents the possibility to share their knowledge and supporting wide participation by making the process easy for the citizens, who are viewed as experts in the knowledge of local context. The main difference between PGIS or PPGIS and SoftGIS is that the PPGIS is developed to support the work of experts in the field, but softGIS also factors in the specific needs of the participants. (Kahila & Kyttä, 2010) The "soft" refers to subjective and qualitative data produced with the method that contrasts with the "hard" data layers in regular GIS. (Brown & Kyttä, 2014)

SoftGIS-methods are developed in cooperation with urban planners and the database enables systematic information analysis to use the gathered knowledge in the planning process. The methods are also developed according to the needs of the users, providing a user-friendly interface, which can be tailored specifically for a concrete theme - like safety, urban mobility, green environment - or for the target group - for example softGISchildren for children and young people or softGISelderly for elderly people. (Kahila & Kyttä, 2010)

There are several PPGIS and SoftGIS platforms developed and in use which all use a 2D map as a basis of communication between the planners and stakeholders. Urban mediator, which focused on collaborative design (Saad-Sulonen, Botero 2010); Tell a Story, which is a mobile phone application for collecting location-based stories on the go and supporting participation throughout the planning process. (Halttunen et al., 2010) The first SoftGIS prototype was developed in Järvenpää and has now been used in several other regions and cities in Finland - Mäntsälä, Kerava, Nummijärvi, Muotiala and Tampere, Turku. (Kahila & Kyttä, 2010) Some examples of SoftGIS and PPGIS are Maptionnaire, ArcGIS plugins, and Avalinn.

Participatory GIS projects are usually on a particular rung of the participatory ladder and rarely move up or down the ladder. (McCall & Dunn, 2011) PGIS is usually used for gathering information and getting feedback – for information sharing and consultation. PPGIS is well suited in the initiation phase of the spatial planning process because it is seen as a means to enhance transactions and knowledge creation. (Brown & Kyttä, 2014) At the moment softGIS-methods are best suited to the evaluation phase of the planning process. In the future, softGIS could be used as a continuous method for monitoring during the whole planning process. (Kahila & Kyttä, 2010)

The PPGIS methods are a good way of communication between the planner and the participants but do not offer the possibility for the stakeholders to communicate with each other and therefore it lacks the possibility of creating discussion and dialogue. This type of participatory tool makes it incredibly easy for the participants to share their knowledge, opinions and ideas with planners. The application is easy to use and can be done "on the go". The system of participation is clear and transparent.

CO-CREATE
(INVOLVEMENT AND COLLABORATION)

"Scenario building and storytelling can make collective sense of complexity, of predicting possibilities in an uncertain world, and can allow the playful imagination, which people normally suppress, to go to work." (Innes & Booher pg. 12, 1999)

Tools for co-creation (involvement and collaboration) enhance the participation of different stakeholders in the planning process. (Wallin et al., 2010) Through using co-creation tools inhabitants and stakeholders become co-producers and co-designers in planning.

VISUALISATION

Visualisation plays a central role in making information comprehensible and understandable. Today, visualisation has become not only an end-product of the work, but a tool that is actively used in all the phases of the planning process. (Kahila & Kyttä, 2010) Visualisation helps not only the participants but also the planners to comprehend the data. (Ibid) The visualisation also puts different nationalities on a more equal basis for participation, since model construction is undemanding in terms of language skills. (McCall & Dunn, 2012)

SCENARIO ANALYSIS

"If a user-generated TV network is possible (YouTube), why not a user-generated city?" (Skelton et al., 2011, pg 355)

It is paramount that the participants understand the proposed ideas and plans to form their opinions and create new ideas. Scenario analysis tools can be used to illustrate the consequences of specific choices and provide stakeholders with an enhanced understanding of the alternative solutions and outcomes. There are some GIS analysis tools available (e.g. CommunityViz, Place3S, What If?, Index) which can be used to manage and represent information in a comprehensible manner. (Salter et al. 2009) Space simulation enables users to modify the urban development model while experiencing the changes in the environment first-hand. (Stauskis, 2014)

ROLEPLAYING

Healey recognizes that in the social context individuals do not arrive at their "preferences" independently, but learn about their own opinions through interaction. (Healey, 1997) Processes that succeed in producing breakthroughs and innovative ways of solving problems are carried out through role-playing the scenarios with the participants. Role-playing games allow participants to consider strategies that they would normally not consider and find consensus through the process. Participants contribute their own experiences, ideas and scenarios they can imagine to the process. This encourages learning, innovation, understanding of the wider scope and therefore genuine engagement. (Innes & Booher ,1999)

GAMIFICATION

"Participants are allowed to become creative in a collaborative way, build on each other's ideas." (Innes & Booher, 1999)

Games of participatory planning are games similar to SimCity which are virtual city planning games. SimCity, Cities Skylines or similar video games have been used for educational purposes for urban design. (Stauskis, 2014; Fonseca et al., 2017, Khan et al., 2021) and in participatory spatial planning processes. (Devisch et al., 2016; Ampatzidou et al., 2018)

The usage of games has been useful in developing conceptual understanding, critical thinking and problem-solving in urban planning. Immersive games allow participants to be in control of the decisions made for solving problems and therefore learn through problem solving and experimentation. (Khan et al. 2021)

Using gamified applications for public participation in spatial planning influences citizens' levels of engagement through motivation to participate (Thiel & Fröhlich, 2016), enables immediate emotional and behavioural experience (Stauskis, 2014) and creates spatial experiences and knowledge (Ampatzidou et al., 2018).

VIRTUAL REALITY

The commercial success of computer games for entertainment has created a generation of young people who are skilled in navigation and manipulation of complex virtual environments. (Skelton et al., 2011) Virtual reality creates an immersive environment which can support participatory processes through visualisation and

creating an experience-based spatial knowledge.

VR headsets are proven to be more effective in informing citizens and providing higher engagement than using non-immersive displays. Visual communication can effectively support communication between the planners and stakeholders by offering a common language that reduces misunderstanding of the created design. Visualisation helps participants assess and reflect deeper on the spatial properties. (van Leeuwen et al., 2018) A comparison of using visualisation and simulation with text only representation reveals that visual representation provides more accurate descriptions of the possible design solutions whereas text-only representations are imagined differently in the participants' heads and can create a situation of misrepresentation. (Patterson et al., 2017)

Virtual, augmented or mixed reality can also be used together with GIS. A combination of those technologies enables visually seeing the changes at the site visit, which are overlaid into the current situation. The technology operates via personal computers, but also mobile devices and smart glasses, which can be used anywhere. This allows stakeholders to engage with the proposed plans while walking in the area and test for example the walking paths and bike paths. Combined with audio solutions even street noise can be simulated. (Boulos et al., 2017) 3D geo-information enables further visualisation of the gathered data to allow meaningful interpretation and discussion (McDal & Dunn, 2011)

For example Betaville "Massively Participatory" open-source web-based participatory software (Used in Brooklyn, Bremen, Shanghai, San Francisco) is used for sharing and discussing ideas of public art, architecture, urban design, and development. It enables citizens to propose changes to an online 3D "mirror world" (digital twin) city model, which can then be commented on and produced further over time by offering alternative ideas. The platform works outside the formal planning process, but can be shared with planners and other experts after creation by the time the formal planning process is initiated, to give input about local conditions and desires. The entire process is automatically recorded and retrievable, giving an instant public record of the process and its outcome. (Skelton et al., 2011)

EMPOWER

"If we don't get the data, the decision will just be based on politics." (Innes, 1989, page 1)

Innes links knowledge to making decisions. Decisions should be made with the aid of knowledge, - criteria, evidence and logic - to choose options that are likely to achieve goals. Facts, statistics, theories and findings from research and analysis are considered knowledge. Knowledge is not only produced by experts, but also by regular people (non-experts, laypeople). (Innes, 1989) Most Web-based applications do not offer citizens the possibility to participate in decision-making, only getting information. (Kingston, 2002)

Planners share power through their communications with planning commissioners, citizens and developers, either empowering or disempowering the listener. (Forester, 1989) Tools and platforms that enhance collaboration through elaboration, explanations and strategizing help to make knowledgeable decisions and gather the support of the public through co-creation. 3D modelling tools are instrumental in empowering stakeholders to understand, negotiate design decisions, discuss design quality and take collective decisions. (van Leeuwen et al., 2018)

At the same time, information and knowledge do not create power without political support for the empowerment of the stakeholders. Other factors like political processes, property markets and property development play the main role here. (McCall & Dunn, 2012)

3 ESTONIAN SPATIAL PLANNING SYSTEM

This chapter gives a general overview of the current Estonian Spatial Planning System and participatory planning procedures based on the current legislative framework, official guides published by the Ministry of Finance and by the Estonian Association of Spatial Planners and other published guides from the field of spatial planning. The section gives an overview of the planning principles and typologies in Estonia and analyses the current participatory processes, roles of various stakeholders and how the different interest groups are included and represented in the planning process.

3.1 LEGISLATION, PUBLICATIONS

Spatial planning in Estonia is regulated by the Planning Act, in force from 01.07.2015, issued by the Parliament (PlanS, 2015). The Planning Act aims to create, through spatial planning, the preconditions that are necessary for democratic, long-term and balanced spatial development that takes into account the needs and interests of all members of Estonian society. The legislation establishes and describes the principles of planning and requirements for the planning procedure and implementation of the spatial plans. (PlanS Ch1 §1 (1) , 2015)

Additional legislations regulate the structure and formatting requirements for spatial plans (Planeeringu vormistamisele…, 2019) and the procedure for cooperation with the authorities (administrative organisations) involved in the preparation of the plans (Planeeringute koostamisel…,2015).

Some other acts include regulations for administrative procedures (Administrative Procedure Act); regulations for implementing the Planning Act (EhSRS, 2015). These acts are not analysed in this research paper due to the lack of relevant content on the topic of participatory planning.

MINISTRY OF FINANCE PUBLICATIONS

Ministry of Finance, as an organiser of spatial planning in Estonia, has published several publications, guidebooks and surveys which explain the Planning Act and aid planners in the preparation of spatial plans.

The publications and spatial planning related topics are covered in a separate planning dedicated portal planeerimine.ee.

The Ministry of Finance is also responsible for creating a national digital database for spatial plans and a national planning procedural information system.

ESTONIAN ASSOCIATION OF SPATIAL PLANNERS

Estonian Association of Spatial Planners has published surveys, and guidance materials for the preparation of spatial plans, including organising participatory processes during the preparation of the spatial plans, for conducting environmental impact assessments and information about the principles of creating quality spaces.

3.2 GENERAL OVERVIEW

Spatial planning in Estonia is regulated by the Ministry of Finance. Spatial planning aims to develop the external environment democratically, creating high-quality, environmentally-friendly and economically, culturally and socially sustainable development. (Ruumiline planeerimine).

A spatial plan is defined in the Planning Act (2015) as an inclusive spatial solution that is prepared in respect of a particular land area and that, in cases provided in law, establishes the land use and building conditions for the area. (PlanS Ch1, § 3 (1), 2015)

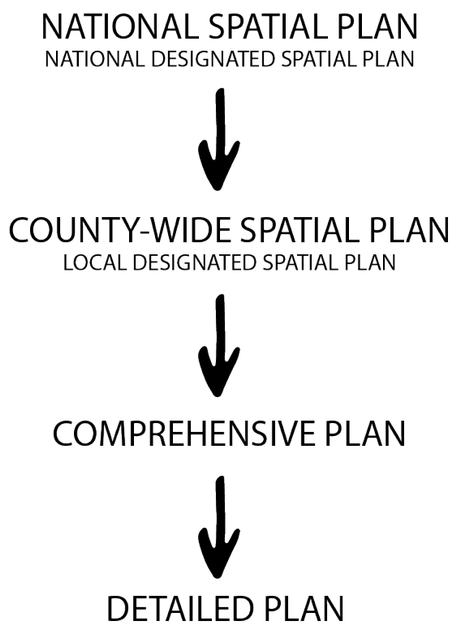
The Planning Act (2015) describes the requirements for the planning procedure, as well as the framework of the documents, which the plan consists of, principles of planning, the process of planning and the implementation of spatial plans.

The spatial planning documentation consists of

an explanatory text and technical drawings as well as annexes with information regarding the planning procedural activities and a strategic environmental assessment. All the documents and planning proceedings are public and accessible (unless they contain sensitive information).

The Estonian Planning System is hierarchical, meaning that the subsequent plan has to follow the rules of the plan which is higher in importance. In necessary cases, the hierarchically lower plan may also be used to modify and change the higher plan. There are four main types of plans: national spatial plan, county-wide spatial plan, comprehensive plan and detailed spatial plan. In addition, there are designated spatial plans, for example, national designated spatial plans and local authority designated spatial plans which are conducted in cases of the erection of construction work, which have a significant spatial impact. (PlanS Ch4 § 27 (1); PlanS Ch7, § 95 (1), 2015)

Estonian planning types can also be divided into two categories based on the purpose: ad hoc - which are object-based spatial plans for specific construction, and strategic spatial plans. Ad hoc plans include detailed spatial plans, national designated spatial plans and local designated spatial plans. National spatial plans, County-wide spatial plans and Comprehensive plans are strategic plans.



The national spatial plan (NSP) is the highest authority spatial plan. It is prepared in respect of the entire territory and exclusive economic zone of Estonia. The function of the NSP is to define the general principles and directions of the spatial development of human settlement, national transport network, including at the international level, other infrastructure including energy, gas and communication networks, directions of exploitation of the ground below the surface, measures to ensure the preservation and functioning of valuable landscapes. (PlanS § 14 lg 1, 2015)

The NSP is initiated by the Government of the Republic of Estonia. The administrative body arranging the preparation of the NSP (planning authority) is the Ministry of Finance. The NSP is prepared in cooperation with ministries and national associations of local authorities. The invited participants include persons and bodies who may have a legitimate interest, for example, non-governmental organisations. Persons who have expressed their interest in being invited to participate may be invited. (PlanS Ch3, 2015)

The county-wide spatial plan is prepared to define the principles and directions of the spatial development of an entire or part of a county in order to express interests that transcend the boundaries of individual local authorities. The functions of the county-wide spatial plan determine the potential locations of transport networks and other infrastructure, locations of waste treatment sites of regional importance, principles for the use of public water bodies, conditions of use of mineral deposits and general conditions of cultural heritage, landscape use, green network. It gives the directions for comprehensive plans. (PlanS, 2015)

The county-wide spatial plan is arranged by the Ministry of Finance in cooperation with ministries, local authorities, persons who have expressed

interest and persons whose interests may be affected. (PlanS Ch5, 2015)

A comprehensive plan is prepared to define the principles of and directions in the spatial development of the entire territory of a rural municipality or city or a part of such territory. A comprehensive plan determines the location of transportation networks and other infrastructure, waste treatment, main utility lines, designated zonings and conditions of the development of the construction work. It also established the restrictions on noise level, culturally and historically valuable objects and areas. (PlanS Ch6, 2015)

The comprehensive plan is initiated and prepared by the local municipality and the administrative body is also the local municipality. It is prepared in cooperation with government agencies, local authorities and the persons or bodies who may have a legitimate interest in the environmental impact and the non-profit organisations representing the residents in the planning area. (PlanS Ch6) A comprehensive plan is a contract between the local government and the residents. To ensure the success of the comprehensive plan it needs the support and understanding of the community, which means the residents, businesses and others need to be involved. (Ministry of finance, 2018)

The comprehensive plan is usually prepared for decades because it is a very long process. It is often used for a couple of years at first, then left ignored. Times change, new technology and people's movements change. International and national goals change.

A detailed spatial plan is an ad hoc spatial plan meaning it is prepared to plan construction works on a territory. A detailed plan forms the basis for the preparation of the building design documentation and the building work conducted in the near future. The purpose of the spatial plan is to create an inclusive spatial solution for the planning area. The functions include defining the plots and buildable area, building rights, location of construction works, requirements for the architectural and spatial solution, principles for vegetation, traffic, levels of noise, vibration, pollution and other principles of using the land plot. Detailed plans also state the need for acquisition in the public interest, designate public-use areas of existing or envisaged recreation areas on private property and determine instances in which holding an architecture competition is required. (PlanS Ch8, 2015)

The preparation of the detailed spatial plan is arranged by the local authority and prepared by the interested party in collaboration with the planner, government agencies, and invited participants whose rights the detailed spatial plan may affect and people who have expressed their interest. If the detailed plan requires conduct of an environmental impact assessment then also non-governmental environmental organisations and non-profit organisations are invited to participate in the preparation of the plan. (PlanS Ch 8, 2015) It is important to identify and consider the different development options and directions for the area. Cooperation should be multidisciplinary between professionals and people. (Eesti Planeerijate Ühing et al., 2020)

Local governments may authorise the construction work based on design specifications and without the preparation of a detailed plan. (PlanS, 2015)

3.3 PRINCIPLES OF PLANNING

The main principles of planning include the improvement of the living environment, inviting and informing the public to participate, balancing and integrating interests, the sufficiency of the information and reasonable and sustainable land use. (PlanS Ch 2, 2015) The principles of planning give the general guidelines for the transparency of the information and participatory processes as well as general principles for planning spatial development.

The principle of improving the living environment stands for the establishment and preservation of a user-friendly and safe living environment and of a spatial fabric which reflects

the values of the community. (PlanS Ch2, 2015) Both objective and subjective evaluations from professionals and the community should be taken into account. The principle is connected to concepts of living environment through public space and recreational areas, safety, user-friendly space for accessible mobility, community values which have a traditional and historical background and milieu values. (Ministry of Finance, 2016)

The principle of inviting the public to participate states that the public has the right to participate in the planning proceedings and express their opinions, therefore the public must be informed of the planning procedure and the possibilities to participate in the proceedings in the course of the preparation of the spatial plan. It states the need to arrange public displays and public discussions for introducing the plans to the public. (PlanS, 2015) From 13.01.2022 it was added to the Planning Act that the public displays and public discussions are also allowed to be arranged by electronic means by real-time communication link. (Ibid.) It must also be ensured that the public understands why they are involved in the planning process and what depends on them. The participant has to formulate the expressed opinions in an understandable way and at the right time and right place. (Ministry of Finance, 2016)

The principle of balancing and integrating interests states that the planning work must balance interests including public interests and values and integrate them into the planning solution. (PlanS Ch2, 2015) Balancing interests does mean taking the proposal into account, but understanding why the proposal was made and finding a compromise for different solutions. (Ministry of Finance, 2016)

The principle of the sufficiency of information regulates the availability of relevant strategies, risk analyses, existing spatial plans and other documents required for the preparation of spatial plans to the authority organising planning work. (PlanS Ch2, 2015)

The principle of expedient, reasonable and sustainable land use states that when creating spatial plans, preference must be given to environmentally sound solutions and the built environment and green areas must receive balanced consideration. (PlanS Ch2, 2015) As a rule insufficiently used areas of existing populated areas should be prioritised over developing new areas unless there are a clear new outside densely populated areas for additional residential development. (Ministry of Finance, 2016)

3.4 STAKEHOLDERS AND RESPONSIBILITIES

The planning authority (Administrative body, local gov) is the authority that organises planning work: arranges the preparation of spatial plans, prepares the spatial plan or commissions the preparation, takes the procedural steps during the preparation of a spatial plan and ensures the existence of spatial plans corresponding to the land area. Their duties also include the assessment of the relevant economic, social, cultural and environmental impacts resulting from the implementation of the spatial plan. The role of the administrative body is to guide the process, identify the impact and interested parties related to the planning process and have the obligation to make the decision on a plan. (PlanS Ch1, 4) (Green paper, 2020) Their role is to ensure that the spatial plan corresponds to the regulations and norms, and local development needs and that the process and documentation of the spatial plan are publicly available. (Eesti Planeerijate Ühing et al., 2020)

The planning authority is, depending on the type of the spatial plan, either the Ministry of Finance (in case of NSP, NDSP, CWP) or local government (in case of CSP, GDSP DSP).

The planning authority is responsible for conducting the participatory processes.

An interested party is a person or a body who has a vision for a spatial solution and an interest in the development of a specific site. An interested party is usually the owner of an area of land or property - either a private person, a development company or the local government if the land is

owned by the municipality. The party wishes to carry out the plan to increase the value of the land. (Green Paper, 2020)

The interested party usually has the means to implement at least part of the vision. The interested party represents the personal and financial interest of a narrow group of persons in achieving a particular spatial solution. (Eesti Planeerijate Ühing et al., 2020) Their interest is to carry out the planning as fast as possible by the procedure to start the implementation of the plan. Above all, interested in having their vision and development plans are taken into account (Eesti Planeerijate Ühing et al., 2020)

A planner (planning consultant or planning official or planning team) is an expert or a group of experts who prepare the planning solution and prepare the planning materials and documentation or provides consulting services during the preparation of a spatial plan. (Green paper, 2020)

As an expert, the planner prepares a professional spatial solution taking into account the client's development vision, the specific characteristics of the environment and the decisions or guidelines made by the municipality. Planner is responsible for drawing up a competent planning solution in terms of both content and form. The planner is hired by the interested party. (Eesti Planeerijate Ühing et al., 2020)

Invited participants are persons and bodies who may have a legitimate interest. They are either the official agencies who are responsible for specific fields (eg. Estonian Rescue Board, Estonian Civil Aviation Administration, Health Board of Estonia, Environmental Board), utility network holders or private persons or bodies in the neighbouring sites. They are invited to engage in the spatial planning process to present their reasonably presented opinions and proposals for alternative solutions. (PlanS, 2015) Their views and interests they represent are taken into account in the decision-making process. (Eesti Planeerijate Ühing et al., 2020)

The public is persons who may not have expressed a wish to be involved or whose rights are not directly affected by the planning, but whose general interests must be taken into account by the municipality. (Eesti Planeerijate Ühing et al., 2020)

The public's (general) interest is the interest of society as a whole in justifying preferences in decisions that secure the public good or avoid harm to it. From the point of view of the public interest, the importance is on what is not used for private consumption but is available to all, such as nature, security, culture, etc. The public interest should be taken into account even in situations where no one is directly involved. (Ibid.)

The public should be constantly informed about the planning process and procedure, about the made decisions and clear messages about the decisions. (Ibid.)

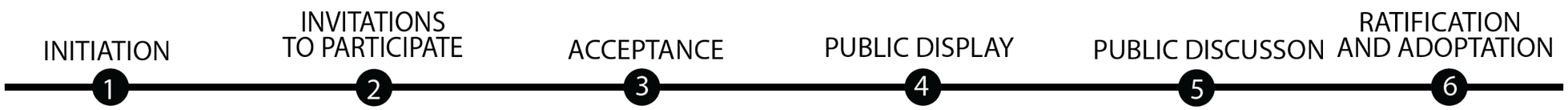
3.5 GENERAL PLANNING PROCEDURE AND PARTICIPATORY PROCESSES

The preparation of spatial plans is public. During the preparation, the plan documents are published together with the most important annexes - studies, approvals, opinions, and other up-to-date information on the website of the planning authority. It is the responsibility of the authority arranging the preparation (usually the local gov) to provide public access to the planning documents.

The Planning Act sets very clear rules for the planning process. Following the procedural process is important, because in the Estonian planning culture there are often situations where planning applications are taken to court. The planning process in Estonia has moved from value-based planning to court-based planning.

INITIATION

The preparation of a spatial plan is initiated by the planning authority. The order to initiate a spatial plan includes the purpose of the preparation of the plan and the time and place for pursuing the initiation order. In case the initiation comes



from the developer/landowner, there are local documentation forms regarding the required information and documentation needed to be submitted for initiation. The decision to initiate or dismiss the plan is done by the local municipality.

If the decision to initiate a spatial plan is positive, a public announcement will be made in a newspaper within 30 days of the initiation and within 14 in the Official Announcements and on the website of the planning authority. The announcement has to include the purpose of the preparation of the plan and the time and place for pursuing the initiation order. The participants invited to cooperate in the preparation of the plan are personally notified in writing within 30 days of the initiation.

INVITATION TO PRESENT PROPOSALS (NOT PUBLIC)

The persons or bodies who have a legitimate interest or have specifically expressed their interest are invited to present proposals through emails. Based on their sphere of competence, the persons and bodies present their proposals regarding the spatial plan. They are given a time limit to answer the proposal and if the person or body has not presented their proposals within the time limit, the person or body is deemed to have declined to present proposals regarding the initial planning outline of the national spatial plan and their response is considered as agreed.

The authority arranging the preparation of the spatial plan considers the proposals and makes necessary modifications, and accepts the plan.

PUBLIC DISPLAY

The authority arranging the preparation of the spatial plan arranges a public display of the proposed plan. The persons and parties invited to participate receive written notification and the public announcement is published in a newspaper and on the website at least 14 days prior to the commencement of the public display. The announcement includes a brief introduction of the content of the spatial plan, the significant impacts that the implementation of the spatial plan might entail and state the major changes in comparison with the existing situation as well as the time and location of the public display. (PlanS, 2015)

The public display is held on the premises of a local authority and sometimes additionally on the site. The public display lasts for at least 30 days. Access to any material regarding the spatial plan has to be allowed (at least during office hours). During public display, everybody has a right to present their opinions regarding the spatial plan. Written opinions are replied with reasoned positions concerning those opinions and information about an upcoming public discussion within 30 days after the end of the public display.

PUBLIC DISCUSSION

Public discussion of the results of the public display is held within 45 days from the end of the public display. Public discussion is not mandatory if no written opinions were submitted during the public display or if all written opinions have been followed up.

Invited participants and people who submitted written opinions receive a written notification 14 days prior. (PlanS, 2015)

The purpose of the public discussion is to

elaborate on the results of the public display, introduce the written opinions and state the planning authorities' views on those topics, present the reasons for the selected solutions and answer other questions related to the spatial plan. (PlanS, 2015)

The results of the public display and public discussion are published in a newspaper within 30 after the public discussion.

DISSEMINATION AND IMPLEMENTATION

After the consideration of the results and necessary changes are made

Submissions for approval and invitations to present opinions go out to the invited people and bodies. If the body or person does not submit their opinion or approval within 30 of receiving the invitation, the proposed plan and report are deemed to have been tacitly approved or the wish to express an opinion is waivered. If no contrary to legislation is apparent, the spatial plan is deemed to have been approved. (PlanS, 2015)

3.6 PLANNING CULTURE

The role of a planner and spatial planning in Estonia has evolved over time. The position of planning has weakened and the role of a planner has blurred. Spatial planning, which is shaping our environment, is hardly visible in space and society. (Metspalu, 2019)

Planner, who during Soviet times was present in official planning-related decision making and planning in local governments is often a part-time task of a building environmental planner. Often the built environment is driven by single projects rather than strategic, long-term choices, with political will and powerful interest groups making the decisions, who do not see spatial planning as an instrument of long-term policy implementation. (Metspalu, 2019)

The bureaucracy of planning processes diminishes the visionary nature of planning. Since the processes can take years, the spatial plans are not implemented for strategic development. (Metspalu, 2019) During spatial planning, the different development scenarios are not often visioned. In the case of detailed plans, it is believed that the most important part of drawing up the plan is the technically correct preparation of the plan. Spatial analysis and assessment of different solutions are secondary. (Eesti Planeerijate Ühing et al., 2020)

In participatory planning, planners carry the role of a mediator between different stakeholders. (Metspalu, 2019)

The Green Paper on Estonia Spatial Planning states that planning authorities, whose role in planning is balancing interests, making discretionary decisions on the planning solution, and reaching agreements with neighbours and agencies has often withdrawn from those duties and has taken the role of a processor whose interest is in fixing bureaucratic and legislative flaws and the role on the visionary has been taken over by the interested party. (Green Paper, 2020) Metspalu believes that the barriers for comprehensive planning and solutions lie in the private ownership rights for each plot. (Metspalu, 2019) The tension between private and public spheres shape Estonian spatial planning, reflecting in solutions which are not suitable for the environment. (Lankots, 2019-20)

Spatial planning has been a procedural rather than participatory process. (Lankots, 2019-20) The majority of society is not familiar with the concept of planning. (Metspalu, 2019) However, there has been a growing public awareness of quality public spaces and urban activism is demanding better solutions. (Lankots, 2019-20) Housing associations, NGOs, and public campaigns against spatial solutions show that collaboration is not valued as a method of planning. (Paaver, Kiivert 2019-20) In planning practice, the urban activists are seen as opponents instead of collaborators. (Kljavin et al., 2019-20) For example in Tallinn, to have a say and be part of the decision-making process you have to constantly offer your ideas and be an expert in where and to whom to write to. (Karro-Kalberg, 2021)

Participation in the planning process had been left to the activists while the government organisations do not seek engagement or prioritise it. For example, comprehensive guides to participatory processes in spatial planning have been produced by the NGO Linnalabor (Urban Lab). (Tillemann & Viljasaar, 2012; Viljasaar et al., 2012) At the same time guides published by the Ministry of Finance focus on the procedural steps of the participation process. (Ministry of Finance, 2021)

The society in Estonia has reached a point where people are increasingly willing to have a say in the development of their environment, express their attitudes and apply their skills and knowledge. (Kljavin et al., 2019-20)

3.7 DIGITALIZATION IN SPATIAL PLANNING

Estonia is known as the most advanced digital society in the world. Estonia ranks first place for digital public services. 89% of the Estonian population uses the internet, with a decent number of ICT specialists and the highest number of unicorns per capita. (e-estonia, 2021)

BIM (Building Information Modelling) has become a standard in the building sector to increase the productivity and quality of the built environment and decrease the time of design and construction work. (Rass, 2021) Modern digital solutions would allow for quick processes and take the quality of our living environment to a new level. The 3D digital twin has been created for the territory of Estonia. It is a digital mirror of the whole built environment, helping to analyse and visualise changes in the built environment in a three-dimensional environment. It is intended to be used as a tool to assist in the design, planning, and construction of buildings. It allows you to view 3D models of buildings and find information about them. (e-ehitus) In addition, Tallinn has also developed a digital twin. (Tallinn city model)

The digital twins enable us to see the shadows the buildings cast and add constraints and additional data from Land Board Geoportal. In the future, it will also show the underground built environment. (e-ehitus)

The Ministry of Finance is working on a national planning information system. Creating a procedural environment for planning, and creating uniform formatting requirements for planning documents, to ensure that they are machine-readable.

Currently, local governments have a large degree of autonomy in planning which has led to fragmented requirements for the prepared spatial plans. The planning database aims to gather all data about existing spatial plans into one application and make them more easily available. (Planeeringute andmekogu.., 2019). The planning database will be introduced in august 2022. The requirements for the layout and form of the plans (Planeeringu vormistamisele…, 2019) establish layers in which the planning solution must be formatted. The uniform guidelines ensure that plans are structured similarly, simplifying the retrieval of the data and uploading plans into the database. (Planeeringute andmekogu…, 2019)

Due to the autonomy in planning, multiplicities use different information systems. There are currently no national systems for the procedure of planning. There continues to be a functional inadequacy with a high proportion of communication going through email and mail. This makes the procedural process time consuming and complex. In addition, it is difficult for the public to access information. (Planeeringute menetluse…, 2020) The Ministry of Finance is currently developing a procedural application for planning, which would be similar to the currently in use building register. (Planeeringute menetluse..., 2020)

Currently, the Ministry of Finance is not working on the issues regarding public participation or developing platforms for collaboration.

EMPIRICAL RESEARCH

4 METHODOLOGY

The empirical part of this research focuses on identifying current participation practices in spatial planning projects: the planners' expectations, views and attitudes towards participatory processes and co-planning, the used tools and methods and the assessment of common practices. These findings are the basis for understanding the current planning practice restrictions, shortcomings and the implementation gap of digital participatory tools.

The research draws on a mixture of qualitative and quantitative data.

Qualitative research methodology is interpretive, the data is analysed thematically and conclusions are drawn through the lens of the researcher. Complex data are analysed holistically, producing/ leading to contextual explanations. During the qualitative research, the general pattern of understanding of the topic emerged. (Creswell, 2009)

The role of the researcher in qualitative data analysis was that of an observer with theoretical knowledge of participatory processes. This enabled the researcher to make conclusions and assessments objectively, even though retrieved from the experiences of the current practitioners. The reporting of the result was based on the theoretical framework of communicative planning theory (Healey, 2003; Innes 1989) and the legislative framework of the Estonian Planning System.

The qualitative research data was gathered through semi-structured interviews and a workshop with practitioning planners.

The aim of the interviews was to map planners' experiences, attitudes and expectations regarding participation, to obtain information about the current participatory practices, experiences with digital tools for collaboration and opinions on the use of different tools in order to identify the planners' needs and implementation gaps of digital participatory tools.

The selection of the interviewees consisted of public sector planners working in municipalities (8), planning consultants, employed as planning conductors for the local government initiated plans (3) and private sector planners from architecture and planning firms employed by the landowners or developers (5). The selection of planners with different backgrounds was made to ensure the relevance of the results.

12 interviews were conducted with a total of 16 interviewees. All interviewees had experiences with plans of different scales: detailed plans and comprehensive plans, some also with county plans, national spatial plans, designated plans and nationally funded projects as opposed to privately financed projects. The interviews were conducted between 12.04.2021 and 30.04.2021. The interviewees and their data are anonymous, but personal data about their experiences with planning processes were used to make conclusions about the difference in attitudes towards participatory processes in planning. Notes were taken during the interviews, and the results were combined during listening and reviewing of the recordings and transcriptions.

The interviews conducted were structured into four topics:

1. How participation is perceived,

2. gathering input and background information

3. Public information, and Public presentation public discussion assessment

4. ideal participation in planning.

The gathered data was analysed on similar topics: The general attitudes towards participation and the knowledge needs, the importance of different stakeholder groups and their visions, implementation and evaluation of the current planning practices and the perceived value of using digital participatory tools.

The workshop methodology was an observation of the discussion between urban planners from the Spatial Competence Centre of the Tallinn Strategic Management Office and planners from the Tallinn Urban Planning Department.

The workshop was conducted by the GreenTwins project team, which is developing the Tallinn City Planning HUB - a space for collaboration for spatial planning. The workshop aimed to understand the expectations towards the Tallinn city planning HUB, the principles for the use of the space, the purpose of the space and the spatial and technological requirements.

I would formulate the last phrase like this: The results described in this study are considered from the perspective of the participants in terms of the important steps for participation and what they see as the ideal conditions and tools for collaborative processes.

Quantitative research was added to further evaluate the current experiences with digital tools and planners' readiness to implement digital participatory tools in practice.

Quantitative research methods are used to numerically describe trends, attitudes or opinions. Based on the results, the researcher generalises claims about the results / the researcher can make generalised statements about the findings. The characteristic of quantitative data is measurability. (Creswell, 2009) The results of the collected data are evaluated and presented in the form of diagrams/chats.

The City Planning HUB digital tools testing workshop was carried out by the members of the GreenTwins project, which is developing the Tallinn City Planning HUB.

The aim of the workshop was to introduce digital tools which are possibly going to be used in the HUB for participatory purposes. The workshop introduced two digital tools: the bottom-up co-planning app "Virtual Green Planner" and the virtual reality technology "Covise". The participants were able to test and gain experience using those tools.

Eventually: Participants were able to test these tools and gain experience with them.

After the workshop, participants were given a questionnaire to complete. The aim of the questionnaire was to gather information about previous experiences with different digital tools and to assess the understanding and willingness to implement those tools into their work and in participatory processes.

This research analysed the results of both private sector and public sector planners to see if there were differences in the readiness to implement these tools.

5 RESULTS

5.1 EXPERT INTERVIEWS

The general attitude towards participation in planning and what kind of knowledge do planners seek from participation.

The interview results reflected the importance of the participation and cooperation of different stakeholders in spatial planning. The most important outcome of participation was considered to be gaining local knowledge, expected future developments of the area, the needs of the entrepreneurs, understanding of the social and historical context of the area and the expectations towards the environment through the engagement with different stakeholders.

Planning consultant 3: "Participation is important because I do not usually know the area that I am planning, therefore I need that local knowledge from the people who live and work there, how they would like to live and what their needs are."

Planners expect the emergence of a respectful dialogue during participation. It is considered important to focus on finding common values at the beginning of a planning process and finding solutions and compromises through collaboration instead of focusing on the negative opinions. It is expressed that at present, the discussion is often overshadowed by emotional attacks, frustration and a lack of mutual trust. This creates a negative basis for communication - people become active advocates for the shortcomings of the plan, instead of collaborators in finding solutions. If the basis for communication is created by opposition, it is very difficult to work together and find agreement. It is also believed that mutual trust is starting to emerge, but this can only continue developing if the public stakeholders are receiving valuable information.

Public sector planner 5: "There needs to be much more mutual trust. And fortunately, I think it is starting to emerge. It means we are evolving as a society, but it can only happen if you are open and you are in dialogue and you have information on which to base decisions."

Differences emerged in the way engagement processes were carried out by public and private sector planners. Public sector planners sought a broad stakeholder group engagement and emphasised that it was preferred to have more people involved. Private sector planners mentioned that they do not actively seek engagement with different stakeholders and only engage with the participants whom they are required to engage with by the legislation or local government.

Public sector planner 4: "The more people we reach the better and more accepted the outcome will be."

Private sector planner 2: "The more people you involve in the process, the slower it goes and the more impossible it becomes to get anything done."

The importance of different stakeholders, their values and visions.

Planning consultant 3: "Participation of the local people is important, but if the importance of stakeholders is measured then the importance would be: 70% entrepreneurs, 20% local government, 10% local citizens."

In terms of engaging with different stakeholders, two important groups stood out - young people and entrepreneurs, although it was also mentioned that the stakeholder groups involved are dependent on the planning typology. While the use of digital tools often highlights the generational gap, planners do not see this as a problem. Reaching out to young people, in particular, is encouraged, and possible solutions are welcome. Public sector planners also value the importance of working together with other planners, architects and universities to gather expert knowledge.

The balance of the different stakeholder values was perceived differently amongst planners. From the government officials, the answers reflected in a unified manner that the values of the public certainly need to be represented, but at the moment the values are really balanced towards the vision of the developers. Some local government planners believed that they should represent the needs of the residents while others said they should stay a neutral intermediary. Planners from private firms were more straightforward about the values represented in the planning proposal, expressing more visions of the developers and that they, as employed by them, had to stand for the developers' vision in discussions. They did however bring out that they often fight and educate the developers to design spaces of high quality.

Private sector planner 3: "Even when it is very important to invite residents to participate, in the end, the developer has to reach their agenda too."

It was said that generally the developer has their vision of what they want to build and the local government gives them the urban development guidelines. About 90% of land in Tallinn is privately owned, which means that the government officials have some power to take control of the development and steer the process in a different direction. However, opposition between the local government and the developer prolongs the planning process when compromise is not reached and may lead to the process being put on hold. The local government does not always have resources or legally valid reasons to intervene with the planning proposal, and this requires a strong sense of responsibility and political ground. Some examples where the development process was intervened and drastically changed in comparison to the initial idea were brought out (Balti jaama turg, Kalaranna). In those examples, the opposition of the local community led to the redrawing of the planning proposal in collaboration with the citizens and experts.

Private sector planners also expressed the need for more content related discussions with the local government officials. They were critical of the planning officials, who have withdrawn from making spatial decisions based on the local government strategic plan and positioned themselves as processors who check the compliance with the law and technical solutions while local government planning officials are also expected to shape their positions in collaboration with the public.

Public sector planner 1: "I do not believe there is a conflict in the basic values, everybody wants a nice environment (urban space), that there are lots of businesses and everybody is happy."

It is never monitored or analysed what kind of stakeholder groups are included and informed of the participation opportunities. The social and cultural background is not monitored and that is not considered an issue in most cases to ensure that all social groups have been included. One interviewee mentioned that they resend emails if the outreached person or body has not submitted their opinions. Often one specific stakeholder group is very active and then it is believed that their opinion is heard over all others.

COMMUNICATION, INFORMING

Public sector planning consultant 4: "We'll let you know we're doing something, but we don't really care what you think."

The current planning system is described as notification-based participation. Legislational minimum requirements for notifying the public of the initiation of a spatial plan, public display and public discussion are publishing a bulletin in a local newspaper, putting information up on the website of the planning officials and the Official Announcements and sending registered letters to the persons whose rights the plan may affect (e.g. neighbours).

These informing tools are described as "primitive ways" by the interviewees, but also the most common mediums in use. The most useful medium

is considered to be a paper flyer that is sent directly to the mailbox and advertisements in the streets. Registered letters are considered as the most useless medium because the procedure of collecting the letter is troublesome, people tend not to take extra steps and the letters are sent back.

Private sector planner 4 with public sector background: "In Tallinn, 70% of these registered letters came back unopened after the deadline, without simply not having been picked up."

In addition, local governments use social media for informing the public in cooperation with the public relations department - mostly Facebook and in one mentioned case Instagram. It is considered most useful to post information to the neighbourhood association groups or thematic groups on Facebook or e-mailing the associations directly.

Planning consultant 2: "It seems to me that we still under-use social media."

The participatory processes are the planner's responsibility (in the case of the planner working in a local government) and there is no personnel for supporting it. Generally, if the planning team wishes the participatory process to be meaningful and get valuable information and input, they do the majority of the work next to their usual daily tasks and from their own private time while there are little to no resources available. Most local government planners would find it useful if there was somebody neutral who would lead and organise the participatory processes.

Third sector planners believe that participatory processes are the responsibility of the local planning officials and they do not engage with the stakeholders themselves (except for the client). Public sector planners also express the need for communication between the developers and local stakeholders before the initiation of the planning proposal. It is stated that in most cases the most valuable collaboration has been in cases where the community or a neighbourhood association is active themselves and expresses their interest to participate in the planning process. The negative side of the community members showing active interest in the planning proceedings is considered to be the problem because in those cases the collaboration usually starts at a later planning phase with opposition and causes a delay in the proceedings. In the case where the community is not active, the planners need to take extra steps to reach out and encourage them to participate by showing them that their ideas are valued. Engaging with an inactive community is considered to be very difficult.

Private sector planner 4 with public sector background: "Developers should communicate much more with the people who already live in the area, because they are in fact their potential buyers and customers so that taking them into account could already be important to the developers before they even approach the local authority to initiate the planning process."

Private sector planner 2: "I've even thought that if I weren't in the profession, I might not be able to read these planning descriptions."

The content of the initial introduction of the plan is also criticised. It is said to be usually only a written text, in a formal and legal language, which is difficult to understand. The planners also find that planning drawings are difficult to understand and often lead to misconceptions. The communication and feedback are usually done through emails or regular mail, which is time-consuming and often in a formal language, which does not support collaboration. All the participation is considered to be very letter-based.

Planning consultant 2: "Nowadays, somehow, the process, based on the written procedure and taking into account the legal input of the authorities, has gone so far that the plan is prepared and then there is a huge amount of communication with the authorities, and only then the plan goes public, which is actually very bad."

The informal, pre-initiation idea collection and communication are considered very important. Most planners believe that participation should begin very early in the planning process. Some believe that "you can not start from tabula rasa" and there should be a draft version ready, while others believe that participation starts with mapping the common values, living habits, development directions, wishes and needs of the community even before starting with the planning process.

Participation during the development of the draft is not an official part of the participatory processes required by the legislation and can and is therefore often disregarded due to the lack of interest in it by the developer, personnel and higher decision-makers, which derive from the lack of financial resources and time.

Public sector planner 8: "The general rule is that the more you discuss at the initial stage, the less you have to discuss during the so-called formal statutory public consultation of the plan."

PUBLIC DISPLAY

Planning consulant 2: "If the law requires that the draft be made public, then well, it's almost a finished plan anyway!" (in the case of a comprehensive plan).

The public is included in the project when the planning proposal is a draft version, which is often already developed comprehensively. Public displays are held in the local government rooms. They consist of a printed map of the planning area, other drawings on the walls and an explanatory memorandum. In some cases, 3D visualisations are also displayed. The planning documentation is also made available on the planning authority's website. In the case of Tartu comprehensive plan 2040+, the planning documentation was entirely digital and during the public display, some computers were placed in a public space, where it was possible to access the planning documentation.

The opinions during the public display are usually sent to the planning authority e-mail or by regular mail. During the public display of the Tartu comprehensive plan, it was also possible to submit opinions through the planning website. The received feedback mostly came through the planning website, only some emails and 2 regular emails were received. It was considered to be successful because the feedback was automatically added to the documentation. The public opinions are answered through an email in a formal manner and if the issue does not get resolved the person is invited to the public discussion. If the opposition is answered, the person also has to withdraw their opposition.

Private sector planner 4 with public sector background: "The law today provides that if you have made a proposal or an objection during the public display and you have in principle received a response, you must also withdraw your objection in writing."

Public planner 8: "I am certainly not in favour of this written procedure, of sending written answers. We'll send a bunch of paragraphs against the opposition and that's that."

The location of the public display is generally local government rooms, which are opened during working hours. It was estimated that less use is made of going to the public display and the digital version is viewed at home.

Public planner 7: "Only 3 out of 10 plans were visited on the spot!"

PUBLIC DISCUSSION

A public discussion is held after the public display. It usually consists of presentation of the plan and the spatial solutions and presentation of the written opinions and positions regarding the opinions. Public discussions are considered to be counterproductive. The problem is speculated to come from the meeting being too late in the planning process. Discussions are conducted in a presenter-opposer manner and are often heated. It is common to have lawyers present.

Planning consultant 3: "The public discussion is a last-minute engagement. At the public consultation, no more objections or new ideas are really expected, even though it is called draft-level planning because those who have power have already decided what is important. Nobody wants to go back to redoing anything because that would mean a new public display and a new public discussion. That this is no longer the place for substantive engagement. Even if the ideas are good!"

Most of all the public discussions are used for presenting the opinions received during the public display. There is no time for extra activities that would create a discussion or collaboration and new ideas, solutions and compromises through that.

Public sector planner 8: "There are no such proposals that are not worth debating. But the public discussion is rather built on the fact that we provide further clarification on the received proposals and questions."

Public discussions are considered to be very counterproductive, because of the nature of the process. The late phase participation creates a lot of opposition and a negative climate. Participants who know their rights often have lawyers present to represent themselves.

Private sector planner 4 with public sector background: "The public discussions have become much more constructive, but there continues to be this kind of adversarial rhetoric in the sense that where the public is cursing the municipality and the developer, and the developer is waving with a lawyer and saying he has this right and that right and a another right and shut up altogether!"

Planning consultant 1 "If there are a lot of objectors at the public hearing, it shows that there has not been a right to speak before - the plan has been drafted and put up."

USAGE AND PERCEIVED VALUE OF PARTICIPATORY PLANNING SUPPORT TOOLS

The value of participatory planning support tools is seen in the capability of including a larger group of participants in the planning process, conducting surveys, automation of the gathered data and visualisation of the planning proposal.

Planners have used ArcGIS online platform to gather ideas from the public. In complex urban spaces, intensive co-planning and participatory planning have been done through outsourced projects where they used digital tools as well as face-to-face meetings, PopUp events and visited kindergartens and schools. University students have helped with the outsourced projects - by making interviews and analysis of the results. Maptionnaire has also been used and the Tallinn Strategy Department has used the Avalinn application (Opencity - a map-based questionnaire). These have been rather rare occurrences and new experiments. The traditional methods like paper-based questionnaires, asking to submit input in a local newspaper, face-to-face workshops and discussions are used in most cases.

The GIS questionnaire is considered both valuable and also lacking in some aspects. Sometimes the feedback was considered insignificant. Firstly the feedback is often predictable, but it is considered valuable as an assurance and as a supporting argument in a case of conflict. Secondly, it is feared that digital information gathering is too anonymous and has the risk to produce faulty information about local values. Some problems were brought up with Avalinn, the most important being the lack of automated analysis of gathered information and data, which makes using the information very complicated and labour-heavy. GIS-questionnaire is preferred to be used together with automated analysis tools.

Digital information gathering can in the cases of an active community be too anonymous and have the risk of not producing the local values.

The most positive factor in using GIS-questionnaire was considered to be the amount and the quality of the received feedback. Instead of only opposing and negative comments, there was also positive and constructive feedback.

Gathering feedback during the formal participatory procedures has also been a positive experience. Giving feedback through a planning website was the most used method when it was made available next to email and regular mail.

Planners find that people often misunderstand the scope of spatial planning and that people find it hard to read and comprehend the drawings. Making the planning documentation digitally available offers some advantages like switching layers on and off, displaying extra information for specific areas and focusing on a specific subject.

Although it was also mentioned, that even though there was a hope that digital drawings will be more comprehensible for everybody, currently it seems that it has been most useful for planning officials, who are well oriented in different layers. The public still has difficulties understanding all the layers and how to use them.

Using virtual reality was considered to be useful for making people understand the space better and to give information through spatial experience.

It was also mentioned that visual representation and understanding of the space might create a platform for new ideas and viewpoints. Using augmented reality through mobile phones and tablets was also mentioned in addition to virtual reality. Using augmented reality would give the possibility to experience the space at the planning site. This method is in theory considered to be the best option for giving people a direct spatial experience.

There were also some concerns brought out in regards to 3D visualisations and virtual reality. Firstly, the participants will expect the final outcome to be exactly as shown and it will not be understood that it is just one possible solution in the guidelines the planning proposal is giving. This miscommunication might also lead to frustration and distrust.

Most of the participants were hesitant in using digital tools for participation but some felt that given the opportunity, the tools could be implemented into their process as well. The platforms however need to be set up beforehand because private firms and local governments do not have that capability alone.

Private sector planner 4 with public sector background: "Once the augmented reality platforms are in place, once the environments are created, it will certainly be possible to do compatible planning with our tools. We have that capability today, for sure. The question then is simply that someone has to create these underlying models and platforms and build the apps."

5.2 WORKSHOP WITH PUBLIC SECTOR PLANNERS

The aim of the workshop was to understand the expectations towards the Tallinn city planning HUB. The planners mapped the expected image of

the HUB.

The results reflect the perceived ideal tools, environment and conditions for collaboration.

Urban planners identified keywords that the proposed HUB should reflect. It was considered important that the space created a sense of security - that the place would be welcoming, warm, open, friendly and caring - an informal, people-centred, non-political community space. Contradictorily, it was felt that a city representative should always be present.

The main purpose of the planning HUB was said to be an information centre, where information about urban planning could be quickly accessed. The aim of the displayed information was considered to be a place to introduce Tallinn's spatial development plans to the city resident, to introduce the developments, important detailed plans and to educate the participants on spatial issues and to raise awareness of the understanding of urban space. Secondly, it was proposed to be a gallery for exhibiting ongoing architectural competitions, ongoing city planning projects and showcasing urban planning practices from other cities - street types, design principles and values. Thirdly it was considered to be a physical space for engagement, discussion and communication with citizens, neighbourhood associations, urban planners, strategists, students, researchers and other experts and developers on the topic of spatial plans and urban interventions with significant impact. The HUB would create a space for collaboration and co-creation, rather than a one-way transmission of information from the presenter to the audience.

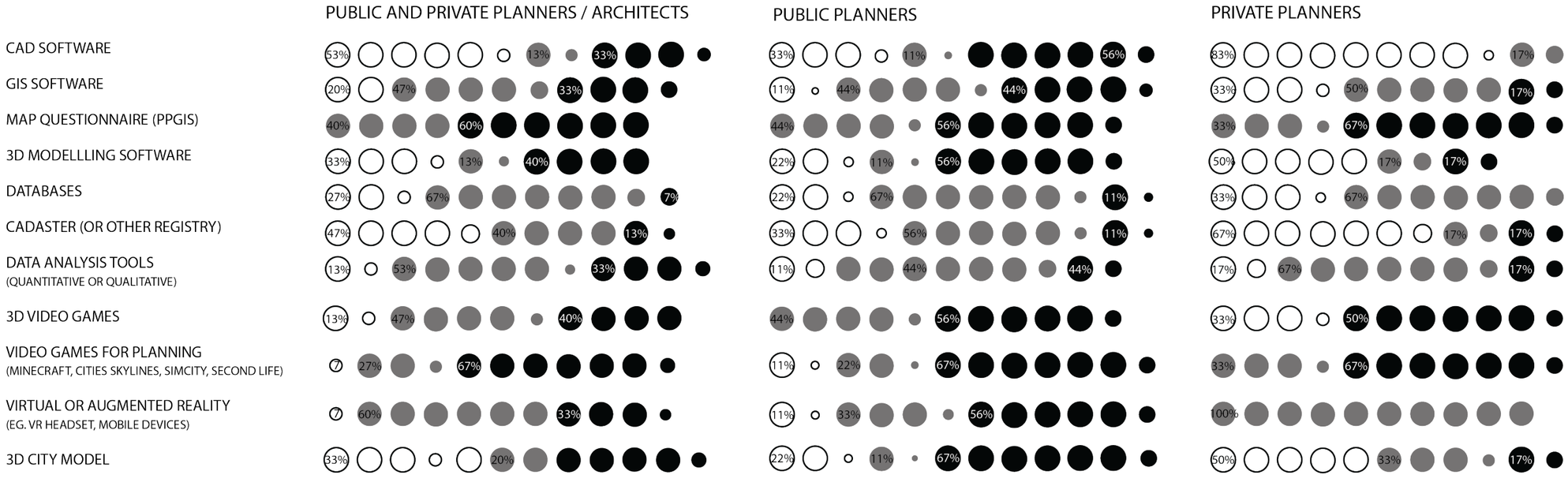
In regards to displaying the information, it was considered essential to make the information easily understandable and complex processes should be explained in a simple and clear way. The access to the information should be individual - the visitor could approach the information alone. The mediums through which information is shared should be traditional posters, information stands, mock-ups and also virtual reality could be used. Some technological options were also mentioned - touch screens, projectors, hologram models, and city 3D models.

The digital twin could be used to display detailed planning solutions on a 3D model, show regional development plans for Tallinn and visualise planned changes to urban space. It would also provide simple information on what is happening and how to get involved.

It could be possible to go to the "Tallinn of the Future" and experience it spatially. Such a collection of different types of information should also be made available as a website.

The information should be precise enough to appeal to a specific person - for example, a visitor could visually see planned changes to the space, via their home address or work-home route, and subscribe to future notifications of changes.

The HUB could help to make planning processes more transparent and to explain the situation and decisions.



5.3 DIGITAL TOOLS DEMO WORKSHOP QUESTIONNAIRE

The tools workshop questionnaire reflected the current experience and openness to implementing digital participatory tools in their work.

There was a difference in the experience of using digital tools between the public and private planners. Among private planners, the most used digital tools were CAD software, cadaster, 3D city model and 3D modelling tools.

The usage of mp based questionnaires was similar among all planners. The majority had never used it in their work and some had only used it on some occasions.

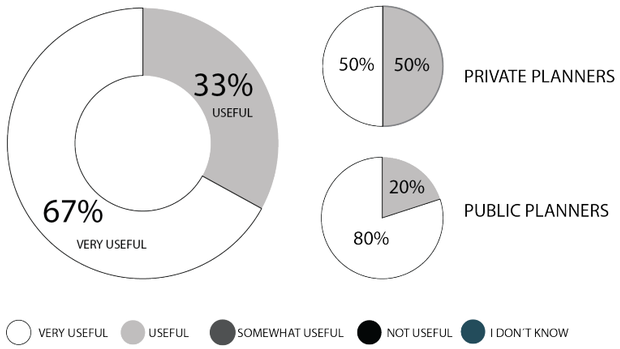
The graphic shows that public planners have less experience in using digital tools overall. The most major differences can be seen in the usage of 3D modelling software, data analysis tools, 3D city model and virtual reality tools.

It can be concluded that private firm planners have more experience in using 3D visualisation tools and public sector planners work more on 2D plans and documentation.

VIRTUAL GREEN PLANNER DEMO

The Virtual Green Planner was mostly observed and not tester by the participants of the workshop. Vitual green planner is an application based on the Digital Twin, which enables users to sketch, plan, analyse and propose spatial solutions.

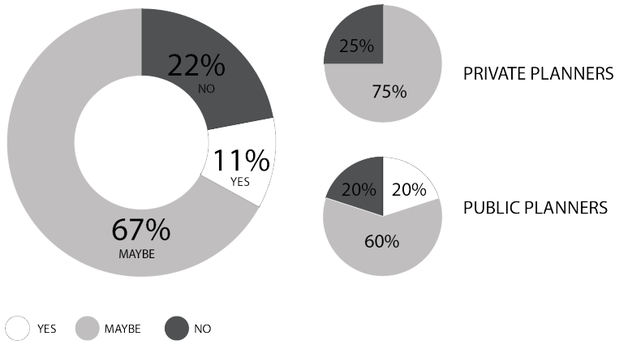
The answers show that the tool is considered to be useful (33%) and very useful (67%). Despite that, it was not clear to the participants how to exactly integrate this tool into their work.



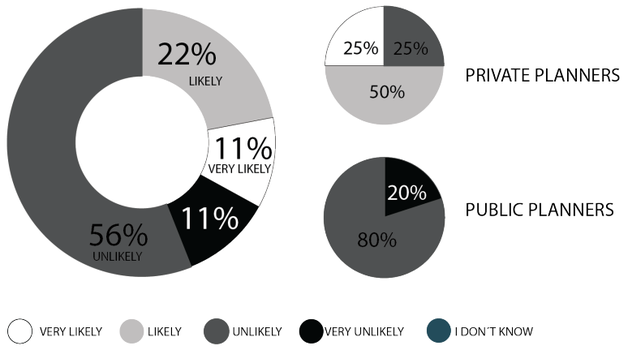
66.7% of the participants also found it very unlikely or unlikely that they would integrate this tool into their work. 100% of public planners found it either unlikely or very unlikely, while 75% of the private sector planners found the implementation likely or very likely.

It was generally understood by the participants how to use this tool for participation purposes. The usage of those tools for participatory purposes was deemed more likely by the public sector planners. (80%) and less so by the private sector planners (50%)

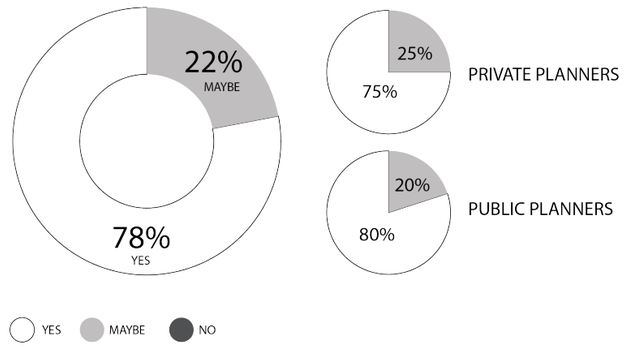
Do you understand how to integrate this tool into your work?



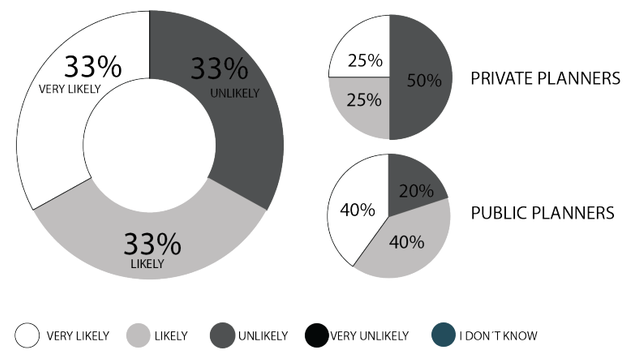
How likely is it that you will use this tool in your everyday work?



Do you understand how to use this tool for public participation purposes?



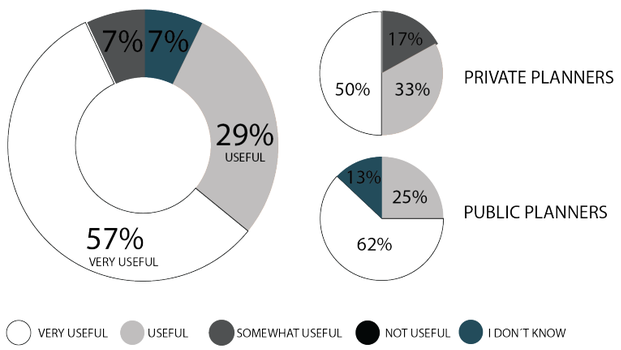
How likely is it that you will use this tool for public participation purposes?



COVISE - Collaborative Visualisation and Simulation Environment

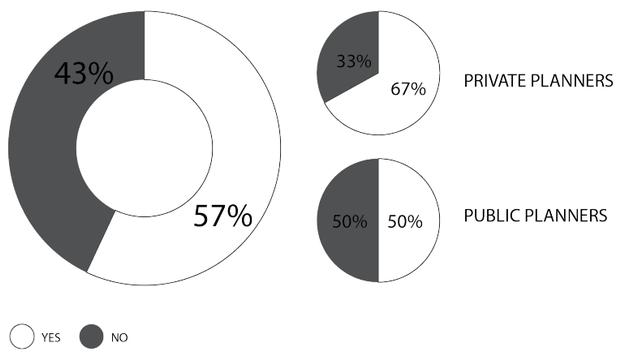
It was considered to be very useful by more than half of the participants (57%). Nobody considered it to be not useful.

How useful do you consider this tool for its purpose?

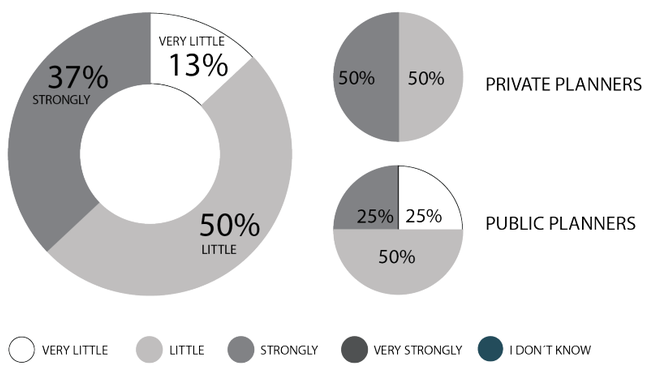


The usage of virtual reality brought out an issue with using virtual reality as an everyday tool. The cybersickness was felt by more than half of the participants (57%), yet the disturbance was considered to be strong by 37.5%.

Did you experience cybersickness?



How much did cybersickness bother you?

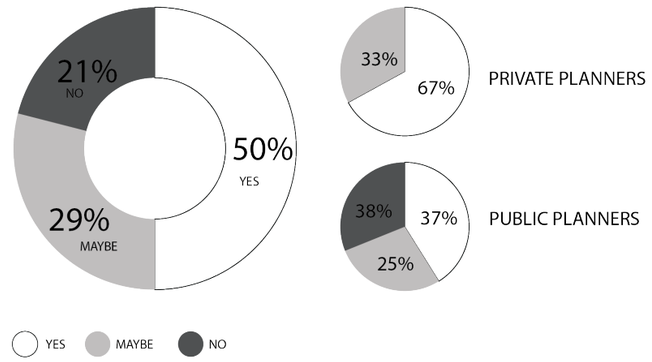


It was understood how virtual reality could be integrated into their everyday work by 50% of the participants, the majority of whom worked in private firms. This correlates with the results of the previous experience with similar tools since private firm planners had more experience with 3D software. 50% of all planners were either hesitant (29%) or did not understand how to integrate this tool into their work (21%).

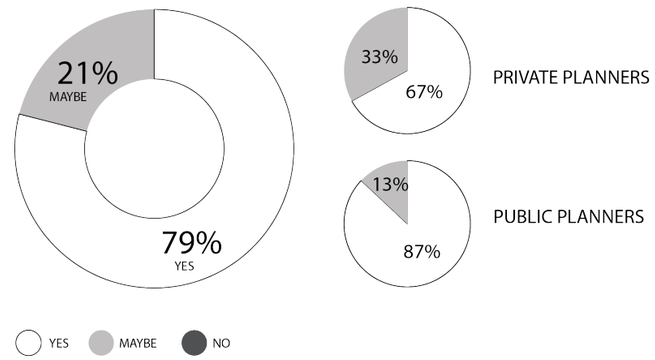
The likelihood of using this tool was overall either unlikely (42.9%) or very unlikely (21.4%). Only 14.3% of the respondents found it very likely that they will integrate this into their work. The private firm planners were more likely to start using this technology for their everyday work, which can be explained by their wider experiences with 3D software and virtual reality. The likeliness of using those tools for participatory purposes was again more

The results reflect that even though public planners have less experience and they are less likely to use digital tools in their everyday work, they are more open to using those tools for participatory purposes.

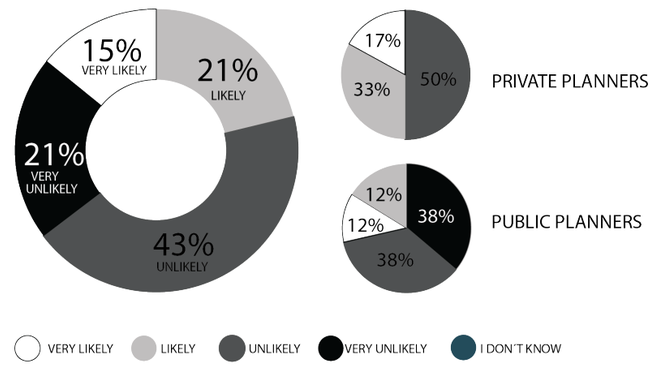
Do you understand how to integrate this tool into your work?



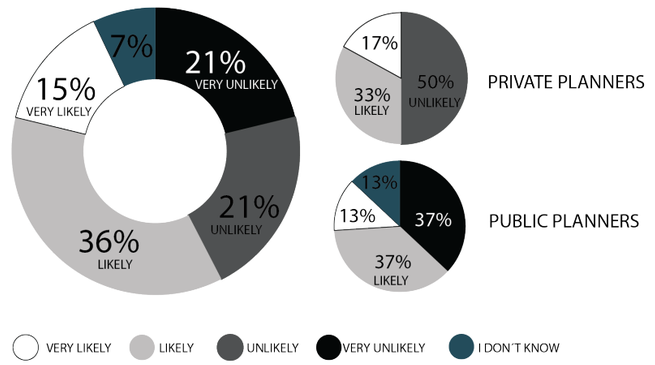
Do you understand how to use this tool for public participation purposes?



How likely is it that you will use this tool in your everyday work?



How likely is it that you will use this tool for public participation purposes?



6 DISCUSSION

CURRENT PARTICIPATORY PRACTICES AND SYSTEM

The current legislation gives a formal framework of the requirements for the proceedings of collaboration and participation. While making participation a required part of the preparation of the spatial plan, the format and methods described do not support a dialogue between participants but rather a one-sided, top-down participation approach to informing. The legislation format of participation requires only informing and consulting forms of participation, which by Arnstein (1969) are the first and lowest types of participation. This is also criticised by the planners, who find that despite the planning procedure being an open and public process, the practice of participation is based on notifications rather than collaboration.

The main principles of planning (PlanS Ch2, 2015) include the improvement of the living environment, inviting and informing the public to participate, and balancing and integrating interests. Principles of inviting the public to participate and of informing the public state that everyone is entitled to participate and express opinions in and during the planning procedure. Entitlement does not guarantee involvement if informing about the process is lacking. The authority that organises planning work must inform the public of the planning procedures in understandable terms, and provide sufficient information to the public. However, the right to participate is only given to the public when the planning proposal is already developed in collaboration with invited participants. This means that the opinions expressed have no real weight in the planning process and can be considered as powerless.

The legislation makes a distinction between who are the collaborators and who have the right to be included in the process. The regulation of Procedure for the cooperation in the preparation of plans and bases for coordination of plans (Planeeringute koostamisel…, 2015) states the institutions invited to participate in the preparations of the plans and conciliate the plans. The invited parties are also the official bodies or persons who the plan may affect. The first cooperation with the invited stakeholders is done on the draft version of the plan before the plan is made public. The legislation states clearly, that if the opinions are not received in a given timeframe, it is tactically deemed as an acceptance of the planning proposal. (PlanS, 2015) It is clear that the legislative procedure supports only notifying the collaborators without the need to make sure the participants received the proposal.

The public and other stakeholders are included in the process after the invited people or bodies have made their proposals and the plan has been modified accordingly. The public is given the right to express their opinions. (PlanS, 2015) At this stage, most of the decisions regarding the plan have already been made. The law supports citizen participation but it lacks the effort to include and involve the public while the plans are being drafted or include them in the decision-making process invalidating the main objective of participation - giving participants influence and power in the decision-making. (Arnstein, 1969; Healey, 1997)

Three main problems arise in the current planning system and practice:

1. The used information channels / and the reach of the information channels

The first step toward meaningful participation is considered to be informing. (Arnstein, 1969) Informing the Estonian planning process is a one-sided, passive method. Information about the possibility to participate and when to participate are important factors in ensuring the right to be included will be used. (IAP, 2018) Planners agree that some current methods of informing are only procedural and do not work as communication channels. Some channels are considered useful - local newspapers and paper flyers. Social media is in addition sometimes used to share information as well. The planners do not monitor which stakeholder groups and how many people the information reaches, but there is a problem of low

participation. (Green Paper, 2020) Participation is open, which means everybody can participate if they show interest. There is no specific selection of the participants. If the participation is open to all, then individuals who are wealthier and better educated are more likely to participate than those who lack these advantages. (Fung, 2006) it is stated that those who are active often overshadow the whole process with one specific idea.

Planners find it difficult to reach the younger population to participate in the planning process although they are considered an important stakeholder group. This could be explained through the usage of different information mediums by the current process and by the youth. Therefore the generational gap which might be an issue while using digital tools is not considered to be problematic.

The lack of effort put into using different media channels and making the information understandable results in a low interest in participation and information reaching the stakeholders too late in the process. Some interviewees reflected that fewer participants are included in the process the easier it is to conduct the proceedings, which could be the reason behind not using new-age channels for including the stakeholders.

Although social media is in some cases used as an information channel, social media attendance should also be monitored and extra measures should be taken to reach more people (Kent & Taylor, 1998) to ensure the representation of different social groups. Monitoring social media platforms and creating communication with stakeholders requires time and knowledge, on both the issues and managing the tools. A facilitator is needed to create a dialogue. (Kent & Taylor 1998) There seems to be a need for planning professionals to be educated in communicative processes and participation experts included in the planning process. The need for a participation professional was also mentioned by several planners. This brings into question the role the planners see themselves in - do they see themselves as visionaries, the executives of the plan or mediators between different stakeholders. (Metspalu, 2019) The Planning Act states that it is a planner's role to assess who should be collaborated. The planner must always assess whether the statutory requirements are met and whether those involved in the planning process are sufficient. (Ministry of Finance, 2022)

Through the usage of social media as a platform of communication, information can be shared both ways and the communication process creates the possibility for collaboration. (Bryer & Zavattaro, 2011) The step toward two-way informing, and communication requires the visible attendance and participation of the officials and planners in the discussion (Staffans et al., 2010) to affect the decisions made. (Staffans et al., 2021)

2. The content and clarity/comprehensibility of information

Having knowledge enables participants to make informed decisions. Acquiring better, more correct and up-to-date knowledge creates the basis for more active citizenship and participation (OECD, 2001) Understanding and awareness contribute to a meaningful discussion and clarification in the engagement process. With the advent of explanatory work, the number of protests also decreases, because people understand the content and take informed stands rather than emotional.

Currently, the content of notifications on the planning proceedings are difficult to understand, they are usually written in formal and legal language, with the information that is required by the Planning Act. (PlanS, 2015) The information should be easily comprehensible at first glance and lead further into the topic later. (Kent & Taylor, 1998) The content should provide alternative solutions for the basis of the discussion in an early stage of the planning process. (Staffans et al., 2010) Planners find that using visualisations helps to make the content more understandable.

3. The timing of participation.

Despite spatial planning being an open process, the timing of the participation and the timing of needed input are not compatible.

The public is notified of the initiation of a spatial plan through the ways and information mentioned before. The public might then be aware of the process, but they are not directly invited to participate in the drawing of the plan. They are given a right to participate if they express their interest to do so, but the Planning Act (2015) also states that they then may or may not be invited to participate. After the collaboration of the invited participants and agencies, a public display and public discussion are held. In the case of a detailed plan which does not require the preparation of the environmental assessment, the planning proposal is first accepted by the local government and only then the public display and public discussion are held.

Planners' interviews highlighted the need for initial collaboration with the public. Their need for stakeholder participation starts at the beginning of the process when the draft is still being made. The gathered ideas, values and local knowledge are considered to be more valuable than later participation. This is often even before the initiation of the plan. It was expressed that there is a need for prior discussion between the public and the developer.

There is a discrepancy between when the planners need input information and when the public realises that something is being planned and their opinions are asked. By the public display, for a planner, the process is in the end phase while for the public it is the first time they are included in the process. They are invited to express their opinions, but it is not a discussion and the opinions are not considered as input, but rather issues that need to be answered with an explanation describing why the initial idea is decided upon. This creates frustration and opposition which are illustrated by the description of the public discussion.

Public display is the first planning phase where the public is invited to give their opinions regarding the planning proposal. The communication during the public display is between the planner and the stakeholder. There is no discussion between different stakeholders and the participants do not see what kind of feedback has been given or what are the opinions of other stakeholders. Collaboration presumes working as a team where the solutions and options are formulated (IAP2, 2018) and collective interests developed (Fung, 2006) together.

Collaboration is therefore not supported by the current procedure of individual feedback methods.

In the public discussion, the opinions and planning officials' positions on the opinions are presented. The public discussion could, by the legally required procedure, be the first possibility for collaborative planning, where the ideas are developed that affect the planning proposal. Since the public discussion is situated in the late phase of the planning process, the discussion often remains inconsequential. It was also reflected by the planners, that even good ideas are usually left aside since by the public discussion the planning draft is already developed and taking into account new ideas the draft would need to be redrawn, which considerably prolongs the process.

Public discussion is currently organised to present ideas and positions rather than have discussions or develop new ideas. Fung (2006) describes the main problem of institutionalised public discussions to be that the participants of such events are spectators who are receiving information rather than collaborators who put forward their ideas.

Due to the lack of collaboration before the public discussion, the participants are not motivated to find solutions or compromises. The wanted outcome of a public discussion is a solution which is acceptable for all the participants, while their input has not made any impact on the decisions.

Public discussions can be organised in a manner which allows participants to explore, develop, learn about issues, and transform their opinions by providing them with information. (Fung 2006). The digital participatory tools which enhance collaboration could be used in the public discussion, but this would need the public discussion to be in the early phase of the planning process. Public discussion would be a great place for strategy role-plays and dialogue between the opinions, taking the constraints and wishes of the participants as parts of a new solution, double-loop learning (VIIDE) and changing the already made plan.

Currently, the collaborative processes can only meaningfully happen outside of the current system, if the planners or the person or body is interested in the planning procedure.

In comparison to the participatory spatial planning process methodology of Horelli (2002), in Estonian planning practice, the participatory processes situate in the Evaluation and Research phase of planning.

PLANNERS' VIEW ON PARTICIPATION

The majority of the respondents pointed out that stakeholder engagement is preferred and that it is sought mostly through questionnaires etc. Acting on stakeholders' suggestions and feedback and also including stakeholders in the follow-up activities would be the preferred next step to enhance the engagement between planners and stakeholders.

There was a difference in attitude towards conducting participation between the local government officials and private sector planners. The explanation could be the previous experience with participatory processes. Public planners and planning consultants had experiences with conducting participation at the initial stages of the planning and had positive feedback and collaboration with the participants. For private firm planners, the experiences were mostly with the end of the process participation, where only opposing views were represented. It can be concluded that the late-stage participation has both influenced the frustration and low motivation of the public to participate as well as the views towards the participation of the planners.

The planners' workshop also revealed a discrepancy in the attitudes towards collaboration and the understanding of collaboration. They found it important to create a collaborative planning HUB, yet their main focus on what the HUB should serve as an information and exhibition centre - a gallery for exhibiting architectural competitions and sharing information about ongoing developments and the core political ideas.

It was expressed that currently, engagement does not provide adequate input and that planners can predict with 90% probability what feedback is expected. Also, that feedback is always negative and people protest out of defiance. Looking at the engagement process as a whole, it can be argued that this resistance is due to the way the process is designed and can be changed by increasing the role of engagement at different stages of the project. Another reason for predictable input could be the lack of providing enough information and explanations.

Planners also felt that engagement is most important at the outset of the planning process, where it aims to identify shared values, map problem areas and decide on the outputs of the plan. It is in the early stages that it is important to find a common language with the participants and a common set of objectives to which the planning process is designed. However, it is not required by law. This raises a number of issues depending on how important the local authority considers the input from the public stakeholders and the resources of the local authority. The landowner's/ developer's perception of the long-term benefits

of widespread involvement is also considered an important factor because it is often not the local authority, but the party interested in the planning process that finances the planning process. Early involvement should be a statutory requirement. However, since it is not, there is a need for a solution that is not costly and time-consuming, to motivate planners and also developers to implement early stage participation.

It seems that sufficient participation is seen as informing and gathering local knowledge through questionnaires or as an opposition to ready-made proposals and actual collaboration with the participants is lacking.

The current communication model for informing and consulting was criticised by the planners. But for example, it was not brought out that planners themselves should be more active in the participatory process but it was rather expected that the communication happens beforehand between the public and the developer.

CURRENT USAGE OF DIGITAL TOOLS

The interviews reflected two main views on the usage of digital tools. From one point of view, some current methods are considered to be good methods for participation, but it was considered that using digital tools could be used to reach stakeholders and social groups that are not usually included in the planning process at the moment - for example, the younger generation.

Digital tools were mostly considered to be helpful for early process idea-collection, automating the workload through gathered data and optimising communication the planning proposal through visualisation.

Map-based questionnaires were considered to be great platforms for gathering input and asking for feedback, because it enabled the participants to also share positive feedback, which was said to be a rare case during the conduct of a planning proposal. PPGIS or SoftGIS would also be fairly easily implemented because many planners use GIS platforms already. Currently, the cases where PPGIS has been used in Estonia are more experiments than an everyday practice, but the planners who have experience with it see value in using the platform for including the public. PPGIS is used for sharing information and consultation, (Brown & Kyttä, 2014) and rarely move up the ladder (McDall & Dunn, 2011) because it does not enable discussion between the participants. It is well suited for the initial phases of the planning possess, (Kahila & Kyttä, 2010) but could potentially be used in the framework of the public display, or for sharing information throughout the planning process. (Ibid.)

Virtual Reality (VR) was considered to be possibly very useful - for helping people understand the space better, but could also bring out problems which come from the visualisation - people would expect something to be exactly as it is shown and they would not understand that it is just one proposed possibility of many, and therefore it could lead to misunderstandings and unnecessary hostility. Maps and surveys that are created during a planning process are often difficult for laypeople and stakeholders to comprehend. (Staffans et al., 2004) Therefore the potential participants may lack sufficient information to make a meaningful contribution.

IMPLEMENTATION GAP

While the planners were open to the change of the used method for participation, there seems to be a gap between the openness to the idea and the actual implementation of the tools. For example, when the planners were discussing the needs for the Tallinn City planning HUB they brought out the need for the currently used tools and methods and digital participatory tools were mentioned less.

The implementation gap also came out from the digital tools testing workshop, which reflected that even when the planners found the tools to be useful, the majority did not see themselves implementing the tools into their everyday work. Private sector planners are more open to the usage of new technology because they have more

prior experience with digital tools, but they see the technology as useful in their everyday work more than in participatory processes. Even though public planners have less experience and they are less likely to use digital tools in their everyday work, they are more open to using those tools for participatory purposes. This correlates with the findings of Nummi (2019), whose research reflects that the tools that are considered to be effective are not being used, and the tools currently in use are considered to be rather ineffective.

The willingness to start using new-age digital tools like VR or AR might come from the inexperience with using similar tools before.

FROM NOTIFICATION BASED PARTICIPATION TO COLLABORATIVE PLANNING WITH THE HELP OF DIGITAL TOOLS

Informing, as the most important step towards participation (Arnstein 1969) is described as one-way communication. (OECD, 2001; Arnstein, 1969; Illing & Lepa, 2005) In a spatial planning process there is a need for information not only to be received by the public from the top-down, but also by the public creating and sharing information about their needs and values to the decision-makers - bottom-up. Informing should be continuous throughout the planning process combined with consultation. The methods can be combined through the usage of social media. Social media platforms offer the possibility to create a platform for communication and dialogue throughout the planning process.

For example, a planning-related social media group could be used for creating an opportunity for discussion of the planned area with interested stakeholders. It would make it easy to share the progress of the plan, new developments and changes easily. It could also be used as a platform to encourage discussion between the different stakeholders throughout the whole planning process. This would also relieve the problem of formal participation processes having restricted timeframes and usually taking place during working hours, making it difficult for people to attend. Digital channels make attendance and giving feedback more flexible. When the planning proposal is developed further, the same platform could be used to share illustrating material and different options of the planning proposal.

Gathering early feedback is considered important by the planners. Currently, it is mostly done through questionnaires. Applying PPGIS or SoftGIS together with the questionnaire could help to gather wider local knowledge and help to map existing values, problems and development needs of the area. The PPGIS applications could also make the gathered information visible to the participants and they would see the ideas and values of other stakeholders as well as their own, which would contribute to further dialogue. It was stated that giving feedback through map-based questionnaires enabled participants to also bring out positive aspects of the planning area. Residents also appreciate the option of giving feedback at the beginning of the process. (Staffans et al., 2010) It lowers the issue where the public feels that decisions have already been made and their only option is to oppose the already made decisions.

Using communication methods and feedback options that allow flexibility for looking at the planning proposals and giving feedback enables a wider social group of people to participate in the process. Residents respond positively to using online tools, because it gives them flexibility in terms of the time and place of discussion. (Saad-Sulonen, 2012) Since currently not many online public displays and discussions have not been practised it should be further observed how online public displays and discussions change the attendance rate.

In Estonian planning processes, strategic alternatives are rarely considered and debated. (Metspalu, 2019) Visualisation of the data and planning proposals are important to communicate the ideas and reasoning behind the decisions. Methods like scenario analysis, role-playing, using games and virtual or augmented reality engage with the participants and allow them to become

creative in a collaborative way (Innes & Booher, 1999) The lack of valuable information due to participants not having enough information to make knowledge-based input and decisions could be resolved using strategic gameplays and analysis tools in collaboration with the stakeholders.

Gamification could be used both in the planning process and before the drafting of the plan. Games could be used in a bottom-up manner to create input to the planning process before the initiation of a plan. The planners stated the need for prior discussion between the developer and public stakeholders. Using games for this purpose would be a possibility to share public ideas. Participants are less likely to engage in the planning process if their role is simply providing information rather than actually contributing in a more consultative or collaborative role and creating their own ideas. (Brown & Kyttä, 2014) When sketch proposals are offered in advance of a formal planning process, it allows for the community to express their ideas and also reach a consensus before the planner or developer has already invested in creating their own planning proposal and hardened the positions without taking community needs into consideration. (Skelton et al., 2011)

Collaborative digital methods do need a facilitator and in current formal participatory practice, the public discussion is the first stage in which the public and planning authority meet. With strict rules on how to conduct a public display and public discussion, the legislative framework does not support any extra participatory proceedings. Digital media could also be shared in the earlier planning stages and invite public stakeholders to participate through interactive digital methods. Planning proposals could be seen online with virtual reality or the changes could be visualised on-site with Augmented Reality through a smartphone or a tablet. Digital technologies also enable the participants to be producers rather than passive consumers of the information. (Saad-Sulonen, 2012; Jenkins, 2006)

The dimension of communication affects the outcome and scope of participation. There can be either a one-sided communication where information is simply received from officials or a collaboration where information is exchanged between all parties. (Fung, 2006) Digital tools offer the possibility to create collaboration and discussion outside of the legislative form.

CONCLUSION

Participation in the Estonian planning process is built on only the first two parts of involvement: information and consulting. To move forward with participatory planning, it is necessary to change the approach to collaboration.

The Planning Act (2015) gives the formal framework and minimum requirements for participation. The planning process is open and everyone is entitled to participate and express their opinions. The participatory processes have a weak impact on the decision making due to the participation processes only beginning closer to the end of the process by legislation and The Planning Act (2015) addressing participation from a procedural point of view. There is seemingly low interest to conduct additional participatory processes by the decision-makers and the Ministry of Finance which is the organiser of spatial planning in Estonia does not view participation and creating participatory platforms as their task.

The main restrictions and deficiencies in the Estonian planning system for implementing digital participatory tools include:

1. Legislation makes a distinction between who are the collaborators and who have the right to be included in the process. The public is only included through informing. It is not monitored if the information reaches people and is not acted upon to reach a wider public. This is also sided by the fact that the information about plans is not easily findable and anybody interested actually has to take that extra step to find it. This makes the process not transparent and often it comes as a surprise to people that not only something is being planned but that the plans have already been approved.

2. The current practice relies on notifications rather than collaboration. The information is made available to be accessed, but the public is not invited or motivated to participate in the proceedings. Including is an active process where the planner initiates a dialogue with the interested stakeholders and public, making it a priority that the strategic development information is understandable. Currently, the public is informed and people need to show initiative to be included in the planning process themselves.

3. The communication method is consultation. Discussion between different stakeholders is not supported and all the proposals and opinions are only communicated with the planner or planning authority. Since in Estonia the land is often privately owned, the discussions need to start between the developers and landowners and the public before the initiation of the plan.

Planners find that participation is very important in planning, yet there is a difference in how public sector planners and private sector planners understand their role in the participatory processes. The bilateral view of participation was clearly outlined - it is considered an important part of the planning process but the current practice does not serve the purpose.

The most important is considered to be early involvement by the planners, but it is not required by law. This raises a number of issues depending on how important the local authority considers the public stakeholders to be, how much is known about the needs of citizens in general, and the resources of the local authority. The landowner's/ developer's perception of the long-term benefits of widespread involvement also plays a role here.

The main restrictions and deficiencies that come from the planner's view toward participation and the usage of participatory digital tools are:

1. The planner's role in the participatory processes is unclear. Private sector planners see participatory processes as the task of public sector planners and planning authorities because local planning officials are responsible for procedural activities such as public notifications, public displays and public consultations. However, these activities cannot generally be considered as collaboration, but rather as informing. Public sector planners express the need for an unsolicited discussion between the landowner/developer and the public stakeholders.

2. There is an implementation gap in using new technologies due to the planner's experience in using digital tools differs. Private secret planners are more open to experimenting with digital tools that are based on 3D models, but they do not view using those tools as important in participatory processes. Public sector planners have less experience with digital tools in their everyday work but view the possibility of using those tools for participatory purposes as more likely.

3. There is a gap between when the planners need input and when the public can express their opinions. This leads to frustration from both the planner and the participants. The planner sees late-stage participation - public discussion - as an unnecessary and often unsuccessful event, where communication is based on negative interactions.

The main problems with participatory processes come from the information not reaching a wide range of stakeholders, problems with communication due to misunderstandings of the planning proposal and no collaboration due to the current communication method. An overlooked aspect is also an evaluation of how many people were involved in the planning process and what kind of interests/age groups/social groups/etc. were involved. There is no tendency to try to reach specific groups and do extra work to reach them and also no monitoring of the balance between stakeholders' interests.

Implementing digital tools into the current planning practice:

1. There is a need for new communication methods to be taken into use, which would be to establish constant communication with the parties - residents, community, developers, etc. Such communication would be most valuable at the very beginning of planning. Through the usage of social media as a platform of communication, information can be shared both ways and the communication process creates the possibility for collaboration. (Bryer & Zavattaro, 2011)

2. For the participants to be able to take part in the decision making and discussions, they need to understand the logic and reasons behind the design solutions. Visual representation through virtual reality, augmented reality and games can help with the communication and understanding of the planning proposal. Visualisation of the data and planning proposals are important to communicate the ideas and reasoning behind the decisions.

3. For further understanding strategic gameplays and analysis tools should be implemented into collaborative processes. These would allow the participants to collectively generate new ideas and solutions for the planning proposal.

In conclusion, there is already a deficiency in the informing phase of the participation, which leads to frustration from both the planners and participants. At the current proceedings, people are expected to show the initiative for being included, yet people are often not efficiently informed of the possibility to participate. The initiative to "force-feed them the information about the possibility to participate" should come from the planning authority. The lack of valuable information leads to participants not having enough knowledge to take part in the discussion, give timely input and affect decision-making. Through digital tools and collaborative platforms, communication should be established with different stakeholders - residents, community, developers, but also official agencies. Such communication would be most valuable at the very beginning of the planning process but also throughout the process.

Finally, the success of the usage of digital tools and knowledge gathered by the methods as well as the success of the collaboration in the planning process is mostly dependent on the willingness of the planners and decision-makers to use the knowledge produced through collaboration. Simply applying digital participatory tools into the process of planning alone is not the solution. Due to the participation climate at the moment, there also needs to be a change in the planning culture. There are issues of lack of trust and frustration which are created by the end-phase participation.

It takes time to start using new technological tools and implement those into the process from both the planners, decision-makers and the stakeholders' side. Different aspects are necessary for implementing collaborative practices: the motivation of planners to create collaboration, a planning system that supports participatory processes, and the motivation and information of those invited to collaborate in the process. Implementation of digital participatory planning support tools is not the question of the tools but it requires a fundamental change in the planning culture, practice and perhaps the law.

POSTER

WHAT ARE THE RESTRICTIONS AND DEFICIENCIES IN THE ESTONIAN PLANNING SYSTEM AND PRACTICE FOR USING DIGITAL TOOLS IN PARTICIPATORY PROCESSES?

THEORETICAL FRAMEWORK

1. PARTICIPATION IN SPATIAL PLANNING
2. DIGITAL PARTICIPATORY TOOLS AND METHODS
3. ESTONIAN SPATIAL PLANNING SYSTEM

EMPIRICAL RESEARCH

1. EXPERT INTERVIEWS WITH PLANNERS
2. WORKSHOP WITH PLANNERS
3. DIGITAL TOOLS TESTING WORKSHOP

RESULTS

HOW ARE PARTICIPATION AND PARTICIPATORY PLANNING SUPPORT TOOLS AND CURRENT PARTICIPATORY PROCESSES PERCEIVED BY THE PLANNERS?

WHICH DIGITAL TOOLS CAN BE IMPLEMENTED IN THE CURRENT PLANNING SYSTEM TO BENEFIT PARTICIPATORY PROCESSES?

ESTONIAN SPATIAL PLANNING PROCESS

LEGISLATIVE PROCESS
NOTIFICATION BASED COMMUNICATION

COMMUNICATION METHOD: CONSULTATION

PLANNERS' TIMELINE
INPUT INTO THE PLANNING PROPOSAL IS NEEDED

PARTICIPANTS TAKE PART IN A KNOWLEDGE-BASED COLLABORATION AND DECISION MAKING

THE DRAFTING OF A PLAN IS IN THE END STAGE

RESTRICTED SHORT PERIOD OF TIME FOR PARTICIPATION
THE PUBLIC BECOMES AWARE OF THE PLANNING PROCESS

POWER OVER DECISION MAKING INCREASES

INITIATION

PLANNING IS MADE PUBLIC THROUGH ANNOUNCEMENT

MEDIUM OF COMMUNICATION:
PUBLIC ANNOUNCEMENT IN A LOCAL NEWSPAPER, OFFICIAL ANNOUCEMENTS, WEBSITE OF THE AUTHORITY

INVITATIONS TO PARTICIPATE

DISTINCTION BETWEEN COLLABORATORS AND PEOPLE WHO HAVE A RIGHT TO PARTICIPATE

COLLABORATORS:
MINISTRIES, GOVERNMENT ORGANIZATIONS, LOCAL AUTHORITIES
PERSONS AND BODIES WITH LEGITIMATE INTEREST

PERSONS AND BODIES WHOSE INTERESTS MAY BE AFFECTED OR WHO EXPRESS THEIR INTEREST MAY BE INVITED TO PARTICIPATE

ACCEPTANCE

THE LOCAL AUTHORITY MAKES THE DECISION TO ACCEPT THE PROPOSED PLAN

THE DECISION CONCERNING THE ACCEPTANCE IS DONE WHEN THE COLLABORATORS HAVE APPROVED THE PROPOSED PLAN AND IT IS IN CONFORMITY WITH THE LEGISLATION

PUBLIC DISPLAY

FIRST OPTION FOR THE PUBLIC TO PARTICIPATE

EVERYONE HAS A RIGHT TO EXPRESS THEIR WRITTEN OPINIONS
THE OPINIONS ARE ANSWERED WITH REASONED POSITIONS CONCERNING THE OPINIONS

PUBLIC DISCUSSON

NOT MANDATORY

IF NO WRITTEN OPINIONS WERE PRESENTED DURING PUBLIC DISPLAY, OR IF THE POSITIONS REGARDING THE OPINIONS WERE PRESENTED IT IS NOT MANDATORY TO HOLD A PUBLIC DISPLAY

PUBLIC DISPLAY IS FOR PRESENTING WRITTEN OPINIONS AND POSITIONS REGARDING THE OPINIONS

RATIFICATION AND ADOPTION

PRESENTED FOR RATIFICATION TO THE MINISTRY OF FINANCE

OPTIONS PRESENTED DURING PUBLIC DISPLAY THAT WERE NOT TAKEN INTO ACCOUNT AND THE REASONED POSITIONS REGARDING THOSE OPINIONS ARE PRESENTED TOGETHER WITH THE PLAN
MINISTRY OF THE FINANCE ACTS AS AN INTERMEDIARY BETWEEN OPPOSING SIDES AND TRANSMITS WRITTEN OPINIONS CONCERNING THE OPINIONS THAT WERE NOT TAKEN INTO ACCOUNT

ADOPTED BY LOCAL AUTHORITY

PRIOR DISCUSSION BETWEEN LOCAL STAKEHOLDERS AND THE PARTY INTERESTED IN THE CONDUCT OF THE SPATIAL PLAN

INFORMATION SHARED BOTH BOTTOM-UP AND TOP-DOWN

THE USAGE OF PPGIS, SOFTGIS FOR GATHERING LOCAL KNOWLEDGE

FLEXIBILITY, REACHING WIDER SOCIAL GROUPS, ENABLES POSITIVE INPUT INTEAD OF OPINIONS

GATHERED DATA REFLECTED BACK AND MADE VISIBLE

PLATFORMS THAT ENABLE COMMUNICATION AND DIALOGUE BETWEEN PARTICIPANTS

PARTICIPANTS PROVIDE INFORMATION INSTEAD OF ONLY OPINIONS

CONTINUOUS INFORMING AND COMMUNICATION THROUGHOUT THE PROCESS

UNDERSTANDING ENABLES CREATIVE COLLABORATION AND KNOWLEDGE-BASED INPUT

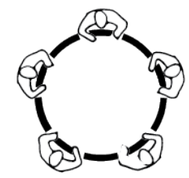
VR, AR AND XR COULD BE USED FOR VISUALISATION FOR BETTER UNDERSTANDING OF THE PROPOSED PLAN DURING AND AFTER THE PREPARATION OF THE SPATIAL PLAN

USING SERIOUS GAMES, ROLE PLAYING, SCENARIO ANALYSIS FOR THE CONSIDERATION AND DISCUSSON OF STRATEGIC ALTERNATIVES

INFORMING
To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

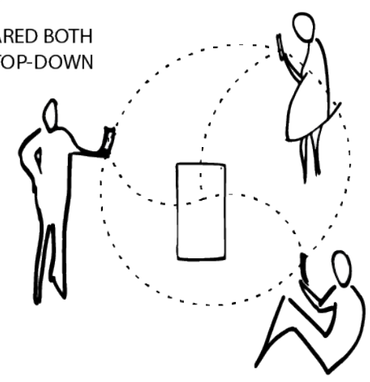
CONSULTATION
To obtain public feedback on analysis, alternatives and/or decisions.

INVOLVING
To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.



COLLABORATION
To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.

EMPOWERMENT
To place final decision making in the hands of the public.



RESTRICTIONS AND DEFICIENCIES IN THE IMPLEMENTATION OF DIGITAL PARTICIPATORY TOOLS IN SPATIAL PLANNING IN ESTONIA

PIIRANGUD JA PUUDUJÄÄGID DIGITAALSETE OSALUSVAHENDITE RAKENDAMISEL EESTI RUUMILISES PLANEERIMISES

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TALLINN 2022

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APPENDIX

EXPERT INTERVIEW QUESTIONNAIRE QUESTIONS AND STRUCTURE

INTRODUCTION AND CONTEXT

To understand what the interviewees experiences and connections to planning processes are. To map what the term participation means to them.

1. What are the first keywords that come to mind when thinking of the word "participation"
2. What are your expectations for participation? What kind of output do you expect from it?.
3. Please explain why participation of different interest groups is important in a planning process and who should be definitely included?
4. What kind of plans have you prepared? / How is your everyday connection to planning?

TOPIC 1

Objective: Passive participation. Input information. Digital information collection. Data collection. Data analysis. Participation as input data. Public display and answering the written questions and comments?

1. What kind of values do you think the plan should take into account? Whose values these are? (What and whose values should the plan reflect in your opinion?)
2. Where do you find the input information (databases, surveys, make the surveys yourself) and what type of information do you use?
3. Is there any data you have lacked that should in your opinion be available?
4. Where have you found information about public interests and values if you have used it?
5. What kind of additional information about public interest and values would you need as an input and how should it reach you?

TOPIC 2

Objective: Informing and motivation. Making the project understandable. Visualization. Invitation to express opinions. Use of tools to explain and understand the content of the plan.

1. Who do you think should take the initiative to engage the public interest?
2. How do you think the public could be informed about the opportunity to participate in the planning process? What mediums have you used for this in your organization?
3. How do you assess the interest of the public (community, stakeholders) in participating in the planning process?
4. Have you noticed a low level of participation by certain interest groups? / Do you think it is a problem that certain interest groups have low interest in participating?
5. How do you think people could be motivated to participate more?
6. What kind of tools could be used to reach people from different social backgrounds?
7. By what means have you introduced the content of the plan? (drawings, text, 3D, etc.?)
8. What kind of tools do you think should be used or do you feel would be helpful in visualizing or explaining the plan?
9. Who in your organization is responsible for stakeholder and public engagement?

TOPIC 3

Objective: Active participation. Participatory Processes. Methods, tools and experiences of current participation. Ideal participation in a planning process? What tools could be used for this? Use of digital tools during the planning process.

1. When is the public involved in the project? (When should it be?)
2. Please give your assessment of the public hearings? What is your experience with them?
3. How do you value the input from the participation? What is positive and what is missing from the input?
4. How have you justified (explained) the content (consequences) of the choices for the public?
5. What do you think an ideal participation in planning would look like?