An Assessment of Sustainable Development Work in Swedish Municipalities

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Abstract:

The research paper assesses the local sustainable development work in Sweden. A theoretical framework has been constructed and applied to six Swedish municipalities. The framework is based on a holistic view and incorporates the structural (integration in the municipality, use of a management system), inclusive (involvement of the citizens), analytical (use of sustainable development indicator) and systematic (framework for sustainable development, sustainability policies) perspective of sustainable development work. In particular, the use and implementation of sustainable development indicators was in the research focus. Semi-structured interviews were conducted to examine the sustainable development work on the local level.

The assessment showed that sustainable development work is to a different extent integrated in the municipality. Some municipalities have dedicated teams working with sustainable development, in other municipalities lies the responsibility on the department chefs. Overall, the municipalities try with the resources they have to work at their best for a sustainable future for their municipality. However, there is room for improvement in terms of structural implementation, use of effective tools and involvement of the citizens.

Keywords: Sustainable development, sustainable cities, green cities, sustainable development indicators, Sweden

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Summary:

Cities are responsible for a majority of global carbon emissions and therefore a major contributor to the climate change. To combat climate change and facilitate a shift towards a sustainable society, cities and municipalities should foster sustainable development work on a local level. The research paper at hand assesses the local sustainable development work in Sweden. Sustainable development work incorporates the economic, ecological and social perspective of sustainability.

A theoretical framework has been constructed and applied to six Swedish municipalities. Based on this framework, the use of sustainable development indicators, management systems and a sustainability policy was researched as well as the extent of integration of sustainable development in the municipality and the involvement of citizens in this work. In particular, the use and implementation of sustainable development indicators was in the research focus. Semi-structured interviews were conducted to examine the sustainable development work on the local level.

The main result of the assessment was that sustainable development work is to a different extent integrated in the municipality. Some municipalities have dedicated teams working with sustainable development, in other municipalities lies the responsibility on the department chefs. Overall, the municipalities try with the resources they have to work at their best for a sustainable future for their municipality. However, there is room for improvement in terms of structural implementation, use of effective tools such as management systems and sustainable development indicators, and involvement of the citizens.

Keywords: Sustainable development, sustainable cities, green cities, sustainable development indicators, Sweden

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1. Introduction

Currently, half of the global population lives in cities, and it is predicted that in 2030 this number will have risen to 60% (UN 2015). Cities are, at present, responsible for 75 percent of the global carbon emissions (ibid). Hence, they represent a major contributor to the global climate change. In Sweden, as much as 85% of the population lives in cities (Globalis 2015). In order to combat climate change, a societal shift is needed towards a more sustainable, low-carbon lifestyle. Besides international and national governance, sustainable cities have significant potential in initiating this change.

Since change in for instance the economic and political systems occurs with a slow pace, cities and municipalities have more room to faster adjust to the challenges we face. Municipalities need to integrate sustainable development in their current and future planning. Plans and programmes need to be adjusted based on the compatibility to sustainability and strengthen cooperation with stakeholders to foster sustainability. Also the municipality itself has to take measures to reduce its environmental impact and incorporate sustainable thinking within the municipality. Through the implementation of sustainable development indicators, municipalities can measure and visualise the state of sustainable development in the municipality. Furthermore, the citizens need to be included in the path towards a sustainable municipality.

After focusing on environmental issues, the sustainable development perspective came to the fore on the local level around two decades ago. Since the implementation of the Local Agenda 21, sustainable development work was pursued throughout Europe. Here, Sweden proved itself to be one of the forerunners (Eckerberg and Mineur 2003, 591). But how is the status quo of the sustainable development work in Swedish municipalities? With a holistic view, the research paper at hand contributes to the ongoing academic as well as political discussion about local sustainable development work.

2. Objective and Research Questions

An increasing amount of cities have noted the importance of integrating a sustainable approach to municipal development. Integrating this approach in the municipality requires suitable tools and structures. Sustainable Development Indicators (SDIs) are used as a common tool to assess, amend and pursue sustainable development on a local level. SDIs have a crucial role in measuring the progress of sustainability work in local governments. Despite the strong presence of SDI research in the academic literature, the most efficient development and use of the indicators is yet to be defined. There is a lack of research focus on how SDIs relate to other tools used in SD work, such as management systems or a framework of SD.

The objective of the master thesis at hand is to contribute to a better understanding of how sustainable development work is conducted in Swedish municipalities. To achieve this aim, six municipalities have been chosen for this thesis as research objective to undertake an in-depth assessment of their sustainable development work. More specific, the goal of this thesis is to examine how sustainability work is integrated within the municipalities and what tools the municipality chose to pursue this path.

A literature review of the current scientific research revealed that the research focus is either (i) quantitative studies comparing the sets of sustainable development indicators, (ii)
qualitative case studies or (iii) studies only focus on management systems. This paper aims to fill this research gap, by comparing indicators as well as analysing both the frameworks and management systems in which the indicators are used. Due to the lack of research projects, this thesis focuses especially on the use and implementation of indicators and how they are integrated in the administration of the local government. This more holistic view of the sustainable development work of municipalities enables a connection the theoretical indicators into their practical implementation and interplay with the whole work strategy itself. This has been neglected so far from the research.

The following research questions are addressed:

- **How does the municipality administration work with sustainable development?**
- **How are sustainable development indicators used within an administrative context?**
- **To which extent are indicators, frameworks, policies and management systems effective tools in achieving sustainable development on the local level?**

**Limitations**

The research study provides a structural assessment of the sustainable development work in Swedish municipalities, meaning to analysis the structure, tools and work processes. A baseline review that presents the actual state and development of sustainability in the municipalities would be a valuable addition to the structural analysis. However, to obtain a meaningful outcome, a thorough analysis based on a sufficient number of different indicators analysing data over at least five to ten years is necessary. This exceeds the framework of a master thesis.

The thesis at hand research focus is mainly the sustainable development work managed by the administration of the local government. Citizen and business initiatives are therefore not incorporated in the analysis. This limitation enables the thesis to do in-depth research on just one part of local sustainability and the results can foster future research to apply a holistic view on local sustainable development research.

3. **Approaches and Tools for Sustainable Development Management**

3.1. **An Approach to Sustainable Development**

Sustainable development is a term which became omnipresent in the last two decades. Although many people, institutions and organization claim to follow and foster the concept of sustainable development, it is a phenomenon which has many different definitions. The most commonly referred definition came from the World Commission on Environment and Development (WCED), which was chaired at this point by the former Norwegian Prime Minister, Gro Brundtland. The Brundtland definition states that sustainable development is “development that meets the needs of current generations without compromising the ability of
future generations to meet their needs and aspirations” (WCED 1987, p. 18). The statement is rather broad and open to interpretation, as opposed to a concrete definition. This has led to a substantial amount of criticism. Nevertheless, a critical discussion of the definition of sustainable development lies outside of the scope of this research paper. It is important to highlight that the disagreement on a definition of sustainable development results in an understanding of sustainable development with different focuses based on a variety of frameworks. It can even be argued that the resulting flexibility has allowed the concept to attain the heights that it has (Bell and Morse 2008, p. 12). Working with sustainable development is often accompanied by the term sustainability. Whilst achieving sustainable development can be seen as a process, sustainability is often viewed as an ideal end-state (AtKisson 2001, p. 5).

Rather than being only a theoretical construct, achieving sustainable development becomes a path to follow by citizens, companies, politicians, and countries. However, successful sustainable development work requires a systems approach. In the case of sustainable development work in cities and municipalities, the system encompasses, besides the physical city facilities, the inhabitants and related social aspects, as well as economic units and physical flows. The environmental impact of all these different aspects is especially important in relation to sustainable development. To be able to structure a system and incorporate all the aspects, system frameworks can be used. A system framework describes a concept or thematic further, showing what is included in the system and their interlinkages. The most popular framework is the triple bottom-line, stating that the concept of sustainable development has three dimensions: economic, social and environmental (Madu and Kuei 2012, p. 1). To achieve a holistic sustainable development, all three dimensions and their interlinkages have to be considered. A more advanced model of the triple bottom-line is the so-called Russian Doll model, which sets the environment as the outer framework in which the social, and finally the economic dimension needs to act. Due to setting the environment as the systems boundary, this framework is often used within ecological economics. The Russian Doll model seems to be closer to reality. Although the economy is thriving regardless of the environmental effects, sciences such as the planetary boundaries suggest that in the end, we need to live within environmental boundaries of our planet (Rockström et al. 2009). This system framework applies also systems theory to the concept of sustainable development. A systems approach uses rather a holistic, than a reductionist point of view to solve problems (Bell and Morse 2008, p. 105). System thinking is beneficial for sustainable development, as it shows the connection between different parts of the system. Furthermore, it pinpoints that in order to achieve sustainability, change must occur within a system. This highlights the role that municipalities and cities can play within the overarching climate change.

Fostering sustainable development in our societies concerns not only a social, economic and environmental dimension, but also an institutional one. This is taken up in the prism of sustainability. The prism of sustainability (Fig. 3) consists of a social, economic, environmental and institutional dimension (Valentin and Spangenberg 2000, p. 382). The form of a prism can visually demonstrate especially the interlinkages between all parameters, which due to no common denominator, cannot be aggregated (Spangenberger 2002, p. 299).
The institutional dimension represents here institutions, formal and informal, which structure our social behaviour in various contexts (Meadowcroft et al. 2005, p. 9). The institutional dimension represents the role of governance and shows that a government with its policies has a significant influence in the work with sustainable development.

Another popular framework for sustainable development indicators is the Compass of Sustainability. Alan AtKisson took the structure of a compass – providing orientation, not direction – and integrated this with the underlying pillars of sustainability (AtKisson and Hatcher 2001, p. 515). The directions in the Compass of Sustainability do not stand for cardinal points, but for dimensions of sustainability (Fig. 2): N for Nature, E for Economy, S for Society, and W for Well-being of people.

This particular framework makes the difference between the individual and the society. Both should be in a sustainable, healthy state. The society dimension covers the government, social and family systems (ibid, 516), and has therefore some overlapping with Spangenberg’s framework. The framework can be used as baseline for a sustainability assessment (Fig. 3), determining the sustainable development work of different scopes. The framework was also developed with the purpose of assessing sustainable conditions on both regional and local scales (AtKisson and Hatcher 2005). With the concept of the Compass of Sustainability, headline indicators, based on several indicators and data sets, can be calculated and then summed up in an overall sustainability index. The indicators are scaled on an absolute performance scale from 0 – 100 (AtKisson and Hatcher 2005, p. 1). Scaling the indicators makes it easy for decision-makers and the public to see the development of the indicators. However, it is important to communicate scientific evidence on which the performance scale
is based on, since otherwise it might not be comprehensible for the public and decision makers and runs to risk for potential greenwashing. Utilising a framework is of high significance for sustainable development work, as it ensures the assessment of indicators is comprehensive for all the determined parts of the system.

The Compass of Sustainability is not the only framework which has been developed specifically for sustainable development work in cities. The framework developed within the Baltic University Urban Forum project portrays sustainable development work in cities as resource management (Nilsson and Rydén 2002, p. 222). Linking sustainable development work to resource management is a useful concept, since a city is based on resource exchange within and outside of the city boundaries. The five defined resources are material (e.g. water, energy, waste), urban space (e.g. streets, buildings, parks), economic (e.g. companies, other economic units), human (e.g. education and work of the inhabitants) and social resources (e.g. city administration, services, institutions) (ibid.). This framework has clear similarities with the Compass of Sustainability by AtKisson, as it distinguishes between human and social resources. The human resource focuses on the fulfilment of the individual, likewise as the ‘wellbeing’ aspect of the compass. The social resource ties right into the frameworks developed by AtKisson (compass) and Spangenberg (prism), since it determines the important role of a cities institution for the sustainable development work. The five resource framework has similarities with the concept of five capitals, a concept developed for the sustainable development work in companies (Porritt 2005), and the six resources developed by Per G. Berg in his work on sustainable development of cities (Berg 2002). There is no evidence in the literature showing to which extent these frameworks are actually used by (Swedish) municipalities.

The examples mentioned show that establishing system frameworks of sustainable development is important, as it defines the concept and lays the base of what should be incorporated in the sustainability work. There is not one ideal framework, but the different frameworks all share some similarities. A framework enables a strategic management of sustainable development and therefore it is more crucial to formulate a framework than trying to find the ideal one.
3.2. Managing Sustainable Development

A considerable number of tools, with sometimes overlapping approaches, are available for the purpose of making the organisations more environmentally proactive and efficient. These tools can provide the organisations with information about the environmental situation, help improving the structure of environmental work and support the environmental decision-making process. Substance flow analysis, strategic environmental assessments, environmental impact assessment, life cycle assessments, and standardised environmental management systems (EMSs) are just a few of the tools available for these purposes. These tools may improve the work directed at sustainable development, as they elucidate various aspects of the environmental perspective (Emilsson and Hjelm 2002, p. 443). In a similar way, an integrated (sustainable development) management system is applicable to capture and manage not only the environmental perspective, but the whole system as described by the chosen framework.

Using sustainable development as an approach for development and structuring an organisation, business, state or city is an challenging approach. It is not easy to apply such an approach into the structure and daily business of an organisation of any kind. Without any guidance and structural implementations, failures such as insufficient cooperation, segregation of planning and implementation, insufficient harmonised tools and fixation on short-term action and projects can occur (Salonen 2012, p. 5). One approach to incorporating sustainability issues in the organisation structure is an integrated management system (IMS). The Managing Urban Europe-25 project assessed management system in 25 European cities and developed and implemented on that basis an integrated management system. This management system focuses not only on the environmental impact, but represents a strategic framework system of managing the environmental impacts of the entire urban area (ibid, p. 41). This management system can of course also be used for managing sustainable development.

The management system has five steps, repeated in a circle (Fig. 4). The baseline review is the starting point, collecting key information from reports, indicators and analysis (Salonen 2012, p. 42). Based on the baseline review, the organisation sets its targets. This process of creating a common vision should involve stakeholders and take into consideration existing programmes and guidance paper like the Local Agenda 21 agreements (ibid). Without fixed targets, managing sustainable development may be inefficient as there is no clear direction or
goal. Furthermore, indicators are required to be set in place, making the targets accountable. In the third step, the political commitment stays in the centre. Here, partnerships with private businesses and citizens have to be formed to ensure to reach and commit to the targets (ibid). Political engagement can also be imposed through the implementation of a sustainability policy. In a fourth step, the implementation and monitoring takes place as part of the strategies chosen to reach the goals of the process. Projects are implemented and indicators need to be followed up and monitored and in the last step, they are reported and evaluated. It is important to collect the results and report it, to be able to learn from it. Regardless if presented in graphs, tables or diagrams, with help of arrows, traffic lights or colours, the results need to be clearly stated and easily understood.

Despite whether this management system is adhered to, it contains the main management elements substantiating that sustainability management is not easy to undertake. It is most notably not something which can just be implemented without monitoring and reporting.

4. Sustainable Development on a Local Level

Since the publication of the Club of Rome report ‘The Limits to Growth’ in 1972 and ‘Our Common Future’ by the World Commission on Environment and Development in 1987, the new policy discourse in Western countries has involved the concept of Sustainable Development (Joas and Grönholm 2001, p. 315). At the United Nations Conference on Environment and Development (known as Earth Summit), held in Rio de Janeiro 1992, the convened nations agreed on a global action plan for sustainable development, Agenda 21 (Evans et al. 2007, p. 852). This conference put the issue of sustainable development for the first time on the international political agenda (Spangenberg et al. 2002, p. 62). Chapter 28 of Agenda 21 emphasised the importance of involving the local and regional level within the implementation process (Joas and Grönholm 2001, p. 315). Hence, the following Local Agenda 21 (LA21) was the first global attempt to promote sustainable development on a local level.

The LA21 was applied in many cities and towns in Europe, showing that there is an interest in tools to manage sustainable development on a local level. This entailed a rise in the number of cities and municipalities pursuing sustainable development, which has been documented in the academic research (Joas and Grönholm 2001). The characteristics of the LA21 are not only a global movement towards sustainability, but also a change in the everyday decision-making and governance. Activities in the framework of the LA21 can rather be seen as policy tools to improve the already existing sustainability work instead of a completely new area of environmental activities (ibid, p. 315). Nonetheless, the orientation towards the citizens is a rather new approach. The aim of the LA21 was mainly to engage the citizens in the process of sustainable development and to narrow the gap between decision-makers and citizens. This is further exemplified as Joas and Grönholm (2001, p. 316) found in their study of LA21 activities in the Baltic countries that ‘educating citizens to environmental awareness’ was the highest priority of the cities. A global LA21 survey by the ICLEI in 1997 showed that 59% of the LA21 project included civil society activities and 68% were used by intersectoral working groups (ibid, p. 317).

The Local Agenda 21 was found to be especially important in the European context. The first European Conference on Sustainable Cities and Towns, also known as the Aalborg Conference, took place in 1994 to encourage the implementation of the LA21. The outcome document of the participating European countries is known as the Aalborg Charter.
Aalborg Charter, the European cities and towns pledged their commitment towards sustainability and for the implementation of the LA21. The Aalborg Charter emphasizes the environmental dimension of sustainable urban development (Engström 2012, p. 15). The funding of the European Sustainable Cities and Towns Campaign by the European Commission (Cameron and Joas 2007, p. 22) is a key factor contributing to the campaign’s success. Despite some variation between countries, LA21 was broadly implemented in Europe.

The voluntary Aalborg Charter has shown to be a solid starting point for European local authorities, as it had more than 2000 signatories by its tenth anniversary in 2004 (ibid, p. 14). The charter, which recognises and states problem, was later expanded at the Aalborg+10 Conference by the Aalborg Commitments (ICLEI 2007, p. 6). The ten commitments set specific policy guidelines and are connected to the integrated management system, the outcome of the Managing Urban-Europe 25 research projects (Salonen 2012).

Concluding, the LA21 brought the importance of sustainable development to a local level, whilst the Aalborg Charter and Commitments provided the local authorities with more concrete tools and guidelines to implement the LA21. For many local authorities, the late 1990s has been the first time that they have been in contact with a more concrete idea of sustainability on a local level. This enabled them to try out different approaches of including it in their local frameworks. In this way, the idea of urban sustainability has spread throughout Europe and beyond. However, the idea of urban sustainability or sustainable development on a local level has attracted plentiful criticism. The argument has been that cities cannot be sustainable due to their heavy reliance on too many resources (Turcu 2013, p. 697). But this criticism shows a very narrow perspective, ignoring for instance the local food initiatives. Surely, a city uses a lot of interest and the more people are moving to cities, the more resources they need. There are possibilities for incorporating sustainability strategies in an urban context, as seen in global initiatives like the Transition Towns Network (in Sweden: Omställning Sverige) or the Swedish Eco-Municipalities initiative (Sveriges Ekokommuner). These initiatives demonstrate different ways to strengthen sustainable development on a local level.

5. Sustainable Development Indicators

5.1. Indicators – A Definition

Indicators are part of our daily life, we use them all the time, often without even thinking about it. Indicators have been widely used in different circumstances for perhaps thousands of years (Bell and Morse 2008, p. 21). Indicators help us to understand and monitor complex systems (Meadows 1998, p. 1). Indicators can therefore be defined as a representation of an attribute in a system (Mineur 2007, p. 3). Besides the importance for our everyday life, indicators can even be embraced in a strategic, scientific perspective.

However, it is important to keep in mind that indicators show only specific parts and attributes of a system. Using indicators must therefore always be taken with a level of uncertainty, because they never can reproduce a whole system. As the World Bank defines it, an indicator is a performance measure that cumulates information into a usable form (Hiremath et al. 2013, p. 556). Indicators, if developed in a holistic way, can break down a complex system into digestible pieces. This enables its users to monitor, assess and understand systems and their relations to each other. To ensure this objective, indicators must
be chosen wisely. One popular criteria scheme for selecting indicators is SMART, which requires that indicators are Specific, Measurable, Achievable, Relevant and Time-related (Tanguay et al. 2009, p. 414). Hence, using indicators is a way to monitor a complex concept such as sustainable development and allows its understanding to be more accessible to decision-makers, scientists and citizens.

5.2. Developing Sustainable Development Indicators

To foster sustainable development, the ability to measure sustainability is crucial. Academia and decision-makers have been highly interested in this regard since the 1980. Theory and practice has since determined that indicators have been the measuring tool with the most influence (Turcu 2003, p. 695). The scientific and professional literature reflects this academic research field in a very broad range of literature. This is also visible in the terminology, which consists of labels such as indicators of sustainable development (ISDs) and sustainability indicators (SIs) (Bell and Morse 2003, p. 16). Since the indicators concerning this thesis are defined as measurement units assessing the state and process of sustainable development, they will be further referred to as sustainable development indicators.

A major part of the research is concerned with the establishment of a common set of indicators. Creating a sustainable development indicator set has been often done based on two different approaches. One approach has emerged which uses quantitative study of a number of different indicator sets to examine frequently used indicators. Another way to establish a common indicator set is through a theoretical approach. Both approaches, in particular the latter, are based on a framework that characterises the different pillars of sustainable development.

Indicator sets have been developed by international institutions (UN 2001, Ambiente Italia 2003), on national (JFS 2015), regional and local level. EU-funded research, such as the European Common Indicators (Ambiente Italia 2003) or the Pastille Consortium (PASTILLE 2002) shows that the development and use of indicators is of high interest. Sustainable development indicator sets are more abundant at a national and local scale than a regional level (Mascarenhas et al. 2010). Besides international initiatives like Local Governments for Sustainability (ICLEI), many researchers focus on a sustainable development indicators on a local level (Valentin and Spangenberg 2000; Eckerberg and Mineur 2003; Holden 2006; Reed 2006, Mascarenhas et al. 2010).

Although a common indicator set provides the possibility to compare the progress in sustainable development between countries and cities, it is questionable if a general indicator set serves the same purpose. Several researchers suggest that there is neither a consensus on the conceptual framework nor on the selection of indicators in developed western countries (Tanguay et al. 2009, p. 407). The diversity in indicators can be explained with the different circumstances and specific needs in the different areas and scales. To address this, Valentin and Spangenberg (2000) suggest the use of an individual set of indicators for communities, but with a common structure. This could be a step in the right direction, as it facilitates a balance between comparability and efficiency. Nevertheless, if the indicator set is to serve the needs of local sustainability strategies, its suitability to the local context should have precedence over its comparability to other cities.

Due to the diversity of issues faced under the sustainability umbrella, the number of indicators varies greatly. For instance, AtKisson and Hatcher (2001, p. 4) assume a median indicator set with around 30 indicators, but indicator sets can range from a few indicators to more than a hundred. A larger indicator set requires a bigger administrative effort, which in turn requires
larger financial resources. Hence, a more condensed indicator set may be more manageable and therefore easier to apply at a local level. Bossel (1999, p. 7) stresses that there should be as few indicators as possible, but not fewer than necessary. Although the public and decision-makers favour a smaller indicator set, policy makers and managers prefer a larger number (Dahl 2012, p. 16).

The research of sustainable development indicators focuses especially on the process of the SDI development. The indicators can be determined through a top-down/expert-led or bottom-up/citizen-led approach, with a research focus on a local level (Fraser et al. 2006; Holden 2006; Mascarenhas et al. 2010). Compared with the national level, the local level would have the right circumstances to actively include citizen participation in the indicator development phase. Involvement in the process unlocks the potential of the citizen as it leverages upon the local knowledge on their environment whilst including the visions and values of the community (Bossel 1999, p. 7). Citizen participation is suitable, especially if it is connected to their personal life (Forsberg 2007, p. 6). However, including the public requires a lot of resources (Bell and Morse 2003, p. 22) from the municipal government. Furthermore, it is questionable if citizen-led indicators are accurate and reliable enough to monitor sustainability sufficiently (Reed 2006, p. 407). There is a need for further research in this area to better determine when and how citizen participation is favourable in the development of local sustainable development indicators.

Whether experts or citizens are developing an indicator set, the question either way is which indicators to pick. Besides the necessity of a framework for sustainable development, there is also the need for a systematic framework for indicators. The UN had developed the driving force – state – response– framework, to establish logic connections between the indicators (Bell and Morse 2008, p. 31). Whilst the UN is not using this framework any longer, it is still popular and further, more sophisticated versions such as DPSIR (driving force, pressure, state, impact and response) have been developed by the European Environmental Agency. Since the classification of indicators in these different categories in retrospect requires explicit knowledge of natural scientific correlation, it will be neglected in the analysis of this study.

5.3. Use and Implementation of Sustainable Development Indicators

The 1994 Aalborg Charter, inspired by the Rio conference and its Local Agenda 21, engaged the signing local authorities to use indicators. The ability of indicators to monitor and describe current state and development makes it very suitable as a tool for policy-making (Ambiente Italia 2003, p. 8). Since the Aalborg Charter initiative, sustainable development indicators have been widely used by local authorities.

Based on a literature review, sustainable development indicators are currently used for different purposes. Firstly, and most logically, indicators are used for monitoring, assessing and communicating progress and performance in regard of sustainable development (PASTILE 2002; Mascarenhas et al. 2010; Eckerberg and Mineur 2003). Sustainable development indicators reveal if for instance a city is going in the ‘right’ direction. It can therefore also be claimed that they are operationalising the concept of sustainable development. Thus, the indicators should be analysed in regard to system analysis, connecting the different indicators together to be able to draw the right conclusions. Since they help to visualise the concept of sustainable development, indicators can also be used for public communication of the sustainable development work. This also fosters engagement with stakeholders. The available research focuses also on the relationship between indicators, policy and decision-making. The connection between them cannot be described as linear. In
their empirical study, the Pastille Consortium found that SDI had not had much impact on decision making at the municipal level (PASTILLE 2002, p. 50). In addition, Innes and Broher (2000) state that SDI cannot drive policies by themselves. The use of sustainable development indicators is also strongly connected, depending on the context they are implemented in. PASTILLE (2002, p. 50) states that this statement “goes against the assumption that indicator systems work always and everywhere in the same way.” The actual use of the indicators therefore depends highly on the decision-making processes within the municipality, the structure of the local government and their working processes.

So can indicators be seen as the silver bullet, the tool that can help municipalities and cities to reach their sustainability goal? It is difficult to give a sufficient answer to this question, as it depends on the realisation of the indicators. In addition, it is difficult to assess the impact of SDI on the progress towards sustainability (Dahl 2012, p. 15). One attempt to resolve this made Ramos (2010) by creating a conceptual framework to assess the effectiveness of sustainability indicators.

It should be mentioned that, although there is an extended literature on the development of indicators, there is little help beside this technical and design-related issue how to actually implement indicators (Bell and Morse 2003, p. 51). It should be ask why there is so little research on the use and implementation of indicators. The research paper at hand contributes to close this research gap.

6. Framework to Assess Sustainable Development Work in Municipalities

6.1. Municipal Sustainable Development Work in Sweden

The Nordic countries have traditionally been at the forefront concerning environmental policies. In terms of implementing the Local Agenda 21, they can even be called innovators (Joas and Grönholm 2001, p. 318) with Sweden perceived as the leading country for environmental policies in Europe (Eckerberg and Mineur 2003, p. 591).

Swedish municipalities could build on the strong environmental movement from the 1980s (Rowe and Fudge 2003, p. 129). This strong movement led not only towards focusing on environmental issues in the beginning of the LA21-implementation (ibid), but can also explain why the Nordic countries, including Sweden, saw the LA21 more as a complementary policy tool (Joas and Grönholm 2001, p. 319). Although many municipalities used their LA21-mandate to adapt their internal routines and working processes towards a more environmental one (Forsberg 2007, p. 30), the main goal was to enhance the sustainable development work on a local level, aiming to engage the citizens. With financial support by the central government as well as ideological organisations, universities and churches (Rower and Fudge 2003, p. 129), the movement was widespread through entire Sweden and was characterized by enthusiasm, a wide range of ideas and the strong belief to change the sustainability work (Forsberg 2007, p. 88). The citizen focus proved to be fruitful, as a study found that 40% of the Swedish population had knowledge of the Agenda 21 in 1996 while 20% had received information (Rower and Fudge 2003, p. 129). However, the actual participation in LA21 project by citizens was only 3% (ibid). Nevertheless, the sole knowledge of the citizens regarding LA21 can be interpreted as a big success, in particular because the LA21 projects were also tied to the individual responsibilities and lifestyle. Although varying across municipalities, the LA21 implementation focused on a holistic
perspective of sustainable development, which included health, sustainable lifestyles, as well as sustainable consumption and production (Bretzer et al. 2006, p. 38).

The LA21 implementation has been underpinned and complemented by investment programs from the national government. The Local Investment Programme (LIP) allocated 6.2 billion SEK for investment programs in half of Sweden’s municipalities from 1998 until 2002 (Naturvårdsverket 2013). It was replaced in 2003 by KLIMP, focusing more specific on climate issues. From 2003 to 2012, around 1.2 billion SEK were provided to projects (ibid). These large investment programs aimed at using the municipalities as a catalyst for the transition towards a sustainable society (Bretzer et al. 2006, p. 19). The amount of governmental funding was added at least equal financing from the municipalities.

Besides the financial means, the Swedish government introduced with the 16 environmental goals a new policy document. These so-called Swedish Environmental Quality Objectives (NEQOs) [miljömål] have been approved in 1999, with the addition of a 16th objective in 2005 (ibid, p. 15). These objectives are not only national goals, but are also transferable to the regional and local level. Due to their local social responsibility and their local environmental work, the municipalities play a key role in working with the NEQOs. The Swedish Association of Local Authorities and Regions (SALAR) [Sveriges Kommuner och Landsting] had then developed local environment indicators based on the national objectives (ibid.). The municipalities have been incorporating the new responsibilities into their local work. In 2005, 84 % of the Swedish municipalities had already initiated a NEQO process. One third of municipalities had also complemented it with their own environmental targets (Forsberg 2007, p. 37).

This strong governmental initiative might have been one factor why the LA21 movement decreased in later years. Although the term (Local) Agenda 21 is not used that much anymore, this does not necessarily mean that the work had been discontinued. Sustainable development work remained, but under a different name and process (Forsberg 2007, p. 83). There have been more changes occurred in the sustainable development work at the municipality level. Forsberg (2007, p. 83) states that municipalities have fewer resources for their sustainable development work. This has direct consequences for the practical work at municipality level. The sustainable development work, which was targeted towards the civil society during the LA21-movement, is not the focus of the municipalities anymore (Forsberg 2007, p. 84; Bretzer et al. 2006, p. 38). Since citizen participation requires many resources, it could be one reason why this change in the target audience occurred. Related to this are the very restricted staff-related resources within the municipality administration. The responsibility for the sustainable development work is commonly left to only one civil servant (Forsberg 2007, p. 88). The study by Bretzer and colleagues shows that the responsibilities mostly are assigned to the environment department within the municipality administration, but this were even reality during the zenith of LA21 (Bretzer et al. 2006, p. 39). This makes it also harder to establish a sustainability strategy that includes all the different departments. An increasing number of municipalities choose to put sustainable development up on the municipality board, but this does not directly mean that it receives a higher political status (Forsberg 2007, p. 29).

Another change stated by the literature is the reduction of the scope of the sustainable development work. Swedish municipalities have not such a strong focus anymore on the different objectives of sustainable development, but rather choose to focus once again on the environmental dimension (Forsberg 2007, p. 83; Bretzer et al. 2006, p. 38). But this statement stands for instance against the trend that many municipalities have implemented the sustainability perspective in their steering documents (Forsberg 2007, p. 66).
Nevertheless, it can be said that the sustainable development work on a local level in Sweden has become more professional, with a greater ‘toolbox’ to rely on. Already in 2001, 42% or the Swedish municipalities used local sustainability indicators as part of their LA21 work (Eckerberg and Mineur 2003, p. 591f). Swedish municipalities have broadly implemented environment management systems, environmental assessment instrument, reporting initiatives and other tools to work with environment and sustainable development (Forsberg 2007, p. 36). In particular the introduction of environment management system (EMS) which spread fast in the private and public sector (Eckerberg and Mineur 2003, p. 597), attests a professionalization. Almost half of the Swedish authorities had implemented EMS in one or more departments, mostly due to organizational reasons (Emilsson and Hjelm 2002, p. 444). Many municipalities use EMS such as ISO 14001 or EMAS or develop their own EMS based on an international standard (Emilsson and Hjelm 2009, p. 722; Forsberg 2007, p. 36).

The upcoming presentation of the focus areas demonstrate some of the key areas which should be in place for a successful frame in which sustainable development work can be utilized in an efficient manner. The analysis of the case studies will show whether this theoretical frame corresponds with the reality of the analysed municipalities.

6.2. Integration of Sustainable Development Work

The debate around sustainable development has been focused primarily on a technical, design-related perspective where the definition was more important than the actual implementation. This could even have contributed to the absence of great process in this field (Heslop 2006, p. 3). Fostering sustainable development on a local level requires its implementation in the local government. In this regard, the municipal organisation requires the capacity to work with sustainable development in its visions, plans and daily working processes. Hence, “the building of institutional capacity becomes itself an important implementation task” (Heslop 2006, p. 3). Wakely (1997) determined three aspects which are crucial for capacity building for better cities: human resources development, organizational development and institutional development. Human resources development is understood as a process of supplying the employees with skills and understanding as well as the access and distribution of information (Wakely 1997, p. 2). Organisational development engages with the working processes within an organisation. Wakely relates this not only to management procedures, but also working relationships (ibid). Lastly, the institutional development comprises the regulatory and legal changes which are required to enable capacity building within the institution.

The concept of capacity building by Wakely reveals what areas are required to change in order to enable capacity building for the implementation of sustainable development. A similar approach with more concrete guidelines has been developed by ICLEI. The so-called Fano Guidelines (Fig. 5) are designed to build capacity for local sustainability. Since the target

<table>
<thead>
<tr>
<th>The Fano Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning as an organisation</td>
</tr>
<tr>
<td>2. Moving away from ‘policy silos’ within local government</td>
</tr>
<tr>
<td>3. Making alliances with people and organizations</td>
</tr>
<tr>
<td>4. Facilitating the process and developing credible leadership</td>
</tr>
<tr>
<td>5. Encouraging creativity and innovation in policy-making</td>
</tr>
<tr>
<td>6. Communicating to make a difference</td>
</tr>
<tr>
<td>7. Catalysing action through raising environmental awareness</td>
</tr>
<tr>
<td>8. Maintaining commitment to achieving the long-term vision</td>
</tr>
<tr>
<td>9. Sharing experience with peers</td>
</tr>
<tr>
<td>10. Influencing all levels of government</td>
</tr>
</tbody>
</table>

Fig. 5. The Fano Guidelines (ICLEI 2004)
audience are employees and decision-makers of local governments, institutional development as presented by Wakely is not incorporated in the guidelines given that this changes need to come from regional or national level.

The Fano Guidelines present straightforward and easily understandable suggestions on how to integrate sustainable development in a municipality. For instance the second guideline “Moving away from ‘policy silos’ within local government” is underlined by the proposals to appoint employees within departments as ‘ambassadors’ for sustainability integration. The ambassadors are encouraged to include all three dimensions of sustainable development in their policies and to develop cross-departmental working groups to facilitate this (ICLEI 2004, p. 5).

Based on this literature background, the analysis of the integration of sustainable development within the administrative part of the municipality will mostly focus on the following areas:

- Responsibility of sustainable development work
- Internal communication and cooperation regarding sustainable development

### 6.3. Use of a Management System for Sustainable Development

As mentioned before, the ability to manage sustainable development requires a coherent cyclic process including follow-up. While sustainable development plans and policies provide a good foundation, they do not provide guidance on how to integrate sustainable development into the daily working processes (Rocha et al. 2007, p. 84). Since sustainable development is present on the local level for only two or three decades, most management systems are primarily focusing on environment. The purpose of an environmental management system ties right into this, as it “organise[s] environmental work in such a way that an organisation’s environmental performance improves on a continual basis” (Emilsson and Hjelm 2002, p. 443). Environmental management systems (EMSs) are fairly common to support and integrate the environmental perspective in an organisation. There are standardised EMSs, for instance the international standard ISO 14001 or the European Commission’s regulation eco-management and audit scheme (EMAS) as well as many EMS who are inspired by these standards (ibid). One Swedish example for the latter is the environmental certification of Svensk Miljöbas. This certification originates in ISO 14001 and EMAS, but has less strict requirements regarding documents and routines (Svensk Miljöbas 2015). Emilsson and Hjelm conclude in their case study, which examines the development from an EMS to a sustainability management system, that “integrating the environmental dimension with the social and economic dimensions by expanding the EMSs to SMSs could be a powerful approach for local” (Emilsson and Hjelm 2009, p. 730).

The integrated management system (as presented in chapter 3.2) was the attempt to develop a management system for sustainability on a European scale. The model is designed to help municipalities and regions with integration of sustainability aspects in the overarching administrative management (Liljenfeldt and Keskitalo 2011, p. 28). Another management system focusing on the whole of sustainable development is the ISIS system developed by Alan AtKisson. ISIS stands for Indicators, Systems, Innovation and Strategy, that can be described as a system to facilitate the planning and implementation of sustainability (Nilsson and Rydén 2012, p. 220). Other standards related to sustainable development are ISO 26000 for social responsibility, Fair Trade City and CEMRs declaration for equality (Liljenfeldt and Keskitalo 2011).
There are several reasons why the use of management systems is important for assessing the sustainable development work in municipalities. A management system requires indicators to follow-up the state of the sustainability within the municipality; and often the implementation of a management system is also connected to a policy. Furthermore, the EMS process involves for instance also training of the employees and the establishment of routines (Emilsson and Hjelm 2002, p. 444). This ties into internal communication and working procedures. A survey with Swedish municipalities showed that the reasons for implementing EMS is primarily of organisational nature, for instance establishing structures, coordination and integration of the environmental efforts as well as enhancing follow-up procedures (ibid, p. 445).

The analysis of the use of management systems within the administrative part of the municipality will mostly focus on the following areas:

- Connection between management system and sustainable development indicators as well as policies
- Scale of implementation of sustainability management systems and its impact

6.4. Use of a Sustainability Policy

A policy can be described as several principles, which are adopted to intend a certain outcome. A sustainability policy of a municipality states the intention of the municipality to integrate a sustainable perspective in their long-time planning. It also helps to determine what kind of sustainable development a municipality strives for. For instance the Aalborg declaration focuses in particular on the environmental dimension, contrary to a position paper of SKL which emphasizes the social component (Engström 2012, p. 15). The reason behind SKLs focus could be that the social perspective is closely related to the welfare mandate, which the municipalities have.

Sustainability policies often include concrete long- or short-term goals. Therefore, they can be a relevant part of management systems, such as environmental or sustainability management system (Emilsson and Hjelm 2002, p. 443). Although the casual linkage between policy and sustainable development indicators has not been addressed and examined yet, sustainable development indicators are connected and used for the follow-up of policies (Hezri 2004, p. 357). Theoretically, there is a connection between policy, management system and indicators. This paper aims to examine how sustainability policies relate to other policies, for instance a climate, energy or environmental policy.

The analysis of the sustainable development work in Swedish municipalities will research the following issues regarding a sustainability policy:

- Use and design of a sustainability policy (connection to framework, incorporation of concrete goals)
- Relation between sustainability policy and other steering documents (other policies, comprehensive plans)

6.5. Involving the Citizens

The necessity of informing and involving the citizens whilst implementing a sustainable development strategy lies in the objective itself. To reach the objective of sustainable
development, leaving enough resources on the planet for future generations whilst living currently in a developed world, comprises the need to change our current behaviour.

Living more sustainably is not something that a government can necessarily dictate, this instead needs to be an active decision supported by the citizens. The participation of the citizens is therefore a requirement of a success implementation on a local level, in particular in the issues regarding the lifestyle, where the citizens themselves are the target group (Forsberg 2007, p. 67). This is especially true on a local level, where the governmental organisations are closer to the people.

Forsberg categorises the involvement of the civil society in three different ways: education (through information and education system), organisation of neighbourhood level, and citizen involvement in the overarching development strategies of the municipality (ibid). This applies not only for the overall sustainability strategy, but also in particular tools like sustainable development indicators. As discussed in chapter 5.2., an involvement of citizens in the development of sustainable development indicators is common and brings advantages and disadvantages with it.

Indicators can also be used for the education and informing of the citizens. The Pastille consortium developed their indicators based on two different target audiences: citizens and experts, stating that qualitative indicators may be more suitable for citizens, whereas quantitative and technical indicators targeting the expert audience (PASTILLE 2005, p. 11). Arguing in the same line, Shields states that sustainable development indicators can only be effective when providing people with information needed and in an understandable way (Shields et al. 2002, p. 149). Going one step further, the researchers connect the indicators to a hierarchical model, and arguing, based on WRI, that indicators target scientist and decision makers whilst indices are appointed for the citizens (Fig. 5).

![Fig. 6. The relationship between data condensation and audience (Shields et al. 2002, p. 157)](image)

While the concept itself is coherent and reasonable, it should be questioned if indices are the best way to communicate the state of sustainable development to the public. The main advantage of an index is that it consists often only of one number, which is easy to communicate and to understand. Since an index does not communicate barely any more information than the bigger picture, the citizens cannot easily draw any conclusions from it. Hence, an index should always be accompanied by further explanations and details to make the results understandable.

The so-called Fano Guidelines by ICLEI defines crucial conditions to build capacity on a local level and determines the communication through targeted channels to the citizens as
their sixth guideline (ICLEI 2004, p. 9). The channels to inform the citizens are numerous. A common tool is to display the indicators in reports, publications, printed mass media, television/radio, as well as conferences and workshops (Ambiente Italia 2003, p. 137f; Bell and Morse 2003, p. 49).

The analysis of the involvement of citizens in the sustainable development work of municipalities will focus around the following issues:
- External communication strategies (how, which channels)
- Further involvement of citizens in the sustainability work

7. Project Design

7.1. Research Design

Yin (2009, p. 26) defines a research design as “a logical plan for getting from here to there, where here may be defined as the initial set of questions to be answered, and there is some set of conclusions about these questions.” This entails that a research design should be constructed in a way to enable reaching the research objective through suitable application of research methods. The research process started with a thorough literature review, exposing the main gaps in knowledge and clarifying the research need (Robson 2011, p. 52). With reliable sources such as books, research papers and articles, the current state of the research within sustainable development work on a local level could be captured. Based on the literature review, the research focus and main questions have been determined. The findings of the literature represent the theoretical framework of the thesis at hand and are presented in chapter 3 to 6.

To assess the sustainability work of Swedish municipalities, empirical data must be conducted to complement the theoretical background. Therefore, six municipalities in Sweden have been chosen as research objects. Clearly, these six cities do not represent the average local authority in Sweden. By focusing on these, this study is concerned with specific examples rather than with general claims about the sustainability management development in Swedish local authorities. In a first step, the sustainable development indicators used by the municipalities are analysed and compared. To further assess the sustainability work in the municipalities, a framework with four focus areas has been developed. Considering this four areas, the interview guide with respective questions have been developed.

Despite being costly in terms of time, face-to-face interviews have been conducted as they give the possibility of a deeper investigation in a way that self-administrated questionnaires cannot provide (Robson 2011, p. 280). Since there is no financial support provided for field work, four out of the six semi-structured interviews have been conducted by telephone and not face-to-face. This is not the perfect setting, but the disadvantages of a phone interview compared to a meeting in person are in a research setting like this so minor that the method still can be used. All interviews have been conducted in Swedish with the exception of Växjö which was held in English. Quotes of the interviews were therefore translated into English.
7.2. Methodological Approach

7.2.1. Case Study

A crucial step in every research design is the choice of a method. Originally, the term ‘method’ meant the way to the goal (Kvale and Brinkmann 2009, p. 105). Hence, the method is the approach of gathering the data, which in a next step is being analysed to answer the research questions.

A case study can be defined as “strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (Robson 2011, p. 136). In contrast to an experiment that builds a research situation to study something, the case study investigates in the real context. It can be used to contribute to our knowledge of social, political, group, individual and organizational phenomena (Yin 2009, p. 8). The choice of a method is not only depending on the research object, but also heavily on the purpose of the study and the research question. So clarifies Yin (2009, p. 15) that ‘What’ questions can be analysed with help of all methods, whereas for ‘How’ and ‘Why’ questions should be favoured a case study or experiments. The master thesis at hand aims to analyse the sustainable development work in municipalities. In particular it is examined how the work is integrated within the structure of the municipalities and why the municipality chose the different tools and steering documents and in which way there are used. This prior presentation of the research method case study shows that it is a suitable strategy for the research objectives.

Furthermore, it was decided to take on a multiple case study approach. This enables to analyse not only one case but several, for example several organisations (Gillham 2000, p. 1). A multiple case study is the research study at hand necessary to draw some conclusions and to paint at least a rough picture of the sustainable development work in municipalities. In this regard, the concern emerges that case studies provide little basis for scientific research. This hesitation can be diminished through clarifying that case studies are not able to be generalised to populations, but rather provide theoretical propositions (Yin 2009, p. 15). The multiple case study approach in this paper allows getting insights in sustainability work of six of the 290 Swedish municipalities. To be able to make more general conclusions, a survey with all 290 municipalities plus additional research interviews with couple of dozen municipalities would be necessary. This ambitious research design is not feasible within the framework of the paper at hand.

7.2.2. Semi-Structured Interviews

There is a great range of methods, from experiments to survey, from being classified as more quantitative or qualitative. Rapley (2004, p. 15) states that the method interviewing is currently the main research approach of the contemporary social science. A research interview can therefore be described as a knowledge-producing activity (Kvale and Brinkmann 2009, p. 47). The knowledge is conducted by asking questions directly to a person, receiving their personal views and opinions on a specific topic. Kvale and Brinkmann identify seven different stages of interview inquiry: thematizing, designing, interviewing, transcribing, analyzing, verifying, and reporting (ibid, p. 102). They furthermore added that if interviewing is conceived as a craft, the best way to learn it is through practice (ibid, p. 91). Although extensive training would most likely improve the outcome of the interviews, the usefulness of it also depends of the size of the research study.
Although the seven stages can be applied to all different kinds of interview approaches – structured, semi-structured and unstructured – the approaches and their applicability differs greatly. Semi-structured interviews are often used in multi-strategy and flexible designs (Robson 2011, p. 285). They are the middle way between completely structured interviews with prepared questions in a set order and very open interviews with only a broad topic as guidance. In contrast, for semi-structure interview, the interviewer has an interview guide with prepared topics and questions. The interview guide gives only a broad framework, so the order of the questions can change and follow-up questions can occur based on the flow of the interview (Kvale and Brinkmann 2009, p. 130; Robson 2011, p. 280). In particular the possibility of follow-up question can reveal more insights which would perhaps be untapped and not brought up by the interviewee if not specifically asked.

Semi-structured methods have been chosen as method for this research study. The objective of the study is a question which cannot be answered only based on steering documents and so forth, because the reality in the working routines could be very different. Using a semi-structured interview method, the interviewees, being the employees working with the matter, can give valuable insights of the current work of the administration. Since the research design is a case study, the main goal is to gain insights. Hence, a semi-structured interview was preferred to an internet survey with a questionnaire, in case interesting issues have been raised which requires further follow-up questions.

7.3. Research Objects

For the multiple case study, six municipalities have been selected. The municipalities are comparable by size and type of municipality. The number of cases is of course too small to make general claims about all 290 municipalities in Sweden. Nevertheless, the research project at hand is still very useful, because it gives a first overview over the sustainability work on a local level. The findings of the interviews show strengths and weaknesses of the municipality work and help thereby future research studies by revealing further need of research.

The municipalities contacted for this study have all been working with sustainable development since a long time. The selection of the municipalities has been based on findings in literature and references by researcher in this field. In total, ten municipalities have been contacted and despite several follow-up requests, only six municipalities agreed to be part of the study. This reveals one problem with interviews, the difficulty of finding knowledgeable informants (Rapley 2004, p. 17).

Table 1: Overview case study municipalities (Håkansson 2014; SCB 2015)

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Population Size</th>
<th>Type of Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enköping kommun</td>
<td>41.163</td>
<td>Municipality in densely populated area</td>
</tr>
<tr>
<td>Knivsta kommun</td>
<td>16.105</td>
<td>Suburban municipality to a larger city</td>
</tr>
<tr>
<td>Nacka kommun</td>
<td>96.271</td>
<td>Suburban municipality to a larger city</td>
</tr>
<tr>
<td>Uppsala kommun</td>
<td>207.362</td>
<td>Larger city</td>
</tr>
<tr>
<td>Västerås kommun</td>
<td>143.702</td>
<td>Larger city</td>
</tr>
<tr>
<td>Växjö kommun</td>
<td>86.970</td>
<td>Larger city</td>
</tr>
</tbody>
</table>
8. Analysis of Sustainable Development Work in Swedish Municipalities

8.1. Overall Results of the Interviews

In the multiple case study, six municipalities have been interviewed based on an interview guide (see Appendix 1). The interviews were between 30 and 60 minutes long and brought many interesting points forward. Table 2 compiles a short summary of the focus areas which will be further elaborated on in the following chapters.

Table 2: Overview of interview outcome

<table>
<thead>
<tr>
<th>Municipality/Focus Area</th>
<th>Enköping</th>
<th>Knivsta</th>
<th>Nacka</th>
<th>Uppsala</th>
<th>Västerås</th>
<th>Växjö</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of SD</td>
<td>No discussion; ecological, economic and social sustainability</td>
<td>No discussion; ecological, economic and social sustainability</td>
<td>No discussion; ecological, economic and social sustainability</td>
<td>No discussion; ecological, economic and social sustainability</td>
<td>Discussion, ecological, economic, social and cultural</td>
<td>No discussion; ecological, economic and social sustainability</td>
</tr>
<tr>
<td>Responsibility of the SD work</td>
<td>No dedicated team, but currently in planning</td>
<td>No dedicated team, six strategist working with SD</td>
<td>SD department got abolished, responsibility lies on department level</td>
<td>Team with around 14 people, working with ecological and social sustainability</td>
<td>The central office has main responsibility</td>
<td>No dedicated team, responsibility in all departments</td>
</tr>
<tr>
<td>Sustainability Policy</td>
<td>No</td>
<td>No, but currently in planning</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes (budget)</td>
</tr>
<tr>
<td>Other related steering document</td>
<td>Enabygdens miljömål, energy strategy, environmental policy (in planning)</td>
<td>Environmental programme, energy strategy</td>
<td>Environmental programme &amp; policy, sustainability programme for new development area</td>
<td>Environment programme,</td>
<td>Environment and climate programme, gender equality policy, Integration programme, comprehensive plan (Västerås Översiktsplan 2026)</td>
<td>Environment programme</td>
</tr>
<tr>
<td>Sustainable Development Indicators</td>
<td>Yes, through Svenska Ekokommuner</td>
<td>No, but currently in planning</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Management system</td>
<td>No, but environmental certification in planning</td>
<td>No</td>
<td>Several department have an environmental certificate (svensk miljöbas)</td>
<td>ISO standard in planning, HBT-certified</td>
<td>No</td>
<td>Ecobudget, then IMS</td>
</tr>
<tr>
<td>Communicatio n to citizens</td>
<td>Website, facebook, press releases</td>
<td>Website, blog about energy issues</td>
<td>website</td>
<td>New website, newspaper</td>
<td>New website, facebook, consultation meetings</td>
<td>Website</td>
</tr>
</tbody>
</table>
8.2. Sustainable Development Indicators & Management System

**Definition of Sustainable Development**

Pursuing sustainable development work on a municipality level requires an understanding of the concept sustainable development. Without a framework (see chapter 3.1), the sustainable development work is lacking a clear idea and path, resulting in an unfocused and uncoordinated work process. It is therefore crucial to analyse if the Swedish municipalities are using a framework for sustainable development and how this decision has been made.

The interviews with the case study municipalities revealed that five out of six municipalities did not have a discussion around the definition of sustainable development. These five municipalities all stated that they are using the triple-bottom-line, which divides sustainability in ecological, economic and social sustainability. It is interesting to notice that none of the municipalities implemented a framework with an institutional perspective. This would put the municipality administration and other services itself in the spotlight and would require an institutional change towards sustainable development. One reason why the triple-bottom-line is used as foundation for the sustainable development work could be that there has not been a discussion within the municipality officials and clerks about the definition itself. Hence, since the three dimensional sustainability definition is very popular and easy to comprehend, it is not surprising that this framework is present in the municipalities. A reason brought up by Växjö municipality for referring to the triple-bottom-line is that they did not see the need to develop a framework for themselves, since sustainability is integrated in all parts of the municipality (Interview Växjö). Enköping municipality stated that the framework is used in discussions with steering committees or politicians to stress the point that all the dimensions, not only the environmental perspective needs to be considered (Interview Enköping). Knivsta municipality, a rather young municipality with no fixed team working with sustainable development, mentioned that they are requesting a dialogue about the definition of sustainable development, since the geographical and social conditions in every municipality are different (Interview Knivsta).

The only municipality which had an extensive discussion on the definition of sustainable development is Västerås. The discussion took place during the process of establishing the new comprehensive plan [översiktplan] for Västerås’ urban centre [tätort] in 2004. The municipality decided upon four sustainability dimensions: economic, ecological, social and cultural. The cultural dimension shall cover cultural heritage as well as culture life, including aspects like citizen participation (Interview Västerås). Including culture as a dimension for sustainable development is very reasonable, since the cultural heritage should be sustained over time whilst making a positive impact in regard of environmental and social terms.

To conclude, the case study municipalities are all using their sustainable development work on a framework which highlights the ecological, economic, social, and in the case of Västerås also the cultural dimension of sustainability. Except once, there has not been a dialogue regarding the understanding of the definition. This lack of dialogue could be related to the, in some municipalities, different level of engagement of the employees.

The framework of sustainable development plays a role even in project work. The municipalities are doing plenty of projects emphasising different aspects of sustainability. Enköping municipality focused for example last year mainly on transport, which was also an important topic for Västerås. Several municipalities are focusing on energy and infrastructure issues. Projects related to sustainable development are also undertaken within the municipality, for example setting up a car pool for the municipality administration. Besides the more technical-related issues stands also the social sustainability in the focus. Uppsala
does also a lot related to gender equality. Växjö municipality has several ongoing projects connecting the social and ecological dimension of sustainability. Hence, the municipalities base their projects on the chosen framework of sustainable development.

**Sustainable Development Indicators**

The systems framework should be the foundation of the entire sustainable development work in a municipality. Hence, the sustainable development indicators, a widely used tool to assess the state and process regarding sustainability, should correspond and cover the concept of sustainable development laid-out by the framework.

All municipalities except two are currently using sustainable development indicators. Knivsta municipality has no SDI, but is currently in the process of developing a set of indicators. However, Knivsta uses indicators in the environment programme, but they are currently not followed-up due to revision of the entire programme. Nacka municipality has had sustainable development indicators previously, but assesses sustainable development currently only with broad goals (see Nacka 2013). Hence, Nacka municipality is not included in the comparison. The other four municipalities are using in very different scales sustainable development indicators, resulting in very different indicator sets (see Appendix 3 for all SDI).

Table 3: Overview SDI by municipality

<table>
<thead>
<tr>
<th>Municipality/Category</th>
<th>Number of indicators</th>
<th>Total (ind. by category)</th>
<th># of ind. used twice</th>
<th># of ind. used three times</th>
<th># of ind. used four times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enköping</td>
<td>12</td>
<td>61</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Uppsala</td>
<td>5</td>
<td>31</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Västerås</td>
<td>39</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Växjö</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>105</strong></td>
<td><strong>12</strong></td>
<td><strong>8</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Table 3 gives an overview of the indicators by municipality, categorised in the three dimensions ecological, economic and social. The results confirm three claims brought forward through the literature review of the current research. First and foremost, it becomes clear that the different SDI sets are not comparable as they are too diverse. The attempt of several researchers to create a common indicator system seems not feasible. Only 12 of the indicators are used in two different indicator sets, 8 in three. The indicator ‘greenhouse gas emission per citizen’ is the only indicator used by all four cities. Furthermore, as Forsberg (2007, p. 83) already stated, there seems to be a preference towards the ecological perspective. However, this conclusion needs to be weighted for several reasons: Enköping municipality is part of Swedens Eco-municipalities [Svenska Ekokommuner] which uses 12 indicators purely for the ecological perspective. Enköping is an active of Swedens Eco-municipalities since 1998, and the municipality believes that it is important to share experience with other municipalities and

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1 Indicators of Västerås and Nacka have originally not been divided by category, the division was made by the author. Furthermore, it shall be noticed that some indicators have been appointed by different municipalities to different categories, since the boundaries between social and economic sustainability gives room for own judgement.
to get ideas what to do in the own municipality (Interview Enköping). Although Swedens Eco-municipalities is presently discussing how to add indicators for the social dimensions (Interview Enköping), Enköping municipality contributes therefore only to one perspective. Another reason why the environmental perspective seems to be dominating which was brought up by several municipalities is the difficulty in finding suitable indicators for the social dimension. Furthermore, as visible in Appendix 3, Västerås municipality follows a large amount of indicators. Summing them up into different headline indicators would furthermore balance the numbers of the three categories. Another result is that the connection between framework and SDI is not always given. Enköping is missing indicators for the social and economic dimensions and despite the thorough debate over a framework, Västerås is not following up on any cultural indicators (such as the Bohemindex, used by Växjö).

Enköping is the only municipality which relies on pre-selected indicators, in this case the indicator set of Swedens Eco-municipalities. Uppsala municipality is currently in the process of determining new indicators for social sustainability. During this process, the municipality inquired the indicator set for sustainable development of kolada.se, the municipality and county council database [kommun- och landstingdatabas] (Interview Uppsala). Kolada provides an indicator set for municipalities with 32 indicators, categorised in ecological, economic and social indicators (RKA 2013). However, the proposed indicators have not been applicable to Uppsala, since the same indicators are already followed up in other programmes and plans (Interview Uppsala). This could be one reason why municipalities choose to select their SDI sets independently and why it is so difficult to establish an SDI set which can be used for instance by all municipalities.

Despite the differences in the indicators sets, the presentation of the SDI is very similar (see Appendix 4). The indicators are presented in diagrams over a time span, showing the development of the indicators. Presented as lines or bar chart, it is for the reader easy to grasp if there has been progress or not. Several municipalities like Västerås and Enköping are even using Smiley-faces or coloured arrows to further highlight the positive, neutral or negative development. This simple visual presentation serves not only citizens, but also politicians. As it was stated by the interviewee of Växjö, this can be a powerful tool since “the politicians can then more or less say ‘I see a lot of happy faces, but also a number of sad faces, so we need to improve these issues’” (Interview Växjö). The SDI of Västerås are only reachable online and not in other documents. All the other municipalities include the indicators in their annual accounts [årsredovisning]. Two municipalities (Nacka and Uppsala) explained that they had in previous years made a separate document for the sustainability issues [hållbarhetsbokslut], but this idea has been abandoned due to resource shortage. Västerås stated as reason for not having a separate document is that sustainability is so integrated in the different parts of the organisation, that there is no need to highlight it separately (Interview Västerås). None of the municipalities chose to calculate an overall index for sustainable development.

Besides the design-related part, one main question of the analysis was to examine how the indicators are used in the municipality administration. Interviewing the case study municipalities uncovered that the SDI are not part of the daily routine or working process in the municipality administration. Nacka and Växjö mentioned that the different committees [nämnd] have their own goals, indicators and steering committees (Interview Växjö, Nacka). Therefore, SDI are used more as a tool to show the broader picture, but are not tied to any specific programmes or goals. Certainly, to reach the goals of different programmes and policies, indicators are used to follow-up the status quo. But the specific, so-called sustainable development indicators seem to be used as a representation and visualisation tool, rather than to aid the daily working processes. Several municipalities stated that the indicators are used to assess in which direction the development is going. Furthermore, the indicators serve as basis
for decision-making and for politicians. Here the visual presentation seems in particular useful. However, Uppsala municipality pointed rightly out that statistics, such as indicators, needs to be interpreted in a correct way. Only if an indicator, e.g., shows that the overall equity between man and woman is above average, this does not imply that there are no differences between different social groups or districts (Interview Uppsala). To what extent the indicators have an actual influence on the politicians, can only be examined through further interviews with decision-makers. Sustainable development indicators as tool to inform the citizens were also referred to several times. Hence, the indicators are used for several presentational purposes, but rather not as a key tool in the daily sustainable development work.

Management systems

Sustainable Development Indicators are way of assessing sustainability in the municipality. Hence, SDI should be part of the sustainability management system of the municipalities. A management system helps to lower the environmental impact of the institution whilst providing clear routines and follow-up for the entire sustainable development work. Out of the six case study municipalities, Knivsta and Västerås are the ones which have no integrated or environmental management system. Enköping has also currently no management system, but the implementation of an EMS is in planning. However, a new person needs to be employed to guide this process, since the environmental strategist has not the experience to do so (Interview Enköping). This example asserts that the will to implement a management system is not enough, it requires also resources. For Enköping the introduction of an EMS requires first to implement a new environmental policy since this will be a requirement of the new management system. The EMS will be first implemented in the urban planning department [samhällsbyggnadskontor] as it has the biggest environmental impact and then later on in other departments as well (Interview Enköping). Also Uppsala plans to implement the ISO standard for sustainable development in all the departments. “It is important that sustainability issues are included in the management system and do not end up as a side project” (Interview Uppsala). Uppsala will use the ISO standard, but does not aim for the certification, a quite common procedure for municipalities. In addition, Uppsala, after having already signed the declaration for gender equality (CEMR), wants to certify the entire administration with the LGBT-certification [hbt-certifiering]. Here, the social dimension of sustainable development is covered. In Nacka, the management system is implemented mostly for environmental reasons. Three departments, the purchasing department, service department and technical department are environmentally certified with the svenska miljöhas. This corresponds to the current research, stating that “departments within the technical sector in the local authorities are the most typical for EMS implementation” (Emilsson and Hjelm 2002, p. 444). The lack of an institutional-wide management system was connected to the fact that there is no steering team for the sustainability issues (Interview Nacka).

The only municipality in the case study which has an integrated management system is Växjö. Växjö implemented the EMS ecobudget in 2002 (Interview Växjö). The main purpose of ecobudget is to treat environmental resources as financial resources, resulting in the incorporation of environmental issues in the annual accountings. The positive outcome was among others that “it would make the politicians understand, because they understand money” (Interview Växjö). As participant in the Managing Urban Europe project (see chapter 3.2), Växjö broadens its scope from a purely environmental management system to an integrated management system. In the course of the process, social indicators were implemented in the same respect as environmental indicators in the budget. However, it led to a misleading
outcome, since it implies that there always needs to be for example a certain unemployment rate. Subsequent, Växjö abandoned the ecobudget in 2010 for a new system, but concrete goals for sustainability are still written to this day in the budget. Växjö’s example showed once again that it is a difficult attempt to include the social perspective.

Nevertheless, the lack of a management system for sustainable development does not need to imply that the overall management and follow-up is inefficient. So has Västerås a continuous follow-up of their strategic and political plans, although no management system is in place. A continuous follow-up depends also on the departments. Enköping stated that a structured follow-up of goals and indicators are done mostly for energy and water/sewer [Vatten och avlopp] issues. Furthermore, tools to enable an effective follow-up are important and well, for instance checklists or analytical tools (Interview Uppsala). Hence, with the right tools and routines, a good management of sustainable development work is possible. The implementation of an integrated management process would strengthen this process even further.

The analysis of the case study municipality shows that the implementation of management systems varies greatly between the municipalities. Only Växjö present a truly integrated management system. The other municipalities have none or focus mostly on the environmental perspective. Aside from the thorough implementation of Växjö’s management system in steering documents, there are no other cases showing a connection between the management system and sustainable development indicators or sustainability policies.

8.3. Integration in the Municipality Administration

Effective sustainable development work in municipalities requires a thorough integration in the municipality administration. It should be clear who is responsible for the sustainable development work and the concept of sustainability should permeate every department of the municipality. The multiple case study of this paper made clear that there are large differences in this regard. Two municipalities had dedicated teams for their sustainable development work. In Västerås, the main responsibility of the sustainable development work lies at the municipality central office [stadsledningskontor]. Here, the environment- and urban planning department [miljö- och samhällsbyggnadsenhet] is working the environmental sustainability, and the welfare department focuses on social sustainability. A similar division can also be found in Uppsala. After a recent reorganisation, a team for ‘quality and development’ was formed. Here, around 14 people working sustainable development, seven with social and seven with environmental issues. The reorganisation resulted in more resources allocated towards social sustainability, mostly in terms of human resources. Nacka municipality had had previously a unit primarily working with sustainability issues. However, it was abolished around three years ago. Currently, the responsibility lies on the departmental level, meaning that the department head are responsible to drive sustainability issues. Since there is no direct steering of the sustainable development work, a position as sustainability strategist was opened in the environment department (Interview Nacka). Hence, the lack of a team responsible can be a hinder in efficient sustainable development work. This is an experience also shared by the interviewees of Knivsta. There, six strategists of different backgrounds, such as energy, environment and traffic, are the people working with sustainable development issues. The personal engagement and commitment of the strategists has here a large impact on the sustainable development work. In Enköping, there is the lack of a team dedicated specifically for sustainable development. These issues are mostly treated within the urban planning department, which includes construction issues. However, the department chefs are currently planning to establish a task force for sustainability issues. It may be a preliminary
judgement to assume that the responsibility for implementing SD work in an entire municipality should fall solely upon one team, as opposed to delegating the responsibility equally amongst all departments. In Växjö municipality, all departments contribute to the sustainable development work. This procedure seems to work for Växjö, at least no negative outcomes have been voiced in the research interview.

It is reasonable to attribute the well working sustainable development work in Växjö to the thorough integration of sustainable development in the municipality administration. With integration, it is meant a knowledge of and cooperation for sustainable development throughout the municipality. In Växjö, all departments are aware of the importance of sustainable development. In most municipalities, the departments do not arrange dedicated meetings or working together regarding sustainable development issues. This reinforces a ‘silo-work’ mentality in the municipality. Västerås’ approach to foster internal communication and knowledge, as proposed in the Fano-Guidelines, is the launch of the environment and urban planning forum [miljö- och samhällsbyggnadsforum]. All departments of the municipality would be invited to inform themselves about different topics. The forum presented for example the new comprehensive plan [översiktsplan] and the new environment programme, which both are connected to sustainable development. The need for an effective internal communication was also voiced by Knivsta. Knivsta is a very young municipality, not even a decade old. In former days, the small size of the municipality meant that everybody knows everyone and can talk with each other (Interview Knivsta). During the fast development of the municipality administration, mainly in size, the structure of the administration does not fit to the new circumstances. This affects and hinders the integration of sustainable development work and related to that, an effective internal information flow.

A good integration of the sustainable development concept would result in the consideration of it for all projects and decision. The urban planning department in Västerås implemented voluntary for all urban planning project a tool to describe consequences. The so-called sustainability square [hållbarhetsfyran] how certain parameter related to ecological, economic, social and cultural sustainability will change if a certain project will be implemented (Interview Västerås).

The case study municipalities drew a rather diverse picture of the level of sustainable development integration in the municipality administration. The responsibility lies often on all the departments, without a specific team working with sustainability issues. Such situations led in some cases to a lack of steering felt by the people working primarily with sustainable development related issues. The integration of sustainable development in the entire municipality can be facilitated through the implementation of a management system.

8.4. Sustainability Policy and Strategic Steering Document

A sustainability policy states the ambitions and goals of the municipality and implies a level of steering that some case study municipalities wish for (see chapter 8.3). Thus, it was rather unexpected that only one municipality has a sustainability policy. The sustainability policy of Uppsala municipality was adopted by the city council. It consists of three pillars: human rights, responsible resource exploitation and growth (Uppsala 2013, p. 22). Hence, the sustainability policy builds clearly on the framework used by Uppsala, the triple-bottom-line (see chapter 8.2). Besides statements describing the pillars such as “We will secure an environment which supports the public health, the ecological diversity, and counteracts climate change” (ibid.), the policy comprises of nine goals. However, instead of specific goals such as for instance rise in cyclists by 5%, the goals are rather broad. For instance goal six is
“Citizens of Uppsala live healthy and climate-smart” (ibid.). One reason why there are not more concrete goals is that this role is taking by other steering documents. Uppsala municipality did a survey within the municipality to examine if the policy and respective goals are used in the different departments. The survey drew a mixed review, as some departments work closely with the goals, and other departments less (Interview Uppsala). Since the different goals are hard to follow-up, they are not included in the new steering document for the city council. The entire sustainability policy is currently also under revision.

Knivsta municipality is currently planning a sustainability policy, together with the sustainable development indicators. A strong connection between setting goals and allocating financial resources is currently not in place yet (Interview Knivsta). Since sustainability is not yet integrated deeply in the municipality (see chapter 8.3), the implementation of a sustainability policy is most likely going to foster this process. The municipality of Växjö claims its annual budget as their sustainability policy (Interview Växjö). As presented previous, Växjö includes concrete goals in its budget, so as well for the chapter “environment, energy and traffic” (Växjö 2014b, p. 14). But since the goals in this chapter are all related to the environment program, the budget will not be seen as sustainability policy in the research paper at hand. The presence of different policies can be seen as one reason why the implementation of a sustainability policy is not so popular among the case study municipalities. Several municipalities state that although they do not have a sustainability policy, the municipalities have other policies related to sustainability, such as environment, gender equality or energy policy. “Sustainability goals are present in the environment and climate programme, as well as in the comprehensive plan and the political programs” (Interview Västerås). Nacka municipality even reduced the amount of policies last year, since it has been too many (Interview Nacka). Not only the amount of policies and other steering document is problematic, but also the follow-up of their goals and indicators. The difficulties of a coherent follow-up were put forward by nearly all the case study municipalities. A follow-up is very time-consuming, and with plenty of steering documents, it could happen that certain goals get followed up on several different occasions.

Analysing the steering documents related to sustainability also revealed that every municipality has an environmental programme and/or an environmental policy. The literature asserts that the focus on the environmental dimension of sustainability instead of all dimensions is a phenomenon occurring in general in Swedish municipalities (Forsberg 2007, p. 83; Bretzer et al. 2006, p. 38). Nacka municipality abolished its sustainability unit several years ago. However, Nacka has recently founded a new political organ, the so-called miljömålskommitte, in 2014 which will work with the local implementation of the Swedish Environmental Quality Objectives. Several reasons can be put forward why the environmental dimension is so dominant. Firstly, environmental issues have been in the spotlight long before the concept of sustainable development came up. Furthermore, environmental issues seem to be treated more separately. In Uppsala, the environmental issues are framed in a very logical and structured way by steering documents and programmes, whereas this is not so easily possible for the social dimension (Interview Uppsala). It is difficult to determine if and in which way the strong presence of an environment programme could hinder the implementation or the effectiveness of a sustainability policy. An environment programme/policy shall ensure a good state of the environment for the entire municipality. Sustainable development brings together the environmental, economic and social perspective, which should be considered in the decision making process of all decisions. There, the environmental programme should not be seen as a hinder for successful sustainable development work. However, the implementation of a sustainability policy could strengthen the presence of these issues. Here, the true integration of sustainable development is crucial. This could, however, also be achieved without a sustainability policy.
Theoretically, a sustainability policy seems to be a useful tool to spread the issue of sustainable development. However, as municipalities have already numerous steering documents and plans which include sustainability, since it should be integrated in all parts of the municipality, it could be inefficient to implement a policy for sustainable development. It might be more successful to strengthen the internal communication and information about how the municipality wants to work with sustainable development.

8.5. Involvement of the Citizens

One focus area of the assessment of sustainable development work in Swedish municipalities is the information to and involvement of citizens. Referring to the communication efforts towards citizens, all six case study municipalities stated that they are not satisfied with their communication efforts and want to improve them. Enköping argues that the communication can fall short due to time-reasons (Interview Enköping). Keeping a website continuously updated is time-consuming, especially if only one person is primarily responsible for the sustainable development work. Then, it can be difficult to prioritise communication before other issues (Interview Enköping).

The main communication channel is the websites of the municipalities. Here, the effort to improve the external communication has already started. Västerås launched in March 2015 its new website. The urban planning unit worked together with a communicator of the municipality administration to make the concept sustainable development more understandable. For the three main city planning areas it was highlighted which of the twelve sustainability strategies of the comprehensive plan are applied (Västerås Stad 2015b). Thus, sustainable development becomes easier to comprehend for the citizens and better connected to their personal life. The launch of the new website for Uppsala resulted in a contrary scenario. Here, the information about sustainable development is not specifically compiled on the new website. But Uppsala, as well as Nacka and Växjö are currently planning to improve the information presented on the website regarding sustainability issues. In the foreground stands the compilation of all the information on one specific webpage rather than have it spread out on different parts of the website. All municipalities also indicated that reports and plans related to sustainability are also presented on the website. But as Växjö pointed out, it might not be obvious for the citizens where to look for the environmental goals and indicators in the municipality’s annual account (Interview Växjö). Therefore, dedicating a specific part of a website only for sustainability or environmental issues is reasonable.

For Västerås, the sustainable development indicators, which are presented on a website called environment barometer [miljöbarometer], represent as well an important communication tool (Västerås Stad 2015a). The use of a website to inform the citizens is a good platform, however it is a one-way communication. It requires interested citizens who actively want to inform themselves about the topic. Knivsta pointed out that the communication is not mainly focused on how the municipality is working with sustainability right now, but rather attempts to change the habits of the citizens. Additional communication channels used are for instance the social media platform Facebook by Enköping municipality for special events, for instance the Earth Hour (Interview Enköping). Facebook, also used by Västerås municipality, is a more dynamic and fast communication channel than a static website. Knivsta municipality has also a weblog related to energy issues, however it is difficult to maintain the blog on a frequent basis due to time resource issues. Several municipalities are also making use of press releases and newspaper articles, mostly in connection with events. To conclude, the communication regarding sustainable development work is mostly of informational character on the static website. Active communication is only used in the case of events.
As described in chapter 6.5, sustainable development work should actively involve citizen participation. One approach is to involve citizens in the development of the sustainable development indicators. This was not the case in any of the case study municipalities which use SDI in their work. The municipalities could not explain why citizens’ participation had not been guaranteed in the developing process. Some interviewees were not in their current position during the SDI development.

How much citizens are involved in other projects related to sustainable development is difficult to examine, since sustainable development is such a broad concept. Especially when integrated into all the departments, it is hard to assess which projects are primarily related to sustainable development. It was not possible for the interviewees to list all projects, and therefore it is hard to assess the involvement of the citizens. However, Växjö mentioned that in the latest revision process of the environment programme, citizens, companies and NGOs were involved, besides of course employees of the municipality and politicians. The revision process was evaluated as very successful (Interview Växjö). Since the interviewees did not in particular mentioned projects that implied the participation of citizens, it can be assumed that the case study municipalities were not aiming to actively involve citizens in projects related to sustainable development. The literature identified in Sweden a significant drop in the amount of activities addressing citizens after the LA21-movement (Bretzer et al. 2006, p. 38). Hence, citizens have a rather passive part in the sustainable development work of the municipalities.

9. Discussion

The aim of the research paper at hand was to conduct a structural assessment of the sustainable development work of Swedish municipalities. Based on an extended literature research, the sustainable development work has been assessed in a multiple case study with six municipalities.

The first research question was ‘How does the municipality administration work with sustainable development?’ The analysis showed that the case study municipalities integrated the concept of sustainable development to different degrees into the municipality administration. It is difficult to assess how integrated sustainable development is within a municipality. For this research paper, only one or two employees per municipality have been interviewed. However, for a more thorough understanding of the integration, employees of several different departments should be interviewed. The perfect scenario for sustainable development work would be if sustainability is present in all different departments and is considered in all decision-making processes. Sustainable development requires a system view and can only be sufficiently applied on a system such as a municipality with a horizontal and vertical integration. Hence, it is reasonable that most case study municipalities assign the responsibility of the department-level. However, in some municipalities this division of work results in a lack of steering. Two municipalities have dedicated team working with environmental and social sustainability. It is difficult to examine if this approach maintains more effective sustainable development work. The analysis suggests that the implementation based on both approaches is most successful. Sustainable development has to be integrated in the entire municipality administration whilst being coordinated and steered by one single team or responsible employees. Furthermore, an effective internal communication is necessary. The departments need to be informed on who is working with which project related to sustainable development. Two case study municipalities used internal forums as a way to foster the internal knowledge management. It has to be clear as well what integration of sustainable
development even means. Since economic sustainability usually is taking into account projects and decision-making processes, the ecological and social perspective should be incorporated here as well. Even if not every project can foster all three sustainability dimension, it should at least be analysed if there will be any negative impacts.

In the light of the strong LA21-movement in Sweden, it is interesting to notice that the involvement of citizens does not seem to play a main role for the municipality. The communication towards citizens has insufficient resources, although the municipalities would like to further improve their communication efforts. Since the personal behaviour has such a significant impact on the transition towards a sustainable city, the citizens have to be included in the municipality’s effort. It is understandable that the municipalities focus the communication mostly around events or activities and not in the planning of every project. Nevertheless, it would be beneficial if the citizens were welcome into a dialogue concerning comprehensive plans, visions and larger plans for the municipality’s future.

The second research question focused on the use of sustainable development indicators within the administrative context. Sustainable development indicators have been used by four of the six municipalities. The sustainable development indicators are used as a visualisation tool for the state of sustainable development. In contrary to the extensive literature that includes theoretical frameworks of a structured and participatory development process of SDI, the involvement of citizens in the development of the SDI does not play any significant role for the municipalities. None of the examined municipalities involved the citizens in this process and the interviewees could not answer why the indicators have been implemented top-down and not with a participatory approach which allows only minor conclusions. There is a discrepancy between research and reality. It should not only be focused on how municipalities can most efficient include citizens, but rather on what the obstacles are in doing so. Is this resource-intensive process really more efficient and relevant in defining sustainable development indicators for a city? Furthermore, given that several other programs and plans follow up indicators as well, it is questionable if citizens have the competence and knowledge to participate in the difficult indicator selection. It seems more useful to involve citizens in the selection of concrete goals and overall vision as well as fostering citizen initiatives and involving citizens in concrete projects.

Given that SDIs are used as a presentation tool, they are not part of the day-to-day working routines in the municipality. The visualisation of sustainable development serves not only as information tool for the citizens, but as background material for decision-making. The connection between sustainable development indicators and policy is a topic widely discussed in the research sphere. Although the connection seems in theory obvious and logical, it has to be examined in practice. There is room for research as to which extent SDIs have an influence on policies. The municipalities stated that politicians are using the SDIs, but to what extent cannot be examined without interviewing the politicians themselves and assessing political decisions, programs and policies on their incorporation of sustainable development.

A very relevant question is to which extent are indicators, as well as policies, frameworks and management systems effective tools to achieve sustainable development on the local level.

Sustainable development indicators give the concept sustainable development a ‘face’ – in terms of numbers. It is a crucial tool for the municipality to analyse the status quo in terms of sustainable development, to account for its previous actions and act accordingly. However, SDIs are only effective in a minor extent to achieve sustainable development on a local level. They are only a visualisation tool and therefore highly dependent on politicians and employees to take them into account. Indicators are not driving policies or other decisions by
themselves. Furthermore, since they are not directly connected to the overall sustainable development work and are only updated once a year, they can end up taking a back seat.

Management systems are theoretically a very effective tool to achieve sustainable development on a local level. Management systems structure the sustainable development work whilst implementing a sustainability perspective in the institution itself. However, the case study municipality showed that only Växjö municipality had an integrated management system. The other municipalities had either no management system or one that focused primarily on the environmental perspective. The integration of management systems is not efficiently used in its full extent in the case study municipalities, in particular not with a holistic view on sustainable development. The current situation may be fostered by the introduction of the new management system for sustainable development, developed by SKL, the Swedish Association of Local Authorities and Regions. The new standard SS 85 40 00 Management system for sustainable development in municipalities, county councils and regions [Ledningssystem för hållbar utveckling i kommuner, landsting och regioner] strives to implement a social, economic and ecological sustainability perspective in the local steering (SKL 2014). The standard shall contribute to better targeted efforts, effective and long-term resource utilization, improved internal and external communication, enhanced cooperation, counselling and dialogue with external stakeholders, increased transparency and trust as well as a continuous follow-up (ibid, p. 7). Hence, it grasps a systems approach and would strengthen the overall integration of sustainable development. After a pilot period, it should be monitored if a change in Swedish municipalities towards more integrated management system occurs.

Another tool to reinforce sustainable development in municipalities is the introduction of a sustainability policy. In the case study, only one municipality had a sustainability policy, which is currently even under revision. The other municipalities refer to, as the main reason why they do not have a sustainability policy, that sustainable development is included in several other policies. It should therefore be asked under which circumstances is the implementation of a sustainability policy effective for the local sustainable development work. The sustainability policy determines the path towards a sustainable municipality. If the responsibility of the sustainability work is on a horizontal department level, the sustainability policy helps integrating sustainable development. However, in the light of the amount of policies that municipality employees need to consider and work towards on a daily basis, a sustainability policy can appear as another burden in a resource-scare work environment. One approach could be to tie the sustainability policy to the vision of the municipality. Instead of determine new goals for the sustainability policy, it could be referred to the (hopefully positive) development of related policies, for instance the environment policy, gender equality policy, and climate policy. The focus should be on strengthening the internal communication and providing the departments with useful tools, such as the hållbarhetsfyran of Västerås, to enable a thorough inclusion of sustainable development rather than introducing additional goals which due to time reasons cannot be followed up. Hence, a sustainability policy is most effective for municipalities that lack steering and structure.

However, it is unclear to which extent is the systems framework effective in achieving sustainable development on a local level. The analysis revealed that except for one case, municipalities do not have a dialog about the framework. The triple-bottom-line seems so widely popular, that it is used as a framework without any doubts. A framework for sustainable development is effective in the sense as it point out the different focus areas of sustainability. However, the focus on the ecological perspective – in programmes and projects as well as management systems – shows that the impact of the framework is not high at the moment. Furthermore, none of the municipalities implemented a framework with an
institutional perspective. The lack of emphasis on the institutional dimension could be identified as one of the reasons why sustainable development work is not as effective as it could be on the local level. Swedish municipalities should strengthen their institutional capacity including routines, resources and knowledge management to foster sustainable development. Hence, a framework can be an efficient tool for sustainable development work, but is currently not used in this regard by the municipalities.

Indicators, policies, management systems and framework are all relevant tools for the local sustainable development work in Swedish municipalities, though with different level of impact. However, it is important to pinpoint two further factors of local sustainability work. Firstly, it is important to assess under which circumstances the work takes place. Is sustainable development just one project driven by engaged employees or is sustainable development the foundation of the city development, supported by the city council and understood by all employees? It is important to allocated financial and human resources to the facilitation of sustainable development work.

Another important factor is networking amongst municipalities. Integrating sustainable development work in the municipality is a large process that often includes also some setbacks. If municipalities cooperate in networks with each other, they can exchange experience and best practice examples that would help all Swedish municipalities. The municipality ranking by the Swedish environmental magazine Miljöaktuellt revealed that of the six case study municipalities, only one is member of Sweden’s Eco-municipalities and four municipalities are in the network of the Swedish climate municipalities. Regarding international networks, two municipalities are passive members of the Aalborg Convention, two joined the Convent of Mayors and only one municipality is active member of ICLEI (Miljöaktuellt 2015). Here, municipalities could increase their activities in networks to improve their sustainable development work. From a political science perspective, it should also be examined to which extent the national government is obliged to provide a useful framework for local sustainable development. The delegation for sustainable cities, a government initiative from 2009 – 2012, should only be one of many efforts to foster sustainable cities in Sweden.

10. Conclusion

The research paper at hand assesses the local sustainable development work in Sweden on the basis of six municipalities. To be able to properly assess the work towards sustainability, a theoretical framework has been constructed. The framework is based on a holistic view and incorporates the structural (integration in the municipality, use of a management system), inclusive (involvement of the citizens), analytical (use of sustainable development indicator) and systematic (framework for sustainable development, sustainability policy) perspective of sustainable development work.

The analysis showed an overall uniform picture, with slight differences in the structure of sustainable development work. Overall, the municipalities try with the resources they have to work at their best for a sustainable future for their municipality. However, there is room for improvement in terms of structural implementation, use of effective tools and involvement of the citizens.

Local sustainable development work has to stay in the current and future research focus. An overarching question should be how to determine what is incorporated in sustainable
development work. As the case study showed, many municipalities do not have a sustainability policy and therefore include related programs and policies for sustainable development as well. Hence, a more holistic scope should be chosen for future research to really capture the entire work efforts.

Furthermore, to assess the effectiveness of sustainable development indicators as a policy tool, politicians and decision maker need to be included in the research, preferably through interviews. The same applies to the integration of sustainable development: Here, employees from several departments should be asked about their opinions. For a more complete picture of local sustainable development work in Sweden, a research project including a web-based survey to all municipalities accompanied by semi-structured research interviews with at least a dozen municipalities would be appropriate. The research in municipalities will contribute to a better understanding of local sustainable development work. Identifying best practice cases as well as structural problems will help to find new routines and solutions, as well as improve the important sustainable development work.
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Mascarenhas, A; Coelho, P; Subtil, E; Ramos, T. 2010. The role of common local indicators in regional sustainability assessment. Ecological Indicators 10: 646-656.


Mineur, Eva. 2007. Towards sustainable development indicators as a tool of local governance. Umeå: Department of Political Science, Umeå University

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Appendices

I. List of Interviewees

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Name</th>
<th>Position</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Enköping</td>
<td>Camilla Wester</td>
<td>Environment strategist</td>
<td>9 April</td>
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<tr>
<td>Knivsta</td>
<td>Martin Wetterstedt</td>
<td>Energy strategist</td>
<td>18 March</td>
</tr>
<tr>
<td></td>
<td>Emma Hell Lövgren</td>
<td>Environment strategist</td>
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<tr>
<td>Nacka</td>
<td>Sabina Nilsson</td>
<td>Sustainability strategist</td>
<td>25 March</td>
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<tr>
<td>Uppsala</td>
<td>Ingela Hagström</td>
<td>Business developer for social sustainability</td>
<td>13 April</td>
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<tr>
<td>Västerås</td>
<td>Ingrid LegrellCrona</td>
<td>Plan architect</td>
<td>31 March</td>
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<td></td>
<td>Theresa D’Errico</td>
<td>Strategist</td>
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<tr>
<td>Växjö</td>
<td>Henrik Johansson</td>
<td>Environmental Coordinator</td>
<td>24 March</td>
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</tbody>
</table>
II. Interview guide

Min uppsats syftar till att undersöka hur kommunens förvaltning arbetar med hållbar utveckling, hur hållbarhetsindikatorer används inom administrativa kontexten och hur effektiva indikatorer, systembeskrivningar och ledningssystem används som verktyg i arbetet med hållbar utveckling på kommunal nivå.

Jag avser att intervjua hållbarhetsansvariga i ca 8 svenska kommuner och väljer i första hand de som har visat sig arbeta effektivt med frågorna. Resultaten kommer att redovisas i en masteruppsats vid Uppsala universitet/SLU i juni. Alla medverkande kommuner och individer kommer att få ta del av resultaten. Ett stort tack till alla som ställer upp för intervjuer.

Intervjun förväntas ta ca 1 timme. Den kommer att fokusera på följande område:

1. **Struktur och Ansvar**
Frågor angående din roll i hållbarhetsarbetet; ansvaret för hållbarhetsarbetet inom kommunen.

2. **Hållbarhetsarbetet i kommunen**
Frågor angående kommunens hållbarhetsförståelse; användning av verktyg såsom hållbarhetspolicy, vision och ledningssystem för hållbarhet; kommunikation av hållbarhetsarbetet till medborgarna.

3. **Hållbarhetsindikatorer och deras användning**
Frågor angående utveckling av hållbarhetsindikatorerna; uppföljning och rapportering; användning av indikatorerna.

4. **Resultat av hållbarhetsarbetet**
Frågor angående konkreta projekt och strategier för att förbättra hållbarhetsarbetet; praktisk integrering av indikatorerna och ledningssystem i kommunens förvaltning.
### III. Sustainable Development Indicators

<table>
<thead>
<tr>
<th>Indikatorer</th>
<th>Växjö</th>
<th>Enköping</th>
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<th>Uppsala</th>
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<td>Andel förnybar och återvunnen energi i kommunala lokaler (%)</td>
<td>Elanvändning, uppvärmingsenergi och miljöanpassad uppvärming i kommunägda fastigheter</td>
<td>Förnybar elproduktion</td>
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<td>Konvertering till fjärrvärme</td>
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<td>Transportenergi för tjänsteresor med bil (kwh/anst)</td>
<td>Miljöbilar</td>
<td>CO2-utsläpp från tjänsteresor med bil (ton/anst)</td>
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<td>Bilinnehav och körfrekvens</td>
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<td>Koloidioxidutsläpp, ton /inv</td>
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<td>Utsläpp av växthusgaser, kton /år</td>
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<td>Ökad insmältning av bioavfall</td>
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<td>Minskad andel deponirest</td>
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<td>Resultat före extraordinära poster kommunkoncern kr/inv</td>
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<td>Demografisk försörjningskvot</td>
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<td>Förvärsarbeteande invånare 20-64 år (%)</td>
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<td>Tillväxt</td>
<td>nyregistrerade företag, antal/1000 inv</td>
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<td>Eftergymnasial utbildning</td>
<td>invånare 25-64 år med eftergymnasial utbildning, ande (%)</td>
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<td>Hushåll med ekonomiskt bistånd som erhållit bistånd i 10-12 mån under året, andel (%)</td>
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<td><strong>Arbetslöshet</strong></td>
<td>Långtidsarbetslöshet 25-64 år i kommunen, andel (%) av bef.</td>
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<td><strong>Jämställdhet</strong></td>
<td>Lönegap median kvinnor - median män, kommunsektorn</td>
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<td><strong>Grundläggande utbildning</strong></td>
<td>Gymnasieelever som fullföjer sin utbildning inom 4 år, inkl IV</td>
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<td><strong>Hälsa</strong></td>
<td>Invånare 16 - 84 år med bra självskattat hälsotillstånd</td>
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<td><strong>Bohemindex</strong></td>
<td>Bohemindex</td>
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<tr>
<td><strong>Trygghet</strong></td>
<td>Anmälda våldsbrott i kommunen, antal/100000 inv</td>
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<tr>
<td><strong>Delaktighet</strong></td>
<td>Andel som röstat i valet till kommunfullmäktiga</td>
</tr>
<tr>
<td><strong>Demografi</strong></td>
<td>Folkmängd, efter ålder</td>
</tr>
</tbody>
</table>
IV. Visual Presentation of Sustainable Development Indicators

Enköping municipality

(Sveriges Ekokommuner 2015)

Uppsala municipality


Västerås municipality

(Västerås Stad 2015b)
Sysselsättning
Källa: SCB

Sysselsättning är central för bedömning av en kommuns och regions livskraft, både ekonomiskt och socialt. Kommuner kan i viss mån påverka sysselsättningen, även om konjunkturläge och strukturförändringar är viktiga faktorer. Växjö kommuns sysselsättningsgrad har ökat sedan den ekonomiska krisen 2009 men ökningen har stannat under 2012 och ligger på strax under 78%. Förvärvsrekvensen bland män är 79% och bland kvinnor 76%.

(Växjö Kommun 2014a, 12)