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Localising the Sustainable Development Goals

Tools and processes for building urban transformative capacity - the case of Malmö

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2022

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Citation for published version (APA):

Zinkernagel, R. (2022). *Localising the Sustainable Development Goals: Tools and processes for building urban transformative capacity - the case of Malmö*. [Licentiate Thesis, The International Institute for Industrial Environmental Economics]. IIIEE, Lund University.

Total number of authors:

1

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Localising the Sustainable Development Goals

Tools and processes for building urban transformative capacity – the case of Malmö

ROLAND ZINKERNAGEL | IIIIEE | LUND UNIVERSITY



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Roland Zinkernagel



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LICENTIATE DISSERTATION

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To be defended at IIIEE, Lund University. 3rd October 2022 at 13.00.

Faculty opponent
Kristina Jönsson

Organization LUND UNIVERSITY International Institute for Industrial Environmental Economics (IIIEE) Author: Roland Zinkernagel	Document name LICENTIATE THESIS	
	Date of issue 3 rd October 2022	
	Sponsoring organization City of Malmö	
Title and subtitle Localising the Sustainable Development Goals: tools and processes for building urban transformative capacity – the case of Malmö		
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Key words Sustainability, Localising SDGs, Urban transformative capacity, Indicators		
Classification system and/or index terms (if any)		
Supplementary bibliographical information		Language
ISSN 1402-3016 IIIEE dissertations		ISBN 978-91-87357-84-8 (print) ISBN 978-91-87357-85-5 (pdf)
Recipient's notes	Number of pages 105	Price
	Security classification	

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Date 2022-09-09

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Paper 1 © Sustainability

Paper 2 © by the Authors (Manuscript unpublished)

International Institute for Industrial Environmental Economics

ISBN 978-91-87357-84-8 (print)

ISBN 978-91-87357-85-5 (pdf)

ISSN 1402-3016

Printed in Sweden by Media-Tryck, Lund University
Lund 2022



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“What if we simply declared that there is no crisis – redefined our relationship with the city not as its makers but as its mere subjects, as its supporters?”

Rem Koolhaas, 1994: What ever happened to urbanism?

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Preface

This licentiate thesis has been written in the form of a municipal PhD, similar to an industrial PhD, and the research has been done part time, alongside working at the city of Malmö's environment department.

Thus, this research has been carried out with a double purpose. Firstly, with an interest in how the UN Sustainable development goals can help local governments in guiding their sustainability ambitions. The second purpose is to fulfil the academic quality requirements for a licentiate thesis. The city of Malmö's ambition to integrate the SDGs into the municipal steering and policy documents hence shaped this research, which fit well with the increasing focus in academia on how the SDGs can be localised when used by cities and regions. The research therefore needs to contribute to academic knowledge in accordance with academic rigour, robustness, and replicability as well as follow academic ethical considerations, thus building new research on past scientific findings and contribution to theory. At the same time, it needs to meet municipal expectations for practical implementation and relevance in topic and time.

The demands from both the municipal and the academic side revealed possibilities for creating synergies, such as ensuring policy relevance as well as societal relevance and spreading results outside academia while at the same time contributing to scientific knowledge.

On a personal level, this research has made it possible to combine and connect experiences and knowledge in both working environments. For example, experiences with, and competence of, using academic knowledge within the city's operation have made it possible to communicate this knowledge in formal and informal meetings and in daily life. Not least, this research made it possible for me to contribute to Malmö's strive towards become a learning organisation.

There were also challenges with having this double role; while being an independent and objective researcher, the role of a municipal employee who needs to make sure that the research is of use for the city of Malmö was constantly present.

This research has been made possible through funding provided by the Swedish Research Council Formas and the project "When municipalities set the research agenda".

Acknowledgements

Many people have contributed to making this research, and my journey into academia, possible! Per-Arne Nilsson, ever thinking outside the box and working persistently and without deviation to make the seemingly impossible possible; and Lena Neij, who managed to nudge and push me into academic thinking, reasoning and argumentation.

My colleagues at the Environment Department supported my academic pursuits part time, particularly Lena and Emanuel, by taking over what I had been doing otherwise and by rescuing me when urgent business needed attention and I didn't have the time to deal with it.

Thank you to all the PhD students at the IIIIEE for the rewarding discussions that helped me in overcoming my anxiety of being an odd practitioner amongst brilliant thinkers.

Finally, thank you to my family! Susanna for listening and standing behind me, discussing and helping me finding the balance between interesting theories and the potential usefulness (or not) for practitioners. Thank you Elfrida for your curiosity and Anton for patiently hanging around while I was writing; thank you all for reminding me why I want to be an optimist.

Abstract

In the autumn of 2015, the UN adopted the Sustainable Development Goals (SDGs) in order to provide guidance for all countries and all stakeholders to achieve a sustainable development. They provide goals and indicators that best cover sustainability in its entirety. The SDGs emphasise the significance of cities' contribution to sustainability and can provide a holistic and integrated framework towards sustainable development at the city level. Nevertheless, the use of the SDGs at the local level will require the translation of the SDGs to the city context, a process often referred to as localising the SDGs.

The aim of this thesis is to advance the knowledge of localising the SDGs by analyses two different types of localisation approaches using the City of Malmö as a case. First, the thesis explores the potential to use indicators associated with each SDG to monitor urban sustainable development. Secondly, the thesis analyses a spatial planning process where the SDGs have been localised to fit the local context. This is done by using Institutional Capacity Building as analytical framework to assess relational-, knowledge-and mobilisational capacities in this process. Both cases explore processes of building transformative capacity for a more sustainable city development.

The results show that cities are challenged, amongst other things, by the large amount of data that they are expected to collect using the SDGs in order to monitor progress. The high number of indicators opens up for the possibility to prioritise according to the local context. At the same time it poses the risk of local cherry picking and difficulties in implementing long-term consistent monitoring. Furthermore, findings include that the SDGs can have a shepherding function, unifying stakeholders across disciplines and sectors. The SDGs can therefore facilitate new ways of collaboration and finding innovative solutions. However, the case of Malmö shows that a major challenge of working with localised SDGs is in their implementation, as their cross-cutting nature is met by the robustness of the traditional institutional structures.

List of papers

Paper 1: Zinkernagel, R., Evans, J., Neij, L., (2018). Applying the SDGs to cities: Business as usual or a new dawn? *Sustainability 2018, 10, 3201*

RZ and LN designed the study, RZ collected data, which was analysed in cooperation with LN and JE. The manuscript was jointly written by RZ, LN and JE.

Paper 2: Zinkernagel, R., and Neij, L., (2022). Localising the SDGs: the case of city planning in Malmö *Submitted*

LN and RZ designed the study, RZ collected and analysed the data, LN and RZ jointly discussed the analysis and the results. The manuscript was jointly written by RZ and LN.

1 Introduction

More and more people are living in cities, and this trend is more than likely to continue (United Nations, Department of Economic and Social Affairs, and Population Division 2019). Such rapid urbanisation puts a large strain on urban systems (Bibri and Krogstie 2017; Wilson, Tyedmers, and Pelot 2007). Cities are facing many challenges, such as containing urban sprawl (Koop and Leeuwen 2017; Turner 2017), limiting greenhouse gas emissions (Kennedy et al. 2009; Wuppertal Institute for Climate Environment and Energy 2009), ensuring satisfactory and sustainable water supply, providing adequate waste management and improving human health (Angelidou and Psaltoglou 2017; Hodson, Geels, and McMeekin 2017; Koop and Leeuwen 2017).

In parallel, there is a need to support transformative change in cities to make the development of cities sustainable. Although the discourse around sustainability had been going on earlier (Harlow, Golub, and Allenby 2013), it is the 1987 World Commission on Environment and Development book, *Our Common Future*, (Brundtland 1987) that resulted in the concept being increasingly used at the local level in the form of the Agenda 21 action plan (Barrutia et al. 2015; UN 1992). The phrasing in *Our common future*, ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland 1987), has since been widely used when trying to grasp the concept of sustainable development (Harlow, Golub, and Allenby 2013). The use of three pillars of sustainability, the environmental, economic and social, is a further attempt to make sustainability a more manageable concept. Despite of these attempts, sustainability remains rather abstract (Owens and Legere 2015; M. A. White 2013). Additionally, there is an ongoing debate as to whether the widely accepted concept for sustainable development, based on the three pillars, needs to be complemented by institutional, cultural and/or ethical dimensions to cover less tangible factors (Dahl 2012). In later years, this problem was exacerbated by the increasing use of the term as a necessary buzz-word rather than a guiding call for action (Vogt and Weber 2019). This lack of a common definition of sustainability, and consequently sustainable cities (Huang, Wu, and Yan 2015), has been pointed out by several scholars. Luederitz et al. (2013) carried out a cluster analysis of scientific literature on the sustainability performance of urban neighbourhood development and came to the conclusion that none of the 21 analysed papers covered all of the three sustainability aspects or at least not to a significant degree. Despite the three decades that have passed since the publication of the Brundtland commission’s report,

indicators are failing to include the entire spectrum of sustainability. Even though they are meant to monitor the sustainability of a city, in effect they tend to be dominated by assessing environmental and ecological performance (Tanguay et al. 2010; Böhringer and Jochem 2007).

The lack of a fully understood and workable definition and the complexity of sustainability leads to a situation where it is impossible to know when sustainability is reached: when the planet, society, a country or a city is sustainable. It is possible to become more sustainable, and we can be fairly certain how, but we do not know when we are sustainable.

At the same time, it is becoming increasingly urgent to accelerate the effort to become more sustainable, and cities are taking on an important role in achieving local, as well as global, sustainability (Graute 2016; Leach et al. 2016; UN 2016b; Yigitcanlar 2015). Moreover, cities are an increasingly important player on the global level. This can be exemplified by cities making their voice heard in the UN climate negotiations, postulating and committing to ambitious greenhouse gas emission reductions (Barrutia et al. 2015; Brenner 1998; van der Pluijm and Melissen 2007).

In the autumn of 2015, the UN adopted the Sustainable Development Goals (SDGs) in order to provide guidance for all countries and all stakeholders to achieve sustainable development (UN 2015). The SDGs comprise 17 goals covering different aspects of sustainable development, in line with the Brundtland commission (Morton, Pencheon, and Squires 2017; Stafford-Smith et al. 2017). The SDGs include 169 targets and several hundred indicators (UN 2016a) to assess progress in meeting the goals. They emphasise the significance of cities' contribution to sustainability by providing a specific SDG on sustainable cities and communities in Goal 11 (Parnell 2016). However, other SDGs also address the local level directly. A number of researchers point out the fact that cities and urban activities are touched upon in the majority of the 17 goals (Bandari et al. 2022; Corbett and Mellouli 2017; Croese, Green, and Morgan 2020; Graute 2016; Klopp and Petretta 2017). In that vein, the SDGs can provide a holistic and integrated framework towards sustainable development at the city level. Nevertheless, such use of the SDGs will require the adaptation of the SDGs to the city context, a process often referred to as localising the SDGs (Bandari et al. 2022; Le Blanc 2015; Patole 2018). In 2019, a report produced by the Swedish association of local authorities and regions collected examples from 121 (out of a total of 193) Swedish municipalities demonstrating how they actively work with implementing Agenda 2030 and the SDGs (Sveriges kommuner och regioner 2019). This can be seen as an indication that cities are indeed taking an active role in implementing policies, measures and activities to contribute to sustainable development. However, localising the SDGs is still in the experimental phase concerning how this localisation process could be carried out. It can be assumed that the next phase will be institutionalising the SDGs at all levels, horizontally as well as vertically, thereby making them an integral part of city administration (Wamsler 2019).

There are a number of challenges regarding localising the SDGs. These range from the availability of reliable data in cities for the large number of SDG indicators (Arfvidsson et al. 2016; Kharrazi, Qin, and Zhang 2016; Florian Koch and Ahmad 2018) and their role in relation to local policy and political prioritisation in the localisation process (Filho et al. 2018; Patel et al. 2017; Puppachai and Zuidema 2017) to covering the complexity of urban systems (Barnett and Parnell 2016; Kharrazi, Qin, and Zhang 2016; Leach et al. 2016). Not least, the need for capacity and skills has been pointed out as a weakness that needs to be overcome (Filho et al. 2018; Graute 2016; Hermans, Naber, and Enserink 2012; Patel et al. 2017).

1.1 Research Aim and Questions

The aim of this research is to address the gap in knowledge on how cities have localised the SDGs to build transformative capacity and to contribute to both local and global sustainability. The objective is to explore how different ways that localisation of the SDGs can take place by using the city of Malmö as a case. Malmö, Sweden's third largest city, has a long history of testing and implementing solutions in the quest to become more sustainable. The city has been described as proactive in its work towards urban sustainable development (Anderson 2014; Kärrholm 2011). Already in 2015, the city of Malmö signed the "Declaration of Cities commitment to the 2030 Sustainable Development Agenda" (Malmö stad 2015), and in 2018 the city presented a strategy for localising the SDGs (Malmö stad 2018). Hence, there is great interest in the city of Malmö regarding if and in what ways the SDGs can be used, translated and implemented within the city's context.

This thesis focuses on how to build transformative capacity by localising the SDGs, and addresses two different types of localisation aspects (1) using the full set of SDG indicators for assessing urban sustainability and (2) adapting the SDGs to a local spatial planning process in Malmö (for a more detailed description on ways of localising the SDGs, see chapter 2).

Paper I contributes to knowledge on how the SDGs can contribute to reaching sustainability by exploring how the SDGs and their respective indicators can be applied at different levels of governance to monitor sustainability. Previous research has identified challenges regarding implementing the SDGs at the local level, the main ones being the availability of reliable data (Arfvidsson et al. 2016; Kharrazi, Qin, and Zhang 2016; Florian Koch, Kabisch, and Krellenberg 2018; Simon et al. 2016), the use of indicators in a multi-level governance structure (Graute 2016; Hermans, Naber, and Enserink 2012; Holden 2013) and the need for increased capacity, skills and experiences in working with the SDGs at the local level (Filho et al. 2018; Hermans, Naber, and Enserink 2012; Patel et al. 2017).

The research questions that Paper I addresses are RQ1 'Which are the most commonly used indicators to evaluate the progress of sustainability in cities so far';

RQ2 ‘To which degree do the most commonly used indicator sets cover various aspects of sustainable development’; and RQ3 ‘How do previously used indicator sets compare with the indicators suggested by the SDGs’. By addressing these questions, the paper places the SDGs in a chronological context of sustainability indicator sets and analyses and discusses the new aspects of sustainable development that the SDG indicators introduce in monitoring sustainability in cities. The paper also assesses whether the SDG indicators match the challenges that cities face today, and some of the challenges they may present to cities in terms of operationalisation. This is done by comparing several indicator sets that have been developed by international organisations to monitor progress towards sustainability, including the SDGs. These indicator sets have either been specifically developed for the urban context or they have been used by cities. The analysis reveals how different aspects of sustainable development have changed over time and how the SDGs complement former indicator sets.

Paper II explores in how far the SDGs can provide a holistic and integrated framework in a local spatial planning context. Earlier research has identified the adoption of an integrated system perspective across levels and disciplines as important for localising the SDGs (Moallemi et al. 2019; Tremblay et al. 2021; Valencia 2019) as well as the necessity for actors and actor networks to cooperate with each other (Bonsu, TyreeHageman, and Kele 2020; Krantz and Gustafsson 2021; UCLG 2020). The aim of Paper II is therefore to study a case of localising the SDGs by using the spatial planning process for the Smörkajen area in Malmö. The paper analyses this process by applying Institutional Capacity Building as an analytical framework, investigating relational capacity, knowledge capacity and mobilisation capacity. The analysis is based on meeting documents, protocols, sketches, photographs, meeting notes and reports. This data was triangulated by semi-structured interviews, which also made it possible to further understand the process and to allow the interviewees to reflect on the process and its progression. Interviewees represented the stakeholders involved in the process, i.e. the city planning office, the municipal traffic and property management department, the municipal environment department, the municipal culture department and VA SYD (the inter-municipal association responsible for waste and water management).

The findings of the two papers and their implications for the local level are discussed by focussing on the implications of localised SDGs on the local level, in terms of process, output and impact, see Figure 1.

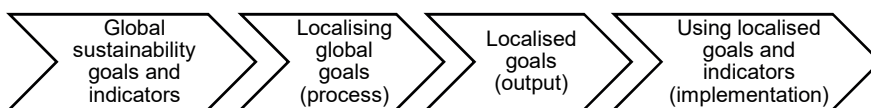


Figure 1 Schematic representation of the process of localising global

1.2 Scope and Limitations

This research has a clear urban perspective and in particular that of urban development and spatial planning. This lens is used in both papers yet comes more clearly into focus in Paper II. The role of the citizen as a user of urban space is only, if at all, indirectly addressed. The answers that this research gives are more directed towards those that plan the sustainable city than those that manage or use it.

A large proportion of the research was carried out in and for the City of Malmö. Paper II uses a single case on which the analysis is based, and generalisability is therefore limited. At the same time, this field of research is thus far limited, and initial results are only now being published. Using Malmö as a case somewhat frames the research to suit sustainable development efforts in the industrialised world. Although this is a limitation, Malmö can serve as a case for how pioneering cities work with implementing the sustainability agenda. Focusing on the process of localising the SDGs also means that results are relevant in a variety of contexts and not limited to the developed world.

1.3 Structure of the Thesis

Chapter 2 in this thesis presents an overview of concepts that have influenced the research design and analysis. Chapter 3 describes the research approach, research design and analytical framework, followed by an account of applied methods of data collection. Chapter 4 summarises and presents the findings from Paper I and Paper II, followed by a discussion in Chapter 5. Finally, Chapter 6 summarises both the findings and discussion and provides comments on the research's relevance for academia and practitioners as well as the need for further research.

2 Conceptual foundations

Considering the role that cities have taken on in recent years in driving and contributing to achieving local and global sustainability, there is an expectation of responsibility on cities to deliver. This expectation directs pressure towards urban transformation (Rink et al. 2018; Wolfram and Frantzeskaki 2016) both with regard to their physical structure and environment but also regarding their institutional set-up and organisation. Hence, this thesis is framed based on research literature focussing on urban transformation. The nature and complexity of this concept necessitates cross-disciplinary research approaches (Sigrun Kabisch et al. 2018) to facilitate the co-production of knowledge. Urban transformation is a broad concept, encompassing various disciplines and schools of thought, a field in which a number of approaches, based on different theories and concepts, can be used to advance an understanding of and facilitate necessary transformation (Sigrun Kabisch et al. 2018).

In order to facilitate and achieve urban transformation towards sustainability, there is a need to build transformative capacity, and cities need tools to be able to track changes, detect trends and monitor progress in a wide field of aspects concerning urban operations. One important tool for this purpose is the use of indicators (Popescu 2020; Wolfram, Borgström, and Farrelly 2019). Paper I addresses this need and looks at which indicators have been used previously and how these compare with SDG indicators. Paper II, on the other hand, takes a more institutional approach, exploring how localised SDGs can be used as a guiding tool in a spatial planning process. This process mainly involved representatives of various municipal departments; the paper analyses the participants' relational, knowledge and mobilisation capacities, aspects that can be seen as important factors for urban transformation, especially considering the necessity to reflect the diversity of stakeholders' interests (Borgström 2019; P Healey 1998; Wolfram, Borgström, and Farrelly 2019).

Considering the crucial change that is required within urban governments, a focus on the tools and processes of localising SDGs for building transformative change enables gaining deeper insights into the required change, making urban transformative capacity an important aspect within urban transformation. Urban transformative capacity offers therefore a more focused perspective in this research than urban transformation itself, which takes a wider system perspective (Ehnert et al. 2018; Hodson, Geels, and McMeekin 2017; Luederitz et al. 2017). Urban transformative capacity focusses on the capability of urban institutions to make

fundamental changes that are deemed necessary to deliver urban sustainability (Broto et al. 2019; McCormick et al. 2013; Wolfram, Borgström, and Farrelly 2019), not least aided through localising the SDGs. Urban transformative capacity builds on action in a setting of multi-level governance and a focus on local governance as key actors to reach urban sustainability, both of which are important aspects when localising or using localised SDGs.

The term localisation can include different ways of using the SDGs at the local level.

- The SDGs can be used as they are, with no or only minor changes/adaptations, and no prioritisation or selection takes place (Mwebesa, Yoh, and Doi 2021; Richiedei and Pezzagno 2022).
- The SDGs are used and translated, i.e. changed, reworded or there is a shift in focus within the topic of the respective goal, thereby reflecting the local context better. This approach can also include some SDGs being prioritised or not considered at all (Osman et al. 2021; Zhang et al. 2021).
- Finally, the SDGs may be used locally in a process, where the goals are, at least in thought, applied to the local context, yet they make a larger impression on the process itself (Immler and Sakkers 2022; Taajamaa et al. 2022).

2.1 Indicators

Organisations and governments on all levels need to learn and develop, adapt to changing conditions and identify shifting challenges. This is also the case for municipal organisations. One aspect that complicates the matter further is that cities have very diverse and broad operations where it is not a given that one hand knows what the other is doing. When the goal is also broad and not clearly defined, as is the case with sustainable development, things can easily get messy.

One way to monitor development in such complex circumstances is the use of indicators (Bossel 2001). There are plenty of definitions of indicators, but in general they are seen as objective measurements that simplify complex situations in order to indicate change (Mineur 2007; Thomas, Hsu, and Weinfurter 2021). In recent years, the use of indicators seems to have been widened to not only include the objective data-carrier function but also take the function of message carriers, where indicators are used as arguments or ideas in order to mobilise stakeholders (Merino-Saum et al. 2020). Indicators have been and are widely used in municipalities, and they are therefore an accepted part of the management of cities. By monitoring the same indicator over time, it is possible to identify trends and development directions (OECD 2008) and act/re-act to counteract undesirable or reinforce desirable outcomes. In evaluation theory, indicators play an important role in evaluating the outcome of policies, but also operations and investments, mainly in order to assess

quality, the effectiveness of reaching an anticipated outcome or accountability (Alkin 2004; Mickwitz 2006). By repeatedly using the same indicators and thus being able to pick up on trends and developments, indicators facilitate learning and continuous improvements. The aspect of learning is an important part of evaluation (Vedung 2017; Weiss 1998), and it also highly relevant in the case of the urban transformation paradigm in which this dissertation is set.

Indicators for monitoring sustainable development in cities are used to show progress towards a given goal or objective (Kitchin, Lauriault, and McArdle 2015; Luederitz et al. 2017), thus they need to consider previously identified target values.

Considering the vague definition of sustainability, this quickly becomes problematic. Studies have shown that the differing understanding of sustainability has an impact on what indicators are chosen for monitoring (Wilson, Tyedmers, and Pelot 2007), something confirmed by Mori and Christodoulou (2012) when they compared urban sustainability indicator sets and found that none of these sufficiently cover the triple bottom line of sustainable development (Mori and Christodoulou 2012).

According to literature, criteria for selecting indicators to monitor sustainable development are to be policy relevant, reliable, measurable, wide in scope and simple; it should also be noted that there is a need to limit the total number of indicators (Böhringer and Jochem 2007; Ness et al. 2007; Niemeijer and de Groot 2008; Science for Environment Policy 2015; Wilson, Tyedmers, and Pelot 2007). When looking beyond the theoretical imperative of indicator selection, however, they are more often chosen based on political prioritisation, perceived importance or data availability (Keirstead and Leach 2008; Lehtonen, Sébastien, and Bauler 2016; Shen et al. 2011).

In later years, the entrance of the SDGs and their related indicators have added new dimensions to the discussion on sustainable indicators and their use in cities. One aspect is the formulation of the indicators themselves, including the (non)existence of standardised methods for collection (MacFeely 2018; Mair et al. 2018). Other aspects range from the discussion of localising the SDGs and their indicators, of which this dissertation is a part (F. Koch and Krellenberg 2018), to dealing with how urban sustainability is framed (Merino-Saum et al. 2020) and challenges focussing on SDG 11 (Sustainable cities and communities) in cities (Klopp and Petretta 2017), as well as challenges and opportunities in connection with communicating progress on the SDG indicators (Jan Kraak, Ricker, and Engelhardt 2018).

This thesis analyses to what extent indicators cover various aspects of sustainability, thereby indicating to what extent different indicator sets support the building of a transformative capacity towards sustainability.

2.2 Institutional capacity building

The cross-disciplinary nature of sustainability as a concept, as reflected by the diverse nature of the SDGs (Warchold, Pradhan, and Kropp 2021), implies that a collaborative approach is necessary when addressing sustainable urban development and spatial planning (Polk 2011). In order to analyse the process of localising the SDGs within a spatial planning context, a framework was used that considers the multi-stakeholder nature of the process as well as the urban context in which the processes take place (Gonzalez Medina and Huete Garcia 2020). The framework delivers insights regarding the process itself and the result that the process led to.

The analytical framework used in Paper II builds on the concept of Institutional Capacity Building (ICB). This concept builds on the understanding that a process of co-creation is necessary to achieve change, linking traditionally unconnected actors and networks (Gualini 2017; Patsy Healey 2006). It builds on the notion of a new form of inclusive governance that is seen as able to deliver space- and context-specific sustainable development processes (Magalhães, Healey, and Madanipour 2017). The ICB framework makes it possible to focus on three capacities within a process, thereby categorising actions and thus being able to develop an understanding of how strong the capacities prevail or have evolved during the process. By applying this analytical framework, relationship building, knowledge and mobilisation are identified as core constituents in a co-creation process, pinpointing key issues such as who participates, what issues are at stake and, in the case of this research, how the SDGs can be translated to fit a local context.

The ICB framework has been used in studies in various research fields, from environmental planning (Bullock and Reed 2020) to sustainable construction (Kurul, Tah, and Cheung 2012; Smedby and Neij 2013), but also industrial symbiosis (Spekkink 2013). It has also been applied in analysing local networks to increase knowledge exchange (Gonzalez Medina and Huete Garcia 2020; Polk 2011; Shahraki 2019). Common to nearly all studies that have used the ICB framework is that they analysed an urban context and related it to sustainability as a development goal.

In this thesis, the ICB framework is used to explore the process of localising the SDGs to fit the local conditions for Smörkajen in Malmö. The results indicate the potentials and challenges in building capacities within a spatial planning context.

3 Research Design

3.1 Research Approach

This research is framed by critical realism in that it follows the positivists' view that the world exists independent of our interpretation of it (Cruickshank 2003). Critical realism embraces a range of different ontologies (the way in which we perceive the nature of social reality), one of which is the understanding that the world is stratified, i.e. the existence of various layers that exist in parallel to each other, yet at intersections can cause the emergence of new layers that are more than the sum of their respective origin (Danermark 2019). Hence, these various layers interact, come into existence and cease to exist, dependently and independently from each other at the same time (Andrew Sayer 2005). We need to differentiate and understand these different layers and see how they interact, in order to be able to understand the social world (Bhaskar 2010). Applying this critical realist's position in the context of urban transformation, the research aims at identifying, for the research, significant strata and consequently understanding generative mechanisms, i.e. events and under what conditions the events occur the way they do (Boonstra and Rauws 2021). Understanding these mechanisms allows us then to focus on strengthening transformative capacities.

This thesis takes its origin in the perspective that the local level, the municipalities, are acting and reacting to contribute to local, and thereby also global, sustainability. In order to do this, the cities have the possibility to use guidance provided from the supra-national level, e.g. in the form of by the United Nations developed SDGs, concerning what needs to be achieved, which aspects are designated as important from the supra-national perspective and which are not. In the case of the SDGs, the United Nations identified 17 aspects that need improvement in order to reach sustainable development. Cities can make use of this guidance but need to adapt, to localise, the guidance to fit the local level in order to increase its relevance there as well as identify what the respective city can do to achieve the dual goal of global and local sustainable development. The reason for the distinction between global and local sustainability is that these two might vary, depending on local conditions, in comparison to global ones. For example, water shortage is a challenge in many parts of the world; locally, however, this might be unproblematic. What is considered necessary to reach global sustainability can therefore vary compared to what is necessary for local sustainability.

The critical realist is conscious of the fact that the researcher, through his previous knowledge and his choice of methods and theories, influences which layers, intersections and resulting social constructs are being observed and analysed. Being a municipal PhD, I am aware of past experiences from my municipal work life. My subjective choices are mitigated by being open about my double role as researcher and practitioner, by correlating tacit knowledge to previous academic findings, by building used frameworks on past academic practices and by applying sound working methods such as triangulation and data collection.

3.2 Research Design

This research is informed by cross-disciplinary research, taking inspiration from various concepts and different fields that can deliver answers in applied research (Bruce et al. 2004). The research draws on literature on indicators, monitoring and assessment of urban sustainable development as well as institutional capacity building. The thesis follows a qualitative research approach, aiming for a better understanding of a phenomenon, in this case how the SDGs are localised in Malmö, rather than attempting to develop hypotheses or explanations of causal relationships (Patton 1990). Therefore, qualitative data collection methods are applied, namely interviews, reviews of existing literature and document studies.

The research in Paper II uses the city of Malmö as a case in order to be able to analyse how a localisation process can take place. The selection of the case is justified by the relevance and timing of the process happening in relation to the ongoing research (Flyvbjerg 2006). Although it can be argued that, by basing the research on a single case, generalisability is limited, the value of this case lies in its level of ambition concerning localising the SDGs. It is the nature of the research aim that makes the use of a case study suitable in that it is the desire to increase and deepen the understanding of this process (Yin 2009). Furthermore, the city of Malmö's past experiences with planning for and implementation of sustainable urban development means that the city can be considered a front runner with valuable experiences with regard to urban transformation. In that regard, using the city of Malmö could be considered a deviant case providing important insights in the field (Alexander and Bennett 2005). Using ICB as analytical framework for analysing the data is suitable for applying it to a single case due to its focus on and analysis of a specific process. In order to localise the supra-national guidance, cities need capacities and tools. Both the localisation and the following implementation of the output of the localisation process are seen as important components of urban transformative capacity.

3.3 Data Collection

Data collection methods were selected to meet the research objective of each paper. The following section describes the methods applied in both papers.

3.3.1 Data collection method used in Paper I

Paper I reviews academic literature to collect data on indicator development, in particular indicator development to monitor progress towards sustainability in cities. This includes literature on how to select indicators, the types of indicators and reviews on how well indicators have considered sustainability aspects. This review forms the theoretical foundation that the analysis builds on.

The data used for the analysis in Paper 1, i.e. the indicator sets that had been used to monitor urban sustainable development, are derived from grey literature. These indicator sets were selected using the following criteria:

- the indicator set aims to cover sustainability in its entirety and account for each different aspect independently;
- the indicators are to facilitate monitoring a wider group of interested parties and not a specific sector;
- the indicators should be developed by transnational, non-private organisations thus making it possible to use the indicators across the globe and in various contexts;
- the indicators should target societal challenges and not be specifically developed to evaluate certain products or services.

Organisations that have developed the indicator sets used in this research include the United Nations, the OECD, the European Union and the World Bank. Examples of included documents are the European Common Indicators, the Better Life Index, the ISO 37 120 standard for sustainable development of communities or the SDGs themselves.

3.3.2 Data collection methods used in Paper II

Paper II uses the process of localising the SDGs for the Smörkajen area in Malmö as a case to analyse institutional capacities.

Data collection for Paper II started with collecting data concerning the spatial planning process of Smörkajen in Malmö. Meeting outputs have been documented in the form of protocols, sketches, photographs, meeting notes and reports.

In order to triangulate the data and to gain more detailed information and a better understanding of the process collected through the document study, qualitative semi-structured interviews were carried out. Interviews are a suitable data collection method to better understand why and which changes have occurred during a certain

time period as they can identify information in complex processes (Bowen 2009). Interviews can provide detailed knowledge and depth to the data collected from documents, and participants have the opportunity to give personal feedback and experiences (Bryman 2012; Young et al. 2018). The process of localising the SDGs to the Smörkajen case included, in total, ca 40 people, not all of whom participated for the entire length of the process. The main criterion for selecting interviewees was the length of time the person had participated in the process. Secondly, interviewees were selected to evenly represent all involved municipal departments, resulting in twelve people, all of which were first-choice candidates, being interviewed. Ten of these came from municipal departments (the city planning office, the traffic and property management department, the environment department, and the culture department, while one interviewee represented VA SYD the inter-municipal association responsible for waste and water management) and one person was the facilitator that participated in the initial phase of the process.

4 Findings

This section summarises the findings from two papers that analysed two approaches to localising the SDGs in Malmö. Paper I focuses on localising the SDGs and their indicators, i.e. using the SDG indicators at the city level. Paper II analyses a process within which the SDGs have been adapted to be used in a spatial planning context for the development of the Smörkajen area.

4.1 Monitoring of urban sustainable development and the rise of the SDG indicators on the municipal horizon (Paper I)

Paper I analyses the localisation of the SDGs where the SDG indicators (and other indicator sets developed before the SDGs) are used as they are; no changes or alterations are made. Indicator sets can be seen as a pathway to overcome the lack of a definition of sustainable development. There are many indicator sets, for example the Ecological Footprint, Environmental Sustainability Index, Dashboard of Sustainability, Human Development Index, or the Living Planet Index (Kitchin, Lauriault, and McArdle 2015; Mori and Christodoulou 2012; Tanguay et al. 2010). In 2000, the UN introduced the Millennium Development Goals (MDG) (UN 2000). Although the MDGs do not make any claims regarding sustainable development, they are an important step towards the introduction of the Sustainable Development Goals in 2015 (Klopp and Petretta 2017; Le Blanc 2015; Morton, Pencheon, and Squires 2017; Rivera 2013; Scott and Lucci 2015; UN 2015). The important role of cities is highlighted in the SDGs by dedicating one goal (SDG 11) towards sustainable cities and communities (Parnell 2016).

The results in Paper I indicate that the SDGs provide the indicators that, so far, cover sustainability best in its entirety, yet they also include by far the highest number of indicators. They cover aspects of social sustainability that have not been covered previously, namely aspects of gender equality and reduced inequalities. Indicators using qualitative or subjective valuations are completely missing, similar to previous indicator sets, despite the fact that those types of indicators could deliver worthwhile insights on the local needs or desires of the local population. Likewise, value-based indicators, such as leisure, social interaction or attractiveness have been

avoided as they are based on underlying societal values that vary from country to country and that are difficult to question from an outsider's perspective. The topics with the highest number of indicators are goal 3 (good health and wellbeing), goal 6 (clean water and sanitation), goal 8 (decent work and economic growth), goal 11 (sustainable cities and communities) and goal 16 (peace, justice and strong institutions). At the same time, the SDG indicators remain more general and overarching and lack a degree of detail that might be needed at the local level. This opens up for possibilities of 'governance through goal setting' where it is beneficial to stay on a more general level, leaving room to specify goals based on the local context.

For the analysis in Paper I of how indicator systems have evolved, data have been collected from indicator sets that have been, amongst other criteria, developed to capture sustainability in its entirety at a supra-national level. The argument in the paper is that the choice of indicators reflects prioritisation and weighting aspects or information that is deemed worthwhile to collect with regard to urban sustainability at a certain point in time.

The paper finds that the number of indicators has been increasing over the years. This might represent a recognition that a representation of complex systems, such as sustainability, requires large amounts of data. Furthermore, indicators covering the wide spectrum of sustainability might need to handle the interactions and interrelations that exist in complex systems, where changes of one aspect might have consequential effects on others. It might be, for example, that reduced poverty (desirable) leads to higher resource consumption (undesirable) due to higher living standards. On the other hand, more green areas in cities will lead to an increasing capacity for climate adaptation (desirable) and might lead to healthier lifestyles (desirable) by people spending more time outdoors. Hence indicators need to be able to monitor changes in order to detect and mitigate negative feedback loops and support positive ones.

There are no indications that the SDG indicators have been selected based on a model representing human-ecosystem relationships, which was common in the early days of the development of indicator sets. Instead, the high number of SDGs and their associated indicators are instead meant to cover all relevant and important aspects, disregarding previously identified important system interlinkages. This in turn means that decision makers might need to prioritise based on the local context.

The increasing number of indicators leads to challenges regarding data accessibility and the quality of data available. There is thus the need to balance the demand for lots of data, which is necessary to reflect complexity, with the practical challenge of being able to collect this large amount of data, which still needs to be reliable and of high quality. There is the risk that the high demand for data collection and quality can seem unmanageable, possibly leading to the prioritisation influenced by arbitrariness, lack of knowledge or political agendas.

Generally, results in Paper I indicate that there is a tendency to follow new trends and shifts in what is currently considered important. At the same time, established

indicators tend to be re-used, thus indicating a path dependency and reliance on traditional indicators without a reflection on whether these really monitor what is most relevant in current times. The paper also shows that the chosen indicators have increasingly taken on board aspects concerning the quality of life and welfare of the individual, yet this is so far a weak trend and needs to be confirmed. Paper I describes the theoretical implications of indicator selection in more depth. What becomes apparent at this point, however, is the divide between the academic expectations and recommendations for indicator selection and the practical implementation.

The paper concludes that, in order to meet the challenges of relevance and large data requirements, cities need to analyse the SDGs and their indicators and select those to match the local condition and take into account the local context in which they are going to be applied. This localisation process is necessary in order to end up with policy-relevant indicators for which reliable data can be collected.

4.2 Localising the SDGs in an urban spatial planning context (Paper II)

Paper 2 analyses the process of localising the SDGs within the context of a local spatial planning process for Smörkajen, part of the Nyhamnen development in Malmö where a former harbour area is to be developed into mixed city use. The analysis is based on Institutional Capacity Building (ICB) as analytical framework (see chapter 2.2 above), which stresses the importance of relationship building and knowledge capacities in order to mobilise in terms of agency and capacity to act. Key questions for the assessment of relational capacities include aspects of who participated in the localisation process, arenas available for networking, and processes for relation building and co-creation. In the case of knowledge capacities, the paper explores processes of knowledge exchange, both among the participants and in relation to knowledge provided by external experts. To understand the actual processes of mobilisation, the development of the localised SDGs in the form of a sustainability strategy and its use moving from the pre-planning of Smörkajen to the spatial planning process and development of Nyhamn has been analysed.

The process of localising the SDGs for the Smörkajen area was conducted by a working group, formed following an inclusive approach with broad representation across several municipal departments. Interviews with working group participants indicated that the atmosphere in the workshops was good; the meetings were described as open-minded with high levels of trust, which indicates that relational capacities were also good. Interviewees described the atmosphere as friendly and relaxed.

The knowledge base in the group was broad with many different competences represented. The working method adopted for the process supported building

knowledge capacities and mutual learning. Numerous interviewees point out past spatial planning experiences that could contribute to the process of localising the SDGs in Smörkajen. Likewise, experiences from outside the municipality were included by arranging study visits or providing reading material. Specialist knowledge was brought to the participants by inviting, for example, researchers or experts in specific, technical details. The solid knowledge base, in combination with the positive and relaxed atmosphere that prevailed at the workshops, gives a strong indication that the localisation processes was characterised by accepting and finding solutions to the challenges put to the group and fostering innovative and creative thinking.

During the process a draft sustainability strategy for the Smörkajen area was developed. This output of the process identified three of the 17 SDGs as prioritised for the area, namely SDG 11 (sustainable cities and communities), SDG 12 (sustainable consumption and production) and SDG 14 (life below sea). These three SDGs were seen as the main guiding components that should lead the development of the area. The sustainability strategy draft also included locally adapted sub-targets, measures and site-specific tools to be used in order to contribute to reaching the localised SDGs in the area. The strategy also pointed out that the prioritisation of three goals does not mean that the other goals are not important; rather it is illustrated how, by implementing the listed sub-targets and measures, most other SDGs are addressed as well.

Although the interviews provided evidences of a strong process in terms of relation building, knowledge and mutual learning, participants indicated weaknesses with regard to mobilisation. The role and relevance of the sustainability strategy to the legally required spatial planning and development documents was unclear from the start and remained so throughout the process. Moreover, the sender of the strategy as well as the target audience was never made clear. Even though the sustainability strategy was finalised, it was never adopted as a stand-alone document. Instead, its content was to provide guidance later on concerning how sustainability aspects should be integrated in the traditional, legally required, development documents, such as the spatial plan and the land allocation programme. At the same time, no guidance was given on how or which parts of the strategy, if any at all, should be included in the legally required planning and development documents.

By not adopting the strategy, the challenge of adding an additional layer of steering documents, besides the already established and required one, was avoided. Nevertheless, the drawback is that a holistic and ambitious strategy, summarising goals, targets and measures that need to be taken across spatial planning and development phases and across actors, is missing.

The paper concludes that, although the process of localising the SDGs to the Smörkajen context seems to have been strong, the challenge of using the SDGs at the local level lies in their implementation.

5 Discussion

The following chapter discusses the findings of the papers by comparing and combining their results. Findings are interpreted in the context of the research objective and aim of addressing the gap in knowledge concerning how cities can localise the SDGs to contribute to the transformative capacity for local and global sustainability by gaining an understanding of what challenges exist when applying global goals at the local level.

Figure 1 on page 18 represents the consecutive stages for the process of localising the SDGs, namely:

- the global sustainability goals as such,
- the process of localising them,
- the output of the process in the form of localised goals and
- their implementation at the local level.

The discussion below relates to each of these stages in turn. It needs pointing out, however, that the distinction between the process of localising the global goals and the output is not always clear cut as the output can have effects similar to those of the localisation process itself. For example, the process might have as much of a disruptive effect on institutional structures as the output of the process itself.

5.1 Reflections on global sustainability goals and indicators

With the introduction of the SDGs, cities received recognition of their role in contributing to global sustainability and a specific exhortation to actively pursue this role (S. Kabisch 2019). SDG 11 (Sustainable Cities and Communities) directly addresses cities, but all other SDGs are also of relevance and importance in cities (Bandari et al. 2022; Croese, Green, and Morgan 2020; Tremblay et al. 2021). Apart from the SDG indicators, Paper I includes indicator sets that have been developed by international organisations without taking into account how well received and utilised by cities each of the indicator sets were. There may exist indicator sets that are apparently well thought through but remain unused by the organisations they were intended for. However, attempting to discover which indicator sets have been

used by any city (or city of certain size, to get some limiting scope) would have been beyond the capabilities of this research. Nevertheless, of the indicator sets that were used for the analysis in Paper I, verification that they were used by a substantial number of cities did take place.

One aspect that Paper I analyses is the evolution of sustainability aspects across indicator sets over time, i.e. reflecting those aspects deemed important and relevant with regard to reaching global sustainability. The paper does so by adopting a somewhat bold assumption, that the number of indicators is an approximation of the aspect's importance, i.e. the more indicators that are assigned to an aspect, the more important it is. However, considering the previously mentioned incompatibility of limiting the number of indicators and at the same time capturing complex systems, this assumption bears sufficient validity.

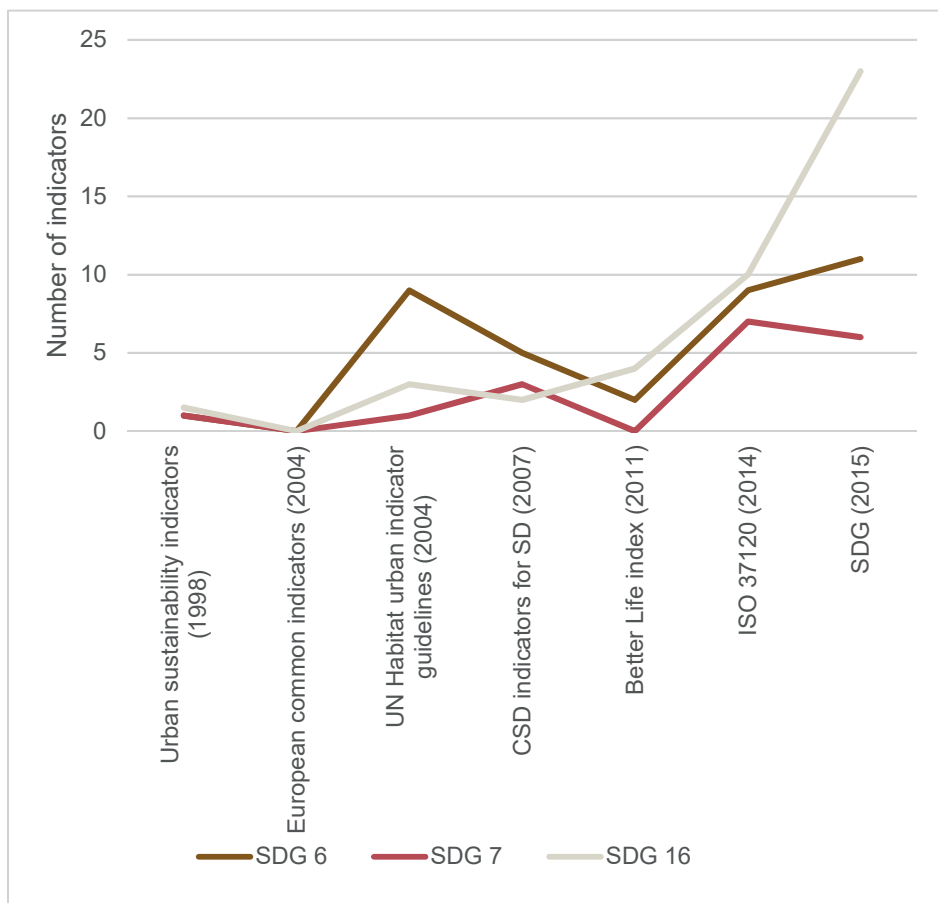


Figure 2 Evolution of selected sustainability aspects over time

Sustainability is defined by a number of important aspects that need to be addressed. On an aggregate level, this could be environmental, social and economic aspects. On a more detailed level, it could be each of the 17 SDGs. The analysis in this research uses the SDG aspects as analytical units. Figure 2 illustrates this, taking three of the SDGs as examples. Looking at Water (SDG 6), interest was low to start with, but increased in 2004 with the introduction of the UN Habitat Urban indicator guidelines (though not in the European Common Indicators) only to decrease with the Better Life Index in 2011 and pick up again in relevance after that. Energy (SDG 7) had a similar, if somewhat delayed development yet peaked already with the ISO 37120 indicators in 2014. Perhaps this reflects the global effort in reaching agreement in the climate negotiations, or perhaps it is more due to the organisation developing the indicator set and their interest in the topic? Institutional aspects, on the other hand, are more or less continuously increasing in importance. Overall, there seem to be indications that the long-used division of sustainability into the three pillars of economic, environmental and social sustainability is losing some of its weight. This would overcome the difficulty of having to assign certain aspects to one of the pillars, e.g. is employment part of the economic pillar or the social? Likewise, this view opens up for a more inclusive approach that could, for example, make room for incorporating culture more prominently in the sustainability discourse.

What is the relevance of these findings for localising the SDGs and contributing to achieving global sustainability goals? For one, it illustrates that what is deemed important with regard to global sustainability is changing over time. The local level is exposed to these shifts in importance and needs to take a position in following the shifts, sticking to aspects that had previously been considered important on the supra-national level or developing local prioritisations. In other words, the local level can follow different approaches concerning how to localise the SDGs; for example, in certain circumstances it might be necessary to prioritise certain sustainability aspects or indicators, as the case used in Paper II confirms.

5.2 Reflections on localising global goals

Previous research has identified challenges with implementing the SDGs at the local level (Arfvidsson et al. 2016; Barnett and Parnell 2016; Graute 2016; Klopp and Petretta 2017; Patel et al. 2017; Simon et al. 2016). This research confirms these challenges.

The results in Paper I, where the SDGs are localised as they are, show that one challenge is the large amount of data that needs to be collected across the municipal organisation, possibly resulting in prioritising certain sustainability aspects over others. Several of the SDGs and their related indicators might also lay beyond the municipal responsibility, depending on the governance structure. Prioritisation at

the local level could also lead to contradictions concerning what is deemed required in order to reach global sustainability and local sustainability. This does not need to be problematic as long as these different prioritisations are made consciously and based on sound knowledge.

The paper also establishes that one shortcoming still is the lack of experience and skill amongst the workforce, both with regard to dealing with the complexity of sustainable development and the amount and type of data that needs to be monitored. Paper II, focusing on spatial planning, identifies challenges mainly with regard to implementation, when responsibility for following and acting on the goals cuts across organisational structures and can cause institutional disturbance.

Results in both papers suggest that the introduction of another level of goals in the form of the SDGs, i.e. a supra-national level next to the European, national, regional and local level, can be seen as confusing and counterproductive, disrupting the municipal operations. Within a municipality, there exist a multitude of policies, steering documents and guidelines on different levels and with varying levels of detail. Indicator sets developed on the supra-national level, including the SDGs, are, at best, complementary to these documents; at worst they add another layer of bureaucracy. Findings in Paper II indicate that the SDGs are formulated vaguely in comparison to local policies, steering documents and guidelines and thus leave room for varying interpretations. These findings are in line with previous research that identified a lack of clear goals as often leading to frustration amongst those that need to work with implementing or following the goals (Palm and Lazoroska 2021). It can therefore be assumed that the complex and overarching nature of the SDGs can lead to difficulties in finding the right priorities for a specific geographical area.

At the same time, findings in the papers indicate that using the SDGs at the local level also has a beneficial influence on sustainable urban development. In the Smörkajen case, the localised SDGs appear to have good potential to guide actions and to lead to high ambitions when it comes to envisioning actions. Furthermore, Paper II shows that their shepherding function seems of particular importance, gathering representatives of different professions and disciplines, which opens up for identifying solutions and innovative ways of working. The SDGs are seen as holistic, covering many, if not all, aspects of sustainability. Using them caused the city of Malmö to question its established way of thinking and working, which is necessary to increase urban transformative capacity. This research finds that there are aspects of the SDGs that provide a common language, i.e. that different actors/sectors take those actions that follow their respective operations, yet contribute to the same SDG. On a similar level, it may not be as important to communicate reaching a global goal, if the same goal is set at the local level in other steering documents. The SDGs hold, therefore, the potential to implement more inclusive forms of governance, opening up for collaborations with local stakeholders.

Another argument for using the SDGs that this research identifies is that the SDGs function as quality control and checklists, ensuring that various aspects have been

discussed and covered. In some cases they even facilitate prioritising measures or highlighting gaps. Similarly, they could be used as justification for certain measures that might otherwise be questioned.

The analysis of the Smörkajen case indicates that the best results might be achieved when the SDGs are used early in the process and repeatedly consulted to ensure they are constantly visible and clear throughout the process. For the SDGs to be used at the local level, sound knowledge and a proper understanding of them is necessary, which is promoted by repeatedly and consistently re-visiting them.

Table 1 summarises the author’s reflections based on the interviews carried out to analyse the localisation process in the Smörkajen process, in particular the interview responses concerning the possible role that the SDGs might have in a local planning process. The table categorises how localised SDGs might take different functions at the local level. They could be obstacles or burden a planning process; simultaneously, they could also take the function of facilitating and supporting planning for a sustainable urban environment, enabling a more inclusive form of governance, thereby assisting the development of innovative solutions. The table highlights the potential for building transformative capacity by taking advantage of those factors where localised SDGs have a beneficial effect or mitigate potentially negative effects.

Table 1 The author’s reflection on functions the SDGs can have in the localisation process

<p>Obstacles to local use of SDGs</p> <p>SDGs as disruptors: Organisational change needed as goals are of an inter-disciplinary nature. Unclear where responsibility for respective goal lies in today’s organisational structure</p> <p>SDGs as elephants: SDGs are too general and inflexible to be applicable at the local level</p> <p>SDGs as tadpoles: There are too many SDGs to manage</p> <p>SDGs as a burden: SDGs impose an additional layer of bureaucracy</p> <p>SDGs as a magnifying glass: It is difficult to see at which geographical level SDGs work most effectively</p> <p>SDGs as a white map: Knowledge and experience about SDGs is still limited</p>
<p>Facilitating/supporting factors of local SDG use</p> <p>SDGs as Quality control: SDGs guarantee holistic coverage of sustainability</p> <p>SDGs as a shepherd: SDGs have a herding function, gathering various interests under one umbrella</p> <p>SDGs as vertical connectors: Connecting local goals and ambitions to an international agenda, strengthening local ambitions</p>
<p>Ambiguous factors</p> <p>SDGS as a maze: SDGS question established ways of working and open up for new thinking</p>

5.3 Reflections on the implications of localised goals

The output, i.e. localised global goals, faces challenges and questions similar to those above, which need to be addressed. Using the global goals at the local level poses the question of how locally they should be used. Paper II indicates that an adaptation at the city level might be more beneficial than using them in a district, not least considering the high resource intensity that the localisation process requires. Furthermore, it is still the case that knowledge about the SDGs, their role and potential in localising and using them, is still limited, especially for those individuals who did not directly participate in the localisation process. The findings in Paper II indicate that, so far, experiences stay with the individual that was exposed to localising global goals; when new people need to start working with localising global goals, the process will most likely need to start from scratch again.

Paper II suggests that SDGs might be challenging to localise, yet that they have good potential to guide actions and can lead to high ambitions when it comes to envisioning actions. This research finds that the SDGs cover sustainability aspects best compared to previously developed indicator sets. They have therefore the potential to guide cities in their efforts. However, as Paper I points out, the SDGs are relatively new and therefore municipalities have not had the possibility to work with them at the local level. They need to develop experiences and refine their work with localising the SDGs. Municipalities are therefore still in a phase of experimentation rather than institutionalising experiences and knowledge (Krantz and Gustafsson 2021; Tremblay et al. 2021). It might be worthwhile to compare the introduction of SDGs at the local level to a process that has been around longer. Other researchers have looked at the role that, for example, strategic environmental assessments have had on institutional learning for higher levels of sustainability performance. They conclude that there are a number of constraints, e.g. institutional unwillingness to change, unwillingness to tackle complex sustainability issues or the long time taken to either show effect from changed practices or the trickle-down effect in the wider institutional context of positive and negative experiences (L. White and Noble 2013). The results of this research supports the assumption that the localisation process for the SDGs will follow a similar pathway.

5.4 Reflections on using localised goals and indicators

The findings of this research show that it is in the implementation phase, when the SDGs are actually put into practice through measures and activities, where the greatest challenge lies. This challenge is not exclusively valid for the SDGs, however. Commonly agreed or prioritised goals always need to be allocated according to existing institutional structures, and the challenge relates to the fact

that these structures do not necessarily follow the lines or the logic of the SDGs (Krantz and Gustafsson 2021).

The ownership and responsibility of different measures is divided between different parts of the organisation when institutional structures do not easily map onto the agreed goals. The localisation process, even though it is done through cooperation and compromise, therefore needs to consider the importance of taking and owning the responsibility of the localised goals. Hence, their disruptive power is both an advantage and a disadvantage, an opportunity and a risk, when using the SDGs at the local level.

The use of indicators to inform local policymaking is not straightforward because local governments have varying possibilities to influence local conditions, depending, amongst other factors, on the country's governance structure and on local conditions. This is especially the case when working with indicators that have been developed for an international context. The role, influence and mechanisms of a regime of multi-level and multi-actor governance is likely to increase turbulence and exert pressure on which indicators are deemed to provide effective monitoring at the local level. Furthermore, results in Paper I indicate that politically-led prioritisation increases with an increasing number of indicators by arguing that monitoring needs to be kept at a manageable level, thereby resulting in prioritising certain aspects and neglecting others. This could shift focus towards areas that are predominantly of special interest in political debates.

5.5 Reflection on research design and alternative approaches

Use of a case in Malmö brings advantages and disadvantages. On one hand, it increases the risk of bias and brings the challenges of remaining aware and managing personal tacit knowledge from past city development projects. At the same time, it also means that access to information as well as interviewees was easy (the response rate for interview requests was 93%). Using a case from a different city in Sweden (in order to still be able to take advantage of knowledge concerning Swedish planning legislation and processes) would have reduced the risk of bias yet the insights gained in the study would most likely not have been as deep and detailed.

A second reflection regarding the use of Malmö as a case is that conclusions drawn in the study are limited to Sweden and Malmö. A wider study, including cases from other countries, possibly even from cities in the developing world, would have increased applicability. At the same time, although interesting, it did not seem feasible to undertake a study of this magnitude without the risk of remaining too general to be useful.

6 Conclusion and Future Research

This chapter summarises the main findings and the discussion and relates them to the thesis's objective of building transformative capacity by analysing different ways that the UN Sustainable Development Goals and their related indicators can be localised while exploring the challenges and opportunities that emerge as cities put them into practice.

6.1 Summary of findings

The research presented in this thesis points at the potential that localising the SDGs has to support transformative change in cities by recognising that they have a decisive role in contributing to global and local sustainability. This localisation can take place in different ways, two of which were analysed in this research, namely using the SDG indicators as they are, to monitor progress towards sustainable development, and localising the SDGs by translating, adapting and prioritising them to be used in a local spatial planning process in Malmö.

The research has shown that prioritised aspects of sustainability vary over time, where certain aspects disappear while others are added. The SDGs and their indicators cover sustainability in its entirety better than earlier indicator sets. For example, social aspects, such as aspects of gender equality, reduced inequalities or discrimination were missing from earlier indicator sets. The SDG indicators are of a more overarching character and lack detail that might be necessary for monitoring progress towards sustainable development at the local level.

The SDGs come by far with the highest number of indicators in order to aid capturing the complex nature of sustainability, crossing many different disciplines and going into the various areas of municipal obligations and responsibilities. This research indicates that there is a risk that the consequent high data requirement can be seen as unmanageable, and prioritisations could be necessary. This in turn could lead to arbitrariness in the localisation process, where aspects are disregarded or given too much attention, due to either political or managerial agendas, prevailing path dependencies or simply a lack of knowledge. Monitoring progress towards urban sustainable development is challenging for a number of reasons. One is the complexity that characterises both sustainability as a concept but also urban systems. Findings show that it is difficult to identify suitable indicators that provide

effective monitoring without getting lost in excessively large amounts of data. There is also the risk that chosen indicators are discarded in favour of other indicators that seem more suitable.

The city of Malmö has shown great interest in implementing the SDGs at the local level (Malmö stad 2018). The localisation process in the case of the spatial planning process for the Smörkajen area in Malmö illustrated that the SDGs and their indicators can in some occasions seem unmanageable, and there might be reasons to prioritise certain goals or aspects when localising them. This can lead to a possible contradiction between what is considered important in reaching sustainability at global level and what is important for local sustainability. The draft sustainability strategy as an output of the localisation process builds on the prioritisation of three of the 17 SDGs (SDG 11, SDG 12 and SDG 14). The analysis of this process showed that the cross-sectoral nature of the SDGs provides the potential to unify stakeholders across disciplines and sectors, opening up for possibilities for more inclusive forms of governance. The SDGs have the potential to provide a common language, and the goals have a shepherding function under which interested or affected organisations can meet and discuss pathways to further local and global sustainability. The SDGs can therefore facilitate new ways of collaboration, thereby making it possible to identify innovative solutions. At the same time results also indicate that the cross-sectoral nature of the SDGs can cause disruptions in established ways of working. Whereas there is a good chance to localise the SDGs in one way or another, findings indicate that the challenge seems rather to lie in their implementation in the ordinary day-to-day operations, where the cross-cutting nature of the SDGs does not meet the traditional institutional structures and its division of responsibilities.

Seven years after the introduction of the SDGs, this research confirms that the localisation of the SDGs is still in its initial phase of experimentation. Although a number of guiding documents have been produced, aiming to facilitate their use at the local level, cities have not been able to establish effective work methods to use them in this way.

6.2 Relevance for academia

This research is part to the ongoing discussion on localising the SDGs and how this localisation can take shape. The findings in Paper I contribute to understanding how the SDG indicators can be used for monitoring progress towards sustainable development. The findings can be applied to specific sectoral research, such as energy planning or the circular economy, to research on sustainable spatial urban development or to research on policy evaluation.

Furthermore, this thesis contributes to research on localising the SDGs in spatial planning. Although Paper II uses Malmö as a case, the findings can be generalised and add to ongoing research with a focus on other parts of the world. As more experience of localising the SDGs at the local level is generated, research on experiences from early adopters, such as Malmö, can be compared and further developed.

Implementing the SDGs unlocks opportunities for cooperation across sectors and actors. This opens up for new forms of governance, not least for increasing the involvement of civil society such as in participatory research on urban development. Findings from this research is therefore of relevance for other research that considers more inclusive spatial planning approaches. Further research can draw on the findings of Paper II to include a wider field of actors beyond municipal participation.

6.3 Relevance for practitioners

The findings presented here are valuable for cities wishing to make an effective contribution to local and global sustainability. Both papers identify challenges and opportunities for localising the SDGs, making them as relevant as possible to the specific local context yet not losing their relevance and contribution to the international agenda. Awareness of the shifting discourse of sustainability on supra-national level, i.e. changing focus and weighting sustainability aspects, is relevant for practitioners, especially at the local level, to be able to act and react and motivate decisions by relating these to shifts on the supra-national level. This awareness also makes it possible to take advantage of the SDGs and use them to argue for high levels of ambitions at the local level in order to contribute to local and global sustainability.

This research also indicates that the SDGs open up for collaboration across sectors and disciplines. Practitioners can use them to reach out beyond traditional partners, thereby allowing for more inclusive forms of governance, such as increased involvement of citizens in planning or the active participation of NGOs or other interest groups. Furthermore, the results are relevant for local practitioners and policy makers because they provide insight and learning into how local steering documents and policies can be implemented more effectively. They do this by pointing out the importance of forming common goals that have the power to create agency and the willingness to embrace necessary change. Practitioners should, however, also be aware that the overarching and cross-cutting nature of the SDGs challenges existing institutional structures, and that implementing the localised SDGs might require shifts regarding with whom or where in the organisation the responsibility lies to implement and monitor compared to a traditional division of responsibilities. This might be experienced by civil servants as a disruptive process.

The Institutional Capacity Building framework illustrates the role that relational, knowledge and mobilisational capacities have in developing consensus-driven visions or agreements. Applying the framework and its logic in the municipal operations might have a beneficial effect in implementing sustainability measures.

6.4 Implications for practitioners

This section presents the findings and discussion from this thesis in condensed form. It is meant to provide a short summary of points that can be more easily taken outside academia and might be helpful when working with localising the SDGs or sustainability indicators.

- Findings of this research show that the sustainability discourse is ongoing and what is considered important to reach global and local sustainability is shifting over time
- This may pose a challenge for cities in adapting to the changing agenda while at the same time prioritising accounting for the local context and local needs, balancing the willingness to contribute to global and local sustainability
- The SDGs cover sustainability better than previous indicator sets developed to monitor sustainable development
- The case of Malmö indicates that the SDGs have the potential to unify stakeholders across disciplines and sectors, opening up the possibility for more inclusive forms of governance
- The SDGs can therefore facilitate new ways of collaboration and finding innovative solutions; at the same time, this can be a disruptive process
- The case of Malmö also suggests that there is a challenge of working with localised SDGs in their implementation as their cross-cutting nature is met by the traditional institutional structure
- Localising the SDGs is still in its initial phase of experimentation, the organisational structures do not reflect the overarching nature of the sustainability goals
- Implementing global sustainability goals means addressing a large number of different aspects, which can be overwhelming. There is a risk of prioritising and thus allowing for arbitrariness or neglecting aspects that are considered important at other levels of governance. At the same time, this prioritisation might be necessary to better fit the local context.

6.5 Further research

Many findings in both papers confirm research that has been carried out previously and in parallel elsewhere. As time progresses and more experiences are gained in localising and implementing the SDGs, further research will be necessary to develop new knowledge regarding institutional learning and how these experiences can penetrate organisations in a more effective and efficient way.

The author suggests that studies using institutional capacity building as an analytical framework would benefit from including aspects of reflectivity more distinctly by including this aspect as a ‘capacity’. This would strengthen and fortify the consideration of past experiences and learnings beyond their inclusion under knowledge capacity. This is also reflected by concepts of urban transformative capacity and institutional learning, which highlight the importance of reflective capacities (Folke et al. 2005; Steele 2011; B. K. Williams and Brown 2018). Sustainable urban development requires balancing and integrating different aspects (not least economic, environmental and social ones) concerning, amongst other things, legislative levels, topics, space or time (Harris and Moore 2015; Salet and Vries 2018; K. Williams 2010). In addition, these variables change over time, as do the prioritised actions at the local level. These challenges are partly addressed by municipalities operating through more inclusive governance rather than traditional top-down government (Fenton and Gustafsson 2017; Hansson, Arfvidsson, and Simon 2019). Being aware and reflecting on past experiences that were made based on prevailing issues, prioritisations and available knowledge at the time provides the potential to increase learning and improve the implementation of sustainability goals and targets (Susur and Karakaya 2021).

The research in this thesis touches upon governance aspects that would need to be investigated further, namely the multi-level governance structure that is currently forming, where global organisations, such as the United Nations, more or less indirectly address the local level, where the local level builds connections and relations with various levels of governance in order to both achieve sustainability at the local level and contribute to sustainability on a global scale. Another interesting aspect of governance is how steering through goal setting works at the local level and how political prioritisation and rhetoric go hand in hand with achieving local and global sustainability targets.

Regarding the role of indicators in evaluating the effectiveness of a desired outcome, it would be interesting to further investigate the role that indicators can have as messengers of ideas and how they can be used to increase mobilisation for certain sustainability intentions.

7 References

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8 Appendix A: Interview guideline

Jag är kommundoktorand på internationella miljöinstitutet i Lund. Jag är intresserad i hur städer arbetar med att bli mer hållbara. Min fokus är hur detta kan ske genom den fysiska stadsutvecklingen. FN tog fram dem 17 globala hållbarhetsmålen för att ge en gemensam riktning åt vilka utmaningar som behöver lösas.

Jag vill se närmare på hur man i Malmö arbetar för att lokalanpassa FN:s globala mål. Därför har jag valt att titta närmare på stadsutvecklingen i Nyhamnen, närmare sagt i det området som kallas för Smörkajen, där staden har valt att anpassa mål 11 (hållbara städer och samhällen), 12 (Hållbar produktion och konsumtion) och 14 (Hav och marina resurser) till den lokala kontexten. Fokus i min studie ligger på hur processen har gått till samt vad resultatet har blivit, i relation till de globala målen samt till kommunens styrdokument.

Inledande frågor:

1. Vad var din roll i Smörkajen processen?
2. Vad skulle du säga att syftet var med processen i Smörkajen? Var det t.ex. probleminentifiering, identifiering av lösningsmöjligheter, avgränsning av olika aspekter, prioritering mellan aspekter, annat?
Hur påverkade syftet sättet workshopparna genomfördes?
Finns det lösningar eller idéer till lösningar som du anser kommer vara extra relevant i framtiden (i eller utanför Smörkajen), som kanske känns realistiska eller inte nödvändiga i dagsläge?

Frågor om relationskapaciteter

3. Vem deltog i processen och varför?
Förändrades sammansättningen under tiden? Skilde sig sammansättningen från andra, liknande stadsutvecklingsprocesser? Valdes deltagare eller aktörer bort eller kom nya in? Valdes deltagare utifrån deras funktion eller deras personlighet/karaktär? I vilken mån samverkade gruppen med externa aktörer? Skulle gruppen kunna inkludera fler aktörer?
4. Hur upplevde du att arbetet under workshopparna fungerade?
Hur var atmosfären i workshopparna?
Förändrades gruppdynamiken under tiden? Hur hanterades intressekonflikter?

Finns det några händelser eller tillfällen du kommer särskild ihåg (både positiva eller negativa)?

5. Vid några av workshopparna var en extern moderator med. Vad var hans roll? Hur upplevde du att hans medverkan påverkade workshopparna?

Frågor kring kunskapskapaciteter

6. Vad tyckte du att processen gav, vad har du lärt dig?
På vilket sätt förmedlades kunskap mellan deltagarna? Vilken roll har externa inspirationsföreläsare haft? Hur påverkade inspirationsföreläsare, studiebesök eller annan läsning processen?
Kan du ge exempel på hur förståelsen för andra deltagares kunskap har påverkat ditt perspektiv (kunskapsempati)?
7. Vilka andra erfarenheter och kunskap kunde du ta med i arbetet med Smörkajen? har påverkat Smörkajen?
Vilka tidigare erfarenheter har du från liknande stadsutvecklingsprocesser?
Har du goda exempel eller misstag från tidigare projekt?
Vilka liknande stadsutvecklingsprocesser utanför Malmö har inspirerat Smörkajen?
8. Vad hände med, och hur hanterades resultaten från varje workshop?
Vilket arbete skedde mellan workshopparna? Hur upplevde du att workshopresultaten omhändertogs?

Frågor kring mobilisering

9. Om vi ser slutprodukterna (Plattformen, Hållbarhetsprogrammet, Markanvisningsprogrammet, Detaljplanen), hur ser det ut idag? Tror du att idéerna och målen däri kommer genomföras?
Står alla förvaltningar bakom alla slutprodukter?
På vilken nivå är slutprodukterna beslutade i (eller kommer att beslutas av) de olika förvaltningarna?
Vilka utmaningar ser du för slutprodukterna framöver?
10. Vilken roll har FN:s globala hållbarhetsmål haft i stadsutvecklingsprocessen för Smörkajen?
Hur upplevde du arbetet med dem globala målen under processen?
Var valet av hållbarhetsmål rätt, dvs avgränsningen och fokus på tre mål bra? Skulle man kunna tänka sig ett annat urval – varför, varför inte?
11. Var hållbarhetsmålen en hjälp i processen för Smörkajen?
Vilken potential ser du i att lokalanpassa hållbarhetsmålen i stadsutvecklingsprocesser?
Vilka för- och nackdelar ser du med lokalanpassade hållbarhetsmål?
Hur kommer de lokala hållbarhetsmålen märkas i Smörkajen?



IIIEE Dissertations 2022:3

ISBN 978-91-87357-84-8

ISSN 1402-3016

