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Managing Sustainable Development in Municipal Context

The Case of Vaasa

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ABSTRACT:

Aim. The purpose of the thesis is to examine and understand the management of sustainable development in the context of municipalities. More specifically, the purpose is to examine the sustainable development management practices at the city of Vaasa and outline road maps for Vaasa to reach its Sustainable Development Goals.

Framework. The research combines literature on sustainable development, management and the municipal context through a framework of materiality assessment, in which steps are followed to initiate or analyse sustainable development management practices. The framework is used to analyse the management practices at the city of Vaasa.

Methodology. Empirically the thesis is a single-case study of the city of Vaasa. The material was collected through semi-structured interviews with mainly directors of the city of Vaasa or with stakeholders. This thesis is a qualitative study and it utilises descriptive and deductive approaches as it aims to understand and explain how the framework and its concepts are realised in the context of the case.

Findings and contribution. It is found out that Vaasa has similar issues with managing sustainable development as it was identified in the literature review, such as complex organisational structures, lack of resources, defects in data and need for competence. Yet, Vaasa has management practices in place and there are opportunities for developing them. Furthermore, the framework of materiality assessment and its suitability for this type of study is critically discussed. Finally, road maps for Vaasa are developed focusing on the organisational arrangements of the sustainable development management practices. The first and the second road map compare the advantages between the steering groups as the coordinative organs or a working group as a less heavy structure for coordinating of the sustainable development action. The third road map supplements either of the first two by introducing an idea of a sustainable development specialist.

KEYWORDS: Sustainable Development, Sustainable Development Goals (SDGs), Management, Practice, Municipalities, Cities.

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TIIVISTELMÄ:

Tavoitteet. Tämän pro gradu -tutkielman tarkoitus on tutkia ja ymmärtää kestävän kehityksen johtamista kunnallisessa kontekstissa. Tavoitteena on tutkia kestävän kehityksen johtamisen käytänteitä Vaasan kaupungilla ja luoda tiekarttoja Vaasalle sen valitsemien YK:n kestävän kehityksen tavoitteiden saavuttamiseen.

Viitekehys. Tutkimus yhdistää kirjallisuutta kestävästä kehityksestä, johtamisesta ja kunnallisesta kontekstista sekä hyödyntää olennaisuusarvio-viitekehystä. Olennaisuusarviossa on kehys kestävän kehityksen johtamisen käytänteiden aloittamiseen tai niiden arvioimiseen. Viitekehystä käytetään Vaasan käytänteiden analysointiin.

Metodologia. Empiirisesti tutkielma on tapaustutkimus Vaasan kaupungista. Tutkimus toteutettiin haastattelemalla lähinnä Vaasan kaupungin johtajia sekä sidosryhmiä. Tutkimusmenetelmä on laadullinen ja lähestymistapa on kuvaileva sekä deduktiivinen, sillä tutkimuksessa pyritään ymmärtämään ja selittämään miten viitekehys ja sen käsitteet toteutuvat Vaasan kontekstissa.

Tulokset. Vaasan kaupungilla koetaan samanlaisia haasteita, joita kirjallisuuskatsauksessa tunnistettiin, kuten kompleksiset organisaatiorakenteet, sekä puutteita resursseissa, datassa ja osaamisessa. Vaasalla on kuitenkin kestävän kehityksen johtamisen käytänteitä ja mahdollisuuksia kehittää niitä. Lisäksi tutkimuksessa tarkastellaan kriittisesti olennaisuusarviota ja sen soveltuvuutta vastaavanlaiseen tutkimukseen. Lopuksi kehitetään Vaasalle tiekarttoja, joissa keskitytään kestävän kehityksen johtamiskäytäntöihin ja organisaatiorakenteisiin. Ensimmäisessä ja toisessa tiekartassa vertaillaan ohjausryhmiä tai vaihtoehtoisesti työryhmää kevyempänä vaihtoehtona järjestää kestävän kehityksen johtamisen koordinointi. Kolmas tiekartta täydentää ensimmäistä tai toista tiekarttaa keskustelemalla kestävän kehityksen asiantuntijan roolin luomisen hyödyistä.

AVAINSANAT: Kestävä kehitys, Kestävän kehityksen tavoitteet, Johtaminen, Käytäntö, Kunnat, Kaupungit.

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1 Introduction

The imperative of sustainable development (SD) as a cross-cutting principle for all human activity is globally recognised. While states are seen as the principal actors in reaching SD through the United Nations' (UN) Sustainable Development Goals (SDGs), it is now also recognised that municipalities play a crucial role in achieving them. There are multiple initiatives and networks that aim to inform and assist cities in enhancing SD action and management, but the level of SD in cities still leaves much to be desired (Valencia et al., 2019, p. 5). The activities of municipalities in general are in accordance with the principles of SD and the SDGs, but the SDGs are seen as a complex and distant set of concepts that does not necessarily fit into the context of cities in practice (Krantz & Gustafsson, 2021, p. 2641, 2642). Therefore, while there is an increasing amount of research addressing the issue, municipalities need practices through which to manage the integration and maintenance of SD.

1.1 Motivation for the study

In the face of climate change, global inequality, overconsumption of the globe, pandemics and other adverse phenomena, sustainable development is the paradigm of the present day. SD aims to balance social, economic and environmental well-being of the current and the future generations and to make progress in the urgent issues. SD is best captured by the United Nations' Sustainable Development Goals (SDGs), which are 17 goals with targets and indicators that 193 states have adhered to (Drastichová, 2022, p. 13-14). While states are the primary actors in solving the global issues, majority of the factors that affect the SDGs, such as basic education, are under the decision-making power of municipalities (Association of Finnish Municipalities, 2022, ch. 1.1). Hence, it is inevitable that municipalities take action on SD.

Crucial to the success of the SDGs and SD in general is the management that enables the implementation and realisation of SD. Management and strategy are key factors in SD performance, but there is limited research to guide municipalities in integrating SDGs

into strategy and management practices (Lueg & Radlach, 2016, p. 158). In recent years the research has focused on individual cities' management and practices in SD (e.g. (Boehnke et al., 2019; De Matteis & Borgonovi, 2021; Krantz & Gustafsson, 2021; Krellenberg et al., 2019). This study will continue on same stream of literature by putting an SD management framework into test and by examining the SD management practices at the city of Vaasa.

1.2 Research gap

As a theoretical concept the SDGs are somewhat exceptional since they thematically cover all aspects of life and society. The literature on the SDGs is wide and it ranges from universal considerations of the SDGs' realisability or for instance synergies and trade-offs (e.g. Dankevych et al., 2020; Knight, 2015; Kroll et al., 2019) to detailed investigations of each goal in particular contexts (e.g. Akuraju et al., 2020; Fenton & Gustafsson, 2017; Frare et al., 2020; Jano Reiss et al., 2022). However, as the SDGs always need to be localised, i.e. interpreted in the local context, such as a city or a business, there are as many research opportunities as there are contexts.

On one hand, approaches to the strategic management of SD or the SDGs have emerged, and they have focused on e.g. creating general principles on managing SD, going beyond siloed organisational structures and making use of synergies (e.g. Broman & Robèrt, 2017; Guarini et al., 2022; Ligorio et al., 2022; Nerini et al., 2019). On the other hand, municipalities still experience difficulties in adopting the SDGs and integrating them into strategy and management practices (Fenton & Gustafsson, 2017, p. 130). The research lacks a practical approach to the employment of SDGs and to the management of corresponding practices (Guarini et al., 2022, p. 585; Zeemering, 2018, p. 137). A recent attempt to tackle this issue by Krellenberg et al. (2019) is materiality assessment adapted to SD, which as a theoretical framework establishes steps for a municipal organisation to establish or evaluate strategic management of SD.

This thesis examines strategic management of SD and the SDGs in a municipal context through a single case study. While the principles of SD are universally accepted, their execution requires adaptation to local contexts, due to which single case studies are necessary from the viewpoint of the organizations intending to adopt the SDGs. While there are studies on the local governments' role in reaching the SDGs, research on how to effectively integrate SDGs into municipalities' existing strategies and management practices is called for (Fenton & Gustafsson, 2017, p. 132). Thus, this thesis examines the management of SD in the context of the city of Vaasa. The research gap is illustrated in Figure 1.

Figure 1. Research gap.

1.3 Research question and objectives

This thesis takes a step towards illuminating how SD has been managed and integrated into a strategy in a context of a city. Furthermore, as an objective for the city of Vaasa, road maps for the alternative pathways for developing SD management practices. Therefore, the research questions are as follows:

1. *How has the management of sustainable development been executed at the city of Vaasa?*
2. *With what kind of road maps can Vaasa's achievement of the Sustainable Development Goals be supported?*

In order to answer the research questions and to outline the research are, the research objectives were defined as follows:

1. To describe sustainable development and the utilization SDGs in the context of municipalities.
2. To describe previous research on management of sustainable development in municipal context and the materiality assessment as an SD management framework.
3. To discover SD management practices at the city of Vaasa.
4. To outline road maps for management practices of sustainable development for the city of Vaasa.

Through abovementioned research objectives and by answering the research questions, both theoretical and empirical contributions are made to the research field. It deepens the knowledge on the attributes of the SDGs and their management practices in a local, municipal context.

1.4 Thesis structure

The thesis is structured according to the research objectives. In the second chapter, literature on SD, SDGs and SDGs in municipal context is reviewed. The framework of the UN's SDGs is summarised and central concepts, such as localisation and synergies, are defined together with the rationale behind applying the SDGs into municipal context. Following, studied is literature on management of SD and the SDGs. Discussed are paradoxes between management and the principles of SD and challenges that arise in municipalities while implementing SD management practices. In the end of the literature review, materiality assessment adapted to SD management is introduced as the theoretical framework of the thesis.

In the third chapter the methodology of the thesis is described through research strategy and case selection, research method, data collection and analysis, and finally validity and reliability of the research. In the fourth chapter represented are the findings of the thesis. In the framework of the materiality assessment there are six steps according to which the analysis is performed and introduced. The analysis is followed by discussion and the outlining of the roadmaps. Finally, in chapter 5 conclusions and contributions of the thesis are discussed. In Figure 2 the structure of the thesis is illustrated.

Figure 2. Thesis structure.

2 Literature review

This chapter presents the theoretical framework of the thesis and the central terminology is conceptualized. First, the literature review discusses the previous research on SD, the SDG framework and how the SDGs have been utilised in cities. Second, reviewed is research on strategic management of sustainable development in the context of cities. Finally, materiality assessment as the main theoretical starting point is conceptualized.

2.1 Sustainable development

SD is an extensive paradigm, but essentially it provides a framework to balance economic growth and social welfare in the limits of the Earth's ecosystem (Drastichová, 2022, p. 7, 8). It is famously summarized as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). A milestone in the development of this paradigm was the UN Conference on Environment and Development in 1992, in which both developed and developing countries committed to the principles of SD. Following in 2000, the UN members agreed on the Millennium Development Goals (MDGs) – a set of time-bound targets to reach sustainability – and based MDGs the Sustainable Development Goals (SDGs) were established in 2015 (Drastichová, 2022, p. 12-13).

SD is thus a primary condition for the relationship between humans and the environment (Knight, 2015, p. 154). Still, while SD is a prevailing societal discourse, research shows shortcomings in the state of sustainability, due to e.g. it being a complex entity to govern (Lueg & Radlach, 2016, p. 160; Zeemering, 2018, p. 137). For instance, despite the theoretical advancement the MDGs failed in having a practical orientation and initiating action (Drastichová, 2022, p. 15).

2.1.1 Sustainable development goals

The UN's Agenda 2030 with the 17 SDGs and 169 targets is the most comprehensive effort by the global community to reach sustainability so far. The Agenda 2030 requires all the UN members states to adopt an action plan to reach the SDGs by 2030 (Deloitte, 2018, p. 3). The SDGs comprehend all three pillars of SD, namely economic, social and environmental. The SDGs are aimed at states as a framework to organize their activities according to the principles of SD, and the states are responsible to the UN about the implementation of the SDGs (Drastichová, 2022, p. 13).

While the SDG framework comprehensively expresses the global political will, there are challenges in the interpretation and application of the framework in practice. The SDGs are universal and applicable to all 193 UN member states, due to which they need to be adjusted to the varying local conditions in different states (Drastichová, 2022, p. 14). The SDGs are complex also because of the synergies and trade-offs between the goals and even between the targets within one goal.

Kroll et al. (2019) identify and predict synergies and trade-offs between the SDGs and conclude that more knowledge is needed about the combined effects between and within the SDGs to realise sustainable development in practice. For example, on one hand it has been noted that goal 12 (responsible consumption and production) is contradictory with economic development and growth (Kroll et al., 2019, p. 2). On the other hand, goals 11 (sustainable cities and communities) and 13 (climate action) have synergies as climate friendly infrastructure enhances life quality in cities and mitigates climate change (Kroll et al., 2019, p. 8).

In their study Nerini et al. (2019) map the synergies and trade-offs between SDG 7 (affordable and clean energy) and the 16 other goals and conclude that there are significantly more synergies. Yet, as all the SDGs are interconnected, synergies and trade-offs between all of the goals should be visioned as a network rather than as pairs (Kroll et al., 2019, p. 10). Notable is that most of the trade-offs observed by Nerini et al. were

due to the conflict between short-term and long-term interests, such as need for rapid action to eradicate poverty and thorough planning for efficient energy systems in the wider picture (Nerini et al., 2019, p. 5).

The management of SD should primarily be based on a holistic approach, but this study focuses on specific SDGs due to their relevance to the city of Vaasa. Their chosen SDGs are 3 (good health and well-being), 4 (quality education), 7 (affordable and clean energy), 9 (industry, innovation and infrastructure), 10 (reduced inequalities), 11 (sustainable cities and communities), 13 (climate action), 15 (life on land) and 17 (partnerships for the goals). All the SDGs are pictured in Figure 3, and each goal chosen by Vaasa is shortly summarized below.

Image 1. The SDGs (UN, 2023).

SDG 3 seeks to ensure healthy lives and promote well-being for all at all ages. It includes reducing maternal and child mortality, ending long prevailing epidemics and reducing

diseases, preventing drug and harmful alcohol use, reducing road traffic accidents, ensuring access to healthcare and especially to sexual and reproductive healthcare, ensuring affordable vaccines and other essential medicines, strengthening tobacco control and increasing research, financing and training on health-related issues (UN, A/RES/70/1, 2015, p. 16-17).

SDG 4 pursues inclusive and equitable quality education and promotes lifelong learning opportunities for all. It should be reached through free and/or affordable, equitable and quality education, decent skills for employment, eliminating gender disparities, ensuring education to vulnerable groups, building safe education facilities and increasing the number of qualified teachers. Moreover, all learners should be equipped with knowledge and skills to promote sustainable development, including amongst others, human rights, diversity and culture of peace (UN, A/RES/70/1, 2015, p. 17).

SDG 7 ensures access to affordable, reliable, sustainable and modern energy for all, which entails substantially increasing the share of renewable energy, improving energy efficiency, promoting investment in energy infrastructure and technology, supplying modern energy for everyone and international cooperation to enable clean energy research and technology (UN, A/RES/70/1, 2015, p. 17).

SDG 9 invites to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. It includes developing infrastructure to support economic development, promoting inclusive industrialization, access of small-scale enterprises to financial services, upgrading and retrofitting industries to make them more sustainable, enhancing scientific research, supporting domestic technology development and innovation and significantly increasing access to information and communications technology (UN, A/RES/70/1, 2015, p. 20-21).

SDG 10 demands reduction of inequality within and among countries through empowering and promoting social, economic and political inclusion of all irrespective of

age, sex, disability, race, ethnicity, origin, religion economic or other status. It also entails achieving and sustaining income growth, ensuring equal opportunity, reducing inequality of outcome, adopting and improving especially fiscal policies, regulations and monitoring, and facilitating orderly and safe migration (UN, A/RES/70/1, 2015, p. 21).

SDG 11 aims to secure the safety and sustainability of cities and other human settlements. It should be reached by securing adequate living conditions to all, developing public services and infrastructure, securing the vitality of countryside while still strengthening sustainable urbanization, reducing the adverse impacts of urbanization to the environment by paying attention especially to the rights of vulnerable groups, such as women, children, elderly and the disabled (UN, A/RES/70/1, 2015, p. 21-22).

SDG 13 advises to urgently act against climate change. It should be reached by strengthening the resilience of communities against climate-related hazards, improving the capability to adapt to climate risks, increasing knowledge, education and preparedness to climate change adaptation and mitigation. Climate action should be integrated to national planning and strategy (UN, A/RES/70/1, 2015, p. 23).

SDG 15 aims to protect, rebuild and promote sustainable use of terrestrial ecosystems, sustainably manage forests, prevent desertification, and halt and reverse land degradation and biodiversity loss. It includes the conservation, restoration and sustainable use of e.g. forests, realisation of sustainable management of all types of forests, combating desertification and degradation of natural habitats, enhancing biodiversity, integrating ecosystem and biodiversity values into national and local planning, and increasing and mobilising financial resources for these targets (UN, A/RES/70/1, 2015, p. 24-25).

SDG 17 seeks to strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development through finance, technology, capacity-building

and trade. The targets encompass e.g. mobilizing resources, enhancing access on science and innovation, developing and disseminating environmentally sound technologies, augmenting international support for capacity-building, promoting international, rules-based and equitable multilateral trading system, and improving systemic issues, such as policy coherence, multi-stakeholder partnerships, availability of data, and accountability (UN, A/RES/70/1, 2015, p. 26-27).

SDGs include several targets per goal and all together 169 targets, which are more specific descriptions of what each goal entails. For instance, target 13.3 under the goal 13 (climate action) states that education and awareness over climate change mitigation, adaptation and impact reduction should be improved (UN, A/RES/70/1, 2015, p. 23). There are outcome targets and means of implementation targets, but they are defined as "aspirational and global", which entails that all states must set their own targets according to the local conditions (UN, A/RES/70/1, 2015, p. 13). Hence, while specifying the SDGs to be focused on, municipalities should also choose and localise the targets they aim to accomplish.

In order to reach the targets and as a consequence the goals, the SDG framework establishes indicators to measure whether the targets are being met. The goals and targets are reviewed through a global set of indicators, but all states using the SDG framework should have localised indicators (UN, A/RES/70/1, 2015, p. 32). Furthermore, municipalities need to select indicators suitable for their specific context. The indicators function as a mechanism to measure performance and as a management tool, but the development of indicator systems has been challenging, as noted by scholars such as Krellenberg et al. (2019, p. 16) and Hansson et al. (2019, p. 218).

Also (Simon et al., 2016, p. 53) note that while indicators ought to be simple and single-variable and their policy implications clear, the connection between the two is far from straightforward. Lack of timely data and the difficulty to operationalize some indicators may lead to measuring available data rather than relevant data. Especially with SDG 11

(sustainable cities and communities) there are no standardized metrics for such a complex entity as a city that consists of several actors and domains of SD (Simon et al., 2016, pp. 53–54).

2.1.2 Sustainable development goals in cities

The actors responsible to the UN about the implementation of the SDGs are the states. There are no peremptory provisions for cities and municipalities even though many critical and significant decisions about SD actions are made on the municipal level (Deloitte, 2018, p. 3). Due to their extensive duties, municipalities are responsible for over 60% of the execution of the SDGs (Association of Finnish Municipalities, 2022, ch. 1.1). The participation of municipalities in SD thus depends on the states' regulation or on their own commitment to the goals.

Notable is that the duties that municipalities face are not new, the SDGs just offer a comprehensive frame through which municipalities can examine, improve, follow and interweave the entities. For instance, municipal development is sustainable when both short-term and long-term prospects in all three dimensions of SD are taken into consideration, and the activities of different municipal departments are integrated. The involvement of residents, companies and other communities, and the utilization of digitalization are crucial (Association of Finnish Municipalities, 2022, Chapter 1.1.).

In Finland there is no specific SD regulation for municipalities, but rather the purpose of municipalities and the general regulation concerning them, such as the Local Government Act, directs municipalities (Association of Finnish Municipalities, 2022, Chapter 2.1.). The environmental dimension of SD has experienced the most turbulence, but still there is no binding regulation, e.g. set greenhouse gas emission reduction targets, to the municipalities. Although, commencing in the city council term 2025-2029, it is planned that it will be mandatory for Finnish municipalities to have a climate plan including undetermined emission reductions (Ministry of Environment, 2023a).

Additionally, the Ministry of Environment has activities to boost municipal carbon neutrality to reach the national goal of carbon neutrality in 2035. In the region of a municipality roughly 10% of greenhouse gas emissions are caused by the municipal sector. The remaining share is produced by e.g. residents and local companies, which the municipal sector can affect (Ministry of Environment, 2023b).

In order for the SDGs to serve as a normative framework for municipalities, they should be localised, i.e. interpreted in the local context and revised into concrete tools for the municipalities (Krellenberg et al., 2019, p. 2). Furthermore, each individual SDG and its measures' relevance for a municipality needs to be evaluated and adapted to the local context. Still, for example climate change as a phenomenon is so complex and its effects insecure that municipality's decision-makers may see the appropriate responses differently, which slows down the decision-making (Aldunce et al., 2016, p. 1004). Hence, SD is a societal norm, but the central question is what principles and actions to prioritize in the municipal management (Castán Broto, 2017, p. 2).

Localising refers to how the SDGs can be applied as a framework for the local level sustainability work but also to how local governments can help to advance the global SDGs (Schmidt-Thomé et al., 2020, p. 16). Thus, while operating in the local level the local authorities must take into account current global developments as the spheres are interdependent. For example, during the covid19 pandemic cities enabled a rapid spread of the virus, which raises questions about the resilience of cities and whether urban development strategies should be rethought (Krellenberg & Koch, 2021, p. 202).

In Finland municipal leaders generally have a clear understanding of the SDGs and willingness to apply them, but in most municipalities SDGs are not a starting point for the strategy or to the planning of the municipal functions. Municipalities hope for practical methods and clear arguments in favour of the implementation of the SDGs so that budgets would be easier to allocate to the management of SD (Deloitte, 2018, p. 14). Although, research on local level SD has expanded (such as Guarini et al., 2022;

Bardal et al., 2021; De Matteis & Borgonovi, 2021; Hawkins et al., 2021), and there have been recent efforts to create practical tools for cities, such as SDG handbooks, by Association of Finnish Municipalities (2022) and Demos Helsinki (2020). Yet, already in 2016 the UN SDSN (Sustainable Development Solutions Network) created a guide for local SD stakeholders in cities (UN SDSN, 2016).

As noted by Krellenberg and Koch (2021, p. 201), several publications point out a plethora of difficulties in adopting SDGs in cities, especially when it comes to the level of concreteness and implementation. For instance, SDGs ought to be universal principles, but in a pilot study by Simon et al. (2016, p. 58) on five cities across the globe, there were too many discrepancies between local realities and data collection practices to consider the principle of universality truly applicable. Especially the availability of timely data was a challenge in all of the studied cities, such as Gothenburg and Cape Town (Simon et al., 2016, p. 58). However, some attempts are being made for data to meet the growing requirements (e.g. Wu et al., 2022).

Another challenge in the sphere of implementation of SDGs is the discrepancy between the cross-disciplinary nature of SD and the bureaucratic and compartmentalized structure of most local governments as identified by Krause and Hawkins (2021). As an example they state that local greenhouse gas emission reduction would easily require the work of four or five departments, which raises its own coordination challenges (Krause & Hawkins, 2021, p. 1).

On the other hand, Bardal et al. (2021) study factors facilitating successful implementation of SDGs in Norwegian cities and map approximately 40 factors ranging from institutional to technical and political ones. As they state, there is existing literature and knowledge on the SDG implementation, but there is a need for practical guidance for local authorities and making the knowledge and tools accessible and approachable (Bardal et al., 2021, p. 17; Taajamaa et al., 2022, p. 2). However, some cities progressively

implement the SDGs and participate in voluntary reporting (Ruiz-Campillo & Rosas Nieva, 2022, p. 2).

2.2 Management of sustainable development and materiality assessment

The two theoretical streams integral to this study are sustainable development and strategic management. This chapter represents the main characteristics, challenges and opportunities of strategically managing sustainable development in cities, and thus, synthesises the two streams of literature. First, relevant previous research is reviewed. Second, the principal theoretical framework of the current study, namely the materiality assessment, is examined.

2.2.1 Previous research

Without management the SDGs remain as good intentions. Problematic is that the goal of management, either public or private, is economic growth and the biggest possible benefit by consuming resources, while SD aims to save resources (Lueg & Radlach, 2016, pp. 158, 159–160). In many organizations the management of SD is limited to environmental matters or SD management's efficiency is restricted by hierarchical structures and silo mentality, and individual administrative bodies cannot reach the complex goals by themselves (Schmidt-Thomé et al., 2020, p. 14; Zeemering, 2018, p. 145). Thus, the traditional view of management has to be revised to include the SD principles and their integration to strategic planning and decision-making (Zeemering, 2018, p. 137).

The causes and solutions of SD challenges, such as climate change, have for long been seen as global, but the discourse of cities and municipalities of significant actors and even as key players has increased (Castán Broto, 2017, p. 1; Zeemering, 2018, p. 140). Challenging in the management of SD in international, national and local level is that the

local conditions alter the context of planning and execution, and generalizations about SD management cannot be done (Castán Broto, 2017, p. 2).

The purpose of municipalities is to secure and advance the region's welfare and amongst other things to organize municipality's services in a sustainable manner. Therefore, municipalities' basic functions should be executed in a way that secures the prosperity and sustainability of the region (Association of Finnish Municipalities, 2016, p. 15). It is clear that SD as a principle belongs to the framework of municipal management. Yet, often hierarchical and stiff power structures, inadequate knowledge about the requirements of SD and lack of strategic approach lead to non-existent or short term improvements in the municipal functions (Knight, 2015, p. 156; Schmidt-Thomé et al., 2020, p. 10).

Many local actors focus on narrow sustainability projects, such as technical improvements, and not on integrating major outlines into the local management (Zeemering, 2018, p. 140). SD has to fit together different viewpoints and it requires systemic approach and easily adjusting and integrating framework of management (Knight, 2015, p. 155). Challenging in integrating SD into municipal management is the dual management model, where power is used by both elected representatives and local government officials.

The long-term goals and activities are also disrupted by parliamentary terms and other short-term motives (Association of Finnish Municipalities, 2016, p. 15; Schmidt-Thomé et al., 2020, p. 25). Municipal actors also often respond to complex issues with less complex policy and management solutions (Aldunce et al., 2016, p. 1015). Still, it is not necessary to completely reorganize the organizations, but to integrate the SDGs to the strategy already in the planning stage (Lueg & Radlach, 2016, p. 162). Additionally, cities are a complicated context to manage and there are often ad hoc working groups and several stakeholders involved (Castán Broto, 2017, p. 5).

In their study Krause & Hawkins (2021) argue that an identifiable and influential lead, whether it be a person or a unit, is essential in successfully implementing sustainability objectives. Often sustainability is seen as extra duties instead of core tasks and the ability of the lead to point out responsibility and require cooperation - instead of negotiating on it - are crucial in embedding sustainability into an organization's core practices. Moreover, with an influential lead leading to steady status of sustainability management in the organization, SD practices are less fragile when it comes to personnel changes. Other studies support the views represented by Krause and Hawkins: Lueg & Radlach (2016) claim that top management commitment raises awareness and guarantees legitimacy to the sustainability objectives and Guarini et al. (2022, p. 586) state that sustainability management does require broad coordination over city departments and significant amount of time, commitment and resources.

The framework applied in the analysis on Vaasa city is developed by Krellenberg et al. (2019) in their study of four cities' sustainability strategies. There are six steps in the framework according to which cities can strategically manage SD. The steps are withdrawn and synthesized from two previous frameworks, namely Broman and Robért's (2015) framework for strategic sustainable development and the UN Sustainable Development Solutions Network's (SDSN, 2016) four steps for getting started with the SDG implementation in cities.

Broman and Robért (2015 p. 18, 20) emphasize the need to understand the benefits of proactivity on advancing and effectively managing SD, and thus want to provide methodological support for that goal. Strategic approach is necessary to e.g. minimize the impacts of trade-offs and enable collaboration across organizations and departments and Broman and Robért describe five steps to reach this strategic state.

The steps consist of having (1) reviewed the system the organization is functioning in, (2) a vision of the desirable future, (3) guidelines for approaching the vision, (4) defined actions to reach the vision and (5) tools and methods to execute actions (p. 22). Broman

and Robért do not use the SDGs as a definition for sustainable development nor do they address specifically cities but rather organizations in general. Therefore, as cities differ from other types of organizations, Krellenberg et al. supplement the five steps with the SDSN's approach that is specifically aimed at cities and built on the SDGs.

The SDSN has a territorial approach to the SDGS due to cities' relevance to achieving sustainability and the effect that urbanization has had on the ecosystem. Urban areas have a disproportionate effect on all development compared to the size of their occupied territory, and hence, it is strategic to focus on cities' sustainability management (UN SDSN, 2016. Ch. 1). SDSN's framework describes four steps for implementing the SDGs in cities: (1) initiating a participatory process for stakeholders in the city, (2) setting the local SDG agenda, (3) planning the implementation and (4) monitoring and evaluating the progress (UN SDSN, 2016, Ch. 2).

The frameworks by SDSN, Broman and Robért, and Krellenberg et al. can be described as materiality assessments as they aim to assess the most material and effective actions to take to reach a goal. In the next chapter the materiality assessment as described by Krellenberg et al. will be introduced as the principal theoretical starting point for this study.

2.2.2 Materiality assessment

Materiality assessment originates from the business world where it is used to evaluate sustainability action and to lay grounds for sustainability transformation. Central is to recognize measures that have the largest advancing impact on SD rather than to e.g. invest in an indicator that merely has a lower value (Schmidt-Thomé et al., 2020, p. 17). Materiality assessment is not a new concept but applying it to sustainable development in the public sector is only in the beginning. Different versions have been developed by aforementioned Broman and Robèrt (2017) and the UN Sustainable Development Systems Network (2016), and Krellenberg et al. (2019) have synthesized a version applied in this study. In Finland materiality assessment has been utilized by Finnish

Government's research project, in which the materiality assessment is also based on the model created by Krellenberg et al. (2019). The steps of the materiality assessment as depicted by Krellenberg et al. (2019, p. 7) are the following:

1. Map the system
2. Vision, goals and indicators
3. Strategic guidelines
4. Actions
5. Tools
6. Readjustment

The realisation of the SD and the SDG framework in an organization can be initiated and/or evaluated according to the six steps. While it is a practical guide to enforcing sustainability in an organization, it is also a theoretical view on how sustainable development is ideally managed and organized. Since managing sustainable development should always be localised and adjusted to specific conditions, a theory of SD management can, at its best, only conceptualize what factors to consider, but not how the factors should turn out.

Nevertheless, according to SDSN successful localisation of the SDGs depends on (1) the process being backed up by high-level political leadership, (2) the embeddedness of SDG management in the organizational structures, (3) cross-cutting communication and coordination between departments, (4) involvement of non-state actors and (5) high accountability and transparency (UN SDSN, 2016, Ch. 2). In the next subchapters the steps of the materiality assessment and factors affecting them will be introduced in detail.

2.2.2.1 Map the system

Step 1 refers to recognizing and putting into words the circumstances and SD challenges of the municipality. It consists of analysing and understanding the physical, economic,

ecological, political, cultural and historical factors affecting the city and its strategy, which in turn allows the identification of the central social, environmental and economic challenges to be focused on. The mapping can be executed with, for instance, SWOT analysis. It is necessary to include stakeholders to this stage in order to get a holistic understanding of the circumstances (Krellenberg et al., 2019, p. 7).

2.2.2.2 Visions, goals and indicators

In step 2 the purpose is to evaluate whether there is a sustainability vision accompanied with a timeline and concrete goals and indicators from the SDG framework. According to a backcasting process the vision should set an image of the desirable sustainable future and then the vision should be connected with more specific goals, policies and programs through which the vision is reached. The SDGs and indicators also should be localised, be implementable to the context and provide high potential for transformation. This stage ought to be accompanied by stakeholder involvement to secure transparency and legitimacy (Krellenberg et al., 2019, p. 8).

2.2.2.3 Strategic guidelines

The finding of step 3 should be that the city has strategic guidelines on how to approach the city's sustainability vision. The guidelines should include both internal and external factors. Internally guidelines should direct in selecting economically viable options and secure that there are enough resources and capacity in the organization to execute the sustainability vision, short-term and long-term. The external sphere encompasses benchmarking and connecting the city's vision to other sustainability strategies in international and national level and to those of other cities. Hence, step 3 is about whether the vision is linked with internal enablers and relevant external strategies and actors on a multi-level and multi-sectoral basis (Krellenberg et al., 2019, p. 8). In summary, it is about how to approach the vision strategically (Broman & Robèrt, 2017, p. 22).

2.2.2.4 Actions

Step 4 is about the concrete actions, such as sustainability education, that the city has chosen in order to reach the sustainability vision. Practically the actions have been prioritized by using the vision and the strategic guidelines to shape the selection of the actions. Considered should be the benefits and synergies of the actions. Yet, actions should be simultaneously paired with financial, human and other necessary resources and a timeline to secure their fulfilment. Again, involvement of stakeholders is necessary to have a holistic understanding of all circumstances (Krellenberg et al., 2019, p. 8).

2.2.2.5 Tools

Step 5 relates to the forms of support that are needed to successfully execute the actions and reach the goals and eventually the vision of desirable future. The forms of support are e.g. tools and methods to implement sustainability work and management. For each action there should be clearly defined responsibilities amongst personnel in relation to the process, timing, execution and financing. Necessary tools for the actions, indicators and goals are monitoring and reporting systems. They enable a transparent process that can be adjusted if necessary. Another relevant factor to take into account is the availability of data to monitor the progress (Krellenberg et al., 2019, p. 8).

2.2.2.6 Readjustment

Step 6 is about reacting, if internal or external factors affecting the goals, indicators or actions change. Therefore, it is relevant to have a monitoring and reporting systems to be able to do planned adjustments when necessary. Following, the other steps may require adjustments (Krellenberg et al., 2019, p. 9).

In summary, materiality assessment by Krellenberg et al. is a framework to evaluate how cities manage sustainable development strategically based on the SDGs. It is also a framework to analyse how cities can affect the global sustainability goals (Schmidt-Thomé et al., 2020, p. 16). In figure 3 the process of the materiality assessment is

visualised. This chapter has represented the theoretical framework for municipal management of sustainable development. The main concepts of the study – sustainable development, management of sustainable development, the SDGs and materiality assessment – have been introduced. The next chapter will present the methodological approach of the study.

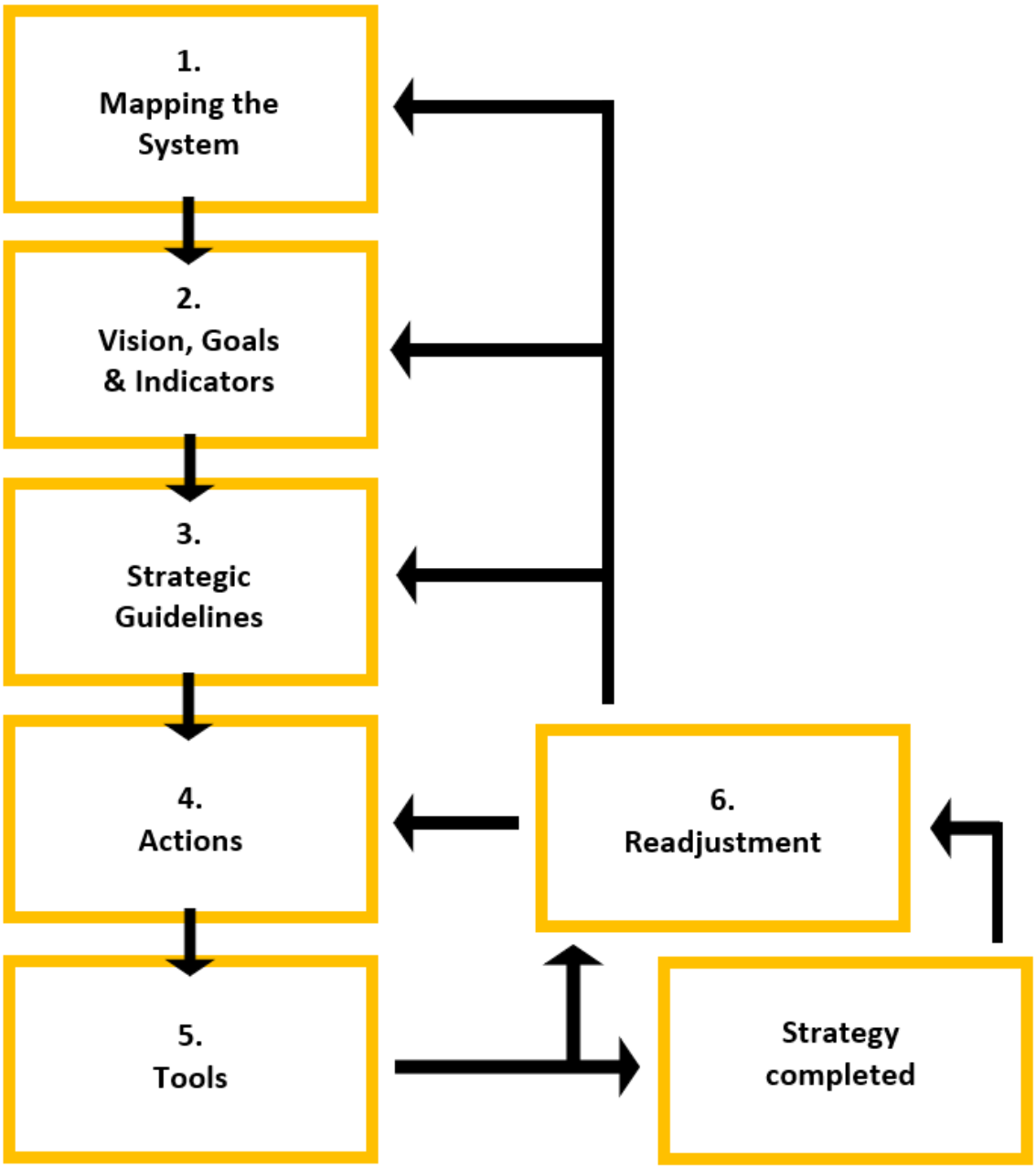

Figure 3. Steps of the materiality assessment (Krellenberg et al., 2019).

3 Methodology

This chapter discusses the methodological choices of the study. First, philosophical assumptions are discussed. Then the research strategy, case selection and method with the application of content analysis are described. Furthermore, data analysis and validity and reliability are reviewed. Thus, this chapter prepares the grounds for the analysis by synthesizing the theoretical framework and the methodological positioning of the thesis.

3.1 Philosophical assumptions

The researcher carries a responsibility of conducting the research in as neutral and unbiased manner as possible. Philosophical and ethical views of the researcher have an impact on the choices made about the study, due to which especially in quantitative research the decision-making ought to be based on generally accepted norms and the decisions – such as research method – ought to be documented (Tuomi & Sarajärvi, 2018, p. 109). As a result, the research has credibility.

As an approach to theory development, this research uses deductive approach, in which the analysis is guided by an already formed theory or a framework. Hence, the theory defines the concepts through which the results of the analysis are outlined (Tuomi & Sarajärvi, 2018, p. 82). In this research the materiality assessment serves as the theoretical framework through which the empirical case is examined. Furthermore, while the primary aim of the research is to study the case of the city of Vaasa and outline roadmaps for its SD management practices, the relatively new version of the materiality assessment depicted by Krellenberg et al. (2019) came to being tested in the research, which can also be a feature of deductive approach.

3.2 Research strategy and case selection

Case studies are used to examine particular phenomena in a specific setting and this research is a single case study. It is a well-suited approach for an in-depth analysis of

complex issues, and especially for identifying best practices. Furthermore, an advantage of a case study is generally the use of multiple data collection methods, such as document analysis and interviews (Adams et al., 2014, p. 98). This research aims to understand SD practices in a specific case of the city of Vaasa and to identify and develop best practices for the organization, and as Adams et al. (Adams et al., 2014, p. 98) state, case studies are about uniqueness and particularisation, that are needed to embody the challenges and opportunities of the city of Vaasa. However, the results are not generalisable, but despite the weakness, case study was considered as the best fit for this research due to its benefits for the city of Vaasa.

Different types of research aim at different knowledge outcomes, of which descriptive research is about simply describing phenomena, such as social systems. Descriptive research also gives a baseline to conduct further examinations. However, descriptive research is not concerned with why behaviour is as it is (Adams et al., 2014, p. 2). This research utilises a strategy of a descriptive single case study as it aims to understand how the framework and its concepts are realised in the context of the case. This in turn enables the outlining of road maps for the city of Vaasa to reach its SD goals.

From the beginning, the scope of case selection process was narrowed down to municipalities due to the SDGs and their management not being widely implemented in municipalities despite the increasing evidence that municipalities are key players in reaching the SDGs. Three cities – Vaasa, Turku and Helsinki – answered to the inquiry about research collaboration and Vaasa was chosen as it had recently adopted the SDGs and had established new management practices to realize them. Hence, a high probability to find a research problem was detected. The more detailed research approach was then formulated together with the representatives of the city of Vaasa.

3.3 Research method

In data collection and analysis this research utilizes qualitative approach. Qualitative data is non-numerical or not quantified data, such as interviews or documentation, and

the analysis is executed by conceptualising the content of the collected data (Saunders, 2007, p. 470). The data can be further divided into primary and secondary data. Primary data is collected by the researcher and in this research, it comprehends interviews. Secondary data is already collected data for some other purpose, such as strategy documents or financial statements, as in this study (Saunders, 2007, p. 246).

The interviews were conducted as semi-structured one-on-one interviews meaning that there were planned questions and themes to cover based on the theoretical framework, while the method leaves the researcher the possibility to ask follow-up questions or slightly modify the questions to each interviewee. As a result, all the necessary information on the researched topic is discovered and more information can be retrieved from newly found topics within the interviews (Tuomi & Sarajärvi, 2018, p. 65).

3.4 Data collection and analysis

The primary data was collected through interviews that were conducted within a period of three weeks in May and June 2023 in Vaasa. Despite two exceptions, interviews were held face-to-face in the premises were the interviewees worked. There were 13 interviewees from all three sectors of the city organization and the interviewees either worked closely with strategy and the SDGs and/or belonged to the top or middle management titled “director” or they were representatives of stakeholders. Most of the interviewees had been in their positions for several years, but some had started in their positions fairly recently.

The template of the interview questions can be found in Appendix 1, but as the interviews were semi-structure, the questions and the structure were not exactly the same for each interviewee. Some of the questions were left open for interpretation. The strategy has its own goals that are separate from the SDGs, but the strategy also refers to the SDGs. Thus, the interviewee had the possibility to answer the questions either from the point of view of strategy’s goals or the SDGs, depending on what was relevant to them.

The lengths of the interviews were between 28 and 58 minutes, but the average was 38 minutes. Altogether the interviews were 499 minutes or 8 hours and 20 minutes. The detailed description is presented in Table 1. The interviews were conducted in Finnish as it was the native or working language of the interviewees and the researcher, and the quotes are translated by the researcher. The interviews were recorded and transcribed. As the research is interested in the subject matter rather than e.g. the interaction, unnecessary words, pauses and repetition were deleted from the transcription. In addition to primary data, some secondary data was utilised in the research, such as some statistics and the strategy document. Especially the strategic document is relevant as it is considered as the formal statement of a city's strategic culture and values (Guarini et al., 2022, p. 584).

Interviewee	Date	Length of the interview
1	29.5.2023	31min
2	29.5.2023	32min
3	5.6.2023	59min
4	6.6.2023	32min
5	7.6.2023	37min
6	7.6.2023	43min
7	8.6.2023	35min
8	8.6.2023	38min
9	9.6.2023	28min
10	12.6.2023	29min
11	12.6.2023	28min
12	13.6.2023	49min
13	13.6.2023	58min

Table 1. Details of the interviews.

The data analysis was performed by first, reading through the transcripts of the interviews and by highlighting relevant parts of the content. Second, the contents of the interviews were categorized based on the steps and concepts of the materiality assessment introduced in subchapter 2.2.2. Materiality assessment can be utilised to either create SD management practices or to evaluate the state of SD management practices, the latter being executed in this research. In other words, the organisation and

its systems were mapped and then the vision, goals, indicators, strategic guidelines, actions, tools and readjustment processes were analysed against the model provided by the materiality assessment.

In practice each of the six steps of the materiality assessment with some keywords were placed in a column in a table. Each interviewee was then placed into following columns, and the contents of their answers were classified according to the steps and the steps' keywords. Finally, all the content under each step of the materiality assessment were summarised to see what factors of SD management emerge from the interviews.

The data structure based on the materiality assessment and the method described above is clarified in Figure 5. In the first-order column there are the steps of the materiality assessment, which are the overarching themes, and in the second-order column there are the keywords of each step, which are drawn from Krellenberg et al. (2019) and described in more detail in chapter 2.2.2. In the end of chapter 4.2 the figure will be supplemented with the findings of the research summarised into more practical keywords and terms under the categories of the first-order and the second-order columns. Discussed in chapter 4 are the findings that are supported by direct quotes from the interviews. The model for the data structure is inspired by Nag et al. (2007, p. 828), even though in their research inductive approach is applied. However, the logic of the data structure from particular to general is simply reversed in this thesis.

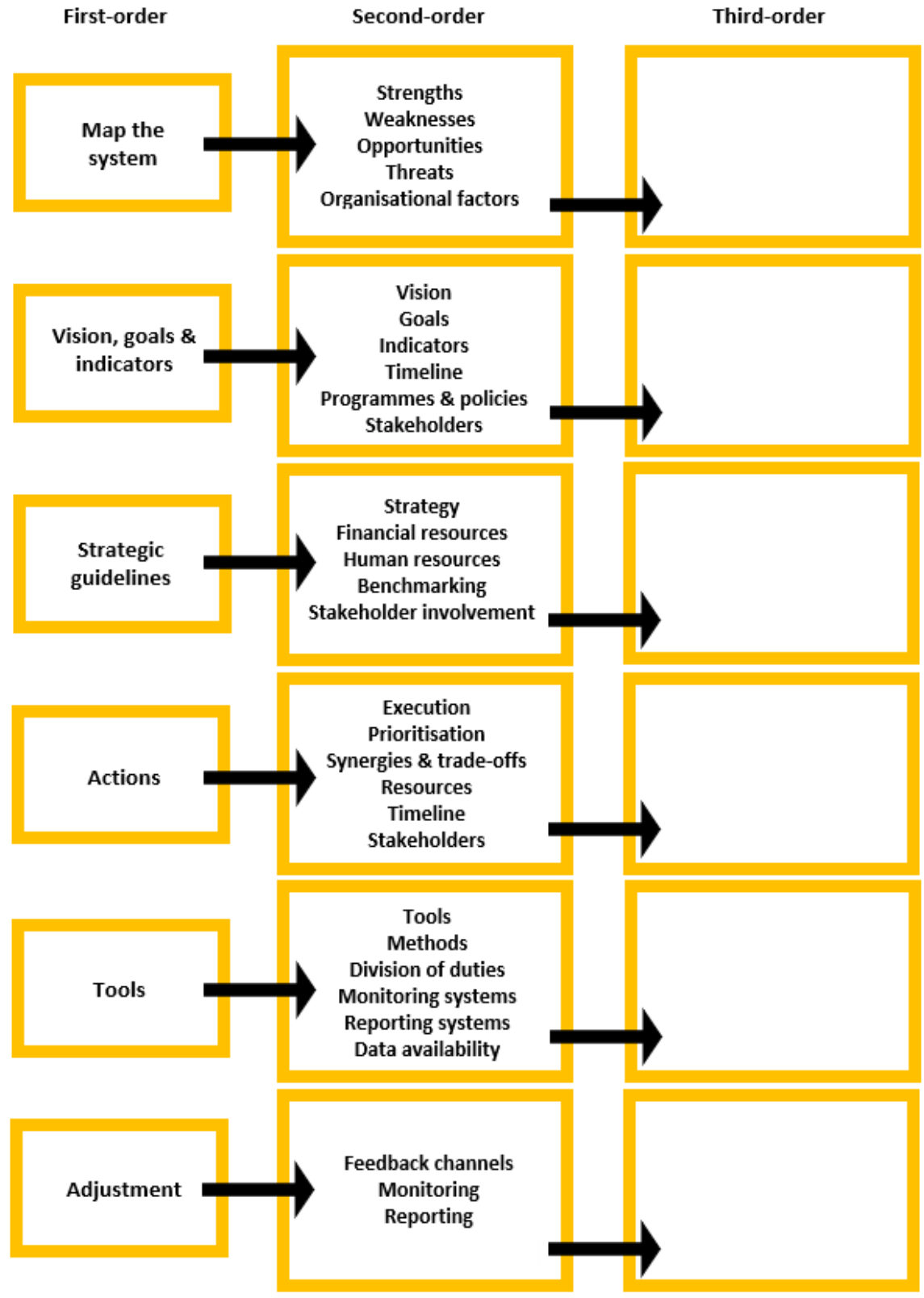

Figure 4. Data structure. Adapted from Nag et al. (2007, p. 828).

3.5 Validity and reliability

There are criteria for research in order to be trustworthy, namely validity and reliability. Validity refers to whether the researcher is measuring what ought to be measured and if the measuring is accurate whereas reliability is about the consistency of the research and its repeatability (Adams et al., 2014, p. 245, 247). However, some studies are not intended to be repeatable, because examined are complex and dynamic circumstances that will not be the same in another moment of time. This research applies such an approach and thus, reliability can be enhanced by describing the data collection and analysis of the research in a transparent and detailed manner, through for example interview transcriptions (Saunders, 2007, p. 319-320).

Internal validity is about whether the researcher has made accurate interpretations about the examined factors and relationships between them. After the data analysis phase, the results were represented to the executive group of the city of Vaasa, in which many of the interviewees sit. This respondent validation method is used to increase the validity of the results (Tuomi & Sarajärvi, 2018, p. 124). External validity refers to generalisability, but as the research is targeted at a single case with a small sample, the results are not intended to be generalisable. Rather, their value lies in understanding the phenomenon in the particular case and its implications (Saunders, 2007, p. 151).

4 Findings

This chapter represents the findings of the empirical study. In other words, analysed is the management of SD in the city of Vaasa regarding the SDGs 3, 4, 7, 9, 10, 11, 13, 15 and 17 and what kind of SD management practices there are according to the materiality assessment. First, the case of Vaasa and SD management is shortly described. Second, the analysis is represented through the steps of the materiality assessment. Based on the findings of the analysis, developed are road maps for Vaasa to manage SD in a manner that allows the city to reach its sustainability goals.

4.1 Description of the case

Vaasa is located on the western coast of Finland. It has approximately 68 000 inhabitants and within the Vaasa region there are approximately 114 000 inhabitants. Vaasa is a medium-sized city, but it features six higher education institutions, and it is one of the most multicultural cities in Finland with 120 different nationalities. Other noteworthy characteristic is a large minority of Swedish speaking Finns in the region (Vaasa, 2023a).

The city of Vaasa has incorporated sustainable development (SD) into its strategy since 2022, but as the first strategy period with SD is still on-going, the implementation of SD into the organization is still in the beginning. The next chapters systematically map and analyse how SD and the SDGs are incorporated into the Vaasa city strategy and the city organization on the level of strategy and practice. Furthermore, the implications of the analysis for the city of Vaasa are discussed, but also the challenges of the chosen framework of materiality assessment are depicted. Lastly, road maps for Vaasa to reach its SDGs are developed.

4.2 Results of the materiality assessment

4.2.1 Map the system

Mapping the system is about recognizing the circumstances of the specific organization that can relate to, for instance, economic, ecological, social or political factors. Hence, existing strategy and practice ought to be reviewed. This subchapter proceeds by first mapping how strategy and SD are managed in the city organization and then by examining internal strengths and weaknesses and external threats and opportunities as in a SWOT analysis. The mapping is based on the strategy document and the interviews.

The current strategy of Vaasa is in force 2022-2025 and it is the first time that the SDGs are formally a part of the city's strategy, despite the SDGs work having started in different projects from 2019 onwards. The strategy is titled The Nordic Energy Capital and its main goals are to have 100 000 inhabitants by nonfixed time, to be the happiest and safest city in Vaasa, to increase the number of available jobs and to be carbon neutral by 202X (Vaasa, 2022, p. 7).

> *I think it's amazing that now there is the bold goal that we want to be carbon neutral in the 2020s, that we really are from the ambitious end of Finnish cities. Of course, we now have to hope that it won't just stay as a goal, but that we actually have the courage to do strategic actions and stick with those decisions (Interviewee 11).*

To reach these goals the strategy is divided into three theme programmes that are Happy and competent Vaasa, Attractive Vaasa and Climate neutral Vaasa 2020X. Each theme programme has goals, measures and actions that need to be reached. In addition to the theme programmes there are Enablers, such as economy and human resources, that also have specified goals, measures and actions. All of the goals, measures and actions need to be achieved within the three theme programmes and the Enablers in order to realise the four main goals of the strategy (Vaasa, 2022, p. 9).

The strategy nor the theme programmes are built upon the SDGs per se. The newly established theme programmes have steering groups that selected relevant SDGs and indicators for Vaasa in the beginning of the strategic period in 2022. The steering groups are also responsible for connecting the SDGs and indicators with the entities of the strategy. While “measures” and “indicators” in this context refer to the same type of tool that indicates progress, for clarity “measure” is used in relation to the strategy and “indicator” in relation to the SDGs. Later on, the overlapping terms and concepts are discussed in more detail.

SD is fundamentally imbedded into the strategy, but the integration of the more tangible SDGs is only mentioned as a goal of the strategy under the theme programme Carbon neutral Vaasa 2020X and the Enablers. A tool named MayorsIndicators that is based on the SDGs is also mentioned as a measure under Happy and competent Vaasa and Carbon neutral Vaasa 202X, and thus, can be regarded as a reference to the SDGs (Vaasa, 2022, p. 10, 12, 14). Yet, despite SD being evidently part of the strategy, the SDGs are only partially imbedded in it. Hence, there is a divide between the goals, measures/indicators and actions of the strategy and the SDGs, which will be discussed in more detail in the next subchapter.

The city’s functions are divided into three sectors and the sectors compromise of service areas or equivalent units. The sectors are Education and cultural sector, Urban environment sector and Central administration. The service areas include functions, such as Library services, Sport services, Urban planning, Building control, Personnel services and Financial and owner control. The service areas are responsible of executing municipal activities that are mostly dictated by law and regulations (Vaasa, 2023b).

In addition to this so-called regular action, there are focus areas stated in the strategy that are to be developed by the city organization. This developing action is also executed by service areas, but the goals of developing action are retrieved from the strategy. Furthermore, developing action and action related to the SDGs are not synonymous but

in this categorization SDG action mostly falls within developing action. Duties arising from law and regulations and from strategy are of course overlapping, but the specification is necessary to analyse the position of SDGs in the organization.

Each theme programme steering group is composed of 12 members and a secretary. There are three sector directors that all serve as the chair of one steering group. Furthermore, there are three service area directors, three representatives of stakeholders, such as subsidiary companies, and four representatives of the city council. Generally, the city officials representing in a steering group come from the same sector. For instance, in the Happy and competent Vaasa steering group the city officials come from the Education and cultural sector and in Attractive Vaasa from the General administration sector, but one Attractive Vaasa member comes from Urban planning sector.

The steering groups meet approximately four times a year and timely topics are represented by group members and other city officials in the meetings. Ideally the steering groups then prioritize between the goals of the strategy and the SDGs, coordinate and direct service areas and stakeholders in executing the developing action. The steering groups also follow the progress of Vaasa's SDGs.

The structure of decision-making is complicated as steering groups ought to define and prioritize goals and actions and then service areas execute them, but budgets are decided in the city council's committees. Furthermore, there is no special funding related to SD or the theme programmes, and service areas need to allocate funds to SD action from the normal budget.

> *Resources come through budget. There are no additional resources for the theme programme work, instead the SD activities should be included into the activities that have been decided on in the annual budget (Interviewee 5).*

Although, in some cases same people represent in a steering group and in a committee or in a steering group and service area. The simplified steering function of the theme groups is illustrated in Figure 4. Anyhow, the dispersion of decision-making power does not necessarily advance fluent action. Hence, the question is whether this setting between these three entities of steering groups, service areas and committees is optimal. It also appears that the steering groups' work stays distant to the personnel, if they are not members or occasionally attending their meetings.

> *The steering groups and what they do and what they are is something that is often asked about, you can tell that their role hasn't clarified yet (Interviewee 10).*

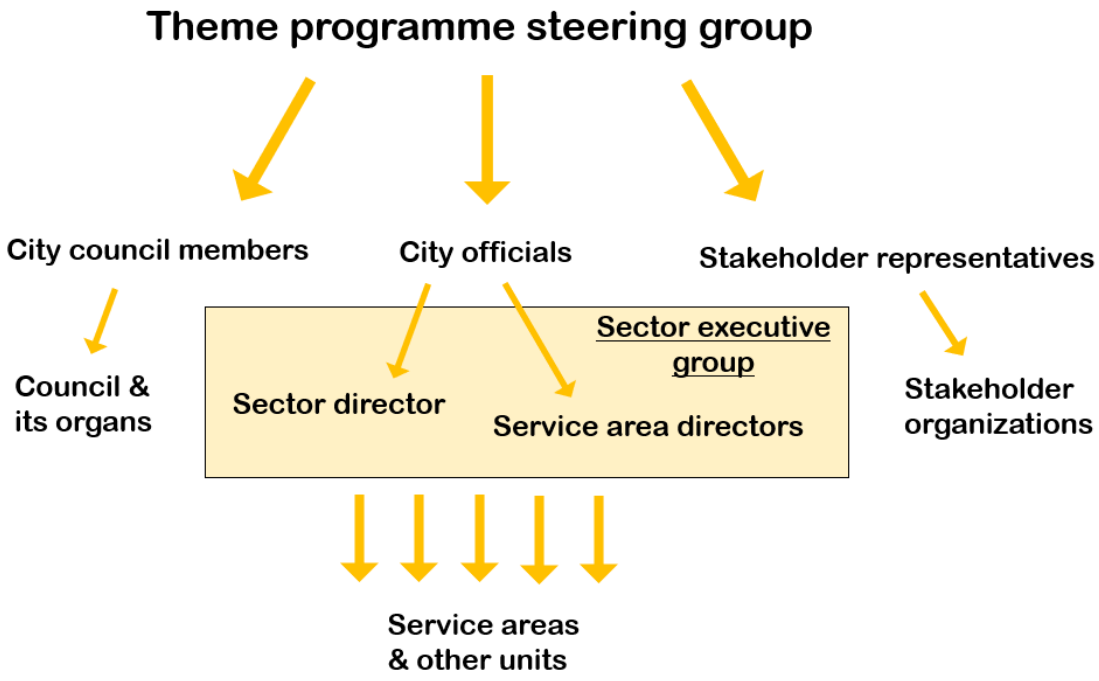

Figure 5. Functioning of the steering groups.

Generally, the interviewees' answers were similar when it comes to strengths and weaknesses of the organization in relation to the strategy and SD. While the implementation of the SDGs is still in the beginning, the interviewees saw there are now structures in place to follow the SDGs systematically, even if they are not well-rounded

yet. SD in general is seen as a possibility to clarify the function of a city taking into consideration considerable changes in the operating environment, such as the transferral of health care services from municipalities to wellbeing services counties and the transferral of employment services from the state to the municipalities.

> *I think strategy work is well implemented in the city organisation and is strongly grounded, and since the city strategy advances the SDGs, we are already in a good position. Of course, we can do the work more visibly and that of course enables, when the time is right, the work to be extended (Interviewee 9).*

Still, SD and the SDGs are seen as a difficult and extremely vast topic in the eyes of the top management but more so in the eyes of the middle management and the personnel. There is a general consensus of the need of SD and the top management is committed to it – which is a requirement for the implementation of SDGs – but the personnel in general is either unaware or not familiar enough with the concept to apply it in daily activities. There is indeed limited internal communication on SD, even more so that would focus on how to implement SDGs into one's work. For example, outside top management and the theme program steering groups no SD vocabulary, such as SDGs or synergy, is used. The top management does acknowledge the need for more internal communication and implementation efforts, but resources need to be allocated to it.

> *The attitudes are positive without exception and SD is considered good and seen the right way. But what it really is and how it is visible in everyone's daily routines, how it is not only in speeches anymore, that is a good question (Interviewee 7).*

> *It is not necessarily the access to information that is the challenge, there is plenty of information easily available. But that knowledge and the dissemination of knowledge would have concrete impact, that is difficult (Interviewee 1).*

> *It is a different thing that we in the management know the goals. For example, counsellors doing their job at a service area, how is it visible in their work? I don't think it really is. We have to know how to talk about it as management talk but also as understandable vocabulary (Interviewee 13).*

The lack of communication can be traced, to a large extent, to lack of resources. The personnel is preoccupied with aforementioned regular action, and as SD and the SDGs are a new framework to learn and adopt, it requires the personnel to spend time on educating themselves. Furthermore, as SD and the SDGs in their current form are a rather new phenomenon, there seems to be a generation gap when it comes to the willingness to internalize the SDGs. Thus, there are two thresholds: internalizing the SDGs and then spending scarce time on developing SD action in addition to regular work. Duties related to SD are seen as tasks outside normal work and time was often quoted as the scarcest resource in the organization. Although, lack of human resources again relates to tightened economic situation of municipalities.

> *It is largely the economy that defines what people and communities are ready to do (Interviewee 1).*

Lack of financial resources were mentioned by all of the interviewees, which leads to the need to prioritize actions. The strategy was praised for having a holistic approach, but also criticized for not guiding the city officials to prioritize between competing interests. Strategy and sometimes SD is used as a reasoning for action, but on the other hand all action could be grounded in the strategy. Hence, it does not assist in making the difficult decisions when the resources are limited.

> *The strategy is only an enabler. It does not give a direction. But then the task of theme programmes' steering groups is to prioritize these actions and give suggestions how to clarify strategy, how to update it (Interviewee 3).*

> *We must remember why we have strategies, and one big reason is that we have limited resources (Interviewee 3).*

Competence was named both as a weakness and a strength by the interviewees. One on hand, the top management sees personnel as highly motivated, and the organization has substance knowledge in different fields. On the other hand, there is no holistic expertise on SD even though personnel do have specialized expertise within SD themes, such as carbon neutrality or equality. Similarly, there are cooperation with stakeholders that

have competence, such as higher education institutions and businesses. But since there is no member of personnel with expertise in SDGs as a framework, SD processes are coordinated as a part of the strategy. For example, even though there are members of personnel that participate in most of the theme programme steering group meetings, with limited SD competence it is difficult to identify and react to possible synergies and trade-offs. Thus, due to limited competence and resources SD work is at times incoherent, which gives opportunity to possible trade-offs and synergies going undetected.

> *With wind power the green transition and renewable energy are being advanced, but then there is the point of view of biodiversity [being threatened] and how wind power affects the entire nature. Contradictions arise inevitably, and some things are not easy to reconcile. On the level of strategy, it is a challenge on how to align contradictory goals and to solve them in practice (Interviewee 4).*

The external threats and opportunities named by the interviewees reflect the themes in the strategy as evidently the strategy aims to tackle the challenges and benefit from the prospects of the area. Like all the cities in Finland other than the growth centres of southern Finland, Vaasa is experiencing decreasing population. Vaasa needs to attract work force to reach its goal of 100 000 citizens and also be attractive enough for the current population to stay. Vaasa does have an opportunity and a competitive advantage when it comes to the energy cluster in the area. Energy industry is a big employer in the Vaasa, and it also attracts international work force. Furthermore, the energy cluster attracts investments and there is an opportunity for a growth cycle.

> *There are so many investments coming to this region due to sustainable development. And so often the things that are good for the environment are good for the wallet. It tends to be forgotten (Interviewee 11).*

The energy cluster and other businesses in the area strive to be forerunners in the green transition, which is again seen as a competitive advantage. The interviews demonstrate that what is partially lacking from the discourse around SD, but still partially acknowledged is the benefit of SD action as a saving mechanism. Saving mechanisms are

desperately needed, since due to national politics the funding and tax income received by municipalities is considerably decreasing.

> *Then there is the economic challenge, we are living challenging times, but instead of seeing what SD costs we should see what it saves (Interviewee 11).*

Since the economic situation of municipalities is unstable, it becomes ever more difficult to have the economic, social and environmental dimensions balanced and execute the green transition and other SD action in a socially just manner. For instance, the income gap is growing and segregation in turn causes e.g. shorter life expectancy and increased appearance of mental health problems (MayorsIndicators, 2023). The interviewees were especially concerned with the ill-being of the youth demonstrated in e.g. increased bullying and prevalence of anxiety.

The capability of the personnel of the city to affect these issues is also limited and often indirect. For example, in the case of increased bullying, the original ill-being is not related to the city's functions per se. The city can only offer services that work either as pre-emptive action, such as anti-bullying programmes, or as supportive action, such as sports services. In the example of carbon emissions, the city can affect its own emissions, but most of the carbon emissions are caused by the citizens and the private sector. Hence, affecting the citizens and stakeholders through external communication is one of the primary actions that is needed to reach the city's SDGs. Challenging is to reach especially the youth because the social media platforms change in an accelerating pace, but it is an opportunity for Vaasa to encourage and motivate citizens to participate in SD efforts.

In general, the rate of change in the operating environment is seen as accelerating and it becoming increasingly difficult to respond to the environment's requirements. For example, a current trend focuses on upkeeping natural diversity and the city struggles to respond to the pressure on a satisfactory level with the limited resources while still remaining as a credible actor and allocating resources to other competing actions.

> *There are incredibly rapid changes in the operating environment. Technology changes, the use of technology changes, and all of it we should be able to harness for sustainable development action. Then it comes to whether we have money and do we have competence for it all (Interviewee 5).*

This subchapter mapped the internal and external factors relevant to the management and realisation of SD action in the city of Vaasa, namely the strategy, the structure of the city, structure of decision making and strengths, weaknesses, opportunities and threats. The next subchapter will examine in more detail the sustainability vision of Vaasa and whether the necessary timelines and concrete goals and indicators are in place.

4.2.2 Visions, goals and indicators

The sustainability vision is about having a clear perception where the organization is now, where it should be in the future and visualizing the possibles pathways on how to reach the vision. The interviewees' answers were in line and the vision centred around the title of the strategy "Energy Capital of the North", and the vision with the whole strategy is in line with SD.

> *I'm thinking our strategy's vision and its big goals that we get 100 000 inhabitants and that we are carbon neutral before 2030, we have well-being and more jobs (Interviewee 3).*

This vision then ought to be connected with more concrete goals, and the interviewees named more or less the same goals that are the main goals of the strategy, such as having 100 000 inhabitants. Hand in hand were the three pillars of SD – economic, social and environmental – but the SDGs were clearly subordinate to the goals of the strategy. It demonstrates the weakness of the current structuring of SD work, where the SDGs are not fully merged in the strategy, yet slightly separated from the strategy processes. SDGs do have their own processes, but they are not as well formed as the strategy processes.

Some goals – either of the strategy or the SDGs – were seen possibly too challenging to reach in target times, such as carbon neutrality by the end of 2020s, but at the same

time ambitious goals are seen as necessity. Nevertheless, the big vision is supported by the more concrete goals as stated in the beginning of previous subchapter. The SDGs have also been localised, i.e. they are interpreted from a local point of view, by the theme programmes' steering groups. For example, SDG 3 (health and well-being) is addressed from a point of view where health care services have been transferred to wellbeing services counties. Hence, the SDG 3 localised to Vaasa focuses on social services and e.g. sport services. Nevertheless, despite the localisation at times the SDGs were seen as broad and their contents hazy, which hinders the formation of a clear perception about the goals.

> *Carbon neutrality by 2020X is challenging. But when a goal is that challenging, if we won't make it there but we get pretty close, it is better than not having done anything at all (Interviewee 1).*
>
> *The goals actually require discussions about what they actually mean here (Interviewee 13).*

When it comes to the indicators, while selecting suitable SDGs for Vaasa the steering groups also chose relevant indicators for the SDGs. In order to monitor the progress in its SDGs, Vaasa uses MayorsIndicators that is a service collecting indicator data of the SDGs and it is develop especially for cities. The steering groups chose indicators that are available in MayorsIndicators and that have enough data from past years. Thus, the indicator selection had its limits, and the implications are discussed in more detail in chapter 4.2.5 Tools. Moreover, problematic may turn out the requirement for high potential for transformation because the goals and indicators can be implemented in the context of Vaasa, but the capability of the city organization to affect the indicators is limited by indirectness and longevity of impacts.

The goals of the strategy also have measures and the data of the strategy goals are collected manually. Indicators and measures of both the strategy and the SDGs are monitored twice a year when the data collection is completed, but for now they are not

in the same processes but executed separately. Nevertheless, the goals have indicators and measures to support monitoring and reaching the goals.

The strategy includes a high-level timeline for the strategic goals, which the service areas then specify, but the SDGs do not have a timeline per se. There are no target times for reaching e.g. certain levels in the indicators nor are the SDGs divided into sub-objectives. A natural monitoring time period is the strategic period that is enforce until 2025, but there are no target levels in the SDGs for the end of the strategic period. Moreover, electoral cycles tend to hinder planning for long-term goals, such as the SDGs, but as this is the first time that the SDGs are applied in the city of Vaasa it is too early to evaluate it.

In addition to the timeline, the goals should be connected with existing programmes and policies. The SDGs and indicators were selected based on the local needs that arise from existing activities and in that manner, the SDGs and indicators are connected to existing needs. But it is not necessarily systematic how the connections are made in between to some extent still abstract goals and practical activities of service areas. It is discussed what is necessary to execute for the city to thrive, but the benefits of a programme or a policy are rarely connected to what effects it may have on an SDG.

Involvement of stakeholders is relevant when forming the vision and the goals to have a holistic understanding of the circumstances, and in the case of cities they exist for their stakeholders, such as inhabitants and businesses.

> *We have had a few experiments considering engaging residents. For instance, we have engaged residents early on, way earlier than usual, to e.g. test something. The results have been extremely good and it supports the idea that working together and openly brings results (Interviewee 10).*

The creation of the vision and strategy is bound to the council and the city officials, and it is not customary to necessary include stakeholders in the process. Yet, the steering groups of the theme programmes have stakeholder members that mainly represent the

Vaasa's enterprises, such as Visit Vaasa and Vaasa Region Development Company (VASEK). Hence, stakeholders are included in the goal and indicator formation.

4.2.3 Strategic guidelines

Strategic guidelines are about whether the vision is linked with internal enablers and relevant external strategies and actors. The previous subchapters have discussed Vaasa's strategy and strategic guidelines on the higher levels, such as the steering groups, and it is clear that SD is approached principally systematically, both in the processes related to the strategy and the SDGs. However, the strategic guidelines need to be linked with economic and human resources, there needs to be capacity for their execution and an understanding of both short-term and long-term impacts in order for them to get implemented on the service areas.

The implementation of the strategy or the SDGs to service areas is in progress. Depending on the sector and the service area, the personnel may be aware of what the strategy or the relevant parts of the strategy are compared to their job description, but it does not appear to be systematically required by the managers.

> *On service area level we have a development day where we think about the bigger picture. There we think what do we do, what do we monitor ad with what timeline. In regular personnel meetings we keep in mind the big picture and look at the current situation (Interviewee 10).*
>
> *With supporting personnel, if we have a job interview, sustainable development is not something we ask about (Interviewee 12).*

While there should be human resources to execute SD action, currently there are barely any human resources to disseminate and implement the strategy and the SDGs within the organization and its personnel. In other words, strategic guidelines are in place and the management is acting on them, but human resources to implement the strategy and the SDGs to the service areas is needed in order for the service areas to be able to execute SD action.

The methods to implement strategy vary between regular and occasional workshops to discuss the strategy and its progress, but the levels of implementation vary between service areas. Some benchmarking of other cities has been done to create Vaasa's current model of strategy, theme programmes and SDGs, but benchmarking could be utilised more in how to realise the strategic guidelines in lower levels of the hierarchy. Externally the strategic guidelines have also been reviewed with e.g. VASEK and The Regional Council to reach the best outcome.

Benchmarking and some stakeholder involvement are seen as being on the outer circle when it comes to regular action, which is again affected by prioritization and the availability of time.

> *Sometimes it is difficult to see what is important because there are all kinds of projects and networks, so where is it worth it to be involved at all (Interviewee 1).*

> *Early on we have had well developed triangular cooperation with businesses, higher education institutions and the city, which already forms a network (Interviewee 6).*

Inevitable stakeholder is the state, which regulates and funds municipal activities. The state's success in reaching the SDGs is dependent on municipalities due to which the state has programmes and other cooperation available to municipalities. For instance, Vaasa is a member in Finnish Sustainable Communities network (FISU) that is run by Motiva Oy and Finnish Environment Institute, a state enterprise and a government office. This steps focuses on stakeholder involvement on the level of strategy, in the next chapter the stakeholder involvement on the action level is examined.

> *For instance, we have regional centre programmes funded by Ministry of Economic Affairs and Employment of Finland that enable us to sit down together with stakeholders and think what should our common activities or vision or outline how to go forward in shared interests (Interviewee 5).*

Behind all scarcity in capacity and human resources is again the financial situation. Vaasa needs to adapt its economy due to changes in received funding, and in general the municipal economic situation is estimated to decline. Hence, the possibility to e.g. employ an SD specialist to increase capacity and human resources is unlikely. However, the interviewees were also optimistic despite the scarce resources.

> *Currently the situation is okay, but if we want to save the world, it requires money, and currently the predictions estimate that the municipal economy will decline (Interviewee 6).*

> *We work in the circumstances we have. On the other hand, we can rethink the setting, it does not necessarily require money to do things differently (Interviewee 10).*

Nevertheless, one interviewee saw a lack of courage in executing expensive actions that on the other hand, will save financial resources in the future. The economic viability of the goals of the strategy has been evaluated in the city's budget, but some of the interviewees were sceptic whether all the goals will be reached with the current timeline and funding. However, for the SDGs it has not been defined what are the pursued levels or values of indicators by the end of the strategic period in 2025.

Despite some shortages, Vaasa has clear strategic guidelines to be followed throughout the organization. However, between this step and the next step "actions" of the materiality assessment Vaasa starts to depart from the theory. In the end, Vaasa is approaching sustainability strategically, but more advancements are needed.

4.2.4 Actions

The delegation of actions that follow from the strategy is rather of a routine in the organization and seldomly require negotiation. Most of the sector budget is used to regular action so the room and resources for developing action is again limited. Nevertheless, sometimes there are SD action done in the service areas, but the link has not been made between the action and the SDGs.

> *In our work, there is very conscious people who know the legislation and its requirements well, so I think we are on the ball even though we don't think daily how is our work connected [to the SDGs] (Interviewee 6).*

Making the linkage can be advanced with internal communication and by raising awareness among the personnel. Most responsibility in this regard is carried by the service area directors since they are in the key position in requiring their personnel to commit to the city's SDGs. One interviewee was positively surprised how SD is present at their service area, but mostly it seemed to be due to one active and motivated member of personnel. However, internal communication can be advanced systematically.

> *[SD practices of Vaasa] should be communicated to the entire personnel through the intranet Lykky or, for example, the managers should be informed to talk [about SDGs] to the personnel in the workplace meetings, the managers should be informed what to inform, when to inform and on what level (Interviewee 2).*

> *It is very important that our personnel knows that here is a thing that we have to now work for and that this is the thing we have to start to improve (Interviewee 2).*

> *[SD] has stayed as a concern of too small of a group, even though the entire organization and every sector should participate in it (Interviewee 4).*

Nevertheless, at times SD is very much dependent on people at certain positions. SD needs to be tied into the routines and regular action of the organization to minimize the dependency of few motivated members of personnel. Such activities could include e.g. comprehensive content of work-related SD in the intranet of the organization, which would be directed at people working in a municipal organization, a specific function or management. The Communications service area tries to achieve it, but again due to the lack of competence to create the content and lack of time to execute the intranet SD pages, the project advances slowly.

Here the need for the implementation of the strategy is highlighted: Service areas are quite independent at allocating tasks to different years, but if the personnel is not

familiar with the strategy – and even if they were it would not necessarily include the SDGs – the prioritizing function of the strategy and the SDGs is lost. Hence, strategy still works as a tool but not as efficiently as possible and synergies and trade-offs may go undetected. Furthermore, so-called "low hanging fruits" or low-effort pathways have already been used. In the context of carbon neutrality, for instance, temperature of the property stock has been decreased to reduce energy consumption and emissions, but now to reduce the carbon emissions requires expensive and/or difficult actions, such as how to get the inhabitants to reduce their carbon footprint.

> *We haven't necessarily led in that manner that we would have expressed ambition or wanting certain things happening in certain years, so I would say that our service area directors have an artistic freedom in what to execute and when (Interviewee 7).*

> *[In management] in all the work that we do, we continuously make value judgements whether actions are in line with the strategy or in line with sustainable development (Interviewee 5).*

Nevertheless, there are concrete actions being executed, such as welfare plan, executing Sustainable Energy & Climate Action Plan (SECAP) and starting energy education programmes in schools as part of regular and developing action.

> *As an example [of SD considerations], we look at where day cares are placed. Whether there are children speaking various languages and from different social classes. We aim to take into account the area and that the buildings are designed to take into account these aspects (Interviewee 8).*

It depends largely on the sector and service areas whether the SDG connections are easy to formulate. For instance, in the sector General Administration most of the functions are supportive functions, such as personnel services or communication, and the personnel finds it difficult to find meaningful connections to the SDGs due to long timelines and indirect impacts. Meaninglessness is also experienced due to seemingly marginal impact that cities appear to have on the SDGs.

> *When you look at what is happening in the world or in Europe, it is like a needle in a haystack. Even if we take care of our piece of land, in other parts of the world lives and forests are shot down like never before (Interviewee 8).*

However, as stated in previous chapters, all interviewees referred again to the shortage of resources to execute effective SD action. Conformity in interviews was also demonstrated on the lack of presence of SD or the SDGs in daily work. The process that ends with the action being executed starts with the goal being identified in the sector and/or service area. Then, depending on the service area either the possible actions or the resources are reviewed next. After that either resources and timeline or timeline and then actions are set. Therefore, it is difficult to determine how the process leading to an action is managed.

While the logic is inherent to a city organization, it is challenging for the service areas to execute goals that the resources have not necessarily been secured for. Due to this it may be that the organization is experiencing insecurity when it comes to reaching the strategic goals, which in turn undermines the motivation to work for the strategy. The Audit committee has also criticized that it is not clear who is responsible for reaching different goals, indicators or measures. Some features lack ownership in the sense that e.g. it is unclear who is responsible of content creation in SD themes or the duties have not been delegated yet, which hinders to realisation of the SDGs.

> *The Audit committee remarked that it is not always clear who are responsible for different actions, but it is not one person. It is a sum of many things, but currently we have people who have the responsibility to report on how the actions have been advanced, and the reporting is done manually (Interviewee 9).*

When there is stakeholder involvement, it is without exception seen as useful and worth the while. Some service areas, such as Welfare services, are very dependant of stakeholder cooperation and their purpose evolves around different stakeholders. Opportunities seem to exist in all service area, it merely depends on whether the personnel have time and willingness to focus on it. Thus, structures and practices for

stakeholder involvement to reach the best action outcome would be beneficial for the organization.

4.2.5 Tools

Tools comprise different tools, methods and monitoring and reporting systems to support the implementation of the SDGs into the organization, and factors such as the availability of data and defined responsibilities. Generic tools at the Vaasa city organization comprehend regular workplace meetings and annual planning cycles. Most of the planning and division of responsibilities take place in these meetings. However, SD may be a topic for conversation in the meetings, but not something that would be divided into actions and duties. And still, SD vocabulary is not used or it is used very little, which does not enable the connections being made between daily work and the SDGs.

> *SD vocabulary is used very little. If we think about administration, it has been in the preparations of the theme programmes. And when strategy is being renewed we– this is middle management I guess – don't think about those things (Interviewee 12).*

The most evident tool and also a monitoring system are the indicators. The service MayorsIndicators used by Vaasa offers indicator data on all municipalities that the data is available. The data is available on their website when signed in, and the data can be represented in different types of graphs and figures in addition to purely numerical data. In addition, twice a year in the end of the second and the fourth quartile Vaasa is issued with a report on the nine SDGs of Vaasa.

> *We started using MayorsIndicators so that we have some monitoring, maybe we even have too much monitoring now, but that was one pathway forwards that we saw. We had a lot of big changes going on, so with the economic challenge and taking into considerations the resources we had, we had to find a pathway to make progress at least somehow (Interviewee 9).*

The reports are discussed in the theme programme steering groups, sector executive groups and in the city council. However, most of the personnel is either unaware or not

familiar with the reports and the possibilities of using MayorsIndicators as a tool. Hence, the service is not used to its full potential as a tool to support SD action. For instance, from a graph showcasing the amount of children being bullied often it was seen that the city of Lappeenranta had managed to reduce the number while other cities' numbers increased. This creates a possibility for Vaasa to do targeted benchmarking to Lappeenranta to find well tried methods.

Indicator data does have it issues, nevertheless. Indicators may have conflicting information, which leads to insecurity about appropriate measures. The numerical data also needs to be interpreted, which gives room for error. Hence, analysing the indicator data is central, but the interviewees raised concerns exactly about the lack of analysis when it comes to otherwise relevant information. Without analysis the data does not serve as grounds for decision making and Vaasa would benefit from management and practices regarding analysing data.

> *I have to say that partially the indicators are very open to interpretation and obscure, like what do the indicators compromise of, it has not been made very easy (Interviewee 12).*
>
> *The reporting takes place, but missing is the analysis whether we have done the right things or what we ought to do in the future, what we could do better in the next period (Interviewee 3).*

The greatest challenge with data in general and in the MayorsIndicators service is that the data is often defective, and it comes with too long of a time lag. For example, the latest data of the indicator "the youth's contentment with their lives" is from 2021 due to which it is difficult to make judgements about current situation or future tendencies.

Some indicators only have data from too few years or there are no other cities to compare to, which decreases the benefit of monitoring an indicator. Second, for climate reporting that the Urban environment sector does, the collection of data has been manual, which increases the chance of error, and the report is usually available in next year´s October or November, which is rather late for directive purposes. However, the

problem of the availability of data is international, and Vaasa is not the main actor that has influence on the issues.

> *From the point of view of monitoring, availability of data is still a challenge. For example, in the past we have manually collected data from different sources for the environment and climate report. Let's say, the report for 2022 would usually be completed in October or November in 2023. Does it steer our activities if we get such outdated data (Interviewee 5)?*

Monitoring and reporting are mainly executed in Opiferus, which is a monitoring system for finances and strategy. Opiferus is mainly used by directors and people working with strategy and finances, and it is up to service directors to disseminate the necessary information to the service areas. Similarly, normal council procedures follow. Thus, the monitoring procedures are very characteristic to cities. However, more easy tools, such as SWOT models, simulation or life cycle assessment, for the personnel are wanted to lower the threshold to execute SD actions.

4.2.6 Readjustment

Readjustment is about the possibility to adjust action if internal or external factors change and that there are also planned readjustment possibilities. Readjustments on the level of strategy are dependent on the council and result of normal reporting to council and the annual review by the Audit committee. Adjustments are inherently part of the strategy as it is upper-level guidelines that the sectors and service areas interpret at their context. The strategy has to be resilient but flexible for the sectors to due to the rapidly changing operating environment. Generally, in the end of quartiles 2 and 4 the executive board of directors – including city manager, sector directors, personnel director and the director of finance and strategy – review the state of the whole strategy and then it is also discussed in steering groups, sector executive groups and service areas.

> *Monitoring of the strategy is executed based on the indicators, and another method for monitoring actually arises from the Audit committee's annual review of strategy and action (Interviewee 5).*

> *Strategy as a steering tool, when we talk about urban strategy, it has to be upper-level, it has to be resilient and flexible in how it is executed, so that in the executing phase the ever-changing operating environment can be taken into account (Interviewee 5).*

At Vaasa the readjustment happens mainly through regular work and meetings. In regular work of the service areas adjustments are usually minor-scale and continuous part of the work. For instance, as social media platforms' popularity changes from one platform to another, Communications adopts the new platform. However, as reported in the previous subchapter the analysing of the applicability of data and action is at times missing, which is why the guidance to adjustments is limited.

> *In the entire organisation we have a practice that there are regular workplace meetings, where the personnel of one service area meets. There are also informative sessions for the entire personnel online. And then there are also team meetings [within service areas] (Interviewee 3).*

The theme programmes' steering groups are new, and their internal review is only commencing, but internal review is a case of planned readjustment.

> *We haven't had the time to do the internal reviews yet because it is relatively new, but to my mind we need to review the steering groups because we exist for the people and not for the administration, and currently the steering groups employs the administration a lot (Interviewee 8).*

In general Vaasa has a simple model for readjustment: in case of a problem, a group is authorised to take action on it, either a working group or a steering group, as in the case of the theme programmes. In addition, in Central administration sector there is a group called "The inner developers". It is experimental and the group has been learning facilitating methods to assist directors and managers in solving problems and enabling conversations. In other words, the group creates possibilities for readjustment but also does developing action that could in the future include more SD work.

Chapter 4.2 has examined how SD is strategically managed and with what practices at the city of Vaasa by utilizing the steps of the materiality assessment. The results represented in chapter 4.2 are summarised in figure 7 as keywords and terms in the third-order column, which is categorised according to the steps and keywords of the materiality assessment. Based on the findings represented in this chapter, the next subchapter will sketch road maps for Vaasa to reach its SDGs.

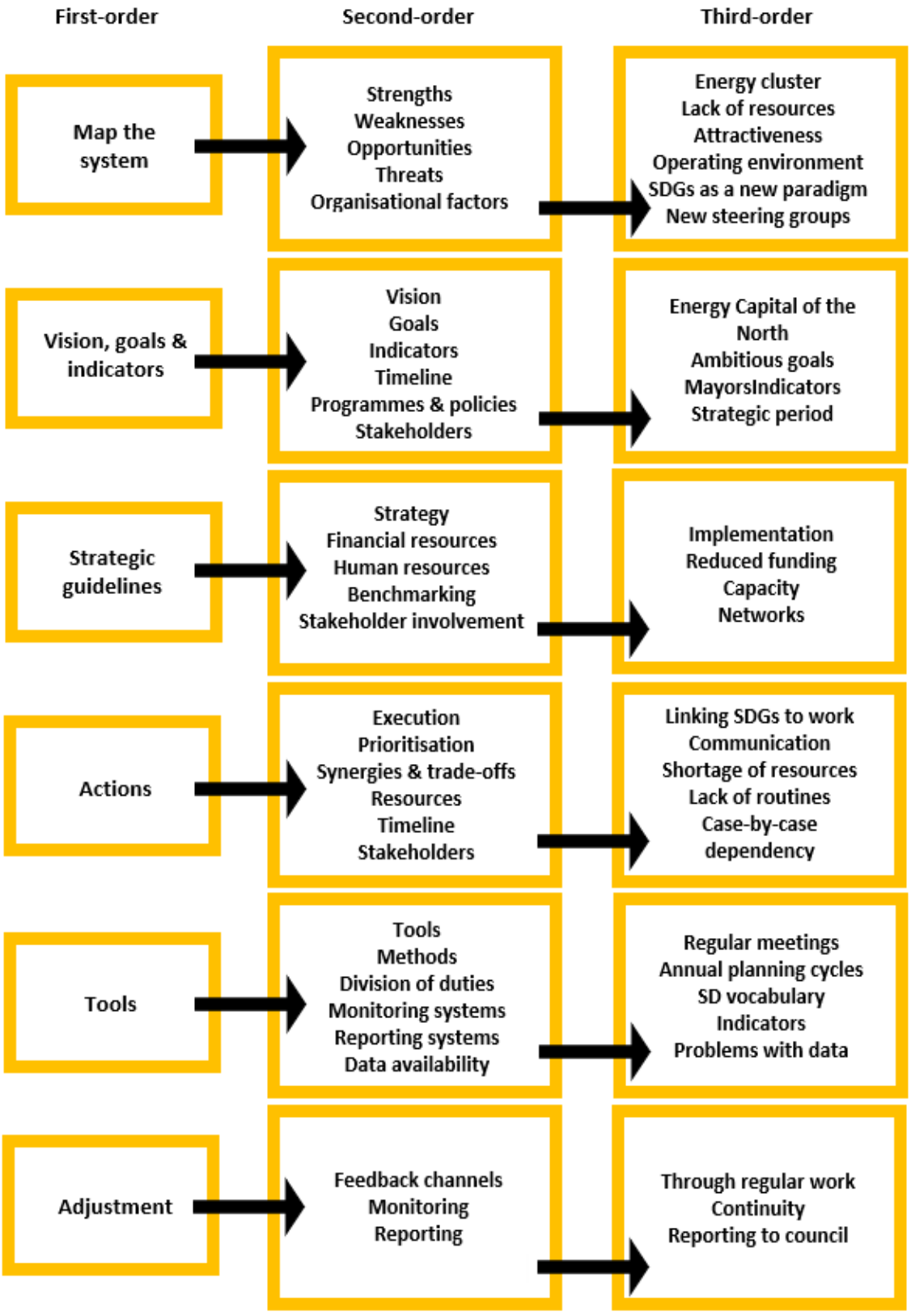

Figure 6. Findings of the thesis.

4.3 Road maps to sustainable development

This subchapter illustrates the possibilities for Vaasa to elevate its SD management, implementation and realisation. Examined are the possibilities to reorganize the management of SD with either developing the model of theme programme steering groups or establishing a working group and by employing an SD coordinator.

The steering groups consist of city officials, council members and stakeholder representatives. While it is appropriate that both stakeholders and persons in positions of trust are included in the goal-formation and prioritizing, the structure adds another layer to the hierarchy. It requires contributions by especially from the chair and secretary of the steering group, but also from the people representing the current themes and projects. Hence, the organ should have high potential for change for its existence to be justified.

While the steering groups have a vibrant conversation culture, the benefits remain evidently limited as the steering groups do not have decision making power. Occasionally synergies are found in the meetings and the members plan to coordinate, but other than that there is no evidence – for the time being – that the steering groups have influence over the service areas or the realization of the SDGs and the strategy. Therefore, in a road map where the steering groups are continued, the influence of the groups should be enhanced.

The budget for the sectors is decided by different committees consisting of council members. The members in the steering groups may be members or a chair of a committee, but not necessarily. For the committees to be aware of the views of the steering groups, and thus, what is prioritised in the strategy, it was seen essential that the chairs of committees would sit in the steering groups. In that manner the steering of the operation would be more tied to the fiscal resources, which define the possibility to execute the will of the steering group in the end.

Additionally, more communication between the steering groups is needed. There are some members of personnel, if not always then mostly, attending the meetings of all steering groups. The chairs who are also sector directors also meet on other platforms, but not especially to coordinate the activities of the steering groups. Since the SDGs have synergies and trade-offs, the steering groups have synergies and trade-offs that currently may go undetected. For instance, Happy and competent Vaasa theme programme covers matters related to higher education institutions as they contribute to competence in the area. Yet, Attractive Vaasa theme programme also addresses higher education institutions as they are one of the primary attracting features of Vaasa.

Although, this issue is not only a matter between the steering groups. Generally, as an SDG always affects several service areas somehow, cross-cutting cooperation between sectors would prevent trade-offs and enhance synergies. Service areas do of course cooperate, but the threshold to consult other service areas, especially over sector borders, seems to prevail. The steering groups mostly feature personnel from the same sectors, which does not alleviate the issue.

For the steering to be successful, there ought to be set courses of action for the steering groups on how to communicate to the service areas. The minutes or summaries of the meetings could be disseminated to the service areas or there could be routines established for the steering group members to communicate the relevant matters in their sector, for example in the sector executive groups. Vice versa, as the service areas detect issues the steering groups should address, it should be clear for the personnel on how to convey the message to the steering groups. Hence, there ought to be dialogue between the different levels.

An alternative road map to the steering groups that is less formal and hierarchical would be a working group, which is a familiar working method in the organization. The issue with the SD management seems to be that while the top management is committed and aware, and some responsibilities are divided to the steering groups and personnel

working with strategy, truly SDGs are nobody's responsibility alone nor a priority. Ideally, the working group would consist of approximately 9 members of the personnel and each member would be responsible of the coordination of one of Vaasa's SDGs.

While the actions would still be executed by several people, one person would oversee the different processes related to one particular SDG. The dispersion of responsibility has its benefits, but when the topic is new and difficult to grasp it may be avoided by the personnel. The working group would also coordinate with each other since different all the SDGs are interrelated. Advantageous would be the smaller amount work and reporting duties compared to the steering groups, since the meetings could be informal. The issue with this model is that the stakeholders and council members are not included, at least not in the core group. Optionally they could be consulting members that would attend when needed or less frequently, since it is still necessary to have the views of the stakeholders incorporated.

A third road map that would complement either of the aforementioned road maps is employing an SD coordinator or specialist. It would again simplify the coordination and responsibility over the SDGs. The coordinator would bring cross-cutting expertise that is needed in addition to specialised expertise. Partially it would also answer to the lack of competence in the organization and the coordinator could also educate personnel about implementing the SDGs to regular work. If this road map would be realised together with the working group, the coordinator would be the head of the working group and enabling the work of the other members.

As time was named as the scarcest resource, an SD coordinator would contribute by having working hours to renew the management of SD by e.g. developing methods to involve regular personnel to the strategy formation. Together with other road maps the SD coordinator would initiate the process the end goal of which would be that SD is seen as a part of regular work instead of extra duties and as manageable instead of insurmountable tasks.

5 Discussion

This chapter describes the critical observations done throughout the research. First, the findings and their theoretical implications are discussed. Furthermore, the materiality assessment framework is scrutinized as it had defects in relation to Vaasa's case. Following, managerial implications are outlined, and suggestions for future research and limitations are presented. Finally, the thesis is summarised in the conclusion.

5.1 Theoretical implications

This thesis contributes to the SD management literature through a descriptive approach as it illustrates the challenges with which the city of Vaasa as a Finnish municipality operates in relation to SD management and practices. Generally the challenges experienced at the city of Vaasa were present in the previous literature, such as the SDGs being viewed as a difficult entity (e.g. Kroll et al., 2019), challenges in internal coordination (e.g. Krause & Hawkins, 2021) and especially a lack of resources (e.g. Guarini et al., 2022).

The case of Vaasa supports the understanding that municipalities need support in not only the strategy planning phase, but also in formulating the structures and routines that enable the SDGs to be rooted in the organisation. Furthermore, implementing the SDGs requires having expertise in the organisation or otherwise there is no capacity to educate the personnel. For instance, in a case study by Tremblay et al. (2021), the SDG implementation was initiated by training city officials.

Hence, while generalisations ought not to made of local conditions, some cross-cutting issues appear to rise especially in similar studies where one or more cities' SD management has been studied, such as Krellenberg et al. (2019), Patel et al. (2017), Raffer et al. (2022) and Simon et al. (2016). While the management and realisation of SD is rather of a wicked problem, the case of Vaasa highlights the opportunities there are in the field. In a relatively short period of time literature on urban SD has emerged, and

within a few years from the introduction of the SDGs at the city of Vaasa they are now in the city's strategy.

Through a case study, this thesis deepens the research on cities as focal actors in the field of SD. Case studies are necessary in the field, because SD management and the SDGs always require adaptation to the local context. Therefore, while similar contexts may be comparable, these generalisations are difficult to make. However, a case study can be used to question theories (Adams et al., 2014, p. 98). A central theoretical contribution of this thesis is the examination and testing of the materiality assessment framework, which is adapted to managing SD in cities by Krellenberg et al. (2019).

The framework combines all the needed concepts – SD, strategic management and municipal context – which is why the theory was selected for this research. However, Krellenberg et al. applied the framework into four cities' SD documents but not on SD practices per se, and the framework turned out to be challenging when applied to practice instead of merely documents. Hence, the framework seems to be more applicable to a rather superficial analysis where the organization of SD within the personnel is not necessarily visible. For instance, the framework does not refer to the motivation of personnel as prerequisite to having capacity. While it can be seen as included in having capacity, it would benefit the researcher to have more concrete approach to the issues of the organization.

The step "Map the system" could include factors, such as mapping and evaluating the organizational structures in addition to thematic mapping with e.g. SWOT. Furthermore, use of concepts integral to SD, such as synergies, trade-offs and localisation, would be necessary to evaluate as a part of implementation of SD. This demonstrates that while the research on municipal SD has increased, a framework combining all abovementioned concepts and that is applicable to practice rather than documents is still needed.

The interpretation of the steps in both frameworks of Broman and Robért (2017) and SDSN (2016) by Krellenberg et al. (2019) comes across somewhat illogical. Step two "Vision, goals and indicators" is a combination of Broman and Robért's (2017, p. 19) "Vision" and SDSN's baseline assessment, while baseline assessment is conducted in the first step "Map the system". In the same step one factor is whether the goals and indicators are connected with programmes and policies, while in step three "Strategic guidelines" ought to be connected with strategies and plans. Whereas it may be relevant to do so in relation to both steps, the criteria need to be described in more detail to allow appropriate and functional research to be made.

Lastly, the framework does not take into account the dual management of municipalities, where elected persons in positions of trust make the final decisions of strategy and budgeting. It is related to the observation that the framework is not as applicable to practical issues, and while this research is limited to the operative organization, it is inevitable that the council, committees and their interfaces have an influence to the operative level.

5.2 Managerial implications

This thesis gives a coherent view on SD management practices at the city of Vaasa and develops road maps that illustrate the possible futures of Vaasa's SD management. Some managerial implications are withdrawn from the research and thus, the central practices and tools are highlighted here.

First, there are several structural factors that may hinder or advance SD action in the organisation. In the case of Vaasa, decision-making is dispersed. The council's committees decide on budgets for the sectors and service areas, but the theme programme steering groups ought to prioritise and delegate actions despite not having formal decision-making power nor power over budgets. In the end, the service areas decide on and execute the actions in practice. In other words, there are three parties who collaborate. In order for the cross-cutting structure to produce the wanted outcome,

there ought to be well-functioning internal communication practices between the parties.

Second, SD practices require resources – funds, capacity, working hours and data – to be allocated to their implementation and realisation. SD actions are often seen as overly costly in the short-term even though they would be profitable in the long-term. Lack of funds tend to result in limited possibilities to invest in capacity building, which is needed in order for the personnel to be able to implement SDGs into their daily routines. Finally, knowledge-based management requires data, but available data is often outdated and does not steer decision-making per se. Models for setting goals and planning action despite a lack of information and data, such as the objectives and key results framework, would be beneficial for Vaasa to investigate.

5.3 Suggestions for future research and limitations

The importance of SD is continuously growing and therefore opportunities for future research are abundant in the field of SD management. First, a central theoretical contribution of this thesis is the examination and testing of the materiality assessment framework, which is adapted to managing SD in cities by Krellenberg et al. (2019). In this study the framework turned out to be challenging when applied to practice instead of merely documents, as it did not take a stance on e.g. the organisation of SD practices, decision-making structures or communication practices, described in more detail in subchapter 5.1. Therefore, while the framework has been a very much needed approach to SD, SDGs, strategic management and cities, further development and clarification of the framework is suggested.

Second, as data was found out to be of outmost importance to SD management, research on how to develop and manage indicator data is needed. The challenges ranged from having timely and accurate data to how to analyse and interpret the data, which are issues partially outside the influence of municipalities. Therefore, joint effort of

different actors, such as the state, municipalities and academia, to develop approaches to overcome these issues would be beneficial for the field.

Third, as this thesis covers the SD management practices in a particular city, similar studies could be executed in different municipalities in Finland or in other countries, and especially smaller municipalities need resource efficient ways to enforce SD. The SD management and the implementation of the SDGs require localisation, due to which the results of this thesis may be relevant to consider in other similar organisations, but they are not generalisable. Therefore, as long as there are different localities willing to implement SD management, there are subjects for research.

In regard to limitations, the scope of this thesis is broad and provides a general take on the topic of SD management practices in the context of the city of Vaasa. Therefore, more detailed micro-level analysis on particular routines could not be carried out in this research. As a result, the road maps focus on development opportunities on an administrative level. On a more detailed level, numerous road maps could be outlined. Second, the interviewees represent the top and middle management at the city of Vaasa, which gives a thorough understanding of management practices, but interviewing both the management and the personnel would have resulted in a broader perspective and more inclusive take.

5.4 Conclusion

The objective of this thesis was to investigate how has the management of sustainable development been executed at the city of Vaasa and with what kind of road maps can Vaasa's achievement of the Sustainable Development Goals be supported. First, sustainable development and the SDGs were introduced and further examined in the context of cities. Literature on cities as significant actors in SD were discussed to showcase that it is a field of growing importance. Especially the challenges the cities experience were scrutinised to set the perspective for the research.

The theoretical standpoint was extended to the management of SD to provide a lens for studying the SD practices in organisations and previous research were represented. Furthermore, the theoretical framework of materiality assessment by Krellenberg et al. (2019) was chosen to as the focal framework of the analysis as it provides steps for analysing the management of SD in the context of cities. Through material assessment considered are the particular context of a city, its vision, goals and indicators, strategic guidelines, actions, tools and opportunities for readjustment of the strategy.

It was found out that the city of Vaasa faces similar difficulties that were identified in the literature review, such as complex organisation structures, lack of both financial resources and competence, SD being viewed intangible, defects in internal communication and the rate of change in the operating environment. Yet, Vaasa does have structures in place for the SD work and a clear vision of the desired future. To support the vision there are detailed goals and indicators in place, which are advanced through strategic guidelines. Despite some shortages the implementation of the strategy and the SDGs, they are in progress. However, when it comes to the step “Actions”, the practices at Vaasa start to depart from the materiality assessment framework.

Most of the resources are consumed by regular action and the possibilities for developing action are limited. Challenges included making the link between work duties and the SDGs and SDGs not being tied to the routines of the service areas. When it comes to tools to execute SD action, there are annual planning cycles, workplace meetings and other features of regular action that function as tools and monitoring systems. Especially in relation to SDG, important is indicator data that is produced by the MayorsIndicators service. However, the indicator data is seen as problematic as the data is often outdated, open to interpretation and it needs to be analysed in order to be practicable. Finally, readjustment mainly takes place through regular processes, such as strategy reporting and continuous adaptation within service areas.

Based on the results of the materiality assessment, this thesis developed road maps for the city of Vaasa in relation to SD management practices. In the first road map the theme programme steering groups will continue and their steering function and communication practices will be developed. In the second road map the steering groups are replaced by a working group and all of its members have ownership over each SDG selected by Vaasa. The working group would be an administratively simpler and lighter option to coordinate the SD activities. The third road map would complement either of the two road maps by employing an SD coordinator or a specialist. It would aid in increasing both the SD competence and ownership of the SDGs. Finally, the results were discussed and reflected against previous research and implications of the research were outlined.

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Appendices

Appendix 1. Interview questions

1. Could you introduce yourself and your central work-related duties?
2. How would you describe your knowledge of sustainable development and the UN's SDGs?
3. What kind of vision does Vaasa have of sustainable future? How was it created?
4. How did sustainability work start in the city organization from your point of view?
5. Has the city or your sector or your service area done SWOT analysis or equivalent?
6. What kind of economic, social or environmental SWOT factors (strengths, weaknesses, opportunities, threats) do you recognise in the sustainable development of the city?
7. In what kind of practices or tasks is sustainability included in your work?
8. Is sustainability vocabulary used in your working environment?
9. What kind of atmosphere or awareness there is in the organization in relation to sustainable development or the SDGs?
10. How has sustainable development been implemented from the strategy in your sector or service area?
11. How have stakeholders been involved in the integration of sustainable development within the city organisation?
12. How have the goals (of strategy or the SDGs) been paired with actions? Have the actions been timed or given resources?
13. How has the realisation of the actions been secured? For example, responsibilities, coordination, tools, indicators, management practices.
14. What kind of monitoring or reporting systems are there to monitor indicators and actions? What kind of resources have they been paired with? Such as data, distribution of responsibilities or financing.
15. How are strategy, sector strategy, indicators, actions or practices adjusted when the operating environment changes? Are there platforms or practices for the adjusting?

16. Has there been benchmarking in relation to sustainable development in your sector or service area? What kind of? E.g. national or international examples.