

Turning Point on Climate Change? Emergent Municipal Response in Sweden:
Pilot Study

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Richard Langlais, Per Francke, Johan Nilsson
& Fredrik Ernborg

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Nordregio
P.O. Box 1658
SE-111 86 Stockholm, Sweden
nordregio@nordregio.se
www.nordregio.se
www.norden.org

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Summary

The pilot study indicates that the number of Swedish municipalities responding to the issue of climate change appears to be increasing. It also tells us, however, that only some of them are engaged in concrete action. Learning that, an important question arises, “Why are only some Swedish municipalities responding concretely, while the majority is not?” A companion question is, “Who, and what, have made the *difference* in that smaller group of municipalities?” The pilot study reported on here is a step in addressing those questions.

In early 2007, researchers at Nordregio conducted a telephone-interview-based survey of the status of climate change work in all 290 Swedish municipalities. The survey was pursued until the response rate reached 100 percent. That has created an unusual and useful baseline for designing further studies. The pilot study, which includes the survey and its analysis, is the first step in a larger project designed to understand why and how municipalities respond to the issue of climate change. The purpose of the pilot study is to help identify those municipalities that are responding *most* concretely and actively. This work differs from earlier research in that it focuses on positive cases. In other words, it is not trying to understand why municipalities are *not* working on climate change issues, but rather, why they *are* responding concretely to those challenges. The fact that the pilot study establishes an initial baseline with data from each and all of the municipalities in Sweden is a valuable additional outcome.

The telephone contacts and the ensuing interviews were conducted by adopting a “citizens” perspective.” We wanted to know what happens when a citizen calls his or her municipal switchboard and asks to speak to “the person in charge of climate-change-related issues,” which is exactly what we did. That manner of enquiring via the switchboard avoids preconceived notions, and allows the municipality’s perspective on what the most appropriate answer might be to dominate. Since we were determined to get a response from each and every one of the municipalities, more than one thousand telephone phone calls were made. That method of exhaustive contacts and enquiries reflects a form of “quantitative-qualitative” methodology.

The pilot study’s results reflect that fundamentalist approach. In our efforts to have the switchboard operator determine whoever the most appropriate person in the municipality might be for an interview, we were connected to a variety of different personnel representing a broad spectrum between two extremes. In some (very small) municipalities, for instance, the only persons who were found for us were janitors and technicians in charge of indoor climate-control for the municipalities’ buildings. In another case, the operator interpreted “climate change” with the result that we were connected to a person working in a greenhouse growing vegetables for the local schools. Most of the time, however, the persons we interviewed were either the municipality’s Agenda 21 co-ordinator, or the environmental inspector. Occasionally, we were also able to interview individuals who were obviously at the forefront of thinking, worldwide, on the issue of municipal response to climate change.

The purpose of the survey was to provide data for selecting cases for later study of the processes behind municipal climate change response action. That data has resulted in a preliminary selection of candidate municipalities. That result will be used, in the next step of this project, with other material we are collecting, which in turn may result in a modification of our list of candidate municipalities.

The survey, perhaps unsurprisingly, did not provide an entirely positive picture of the level of activity among the municipalities in their work on climate change. The survey did clearly indicate, however, some of the many challenges they are confronted with when they do try to move forward. Among other factors, the relative absence of top-down policy from the national level provides little guidance for municipalities, at the same time as that vacuum creates, ironically, much “space” for them to generate local initiatives. Why those local initiatives manage to get started at all is a question for further research and an object of much admiration.

Acknowledgements

We are grateful to the Urban and Regional Planning Programme, at the Department of Human Geography, Stockholm University, for providing the opportunity for this collaboration with Nordregio. While still enrolled in that programme, and as part of its Praktikand component, three of us, Ernborg, Francke and Nilsson, were able to perform most of our work on this pilot study. At Nordregio, the conduct of the pilot study was influenced by helpful discussions with a number of Nordregio's Research Fellows, including Katarina Pettersson, Lisa Van Well and Margareta Dahlström. Johanna Roto produced the map in Appendix 1. Chris Smith did some of the language checking. Ole Damsgaard, Nordregio's Director, provided consistent support for the pilot study by ensuring that in-house funding was available, as needed, and for believing strongly in the value of our efforts. Finally, we thank each of the hundreds of un-named respondents on the hard-working staffs of all of Sweden's municipalities; the patience and generosity with which they addressed our persistent enquiries was an inspiration, and a precious gift. Thank you!

Because this is a working paper, we also acknowledge that it leaves much room for improvement and must certainly exhibit a number of weaknesses. We, the authors, accept all responsibility for those flaws, and welcome any criticism, suggestions, or other feedback.

(Please send any comments to <richard.langlais@nordregio.se>)

1. Introduction

This Nordregio Working Paper is motivated by an intense curiosity to know more about how our society is adapting to climate change. To address that, a number of us at Nordregio are pursuing research on several fronts. The study reported on here is our first step in learning more about why the climate change issue is motivating some Swedish municipalities to respond more *actively* and *concretely* than others, and whether this is different from how they have responded to more general calls for sustainable development. What are the motivations that succeed in making a shift to *acting* on climate change? This is especially interesting since the key literature on the subject laments that this is *not* happening. Have key individuals made the difference? Or is it other stakeholders who have pressed for change? Is it the particular local conditions? Is it informed global altruism, or crass economic calculation, or even both? The potential answers are many; the actual answers are only partially uncovered. Succinctly put, we are doing research to discover whether, in the work for sustainability, the increasing focus on climate change marks a significant *turning point*.

By studying the responses that are being made at local, municipal levels, we are moving closer to finding out whether there is something different about *climate* change, why that is so, and how that is being transformed into effective *social* change. What struck us at the beginning of this work was that no *comprehensive* picture was available of what was going on in Swedish municipalities, that is, in *all* Swedish municipalities. Even the most rudimentary overview was lacking. The only other attempt we knew of had only received answers from half of the municipalities (Rylander, 2005). We decided that we would take that as our point of departure.

Action on climate change gains relevance from, but is not explained by, its relation to sustainability. To what extent is that relation vital? Part of the answer lies in comparing the basic premises and messages, in asking how similar they really are, and in analyzing how various actors have interpreted them. A powerful perspective for discerning these fundamentals is gained by asking to what extent their attributes can be ascribed to changes at the municipal level, which in turn leads to wondering *who* the creative agents have been, and are, and *how* they have been proceeding.

The particular contribution of this study is that we have achieved a 100% response rate from the 290 Swedish municipalities. This was achieved by telephoning every municipality and asking to speak with those responsible for climate change issues. We let them decide who the best person for that would be, and their decisions in turn provided us with richer returns on our efforts. As a result of our persistence and their generosity, an initial baseline, for use in further studies, has resulted.

As we discuss in the following chapters, although the depth of the responses to each of our enquiries was necessarily limited, what is unique is that we conducted the study in such a manner that results were obtained from every single municipality in Sweden. This forms a rudimentary baseline from which to go forward. Notwithstanding that these initial results are only a beginning, it is now possible to proceed, on the basis of this study, in a systematic and constructive manner to build a much more thorough, comprehensive and solid understanding. Eventually, we hope to use this understanding in order to learn what has really worked in responding to climate change. This may be of use in the future, not only in Sweden, but elsewhere.

If we take sustainability as an issue for governance, we see that by now it has been discussed on numerous policy levels. The Brundtland Commission stabilized it as the slogan of a global consensus in the 1980s, and it has been moving in a top-down manner ever since, from global to international, to national and regional and on “down” to local levels. Now that climate change is joining it at those levels, with varying degrees of conceptual blending, it is possible that this marks a “tectonic shift” in the overall direction and quality of response, where the first local-level actions are generating feedbacks (now bottom-up) to the national and international levels. At the same time, the relations of power and the space for change are being re-arranged. The local appears in some cases to be superseding the national, and the relative weights of different jurisdictions are in flux. Our research asks to what degree this description is correct, since it indicates the manner, directions and speed with which planners, stakeholders and decision-makers will be expected to (re)act. To recapitulate, the following suite of questions captures the research logic and the milieu of enquiry we are pursuing to address the above objectives.

How and why has climate change action at the municipal level emerged? What – and who – has made it meaningful for municipalities to take steps, even the most minimal, beyond those they are *ordered* to perform (by, for example, the national government, among others)? Are there discrete, identifiable influences that lead to more tangible results, and have more power, than others?

Which municipalities in Sweden are acting most concretely? Who is doing what? Are any of their actions especially innovative when considered from an international perspective? Do they demonstrate that they understand the scientific “story” and knowledge about climate change in different ways?

As programmatic responses proceed, are specific spatial and regional development impacts (changes in employment, mobility, etc.) generated that can be of concern in Sweden and in the countries of the Nordic and Baltic Sea regions? How does that feed back to the originating municipalities? Can planners cope with explanations provided by different combinations of interdisciplinary studies, or with the need to develop 100-year plans?

1.1 The background for the pilot study

The fundamental image underlying the pilot study is based on several findings from the last few years. The first is one of the main results of a study by SMHI, the Swedish Meteorological & Hydrological Institute. In its survey of all of Sweden’s *county* administrations (Länsstyrelser), selected municipalities and other actors, it found that, “With few exceptions, no concrete implemented measures of adaptation to a changed climate have been able to be identified” (trans. ours; Rummukainen, et al., 35, 2005). That statement, striking as it is, is echoed by one made to us recently by Tom Hedlund, leader of a major government study (Sweden, 2006) of Sweden’s vulnerability to climate change: “Very few municipalities have begun concrete measures. There is as yet no deep-probing study of the climate-related responses of Swedish municipalities.” That statement has been an inspiration for the work reported here.

The two quotes above, from Rummukainen and Hedlund, create, for us, a “bird’s eye view” of Sweden as a flat landscape of uniform contour stretching away monotonously from one horizon to the other. Only a few mild protrusions of active response – the “few exceptions” noted by SMHI – appearing like small hills rising from the plain, have until now been visible to disturb that uniformity. The surprise today is that something has changed; the flat landscape has been modified, only two years after SMHI’s report, by more than just “a few,” or by even as many as “a dozen or so,” examples of municipalities that have embarked on programs of concrete response to climate change. Their number and degree of involvement appear to have grown. Our own study indicates this. That this may reveal a turning point is reinforced by studies showing that climate change has moved to the centre in sustainability work in the UK and Germany, and that this alters the relative involvement of national and local bodies, even though the concrete actions themselves remain minimal (Bulkeley, 2006; Bulkeley & Kern, 2006; Wilson, 2006).

1.2 Some other perspectives

What has happened in only a few short years? The increase, however modest, is still a momentous phenomenon, since, if negative aspects of climate change are to be averted or adapted to, municipalities will likely need to be engaged, even if it disturbs the judicial and political balance (Engel, 2006), and raises the ever-hovering spectre of tensions for democracy (Lundqvist & Biel, 2007). What works to galvanize municipalities to act concretely is not obvious; Wilson (2006) affirms this in her analysis of the intransigence of UK planning professionals and local political officials to engage in climate change response. The SMHI study mentioned above gives us a snapshot of that, but no analysis. It is urgent, therefore, that the actual responses we are seeing in Sweden are studied at much greater depth.

We emphasize that this initial study can only provide faint contours for guiding our next steps. We look forward to continuing to assess our results in the context of numerous scholarly works. For example, the work of Hukkinen (1999) shows how planning officials are co-opted in making sustainability-related decisions, even when they “know better.” Dolšák and Ostrom (2003) open the way for management of global-scale resources at local, human-ecological levels in terms of trust, social capital and common property. Detailed resolution of such processes of political ecology and the role of power in local-level sustainability policy and decision-making is found in Flyvbjerg (1998) and, with regard to reflexive governance, in the rich anthology by Voss, et al. (2006). Lundqvist and Biel’s (2007) work, on interaction between different levels of government in climate change programs, is instructive. The role of businesses (Holliday, et al., 2002), of the economy (Stern, 2006) and of innovation-motivated professionals in ecological modernization (Cohen, 2006) is provocative.

In the next chapter, we discuss several other studies that preceded this one, as well as some of the theoretical considerations that underpin the line of enquiry that this and ensuing studies will follow. Chapter 3 describes and discusses the Swedish context of the pilot study, providing brief capsule descriptions of the major programs and guidelines that municipalities in Sweden can choose to work with. The study itself – including its methodology, preparations and operation – is presented in Chapter 4. Chapter 5 presents the results, with both the nature of the modest baseline and the group of selected municipalities, as its principal contents. The final chapter discusses the strengths and weaknesses of the pilot study, a number of reflections and observations about the outcome, and the possibilities for further study that it opens up.

2. Theoretical and methodological considerations

When checking the literature for the potential precedents to this study, we found some theoretical postulations (see the above section) about how processes of municipal response to climate change might, could, or should, take place, but disproportionately little empirical research that describes or analyzes actual *concrete* attempts at *active* response. One reason is that to date such active responses have been few, thus making it even more imperative to study how they proceed, and why (Lundqvist & Biel, 2007; Wilson, 2006).

Bylund (2006), for example, studied a Stockholm Local Investment Programme case that concerned sustainability, not climate change response (although it is a good example of using actor-network-theory fruitfully). Winblad's (2005) study on women in climate change work in Sweden contains some quantitative analyses of the status quo regarding the number of women in climate-change/sustainable development-related job positions. A study by Rylander (2005), working at SNF, Sweden's Society for Nature Conservation, provides a minimal comparison for triangulation with this study's results. Its usefulness here is limited, however, since its approach and questions were different from this study's. It used a mail questionnaire and, although the response is impressive (approximately 50 %), it lacks the comprehensiveness (100%) that we sought. Nevertheless, it provides a valuable additional source for confirming the validity of our responses. (That study is described more in detail in Chapter 3.)

There is a slowly growing body of literature that considers how different kinds of knowledge integration take place in sustainable development and climate change work. Since integration takes place over time and usually implies simultaneous implementation of policy, the involvement of multiple levels of government and governance is often essential. As far as a turning point is concerned, it is fascinating to consider the role of the individual bureaucrat or stakeholder in that complex interaction. In their research on how high-level policy (i.e. the Kyoto Protocol and Swedish national policy) is implemented across and between multiple levels, even to that of the "individual," Lundqvist and Biel (2007) conclude, following Dietz, Ostrom and Stern (2003), that "nested layering" of institutional arrangements, a mixture of institutional types and "analytic deliberation" among the parties and the public can increase legitimacy of implementation processes in multi-level settings. In the same context, the specific issue of the use of cost instruments, trade-offs and their associated social dilemmas is discussed by Hammar and Jagers (2007). Pierre and Peters (2005) develop a typology of models of governance, between the extremes of "state-centric" and "governance without government," and use it to analyze institutional linkages and changing intergovernmental relationships, for example between the EU and domestic institutions. Vastly simplifying their sensitive and detailed analysis here, they argue for a middle way where institutions and the state continue to play important roles, but in an intensive complex of interactions both vertically and horizontally, between various actors in a flux of power relations.

When it comes to the actual implementation of policy, it is often left to planners to have to consider the implications of the trade-offs chosen so that the intended synergies can be secured and the potential for further synergies increased. Often, conflicts, hazards, costs, decoupling and risks are among the decelerating (Hibbard, et al., 2007) factors that are implicated when choices of strategies are closed. Schmidt-Tomé (2006), in his recent study of integration of risks, natural hazards and climate change into spatial planning practices, echoes, (interestingly, given the perspective), the conclusions of several of the authors above (Nilsson & Eckerberg, 2007; Lundqvist & Biel, 2007; Pierre & Peters, 2005; Dietz, Ostrom & Stern, 2003). He insists on the importance of detailed communication processes that ensure

“inter-disciplinary, inter-regional and inter-governmental cooperation to obtain multi-dimensional views . . . the development of appropriate adaptation strategies [in spatial planning] is a slow process that should integrate all relevant actors and stakeholders” (pp 27-28). In so far as those studies have made progress in identifying the important components in achieving appropriate combinations of different aspects of sustainable development, we in turn proceed to look at concrete responses and to follow the actors themselves, in search of the meaningful patterns that arise.

2.1 Regarding the present study

In order, then, to perform this theoretical and empirical enterprise, we have been, and will be, employing several techniques. The work reported on in this Nordregio Working Paper is only the first of several succeeding and complementary studies that need to be made. Here, we discuss only the work done so far.

We have collected the preliminary data that the survey produced and completed their initial categorization. To do that, we were inspired by the technique of micro-array pattern-recognition used in genomics, whereby large numbers of samples are scanned in order to perceive their level of activity for a given condition (Law, 2004; Latour, 2005; Bruun, Forthcoming 2007). Analogously, every municipality in Sweden was contacted by telephone in order to conduct interviews of those in charge of climate-change-related matters. That allowed us to make the first rough choice of municipalities for later study. That choice is the result reported on in this Working Paper. (We describe that method in more depth in Chapter 4.)

The next priority remains to finalize the choice of the “target municipalities.” We are currently refining the analysis of the preliminary level of data (from the survey) along with other data as follows. By applying several detection indicators that we have derived for discovering candidate municipal activity, the results of the phone survey are being cross-checked with other data from other sources (e.g., municipality membership in international climate change organizations and networks, consultations with national authorities, and so on). Candidate municipalities will then be re-assessed for usefulness as final choices for further study. We have already tested this approach in an even earlier, in-house pilot study, which produced a first-level functional scan of candidates. The data from the present initial step have been used to produce the first map showing the coarse levels of climate change response activity of all Swedish municipalities. We emphasize that the levels of response indicated on the map are comparative, not absolute. The map is shown in Appendix 1. The further steps in this work will be described in ensuing reports from Nordregio’s climate change response studies.

Now that the work so far has been summarized, the following chapter discusses two earlier Swedish studies and their direct relevance for this study.

3. The case of Sweden

From a Swedish perspective, the start of climate change work can be said to have begun with the implementation of Agenda 21. Sweden's municipalities obliged themselves to start their Local Agenda 21 programs in 1996. The municipalities pledged to act as an example and to work actively to include municipal actors in environmental work. It was also deemed important that the general public was involved, through informing them about what they could do to contribute to sustainable development on the local level. The element of climate change-related work in the Local Agenda 21 documents was limited. It was during the latter part of the 1990s, in connection with the Kyoto Protocol, that the climate change issue would come into larger focus in connection with the issue of greenhouse gas emissions. A number of municipalities then chose to take on a more active response to the climate change issue by incorporating climate objectives in their local Agenda 21-documents. When the national government offered grants through the Local Investment Programmes (LIPs), municipalities became more active in their work with above all energy-related issues, in order to decrease their emissions of greenhouse gases. That in turn led to an increase in the municipal response to the climate change issue.¹

A study of the municipalities' increased commitment to working more actively on climate change issues was performed by SNF, the Swedish Society for Nature Conservation (Svenska Naturskyddsföreningen). The resulting report (Rylander, 2005), *Kommunernas klimatarbete – klimatindex för kommuner 2005* (trans. The Municipalities' Climate Work – Climate Index for Municipalities 2005), presents a "climate index" that is based on an evaluation of each municipality's climate work; each of the municipalities that responded is ascribed grades for the various climate measures undertaken in one or another fashion. The survey was limited to one of the sixteen national environment objectives, that is, "limited climate influence" (Swedish, "begränsad klimatpåverkan"). The basis for the index consists of a survey with a questionnaire that the municipalities had the opportunity to respond to.

SNF mailed its questionnaire to each of Sweden's 290 municipalities. From the 135 answers received, it is suggested that there are many municipalities that work actively to decrease their emissions of greenhouse gases. Furthermore, the survey revealed that an overwhelming majority of the measures taken are within the energy sector, where energy efficiency improvement, renewable district heating and providing energy advice are the most common measures. An explanation for the latter can be the effect of national government grants programs, such as LIP (Local Investment Programme) and KLIMP (Local Climate Investment Programme), which increase the municipalities' incentives to work more actively on climate change-related issues. The report also states that measures in the traffic sector are rare, and that the measures taken are limited to such items as expanded bicycle paths and public transport. According to SNF, the good outcome from the LIP and KLIMP investment subsidies indicates that there is strong support for the work with climate change issues among decision-makers at the national level.²

The SNF study looked at the municipalities' climate work in general; the results indicate that the measures that were taken were of a more reactive nature. In February, 2005, another report, this time by SMHI, the Swedish Meteorological and Hydrological Institute, provided a different perspective. The SMHI report, entitled *Anpassning till klimatförändringar* (Adaptation to Climate Change), discussed their own study of how different actors within Swedish society are planning to adapt to a changing climate. (The SMHI study was financed by the Swedish Environmental Protection Agency, or Naturvårdsverket.) The SMHI study focused on a search for a particular set of actors. The actors are those who undertake analyses of the public adaptations that should be made as a result of the effects of a

¹ SNF (2005) p. 2

² Ibid. p. 3

changing climate. The report focused on the actors' proactive work. It was thus important to map the need for adaptation, the initiatives that were being planned and implemented, as well as the protection measures related to the effects of climate change.³ The SMHI study used questionnaires, which were sent to each of Sweden's *counties*, relevant authorities, sector and interest organisations, companies, research financiers and thirteen *municipalities* (of 290). In total, ninety questionnaires were sent to the different organizations; seventy-nine responded. The survey was later complemented with reports and other types of documents produced by the different actors taking part in the survey.⁴

One of the main findings of the SMHI study is that there was much uncertainty among the actors about who had responsibility, and for what, with regard to the climate change issue. Many of the respondents called for study and analysis of the directions that Parliament and the government had handed down, since it was felt that ambiguity prevailed. The issue of unclear division of responsibility became obvious through the replies from the municipalities, counties and other authorities, who expressed that although they could imagine that they had certain responsibilities in relation to climate matters, they were nevertheless unsure. It was also established that almost no actors have analyzed how they would adapt to climate change. A majority, on the other hand, have undertaken analyses of the effects of a changing climate. When it came to concrete adaptation measures to climate change, no such activities, with only a few exceptions, could be identified. The SMHI study's authors called not only for more research on specifically the latter point. They also called for more activity by the actors/respondents in addressing how they could act more concretely and proactively when it comes to adaptation to climate change.⁵

Both the SNF and the SMHI studies are part of the legacy that the present study is building upon; it seeks to address the gaps in knowledge that they in part identified. It does so by providing a qualitative basis for identifying those Swedish municipalities whose work within the climate change issue is characterized by pro-activeness and a high degree of concretion. In order to achieve any distinguishable contrast between those that stand out and the mainstream, it has been necessary to create a "normal" background against which to detect the candidate municipalities. The next section does just that by describing the obligations that all Swedish municipalities have, and share, as well as the opportunities and forms of collaboration that they have at their disposal for adapting to climate change.

3.1 Municipal obligations and possibilities

In this section, we consider the obligations and possibilities that Swedish municipalities have concerning the climate change issue. The objective with this section is not only to clarify the state's role regarding both the current national environment objectives and the local investment subsidies available from the state, but also to show the different possibilities that the municipalities have for participating in different networks concerned with climate change issues.

3.1.1 The Swedish Environmental Protection Agency and Sweden's 16 environmental objectives

At the governmental level, the Ministry of the Environment is responsible for the environmental/climate change interface. Under the ministry, a number of different authorities are represented, where The Swedish Environmental Protection Agency is a central administrative authority in the environmental arena. It works to promote sustainable development, based on the environmental objectives set by Parliament. The agency's main

³ SMHI (2005) p. 2f

⁴ SMHI (2005) p. 6

⁵ SMHI (2005) p. 3

objective is to set central standards and to coordinate and evaluate environmental work (see Figure 1, below). Above all, this includes both the duty to inform and to ensure that environmental laws are followed, while also assisting the government and the Parliament on environmental policy. Furthermore, the agency functions by serving as a guide to other central, regional and local authorities in respect of environmental issues. Another important part of the work carried out by the agency is to clarify how laws should be interpreted through the creation of regulations, manuals, etc., and by holding general councils on the topic. In addition, The Swedish Environmental Protection Agency also acts to ensure that the law is adhered to, while also evaluating whether legislative changes are needed and, where applicable, forwarding specific changes to be implemented.⁶

The Swedish Environmental Protection Agency interacts with various public authorities, private companies and sector organisations. It has also set up, and participated in, a number of different networks, both in Sweden and internationally, at the EU level. In Sweden, both the counties and the municipalities are important collaborative partners, since they are responsible for environmental issues on the regional and local levels. A central focal point in this respect is the Swedish Riksdag's list of sixteen environmental objectives (the first fifteen were adopted in April 1999, the sixteenth in November 2005.). The Swedish Environmental Protection Agency is not, however, the only body responsible for all environmental objectives. Other authorities and agencies also have a role to play, for example, The National Board of Housing, Building and Planning, The National Chemicals Inspectorate and The Swedish Radiation Protection Authority are responsible for the environmental objectives that concern their various areas of responsibility.⁷

<i>Objectives for which The Swedish Environmental Protection Agency is responsible</i>	<i>Objectives for which other agencies are responsible</i>
<ul style="list-style-type: none"> • Reduced Climate Impact • Clean Air • Natural Acidification • A Protective Ozone Layer • Zero Eutrophication • Flourishing Lakes and Streams • A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos • Thriving Wetlands • A Magnificent Mountain Landscape • A Rich Diversity of Plant and • Animal Life 	<ul style="list-style-type: none"> • A Non-Toxic Environment • A Safe Radiation Environment • Good-Quality Groundwater • Sustainable Forests • A Varied Agricultural Landscape • A Good Built Environment

Figure 1: Responsibility for environmental objectives (Source: The Swedish Environmental Protection Agency)

In relation to the environmental objectives, municipal obligations remain poorly focused. An initial general overview shows that municipal responsibilities in respect of climate change are, in principle, rather diffuse, with the municipalities not actually obliged to do anything.

⁶ www.naturvardsverket.se

⁷ Ibid.

The municipalities are, however, responsible for the maintenance of a “good habitat” at the local level and, according to Parliament, they have overall responsibility for local implementation of national environmental and public health objectives. The municipalities are also considered to have an important role to play in pursuing a dialogue with their citizens as regards how the environmental objectives are to be achieved. The outlines of that work vary, although the introduction of environmental management systems and routine coordination with the local Agenda 21 work commonly occur. The Agenda 21 processes in Sweden’s municipalities have provided a good basis from which to develop the work with the environmental objectives already outlined.⁸ In addition, there are the so-called Environmental Quality Standards, initially introduced when the Environmental Code was implemented on January 1, 1999. Environmental Quality Standards are a novel governing tool in the context of the Swedish environmental legislative system.

It is not always clear what applies when implementing the regulations. It is important to emphasize that for certain issues that have been pursued by the introduction of the Environmental Quality Standards, there are no simple and straightforward answers. In some cases a legal precedent needs to be set.⁹

Currently, no specific Environmental Quality Standard has been set for the climate change issue, further emphasizing the current and somewhat inadequate situation with regard to municipal obligations. According to the first environmental objective, municipal obligations seem to focus primarily on encouraging change and the provision of a supportive environment. It is worth noting here, however, that the municipalities are required to establish an energy plan. In accordance with the law on municipal energy planning (1977: 439), each municipality should have an up-to-date plan for the supply, distribution and use of energy. The plan is to be established by the municipal council.¹⁰ On The Energy Agency’s homepage the following stipulation is expressed:

It is important to have an overall vision in respect of energy planning and to take its environmental effects in consideration through a local, regional and global perspective through an environmental analysis and an assessment of how the environment, health and the management of resources will be affected by various measures or energy systems.¹¹

3.2 State investment subsidies: LIP and KLIMP

Both Parliament and the government have decided to boost the environmental work already being done in Sweden’s municipalities by offering subsidies. The Local Investment Programme (LIP) and the Climate Investment Programme (KLIMP) are designed to both stimulate and support the municipalities in their environmental work. The LIP is a more general environmental subsidy, while KLIMP has a more focused aim in climate measures. Both subsidies, however, require municipal co-financing.¹²

⁸ miljomal.nu

⁹ www.naturvardsverket.se

¹⁰ www.stem.se

¹¹ Ibid.

¹² www.naturvardsverket.se

3.2.1 LIP – Local Investment Programme

The LIP began after Parliament accepted the regulation (1998:23), which stipulates that state subsidies to local investment programmes will increase ecological sustainability in society. A secondary aim here is to stimulate employment. The thought behind the programme is summarized in four sections where LIP will: start with the municipality's unique situation and permit priorities for local environmental problems, be based on a bottom-up approach and ongoing Agenda 21 work, be linked together with the municipality's overall environmental work, ensuring that the "global" end result is magnified beyond the sum of its individual parts.¹³

During the period 1998-2002 some 6.2 billion SEK was released by the state through The Swedish Environmental Protection Agency, and 211 investment programmes were implemented in 164 municipalities and in two municipal associations. Within the framework of those 211 investment programmes, some 1,814 measures have been undertaken. In total, approximately 27.3 billion SEK has been spent on various LIP-projects and approximately 20.7 billion SEK of this total on specific environment investments.

The municipalities applying for these environmental subsidies can do so individually or in collaboration with other actors. The municipality is also responsible for meeting the requirements of the regulations. There are however no specific requirements in respect of technological systems or solutions since the main objective here are to decrease the environmental impact. "The results are our focus—not the way in which they were produced."¹⁴

3.2.2 KLIMP – Local Climate Investment Programme

Following the discontinuation of LIP subsidies, KLIMP emerged in its place. The main objective of the KLIMP programme is to foster a reduction in greenhouse gas emission levels and, in connection with a specific KLIMP project, conduct information campaigns in respect of the project.¹⁵

Municipalities, counties, firms and other local actors have, since 2003, been able to apply for KLIMP-subsidies from The Swedish Environmental Protection Agency. Between "start up" in 2003 and May 2006 a total of some 1.1 billion SEK had been disbursed to various programmes. The total investment volume within the framework of KLIMP has however been 4.7 billion SEK since KLIMP-financing like that associated with the LIP requires co-financing from the receiving actor. The period of a KLIMP programme is four years after which the results are reported to The Swedish Environmental Protection Agency. The agency then makes a final assessment which will be the basis for the final amount that is allocated to the KLIMP-project and this assessment is based on how the results correspond to the stipulated objectives of the project. As such then the final reporting of projects from the first four year period will take place during 2007. The Parliament also decided that during 2007 and 2008, KLIMP funding will be increased by some 395 million SEK a year.¹⁶

Among the KLIMP-projects attracting funding during the period between 2003 and 2006, two dominant areas emerge with energy (production and distribution) and transport (road traffic) together allocated more than 50 percent of the total available funding.¹⁷

¹³ www.naturvardsverket.se

¹⁴ www.naturvardsverket.se

¹⁵ www.naturvardsverket.se

¹⁶ Ibid.

¹⁷ Ibid.

3.3 Networks for municipal cooperation: The Swedish Eco Municipalities & the Swedish Network of Municipalities on Climate Change

There are a number of municipal cooperation initiatives in network structures linked to the climate change issue where members work together in order to raise awareness of the climate change issue. The idea here is to support each other in the climate work and to share knowledge and experience. The two largest networks are: The Swedish Eco Municipalities (SEKOM) and The Swedish Network of Municipalities on Climate Change (KK). The Swedish Network of Municipalities on Climate Change and The Swedish Eco Municipalities.

3.3.1 The Swedish Eco Municipalities (SEKOM)

The concept of Eco-Municipality was originally launched in the Nordic countries in 1980 by the Finnish municipality of Suomussalmi. In 1983 the concept was introduced to the Swedish municipality of Övertorneå. These municipalities remained, at this early stage, the only Eco-Municipalities in the Nordic countries.¹⁸

The work undertaken in Övertorneå, towards the development of the eco-municipal concept eventually inspired many other municipalities in Sweden. A network of eco-municipalities was formed in which about 15 other municipalities participated. The network was formed in response to increasing municipal demand for support in their ecological sustainable planning. In 1995 when the network was formed, a decision was also made to create a common secretariat to service the municipalities within the network. The association is non-profit driven and has subsequently grown to include 68 Eco-Municipalities. The member municipalities are represented by both a civil servant and a politician, something that is supposed to ensure the creation of better conditions for environment and climate change issues gaining in importance within the municipalities.

The objective of the network is to help all of Sweden's municipalities to become sustainable. An important part in their work practice is that politicians and civil servants in the municipalities exchange experiences and knowledge concerning the climate change issue. This is carried out among other things via SEKOM's intranet and through regular common meetings. SEKOM has established twelve common Green Key Figures, which were implemented in 2002. The Green Key Figures are monitored in each of the member municipalities in order to register whether their measures have had the desired effect. The Green Key Figures are divided between the two sections: the municipality as a geographical area and the municipality as an organization. The Green Key Figures are chosen in such a fashion as not to become a large additional workload while, in addition, they should be of interest to the other member municipalities. They should also be designed to be as concrete as possible to ensure that they are as achievable as possible through an active approach to municipal work.¹⁹

During 2006 an environmental communication project was carried out between The Swedish Eco-Municipalities and the Swedish network of municipalities on climate change. The project was financed to a certain extent by the Environmental Objectives Council through The Swedish Environmental Protection Agency with the central objective being to increase the competence of responsible officials. Furthermore, an important part of the project was to communicate environmental issues on the local level in order to make it possible for municipalities and other organisations to implement the information campaigns that contribute to the achievement of Sweden's environmental objectives.²⁰

¹⁸ www.sekom.nu

¹⁹ Ibid.

²⁰ Ibid.

3.3.2 The Swedish Network of Municipalities on Climate Change

The Swedish Network of Municipalities on Climate Change (KK) is a network of municipalities working actively with the climate change issue and whose overall aim is to reduce greenhouse gas emissions. The network was founded in 2003 on the initiative of the municipality of Lund, which also serves as the host municipality. KK is primarily financed by The Swedish Environmental Protection Agency and its members today include: Malmö, Lund, Luleå, Kristianstad, Växjö, Götene, Helsingborg, Hässleholm, Falköping, Lidköping, Mölndal, Olofström, Stockholm, Säfte, Södertälje, Uppsala, Åmål and Östersund. KK supports municipalities that want to take on the climate change issue and is an instigator for the national climate work through its focus on the important possibilities, obstacles and driving forces that impact the results of climate change work. The networks also help to distribute information and experiences of local climate work with a view to increasing knowledge levels in respect of the complex problems related to the climate change issue. KK also works to establish international co-operation in order to gain contact with similar networks in other countries. By this means KK hopes to set an example for all Swedish municipalities to follow, since they want each to find someone to whom they can compare themselves.²¹

Membership is free but there are certain requirements involved in becoming a member. The municipalities are required to establish environmental goals at the political level. These goals require the municipality to work for continuous reductions in greenhouse gas emissions, to set goals for the reduction of emissions, to create an action plan and to implement measures in order to decrease emissions and continuously inform the network about their work in progress. The overall objective of the network is then that, before the end of 2008, at least half of Sweden's municipalities will have participated in the network's activities and that the network, during this period, will have grown to approximately 25 members. Furthermore, the network will annually summarize obstacles and possibilities within the local climate work.²²

In the autumn of 2006, it was possible for small municipalities with an inhabitant number of (maximum) 15 000 to attend the project Climate Coaching, an aid in the local climate work for small municipalities. The project, with 23 participating municipalities, is run by KK and the aim here is to create the basis for long-term climate work in smaller municipalities who today lack a climate strategy or a corresponding plan. During the project period from 1 January 2007, to 15 April 2008, all participating municipalities will receive "custom-made" help from a climate coach based on an individual needs analysis. The objective is also to initiate work processes in order to create a climate strategy, update the municipality's energy plan and to renew environmental objective programmes. Participating municipalities receive a contribution of some 50 000 SEK which can be used for funding measures within the project. In return, each participating municipality undertakes to sign a declaration of intent authorized by the municipal executive board. The declaration of intent will, among other things, contain a promise that the municipal council will prescribe a proposal for a climate strategy within a time period of two years. The municipality will also contribute in the form of local research resources or measures an amount rising to at least 50 000 SEK. The municipality also receives support from a "mentor" municipality who is already a member of KK and thus has the experience to contribute with suggestions and strategies in respect of local climate work. The mentor municipalities are Åmål, Kristianstad, Malmö and Stockholm.²³

²¹ www.klimatkommunerna.infomacms.com

²² Ibid.

²³ Ibid.

4. The survey

For this study, a survey of all of Sweden's 290 municipalities was carried out. Because of our persistence with the method (qualitative interviews conducted by telephone), and patience from our respondents, thoughtful responses were received from every one of them, that is, a 100% response. The main goal of the survey was to discover which of the municipalities are actually carrying out *concrete actions* with regard to the climate change issue. The emphasis in the survey was to gather data about *what the municipalities themselves considered as being their concrete actions*. As part of that, the survey was receptive for any mention of the goals that were motivating their work, as well as any allusion to what the underlying driving forces might be. Of equal interest were any references to individuals or other actors who were considered as having taken the initiative (and why) in any of the actions cited. The ultimate purpose of the survey was to assist in identifying those municipalities that stand out from the mainstream in working more actively and concretely than others on the climate change issue. It was, therefore, intrinsically comparative. The data collected is in turn already feeding in to other on-going studies at Nordregio.

In the first section of this chapter, the study's design and implementation are presented in detail. For those who would prefer to proceed directly to the data, they are presented in Chapter 5, below.

4.1 Design and implementation of the survey

A number of steps were involved in the performance of the survey. To summarize, the first step was to create a structure for the interaction that was anticipated to occur with each telephone contact with the municipalities. The next step was to design a template that would underlie each interaction with a municipality, from the moment of first contact, usually with the switchboard, to the ensuing more in-depth interview opportunity, whenever it finally occurred. Once the template was ready, we could begin the step of telephoning each and every municipality. After completing all of the telephone calls, what remained was to transcribe the responses, then to sort and, finally, categorize them. Each of those steps is considered in more detail in the respective sections below.

4.1.1 Preparing the survey

For this study, a survey of all of Sweden's 290 municipalities was carried out. Because of our persistence with the method (qualitative interviews conducted by telephone), and patience from our respondents, thoughtful responses were received from every one of them. The main goal of the survey was to discover which of the municipalities are actually carrying out *concrete actions* with regard to the climate change issue. The emphasis in the survey was to gather data about *what the municipalities themselves considered as being their concrete actions*. As part of that, the survey was receptive for any mention of the goals that were motivating their work, as well as any allusion to what the underlying driving forces might be. Of equal interest were any references to individuals or other actors who were considered as having taken the initiative (and why) in any of the actions cited. The ultimate purpose of the survey was to assist in identifying those municipalities that stand out from the mainstream in working more actively and concretely than others on the climate change issue. It was, therefore, intrinsically comparative. The data collected is in turn already feeding in to other on-going studies at Nordregio.

4.1.2 Preparing the template

The interview template contains three main topics and is used by the person conducting the interview. The use of a template was important for maintaining consistency during the performance of such a large number of interviews by three different persons.

Three main topics were central for the template:

- whether a municipality is active on climate change response, and its level of concretion
- the background motivation and aims for the chosen actions
- how and when the work started and by whom.

To make the template operational, the topics were reformulated as questions:

- *Question 1: Is your municipality taking any concrete measures (and what are they) related to the climate change issue?*
- *Question 2: What goals (and the reasons for them) does the municipality have with regard to its climate-related work?*
- *Question 3: Who started this work and when?*

In order to make the collection of data during the interviews as simple as possible, the template was reproduced as a standardized form, on paper. This was used by the interviewer during the contact with the municipality: one municipality, one form, and vice versa. Ample space was left for manual note-taking during the conversations.

In each field for each individual contact, there are several empty rows for additional comments of interest, in addition to the usual factual contact data. The reason for providing two fields (for recording the names and title of the respondents) for transfer calls is based on the assumption that it would normally take at least two calls for completing the entire contact with each municipality. The question area of the form is divided into three fields, for writing in the responses and qualitative observations about the approach and content of the respondent.

Before the actual survey was begun, a number of test interviews were carried out, through role play, which were in turn examined and evaluated for effectiveness and improvements. The idea was also to practice a natural conversational style for the interviews. That also provided a check on the appropriateness of the form. When we were satisfied that the template and the standardized form, as well as the procedure and interview technique, were sufficiently stabilized, we could begin with the several-weeks-long process of contacting each of Sweden's 290 municipalities.

4.2 The contact and interview procedure

The object of the study was to discover what we didn't already know about concrete climate change responses in Swedish municipalities. It was therefore important that we established contact with each municipality in a particular way. On the one hand, we wanted as much as possible to avoid having any preconceived notions. On the other, it was essential that the enquiry was done so that it would be *the individuals who represented the municipalities who would tell us what they themselves considered to be the appropriate answers to our questions*. In other words, there should be as much self-selection as possible by each and every respondent, at all levels of the contact. An example might better clarify what we mean. It has been common for observers of the study to ask, when they understood that we were proceeding to phone every municipality, if when we phoned we called directly to the, for instance, "Environmental Protection Officer," or some similarly designated staff person. Our reply is that, no, we

simply phoned, as any citizen might, to the public switchboard for the municipality, and asked to speak to anyone who could tell us what the municipality was doing in the way of climate change response. The selection that the switchboard operator made was therefore interesting in and of itself, and useful as data.

In other words, we consciously adopted a *citizen's perspective* when making our first contact with the municipality. Every moment of the call would thus become important for our knowledge of the municipality's approach. For example, how the switchboard operator answered our query, whether he or she provided information to us themselves, or immediately passed us on to someone else, who was in turn more, or less, knowledgeable, became important for our analyses. All the time, the attention was focused on the respondent's reaction and how he or she handled the situation. How was their response? Was the respondent used to these types of questions? To whom would we be transferred from the switchboard? When speaking with the switchboard operator we adopted as passive an attitude as possible, in order to let the operator decide how to react to our requests.

The municipal register maintained by Statistics Sweden (SCB) was used in order to create a catalogue of all municipalities in Sweden. We listed the municipalities alphabetically, to create a geographically neutral randomisation of the order in which we would contact them.

The results section (see Chapter 5) discusses and describes the variety of the responses in more detail. It is nevertheless worthwhile to mention here that the reaction that we most often received to our calls was confusion. Our queries were often responded to with such telling counter questions as, for example, "Indoor or outdoor climate?" or "What do you mean?" or "Is this environment-related?" Often, similar responses were received even from those whom we spoke with in the municipality's technical departments that we had been transferred to.

In our contacts with each municipality, the chain of referrals eventually came to a stop only when we reached the person who was considered by his or her colleagues to be the most suitable for answering queries about climate-change-related issues. Most frequently, the person we ended up talking with was an officer from the municipal environmental office (an inspector, a manager, an Agenda 21 coordinator, an ecologist, or, in some cases, an energy adviser).

Once a full presentation of the survey was made, we would then proceed with the questions. In connection with the first main question, the respondents' response was often characterized by hesitation and counter questions, such as: "What do you mean with concrete measures?" Our reply was that we were leaving that for them to decide. Our role as interviewers was not to lead the respondents in their answers, but to notice which measures, intentions and aspirations they considered to be concrete. Occasionally, the respondents wished to expand upon their previous comments, which in turn led to the interview's continuation on a more informal basis. This was important to recall in connection with the eventual analysis of the municipality's responses.

During the interviews, only a small portion of the time could be used for note-taking, which in resulted in the use of keywords and a few representative sentences, as a kind of evolved shorthand. That transcription provided an opportunity for clarifying the interview responses, once each contact was completed. In order to minimize the potential for errors, the person who performed the interview also did the transcription.

4.3 Some considerations about the categorization

On the basis of the collected and transcribed data, the municipalities were categorized according to six sets of criteria, for the study's internal use. The categorization was an aid to making a selection of interesting candidates for later study.

The development of the criteria for the categorization was also partially affected by the character and quality of the data that we collected. That is, when beginning to analyze the data, the categories were refined according to the kinds of differences that we were beginning to see in the municipalities' responses. For example, we hadn't expected to find municipalities with a decreasing level of activity, but the existence of such responses did indicate the need for such a category. In those cases where some degree of uncertainty arose, the person who performed the interview, after discussion with the working group, had the final decision. The characteristics of each category can be summarized as follows:

- Category 1: no special activities; no particular response
- Category 2: ambition to develop some concrete response
- Category 3: some concrete activities according to governmental *guidelines*
- Category 4: fewer activities compared to previous level of engagement
- Category 5: wide variety of activities at a stable and even rising level
- Category 6: wide variety of activities with exceptional engagement.

It was impractical to have too many categories. Nevertheless, the distinction between categories 5 and 6 has been retained, mainly for the purposes of sorting, although in practice each of them indicates a "wide variety of activities." Since the point of the survey is *to serve as a basis for a qualitative selection* of those municipalities that are exceptional, the distinction is meaningful. It is important to note that, although the categories range from 1-6, this is *not* intended as a definitive order of preference. In other words, category 1 is not "worst," nor category 6 "best." The municipalities that we have been able to place in either category 5 or 6 are those that we consider to be most interesting for the follow-on study, which at time of writing has not been completed yet. To illustrate, municipalities in category 5 appear to have more stable and established climate work underway than do those in category 6; those in category 6, on the other hand, do seem to have "something else" underway than those in category 5. It is that "something else" that is deemed as being exceptional (when compared to what we could see was going on in categories 1-5). For example, category 6 municipalities are carrying out projects and working with new perspectives on climate-change-related work that can provide insightful lessons for other municipalities. The categories are for the purpose of comparison and selection for later study. Again, we are not seeking to label any municipality as "best," or "the winner," but to understand more about why some municipalities are so much more active, and in what way, than others.

5. Results

We undertook a comparative categorization of all 290 Swedish municipalities according to the data we had collected in the survey. The data was a result of conversational interviews undertaken by telephone, as described more fully above in Chapter 4.

The categorization indicates the degree of the municipalities' engagement in concrete action on climate change response. 48 municipalities were identified as noteworthy in that regard, according to the following categorization:

- 35,4 percent (17 municipalities) in category 6 (of a total of 18 municipalities in cat. 6)
- 52,1 percent (25 municipalities) in category 5 (of a total of 25 municipalities in cat. 5)
- 4,2 percent (2 municipalities) in category 4 (of a total of 9 municipalities in cat. 4)
- 6,3 percent (3 municipalities) in category 3 (of a total of 119 municipalities in cat. 3)
- 2,1 percent (1 municipality) in category 2 (of a total of 45 municipalities in cat. 2)
- 0 percent (0 municipalities) in category 1 (of a total of 74 municipalities in cat. 1)

Although 48 municipalities were considered as potential candidates, only those 43 that appeared in categories 5 and 6 are highlighted on the map in Appendix 1.

The 48 municipalities, in alphabetical order, are:

Arvika	Jönköping	Söderhamn
Boden	Kiruna	Tidaholm
Borlänge	Kristianstad	Tranemo
Eksjö	Kungälv	Trelleborg
Enköping	Lerum	Trosa
Eskilstuna	Lidköping	Uddevalla
Eslöv	Linköping	Ulricehamn
Falköping	Lund	Uppsala
Gotland	Mölnadal	Varberg
Grästorp	Nacka	Västerås
Göteborg	Nässjö	Växjö
Hammarö	Olofström	Åmål
Helsingborg	Sala	Älvdalen
Hudiksvall	Skövde	Örnsköldsvik
Hultsfred	Stockholm	Östersund
Hällefors	Säffle	Övertorneå

From those 48 municipalities, yet another selection was made. This was done because we wanted to limit the size of the final group as much as possible for the sake of the follow-on study, which will be case-based.

The criteria used for the final selection were that the municipality: 1) in addition to undertaking “normal” (in the Swedish context) environmental, sustainable development and climate-change-related work, not only has one or more on-going projects that can be considered as concrete and action-oriented, but they can be considered to be *exceptional* and 2) appears to have made its climate-change-related work an *essential*, increasing part of municipal activity.

10 municipalities fit those criteria. In spite of our receptiveness to municipalities in all categories, only some of the municipalities from category 6 (12 municipalities) and from category 5 (13 municipalities) were included in the final grouping.

5.1 The selected municipalities

The final selection, along with a visual representation of the location of the municipalities in categories 5 and 6, are illustrated on Map 1 (see Appendix 1). Since the data regarding the municipalities in categories 1-4 remain inconclusive, they are grouped together on the map.

The final grouping of municipalities that we selected on the basis of the data collected is presented below, in alphabetical order, in order to avoid any sense of their being competitively ranked. Brief summaries of those characteristics that are of note are provided for each. The characteristics were collected from the respondents in our telephone interviews.

Boden

Category: 5

For Boden, the issue of sustainable development is an accepted attitude that permeates the municipality’s overall work, based on a long history of working with sustainability issues. Furthermore, Boden took the initiative in starting the network of “Swedish Eco Municipalities.” They have recently focused more on the climate change issue, separate from general sustainability work, and use KLIMP (Local Climate Investment Programme) funding to initiate projects, particularly within the fields of transport, energy and educational campaigns. Each year sees a different project and a specific theme. Boden is not, on the other hand, a member of The Swedish Network of Municipalities on Climate Change, since they consider the network of Swedish Eco Municipalities as a slightly better alternative. Boden has also established good relations with the neighboring municipalities of Luleå, Piteå and Älvsbyn regarding their work on climate change issues. In sum, Boden represents a case of early adopters, with a long history of sustainability and climate-change-related work. Its scope on the issue is broad, and it has now integrated climate work to the point that it considers it a “natural” part of not only municipal work, but everyday life. Boden has high ambitions and a prominent engagement, which promises the potential for high-quality climate work.

Grästorps

Category: 6

This is a small municipality that appears to have an entirely different view on environmental and climate issues than the usual municipality. Here, the presence of locally-produced food and energy is regarded as natural; this together with the prominence it claims that working on climate change matters has, was surprising. The respondent emphasized that their view is that environmental- and climate-change-related work should be “cheap, simple and fun,” and that Grästorps is “very good at the bottom-up approach. I actually believe we are best.” The entire contact with the municipality and the main interview itself were characterized by a

positive response regarding the climate change issue, with the statement that it should not be seen as a problem, but as a possibility. The way in which this position is manifested and translated into positive action makes this municipality attractive for further study. How does its positive stance towards acting adaptively for sustainable development persist into more of a climate change focus? If they consider that climate change work need not be something expensive and burdensome, but rather the opposite, what are the ways in which they implement that vision?

Lidköping

Category: 6

A municipality where it seemed completely clear that they knew what they were talking about regarding climate change, or as they put it, “Here, we are taking concrete measures.” This compares to the more general response from other municipalities who were wholly uncertain about what they could provide as examples of their own activity. Among the more ordinary climate measures mentioned, such as education and information projects, they heavily stressed that, “. . . the reduction of CO₂ concerns everything.” The respondent expressed the firm conviction that there was a high level of ambition in the municipality’s climate work. One part of the explanation is the fact that the municipality is flood-prone and sensitive to its threat. They claim, therefore, a high level of awareness and determination regarding climate change issues. The specific threat of flooding can, perhaps, explain the high level of response by the municipality, and why they have not limited themselves to *reactive* planning measures and responses.

Lund

Category: 6

Lund responded that “lots” of concrete measures are being implemented as a result of the climate change issue. The measures that were put in focus by the respondent were, however, more of a summarizing nature: “. . . traffic measures, energy adaptation programmes and state subsidies.” Because of that, no measures stood out from the general. Our interpretation of that manner of responding is that it was due to the fact that the municipality is actually active on the climate change issue. So far, it seems that the commitment on the climate change issue is due to its being seen not only as part of “ecological development,” but as an objective in its own right. This was stressed in all clarity when the respondent said that the municipality is the host municipality for The Swedish Network of Municipalities on Climate Change. Furthermore, it was explained that there is and has been “political unity in working with these questions – regardless of who has been in power.” Lund appears to be a forerunner municipality that has been actively engaging other municipalities on the climate change issue. The issue is given its own priority, and the municipality’s work is pervaded by a high degree of concretion.

Mölnadal

Category: 6

Mölnadal is engaged in an active and largely concrete programme of climate work on a broad front, or as they express it, “We have a smorgasbord of measures.” The municipality is focusing not only on the traditional measures of district heating and energy efficiency, but on traffic and transport issues. This distinguishes the municipality; they are doing studies and recording the inhabitants’ values regarding their transport routines. The objective is to accomplish sustainable transportation, where more citizens are travelling collectively. The municipality also views the settlement structure as an important part of their climate work, with the explanation that a condensed structure creates better conditions for collective transportation. According to the municipality, working actively with climate change issues requires a new way of thinking and a realization that the work needed on climate change is

massive. In contrast to some of the other municipalities that were identified as interesting for further study, the respondent expressed the importance of integrating climate-change-related work into all of the municipality's sectors, and wondered, "Why should it be distinguished?" Mölndal, thus, pursues an integrative approach to climate change, which, it was claimed, is supported by a broad political consensus. With its newly ratified climate strategy, the municipality show signs of increasing ambition in their work on climate change issues. The respondent herself came across as a singular driving force, or resource, behind the municipality's work on the climate change issue, with clear opinions about how it should be grappled with. She seems to be an important resource for the municipal climate change related work. Mölndal's choice of the traffic issue as the most important part of their climate change work, which is pursued in an actively concrete manner, is noteworthy.

Olofström

Category: 6

This municipality has a number of approaches in addressing climate change. For example, it has several automobile industry plants that place a heavy burden on the local highway transportation system. The climate change issue is mentioned as one of the reasons for changing that situation. It has thus become a priority to find ways of reducing the present highway transports by switching to railway transports. Another approach is to emphasize information's important role in climate change response. Reflecting that, they have taken initiatives to mount an energy trade fair where they will highlight the climate change issue via a lecture held by one of Swedish state television's (SVT's) meteorologists. They have also organized screenings of Al Gore's film, *An Inconvenient Truth*. The municipality also applies a distinctive approach for how they anchor their climate change work. They have what they call an Agenda 21 Group, where politicians, municipality officials and others municipality employees participate and discuss climate change issues. The Agenda 21 work has been important for its climate change response since 1998, when they first formulated aims about the emission of greenhouse gases and the phasing out of fossil fuel. It also is in active dialogue with the local business community as part of the so-called "Energy Group." With the municipalities of Karlshamn and Sölvesborg, it is part of an association for coordination of environmental monitoring. In sum, this appears to be a municipality that has chosen to see the climate change issue from a broader perspective, and not to limit themselves to energy-related issues. The anchoring of its climate work is wide in scope, and is fostered through dialogue groups and an energy trade fair, with associated information campaigns.

Skövde

Category: 5

Skövde distinguishes itself by a high degree of concretion in its climate change work. They appear to have adopted measures that correspond to their aims, especially in the area of information. It has established a dedicated homepage for establishing its climate response both within the municipality and among other actors, with a cumulative information and knowledge bank. The municipality appears to be geographically uninhibited in its approach, with a respondent expressing it as ". . . taking local responsibility for national objectives." This is also confirmed through their active participation in different networks. Their approach is to include, as much as possible, all societal actors. One of the respondents herself came across as a strong driving force in working on the municipality's climate change response.

Stockholm

Category: 5

As Sweden's capital city, it is also the municipality with the largest population and the greatest amount of resources. As such, its expectations and those placed on it are high. The

scale of the resources available to it, and its wide contact network that stretches far beyond the country's boundaries, make it unique, with the possible exception of Göteborg, Sweden's second largest city. Since 1995, the municipality has worked with different programmes related to climate change, beginning with its programme on greenhouse gas emissions. According to the respondents, its documentation of its emissions has been evaluated by the Royal Institute of Technology (KTH), which has concluded that Stockholm is reaching its objectives. Another documentation programme currently being produced adopts a proactive perspective by focusing on how Stockholm will adapt to climate change. In connection with that, in collaboration with the Swedish Meteorological and Hydrological Institute (SMHI), it is studying how rising water levels will affect the city. Also, unique regarding our data collected from all the Swedish municipalities, Stockholm has flagged biological diversity as an important climate change-related-issue. The municipality regards various networks as an important part of their work on climate change response. Therefore, cooperation with, and between, local energy companies and traffic operators, for example, is supported. Stockholm is also present in the global arena when it comes to climate-change-related work; among other activities, the municipality has hosted a conference on climate change adaptation, attended by 240 participants from 28 countries. According to the respondents, Stockholm has a reputation as a standard-setting city, with the result that it receives representatives from other big cities who come to study the Stockholm example. Apart from working "globally," Stockholm also has many local initiatives and projects. Various information campaigns are directed at the municipality's inhabitants, highlighting, for example, traffic and public transportation issues, projects where climate coaches interact with selected households, and general mitigation awareness.

Säffle

Category: 6

This is a municipality that appears to have noticed the complexity of climate change issue at an early stage. In 1990, the municipality participated in a national project, along with a handful of other municipalities, and in collaboration with the Swedish Environmental Protection Agency (Naturvårdsverket) and the National Road Administration (Vägverket). The respondents described that project as a "wake-up call" for climate change issues locally, regionally and nationally. In other respects, Säffle focuses the majority of their concrete climate measures on energy matters. They have a project in the schools, which they call "A Green Upbringing" (Swedish, "Grön uppväxt"), where students are trained in climate change issues. Säffle works proactively through several different networks; among others, they are taking part in an EU project hosted by the English town of Cornwall. Within the county, there is also broad cooperation between the municipalities. Säffle is also a member of The Swedish Network of Municipalities on Climate Change. Their climate work, in relation to the size of the municipality and assumed level of resources, is admirable. They are one of the pioneers among Sweden's municipalities when it comes to climate-change-related-work.

Växjö

Category: 6

This municipality has the unusual overall objective in its climate work of "taking on its global responsibility," based on the assumption, according to the respondents, that "it is not possible to sit and wait . . . we are working in all areas!" In 1993, the municipality adopted, among other things, an environmental policy, and first contacted Greenpeace in order to receive help with establishing it. For a number of practical reasons, they were unable to proceed with it, so they ended up working instead with the Swedish Society for Nature Conservation (Naturskyddsföreningen), for a three-year period, starting in 1995. In 1996, the municipality adopted the aim of becoming a "fossil-fuel-free municipality." The municipality gave subsidies, in order to encourage district heating and the use of solar energy; that only ceased when the national government also began such a program. The respondents made it

very clear that the foundation and extent of the climate work in Växjö is due to a strong consensus, which has withstood even shifts in local government, among its politicians. Part of that consensus includes wanting to actively promote the municipality as a forerunner in responding to the climate change issue. In sum, the municipality appears to recognize the possibilities of a bottom-up perspective by thinking “outside the box” and taking new untried initiatives.

6. Discussion

The study reported on here is the first in a sequence of studies that are being planned, by Nordregio and its partners, to address a range of questions regarding municipal response to climate change in Sweden, and elsewhere. Those questions are discussed in the Introduction to this Working Paper, but they can be summed up here as being of two types. One type asks, “Who is doing what?” and the other type asks, “Why or why not?” Restated in a more particular way, there are questions regarding, “Which municipalities in Sweden are undertaking concrete actions in response to climate change issues?” Then there is the other set of questions addressing the main question, “How can the fact that some municipalities are responding concretely, while others are not, be explained?” In this first study, we have come quite far in answering the first set, but less far regarding the second. Our follow-on studies will provide further clarification about the first, and delve much more deeply into the second.

The study’s significance can be stated in terms of its results. One result is the knowledge gained via the analysis of the data collected from all 290 of the Swedish municipalities. The further analysis of the data has also allowed us to produce another result. That is a selection of 48 municipalities that have provided a pool from which to further select a smaller number of cases for our coming studies. Within the bounds of the present study, the identification of that smaller number of potential cases has stopped at 10; pending further analysis, that number presents sufficiently rich diversity for proceeding.

6.1 Observations, reflections and further study

The significance of the present study can be summed up in at least two ways. On the one hand, it provides new knowledge about which municipalities in Sweden are acting most concretely on climate change, something that has general interest. On the other, the data it has collected provide a substantial basis for a variety of further studies. Some discussion of the latter takes place in the following section, as a product of considering a number of interesting observations and reflections that arose during the analysis of the data.

6.1.1 The significance of the study as a baseline

The completion of the present study provides one baseline for later studies that ask whether or not Swedish municipalities are increasing their concrete responses to the climate change issue. We qualify this, by saying “one” baseline, for a number of reasons. One reason is that the method used in this study is not exhaustive. It is qualitatively-based and consistently uses only one channel of data collection to obtain its results, although it succeeded in achieving a 100% rate of return for that one channel. All 290 Swedish municipalities provided input to the telephone-interview-based survey.

We did establish a second channel of inputs, however, for approximately 26% of the municipalities. Those were the municipalities (in categories 5 and 6) that, as a result of our first-level analysis, were selected for a second round of analysis. In those cases, we studied the evidence for a wider social context for their climate change-related response, i.e. their participation in networks, their engagement in campaigns, grant-raising activity, and so on.

Thus, although we are careful to qualify our baseline’s status in that way, we nevertheless consider that it has two valuable components. Firstly, there is at the moment no other baseline available, so any baseline at all is an improvement. As mentioned in the Introduction

and in Chapter 2, the only previous references that we could find to a comprehensive overview of Swedish municipal climate change response were either anecdotal, or the opinions of the authors. As such, the statements were opinions without any direct connection to the scope of, or questions in, their own studies.

Secondly, since we have now established and exercised the method used in this study, it would be highly valuable to repeat the study on an annual or biannual basis. The reiteration of the study would reinforce its reliability as a tool for comparison and analysis. This is, indeed, one of our intentions for a follow-up study in the near future.

Returning to this section's opening statement about this being just "one" baseline for knowledge of this kind about Swedish municipalities, it remains to clarify that that was also a reference to the obvious possibility of establishing much more thorough baselines. Such baseline studies, if provided with sufficient resources, could much more thoroughly and exhaustively investigate every municipality's status with regard to concrete climate change response, using numerous different methods. The overview provided in that event would only be welcome. Once again, though, we emphasize that our more primary objective with such a baseline was to use it as a way of discovering, and enquiring into, the explanations for how and why municipalities *can*, and *are*, succeeding in pursuing concrete actions with regard to climate change.

The pilot study's results reflect our fundamentalist approach in pursuing a "citizens' perspective." While that method is an extremely open approach, it demands a sensitivity to the diversity of responses that that subjects the researcher to. In our efforts to have the switchboard operator determine whoever the most appropriate person in the municipality might be for an interview, we were connected to a variety of different personnel representing a broad spectrum between two extremes. In some (very small) municipalities, for instance, the only persons who were found for us were janitors and technicians in charge of indoor climate-control for the municipalities' buildings. In another case, the operator interpreted "climate change" with the result that we were connected to a person working in a greenhouse growing vegetables for the local schools. Most of the time, however, the persons we interviewed were either the municipality's Agenda 21 co-ordinator, or the environmental inspector. Occasionally, we were also able to interview individuals who were obviously at the forefront of thinking, worldwide, on the issue of municipal response to climate change. It is still possible, however, that in those municipalities where the switchboard operator may not have known how to proceed with our query, the "most knowledgeable" potential respondent may have been missed. That further highlights the need for triangulation of the results with other sources of data.

Given the level of resources that any further study might have, a selection would still have to be made. If we will only have the resources to pursue a proper study of only a fraction of the "interesting" municipalities, then whether the number of interesting municipalities are 44 or 25 doesn't matter if we can only study 10. The result is that we gain as much knowledge as we can under the circumstances; the difference with a wider study is, quite simply, that we will gain that much more knowledge. With that uppermost in mind, the possibility that our categorization and our data collection have not been stringent enough becomes of lesser significance.

In the following two sections, we discuss a number of observations that arose as a result of our analysis of the data collected both in the telephone interview survey and other enquiries, either to organizations and government agencies, as well as in Internet- and other text-based data mining. In the ensuing, final section, more general observations at a collective level provide concluding reflections. The observations reflect what the study revealed about the character of climate change response work among Swedish municipalities. As a commentary on that work, it is hoped that they contribute to a more refined and textured understanding of what has begun to succeed, or what hasn't succeeded so far, at the local level. In the next section, a sample of the kinds of observations that have been made regarding specific, active municipalities is discussed. This discussion also involves a number

of municipalities that are not included among the 10 that we have preliminarily chosen for further study, which were presented in Section 5.1, above.

6.1.2 Discussion of observations from a sample of active municipalities

In addition to the 10 municipalities that our analysis indicated would be *most* interesting for further study, there are a number of others that have specific projects, or a general approach to climate change, that are interesting for the purposes of the present discussion.

Kiruna, for example, has a long history of dealing with environmental issues. By 1967 it had already begun to measure local air pollution, in collaboration with the dominant industry there, LKAB, the iron ore mining company. Since it has been decided that, as a result of the mine's expansion during the last century, a large part of the town needs to be moved to another location, it would be interesting to follow how the "New Kiruna" will be constructed, especially the extent to which climate change issues are implicated. The town faces new challenges, but also new opportunities. To what extent is sustainable development being built into the new plan, now that this opportunity has arisen? An example of this, according to one of our respondents, is that the town's new public transportation facility is to be placed as centrally as possible, so as to encourage more use of public transit. The municipality as a whole has to deal with the interplay of new values and knowledge across the entire spectrum of sectoral issues.

Nacka has focused on climate change in a way that differs from that of other municipalities. Since it has a lengthy coastline, it has paid extra attention to water-related challenges. In anticipation of continuing climate change, the municipality has raised the permitted height of new construction by a meter. They have also studied geological and hydrological factors from a climate change perspective, with an emphasis on how the water table and the sewage system might be affected.

Ulricehamn struck us as being representative of a new style of climate change response that is becoming more apparent among Swedish municipalities. Our respondents indicated that, "There's a lot going on right now." This is apparently strengthened by "strong political leadership" from the municipal commissioner (Kommunalråd), who was described as influential in placing such matters on the political agenda. The municipality is currently in the process of revising its environmental objectives.

If Ulricehamn is an example of a municipality that has increased its ambitions with regard to climate change as a result of political will, then Uppsala appears to be the opposite. The latter has a long record of progressive action related to environment and climate issues. According to our respondents, however, a recent political regime shift appears to have modified the level of ambition to that of simply complying with those obligations, laws and regulations in place at present.

Specific issues highlight the difference in the level of motivation between municipalities. Borgholm, for instance, has refrained from negotiating to purchase "green cars," on the grounds that there is a "lack of an appropriate service station for green cars within the municipality." Gotland, conversely, has pursued its negotiations for ethanol-driven cars in advance of the availability of an ethanol station on the island.

Eksjö is a municipality that appears to have a high level of activity in its climate change work. As a member of SEKOM, it is home to a great deal of engagement by both companies and the general population. One of the respondents there was strongly critical about KLIMP, however, saying that it was overly bureaucratic. At the same time, the municipality nevertheless has many climate projects underway, both on its own and in collaboration with neighbouring municipalities, but it is experienced as being unstructured and without follow-up, or follow-through, on its projects. The lack of thorough organizational strength in its climate work was yet another reason why a number of municipalities, although we considered them admirable, were not identified as the most likely candidates for our next study.

Hudiksvall represents yet another specific approach to climate change response. It is focusing on having its own successful car pool in operation, using ethanol-fuelled cars, and only in extreme cases are staff-members allowed to use their own cars while on duty. It would be interesting to investigate how this approach is working out. Is it effective to use “the stick” in the form of prohibition and strict regulations? Would that result in a more effective outcome? Is there instead a probability that a backlash would ensue instead, where the participants would eventually become so irritated that they would be less inclined to cooperate personally in responding to climate change? Would a more consistently encouraging approach prove more effective, or would a skilful combination of “carrot and stick” be preferable?

Hällefors was one of the five first municipalities to join the Eco-Municipalities network. Additionally, and somewhat exceptionally, the issue of climate change is dignified with its own section in the municipality’s strategy document. The municipality’s slogan for its approach is summed up, according to our respondent, with the phrase, “think globally, but act locally.” It would be fascinating with a follow-up study to see the extent to which that thinking actually influences the municipality’s actions and plans. In a similar vein, in our contact with the municipality of Tranemo, the respondent mentioned that someone who is having an impact in the municipality is one of the primary school teachers, who is working to raise environmental consciousness via the schools. It would be interesting to learn more about that situation, as well.

Lerum is yet another municipality that is considered to have high ambitions regarding its work on climate change. It commenced its work around the year 2000 by establishing a vision to be a “leading environment municipality.” Among other things, it is planning a climate exhibit on the theme, “What can you do?” in connection with their showing Al Gore’s film, *An Inconvenient Truth*.

Borlänge is concentrating on the transport sector’s CO₂ emissions. There, the efforts of a project leader, in collaboration with many partners, among them the Dept. of Highways (Vägverket), the Rail Transport Authority (Banverket) and others, were cited as being responsible for that effort. Respondents claimed, however, that the desire for environmental improvement exceeds the will to finance the various proposals that emerge.

In a complementary example, Borås considers energy conservation to be both environmentally and financially compelling target, but, according to a respondent, it is only when the numerous large companies consider those targets to be “economically positive,” that they become attractive. This reveals, also, that there can be different economic paradigms driving the various claims of different actors. Environmental measures are seen as being “bonus” issues, rather than ends in their own right.

Many Swedish municipalities resemble Borlänge and Borås in having achieved a certain level of climate change-related work, but it was difficult to find the ways in which they are doing much more than “business as usual.” It was therefore difficult to identify them as being of especial interest for the next study.

The final selection of cases for the next study will be done as one of its initial stages. The selection made here will be analyzed using a triangulation with other data that we have collected. As a result of some preliminary analysis of that other data, we already know that some municipalities, based on the survey results, were left out of the selection. At the same time, it has also been evident that other municipalities that some respondents told us should be included, reveal more about their own biases than about what the municipalities are actually doing on climate change. Our expectation is that the selection of cases for further study will be partially modified according to the coming triangulation effort.

6.1.3 Discussion of more general observations

Various municipal-level networks for climate change work already exist. The two most influential ones are The Swedish Eco-Municipalities (Sveriges Ekokommuner, or SEKOM)

and The Swedish Network of Municipalities on Climate Change (Klimatkommunerna, or KK), whose purpose is to increase municipal-level interest in and recognition of environmental- and climate change issues through the exchange of knowledge and experience. Currently, however, only about a third of Sweden's municipalities are members of, or participate in other ways in, those networks. Other networks that are gaining more Swedish municipal membership are EU-based and focused mainly on energy conservation and savings, such as the Aalborg Declaration, ASPIRE and Energy in Minds.

Another interesting observation about networks is that membership in the KK or SEKOM networks does not in itself however guarantee that a municipality will be on the "cutting edge" with respect to their approach to climate change work. In fact, during our analysis of the data we had collected on the municipalities, there was in some cases such a striking contrast between the image created by a municipality's being a member of either network and the level of actual engagement that we found, that we were compelled to contact them once more just to verify that our facts were correct.

Another minor negative trend surprised us so much that we were forced to create a separate category to reflect the distinction. In a small number, 9, of municipalities, the level of sustainable development- and climate change-related activity seems to have decreased. Several respondents related how, since the work with Agenda 21 has been reduced in many municipalities, a re-organization took place. The responsibilities gathered under its umbrella were distributed under their respective activity areas. As a result, many of the personnel who had previously had a responsibility for following through with the municipality's activities have now left. One further consequence is that sustainable development and climate change work have been "re-invented," or "resurrected," in the municipalities, primarily through revision of already existing energy plans, environmental objectives, and so on. One respondent referred to this process as a kind of "decisional archaeology" (in Swedish, "beslutsarkeologi").

There is currently a great deal of uncertainty over municipal obligations with respect to climate change. Indeed, according to many respondents, juridical guidelines on municipal obligations in this area remain extremely vague. Nevertheless, a number of state-sponsored stimulus measures have been implemented with a view to stimulating municipal engagement in this area. Such measures include the Local Investment Programme (LIP) and the Climate Investment Programme (KLIMP). These are described in more detail in Sections 3.2.1-2, above. One example of KLIMP and LIP projects that were highlighted are those where experienced Klimatkommun consultants help smaller municipalities to plan their general work in a more climate-conscious manner. Many of the municipalities that stood out in our study have been those that have taken advantage of either or both KLIMP and LIP financing, but the relevance of that observation shows some sense of a "chicken or egg" dilemma. In other words, does a municipality receive its assistance because it has shown deep engagement in climate change issues, or, conversely, is it the availability of grants that generates the engagement?

Many respondents also spoke about private corporate initiatives within their municipalities, mostly in the sense of projects within the biogas and ethanol manufacturing sector. In addition, Al Gore's film, *An Inconvenient Truth*, was often pointed out as being part of several municipalities' broader information campaigns. Among the most common concrete measures mentioned are eco-cars, expansion of district heating, establishing energy plans, courses in eco-driving among municipal employees and energy consultation for firms and private people. Many of those measures, although they might serve as politically expedient examples of climate change response, on further analysis – often of a historical nature – can be shown to have been instigated, instead, largely for economic reasons.

Analysis of the survey also reveals that a specific pattern is evident among suburban and commuter-dominated municipalities, mostly in the Stockholm and Malmö regions. Such municipalities often display a lower level of engagement with respect to climate change issues than most other municipalities. One of the reasons, the concerned respondents

indicated, is that they are pre-occupied instead with, and often overwhelmed by, the problems associated with the heavy, often motorway-borne, transit traffic that passes through their areas. As a consequence, they claim not to have the resources to counteract those problems, let alone the ones that they see differently as associated with climate change. Some exceptions to that position, however, are for example Ekerö, Kungsbacka, Kungälv and Mölndal, which operate from value bases associated more with public transit. Their officials relate how newly-built and -planned building projects are being designed both in proximity to, and so as to create synergies and harmonize with, public transit facilities.

The most active municipalities tend to be located near large bodies of water (the coasts and the largest inland lakes) and were more likely to be in the southern third of Sweden. These are the only identifiable geographical patterns discernible from the data collected. Other potential explanatory factors with respect to the more positive response require further study of the collected data.

One other kind of pattern detected involved those municipalities where institutions of higher education – universities and other advanced academic and research facilities – are located. They appeared to have a higher level of engagement in climate questions than most other municipalities, although not always necessarily of the more concrete kind.

Sweden's municipalities engage in a variety of approaches in responding to climate change. Some municipalities see climate change issues permeate their overall work while most do no more than the law obliges them to. A large number of municipalities claim that they have environmental goals, specific climate work plans and programmes on climate change currently either "in the pipeline" or coming up for decision, although most of those who made such claims actually had little of a concrete nature that they could point to as currently being underway.

A further issue among the most inactive municipalities relates to the perception of there being a "lack of political will" for addressing climate change issues. In the interviews conducted in this study, the need for clearer goals was often expressed. The national environmental quality objectives are criticized by some as being too abstract and not specifically applicable to their municipality. "Mest skrik och ganska lite ull" (trans., "A lot of shouting and pretty little wool,") was one comment often received in relation to the national environmental goals.

Another interesting observation here is the existence of a paradox when it comes to small municipalities and their climate change work. Some smaller municipalities claimed that they are simply unable to play an active and concrete role in respect to climate change-related issues, "because they are too small and thus lack the necessary resources." At the same time, others said that they have the opportunity to carry out such work precisely "because they are so small," since they are not hindered by an overbearing level of bureaucracy. Meanwhile, a majority of our respondents expressed an interest in learning more about how other municipalities were able to initiate and carry out concrete measures.

The tendencies and trends identified here correspond to the notion that explanatory factors can be found in social processes at the local level, in interaction with other levels. The importance of further study within the field is underscored by the fact that the effects of climate change place a higher pressure on society to embark on adaptive change. The major challenge is to get all municipalities to act now. The pace of action is increasing almost daily; the varieties of climate change experience are flourishing.

Climate change response measures

most often mentioned

by respondents

(in no specific

order)

Green cars
Eco-driving
Energy plans
District heating
Climate coaching
Energy counseling
Phasing out fossil fuels
Information campaigns
KLIMP and LIP projects
Biogas and ethanol production
Showing Al Gore's film, *An Inconvenient Truth*
Inventories of and refinements to existing systems

Figure 2: "The climate change response smokestack." The climate change response measures most often mentioned by respondents (in no specific order)

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Appendix 1: Map of candidate municipalities

