A Climate of Planning: Swedish Municipal Response to Climate Change

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A Climate of Planning:
Swedish Municipal Responses to Climate Change

Richard Langlais

It is important to know why the climate change issue moves some communities, more than others, to respond *actively* and *concretely* to its implications, and whether this is different from how they are responding to more general calls for sustainable development. What are the conditions that succeed in making a shift to *acting* on climate change? This is especially interesting since there are widespread laments that this is *not* happening. When active, concrete response emerges, is it because key individuals have made the difference? To what extent have other stakeholders been critical to their success? Are particular local conditions necessary? In the absence of direct threats, is the response due to informed global altruism, or crass economic calculation, or even both? In our work with these questions in Sweden, we want to know if the increasing focus on climate change also marks a significant turning point in the work to achieve sustainable development.

Action on climate change gains relevance from, but is not explained by, its relation to sustainable development. 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 analysing how various actors have interpreted them. We feel that the answers to these questions will reveal not only if this is a turning point, but whether its implications are sustainable in the long term. By studying the responses that are being made at local, municipal levels, we seek to discover if there is something different about climate change, why that is so, and how that is being transformed into effective social change.

In Sweden, mitigation, rather than adaptation, has so far been the dominant response to the issue of climate change by the country's 290 municipalities (Langlais et al, 2007). It is possible that its particular focus of sustainable development work implies that the issue of climate change, more generally, is qualitatively different from the other focuses. It is intriguing to consider that the essential differences between an approach dominated by an attitude of mitigation and another by adaptation are connected to the current transition from a nation state to a market state world (Royal Dutch/Shell Group, 2005; Bobbitt, 2008). As yet, it is not entirely clear what the long-term consequences of such a difference will imply.

If we take sustainable development as a context for climate change response, 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 becoming a pressing issue 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 rearranged. The local appears in some cases to be superseding the national, and the relative weights of different jurisdictions are in flux. We need to know 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.

Swedish municipalities and the origin of climate change response

From a Swedish perspective, climate change work at the municipal level began in a tangible, albeit modest, way as a part of the initial moves to implement Local Agenda 21, in 1996. Although the municipalities pledged to act as leading examples of sustainable development, the element of climate-change-related work in the Local Agenda 21 documents was limited. A key feature of that campaign was the determination to strive to include various municipal actors and the general public in local environmental work. It was only during the latter part of the 1990s, stimulated by the adoption of the Kyoto Protocol in 1997, and its focus on the issue of greenhouse gas (GHG) emissions, that climate change emerged as a more explicit part of municipal policies. A number of municipalities then adopted a more active response to the climate issue by incorporating related objectives in their Local Agenda 21 documents. When the national government's environmental protection agency (Swedish: Naturvårdsverket) offered grants through its Local Investment Programmes (LIPs), and its Local Climate Investment Programme (KLIMP), which had a tendency to encourage commitments more towards all forms of energy-related issues, municipalities became more active in their work with, above all, decreasing their emissions of GHGs. A penchant for mitigation with regard to climate change was becoming entrenched as the primary approach on climate change (Rylander, 2005).

An overwhelming majority of the mitigation measures undertaken, therefore, have been within the energy sector, where improvement in energy efficiency, renewable district heating and providing advice on energy issues are the most common actions. The LIP and KLIMP programmes have been increasing the municipalities' incentives to work more actively on climate-change-related issues. Measures in the traffic sector, on the other hand, have been rarer, while those that have been adopted have been limited to such items as expanded bicycle paths and improvements in public transportation. The success of the LIP and KLIMP investment subsidies indicates that there is at least a modicum of support for the work with climate change issues among decision makers at the national level (Rylander, 2005), even if most of the measures that have been implemented are of a more reactive character.

In the first years of this decade there was much uncertainty about where responsibility for dealing with climate change issues rested. There were calls for studies of the manner in which the government and the Riksdag, the Swedish parliament, were dealing with the challenge; it was felt that ambiguity prevailed. The issue of unclear division of responsibility was a concern for officials in the municipalities, counties and other authorities, who could imagine that even though they should have certain responsibilities in relation to climate matters, they were nevertheless unsure of exactly how those were defined. Almost none of the important actors had analysed how they would adapt to climate change. A majority, on the other hand, had

undertaken analyses of the effects of a changing climate on their own localities. Concrete adaptation measures that were identified as being in response to climate change, however, were extremely rare, with only half-a-dozen or so exceptions among the total of 290 municipalities. A consensus was beginning to form around the need for more concrete action (Rummukainen et al, 2005).

For the purposes of our studies, and in order to achieve any distinguishable contrast between those municipalities that stand out as proactive and the more passive mainstream, it has been necessary to create a 'normal' background against which they can be more easily discerned. The next section sketches that background by describing the obligations that all Swedish municipalities have, and share, as well as the opportunities and forms of collaboration that are at their disposal for responding to climate change. The objective 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 indicate the various possibilities that the municipalities have for participating in different networks concerned with climate change issues.

Municipal obligations and possibilities: The Swedish Environmental Protection Agency and Sweden's 16 environmental objectives

At the national level, the Ministry of the Environment is responsible for the environment and climate change interface. A number of different authorities are represented within the Ministry, where The Swedish Environmental Protection Agency (Naturvårdsverket) 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 objective is to set central standards and to coordinate and evaluate environmental work throughout the country. 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 policy, proposing legislation where needed. Furthermore, the agency functions by serving as a guide to other central, regional and local authorities with respect to 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, and so on, and by holding general councils on the topic.

The Swedish Environmental Protection Agency interacts with various public authorities, private companies and sector organizations. It has also set up and participated in a number of different networks, both in Sweden and 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 16 environmental objectives (the first 15 were adopted in April 1999, the 16th 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.

In relation to the environmental objectives, municipal obligations remain poorly focused. A general overview shows that municipal responsibilities with respect to climate change are rather diffuse, with the municipalities not actually obliged to do anything in particular. The municipalities are, however, responsible for the maintenance of a 'good habitat' at the local level and, according to parliament, 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 with regard to 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. In addition, there are the so-called Environmental Quality Standards, initially introduced when the Environmental Code was implemented, on 1 January 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 remains to be set.

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 by law (Sweden, 1977) to establish an up-to-date energy plan, for the supply, distribution and use of energy. The plan is to be established by the municipal council.

Municipal obligations and possibilities: State investment subsidies, LIP and KLIMP

Another part of understanding the background for the active progress of climate change mitigation measures in Sweden are the two programmes of state investment subsidies, the LIP and the KLIMP.

Both parliament and the government have been active in encouraging the environmental work already being done in Sweden's municipalities by offering subsidies. LIP and KLIMP were designed to both stimulate and support the municipalities in their environmental work. The LIP was a more general environmental subsidy, while KLIMP has the more focused aim of instigating climate-change-related measures. Both subsidies, however, have required municipal co-financing. A closer look at each of them follows.

LIP – Local Investment Programme

The LIP came into force once parliament passed regulation (Sweden, 1998) stipulating that state subsidies to local investment programmes will increase society's ecological sustainability. A secondary aim was to stimulate employment. LIP's rationale was summed up in four intentions; it was to:

- start from the municipality's unique situation by setting priorities for identifying local environmental problems;
- be based on a bottom–up approach and each municipality's on-going Agenda 21 programme;
- be linked to each municipality's overall environmental work;
- ensure that the 'global' end result of its programmatic focus will be magnified beyond the sum of its individual parts. (Sweden, 1998).

During the period 1998–2002, some 6.2 billion SEK (Swedish krona) were released by the state through The Swedish Environmental Protection Agency, and 211 investment programmes were implemented in 164 municipalities and in 2 municipal associations. Within the framework of those 211 investment programmes, some 1814 measures were undertaken. In total, approximately 27.3 billion SEK was spent on various LIP projects, while approximately 20.7 billion SEK of that total was used for specific environmental investments.

The municipalities that applied for these environmental subsidies could do so individually or in collaboration with other actors. The recipient municipality was also responsible for meeting

the requirements of the regulations. There were, however, no specific requirements with respect to technological systems or solutions, since the main objective here was to decrease the environmental impact.

KLIMP – Local Climate Investment Programme

Following the discontinuation of LIP subsidies, KLIMP emerged in their place. The main objective of the KLIMP programme is to foster a reduction in GHG emission levels and, in connection with each specific KLIMP project, conduct information campaigns about its goals.

Since 2003, municipalities, counties, firms and other local actors have 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, as was the case with the LIP, requires co-financing from the receiving actor. Each KLIMP programme lasts for four years, after which the results are reported to The Swedish Environmental Protection Agency. The agency then makes a final assessment, which serves as the basis for calculating the final amount to be allocated to the KLIMP project; this assessment is in turn based on how the results correspond to the stipulated objectives of the project. As such, the final reporting of projects from the first four-year period took place in 2007. The parliament decided that during 2007 and 2008, KLIMP funding would be increased by some 395 million SEK per year (Swedish Environmental Protection Agency, 2007).

Among the KLIMP projects that attracted funding during the period between 2003 and 2006, two dominant areas emerged; these were energy production and distribution, and transport – mainly road traffic – which together were allocated more than 50 per cent of the total available funding.

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

There are a number of Swedish municipal cooperation initiatives that have taken the form of network structures, where members collaborate in order to raise the level of awareness about the climate change issue. Their intention is to support each other in climate-related 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 (Klimat Kommuner, or KK).

The Swedish Eco Municipalities (SEKOM)

The concept of eco-municipality was originally launched in the Nordic countries by the Finnish municipality of Suomussalmi, in 1980. In 1983, the concept was introduced via the Swedish municipality of Övertorneå, which was on the border with Finland, in the far north of the country. In that early stage, those municipalities were the only eco-municipalities in the Nordic countries (Sveriges Ekokommuner, 2008).

The work undertaken by Övertorneå in developing the eco-municipality concept eventually inspired many other Swedish municipalities. A network of eco-municipalities was formed in which 15 other municipalities participated. It was intended as a response to the need for support in their ecological sustainable planning that the municipalities were experiencing. In 1995, when the network was formed, a decision was also made to create a common secretariat for servicing the municipalities within the network. It is a non-profit association and has subsequently grown to include 68 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 and an increase in

the importance of environmental and climate change issues within the municipalities.

The objective of the network is to help all of Sweden's municipalities to become sustainable. An important element of their interaction is that politicians and civil servants in the municipalities are able to exchange experience and knowledge concerning the climate change issue. This is enabled by, among other things, SEKOM's intranet and regular meetings.

During 2006, an environmental communication project was carried out between The Swedish Eco-Municipalities and the Swedish Network of Municipalities on Climate Change (see below). 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 organizations to implement the information campaigns that contribute to the achievement of Sweden's environmental objectives.

The Swedish Network of Municipalities on Climate Change

The KK is a network of municipalities working actively with the climate change issue and whose overall aim is to reduce GHG emissions. The network was founded in 2003, at 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, Säffle, Södertälje, Uppsala, Åmål and Östersund. KK supports municipalities that want to take on the climate change issue. It is an instigator of 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 experience in working locally on climate issues, with a view to increasing knowledge levels in respect of the complex problems associated with it. KK also develops its international cooperation in order to gain contact with similar networks in other countries. In that way, KK hopes to set an example for all Swedish municipalities to follow, since they want each community to find another that they can compare themselves to (Klimatkommunerna, 2008).

Membership in KK 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 obstacles and possibilities facing them. The overall objective of the network is that, by the end of 2008, at least half of Sweden's municipalities will have participated in the network's activities and that the network itself will have grown to approximately 25 members.

In the autumn of 2006, the network made it possible for small municipalities with a population of up to 15,000 to attend the Climate Coaching project, which was designed to aid small municipalities in responding to climate change. The project, with 23 participating municipalities, was run by KK itself, with the aim of creating the basis for long-term climate strategies for smaller municipalities. During the life of the project which began in January 2007, each participating municipality has received '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 renew its programme of environmental objectives. 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 signs a declaration of intent authorized by the munici-

pal executive board. The declaration of intent contains, among other things, a promise that the municipal council will prescribe within two years, a proposal for their own climate strategy. The municipality also agrees to 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 that is already a member of KK, and thus has the experience and 'critical mass' to contribute with suggestions and strategies for the local climate work.

In concluding this discussion of Sweden's climate-change-related networks of municipalities, there are some reflections that are worth mentioning. Although the history of the networks helps to explain part of the reason for the dominance of energy-related mitigation practices in the modes of municipal response, that explanation is limited by the fact that only about one-third of the municipalities are members of, or otherwise participate in, those networks. Other networks, such as the Aalborg Declaration, as well as ASPIRE (Achieving Energy Sustainability in Peripheral Regions of Europe) and Energy in Minds, are gaining more Swedish municipal membership. Those networks are EU-based and focused mainly on energy conservation.

Another observation about the Swedish networks is that membership in KK or SEKOM has not in itself appeared to guarantee that a municipality will be on the 'cutting edge' in their approach to climate change mitigation, even if that might be what some of their representatives would have liked. In fact, in our review of the municipalities' efforts, there was a striking contrast between the image created by a municipality's membership in either or both of the networks and the level of actual engagement that could be found.

Concluding discussion

The way from a habit of mitigation to a creative approach to adaptation is not so obvious, even in a small country with a decades-long tradition of continual transformation of its energy system, notwithstanding that its activity has had other motivations than climate change response, per se. That is not to say that mainstreaming mitigation has been perfectly straightforward, either, while even more profound transitions must be forthcoming if new emissions targets are to be met, sooner rather than later. There is currently a great deal of uncertainty among the municipalities, for example, regarding their obligations with respect to what they see as vague national legal guidelines on climate change response. In spite of that, several of the state-sponsored measures that have been implemented with a view to stimulating municipal engagement in this area have been considered to be more successful. Such measures include the LIP and the KLIMP, as described above. Among smaller, less resource-rich communities, those that appear to have come furthest in their climate change work have for the most part received substantial assistance from those programmes. This has included their reliance on the advice of 'consultants', or mentors, from the 'Klimatkommunerna' network, who have helped smaller municipalities to plan their general work in a more climate-conscious manner. The verdict is still out, however, on the deeper reasons for those municipalities' success; it is a type of 'chicken or egg' dilemma. In other words, one can ask whether a municipality's application for assistance has been approved because the municipality has shown deep engagement in climate change issues, or, conversely, whether it has been the availability of grants that has generated their engagement.

The growing general acceptance of the need for mitigation measures has not necessarily led to an ever-increasing acceptance of other climate change responses; our work has revealed that in some municipalities this has been decreasing. In a small number of municipalities (9 of 290), the level of sustainable-development- and climate-change-related activity appears to have decreased. This has only been the negative extreme in an otherwise general change in the organization of sustainable development activities in the communities, in turn a result of the reduction of Agenda 21 projects in most municipalities. Many of the personnel who previously had responsibility for following through on the

municipality's Agenda 21 activities have since left those positions. This is evidence, although of a negative kind, that the role of key individuals is essential in at least some cases for achieving a shift from merely discussing action, to concretely implementing it.

In the resulting policy vacuum, this has led to the further consequence that sustainable development and climate change activities have been 're-invented', or 'resurrected', in the municipalities' profiles, primarily through revision of already existing energy plans, environmental objectives, and so on. One of our respondents referred to this process as a kind of 'decisional archaeology' (in Swedish, 'beslutsarkeologi'). The work that had already been proceeding under other names and guises has now found a renewed drive and motivation in the discourse of climate change. While it is not yet a 'turning point', it does convey that the drive for sustainable development is at least entering the turn.

In our surveys of municipal response to climate change, we observe a broad diversity of initiatives emerging, even if much of what is already going on is old work under a new name. It is proving difficult to break out of the current paradigm, which has relegated much of the earlier diversity in sustainable development campaigns to being mostly about various sorts of energy-sector-related activities. Moving into a thorough and penetrating discussion about behavioural and lifestyle issues, for example, is only halting and shallow. The impetus seems present, however, which leads us nevertheless to expect a very different picture to emerge in the next few years.

When concrete actions do occur, to what extent have other stakeholders been critical to their success? The initiatives we have been observing occasionally highlight the increasing role of private corporations in joint projects with the municipalities, although still mostly within the biogas and ethanol manufacturing sector. This reflects the eagerness to envision the challenge of climate change as a stimulus to innovation and entrepreneurship. It builds on a widespread opinion in Sweden, both at the national and municipal levels, which holds that much of Sweden's current well-off situation is due to the development and maintenance of a growing, robust form of the 'knowledge economy'. This in turn is expected to apply as the basis for future growth.

The municipalities' most common concrete measures include the replacement of their vehicle fleets with so-called 'eco-cars', the expansion of district heating systems, the development of new energy plans, holding eco-driving courses for municipal employees and engaging energy consultation assistance for firms and private homeowners. Staging showings of Al Gore's film, *An Inconvenient Truth*, was often pointed out as being part of several municipalities' broader information campaigns.

Another kind of pattern is becoming evident among suburban and commuter-dominated municipalities, mostly in the greater Stockholm and Malmö regions. Such municipalities often display a lower level of engagement in climate change issues than what can be observed in most other municipalities. One reason is that they are instead preoccupied with, and often overwhelmed by, the problems associated with the heavy transit traffic that passes through their areas. That traffic is often impervious to the municipalities' efforts, since it is dominated by expressways, which function according to logics that rarely have anything to do with the municipalities they transect. As a consequence, the affected municipalities claim that since they don't even have sufficient resources for counteracting the problems created by local and through traffic, then mitigation actions with regard to those problems associated with climate change are viewed as beyond reach. Several municipalities were found to be exceptions to that situation (for example, Ekerö, Kungsbacka, Kungälv and Mölndal) and, upon further enquiry, the explanation was that they appeared to be operating from value bases that were more associated with public transit. This finds expression in the construction and planning of new building projects that are being designed to be both in proximity to, and creating synergies and harmonizing with, public transit facilities. In other municipalities, their location near large waterways and other bodies of water also seemed to encourage an enhanced level of climate change

mitigation awareness, as did the presence of institutions of higher education, such as universities and other advanced academic and research facilities, although not necessarily of the more concrete kind.

In conclusion, Sweden's municipalities engage in a variety of approaches in responding to climate change. What are the underlying motives? Is the explanation always to be found in arguments for energy-sector-driven economic rationality? Often, yes, but a sizeable proportion (about one-fifth) of the municipalities are responding to locally perceived threats of increasing natural calamities, such as flooding, landslides and drought. Some municipalities see climate change issues permeate their overall work while most do no more than the law obliges them to. This was in sharp contrast to a handful of communities that do seem to be acting on the basis of an essentially altruistic concern for the state of the world in general, with only the vaguest concern for any direct gain locally, apart from moral satisfaction. Many municipalities, on the other hand, 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; notwithstanding those claims, however, it was seen on closer observation that few of them had much of a concrete nature that they could point to as currently being underway.

In the most inactive, or even passive, municipalities, there is a palpable atmosphere of there being a 'lack of political will' available for addressing climate change issues. Once again, the need for clearer goals was often cited as an explanation for that dearth of motivation. The national environmental quality objectives are a favourite target for criticism, and often described by our respondents as being too abstract and not specifically applicable to their municipality. As expressed in Swedish, '*Mest skrik och ganska lite ull*' ('A lot of shouting and pretty little wool') was an illustrative comment that reflected the kind of sentiment often heard to describe the vague and ambiguous national environmental goals.

There is a paradox in the way that many small municipalities approach their climate change work. Some of the smallest municipalities claim that they are simply unable to play an active and concrete role in response to climate-change-related issues, because they are 'too small and thus lack the necessary resources.' At the same time, others claim that they are perfectly placed to carry out such work, precisely *because* they are so small, since they are not hindered by an overbearing level of bureaucracy. Here, again, the role of key, visionary individuals appears to be playing a strong role. Overall, there is an oft-expressed interest in learning more about how other municipalities were able to initiate and carry out concrete measures; the level of interest is high.

Finally, a composite derived from a number of studies indicates that the engagement of Swedish municipalities in responding to the challenge of climate change has increased dramatically in the period 2004–07 (Rummukainen et al, 2005; Rylander, 2005; Winblad, 2005; Schmidt-Thomé, 2006; Langlais et al, 2007; Sweden, 2007). Our work seeks evidence of concrete action and explanations for why some municipalities are much more active than others. This difference is striking, given that the institutional and governance conditions are similar. Although adaptation issues dominate in some communities, the focus of most is on mitigation. The role of planners in mitigation activities is often described as frustrating, since at the same time as it is of central importance, with high political priority, there is a lack of knowledge and experience in incorporating the broad generalities of climate change challenges into the detailed protocols and routines of everyday practice.

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