

**TOWARDS DEMOCRATISATION OF EXPERTISE
FOR SUSTAINABILITY**

**A CASE STUDY OF FIVE INITIATIVES
IN SWEDEN AND THE UK**

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ABSTRACT

This PhD thesis consists of an empirical study of three housing initiatives and two transport initiatives in urban regions: in Stockholm, Sweden and Yorkshire, UK. Common to all investigated cases is that their instigators have sought, in rhetoric and to a varying degree in reality, a participatory dimension regarding technical assessment and decision-making in local environmental policy formation and implementation. By considering the realities of how the commitments to participation have been pursued and achieved in the selected cases, this study explores the potential for citizen participation in relatively technical aspects of environmental policy in the wake of Agenda 21.

The thesis concludes that there are tentatively poor conditions for effective involvement of citizens in technical matters of local environmental policy in Sweden and UK, despite the fact that both countries have enthusiastically endorsed participation in the sustainable development process. The main reasons appear to be the adoption of inappropriate participatory techniques and lack of managerial skills in, as well as inadequate policy and institutional practices for, pursuing meaningful public participation in the technical-environmental policy realm. Moreover, although there are opportunities for local assessment of expert knowledge in all the cases, there appears to be limits to the degree of policy impact that can be ascribed to the participatory exercise. Nevertheless, the study suggests that, if given the opportunity and inclined to take it, in using their local knowledges, values and preferences, lay publics are capable of validating relatively technical facets of environmental housing and transport policy. This further suggests that there is good potential for democratisation of expertise in the process towards global environmental management given the existence of effective participatory practices and a genuine will to co-operate.

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ABBREVIATIONS

| | |
|-----------------|--|
| A21 | Agenda 21 |
| AQMA | Air Quality Management Area |
| AQMT | Air Quality Management Team |
| CIA | Central Intelligence Agency |
| CIT | Community Involvement Team |
| CO ₂ | Carbon dioxide |
| CSD | United Nations Commission on Sustainable Development |
| DETR | Department of the Environment, Transport and the Regions |
| DEFRA | Department of Environment, Food and Rural Affairs |
| DTI | Department of Trade and Industries |
| EEAC | Energy Efficiency Advice Centre |
| EFIEA | European Forum for Integrated Environmental Assessment |
| ESCR | Economic and Social Research Council |
| EU | The European Union |
| GIS | Geographic Information System |
| HECA | Home Energy Conservation Act 1995 |
| HEES | Home Energy Efficiency Scheme |
| HSB | Hyresgästernas Sparkasse och Byggnadsförening |
| HSMO | Her Majesty's Stationery Office |
| IA | Integrated Assessment |
| ICIS | International Centre for Integrative Studies |
| ICLEI | The International Council for Local Government Initiatives |
| IISD | International Institute for Sustainable Development |
| IPCC | Intergovernmental Panel on Climate Change |
| IUCN | International Union for Conservation of Nature and Natural Resources |
| KFTRA | Kirklees Federation of Tenants and Residents Associations |
| LA21 | Local Agenda 21 |
| LAQM | Local Air Quality Management |
| LEAP | Local Energy Action Plan |
| LGA | Local Government Association |
| LGMB | Local Government Management Board |

| | |
|---------|--|
| MFO | Materialförsörjningsorganisationen |
| NGO | Non-governmental Organisation |
| NHER | National Home Energy Ratings |
| OAS | Organisation of American States |
| OECD | Organisation for Economic and Social Co-operation and Development |
| PUS | Public Understanding of Science |
| SB | Svenska Bostäder |
| SEI | Stockholm Environment Institute |
| SEK | Swedish kronor |
| SSK | Sociology of Scientific Knowledge |
| TRA | Tenants and Residents Association |
| ULYSSES | Urban Lifestyles, Sustainability and Integrated Environmental Assessment |
| UK | United Kingdom |
| UNDP | United Nations Development Programme |
| UNECE | United Nations Economic Commission for Europe |
| UNEP | United Nations Environment Programme |
| UNCED | United Nations Conference on Environment and Development |
| UNDESA | United Nations Department of Economic and Social Affairs |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WSSD | World Summit on Sustainable Development |

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PART I

1. Introduction

1.1. Background

The new global environmental risks that are facing us today challenge the conventional role of science and technology in society. A growing number of scientists recognise that the scientific and technological culture has reached a turning point and that it has to change if we are to manage these environmental risks and problems in the future. Adherents of the changing nature of scientific problems view agree that ‘business as usual in science will no longer suffice, that the world at the close of the 20th century is a fundamentally different world from the one in which the current scientific enterprise has developed’ (Gallopín *et al.* 2001). Instead of the traditional images of conquering or managing, in this new era we have to consider fully the negative consequences of our pursuits that are becoming apparent in society. The term *post-normal science* is often used to describe this new era that, as some of the term’s proponents put it, ‘...mark(s) the passing of an age when the norm for effective scientific practice could be a process of puzzle-solving in ignorance of the wider methodological, societal, and ethical issues raised by the activity and its results.’ (Ravetz and Funtowicz 1991:138).

The last decades have also witnessed the role of science and technology in society becoming increasingly contested by the public, in part because different scientific disciplines raise different kinds of questions and make risk assessment inherently problematic (see e.g. von Schomberg *et al.* 1995). Given the level of complexity and uncertainty involved in the face of global environmental management, more traditional environmental policy making strategies have come to be increasingly recognised as insufficient without meaningful involvement of ordinary people in the process. Instead, using a participatory stance rather than an external expert stance to science and technology policy, such as health and environmental risk management issues, is increasingly advocated not only by members of the public themselves, but also academic institutions, governmental agencies and industry. In practice, however, the development has basically been a different direction as the 20th century experts have by and large set themselves off from the ordinary citizenry, resulting in an ever increasing technocratic form of decision-making (Fischer 2000).

Calls for more 'sustainable' and 'participatory' development were endorsed to an unprecedented degree by governments, scientists, international agencies and non-governmental organisations (NGOs) worldwide during the 1992 United Nations Conference on Environment and Development (UNCED), commonly referred to as the 'Earth Summit', in Rio de Janeiro, Brazil. The outcome of the conference, the policy document *Agenda 21*, with 10 of its 40 chapters devoted to public participation (section III), states that '(o)ne of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making' and stresses the need of 'individuals, groups and organizations to participate in environmental impact assessment procedures' (UNCED 1992, section 23:1). Moreover, chapter 28 requests among other things all local authorities to develop *Local Agenda 21* strategies for their communities in consultation with the citizens.

Given the growing rhetoric concerning the role of citizen participation for sustainable development in the post-Rio era, it is hardly surprising that approaches claiming to introduce a participatory dimension to environmental policy assessment have become very popular in recent years. There is, however, some controversy over the level of participation that can realistically be aspired to in different contexts (World Bank 1996, McGranahan and Gerger 1999), as well as concerning what has actually been achieved in terms of promoting meaningful participation in the process towards sustainability. A decade after the Rio Declaration and the launch of Agenda 21, authors of a background document for the Stakeholders Forum of Earth Summit 2002 (Rio+10) in Johannesburg assert that: '(t)he global sustainable development partnership called for in Rio is foundering due to a failure of social and political will' and that there has been 'a wide failure to link up and support collaborative action between institutions and groups at different ends of the sustainability scale. The principles of subsidiarity and bottom up decision-making have not been effectively applied at the international level'. (World Humanity Action Trust *et al.* 2001:1-2).

Although many others would reflect more optimistically on both the achievements to-date, as well as the prospects for growth and sophistication of participatory initiatives, this and other evidence for the lack of achievement in terms of bringing participatory approaches to bear in the global sustainable development process (see e.g. Dodds *et al.* 1997) suggest that it is critical to consider whether this reflects serious difficulties

turning rhetoric into practice, or procedural obstacles which could easily be conquered given the political will.

1.2. Purpose and methodology

With this study, I want to reassess the role of science within contemporary society, in particular in relation to the global sustainable development process. Through an empirical study of some urban settings, I also want to contribute to an improved understanding of whether and how science and technology can be better equipped by the inclusion of other, 'non-expert' values and perspectives and the (local) knowledge that lay people possess, in the assessment and decision-making processes for environmental management. The main purpose of the thesis is therefore to explore the potential for citizen participation in relatively technical aspects of environmental policy formation and implementation in the wake of Agenda 21. Accordingly, the focus of this research is on the possible ways citizens can be involved in the technical assessment of local environmental policy and implementation for sustainable development and can thereby contribute to more effective outcomes. For this purpose, I investigate some particular initiatives in which public participation is promoted, and where citizens are provided with the opportunity to learn about relatively technical facets of environmental policy options in order to enable them to assess these options and their likely consequences using the citizens' own preferences, values and knowledge.

The research draws on five empirical cases in two Northern urban regions, two initiatives in Yorkshire, UK, and three initiatives in the Stockholm region, Sweden. The theoretical chapters will address the following questions: What are the arguments in favour of citizen participation and which apply to local environmental initiatives in support of sustainable development? The empirical study, which is the main focus of the PhD thesis, will be largely devoted to answering the following questions: What is the nature of, and scope for citizen participation in technical assessment of local environmental policy matters in the selected cases? What are the obstacles and opportunities for citizen participation in these issues? In each of the five case studies, the questions will be addressed through the use of qualitative research methods, and more specifically through the carrying out of individual interviews and focus groups, along with literature reviews. A description of the research methodology, the selection criteria for the case studies and

the empirical case studies is given in chapter 5. Apart from discussing the main findings of the study, the concluding section will consider the extent to which it is appropriate to democratise expertise in the search for effective governance of sustainable development.

1.3. Outline Of The Thesis

The thesis is divided into two parts. The first part is a theoretical review and discussion of participation in science, technology and sustainability spheres, and the second part, which provides the main focus of the thesis, is an empirical study of five cases of housing and transport activities. More specifically, chapter 2 considers the history and development of the concepts of participation and citizenship, the multiple meanings of participation and the rationales for endorsing participation in the policy field. Chapter 3 discusses theories on participation in decision-making, in particular three different perspectives that are apparent in the participatory debate: participation as a democratic goal; participation as quality assurance through extended peer reviews; and participation for the sake of knowledge generation in the science and policy domains. Chapter 4 discusses the emergence of participation in the sustainable development process, as well as in the science and policy domains for governance of global sustainability.

Part II is introduced by chapter 5, which is devoted to a description of the research methodology and an empirical introduction of the two case study regions, the Stockholm Region, Sweden and the Yorkshire Region, UK. Chapter 6 highlights the first Swedish empirical study, an environmental housing project carried out in the block of flats of *Trekanten* in Stockholm. The ensuing chapter 7 discusses another housing initiative in Stockholm, the eco-village of *Understenshöjden*. The last Swedish case is a transport initiative, more specifically a car-sharing initiative in the City of Stockholm, called *Stockholms Bilpool*, which is highlighted in chapter 8. Chapter 9 treats the first UK case, a national air quality management initiative with focus on transport options and policies, carried out in parallel in the cities of York and Leeds. The last empirical chapter, chapter 10, discusses another national initiative undertaken locally in Yorkshire, more specifically home energy efficiency schemes in Kirklees District. Common to all cases is that there is or has been a participatory dimension to the technical assessment and decision-making procedures of local environmental policy.

Lastly, in the concluding chapter 11, I revisit the research questions and draw conclusions as to the potential for citizen participation in technical matters of environmental policy formation and implementation for sustainable development. The discussion is complemented with two tables: Table 1 outlines the nature of and scope for participation in the selected cases, as well as their respective policy impacts to-date; and table 2 includes an application of the three participatory perspectives (highlighted in chapter 3) to the researched cases, to support the analysis in the chapter.

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2. The emergence of participatory approaches in policy domains

2.1 *Participation and citizenship: history and development*

Citizen participation is akin to the concept of ‘citizenship’, and a product of a long history of the exercise of citizenship in different societies. In the ancient world, citizenship implied participation in the city-state, including both its obligations as well as duties. For Aristotle, to be human meant to be political. He viewed citizenship as participation in or membership of the *polis*, confined to those, with the exception of women and slaves, who participated in the defence of the city-state and the exercise of power (Hill 1994:9-10). By 212 A.D., with the establishment of the edict *Constitutio Antoniniana* under the Roman emperor Caracalla, the rights of citizenship were for the first time granted to all free men in the Roman Empire. Hence, the concept of universal rights of citizenship was born. (Langton 1978:19).

During medieval times, the term citizenship encompassed a duality of loyalty to Church and state, but the concept also endorsed the fraternity of guild member and burgher in city life (Hill 1994:11). During the Renaissance (14th-17th centuries), in republican Italy there was a revival of the ideal of active citizenship and concern with aspects of ‘self-government’. Republicanism came to have a significant impact on political thinkers and practitioners in Britain, America and France in the 17th and 18th centuries, who became increasingly concerned with the problem of how civic life was to be constructed and how the public life was to be sustained. By the late 18th century, the theory of representative liberal democracy came to shift the terms of reference of democratic thinking, as the rights of citizens more and more became synonymous with participation in the determination of the collective will through representative democracy. (Held 1996). Following the French Revolution, it became the practice to address persons as ‘citizen’, since all other titles were abolished. Common to the French and the American Revolutions were their unprecedented demands for equality, inalienable rights and the liberty of citizens. (Langton 1978:19-20).

However, the political and civil rights of citizenship that followed in the 18th and 19th century were challenged by Marx as inadequate in a capitalist society, where a large

proportion of the population is powerless and where the inherent class divisions and interests could not be eliminated by appeals to citizenship. Although it can still be argued that these inequalities exist today and that conflict is still prevalent in the contemporary citizenship discourse, there is also evidence of a different development of the role of citizenship. For example, the 19th century in Britain was marked by a strong moral ethos of public service and public spirit, with local governments based on increasingly elected public involvement (Hill 1994:11).

Hill distinguishes three different strands of thought that emerge from the historical development of the concept of citizenship that dominate in the contemporary debate (1994:12-18). The *liberal-individualist tradition* claims citizens' rights against the state and duties to it, mainly through payment of taxes and bills. While citizens are free to choose their governors, their involvement in public concerns is a matter of choice rather than a necessary feature of citizenship.

The *civic-republican perspective* has its roots in Machiavelli's idea of virtue, chiefly the obligation of military service to defend the republic, which in turn was related to public-spiritness values. According to this perspective, citizens' engagement in public life is to deliberate on common purposes, then to take action to secure them. These are inherent duties in the individual, and not to fulfil them means to cease being a citizen. The key factor in this tradition is shared experience of participation in the political community. This position thus stresses communitarianism and citizenship that entails participation, and not to take part is the same as abrogating citizen rights.

The third strand of thoughts, *social rights of citizenship* evolved in the 20th century, following the influence of T.H. Marshall's work. To Marshall, especially evident in his *Citizenship and Social Class* of 1950, citizenship is a status possessed by all those in full membership of a community that is based on the principle of equality. The grounding of citizenship as political, civil and social rights produces citizenship both as a set of rights and status. The rights of duties work both ways. While citizens have duties to their community, the state has an overall general duty to provide services to all its citizens. Although Marshall's perspective of citizenship has gained broad acceptance in the 20th century debate, it has been challenged by many contemporary scholars who reject welfare rights as dependency and by those who believe that while social rights facilitate

citizenship, they do not constitute it. Nevertheless, the main view seems to be that welfare rights are important elements in the contemporary understanding of the term citizenship.

This theoretical debate was resurrected in the 1980's by the emergence of the 'active citizen' in political debate. There has since been a reassessment of the meaning of citizenship and the structures and institutions that underpin it. Today, citizenship is often associated with Aristotelian tradition of active citizenship as constituting the good or virtuous life in civil society. (Hill 1994).

The term citizenship is also often explicitly associated with participation. Several classic theorists like de Tocqueville, J.S. Mill and Rousseau emphasised the educational and experiential role participation has for individuals. According to this tradition, a local level of decision-making with local bodies responsible for addressing problems and implementing solutions itself stimulates citizen participation and empowers the citizen. The contemporary position continuously stresses citizen empowerment and access to political decision-making at local scale, which goes beyond the belief in local government and traditional associations. (1994:23-27). Instead, the current focus has come to reflect interest in environmentalism and other social movements, which are 'characterised by a stance of 'think global, act local', in which citizenship rights must be extended by a continuing struggle for equality of gender and race, and for conservation and more equitable distribution of the earth's resources' (1994:25).

The scope and meaning of community development changed when bodies such as the UN, in viewing those colonies which won independent statehood, began to redefine its role to encompass wider social and political goals rather than particular community needs. In broadening the definition this way, the United Nations (UN) was the first major body to view community development as synonymous with community participation. (UN 1955).

In reviewing the state of public participation in British local services during the 1970s and 1980s, Boaden *et al.* found that 'though there have been great moves towards public involvement in local service provision in recent years, little has been achieved by way of

a fundamental shift in power, a shift which implicitly underlay the ideas of radical proponents of participation in the late 1960s.' (Boaden *et al.* 1982:179).

When the first comprehensive bulk of participation literature emerged in the 1970s and early 1980s, the strategies were primarily concerned with collecting accurate and detailed information efficiently, with the focus on words like 'rapid' assessment for the purpose of 'appraisal' and 'diagnosis' of local problems and concerns. The control of the process remained, however, mainly in the hands of external researchers and agents. As experiences and knowledge grew, it became clear that the local citizens had a lot to contribute to the research and development process rather than being just clients and beneficiaries. As new participatory approaches were applied and refined in the 1980s, the wealth and validity of local people's experiences became increasingly recognised. Accordingly, the last decades' experiences from participatory approaches demonstrate a new direction within participatory research and development (Mitlin and Thompson 1995).

Despite the unprecedented endorsement of public participation in science, policy and development spheres, at the turn of the 21st century, both theorists and practitioners remain concerned with the inherent difficulties of achieving effective participation in these matters. The focus of attention in the participatory discourse varies though between commentators, ranging from *inter alia* the issue of fairness and competence in citizen participation (Renn *et al.* 1995); the recognition that implementing unpopular policies on risk may cause widespread public protest and distrust in governing institutions (Kasperson *et al.* 1992); to the problematic interaction between technical experts and non-experts in environmental politics (Fischer 2000), and calls for 'folk-integrated assessments' of scientific knowledge for the sake of rebuilding public trust and credibility in expertise and enhancing public interest and enthusiasm (Darier *et al.* 1999). Chapter 3 reviews three particular aspects of participatory theory that are prevalent in the contemporary policy discourse.

2.2 The multiple meanings of participation

In the contemporary debate, the multiple meanings and scope of public participation have led to different interpretations of its nature, and of the extent to which it should be

promoted in society. Several authors have pointed out the ambiguity of objectives and programmes pursued under the banner public or citizen participation (Langton 1978, Arnstein 1969, Thomas 1996). Even those who are not committed to public involvement in planning and policy-making activities may find it easier to twist the concept to their needs than to take a stand against participation. The current section of this chapter uncovers some of the basic elements of the multiplicity of definitions and interpretations of this indistinct, value-laden and contentious concept.

In broad terms, participation means ‘a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them.’ (The World Bank 1996:3). Rhetorically, participation is often portrayed as the non-electoral face of democracy, but the implications of the concept may vary largely in terms of range of mechanisms and extent to involve the public, ranging from surveys and questionnaires to more recently used techniques such as round table policy dialogues, citizen juries and planning-for-real exercises. The aim here is not to describe and evaluate existing methods to promote participation, but simply to highlight the broad array of approaches to achieve meaningful citizen participation in different contexts.

Generally, however, it can be argued that more conventional forms of participation, such as questionnaires, public hearings, inquiries and advisory committees are typically characterized by a top-down approach: the opportunity that these techniques allow is often limited in terms of genuine local participation (see e.g. British Council 2002, Cochrane 1986, Mitlin and Thompson 1995). Much of the criticism of conventional top-down approaches to community participation derives from studies in developing countries (Dalal-Clayton and Dent 2001, UNDP 1994). In development programmes, participation may often be viewed as a means to an end, where members of a community are viewed as implementers rather than the decision-makers. However, this approach has been criticised for tokenism, as the control remains in the hands of outsiders (Barbour and Kitzinger 1999:80).

One common criticism of the value-laden and indistinct concept of public participation is that it is apt to being interpreted in ways that conform to the interests of those using the concept. Therefore, it can be adopted to legitimate existing decisions and promote the status quo by giving the impression of public involvement in decision-making while

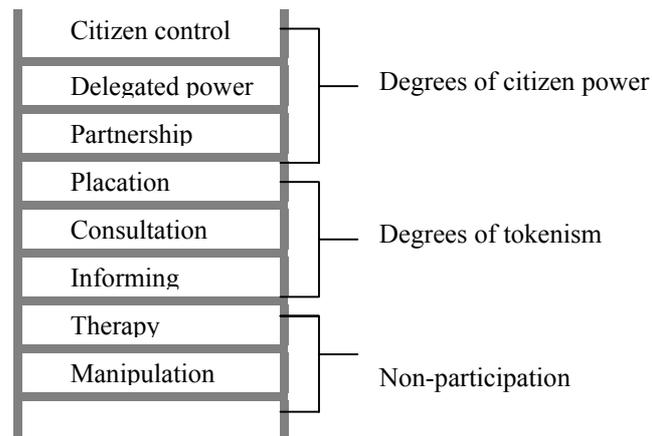
actually preserving the interests of the ruling elites (Boaden *et al.* 1982, Thomas 1996). In reality, the participatory exercise falls somewhere between the two pure extremes of top-down versus bottom-up approaches:

‘At its best, the process can be liberating, empowering and educative, a collegial relationship that brings local communities into the policy debate, validating their knowledge. At its worst, it can degenerate into a process of co-option of local communities into an external agenda, or an exploitative series of empty rituals imposing fresh burdens on the community’s time and energy and serving primarily to legitimise the credentials of the implementing agency as ‘grassroots oriented’. While participation must be integral to the research process, it must be understood and practiced as a genuine process.’ (IISD 2002).

Thus the role and meaning of public participation can be viewed from several different perspectives, and the perceived rationale behind participatory approaches therefore largely depends from which perspective one views it. Abbot, for instance, focuses on the role of community participation in developing countries, linking it to modernisation theory and the subsequent disillusionment with the ideas it advocates (Abbott 1996). According to him, individual community workers in the UK and the US became engaged in efforts to improve the personal well being of people in impoverished working class communities, thereby resulting in some social support to community participation. The ideas were exported to the colonies where they were generally accomplished with great success within the paternalistic structure of the colonial administration.

Arnstein dealt with the issue of public participation and its role in power distribution in her famous article ‘A Ladder of Citizen Participation’ (Arnstein 1969). The author prefers to view citizen participation as a form of citizen power, suggesting the definition ‘the redistribution of power that enables the have-not citizens presently excluded from the political and economic processes, to be deliberately included in the future’ (1969:216). In an attempt to determine different levels of participation, she illustrates a ladder with eight rungs. At one extreme is full ‘citizen control’ (complete citizen power exercise), and at the other extreme ‘manipulation’ (non-participation exercise). Over the years, Arnstein’s classification has been criticised and revised many times, with many modifications emerging from applications in the South (see e.g. Abbot 1996, Choguill 1996). Setting the boundaries on what sorts of activities should be labelled ‘participatory’ remains a key issue in debates about participatory approaches, including participatory research.

Figure 1. Eight Rungs on a Ladder of Citizen Participation



Source: Arnstein, 1969.

The diverse interpretations and meanings of ‘participation’ is further complicated by the multiplicity of concepts used to express some kind of involvement of the wider public. Terms such as ‘public participation’, ‘citizen participation’, ‘citizen involvement’, ‘community participation’ all refer to inclusion of ordinary people, but differ somewhat in terms of target groups and associations. The concept ‘community participation’ was perhaps a more commonly used term after the Second World War than it is today. In 1955, the UN defined community development as ‘a process designed to create conditions of economic and social progress for the whole community with its active participation’ (UN 1955). Some authors still advocate the term community participation as opposed to citizen participation. Choguill, for instance, argues that ‘it is understood that individual citizen participation in decision-making would bring little benefit for the community as a whole. Thus, the term community participation is suggested instead of citizen participation, considering individuals as members and representatives of a fully recognised community’ (Choguill 1996:435). Community has often been used to describe different aspects of the relations between institutions and locality, including geographically defined populations, groups of people sharing ideas, values and lifestyles as well as social interaction (Hill 1994).

‘Public participation’ and ‘citizen participation’ are often mistakenly used interchangeably as synonyms. According to Langton, citizen participation can be defined as ‘...purposeful activities in which citizens take part in relation to government’ (1978:17).

Fully recognising the exclusion of activities in which people participate, he suggests a distinction between citizen participation in which people relate to the state, and social, e.g. worker participation which does not have a direct relationship to citizen participation. Consequently, public participation is not synonymous with citizen participation, since it ‘...refers to all people included in a public, whether or not they possess the rights and obligations of citizenship’ (1978:20). Moreover, public participation can include taking part in any public institution of society or the state. Hence, public participation includes citizen participation *and* other forms of social participation.

The author further argues that the concept of citizen involvement has a different connotation than citizen participation. Involve in Latin is *in volvere*, ie. to roll or wrap something. What the word then indicates is that something is encumbered or controlled by something else. However, participation (from the Latin *participare*) implies variation in how things ‘take part’ in each other, because the control may rest in either thing or be equally shared. Hence it follows that ‘(c)itizen participation includes a variety of activities in which control may rest with either on citizens or the state, or may be equally shared’, whereas ‘(c)itizen involvement can be considered as a variety of citizen participation characterised by state control of the process of participation’ (ibid:21).

Today, the most common term for expressing inclusion of ordinary people is probably ‘public participation’. It is attractive in the sense it is wide enough to include all individuals of the public society. However, the actual meaning of the term is also somewhat disputable. Although it is well recognised and used in different contexts, it gives the false impression that ‘public’ is a homogeneous mass of people, whereas in reality, it is a great heterogeneous group of individuals with different sets of interests, views and concerns.

Given the inescapable difficulty in defining and analysing public participation, it is not surprising that it means different things to different people and that confusion and ambiguity are common in the debates surrounding it. To some people it is associated with the political activism of the 1960’s and the subsequent growing claims for power among poor and minorities. Others find the term vague and diffuse and still others

believe it does not reflect sufficiently the limited and controlled degree of involvement in decision-making (Langton 1978:13).

Despite these problems and concerns, with all experiences from participatory exercises worldwide, there is today a more coherent understanding of the significance of bottom-up participatory approaches for the purposes of promoting democracy and civil rights, political legitimacy and credibility, citizen empowerment, mutual expert-lay learning, and inclusion of local knowledges in assessment and decision-making processes. The prevailing arguments for participation in science and environmental politics spheres will be discussed in the next two chapters.

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3. Theories of participation in decision-making: Three perspectives

The previous chapter discussed some main strands of the meaning of and rationale for participation and citizenship, and also described how participatory approaches have evolved from applications in the ancient Greece up to modern times. This chapter investigates the role and rationales of citizen participation in decision-making processes from a contemporary theoretical perspective. In an attempt to uncover different commentators' ideas on participation in (technical) decision-making, below I distinguish between three different approaches under three sub-headings: participation as a democratic goal; participation as quality assurance through extended peer reviews; and participation for the sake of knowledge generation in the science and policy domains.

3.1. *Participation as a democratic goal*

3.1.1. Participatory democracy theories

In her book *Participation and Democratic Theory* (Pateman 1970), Pateman attempts to resurrect the arguments of the classical theorists of democracy and how the 'contemporary social scientists' have understood them. One of her basic points is the general ignorance of diversity in reasoning of classical theorists like Mill, Rousseau, Cole and others and the general acceptance of the caricature 'classical doctrine of democracy'.

The most common criticism of the classical theorists, instigated by Schumpeter, is that their arguments for wide participation are unrealistic and over-ambitious, as their ideal democratic systems demand high level of rationality from the ordinary man that is simply not feasible. For the 'contemporary writers', referring to commentators of the time like Dahl, Sartori, Berelson and Eckstein, citizen participation is typically limited to means for voting for leaders and discussion that keeps the electoral machinery - the institutional arrangements - working satisfactorily. What later writers have often ignored is that the classical participatory democracy theorists offered specific prescriptions and action plans for the attainment of political democracy that depends on participation in many spheres of society, and on political activity in a wide sense. In Pateman's view, the core

arguments in the theory of participatory democracy centre around the inter-relationship between the institutional bodies and individual ones; the notion that citizens are interested in politics; and the idea that the existence of representative institutions at national level is not sufficient for democracy. They all assume that the more participation of individuals the better for society.

The major function of participation, according to the classical participatory democracy theorists, however, is an educative one, including both psychological aspects as well as the gaining of practice in democratic skills and procedures. This perspective is particularly apparent in Rousseau's writings. His ideal system is designed to foster responsible individual, political and social action through the participatory procedures. In such a process, the individual learns that the private and public interests are linked, because he must take into consideration wider matters than his own private interests if he is to gain co-operation from others. The logic of the operation of the entire participatory process is that the individual is forced to deliberate according to his sense of justice because fellow citizens can always resist the implementation of inequitable demands. As a result of being involved in the decision-making, the individual is educated to distinguish between his own impulses and desires and hence he learns to be a public as well as private citizen. Eventually, through this process the individual will also come to feel little or no conflict between the demands of the public and private spheres. Once the participatory system is established, Rousseau believes that it becomes self-sustaining, because the qualities that are required on the part of the individual citizen if the system is to operate successfully are those to whom the process offers an important justification for a participatory system.

In general, J. S. Mill's and Bentham's theories about participatory democracy reinforce Rousseau's, but they are adapted to modern society. Bentham and James Mill had earlier argued that in the narrow, academic sense, education was the best way of ensuring responsible participation in the political life on the part of the 'numerous classes'. J. S. Mill never really rejects this perspective, but he views the educative function of participation in the broader sense, more the same way as Rousseau does. He argues that where the individual is concerned solely with his own private affairs and does not participate in public affairs, then the 'self-guarding virtues' suffer whereas the capacities for responsible public action remain undeveloped. For him, the government and political

institutions are inter-related insofar that a necessary condition of good government is the promotion of the right kind of individual character, and for this purpose, the right kind of institutions are required. It is only within this context of popular, participatory institutions that an active public-spirited individual character can be fostered. The ideal system, according to J. S. Mill, could only come about under a system of plural voting based on educational attainment, and ideally this is achieved by local political institutions. (1970:28-31).

The major difference between the participatory democracy theorists is their views on the extent to which the 'ordinary man' should participate in the political sphere. While theorists like James Mill and Bentham ascribe participation a narrow, purely protective function ensuring good government, for Rousseau and Cole (and J S Mill when dealing with politics at the local level), participation has a much wider function: the active involvement in the making of decisions.

Already three decades ago, Pateman contended that in large-scale societies, direct participation is often seen as unworkable and therefore public participation is largely of a symbolic nature. This accords with recent studies on Western democratic systems (see e.g. Renn and Webler, 1995, Fischer 1990, 2000), which show that these political systems are not that favourable to genuine public participation. Thus it follows that the philosophical rationales for participation, which characterise the arguments of the 'contemporary democratic theorists', seem to bear less relevance to the challenges of modern society than those of their predecessors. Conversely, Pateman's arguments for participation appear much more applicable to the current challenges of global environmental change and scientific uncertainty, which presuppose more meaningful citizen participation in environmental policy matters. Today it is widely recognised by a number of studies that global environmental problems and risks will not be tackled without attention to lay knowledge and citizen participation (see e.g. Renn 1992, Matthews 1996, Bijker 1993, Margolis 1996, Rowe and Frewer 2000, Irwin 1995, Irwin and Wynne *et al.* 1996, Fischer 2000).

3.1.2. Citizen participation in technical matters

In his *Toward a Rational Society* (Habermas 1971), Habermas discusses the 'scientization' of politics and participation in technical matters. The author is

preoccupied with the apparent rationalisation of society as a result of formal institutionalisation of scientific and technological progress. In looking at the development during the post Second World War era, the author finds that the military and politicians had been orienting themselves to strictly scientific arguments in the exercise of their public function. According to Habermas, this development illustrates a new stage of rationalisation, which Weber had already understood as the foundation for development of bureaucratic domination, where the exercise of power had been structurally transformed by the aims required for new technologies and strategies.

Habermas distinguishes three different prevalent models of the relation to expertise and political practise for decision-making in contemporary societies. In societies based on the practice of the *decisionistic* model, the politician has the ultimate authority in defining policy and the expert's role is limited to making new technologies available. According to the *technocratic* model, the politician is an agent of the scientific intelligensia and the initiative for decision-making is passed to scientific analysis and technical planning. These two models, in one way or another, suggest strict separations of the roles of experts and the politicians in the making of decisions by emphasising one group's dependence of the other. The *pragmatistic* model, on the other hand, replaces the strict division between the function of the expert versus politician by emphasising interdependence and intense communication between scientific experts and the decision-makers. According to the author, this is also the only model that is necessarily related to democracy, where 'the successful transformation of technical and strategic recommendations into practice is (...) increasingly dependent on mediation by the public as a political institution.' (1971:68). The communication between experts and the decision-making agencies must be rooted in social interest and value orientations in society. Moreover, this communication is based on a historically determined preunderstanding, a consciousness governed by social norms that can only be informed hermeneutically of what is practically needed in a situation, through articulation in a public discourse. Therefore the pragmatistic type of communication cannot occur independently of the communication that is in process on the prescientific level.

Nevertheless, according to Habermas, the pragmatistic model cannot be applied to political decision-making in modern democracies, because '...this model neglects the specific logical characteristics and the social preconditions for the reliable translation of

scientific information into the ordinary language of practice and inversely for a translation from the context of practical questions back into the specialized language of technical and strategic recommendations.’ (1971:70).

Accordingly, Habermas’ main criticism of the three existing perspectives of decision-making is that they do not advocate a communication between scientists and the general public, and hence they fundamentally lack in terms of democratic decision-making. Conversely, the prevalent models for decision-making serve as a barrier between science and public knowledge:

‘Leaving aside the public’s ability to respond, the very results of research that are of the greatest practical consequence are the most inaccessible. While earlier industrially utilizable information was sometimes kept secret or protected for reasons of economic competition, today the free flow of information is blocked primarily by regulations of military secrecy’. (1971:76).

Habermas further discusses the translation between science and politics in relation to public opinion. In his view, the ideal conditions of the communication are extended to the entire general public and are free of domination. In this light, the role of science in relation to the public is to translate scientific communication and promote public knowledge, although the preconditions are deemed unfavourable on both sides:

‘On the one hand, we can no longer reckon with functioning institutions for public discussion among the general public. On the other, the specialisation of large-scale research and a bureaucratised apparatus of power reinforce each other while the public is excluded as a political force. (...) A scientized society could constitute itself as a rational one only to the extent that science and technology are mediated with the conduct of life through the minds of its citizens.’ (1971:79-80).

Instead, he claims, political rationalisation is possible ‘through the process of enlightenment of political will, correlated with instruction about its technical potential. This dimension is evaded when such enlightenment is considered either impossible because the need for authoritative decisions or superfluous because of technology.’ (1971:80). It is thus evident that Habermas advocates a different perspective than those suggested by the three traditions; one which is based on the inclusion of the general public in the existing dialogue between experts and political agencies.

Being one of the former proponents of expert-citizen interaction in prescience processes, Habermas' ideas have undoubtedly been critical for, and influential in, the participatory research domain. In *Toward a Rational Society*, this is illustrated well through his critical perspective of scientism and positivism, which was still largely popular at the time. Nevertheless, in this review it appears that his description of the ideal notion of public participation is rather narrow, compared to the prevalent understanding and meaning of the term, which dominates in the contemporary debate. In his book, Habermas does not appear to have thought about what positive role public participation could play in the technical decision-making process, nor is he concerned about how an ideal expert-public interface would take shape. For example, little attention is paid to the scientific uncertainty and the actual or potential benefits of having citizens on board in decision-making processes, e.g. through tapping their local knowledges and enhancing local awareness and responsiveness. In addition, it is doubtful why the preconditions are necessarily unfavourable on the part of scientists as well as the public in such an interface, as Habermas suggests.

We are now turning to another commentator, Bell, whose perspective is rather different from Pateman's as to the role of citizens in democratic decision-making, and also from Habermas as to the role of ordinary citizens versus experts in the science and policy arena. In his book *The Winding Passage: Sociological Essays and Journeys* (Bell 1991), Bell predicts an increasing role in the future technical decision-making and an enormous growth in 'the third sector', i.e. the non-profit area outside of business and government, including schools, research, voluntary and civil institutions. In looking at the post-industrial society, he finds that intellectuals, such as scientists, mathematicians, economists, engineers and technicians are replacing the dominant groups of the past century: entrepreneurs, the businessman and the industrial executive. In addition, the crucial decisions concerning the expansion of the economy and its balance are expected to come from government, but they will be based on the government's sponsorship of research and development.

In another book, *The Coming of Post-industrial Society* (1974), Bell discusses in more detail the consequences of participatory democracy in the post-industrial era. In this book, it becomes clearer that in Bell's view, ordinary citizens have only a marginal role to play, if any, in decision-making in science and technology matters. According to him,

‘(t)he rise of the new elites based on skill derives from the simple fact that knowledge and planning - military planning, economic planning, social planning - have become the basic requisites for all organised action in a modern society’. The member of this new technocratic elite, with their new techniques of decision-making ‘...have now become essential to the formulation and analysis of decisions on which political judgements have to be made, if not to the wielding of power. It is in this sense that the spread of education, research and administration has fostered a new constituency - the technical and professional intelligencia.’ (1974:362). He further believes that the relationship of technical and political decision-making procedures in the next decades will become one of the most crucial problems of public policy, as many questions cannot be settled on the basis of technical criteria but necessarily involve value and political choice.

Bell does not ignore the increase in public involvement in technical and political decisions in the post-industrial society. To him, it is evident that a ‘society-side uprising against bureaucracy and a desire for participation’ (ibid: 365) is taking place as people regard themselves to be able to affect the decisions that control their lives. To a great extent, the participation revolution is a reaction against the ‘professionalisation’ of society and the imminent technocratic decision-making, and the process that started years ago in the factory through the trade unions has spread to the neighbourhood and into the university. Consequently, new forms of organisations will replace the old bureaucratic models of hierarchy.

Here, he sees a problem, however, because participatory democracy ‘...is not the panacea that its adherents make it out to be, no more so than efforts of fifty years ago at creating plebiscetarian political mechanisms such as the initiative, the referendum and the recall’. (1974:366). With all the sudden enthusiasm about participatory democracy, Bell finds it interesting that few of its advocates have tried to think through the meaning of the concept. If individuals are to affect the decisions that change their lives, then segregationists in the South would under those circumstances have the right to discriminate blacks and exclude them from the schools. Equally, a neighbourhood group would be permitted to veto a city plan that takes into consideration the needs of a wider social community. But in this respect, he argues, one would have to point out that the American South is not an independent entity but part of a larger one, and must conform

to the moral norms of the more inclusive society and this is also true for the neighbourhood.

As indicated above, Bell does not adhere to democratisation in the entire range of human activities. According to him, the expansion of the political arena and the involvement of a growing number of people simply means that it takes more time, and involves more cost, to reach decisions and to achieve something:

‘More claimants are involved, interests multiply, caucuses have to meet, demands have to be bargained over, differences have to be mediated - and time and costs mount up as each person or interest wants to have his or its say. Often one hears the statement that individuals or groups feel ‘powerless’ to affect affairs. But there is probably more participation today than ever before in political life, at all levels of government, and that very increase in participation leads to the multiplication of groups that ‘check’ each other, and thus to the sense of impasse. Thus, increased participation paradoxically leads, more often than not, to increased frustration.’ (1974:469).

The arguments of fairness and equality attributed to the participatory democracy theorists are clearly very different from Bell’s arguments. The real problem, according to him, is not the abstract question of fairness, but the social character of resentment and the conditions that give rise to it. For example, he finds it a fascinating sociological puzzle that, while inequality decreases in a democratic society, resentment tends to increase. This is part of the ‘ambiguous legacy of the principle of democracy’ (ibid:446).

It thus appears that Bell considers enhanced public participation in decision-making as a constraint rather than solution: the more citizen involvement, the less satisfaction on their part and the more ineffective the policy outcome in the political process. Using Bell’s own metaphor regarding the segregationists in the USA, one could as well argue that, being a small part of a larger unit, the technocratic elite ought to defer to the moral norms of the civic society rather than the opposite, as he suggests. In fact, the example Bell refers to above is a rather extreme case where citizens, due to various historical factors, held radical, racist views. To interpret this as a typical cause-and-effect relationship, where public participation leads to undemocratic society, seems delusive and therefore inappropriate. And how can we be certain that experts would not design a city plan that favours political and economic interests instead of the common interests of a wider population being affected by it? From the Sociology and Scientific Knowledge (SSK)

perspective, it is often argued that science may become a weapon used to further economic and political interests, where science becomes politics by other means (Irwin 1995).

From the arguments discussed above, it appears that both Habermas and Bell depart from the conventional, scientific perspective assuming that the rationality of scientists in all aspects is superior to that of citizens. However, while Habermas believes in democracy in science and technology in its narrow sense, Bell seems to view democracy as a threat to the technocratic establishment. As noted above, SSK analysis contrasts sharply with this 'enlightenment' view of science as homogeneous, cleanly-bounded and consensual, according to which science as a form of knowledge is value-free and objective (Irwin 1995, Cozzens and Woodhouse 1994). A number of recent studies show that citizens often are sceptical about scientific claims and feel overlooked in decision-making processes (Irwin 1995, Wynne 1996b). Bell, on the other hand, entirely ignores the question of citizen ownership, empowerment, conflict resolution as well as the benefits of local participation in policy implementation.

Sclove offers a completely different perspective on the role of citizens in the science and technology domains (Sclove 1994, 1995, 1996). In democracies, it is often taken for granted that policy decisions affecting all citizens should be made democratically. However, the science and technology domains loom as great exceptions to this rule. Although the decisions affect all citizens profoundly, the policies are typically framed by representatives of only three groups: business, the military and universities. According to conventional common sense, the reason for this state of affairs is that non-experts are ill equipped to comment on complex technical matters and probably would not want to even if they had the chance (ibid:1996).

His own view is that it is both possible and appropriate to involve citizens more directly in making science and technology policy. One of the major reasons is that citizens need chances to influence technology decisions because their lives are so deeply affected by the consequence. In addition, broadened participation can be an irreplaceable source of insight and creativity. He refers to an initiative taken by the Danish Government's Technology Board, a parliamentary agency in charge of assessing technologies, in stimulating broad and intelligent social debate on technological issues through the

conduct of consensus conferences with lay citizens. The conferences are built up around carefully planned programmes of reading and discussion culminating in a forum open to the public, which ensures that they become well-informed prior to rendering judgement. These judgements are then publicised through the news, media, video etc. Interestingly, surveys show that the Danish public and politicians are better informed on issues addressed in this way than are the citizens of other countries facing similar questions. Drawing on this and other empirical evidence, Sclove also finds that by consistently engaging local social issues and citizens concerns, universities would help preserve their own capacity for independent social criticism. (1996).

In his book *Democracy and Technology* (1995), Sclove examines the constraints of conventional approaches to policy analysis of technology and the potentials for reconstructing technology along more democratic lines. One serious misconception about technologies, according to him, is that they are natural or inevitable rather than the product of contingent social choices. A part of the problem is that technologies have never been systematically evaluated from the standpoint of their democratic bearing, wherefore many existing technologies may appear to be structurally undemocratic. To become effective, they must be expanded into more specific guidelines for technological design, so called democratic design criteria. These criteria, he suggests, should be publicly debated in order to offer promising means for learning collectively to perceive technologies' non-focal aspects and to formulate democratically important questions.

More ideally, strong democracy requires that organisations and communities seek to achieve self-governance and political equality, serving as mediating structures that help empower citizens and give them self-actualising opportunities. In addition, freedom can be obtained to the extent that citizens share commonalities. His view is reflected in a prescriptive theory of democracy and technology, suggesting that '(i)f citizens ought to be empowered to participate in determining their society's basic structure, and technologies are an important species of social structure it follows that technological design and practice should be democratised.' (1995:26-7).

Sclove distinguishes between basic forms of technologically mediated social relations. *Authoritarian technologies* support establishment or maintenance of illegitimately hierarchical relationships; *Individualised* are employed for the purpose that individuals

have essential liberty to determine for themselves; *communitarian/co-operative* relations help to establish or maintain egalitarian, congenial or legitimately hierarchical social relationships. *Mass technologies* consist of a combination of the former three, but here the elite is distinguished from the majority and there is rough equality among members of the mass. This equality, however, is thin and negligible ‘insofar as direct interaction among the mass tends to be non-existent and or else is mediated through technologies that the elite control. (...) Thus for members of the mass, social relationships tend to be atomised, standardised or latently oppressive.’ (1995:62). Lastly, *trans-community technologies* boost or facilitate democratic social relations among communities or among members of different communities. Sclove advocates a combination of the three most democratic forms of technologies, arguing that:

‘Democratic societies should seek a balanced mixture of communitarian/co-operative, individualised, and transcommunity technologies, while avoiding technologies that establish authoritarian social relations. Deploying a limited number of democratically governed mass technologies may also be acceptable.’ (ibid).

In modern Western societies, most social relations fall under authoritarian or individualised, or a combination of these two. An example of this is the physical layout of production e.g. sitting in a classroom where the teacher’s desk is opposite the pupils and twice the size of their desks. In contrast to the prevailing situation, in workplaces or elsewhere individuals or local communities should have equal and extensive opportunities to influence directly or indirectly whichever decisions affect them, in particular those which affect their prospects for individual or community freedom and democracy. Here he lists his first design criterion, suggesting that democratic societies should seek balance between communitarian, individualised and trans-community technologies while avoiding those that create authoritarian social relations. For clarification of this typology and to establish its practicability, the author considers a number of case studies of contemporary (authoritarian) technological orders as well as alternative orders with more popular organisational and technical innovations. The latter category is found in the Swedish, French and Brazilian studies where communitarian/co-operative social relations proved successful in terms of benefits of various kinds ranging from sense of commonality and conviviality to reduced actual employee turnover and absenteeism.

Sclove also discusses the political implications of having lay people on board in technology decisions. In contrast to Bell, he believes that the issues of ordinary people's competence to participate in research design and development do not pose insurmountable problems. Rather, in Sclove's view, research design and development activities can offer rewarding opportunities for creativity and self-actualisation on the part of ordinary citizens. In addition, he believes that lay people can help identify social needs and concerns and hence contribute to developing functional specifications for new technologies. He also calls for regulated market dynamics as he believes that the conventional economic justification for markets on efficiency grounds is false as they may foster egoism and '...do not satisfy exogenous preference, but do clandestinely transform social structures. (1995:178).

From the discussion above, it appears that Sclove's rationale for extensive individual and community participation in the technology sphere is primarily of a democratic nature. Much of his reasoning conforms to the arguments of 'classical democracy theorists', such as Rousseau and Cole, but is applied to the modern society and deals specifically with technical issues. However, Sclove goes even further than the latter authors in calling for democratisation of technology in its widest sense: not only are the benefits a question of ensuring political stability, equality and individual development, but also a matter of achieving more effective policy outcomes. Similar to Rousseau, Sclove argues that enhanced public involvement in decision-making leads to individual gains in terms of moral development and political and social responsibility (here more in terms of self-reliance and self-actualisation - values that are viewed to be of great importance in his own culture, the US society).

Hence it follows that Sclove's view diverges substantially from Bell's and Habermas' notion of the ideal role of science and technology in the policy domain. As was argued above, Bell adheres to the idea that participation often leads to increased frustration, and not self-actualisation, as Sclove suggests. In addition, whereas Bell views the values of fairness and equality as abstract and subordinate to technical expertise, Sclove sees them as the prime rationale for democratising politics of technology. The differences between Habermas' and Sclove's perspectives are mainly in terms of the degree to which the citizens have a say in technical matters: whilst Habermas calls for expert-citizen

communication during the policy making process, Sclove calls for *direct influence* of citizens in research design and development of technology [my emphasis].

With this book, Sclove presents a detailed analysis of the prevalent relationship between democracy and technology and shows that it is at least theoretically possible to democratise technology. Thus the influence of Sclove's literature reviewed here seems to lie in its theoretical strength rather than in its real world applicability. Although there are persuasive arguments about the individual and societal benefits of democratising politics of technology, their validity does not appear equally bearing across the world, as the arguments tend to neglect the enormous range of cultural variability, which in turn inhibits any cross-societal comparison. For example, one may wonder why the case studies in the United States and Sweden would necessarily be applicable to the Third World context, where the technological, cultural and political systems may be substantially different.

3.2. Quality assurance through extended peer review processes

Ravetz and Funtowicz (1991a, 1991b) also discuss the role of participation in policy-making, but set out from a completely different position than the previous authors. Their arguments for participation are not for the purpose of knowledge generation, political equality and education among ordinary citizens, but that of quality assurance in science for policy. In these two publications, the authors describe their views of the problem of uncertainty in science and decision-making and the limitations of application of traditional scientific methodologies for addressing current global environmental problems.

Their starting point (1991a) is the evolution of science and its current products, reflecting a response to the changing circumstances from the Middle Ages up to the 'post-normal' era of today. The term post-normal science mirrors '...the passing of an age when the norm for effective scientific practice could be a process of puzzle-solving in ignorance of the wider methodological, societal, and ethical issues raised by the activity and its results' (1991:138). Unlike earlier scientific practices, post-normal science does not pretend to be either value-free or ethically neutral. Today, scientists normally tackle problems introduced through policy processes where the facts, typically, are value-laden,

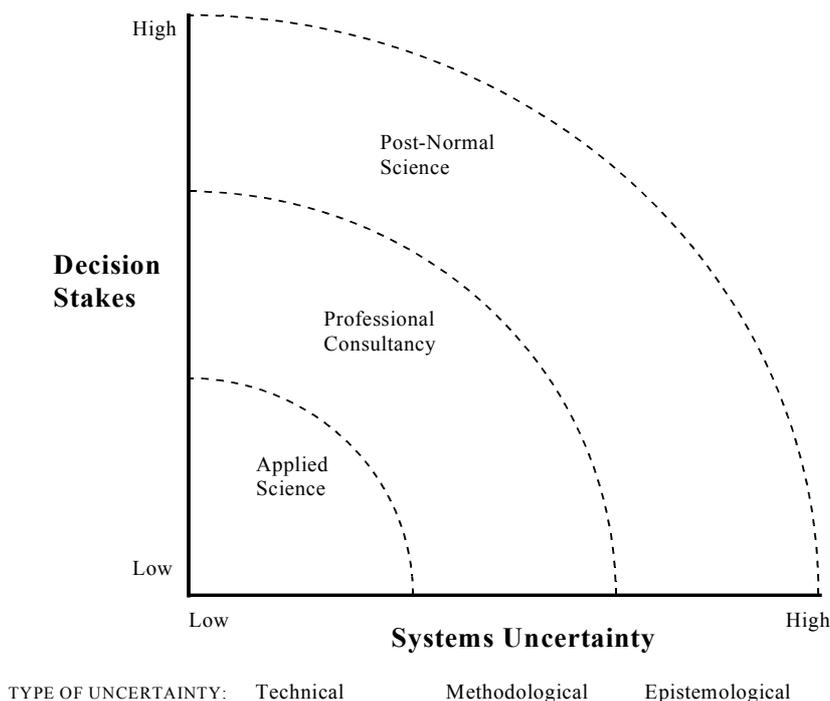
stakes high and decisions urgent. The uncertainties in research related to global environmental problems are deemed even greater, given that they are global in scale and long term in their effects. In post-normal science, 'the art of the soluble' is no longer appropriate, because it is issues rather than problems that are examined. Instead of the traditional images of conquering or managing, we now have to consider how to cope with, and ameliorate the consequences of, the traditional activities that are now becoming apparent in society.

In post-normal scientific research, an enormous amount of resources and efforts have been devoted to developing and applying methods like computer models to address these difficulties. However, particularly in research related to policy on risks and the environment, there has been little attempt to find out whether the scientific methods do contribute substantially to our knowledge or quality of our decisions. The output of computer models, the most commonly used method for predicting future scenarios, is not necessarily based on scientific predictions and may represent an inadequate future policy forecast: the numerical input data, the authors contend, may not derive from experimental and empirical research, and the best numbers available may be guesses gathered from experts. It is also clear that the dilemmas of computer modelling cannot be resolved by new technological innovations. Although the computer models are not adequate tools, no other better ones can be provided by traditional science. Their critics judge them by the standards of mathematical-experimental science, and their advocates assess them on the grounds that they are the best possible available without assessing how different the complexity of uncertainty in these new sciences, the new criteria for quality, or socio-political involvements are.

Thus, the authors argue, efforts are needed for the management of uncertainty, quality assurance and the development of skills. This is necessary in order for scientific arguments to be contested and questioned, particularly in relation to environmental, social and ethical aspects. In order to ensure such a quality control in science, technology and decision-making, Ravetz and Funtowicz call for the development of extended peer reviews in these processes in which non-scientist groups of people would assume a role in quality assurance.

To highlight the limitations of traditional problem solving, the authors suggest three types of strategies illustrated in a biaxial diagram (Figure 2). The diagram shows them in terms of ‘systems uncertainties’ (reflecting technical, methodological and epistemological uncertainties) and ‘decision stakes’ (costs, benefits and commitments) that range from a low to a high degree. The figure also shows three divisions corresponding to three types of scientific practice discussed in their paper: applied science, professional consultancy and post-normal science. For example, in the case of the post-normal scientific era, the decision stakes are typically high (complex environmental risks, global impact, survival) whereas the degree of uncertainty is also high (no adequate technical tools available, lack of knowledge about global environmental risks and methodological approaches).

Figure 2: Types of problem-solving strategies, after Funtowicz and Ravetz (1991:145)



The usefulness of the model lies in particular in its applicability to global environmental problems such as climate change, which is characterised by high risks, scientific uncertainty, and inadequate technical tools to solve the problem. It also clearly demonstrates that when uncertainties are low, if decision stakes are high then puzzle-solving alone will not be effective in a decision process as no scientific arguments can be

logically conclusive. In this context, scientific arguments evolve in a continuous dialogue with others, and ‘rationally’ change their opinions as a result of ongoing debate among those with strong stakes in the outcome. Accordingly, in the post-normal science problem-solving strategy, the figure shows the need for inclusion of others than technical experts in the decision forum.

However, it is debatable why the diagram assumes that there is a clear-cut correlation between the variables ‘systems uncertainty’ and ‘decision stakes’: it appears to assume that there are common, objective interpretations of the problems and the potential solutions among the actors involved. In reality, however, problem solving is an interactive, dynamic process, which largely depends on the nature of the dialogue and the characteristics and idiosyncrasies of the partners involved. For example, some policy-makers may undervalue the scientific uncertainty aspect, and stress the importance of decision stakes, whereas some experts do the vice versa. Or using another example, some experts may be of the opinion that the issue at stake is easy to resolve from an epistemological and methodological viewpoint but questionable in terms of available technical tools.

Ravetz’ and Funtowicz’ typology has attracted both similar and different criticism from other commentators. Yearley’s detailed analysis of the model centres on the lack of clarity about the nature of the variables, as well as about whether assessments of uncertainty and decision stakes are truly discrete (Yearley 2000):

‘(...) These drawbacks hint at the first significant underlying problem with this approach: that it assumes that the variables of uncertainty and decision stakes can be agreed on and measured in some objective or non-partisan way. The authors themselves indicate something of the difficulties inherent in this matter by their lack of clarity about the nature of the variables on the axes. Sometimes these are presented as simply more or less of a property (‘uncertainty’), though on other occasions there are differences of quality: different ‘types’ of uncertainty are marked on the horizontal axis, as shown in Figure 1 [*here in Figure 2*]. When the types are separated out, low uncertainty is described as technical, middle-range uncertainty as methodological, and high uncertainty as epistemological. But in the absence of a clear indication of how these categories shade into each other, the calibration of this variable is highly ambiguous. Furthermore, it is unclear whether the assessments of uncertainty and decision stakes are---either in principle or in practice---truly discrete. In many cases, one cannot form an assessment of the stakes without simultaneously coming to an opinion about what is or is not known. Thus, in contemporary debates about the putative hazards of genetically modified organisms (GMOs), contests over the stakes are inseparable

from claims about the risks or uncertainties. For many protesters, the stakes are high precisely because they believe there is a chance, however slim, that genetic material can migrate across many species. Those who regard the uncertainties as less high, also regard the stakes as much lower, since genetic pollution is not held by them to be a conceivable risk.' (2000:110).

More generally, while the basic problems of science for policy-making are carefully elucidated in the article, the authors do not adequately elaborate on the solutions to the problem. For example, it is unclear what level of participation they call for; what groups of people are qualified for a stakeholder role; and on what level, and how, the interactions would take place in the decision forum. While one could argue that this is beyond the scope of the paper, one may also contend that it fails to convince the reader that there is an available solution to the post-normal science conditions.

3.3. Participation for the sake of knowledge generation in science and policy domains

Wynne also treats the problem of uncertainty within scientific understanding of the environment (1992) and the need for enhanced citizen participation in science and policy-making spheres (1996a, 1996b). Wynne's notion of an ideal participation in these issues is, however, not that of peer review community for the purpose of quality assurance, but that of lay involvement for the purpose of knowledge production. The core argument in his reasoning is that ordinary citizens may have access to local lay knowledge that is unknown to authorised expert communities and hence lay people possess expertise in the context of their everyday experience and discourse, which is valuable for the generation of scientific knowledge.

As empirical evidence for his arguments, he examines public interaction with science, in particular the case of hill farmers of the UK's Lake District in the aftermath of the radioactive fall-out from the 1986 Chernobyl accident (1996a). In the study, the author found that the scientific institutions concerned framed the issue and knowledge they articulated as science on erroneous assumptions caused by the inherent perception of scientific knowledge as superior and as beyond questioning by the wider public. For example, he found that the scientific research methods were erroneously expected to fully simulate realistic farming conditions as practised, transmitted and valued in hill-

farming culture and that the lay knowledge of local hill farmers on these issues was considered worthless by the experts.

In Wynne's view, this lay-expert interaction is of a cultural nature in that scientific knowledge manifests social and cultural prescriptions in its very structure. Accordingly, the problems of public uptake of science lie in the institutional forms of science and its inclusion into policy and administration. For example, Wynne discovered that the farmers were relatively familiar with uncertainty in several ways and hence with adaptation to factors beyond their control. However, this cultural perspective was incompatible with the scientific-bureaucratic culture of standardisation of formal and inflexible methods and procedures, prediction and control. In addition, the local hill farmers prove able to reflect upon, and develop their own social position as part of a 'dependent' response, in which they are assumed to have no powers of critical rationality independent of 'proper' scientific understanding. For example, they recognise their social dependency upon the scientists, since they are the certified public authorities in the area. Moreover, although they held different beliefs, they could describe these. Conversely, according to Wynne, the scientists in this study show no particular ability to reflect upon the social dimensions in their scientific interventions that are imposed on the hill farmers. While the implicit moral imperative that drives science is reorganisation and control of the world so as to come to terms with contradiction and ambiguity, this is a moral prescription, which may be legitimately limited or even rejected by ordinary people.

The author suggests that 'reflexive recognition of its own conditionality is a prerequisite for science's greater public legitimation and uptake', which '...requires institutional reform of its modes of organisation, control and social relations.' This would partly involve '...recognition of new, socially extended peer groups legitimated to offer criticism of scientific bodies of knowledge from beyond the confines of the immediate exclusive specialist scientific peer group. The social definition of such extended peer groups would relate to the context of use of the scientific specialties concerned; and criticism would include explicit negotiation of the social criteria or epistemology of knowledge for the situation.' (1996a:39)

Accordingly, Wynne's claims about the need for socially extended peer groups do not considerably advance Ravetz' and Funtowicz' arguments for extended peer reviews per

se, as the paper does not offer an account of how such social extended peer groups are to be included in the science and policy spheres. However, while Ravetz and Funtowicz are inclined to grant ordinary citizens a role in the process of extended refereeing, Wynne calls for fundamental changes in the scientific institutional framework, where lay people are recognised as experts of different types and in different degrees and thus they qualify in the process of knowledge generation. Moreover, in Wynne's view, the lay-expert interaction is considered to be a vital precondition for scientific and technological innovations to occur.

In examining the fundamental interaction between scientific expertise and lay public, Wynne advocates a social constructivist approach, which is concerned with the social negotiations involving both experts and the general public on what counts as scientific knowledge. The author's approach to public understanding further underlines the point made in other SSK studies, that the boundaries between the scientific and the social spheres are mere social conventions that are defined in fashions which may be inappropriate and which should be open to renegotiation. (Jasanoff 1987).

In another paper (1996b), Wynne discusses in more detail the reflexive processes amongst lay public outside of the expert systems. He criticises the prevailing perspectives, articulated in *inter alia* Giddens' and Beck's work, of inadequately capturing the reflexivity among lay people and ignoring the more culturally rooted and legitimate forms of collective public knowledge. According to Wynne, these and many other conventional analyses erroneously take public knowledges and their trust in scientific knowledge for granted, and fail to recognise the cultural and hermeneutic elements of scientific knowledge as well as social interaction and cognitive construction in general. Drawing on the case of nuclear risk debate in the UK, he finds that 'public alienation from and ambivalence towards expert institutions are not necessarily manifested in behaviour or overt commitments, so that observation cannot automatically be interpreted as if trust actually exists and alienation does not' (1996b:49).

As another basis for his reasoning, Wynne refers in part to Erickson's study of Buffalo Creek dam disaster in the 1970s (Erickson 1976). This study showed how an adjacent mining community was torn apart by the release of a sense of chronic disaster which predated the actual dam-burst and ensuing flood. This syndrome was characteristic of an

unarticulated but deep sense of stigma caused by the community's recognition of its complete dependence on the coal company, which behaved generally ruthlessly. The conventional analysis in line with Giddens' perspective, he contends, would mistakenly argue that the local community tends to trust experts but may feel betrayed by the coal company if their expectations are not met. Wynne, on the other hand, suggests that the public's implicit and pervasive sense of self-denigration at 'allowing' their own dependency on an untrustworthy company owner, and employer in this study had been confirmed and rendered explicit. A similar phenomenon is found in a study of public perceptions of risk information on major hazard chemical plants in the UK, where responsible companies were ranked top as a sought-after information source in spite of the lack of public trust in them. The reason for this, according to the author, is that this action was perceived to reinforce the prescriptive message that the companies should be made to fulfil a responsibility for providing public information, and this was one way for the public to enforce that point.

Overall, Wynne prefers to see the conventional view of lay public trust in expert systems under conditions of so called 'simple modernity' be replaced by a more complex assumption of such relationship '...in which ambivalence is central and trust is at least heavily qualified by the experience of dependency, possible alienation, and lack of agency (...).' (1996b:52).

Unlike Ravetz' and Funtowicz' theoretical high-level discussion, Wynne's papers provide rich and convincing empirical evidence of the fundamental unacknowledged capability among lay persons in articulating responses to scientific expertise, and that understanding is a function of experience, judgement and understanding of institutional forms of science's as much as of its cognitive elements. By including local lay knowledge, experts and policy-makers are provided with information and judgements which they may need to reduce the complexity of a given social system and to come to terms with uncertainties and indeterminacies so as to effectively anticipate the consequences of scientific and technological knowledge. Overall, writers such as Wynne and Irwin have stressed the process of social deconstruction and renegotiation of knowledge claims rather than a simplistic process of competence or incompetence, as one important factor explaining issues such as public resistance to nuclear power (Irwin and Wynne 1996).

As we have seen in this chapter, the three theoretical perspectives of participation differ considerably between themselves in terms of rationale and scope for participation, although the specifics of the arguments appear to apply differently to different contexts of environmental policy spheres. Nevertheless, together they reinforce the arguments for participation in policy matters. The ensuing, last chapter of part I of the thesis highlights how citizen participation has evolved up to date in the environmental field, and also at the main arguments in favour of participation in the sustainable development debate.

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4. Citizen participation in the sustainable development process

'One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures'

Preamble of chapter 23 in Agenda 21 (UNCED 1992).

This chapter looks at how citizen or public participation has emerged in the quest for global sustainability and the main arguments in favour of participation in the contemporary sustainable development policy debate. More specifically, section 4.1 discusses how a call for sustainability and the concept of sustainable development has emerged during the 1980s and 1990s. Section 4.2 reviews the rhetoric of participation in the sustainable development process in some key documents resulting from the most influential global environmental initiatives: the 1987 WCED, and the 1992 Earth Summit in Rio and beyond. Particularly important for this research study is also to examine the arguments for citizen participation in science and technology assessments, issues that are critical for the governance of sustainable development. This is the central theme of section 4.3.

4.1. The emergence of the sustainable development approach

The 1960s and 1970s were marked by a growing international concern about environmental pollution and an awareness that environmental degradation arises within the context of complex inter-relationship between humankind, the global resource base and physical and social environments (Turner 1988). At the 1972 UN Conference on the Human Environment in Stockholm, the international community met for the first time to discuss global environment and development issues. Among other things, the Conference stated that 'industrialised' environmental problems, such as acid rain, toxicity and habitat degradation, were not necessarily applicable to all countries, and current development strategies were not meeting the needs of the poorest countries. However, with influence

from books such as *Silent Spring* (Carson 1962) and the Club of Rome report *The Limits to Growth* (Meadows *et al.* 1972), it was the pressing environmental problems that came to dominate the conference agenda. The conference stimulated the creation of environmental ministries across the world, established the United Nations Environment Programme (UNEP) and led to a vast increase in the number of civil society organisations concerned with environmental issues.

The term *sustainable development* was first introduced in the international arena by the World Conservation Union in its World Conservation Strategy (IUCN 1980). However, this report mainly treated the term sustainable development in a narrow sense, with a focus on ecological sustainability. A broader understanding and application of sustainable development was formally introduced by UNEP in the report *Our Common Future* (WCED 1987), commonly called *The Brundtland Report* after the Commission's president. The document defines the concept of sustainable development as 'development that meets the needs of present generations without compromising the ability of future generations to meet their own needs' (WCED 1987:8). Thus the definition, which is still largely valid today, stresses the dimensions of intra- and inter-generational equity of global environmental problems between nations, cities and localities becoming sustainable in their resource use. Rather than suggesting that environmental conservation can only be achieved at the expense of economic development, like earlier documents on sustainable development, the Brundtland Report argues for *integration* of policies and strategies for economic, social and ecological development. As a consequence of the popularisation of the Brundtland understanding of sustainable development, environmental quality and economic development have come to be viewed as inter-dependent and mutually reinforcing. (Baker *et al.* 1997:3).

Although the definition appeals to those concerned with both social justice and ecological quality, the Brundtland concept has been subject to considerable criticism. The most common critique refers to the definition's imprecision and vagueness which may lead to abuse (O'Riordan 1988) or to its strong foundation on conventional economic rationalism and anthropocentrism (Koeyers 1993:15). Some call in question why the definition argues for more concern about inter-generational equity than intra-generational equity (Reid 1996), and yet other critics contend that the definition suggested is more concerned about how economic interests could integrate ecological

constraints, thereby continuing the domination of Northern elites (Koeysers 1993). This controversy over the definition and interpretation of the term sustainable development continues to engage many scientists and policy analysts today.

During the 1990s, the concept of sustainable development became a catch phrase, particularly in the wake of the Earth Summit in Rio in 1992. The Earth Summit brought together Heads of States, government officials, scientists, and representatives from UN agencies, international organisations and many NGOs from all over the world to discuss and develop a common strategy for global sustainability into the 21st century. The Brundtland Report had framed much of the issues that would become the 40 chapters of *Agenda 21* (A21, UNCED 1992), which was adopted by 178 countries as a global action plan for sustainable development¹. The 700 page-long action plan deals with both the pressing problems of today and offers a policy framework for national governments to take action to ensure sustainable development in their respective countries. This has resulted in the establishment of thousands of Local Agenda 21 (LA21) initiatives worldwide and an enhanced political profile of environmental issues, which is reflected in the vast number of recent national sustainable development commissions and strategies for sustainable development. (Gardiner 2001). The Rio Summit has been followed by a number of agreements and discussions. For example, the UN Commission on Sustainable Development (CSD), which was founded during the Rio Earth Summit, meets annually to discuss government and NGO initiatives in the sustainability spheres, the Biodiversity Convention was signed in 1993 and the Climate Convention was ratified in 1994.

The 1997 Rio+Five Summit in New York gathered stakeholders to assess the progress of sustainable development during the first five years of the Rio agreements. A number of gaps were identified, especially in relation to social equity and poverty, reflecting among other things a decline of official development aid and growing international debt. (Gardiner 2001).

As a follow-up of the 1992 and 1997 Summits, in August-September 2002 the UN held the World Summit on Sustainable Development (WSSD) in Johannesburg, also called 'Rio+10'. The major outcome document of the WSSD, the *Plan of Implementation*, contains targets and timetables to promote action on a number of issues, including

halving the proportion of people who lack access to clean water or proper sanitation by 2015, reducing loss of biodiversity by 2010, restoring depleted fisheries by 2015, and, by 2020, using and producing chemicals in ways that are harmless to the environment and human health. In addition, for the first time countries committed to increase the use of renewable energy ‘with a sense of urgency,’ although no specific target for this was adopted. (UN 2002).

4.2. Public participation for governance of sustainable development

A cornerstone of the arguments of the Brundtland Commission and the Rio Earth Summit is the requirement for the decentralisation of policy activities and the call for effective citizen participation in decision-making (WCED 1987:65, UNCED 1992, chapter 23). The UNCED commitments, in particular A21, are of particular importance for the participatory rhetoric in the sustainability discourse both because of the range of signatories and the extent of the provisions relating to access to information and public participation. In particular, section 3 (chapters 23-32) of A21 is devoted to strengthening the role of major groups of civil society in sustainable development efforts. Chapter 28 stipulates that, as many problems and solutions listed in A21 have their roots in local activities, local authorities have a key role to play in making sustainable development happen. For this purpose, A21 requests all local authorities to develop LA21 strategies for their community in consultation with its citizens and explicitly identify a need for ‘individuals, groups and organisations to participate in environmental impact assessment procedures.’ (ibid, 23:1). In endorsing A21, many governments worldwide have thus made a commitment to public participation in recognising the importance of involving all groups within society within policy-making for sustainable development.

Not only A21’s definition of sustainable development, but also its claims for participation have been subject to controversy. Despite the fact that the document is devoted to public participation in 10 of its 40 chapters, it has sometimes been criticised for not being really about meeting people’s needs and priorities (Middleton *et al.* 1993). Some commentators go even further in their critique. Sachs, for example, argues that the multiplicity of meanings of sustainable development, despite commitments to LA21, do not necessarily incorporate advocacy of true public participation (Sachs 1999). He identifies three perspectives on sustainable development reflecting the value-conceptual

nature of the term. The 'contest perspective' focuses on making growth sustainable and means that such growth is possible indefinitely while accepting that it will remain spatially restricted to the richer parts of the globe. The 'astronaut's perspective' admits growth cannot be infinite and views the solution as a global framework to deal with the crises in nature and the crises in equity. The third one, the 'home perspective', is about neither economic growth or global stability but is concerned with local livelihoods and looks to alternatives to the economic development which has disempowered communities. According to Sachs, participation is only likely to be sustained within this perspective, which seeks local solutions to local and supra-local problems. The first two perspectives, on the other hand, are unlikely to involve public participation in any meaningful way, as they are concerned with international economic measures, techno-fix solutions and institutionally imposed global environmental solutions, which do not accept the notion of any limits to development. Hence, he concludes that meaningful public participation is unlikely to occur within sustainable development, since the 'home perspective' appears to be the one that is least prevalent within institutional discourses.

More typically, however, authors have adopted a more optimistic view of the role of participation in the sustainable development process post-Rio. While some authors have emphasised the rhetorical breakthrough of participation as a direct result of the Rio Summit and A21 (Holmberg *et al.* 1993), a number of more recent studies highlight the progress made in the field of public participation through implementation of A21 (Brundtland 2001, Trittin *et al.* 2001). For example, ICLEI's analysis of local government implementation of A21 during the 1992-1996 period (prepared for the Rio + Five Summit), found that 'the greatest impacts of local government actions have been in the areas of institutional development, public participation, and improved management systems.' (ICLEI 1997). A recent ICLEI survey of LA21 processes worldwide reconfirms the achievements to date in terms of involving civil society in the sustainable development issues through LA21 processes, which '...demonstrated local governments' growing commitment to address sustainable development through their Local Agenda 21. (...) The success of these initiatives is evidenced by the integration of Local Agenda 21 into municipal systems and improvement in specific issues such as air quality, water resources management and public participation' (UNDESA 2002:24). Most progress appears to have been made since the Rio+Five Summit in New York, 1997. Since the previous survey of LA21 in 1997, processes were identified in 49

additional countries and the number of ongoing LA21 processes had increased from 1,812 to 6,416 in 113 countries by December 2001 (ibid:8). However, this and other studies (World Humanity Action Trust *et al.* 2001) suggest that the LA21 work is very patchy between countries and continents, as well as between regions within a country.

The Earth Summit has spurred some other inter-governmental agreements highlighting the benefits of public participation in the process towards sustainability. Perhaps most notably, at the global level, the 2000 *Malmö Ministerial Declaration* of the first *Global Ministerial Environment Forum* in Malmö, Sweden, reaffirms the principles of Rio, stating that civil society plays a critically important role in addressing environmental sustainability.² The significance of public participation has also become officially acknowledged in a number of regional policy agreements on sustainable development. Following UNCED, the right of public access to environmental information has become an important support for effective public participation in decision-making and for the effective monitoring of countries' compliance with their international environmental commitments. In June 1998, the State members of the United Nations Economic Commission for Europe (UNECE) adopted the *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* in Aarhus, Denmark. The Convention represents a milestone in the contributions of public participation in international law, since it contains innovative conditions on the rights and obligations of governments regarding civil society access to environmental information. The Aarhus Convention, which was signed by 40 countries, entered into force on 30 October 2001. (UNECE 1998). In the Americas, the Organisation of American States (OAS) adopted *the Inter-American Strategy for the Promotion of Public Participation in Decision-Making for Sustainable Development* in 2000 (OAS 2001). The Strategy states principles, goals and policy recommendations aiming at promoting and strengthening public participation in sustainable development decision-making. Also this agreement stresses the need for public access to timely information on sustainable development.

At the recent WSSD in Johannesburg in August-September 2002, the views of civil society were given prominence in recognition of the key role of civil society in implementing sustainable development worldwide and in promoting partnership initiatives. Over 220 partnerships between government, private sector and civil society

were identified in advance of the Summit and approximately 60 partnerships were announced by a number of countries during the Summit. (UN 2002).

4.3. Participation in science and technology policy

Until fairly recently, the general institutional approach to participation in science and technology has worked upon the premise that there is a deficit in the knowledge of the public and that this should be corrected by the provision of expert knowledge. However, this positivist standard image of science and scientific knowledge as objective and value-free has become increasingly rejected. One important reason relates to the changing attitude to the role of science and technology in society. Today, there is a wide acceptance that technology serves as both a cause of environmental problems associated with the development of the modern, industrial society, as well as part of the solution to the problems (through the development and use of cleaner and more energy efficient technologies). The concept of 'technology assessment' received growing attention from the mid-1960s onwards mainly for two main reasons. It was increasingly recognised that some scientific and technological programmes (e.g. chemistry, biochemistry and nuclear industry) constituted unprecedented challenges to risk management, social traditions and values. In contrast to the enthusiasm for science and technology that had been prevalent in earlier decades, the late 1960s and the 1970s saw scientific issues increasingly contested by the public. (Joss 1998).

In the 1980s, sociological and historical studies became preoccupied with developing a constructivist analysis of science and technology. Thus it became clearer that scientific and technical decision-making procedures are value-based and could no longer be delegated to expert communities without the attention to the values, preferences and knowledges of the public. This questioning of the role of science and technology is not restricted to a certain group of opponents but is found within scientific, policy, non-governmental and 'non-expert' communities.

Renn *et al.* offer a two-fold explanation as to why traditional environmental policy making strategies are increasingly recognised as insufficient without meaningful public participation. First, they tend to de-emphasise the attention of concerned interests in favour of 'objective' analyses, and therefore lack popular acceptance. Second, they rely

almost exclusively on systematic analysis and general theories, and hence devote inadequate attention to local and anecdotal knowledge of the people most familiar with the risk or problem. Consequently, this gives rise to ‘...outcomes that are incompetent, irrelevant, or simply unworkable’ (Renn *et al.* 1995:1). This reasoning relates to the arguments for lay participation for the sake of scientific knowledge generation, which was discussed in chapter 3.

In the UK, the last decade’s controversies over incidents such as BSE and genetically modified foods have eroded the earlier public faith in scientific expertise. While there is strong indication that people’s attitude to science is more supportive today, it also appears that science is not any longer viewed as uncontested truth. In an attempt to reduce public opposition and improve legitimacy of decision-making on science and policy matters, the UK Government has explored ways to broaden participation in these domains. In recent years, there have been a number of recent inquiries by Parliament committees that have considered public participation in policy matters. In February 2000, the Science and Technology Committee of the House of Lords published a report on the theme *Science and Society*, in which it called for increasing public consultation and enhanced dialogue with members of the public in scientific research and technology development³. (Kass 2001). The Third Report of the Select Committee on Science and Technology provides a number of recommendations to be pursued by science and policy institutions in the UK. For example, it is recommended that direct dialogue with the public should move from being an optional add-on to science-based policy-making and to the activities of research organisations and learned institutions, and should become a normal and integral part of the process. It is further advised that government departments should collate experience of new procedures of public dialogue, as well as draw up a code of practice aimed at maximising their effectiveness and preserving their integrity. Advisory and decision-making bodies in areas involving science are advised to adopt a presumption of openness and the Government is advised to give a lead at EU and international level in fostering public dialogue on issues involving science. (House of Lords 2000).

The widespread recognition of the importance of public involvement in science and technology is also reflected within the scientific community itself. During the past two decades, a growing interest has emerged in integrating participatory techniques from the

social sciences into the assessment of complex environmental issues where a high degree of risk and uncertainty are involved. A large scope of studies on risk assessment and management is concerned with the role of public participation in this realm (Kasperson 1986, Wiedemann and Femers 1993, Slovic 1987).

Another strand of multidisciplinary perspectives, *Public Understanding of Science* (PUS) emerged as a systematically-researched area in the 1980s. Studies in this vein deal with aspects of the inter-relationships between science (including technology and medicine) and the society. Until recently, the dominant agenda of PUS research was shaped by problematizing publics and their cognitive processes, while PUS research criticising science was misrepresented. In reality, PUS thereby propagated ‘...the existing institutionalised cultures and definitions of ‘science’ as natural and universal standard of judgement and rationality’ (Wynne 1994b:384). More recent PUS research, suggested by the Sociology of Scientific Knowledge (SSK) strand, attempts to examine how people experience and define science in social life, as well as how particular scientific constructions incorporate tacit, closed systems of social relationships that are, or should be, open to negotiation. This implies that scientific knowledge, when operating in public, inevitably assumes a social-descriptive role (1994b:362). One key finding in PUS studies on science in public suggest that ‘expert’ accounts of physical reality often conflict with local people’s knowledge and that this local knowledge often proves more sensitive to local realities than the applications of universal scientific knowledge.

Several PUS-related studies offer explicit critique of conventional approaches to risk communication. A recent study of lay understanding of hazards in Northeast England, for example, found that the public perceptions of environmental risk and health are intimately linked with cultural identity and social worldviews and cannot be separated from the larger settings, within which they are experienced and constructed (Irwin *et al.* 1999). In addition, instead of risk communication being conceptualised in terms of supplying objective data to unaware and ignorant lay publics, a two-way form of interaction between lay and scientific groups appeared to be required. The authors also found that, within the local contexts, local citizens are able to construct robust and often vivid accounts of hazards. These findings are typically at odds with conventional risk communication analysis.

There is an expanding toolbox of participatory methods and procedures and much of the research is aimed at understanding which of the variety of emerging methods is the most applicable in different contexts, as well as why. In this vein, *Participatory Integrated Assessment* (IA) is emerging as an interactive and iterative participatory process that aims to accommodate the uncertainties, complexities and value diversities by taking into account social context in which scientific and political activities operate (van der Sluijs 1999). IA is ‘a multi- and interdisciplinary process of structuring knowledge elements from various scientific disciplines in such a manner that all relevant aspects of a social problem are considered in their mutual coherence for the benefit of decision-making’ (ICIS 1999:2). A number of IA-projects are devoted to building computer models for such decision support on complex environmental issues. However, during the 1990s the focus shifted from IA models for generation of scientific knowledge in support of global climate policy, towards an understanding of the need to complement these science-based tools in a broader, multidisciplinary assessment process.

By the mid-1990s, the interest in developing participatory techniques for policy support in IA led to some European research initiatives such as the projects *Urban Lifestyles, Sustainability and Integrated Environment Assessment* (ULYSSES), funded by the EU (DG XII) during 1996-1999 (Jaeger *et al.* 1995), and the ESRC funded (1997-1998) *Lay Knowledge, Sustainability and Integrated Assessment* (Bailey *et al.* 1999). The common objective of these projects was to develop and test tools for public participation in IA by embedding scientific knowledge (through giving access to such computer models for decision support) in a social discourse. However, while ULYSSES focused on the issue of climate change and urban lifestyles at European policy level, the latter project focused on air pollution at local policy level in the Sheffield region, UK. This project has later been extended to include analogous studies of the UK cities of Bristol and York. Another initiative, the establishment of the European Forum on Integrated Environmental Assessment (EFIEA) (Tol and Vellinga 1998) under the auspices of the European Commission in 1998 further illustrates the recent growing interests in (participatory) IA studies.

A number of other studies of the 1990s have emphasised the relative benefits of involving lay publics in science and technology assessment (see e.g. Sclove 1995, Joss 1998, Petts 1994, Irwin 1995, Irwin and Wynne 1996, Renn *et al.* 1995, Kuper 1997,

Wynne 1996, Bijker 1993, Yearley and Bailey 1999). Recent research is increasingly preoccupied with the quality of various participatory methods and with the provision of evaluation frameworks for public participation in these areas (Rowe and Frewer 2000, Young 1996, Renn *et al.* 1995, Beierle 2002).

In the theoretical chapters, I have highlighted how the calls for participation have emerged during the last few decades and in particular how such claims have been endorsed in the sustainable development debate. In the previous chapter, I contended that public participation has commonly been advocated theoretically on the grounds of democracy and justice; the need for lay expertise in the production of (scientific) knowledge; as well as for the sake of quality assurance in a process of extended refereeing. In the current chapter, I have illustrated more explicitly that the rise in interest in, and practices for pursuing, meaningful public participation in technical policy issues, is largely a product of the changing attitude to the role of science and technology in society. Despite some controversy over the arguments for participation in the sustainable development process, participatory approaches to science and technology policy continue to attract a growing number of proponents and practitioners within the academic institutions and government agencies worldwide.

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5. Empirical introduction and methodology

This first chapter of part II of the thesis introduces the empirical research undertaken in some urban settings: the Stockholm Region in Sweden, and Kirklees, Leeds and York in Yorkshire, UK. Chapter 5.1 describes the research method used for the study, and section 5.2 describes the selected case study areas and what criteria were decided upon. The last section, 5.3, introduces the three cases in Sweden and two cases in the UK that have been selected for the study.

5.1. Research method

Throughout this thesis, I will use dichotomies when speaking of the representatives of citizenry versus government or private institutions involved in the studies. Any generalisation based upon expert-lay dichotomies is certainly rough and simplistic, and risks reinforcing stereotypes. As argued in chapter 2 ‘ordinary citizens’, or ‘the public’ are not a homogeneous mass of people, but a great heterogeneous group of individuals with different sets of interests, views and concerns. What they have in common in the context of this study is their non-professional background in the examined science and policy domains, as well as lack of political power and political-organisational structure. Neither are government officials necessarily ‘bureaucrats’ with fixed ideas and policy-oriented perspectives on things, nor are private sector stakeholders only profit-driven individuals without no other pursuits in their lives than making money. Needless to say perhaps, representatives of government agencies and private companies are also citizens, and lay people in other contexts than those under scrutiny here. However, in the context of this participatory study, the concerned actors’ professional and non-professional roles and experiences are predominant in their relations to one another as well as determinants of their empowerment of and control over the investigated initiatives. In addition, the advantages of employing these dichotomies help assess the challenges of participation in environmental policy and management.

In order to collect qualitative data, I have chosen to carry out both individual and group interviews with representatives of local authorities and the private sector concerned in the environmental initiatives, as well as representatives among the concerned citizens. In the context of interviews, focus groups appear to be an appropriate tool for qualitative data gathering in participatory research. Focus groups are carefully planned discussions

designed to obtain the perceptions of a certain group on a defined topic in a permissive and non-threatening environment (Krueger 1994:6-7). Attitudes and perceptions relating to concepts, products, services or programmes are developed in part by interaction with other people (ibid:10-11). Moreover, the focus group technique is a useful tool for examining people's different perspectives as they operate within a social network and for exploring people's experiences, opinions, concerns, and particularly for allowing participants to generate their own questions, frames and concepts (Barbour and Kitzinger 1999:5).

In line with standard procedures for analysing focus group data, I have audiotaped the interviews (leaving out only irrelevant parts of the discussions) and transcribed the tapes. In order to support my arguments and to illustrate interviewees' perspectives in their own words, as well in which context they were raised, quotations have been selected from the transcripts and inserted in each case study chapter. Although I tend to highlight more commonly expressed arguments in the discussions to show the general patterns and trends in the interviewees' arguments, I make no attempt to quantify the proportions of the various types of interview responses.

My research approach was to combine the use of focus groups and individual interviews for empirical data gathering. The data are based on a minimum of one focus group and six face-to-face interviews in each of the five cases. Individual interviews were conducted in order to acquire initial information and data from local government representatives, professional staff or other first contact persons engaged in the selected activities. Moreover, I carried out several individual interviews for practical reasons: when meetings were set up within short notice, the time and location did not allow for focus group arrangements, and in cases where the number of interviewees was low.

For both types of interviews, I have used a non-standardised approach to the interview guides, departing from a list of topics that I wanted to explore, and attempting to phrase the questions and put them into any order that seemed appropriate to the case. In most cases I used note-based analysis (as opposed to transcript-based analysis) of the face-to-face interviews. In these cases, I have taken the precaution to take notes during the interview, write up minutes promptly afterwards, and then to store them systematically. However, a number of the individual interviews have been recorded and transcribed in

cases where I have been particularly interested in obtaining a more detailed account of the interviewee's views and arguments. The face-to-face interviews have generally proved to be complementary to the focus groups, since the character of an individual interview allows the interviewee to develop his/her arguments in a different fashion than in focus groups. Thus there are diverse strengths and weaknesses of these two research techniques, which I have tried to combine as appropriate as possible.

In order to secure anonymity of the interviewees, no names are disclosed in the chapters, whereas other details about the conducted interviews are given under the respective sections. The interview data have been complemented with a review of literature that is relevant to the selected cases, with a list of references at the end of each chapter.

5.2. Selection of case studies

I have attempted to find some promising examples of local initiatives in Swedish and UK urban settings taking into account the opportunities for collecting/accessing the required empirical data. The five cases are not clearly comparable in a stricter sense, but together they provide a clear indication of the very different obstacles likely to be encountered when pursuing a participatory approach to (environmental) science and technology domains. For the case studies, the following selection criteria were decided upon:

- Two larger conurbations in the North (UK and Sweden) taking into account the location and access to empirical data as well as my previous research experiences.
- Some degree of collaboration between local authorities and citizens, but the activity may have been initiated either by local community groups or the local authorities.
- A fair degree of citizen involvement in the assessment of relatively technical aspects of environmental policy, with evident interaction between experts and lay people.
- To enhance comparability, I chose two particular focal points for the case studies: housing and transport. There are several rationales for this focus: first, human activities in these sectors pose severe challenges to contemporary environmental policy and management processes, as they are inextricably global and complex in nature. In targeting local citizens as householders or travellers, through the participatory process they can become more aware of the consequences of their lifestyles, and alter unsustainable behaviours accordingly. Housing and transport are

also good examples on participatory democracy grounds, as they involve citizens in the capacity of tenants/residents or travellers who ought to have the right to claim control over assessment and decision processes of issues that concern their lives to such an extent as local transport and housing planning and design. Moreover, in relation to this, local citizens are also in an important sense the experts on housing or travelling and mobility in the local contexts, and can thus create not only fairer but also more effective policy outcomes.

On the basis of the selection process between 1998-2000, Stockholm in Sweden and Yorkshire in the UK appeared to be the most promising regions for the selected cases.⁴ More specifically, in the Stockholm region, I identified and chose two housing initiatives and one transport initiative, whereas for the Yorkshire case, I selected one housing initiative in the Kirklees District as well as a transport-related activity implemented in York and Leeds. I have given one to two contact persons for each initiative the opportunity to review the respective draft chapters to ensure that the facts provided in this thesis are correct.

5.3. Empirical introduction

This section briefly describes the two case study countries and selected regions, as well as the ongoing environmental initiatives, with focus on the A21 efforts. Some additional case-specific facts will be provided in the respective empirical chapters. In case the reader is interested in a more detailed account of the countries and regions, he or she is advised to look at existing literature or web sites providing such facts and figures.

5.3.1. Facts about Sweden and Stockholm

Sweden

Sweden covers a land area of some 410,000 km² and has a population of approximately 9 million and a GNP per capita of 26,000 US Dollars (2001). The Scandinavian country is a monarchy and the king is the Head of State, but he has no longer any authority in the governing of the state. Sweden has four constitutional laws: *Regeringsformen* (form of government), *Successionsordningen* (order of succession), *Tryckfrihetsförordningen* (press law) and *Yttrandefrihetsgrundlagen* (constitution for freedom of speech).

Legislative powers are held by the Parliament (*riksdagen*), which since 1970 has a unicameral system with 349 members chosen in direct elections every four years. (Sverigeturism 1999). The Parliament enacts laws, decides on national taxation and the budget, and elects a Prime Minister (*statsminister*), who appoints a Government (*regering*), which is the planning, initiating and executive body. The Government Offices (*Regeringskansliet*), a unified government authority, comprise the Prime Minister's Office (*Statsrådsberedningen*), ten ministries and the Office for Administrative Affairs (*Förvaltningsavdelningen*). To support the ministries and governmental administration, there are a number of central authorities or boards, which are largely independent of the Swedish Government in decision-making procedures. (Stockholm Stad 2002).

Sweden is subdivided into 21 counties (*län*) headed by county administrations linked to central authorities. The publicly elected County Councils are responsible for health care, dental care, public transport and support for business and industry and regional growth and development. The smallest political body is the municipality (*kommun*), which holds extensive political power over matters of local/regional character. Sweden has 289 municipalities covering the entire country, each with a popularly elected council responsible for income tax collection and for the operation of public services such as schools, child and elder care, housing, and cultural and leisure activities. While the Swedish municipalities have the right to provide public services at their own discretion, they are bound by law and regulations to offer a minimum of basic services. (ibid).

Shortly after UNCED in Rio de Janeiro 1992, the Swedish Government stressed the importance of the local, municipal level for the implementation of A21. In 1995, the Swedish National Committee on Agenda 21 was formed. The current National Committee on Agenda 21 and Habitat was established in June 2000, with the task of co-ordinating Swedish work on A21 and sustainable development as well as Swedish commitments under the Habitat Agenda. With respect to A21, another aim was to mobilise the political interest for the UN World Summit on Sustainable Development (WSSD) in Johannesburg, 2002 ('Rio +10'). Moreover, the Swedish Environment Protection Agency (*Naturvårdsverket*) was commissioned by the Government to prepare a National Communication Strategy for A21: *From Word to Action: National Communication Strategy for Agenda 21*, which was published in 2000. The national level has supported LA 21 work, e.g. through funding local projects and awareness raising

activities such as seminars. Moreover, the Swedish Parliament allocated SEK 7.2 billion (about 0.8 billion Euro) during the period 1998–2003, for local investment programmes (LIP) aimed at promoting sustainability at local level. Sweden was also actively supporting the preparation of a regional A21 for the Baltic Sea Region, *the Baltic 21*, which was endorsed in 1998. (Miljödepartementet 2001).

According to a survey conducted in 1998-99, most Swedish municipalities have taken on the LA21 tasks with great seriousness. All of the 289 Swedish municipalities have been working with LA21 in one way or another, although the work is now declining in some of them. Almost all municipalities claimed to have taken concrete measures to involve their citizens and many had established permanent forums and networks for exchanging ideas and experiences and stimulate action concerning A21. At the end of 1998, 56% of the municipalities had formally adopted LA21 plans at the local municipal council level and the work has since entered the implementation phase. (Brundin and Eckerberg 1999). In 2001, this figure increased to 70% (Edström and Eckerberg 2002).

However, there is also a prevailing negative trend in the implementation of LA21 in Sweden. There seems to be a growing gap between ‘pioneering’ municipalities and those who have cut down on staff and resources for LA21 (ibid). One of the obstacles cited most often by the LA21 co-ordinators is the lack of resources in terms of time, staff and money. Some municipalities also claim that they give less priority to LA21 now than in the mid-1990s. They also tend to experience conflicting political goals, and a lack of dedication and interest from local politicians, civil servants and local citizens. (Miljödepartementet, 2001).

Stockholm

The entire County of Stockholm has a population of 1.8 million inhabitants spread across 28 municipalities, out of which City of Stockholm is the biggest with a population of 750,000. As the capital of Sweden, Stockholm is the primary political, administrative and financial centre of the country. The Stockholm Region’s business development, industry and science can be divided into four clusters: IT and Telecom; Life Science; Environmental Technology; and Banking and Finance. In all these fields, the region claims a leading position in Northern Europe (Stockholm Business Arena, 2002).

The standard of housing is generally good in Stockholm as well as in the rest of Sweden. However, there are other challenges in this sector particularly in Stockholm. Although construction of new residential housing is now beginning to pick up after several years of low building activity, there is still a great imbalance between housing supply and demand largely due to the fast population growth in the city (approx. 4,700 a year) (ibid).

Whilst public transport is well developed and utilised in the Stockholm region in comparison with other large cities (in some central areas up to 70% of the population uses buses and/or the underground systems), the total number of vehicles is still increasing and car traffic is increasing more than the public transport (Miljöförvaltningen 2002).

To strengthen local democracy and improve municipal services, since 1996 Stockholm has been divided into 18 *district councils* with the same responsibility and authority as the City's other committees and boards within their respective geographic areas. Examples of matters for which they are responsible are: pre-schools and compulsory schools, child and youth and cultural activities, family and elder care, maintenance of streets and parks, local trade and industry. (Stockholm Stad 2002).

In the City of Stockholm, LA21 work is implemented at city district level. Until 2000, it was co-ordinated by the City of Stockholm's Environment and Health Protection Administration (*Miljöförvaltningen*). Although the A21 process in the Stockholm region appears to be fairly advanced in comparison with many other parts of the country, there are great variations in the achievements of LA21 processes also within this region. (Agenda 21 Forum 2002). However, some of the Best Practice environmental projects in Stockholm have been developed quite separately from the LA21 processes. *Hammarby Sjöstad*, the largest housing project in Stockholm, is a new ecological housing area with 8,000 flats for 20,000 residents that have been built using innovative eco-friendly technology and materials. Stockholm's national ecological park, *Ekoparken*, is the first of its kind in the world. The Stockholm initiative of the European ZEUS project promotes energy-efficient, environmentally friendly vehicles and fuels in the City. (Miljöförvaltningen 1999). In 1997, Stockholm was granted the European Sustainable City award (together with Heidelberg in Germany and Calvia in Mallorca) for its work in the sustainable development sphere, in particular for its involvement of citizens in the

LA21 processes. However, one survey, carried out by the Swedish Society for Nature Conservation (*Svenska Naturskyddsföreningen*) in 1999, found that City of Stockholm has decreased the funding for LA21 activities in the city district in recent years (Svenska Naturskyddsföreningen 1999)

In parallel to the LA21 work, since mid-1970s City of Stockholm has also had Environmental Programmes developed and administered by the City of Stockholm's Environment and Health Administration. The Programme set out plans and policies with regard to the municipality's environmental efforts. The recently adopted Environmental Programme, the fifth of its kind for the City, runs over the period 2002-2006. (Miljöförvaltningen 2002).

5.3.2. Description of the UK; and Leeds, York and Kirklees in Yorkshire

The UK

The United Kingdom comprises Great Britain (England, Wales, Scotland) and Northern Ireland and covers a surface of 244,000 km². In 2000, the population was approximately 60 million (50 million in England, 3 million in Wales, 5 million in Scotland and 1.7 million in Northern Ireland) and the GNP per capita was about 22,800 US dollars. The UK is a leading trading power and financial centre, which deploys an essentially capitalistic economy, one of the 'quarter of a trillion' dollar economies of Western Europe. Agriculture is intensive, highly mechanised, and efficient by European standards, producing about 60% of food needs with only 1% of the labour force. Services, particularly banking, insurance, and business services, account by far for the largest proportion of GDP while industry declines in importance. (CIA 2001).

The UK is a constitutional Monarchy, with a Queen as Chief of State. Legislative powers are held by the Parliament, which is chosen in direct elections every five years. However, the Prime Minister can call a vote whenever she/he chooses. The Houses of Parliament consists of two chambers, the House of Commons (635 members) which has the legislative power and some power over some financial and tax laws; and House of Lords (over 900 members), which holds veto powers in specific issues. Legislation is based on a system of common law, and is documented in Public General Acts and Local Acts. The executive power is held with the Central Government under the leadership of the Prime

Minister who appoints the cabinet. The Cabinet Office's central role is to support the Prime Minister in ensuring delivery of the Government's strategy. Apart from the Cabinet Office and its supportive Cabinet Ministers and Committees, there are another 16 government ministries. (Bra Böcker 1995).

At the local level there are 469 county, metropolitan, unitary, borough, district, and city councils, which are regional and local political units. Whilst councillors are local politicians proportionally elected to represent the political parties at the council level, Members of Parliament are local politicians elected at constituency/council level to the House of Commons. (ibid).

The UK Local Agenda 21 National Campaign was established in 1993 by five local authority associations, following the participation of these associations in the UK's national delegation to UNCED⁵. The Campaign, initially administered by the then Local Government Management Board (now Local Government Improvement and Development Agency-IDeA) has recruited local authorities to commit to LA21 processes across the country. In 1997, the Prime Minister officially expressed his goal to have all UK local authorities complete A21 plans by the year 2000. For this purpose, in 1999 the Government published a strategy for sustainable development setting the target for all local authorities to prepare LA21 strategies: *A Better Quality of Life* (HMSO 1999). The year 2000 also marked a shift in LA21 development when sustainable development was integrated into other initiatives through the Local Government Act 2000. The Act requires all local authorities to complete Community Plans for the social, economic and environmental health of their area. As of late 2001, it is premature to assess the impact of the pursuit of sustainable development through community plans. (UNDESA 2002).

In December 2000, over 90% of the UK local authorities had produced LA21 documents. A great share of the authorities had started implementing their LA21 strategies, whereas others have not yet reached this stage. (LGA 2000). The UK 2001 LA21 Survey prepared for the Rio+10 conference highlights a trend of continually increasing local action toward sustainable development among LA21 initiatives in response to the international calls for sustainability (ICLEI 2002). This growth has been led primarily by local authorities with the involvement of their communities, but has also been supported by local government associations, national governments, international institutions, community-based groups,

NGOs and other partners. LA21 processes are progressing from agenda to action and are doing so with the engagement of the broader community. The areas in which LA21 processes have had positive impacts include: water supply, city beautification, education systems, public awareness of sustainability issues, waste reduction, community empowerment, sanitation, and energy conservation. (ibid).

The Yorkshire Region

Yorkshire is part of the political unit of Yorkshire and the Humber Region, which is overseen by the Government Office for Yorkshire and the Humber. There are about 5 million people living in Yorkshire, the majority in the metropolitan counties of South and West Yorkshire. The Yorkshire and Humber Region consists of 7 counties and unitary authorities, and 22 local authorities, among them York, Leeds and Kirklees. The region is diverse containing large industrial, urban and rural areas. The main industrial centres are in South and West Yorkshire and parts of Humberside, which include the cities of Leeds, Sheffield, Bradford, and Kingston Upon Hull. The region's other main city, York, is located in North Yorkshire, which is largely rural. The combination of a good road network and 25 million people living within two hours' drive has helped the region develop as a distribution centre. (The European Commission 2002).

Unlike many other regions, Yorkshire and the Humber is still very dependent on manufacturing industry, but expanding sectors include chemicals, distribution, electronics, financial services and tourism. The region does have problems, indicated by the fact that 47% of the population live in areas with Assisted Area status, and 52% in areas that are eligible for European funding. On a number of economic indicators, the region lags behind both the UK and EU average. (ibid). The region has the second highest level of non-decent housing in the country and is among the worst in terms of fuel poverty (DETR 2000a).

With a population of 175,000, the City of York is an industrial, commercial and transport centre, with major companies in confectionery manufacturing, construction, engineering and scientific products. There is substantial office employment in insurance, financial services, healthcare, telecommunications and the railway industry. In addition, there is a prominent university, a hugely successful tourism industry and growing employment and investment in bioscience and technology in York.

The City of York Council consists of six departments that provide services in different areas. The Environment and Development Services department's overall objective is to create a city, with sufficient employment opportunities, and housing and transport facilities taking into account a sustainable environment. The Local Plan sets out how the council aims to work towards meeting this objective during the coming years. Other specific tasks undertaken by the department include environmental services. The environmental work of the City of York Council focuses on four areas: transport, waste, environmental health and York's environment. The LA21 process in City of York involves over 1,000 people and 300 organisations. The LA21 steering group supports a number of projects including: *Planet York*, a year-long sustainable energy campaign; *York Energy Savers*, set up to offer direct help to householders; *Young Transnet*, which works with schools to reduce the effects of traffic on their locality; *City Harvest*, a scheme for local growers of organic produce; and *Travelwise* - a project to help employers improve the efficiency of staff and business transport. (City of York Council 2002).

Kirklees District covers an area of 400 km² spread across 24 wards in West Yorkshire. The population is roughly 395,000, focused around the cities of Dewsbury, Huddersfield and Batley (Kirklees Metropolitan Council 2001a). However, Kirklees is largely a rural area of Yorkshire. The main industry activities in the district are public administration, education and health (27%); manufacturing (26%); distribution, hotels and catering (21%). (Kirklees Metropolitan Council 2001b).

The Kirklees Metropolitan Council, the seventh largest metropolitan council in the country, encompasses 8 council departments, of which seven are Portfolios under the leadership of the corporate management of the council's Executive Management Group. The Environment and Transportation Portfolio include Environmental Services, Refuse and Street Cleaning Services; the Environment Unit; Highways and Transportation Services and Transport Services. The Council has been committed to sustainable development since 1990, i.e. prior to the Earth Summit in Rio in 1992, and has been viewed as one of the pioneering examples of UK local authorities in this field (see e.g. EURONET and ICLEI 2002). The council adopted its first LA21 plan in 1998 and today a bulk of the Council's environmental work is included under the Kirklees A21 banner. The current A21 focuses on energy, transport, a Biodiversity Action Plan, Eco-

management and Audit Scheme (EMAS), Sustainability Appraisal and Food Futures. The Kirklees Environment Unit governs and administers the Kirklees A21 efforts, although other portfolios also have environmental targets and ongoing environment-related activities, such as Kirklees Housing Services. (Kirklees Metropolitan Council 2000).

Leeds City, with its population of 725,000 (2001), is the second largest metropolitan district in the UK and the regional capital of Yorkshire and Humberside. The area extends 24 kilometres from east to west, and 21 kilometres from north to south. Leeds is the UK's second largest financial, legal services and retailing centre after London. Other major industries include professional services and manufacturing. With its two universities, 9 colleges (in the further education sector) totalling about 50,000 full-time students, and the regional centre of Open University, Leeds is also the leading academic centre in the region. The unique role of Leeds in the region as a centre for employment and shopping imposes burdens on the capacity of its transport network. (Leeds City Council 1997b).

There are 15 council departments within Leeds City Council. Several of the departments, such as the Housing and Environmental Health Services and Highways and Transportation, have environmental issues on their agenda. (Leeds City Council 2002). In the wake of the 1992 Earth Summit, the Council has produced an Environmental Policy 1998-2002 setting out targeted areas for improved environmental performance including: atmospheric emissions; water or sewage discharges; solid and other (hazardous) waste; contamination of land; use of land, water fuels, energy and other natural resources; discharge of thermal energy, effects on specific part of the environment and ecosystems. (Leeds City Council 1997a). The City Council has addressed sustainability through mainly two initiatives: *Vision for Leeds—A Strategy for Sustainable Development* and the City Council's own 1999 *Corporate Plan*. In 2001, drawing on previous work through the Leeds Corporate Plan (1999-2002) and *Vision for Leeds (1999-2009)*, the first LA21 Strategy outlines a strategic and policy framework for *inter alia* protecting and enhancing the environment through efficient use of natural resources, waste minimisation and pollution control. (Leeds City Council 2002).

The next five chapters highlight the experiences of the five cases selected for the empirical study. First, chapters 6-8 present the Swedish cases: chapter 6 discusses an

environmental housing project in the block of service flats of Trekanten; chapter 7 investigates an eco-village initiative called Understenshöjden; and chapter 8 examines one of the first car-sharing initiatives in Stockholm, Stockholms Bilpool. The ensuing chapters 9-10 treat the two selected cases in the UK: chapter 9 highlights a national air quality management initiative with focus on transport options and policies, carried out in parallel in the cities of York and Leeds; and chapter 10 discusses another national initiative undertaken locally in Yorkshire, more specifically home energy efficiency schemes in Kirklees District.

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PART II

6. Reconstruction and environmental improvement of the Trekanten housing collective

This project concerns one of two housing initiatives as part of the empirical study of the Stockholm region. The empirical research that provides the foundation for this chapter was undertaken between February 1999 and March 2001. The data has been collected through literature review and interviews with 16 persons: seven interviews with professional staff (Svenska Bostäder and its contractors, of which two persons were interviewed both before and after the reconstruction phase), and two focus groups with six local tenants in each, of which three persons participated in both meetings. Seven interviews were conducted with four professional staff, two of whom were interviewed prior to and after implementation (11-02-99, 16-01-99, 18-02-99, 15-01-01, 22-11-00, 16-01-01, 14-03-01). The first focus group was held in June 1999 (01-06-99), just before the main construction and reconstruction work was launched. At the time, the preparatory work had been going on for about two years. Moreover, SB's contractors had carried out some work, e.g. construction of balconies in 'pilot flats', electrical fittings and improvements of the ventilation system. The second focus group was carried out in November 2000 (28-11-00) after completion of the bulk of the work (apart from connection of the solar power systems and completion of the rain-water collecting system that had been postponed). The quotations below are excerpts from interviewees' statements.

6.1. Introduction

With its approximately 50,000 flats and 5,700 premises in the Stockholm region, *Svenska Bostäder* (hereafter SB) is the largest real estate company in Sweden. Together with another two real-estate companies, *Familjebostäder* and *Stockholmshem*, SB is owned by the City of Stockholm through the municipal group *Stockholms Stadshus AB* (Stockholms City Hall Ltd). As a matter of principle, all SB's houses are situated in the municipality of Stockholm. The block of service flats, *Trekanten*, near the culture park area Liljeholmen south of the City of Stockholm, is one of them. SB owns the building and lets out a total of 78 flats to tenants⁶. *Trekanten* was built in 1986, but the standard of the estate is lower than in most buildings of that time: for example, there are only linoleum floors and no balconies in the flats. Like most *housing collectives*⁷, *Trekanten* has common recreational facilities, kitchen and dining room. As elsewhere in SB's housing collectives, the tenants have the right to take decisions concerning maintenance and care of private and common properties of the estate and its yard, and issues relating to heating and electricity in the common areas (Svenska Bostäder 1984). The tenants have agreed to do the cleaning of staircases and other common space as well as

maintaining the green area outside the house for a fee (Svenska Bostäder 1998). The proceeds of this are used to finance joint activities and to subsidise the price of meals that are served in the common dining room.

Many Trekanten tenants had been discontent with the relatively poor standard of their flats for a long time. In the mid-1990s, they raised concerns over the discomfort at some house meetings and in meetings with SB. One of the main requirements of the majority of tenants at the time was to get balconies installed in their flats. When debating this issue, it appeared that many tenants wanted further constructional changes to the house and its surroundings. Under the guidance of a former chairman of the Tenants' Association, the tenants formulated ideas about environmental adaptation and physical improvements of the house as well as the adjoining yard. Many focus group participants were in agreement that the initiative was largely a product of the enthusiastic chairman. One focus group member explains her view of how the project initiative grew out of his ideas and his ability to inspire others:

Tenant (T): 'The first step was [name] who was Chairman of the association. He was a real enthusiast and an incredible visionary person. He had a lot of ideas of what he wanted to achieve and what we all could do here (...) But he wasn't that sort of everyday worker who gets people on board little by little. Only those who were as visionary as him ran off from the rest of us with these ideas in their minds. But he meant a lot when it came to inspiring people and making people come up with ideas. (...) And out of these rather wild plans but also exciting ideas, this project was born. And then I think SB (...) was very concerned about this as well. They wanted to encourage it, and we're looking for this kind of project. They probably wanted to do something good with this collective house they've got, so they jumped at it.' (01-06-99).

In 1996, after some joint discussions between tenants and SB it was decided that SB would undertake considerable reconstruction and environmental improvement measures on the estate and the yard belonging to it. This initiative was indeed well timed for SB. In recent years, the company, which is the biggest landlord in Sweden, has developed an environmental profile and started labelling itself 'the environmental landlord'. It has also developed a comprehensive environmental policy, and has initiated several large-scale environmental housing projects in the Stockholm region (Svenska Bostäder 2001). One of the SB staff involved contended that SB is generally known to be a bureaucratic, top-down organisation, which has sometimes encountered opposition from tenants against its policies and initiatives, rental charges and so on. In part due to these problems, he

explained, SB decided to try out a different, bottom-up approach towards a participatory culture in housing matters: on the basis of environmental considerations they would promote tenants' participation in the planning and implementation of a house-rebuilding initiative. Trekanten would serve as one of these democratic pilot projects in the Stockholm region, along with some other environmental initiatives with higher degree of tenant participation (18-02-99). The specific reasons behind SB's approach and choice of locality were, according to him:

- Trekanten tenants' needs for improved standard of living in their homes (improvements of heating and ventilation, balconies, nicer outdoor environment);
- Trekanten serves as a good example of a housing association with a settled organisational structure, established spirit of co-operation and tradition of collective housing activities;
- Trekanten is strategically located in the cultural park Liljeholmen, surrounded by a beautiful lake and green parks;
- Trekanten provides a good example where SB can try out its environmental approach in practice.
- Trekanten offers an opportunity to experiment with new technology in somewhat older houses with simpler construction, instead of building completely new ecological houses using more expensive, innovative technology.

Thus, there was allegedly both prestige and genuine intention behind SB's environmental and reconstruction initiative in Trekanten.

At a formal level, the areas of priority that were adopted for the environmental project are formulated in the SB's Environmental Plan (Svenska Bostäder 1997), to: reduce energy consumption; make an inventory and reduce toxic substances; improve the indoor environment; take care of by-products and waste; as far as possible, adapt the estate to tenants' requirements; and promote and encourage tenants to take responsibility for the maintenance of the estate.

In addition, the following site-specific aims of the project were applied:

- The work shall be governed by a joint consideration of what is environmentally justified, technically possible and economically feasible.

- Develop and strengthen the local qualities and improve the understanding of co-operation between the estate and its environments.
- Implement the transformation work in close co-operation with tenants. (Svenska Bostäder 1998:6).

According to the Environmental Manager of SB (14-03-01), SB already had some experience from tenants' involvement in the assessment of environmental initiatives, primarily through the project in the block *Pyramiden* at Södermalm. Apart from this large-scale project (292 flats concerned), SB had learnt from interacting with tenants in numerous small-scale projects. *Trekanten* was, however, the first project that was designed to promote tenant participation in the technical assessment of environmental housing initiatives. The lessons learnt from *Trekanten* and *Pyramiden*, as well as some other significant SB projects in the city districts *Husby* and *Skärholmen*, were expected to contribute to improving SB's participatory approach toward environment-oriented housing.

6.2. Organisation and management in the preparatory phase

6.2.1. Information dissemination and awareness raising

The environmental project was launched at The Environment Day May 3 1997, through a full day of local activities organised under the theme 'environment'. In order to inspire the tenants, a researcher and architect from the Swedish Royal University of Technology, and an Agenda 21 Officer of the Environmental and Health Protection Administration of City of Stockholm were invited to give talks on ecological construction and housing matters and the environmental impact of energy use. Under the latter discussions, the tenants were presented with a computer model displaying 'Personal Environmental Profiles', which calculates individual levels of emissions from energy consumption through housing, transport and leisure activities. One tenant remembers from this day:

T: 'I recall there was a day that was arranged for us in the house. I think that was the start of it all, you know, a way to get people aware of this project and to inform us of the necessity of doing something for the environment. And what I remember from that day I learnt there is a lot we can do and have to do in our homes, although I can't remember exactly what we learnt but I suppose it was, you know, how good it is to buy energy efficient light bulbs, reduce the use of hot water, and so on. (...) It was a good initiative. Unfortunately it's now a long time ago and now we seem to have forgotten about it.' (01-06-99)

Apparently this person thought this initiative was a good way of making tenants aware of the project and the need for protecting the environment in the household activities. She also seemed to regret that tenants' awareness of these issues had not been maintained ever since.

In order to ensure tenants' awareness of and participation in the project, the project team consisting of five SB staff (Project Manager; Project Co-coordinator/Consultant; and experts in electricity; water and sanitation; and building) employed different information techniques during the preparatory phase. Thus the progress of the project was reported through the following media:

- A periodic Newsletter with the aim of informing about project development.
- An internal TV channel on which a particular page was opened by the end of May 1997 to provide information about the project development and tenants' views and proposals.
- An information section was set up in the laundry-room where the working groups could inform people about their work on a notice board. Relevant material was also available, e.g. a binder compiling information about a sample of other environmental housing projects, books on ecological constructions, and all consulting reports on the project.
- An 'idea box' was put up where the tenants could put forward their concerns and ideas related to the project.
- Meetings, Environment Cafés and an environmental project exhibition were organised in the common living room in order to allow for the exchange of views and information.
- Some study tours were organised to visit other interesting sites where environment-oriented housing initiatives had been implemented.

A member of the project team anticipated that these modes of information would lead to mutual communication and eventually serve as key instruments for getting tenants involved in the implementation of the project (11-02-99).

A number of tenants felt there had been rather extensive information-sharing and awareness-raising opportunities particularly at early stage of the project. In spite of this,

both tenants themselves as well as SB staff felt that it did not generate widespread interest or promote a high degree of local involvement in the project, as we shall see below. One person, who was both a tenant and SB Consultant during the planning phase, related the issue of information sharing to the apparent low degree of participation and interest in the project in the following way:

T: 'As a matter of fact, there was regular information coming in their mailboxes every month. And that was quite extensive information about what had happened in the project. And then they had an opportunity to give feedback through this medium and also through the idea box and through the contact people in the house. (...) But they never came up with own views. If they were dissatisfied there was perhaps some discussions, but they never proceeded with that. I think that they simply didn't have the strength to do so because a lot of them have so much else to do in their everyday lives. That's why they didn't have the energy to be more active. But when I moved in here [1997], a lot of people came to me to express their viewpoints, since it was easier to make contact with me who was there on the spot. And perhaps they felt that I as a tenant was closer to their realities as well. In particular if somebody phones SB and they are not available, and instead they meet somebody in the laundry room who knows about it, then it is much easier and comfortable to convey your opinions. (...) But in this project I feel there have been many opportunities to influence but they haven't seized these opportunities. Then I think it's wrong to blame SB because they have really tried to inform. We tried to reach people through information dissemination in many ways and it was enough for some tenants but not for others.' (22-11-00).

The lengthy quotation above reflects how this person on the one hand called for more responsibility on the part of the tenants for sharing the information available and for taking action. She also argued that their apparent lack of interest and action resulted in tenants' discontent with the initiative, which otherwise could be easily blamed upon the project team or the project approach. However, she is also sympathetic to the low level of tenants' participation since the tenants, in her view, could not easily get involved in the project due to day-to-day time constraints. Another reason was that the exchange of information and communication between the project management team and the tenants was obstructed by the project staffs' physical absence, and lack of understanding of local tenants' realities (see further 'Tenant participation').

Some tenants felt that there was extensive information sharing initially, but eventually when the practical work started, they lost the grip of what was going on in their estate:

T: 'We received a lot of information material and met SB in some meetings. (...) And there was a lot of talk and many interested and excited people then. But now I wonder what is really going on here. I know

they are eventually going to start building outside, thank lord. And yes, we are getting the longed-for balconies, that's for sure. But there have been so many rounds and turns without our awareness and the longer time it takes to get off the ground, the less we know what they are really up to.' (01-06-99).

Somebody even thought the tenants were not prepared for all the information when it was presented, but tenants must be given time to reflect over the situation before they are fed with information. Some samples of quotations indicating this are as follows:

Researcher (R): 'As far as I understand, the working groups and also other tenants have shared expert knowledge and information material. (...) There have been opportunities for transfer of knowledge concerning the issues. What are your feeling about this?'

T₁: 'A lot of this was presented at a very early stage. Then it got a bit dreary. I hardly even remember what sort of people were here, but now I remember there was somebody from KTH' [Swedish Royal University of Technology].

R: 'But do you think it was a good way of bringing about information awareness of the project or didn't it work in practice?'

T₁: 'First and foremost I think it came a little too early in the process, before we had really had time to reflect on it all. Perhaps we should have given it a thought first and have begun to formulate the questions.'

T₂: 'Or begun to see what options there were beforehand. Now all the information came first and after that, far later we would have to assess the various options that are available.'

T₁: 'Yes. I don't think we were really prepared for it at the time.' (27-11-01).

T₃: 'They should have come back to us during the course of the work process and show how it would be if we do it this way or that way, not only telling us a little about it vaguely beforehand when we don't really know the relevance of it. That way we would be able to apply our knowledge in a better fashion. And they should tell us what are the consequences of our actions.' (27-11-01).

Information dissemination is not an end itself, but a means to enhancing the target group's awareness of the matters of concern. By sharing information and knowledge relating to the project, the project team wanted to '(...) facilitate the residents' possibilities to take their stand and get inspired and get engaged in the project development' (18-01-99). In general, adequate information sharing assumes that there is a good communication between the concerned parties. During the Trekanten focus group discussions, it appeared however that a number of participants were critical of the communication between SB and themselves rather than the accessibility of information *per se*. This is illustrated in the following excerpts:

T₁: 'I think the important thing is that one focuses on information (...) and communication in this sort of project and that there are indeed two partners involved in the conversation. But if there is nobody, or if you don't get response from the other party, or there is no forum where you can talk about it? I think it's important that there is such a forum. (...) I think that one has to look into this aspect and bring about a straightforward channel of communication'.

T₂: 'But these working groups have been supposed to function like bridge builders, haven't they? To exchange the ideas back and forward between people?'

T₁: 'But I don't feel they have. I think we would have to make an effort to get this channel working. If you say something to somebody in the groups you should get an answer and be confident that your points have been forwarded and get a reply back. Otherwise it's like mailing a letter, you never know if it reached there. After a while you don't even remember if you put a stamp on it, because you don't remember exactly what you did.'

R: 'Whose responsibility is it then to bring about this forum or channel of communication?'

T₁: 'I think it's both our and SB's if we talk about it as two parties involved. I think we don't have been enough careful enough about shaping these modes of communication. And you can't ask the other party to do that, but we also have to do our share.' (01-06-99).

T₃: 'I think one of the problems in this project is the lack of communication between us and SB. This has resulted in uncertainty as to the roles of the working groups versus the SB team's'. (01-06-99).

Another perspective is characterised by those tenants who were critical of SB staff because of their lack of or bad communication, and thought this was partly a result of them running their own agenda. This is highlighted in the following quotations:

T₁: 'I remember quite clearly that they said that it would be presented in a fashion that would allow us to put forward our requirements, and then they would remove what was technically or financially unfeasible. Then I felt it was delayed at the beginning. We got really annoyed, we thought it was way too slow progress then. And eventually when we heard from them and they had done the removal [from the list of proposals]. (...) They put it together into a package without our agreement to it, because they had already decided what they wanted to be included, things that they thought were important (...) And they didn't simply tell us about this. But unfortunately by the time I had forgotten that they had said that we could be involved in the prioritisation. So we received that package and then they said 'well, now you have to say yes or no to this package. And if you say no there will be nothing'. A very bad way of communicating, but it was really a bit like that.' (27-11-00).

T₂: 'It seemed like they already had some ideas, their own ideas, about what would be done on the estate. And then they said that our priorities would determine what measures to implement. And of course to some extent they [the tenants' priorities] did. But in a way they deluded us, because we were made to believe that these things we wanted were going to stay on the list. In reality it turned out that their predetermined

ideas were already on the hidden list. I think that's why they didn't talk to us clearly about how the screening process was done. And that's why it was quiet for a long time.' (27-11-00).

Some SB officers agreed that there was some problems of mutual communication, but ascribed the tenants more responsibility in the interactions:

Expert₁ (E₁): 'I think one of the problems in this project is that we were not talking very clearly with them [the tenants] about the limits of the funds and the technology right from the outset. We wanted them to feel they were part of it and could express their wishes and so on. You don't want to kill all ideas either, do you? But now they were let down because we couldn't realise all their dreams. But it's also up to them to talk clearly to us because they've had the chance.'

E₂: 'Well, it's true there has been a problem getting messages across to the other group. It's mainly those who haven't been involved in this development process, who complain when it's already too late. They didn't care before when we listened but now they come and say 'we want to express our opinions' when they see the completed work and the results'. (15-01-01).

In sum, a number of interviewed tenants and SB staff were in agreement that there were opportunities for extensive information sharing and awareness-raising in the project and that it did not contribute to meaningful local participation in the project. Representatives of the former group claimed that the information could have been provided at a later stage to allow for better assessment among tenants of the issues of concern. In addition, there was a prevalent feeling among tenants, with some support by SB representatives, that there was a problem of communication between the two parties rather than a problem of information *per se*. Some local people thought this was at least in part a consequence of SB people looking to their own interests in the project. This in turn had negative impact on the tenants' attitudes towards, and participation and interest in, the project.

6.2.2. Approaches to tenant participation

The principle of SB's participatory project approach was hardly disputed among the Trekanten tenants. On the contrary, many focus group members regarded their involvement as self-evident and critical for the success of the project. For example:

R: 'Which role do you think the residents should have in this type of environmental housing project?'

T₁: 'Without the participation of tenants you can't probably run an environmental project at all, I think. Not if it's going to be a good and a fair project anyway. And this project, if I may be a little faultfinding to SB,

started at the wrong end. This could have been much more of an environmental project if people had joined in. If it all had come really from ourselves.’ (27-11-00).

T₂: ‘Residents’ involvement has to be the foundation in all housing projects and this is no exception. It’s our homes we are dealing with, not SB’s or anybody else’s. Our needs should determine the project decisions.’ (27-11-00).

At the Environment Day, the tenants had had the opportunity to put their names on lists if they wanted to take an active part in the planning and design of the project. In order to put the ideas of a participatory environmental housing into practice, the tenants suggested the formation of four thematic working groups, through which they could collaborate with SB and participate in the assessment process. SB supported the idea since it was in line with the bottom-up approach described in their work plan. In an article, one of the interviewed SB staff contended that:

E: ‘This has been a completely new way for us to work in. Normally we at Svenska Bostäder develop the ideas, project them and present a ready-made proposal. Instead we have taken the views and thoughts of the tenants as the starting-point.’ (Bergström 2000:35).

Accordingly, under SB’s guidance the tenants formed four working groups around the themes: Ecological Sustainability and Recycling, Outdoor Environment, Indoor Environment, and Reconstruction and Extension. The working groups, consisting of some five rather active and enthusiastic people in each, began to meet occasionally or on a more or less regular basis to discuss ideas and priorities relating to their specific areas of responsibility. The particular incentives for participating in the working groups varied somewhat among the tenants, but in the focus group discussions one main perspective emerged: tenants who felt their participation would contribute positively to the project. This perception is reflected in comments from members of the Reconstruction and Extension group and the Ecological Sustainability and Recycling Group:

T₁: ‘At the beginning I didn’t see it as a matter of concern to engage. I thought we were doing fine anyway the way it was. But later when I understood that something would come out of it, and when I saw that some material they used that I thought was really bad, then I wanted to get involved so that I could contribute to finding better options. (...) As regards the balconies, I thought the material wasn’t that lucid. It wasn’t easy to grasp what the balconies would look like. So I wanted SB to present it in a clearer fashion. And since

they didn't we had to do it ourselves. That's when I started to engage.' (...) It is purely due to my own professional background that I've been able to participate.' (27-11-00).

R: 'Did they [SB] try to encourage persons with expertise in the field to become involved?'

T₂: 'It wasn't the case that you actively tried to find those people, but it was rather us ourselves who wanted to engage because we felt we had something to contribute to the project. (...) Most of us chose working groups on the basis of previous interest and knowledge.' (27-11-00).

Sometimes the working groups met together with SB project staff and its contractors but most often they carried out the work on their own. At times, it was necessary for the participants to investigate what products were available in the market. However, the more technical aspects of design and installation were usually left to SB to deal with (see further 6.2.3.).

Right from the beginning, the tenants through the working groups were encouraged to come up with ideas on measures needed on the estate. However, several focus group participants seemed to be disappointed by the fact that their suggestions would not be or had not been taken seriously. This perception is reflected in the following passage, where only one of the four tenants involved in the discussion seemed to view the first listing procedure as a positive exercise:

T₁: 'He (an SB Officer) was here. And he thought it was so nice that this project proposal was put forward and said that we could wish whatever we wanted now. And we said: 'Ehe, well, we don't know what to wish'. 'You can wish just anything you want, hanging gardens, everything you want'.

T₂: 'And grass on the roofs.'

T₃: 'Yes, it was just incredible what sort of wishes we could make.'

T₁: 'And then that first list of crazy proposals appeared. That was so unrealistic. But that's what they encouraged us to do.'

R: 'Did that list come from the tenants?'

T₁: 'Yes, from us. There was everything between heaven and earth. There was a pier and a boat'.

T₂: 'And there was new flats on top of the roof.'

T₄: 'But I don't think it was crazy. I think the good stuff emerges from the most incredible ideas that appear to be unrealistic and too expensive and unworkable.'

T₃: 'Well, it would be great if we could implement 10 % of it (...) And they said there was money for it as well. That was the real problem as far as I'm concerned'.

T₁: 'Yes, that's what they said at that time. They were sure they would get those government funds for us, which we didn't of course.' [Funding was sought from a municipal trust fund]

T₂: 'We thought it would be great that this house would serve as an experimental project and demonstration house for SB during the Cultural Capital⁸ Year, didn't we?'

T₁: 'And then it became very quiet from the centre I think.'

T₅: 'Yes, for a long time.' (01-06-99).

In early 1998, the working groups put together lists of proposals that were submitted to SB and presented verbally to tenants through an exhibition and a slide show. The others then had an opportunity to review the list on the basis of their own preferences. According to several interviewees, most non-active tenants neither participated in the review process, nor did they generally attend project meetings. Hence there was little input from them and on the whole they accepted the proposals that were presented by the groups. One active tenant expressed her view of the relatively low degree of tenant participation in the procedure in the following way:

T: 'I think that in the first place one has confidence in the group that is doing the work. One believes that they will get the job done anyway. But then when they [the group members] present their viewpoints, they [non-active tenants] don't express their own opinions. I think it's really bad that they don't do that. (...) The residents that we are working with say that the others are very stressed in their day-to-day business and that they do not have time to participate particularly in meetings.' (22-11-00).

Some interviewed non-active tenants claimed that they were satisfied with the five working groups and tended to confirm this perception. For example:

R: 'What do you think about the working groups' role in the process?'

T: 'They've been navigating it. But it's nice that they have been doing that, because there has been a fairly low degree of ambition in many of these issues among the others of us in the house. Both at general house meetings, and when we are discussing this, quite few people have showed up. (...) So it's good to have these working groups and I think there have been people involved there with sound judgement in my opinion.' (27-11-00).

Some members of the Outdoor Group and the Ecological Sustainability and Recycling Group were critical of ordinary tenants for their apparent lack of participation and interest in this process:

T₁: (...) 'There are specific persons in the working groups who have taken the initiatives to run the work through the groups and the others have just been grateful that somebody wanted to do the job for them. It

really feels that way. And one may wonder why anybody should be satisfied with the fact that somebody else takes on all the work.’

(...)

T₂: ‘Yes, no people have come up to me either to express their views on the different things that we do. We’ve mostly been engaged in composting and waste management and tried to find out what people in the house want to see. But nobody comes and tells us.’ (01-06-99).

The first person in the last passage was also critical of those who had opinions on the issues but did not share those opinions with the others:

T₁: ‘The rumour reached me that some parents of small children didn’t like one of our proposals we have concerning the yard, to remove the climbing frame. But then I wonder why don’t they come and tell us? But nobody came to me to tell me and I knew there was a discussion out in the yard about this. Then we put up an announcement where we invited people to come to a special discussion about this proposal and our suggestions. But nobody with that sort of opinion came. That’s when you realise that this kind of forum isn’t the place where you get those constructive and critical viewpoints because there are only people who are already in favour of the project ideas there. So the possibilities for those who have different opinions to make their voice heard aren’t satisfactory. But this is not to say that I don’t think it’s cowardly to abstain from expressing your point of views. Why can’t they stand up and speak their minds? So what then?’ (01-06-99).

Some others of the interviewed tenants explained their views of the problem of lack of local participation and how it could be overcome, in the following way:

T₁: ‘It feels like the low degree of action in the house impacts on the work both in the working groups. (...) I think that there is only a smaller group of people who is really concerned and active, and there used to be more people earlier. If they were more active in the project it would feel like the project was on the way up but now it seems they are leaving. As regards the other [non-active] people, even if they [the project team] put up announcements and distribute the newsletter it feels like a lot of people don’t manage to read them (...).

R: ‘Does this concern the project in particular or is it a general tendency in the house that people don’t get involved?’

T₁: ‘It’s general, but the project suffers from this. It has to do with the time aspect, that people don’t have a lot of time for these sorts of things. They [the project and /or house managers] put up notes on the notice boards and everywhere but there is little response. There is information available, it is disseminated to people, but it seems not everybody shares it. I think they would if they felt the house developed in some way.’

R: ‘What do you think is the key to tenants’ involvement and engagement then?’

T₁: 'Perhaps that one enthusiastic person in the house takes the lead and make the others motivated. A person with genuine interest and charisma. But it has to target everybody in the end, not only the project staff or those tenants who are directly involved. There is a need to find an approach that triggers all people. But that single person, or a few of them, could help a great deal to get things going.'

T₂: 'I agree. And then this person has to create incentives for the individual tenant to get involved.' (01-06-99).

The comments in the last passage re-emphasise the significance of local enthusiasts who take the lead in the initiative and attempt to motivate other tenants to get involved. One person explicitly called for an enthusiast also at SB's end to be involved in the project:

T: 'Isn't it also the case that we have missed a really enthusiastic SB person in this project? Somebody who has a sense of ownership of it and who is interested and who feels it's important that we get what we want? It isn't only the people in our house that count.' (27-11-00).

In the previous section, I argued that some tenants put the blame on SB's flawed communication modes for the relatively low degree of local interest and involvement in the project. In the discussions it also became clear that several tenants questioned some of the SB staff's commitments to the project and were concerned or even sceptical about their general negative attitude towards the tenants. This, it was argued, discouraged local involvement in the project:

T₁: 'I believe that people's engagement is very fragile, that you have to really get things off the ground and be generous and positive and meet all suggestions with respect and positive-ness. Otherwise people get tired of it. I don't mean that SB should say 'yes, we will give you all that' all the time but they should keenly show that each time they get suggestions, it's good initiative. So that this power can continue to live. Because the process of getting involved in something and feeling it's really means something that you are part of the game, is risky. It happens very easily that it dies, I believe. And then when they [SB] start talking about it as a matter of finances, then I think we feel a little deceived. As if the issue isn't important in itself, it isn't a quality issue or a housing issue or responsibility issue or an environmental issue, it's a financial issue. We are a little manipulated you know. And then if the counter partner doesn't show very clearly their intentions and what they talk about, it doesn't work.' (01-06-99).

T₂: 'The problem was that they were not so quick in responding when we brought up the problems concerning the ventilation. It felt like they wanted to avoid it a bit, they knew there were protocols with critical comments on it. (...). And they didn't respond right away. They didn't say, 'well, let's see what we can do about it' but instead they tried to escape from the discussion. And then of course you get sceptical. It's a big issue and very concrete, and surely it's very expensive for them if we start making a fuss about

the ventilation, but it doesn't help that they try and escape and hide in the bushes. So this created mistrust between us. But I'm sure it's very difficult for them too. And they have many other houses to care about than ours.' (01-06-99).

Two SB officers' perspective of the low degree of local participation in the project appeared to be quite different from most tenants. Their explanation related to how the project deviated from the original plans and thus made people disappointed:

E₁: 'It's a little group that has been interested in the project on the whole. The great majority hasn't been involved more than perhaps through putting forward their complaints at meetings. It seemed like during the first board's work, during that period which was the designing phase, people were very active. But the project changed a lot in its character and orientation during the course of the process. And it's common that you're working with a specific thought in mind and then maybe those thoughts aren't brought to play. I think the main criticism one may have of the project as such is that it has taken too long time and some minor problems have grown to become big ones.'

E₂: 'But the reality and the technology are putting a strain on it all as well. Out of those big visions that were over there [pointing] only a small portion can be realised. And it's over here [pointing] where the involvement was great, but then when people discovered that we have limited the items, the level of interest declined.' (15-01-01).

During the latter half of 1998, SB reviewed the first round of working groups' lists and used them as input for the production of the Final Report *Kollektivhuset Trekanten i Förändring*'. In early 1999, after having reviewed the findings and suggestions made in the report, the working groups put together a final list of proposals for SB's consideration. Some notable suggestions were: construction of a more open and light green park area with a photovoltaic-run fountain, wind power scheme, and a recycling scheme with collection of rainwater, and a sophisticated compost called JORA⁹ in the yard. In the house, there were suggestions for construction of balconies, larger flats, bigger windows, environment-friendly techniques for alternative ventilation system, solar panels on the roofs, and photovoltaic and energy-efficient light bulbs in all common properties. It thus appears that the tenants' preferences concerning the outdoor environment related almost exclusively to environment-friendly options whereas the suggestions for measures on the estate were more mixed. Perhaps this reflects the tenants' longing for a well-preserved nature in their outdoor environment, whereas their criteria for good housing more typically concern practical usefulness and comfort (see e.g. Council of Europe 1981, Bijker and Bijsterveld 1998).

Again SB reviewed the lists and selected those suggestions that in their view appeared to be realistic and financially appropriate. This selection procedure was done without involvement of tenants. One SB officer describes the reasons for this as well as the overall circumstances in the following way:

R: 'As far as I understand, the list of priorities that the working groups produced were cut down for some reason, or various reasons. Can you tell me a little about this process?'

E₁: 'Yes, it was due to technological and financial reasons.'

R: 'And was it the project team that made this selection, or?'

E₂: 'Well, it was two of us. I know there is criticism among residents that they weren't involved in the whole process. And we have taken that criticism to our hearts. But it would have implied that we would have had to explain every single issue, 'why we can't place an open fire there'? 'because it would be too expensive and doesn't work there'. And we didn't have that much time, it was already a long and complex process. But instead when [the two SB staff] formulated this report, [they] tried to highlight the positive parts and plans like, 'we can do it this way' instead of saying what we couldn't do.'

R: 'How was that received by the tenants?'

E₁: 'It resulted in this report, you know, and people were partly impressed with the report and said that now we could proceed with those things that were suggested. We took that as evidence that there was tenants' influence in the suggestions that were in the report. And somebody has to take the ultimate decision after all. (...) Somebody has to be the manager and say 'now we're doing this.' And you should of course be able to feel the atmosphere in the house. But you can't have some sort of press button democracy where everybody has his or her say in exactly everything. It's not just possible to run a large project with a lot of individuals with different viewpoints in that way.' (15-01-01).

In short, these persons' perspective was that it would be too complicated and time consuming having the tenants involved in the entire decision-making process. As indicated above, this selection process of measures that was to be implemented caused some irritation among tenants. Indeed, some tenants in the last focus group were annoyed because of this exclusion. One active tenant related her disappointment of the exclusion to the fact that tenants were excluded from the ultimate decision-making procedure and not given sufficient time to make a proper decision through the voting procedure:

T: 'Unfortunately it was first after a half-year when a lot of discussions emerged in the house and a lot of people were dissatisfied with it all, that we hadn't got the opportunity to consent or disagree with their additions and putting it all together [the decisions concerning the measures in the house and the yard]. But later I remembered that they had promised we would be involved. (...) They submitted the Final Report in December [1998], the million was there to be used for '99 and the reconstruction had to take place during '99. And then we were going to have a voting procedure in the house and discussions about the project

implementation and so on, suddenly there was panic. (...) In January it had been going on for four years already and then all this would occur in three months' time. As far as I'm concerned, I was really disappointed. (...) And I didn't get the opportunity to vote for or against the different proposals of measures before they were settled.' (27-11-00).

In sum, in this section we have learned that both tenants and SB officers felt that there was inadequate representation of tenants in the assessment process as well as that many non-active tenants simply relied on the working groups' representation of them in the project. A number of the tenants thought that some SB representatives were uncommitted to the project and had negative attitude towards the tenants. This, it was believed, contributed to local scepticism and disappointment, and in turn reduced involvement and interest in the project. Instead they called for a few committed enthusiasts being involved in the project who could inspire the other tenants to participate. SB representatives, on the other hand, tended to view the alleged lack of participation as a result of the project deviating from its original plans, and hence lost interest.

6.2.3. Expertise and expert-tenant interface

The SB team's areas of expertise were mainly in the field of engineering with specialisation in electricity, water and sanitation, and construction. Apart from these five persons, some other experts were sub-contracted by SB, such as a house architect, a landscape architect and an electrician to carry out some of the work in the yard and the electrical installations on the roofs and in the house. The electricity consultant was also involved in the electricity inventory that was carried out prior to the project. The Project Co-ordinator is an Engineer by training, with specialisation in Social Planning and hence she was the only person in the SB team with an academic background also in the social science sphere. She was hired to represent the tenants' views, to maintain contact with them and keep them informed throughout the project-planning phase. In practice, these tasks were greatly facilitated by the fact that she was also a tenant in the house who met with the tenants frequently and in a more informal setting (11-02-99).

In theory, a high degree of participation in housing means that local residents are also involved in technology assessment of the construction and design. According to the SB Environmental Manager (14-03-01), it is possible and often wise to involve local tenants in the technical decision-making of housing initiatives, but only to a certain degree. His

experience from previous work is that it requires much more time for discussions before decisions can be taken and he thought that experts ought to be involved to provide tenants with the correct facts and figures that are necessary for their assessment.¹⁰ Also in the SB project team, there was support for tenants' participation in technical aspects of assessment of housing. One person argued there was a need to improve the modes of communication and transfer of expert knowledge in order to ensure better uptake of non-expert values:

E: 'In today's modern society we have to learn how to bring about interaction between citizens, the municipality and the experts. (...) We have achieved a little bit but it's still pioneering. For example there's a lot of knowledge to generate from the residents but when it comes to finding an approach to make use of this knowledge, I think we have a lot to learn. And I think a common method is that one [the expert] sketches out an idea and half the number of those you're doing this for don't have the possibility to avail themselves of the drawing professionally, but they would rather prefer to have a physical model that would make it all graspable to them. That's a very simple tool apart from the communication itself. It's important to find these simple instruments and models of communication in order to bring about a good co-operation.' (16-01-01).

In the Work Plan '*Kollektivhuset Trekanten i Förändring*' it is stated that '(t)he transformation work will take place entirely on the basis of the tenants' conditions (...)' With this approach we want to develop the mechanisms for collaboration and methods which implies that the residents get a strengthened ability to take action and the project attains continuity. The assessment process gets a new and more positive esteem, which means participation on the part of the tenants and partnership on the part of SB.' (Svenska Bostäder 1998:8). Implicitly, this suggests that there was an intention to promote tenants' participation in the making of proposals and to allow tenants to express their ideas and concerns, rather than to attain full local participation in the final decision-making concerning the project matters. According to a SB officer, '(t)hat would not just be possible since they do not have all the knowledge that is required and nor does this go with SB's way of working' (16-01-01). Another SB officer even argued that tenants' involvement in the technical decision-making could be a hopeless endeavour:

R: 'As far as I understand, one idea was to allow residents to be involved also in the more technical decision-making?'

E: 'Well, we've had architects working together with the residents with the balconies in the house and very actively in the yard work for example. And these persons have had expertise in the field. But when it

comes to people who don't know nothing about the more technical issues, it gets nearly pathetic when they want to have a say.' (16-01-01).

What seems evident from the above sample of statements is that the SB interviewees were in favour of local participation in the assessment of technical issues mainly because it would help SB formulate decisions that took into consideration local tenants' preferences and needs. This perspective differed from that of one of the interviewed consultants. He felt that at least the Outdoor group, which he had been working with, had a considerable role in the technical decision-making, as the following quotation illustrates:

R: 'Do you think that the tenants in Trekanten had a significant role in the technical decision-making concerning the project?'

E: 'Yes, I think so. I perceived them as a strong group who had impacted on the project results. There were some few spear-heading persons such as [member of the Outdoor group] and that was probably a prerequisite for the group to be successful and achieve something, that somebody took the lead.' (...) [the Project Co-ordinator] was also such an important person. And she was also so enthusiastic about the whole project. I think that was the key really to achieving a good housing project.' (15-01-01).

In examining the degree of Trekanten tenants' access to expert knowledge, in tenants' views it typically appeared to be rather limited. This is illustrated in the passage below:

R: 'Have you received any environmental and technical training during the project?'

T₁: 'Yes, we have learnt how to compost and recycle things.'

T₂: 'Yes, that's correct. For the first compost that we had in the garden, somebody came to fit in those boxes and held a session and told us how we had to do and answered our questions. And later on that JORA compost. (...)

T₃: 'That was a consultant who was here and dealt with that.'

T₄: 'Yes, first we had a meeting here and then there was somebody here in the garden who fitted that in.'

T₂: 'But we haven't got anything else [environmental and technical training]. But when we started with this there was a guy who lived in the house who worked for the Environmental Protection Administration. (...) he was very active in the ventilation and environmental standards and so on. There have been people here with knowledge about these things and expressed themselves and their thoughts. And the others of us have kept quiet, nodded and agreed.'

R: 'But how about the consultants that SB contracted, as far as I understood they have worked with the working groups in order to support you?'

T₃: 'Well, yes, in the outdoor group they have had meetings with the landscape architect. He presented the drawings of the yard. And the others of us have also met him but not so much.'

T₁: 'Yes, but that's it I think.' (10-06-99).

These focus group participants did not reflect upon the other technical training or assessment exercises in which they allegedly had a considerable role. As noted in 6.2.2 (information-sharing and awareness raising), initially the tenants had the possibility to share environmental and technical information with some invited experts, and through visits to environmental-oriented housing projects etc. In addition, as early as 31 October 1997, SB's project team and the working group representatives agreed to carry out an assessment of measures to reduce future environmental problems and burdens in consideration of resource management and other environmental impacts. Consequently, SB's electrical engineer and a contracted electricity consultant carried out an electricity inventory, indicating a possibility of reducing the energy consumption and experimenting with photovoltaics for the power in the staircases. At the same meeting, the group had also decided to investigate available options to the existing ventilation system that had been in place since inception. The alteration work would begin with a trial flat, after which measurements would result in tenants' and SB's joint decisions on the most appropriate options. (Daryani 1997). Later when the new ventilation system was in place, the tenants were invited to a demonstration of it so that they could make an assessment of its function in their homes. Only a small group of people attended these events, which again indicates that there was modest local interest in sharing the available information and providing feedback. Some focus group participants recalled from this event:

T₁: 'There was a very good initiative in this project where we have demonstrations [of the ventilation system] of the pilot flats. There they [the experts] really explained in detail what it would look like and how it would work. And then suddenly people started to raise concrete questions that people wanted to know about and opinions. After that information they felt certain and confident to formulate their own opinions.' (01-06-99).

T₂: 'We have been able to express ourselves when it comes to the ventilation. (...) We made clear that it didn't work that well, so we put forward our complaints on the ventilation in the house. And after that we were invited to a number of meetings at [one tenants'] to get it demonstrated for us. That was a good way of presenting the ideas in a tangible and visual way I think. But if we hadn't liked it, I'm not sure they would have cared too much, but we were rather facing it more in terms of 'this is the way it will work'.

T₃: 'Yes, perhaps it's a good way of doing it, but then you may ask yourself how much you can assess if you go and look for let's say ten minutes in the middle of the summer, how good that ventilation really is.'

T₄: ‘Well, that’s correct. But again the same thing with the balconies, I think it was really good that there were pilot balconies constructed beforehand. The question is whether they would have built these if we weren’t clearly asking for it so that people can go and look how it would look like before we can express our judgment.’ (27-11-00).

These comments indicate that several tenants appreciated the technical knowledge being presented to them in a more concrete and visual fashion. The last quotation reflects though that there was some concern over and suspicion about SB’s intentions with the tenants’ assessment, since the demonstration could have been performed better if the tenants had been given a reasonable amount of time and if the timing had been adjusted to the circumstances when it would have been possible to make a feasible assessment of the ventilation system.

As indicated in the quotation above concerning expert knowledge, there were some notable events at which ordinary tenants were given the opportunity to share and assess expert input: at the demonstrations of the pilot flats with the new ventilation system; during an architect’s presentation of the drawings of the balconies; at a training session on the use of the JORA compost in the yard; and during the landscape architects’ presentation of the drawings of the yard. According to some persons in the project management team, there was generally little feedback on these issues (16-01-01 and 22-11-00). The landscape architect worked primarily together with the Outdoor Group during the preparatory phase. Initially, he spoke to the members of the group to learn about their ideas concerning the yard. After having shared their concerns and ideas, he sketched them up on paper and presented them to the group. After the tenants had given feedback on the sketches, he made new drawings and presented them again. Part of his experience from the interaction was that:

E: ‘As far as I remember there was a positive attitude among the tenants. My experience from this sort of context is normally that some people usually feel a need to manifest their dissatisfaction. (...) There was nothing of this in this group but it was mostly the day care centre personnel who were sceptical. But if that had to do with them not being able to influence the drawings is difficult to tell. (...) It was a rather small group of people that I worked with who prioritised these sorts of measures. Perhaps that’s why I wasn’t met with that negative attitude.’ (15-01-01).

Obviously this person experienced a more positive attitude from the tenants than the SB staff typically did. In the focus groups, it became clear that many participants appreciated collaborating with the architect, but also that some participants thought it was difficult to make assessment of the planned measures in the yard on the basis of his drawings:

T₁: 'But all these drawings that have been reviewed and discussed here, out of that we can ascertain that people generally can't understand those. And these beautiful water-colour paintings that [the architect] made, they can't be translated into reality for most people.'

T₂: 'No, that's true.'

T₁: 'Because you can't understand that this piece will look like this or that out there [in the yard]. But he is really skilful.' (27-11-00).

One tenant in each focus group suggested that the use of models would have been a more concrete and visual way of presenting the ideas for the yard to them:

T₁: 'I met somebody who works in the project that [a Trekanten tenant] is now involved in. (...) She said that they work a lot with miniature models of the plans for that yard. And I was thinking that it is exactly what we should have had. A model, since people have difficulties reading the maps and drawings. A model that makes it easier for people to understand.' (27-11-00).

T₂: 'I think it would have been easier if he had showed real models of the house and the yard, so that we get a better feeling for how it would look like. It's more concrete that way.' (01-06-99).

Apparently the architect was not surprised by the tenants' difficulties with interpreting the drawings. He explained how techniques today facilitate the comprehension of architect's drawings:

R: 'What is your experience with regard to the residents' ability to avail themselves of them [the drawings] and understand what it would look like in reality?'

E: 'I think it's really difficult. It's difficult even for myself to work with different scales. (...) It's hard to understand fully all the details. It's common that some exciting details catches everybody's attention like 'yes, that fountain is good and also that beautiful hedge', but to grasp exactly what it will look like in its entirety is hard. It's easier though if you've got a detailed plan for a yard and the residents know the environment so they can go and have a look and try and imagine.'

R: 'Is there any other way for you as an architect to visualise and concretise the plans for the yard work that could facilitate ordinary people assessing them?'

E: 'There are more sophisticated tools today following the advancement of computers. Had we done this today surely we wouldn't have drawn the pictures manually but made montages right in the pictures. And I

think people find it easier to understand that. But of course you can lie as much as with those hand-made pictures, but it's still easier. Today we use illustrations in that way, and it goes much faster as well.' (15-01-01).

The technology assessment was primarily enabled through the preparatory work of the working groups. In practice, they met to discuss what physical improvements they wanted inside and outside the estate with the aim of making suggestions for constructional changes to SB. They were involved in activities ranging from design and installation of balconies, ventilation and electrical systems in-doors; to design and location of earth cellars, rainwater collectors, solar and wind power and recycling schemes in the yard. Particularly the Outdoor Group was considered to be active over a long period, in part because it involved some enthusiastic and technically skilled persons and because there was more extensive and time-consuming work required in the yard than indoors (15-01-01, 16-01-01). Sometimes the process required investigation of products on the market, but usually the groups relied on some few knowledgeable group members' input on the matter. At times, the groups met with SB staff to discuss the various issues. According to a SB staff, the interaction between tenants and experts generally worked well during this process:

E: 'The approach that we've used, i.e. working with these groups, has been a success in many ways. We've learnt what they want in the house and the yard. And they all have had access to one of us experts. And we haven't steered these groups but they've been able to think and discuss freely and spontaneously as much as they liked.' (16-01-01).

Nevertheless, it was clear that even the active tenants typically considered their role to be modest in the overall technical decision-making. Three SB Officers admitted that the project management team usually took most decisions concerning technical measures, but claimed that the tenants had the opportunity and authority to vote for or against the rebuilding (16-01-01, 22-11-00). None of the tenants denied that there had been opportunities for them to express their views in the technology assessment or to share the available expertise with the experts at meetings. Yet there was some criticism of SB's lack of uptake of tenants' preferences in the decision-making process, which is evident from both arguments in this section as well as previous sections of the chapter. A majority of the tenants appreciated the involvement of experts in the project, although there were comments about how their role could have been utilised in a more effective

manner as we have seen. The following quotations reflect some views of the role of expert versus lay input in the project:

T₁: 'It is difficult to understand that and to come up with suggestions for other technical solutions in general I think. You're not an expert yourself in a technical area so you don't know if there are other options. (...) It is very hard to judge yourself. So we do need to have them involved.' (01-06-99).

T₂: 'I think it's a factor of progress in this project, that our own involvement has to be coupled with experts who implement those ideas and suggestions we come up with'.

T₃: 'Yes, they provide a feeling of security and the framework that we residents can depart from when discussing our needs here. If you don't have the knowledge about the issues, it's not that easy to come up with ideas without knowing the limitations. But when an expert puts forward a suggestion or supports one of yours, it feels safer to make decisions about it, I think.'

T₄: 'That actually relates to one of the complaints that appeared during the course of the preparation work. When we were asked to express our ideas about things we wanted to include in the construction work, we sometimes asked them 'what can we wish then?' It feels insecure when we are asked too abstract or diffuse questions without getting clear boundaries to operate within. And it doesn't make you excited or start suggesting a lot of unrealistic things that you don't know whether or not they will actually make sense. Instead it makes you feel unconfident.'

T₃: 'At the same time, when the experts appear, the amateurs can feel that they lose some of their power of initiative. You easily feel you don't have that much to contribute yourself when somebody else knows a lot about the different issues. It's also a kind of imbalance that is created in the group of people.' (01-06-99).

These comments highlight some tenants' perceptions of expert versus lay knowledge in the project, illustrative of the interviewed tenants' general view. Interestingly, the tenants clearly regarded the outside experts to possess the relevant expertise in the field of housing and they clearly expected the SB staff and its contractors to share their expert knowledge in order for the local tenants to assess on the basis of their local needs and concerns. On the one hand, they valued the role of experts as positive and critical in the project since they, by providing the appropriate information and setting the framework for the discussions, enable lay people to feel more confident and competent in assessing the matters of concern. On the other hand, the latter person was wary of experts taking over the activity, thereby inhibiting lay people's initiative and their self-confidence in the field. Later on, the tenants expressed some requests that would allow the expert input to be more effective: the expert information should be conveyed in a clear, straightforward and simple fashion; the experts should possess the 'right' communication skills and be able to enthuse the residents by sharing their own views and imaginations. At the same

time they should be open to the residents' perspectives and let the local preferences and values steer the project. Moreover, again it was argued that in order for the project to be successful it has to be anchored among the local tenants from the outset:

T₁: 'It's very important that the experts inform the residents in the first place. Then you yourself can come up with your own preferences and suggestions. (...) I really believe there has to be a straightforward and mutual dialogue between the groups. The information that the experts provide the residents has to be clear and be inspired by their own views and imaginations in order for the residents to dare to take part and to be able to put demands.'

T₂: 'Yes, but I think it's important that it [the initiative] comes from the core of the tenants. The needs have to be locally anchored in some way. There is no way you can run a lot of fancy environmental projects if people in the house don't feel the need for it or feel they can't manage it. When the experts leave the ship so to speak, the people are standing there without knowing how the project will proceed. If there is going to be a long-term project there is a need to depart from the tenants' preferences and needs and interests and possibilities to manage it. Otherwise it will only live for a short period. (...) Surely there is a need for a lot of information, but at the same time I can see the danger of imposing a project which isn't rooted among the people who live there.'

T₃: 'I agree. There should be only a limited degree of expertise involved though so that you don't run the risk they will take over entirely but they should inspire the target audience. The experts involved have to be some kind of supermen who know how to get people on board and when to withdraw and pass over the responsibility.'

T₄: 'Yes, and they have also to express themselves so that ordinary people understand the point they're making.'

T₂: 'It would be good if we as the group of residents felt there was a real need for it and the experts were there for us, to inform us of the issues. (...) And out of this mutual collaboration grows the general interest among the residents in getting involved in the things that are to be implemented. It's very difficult to come up with an odd idea and try and implement it.' (27-11-00).

Also some experts felt they had benefited from interacting with the local tenants in the project. For example:

R: 'Do you feel that you have learned something from collaborating with the tenants?'

E: 'Yes. In many aspects of the yard, they have had an incredible level of knowledge about things that we didn't know anything about. For example, how do they use the yard, where do they want to sit (...). And 'there somebody is growing something so it's not good to remove that'. You know, that sort of things. There is much of that detailed knowledge that is invaluable for us. (...) The residents are experts on how it is to live there and it's very difficult to get all that knowledge in any other way for us. But concerning the more general knowledge, it's more difficult to say, because it varies a lot between individuals. But in this case (Trekanten) the [Outdoor Working] group was very active and that helped a lot.' (15-01-01).

To sum up, in this section we have learned that in both rhetoric and reality, the tenants were given opportunities to assess technical housing matters in the project. However, there were different perceptions as to what degree of control the tenants actually had over the decision-making process. SB generally contended that they were meant to support them in the making of decisions, whereas tenants typically expected more impact on the decisions. A number of tenants involved in this research also regarded the expert input to be of vital importance in this type of project and some of them had some positive experience from it. Nevertheless, they put high demands on the experts' pedagogical qualifications (e.g. positive and respectful attitude, genuine intentions and interest, collaborative skills and sensitivity to tenants' concerns) for that collaboration to be effective. Some tenants suggested that expert knowledge should be conveyed in a simplified, straightforward and visual fashion, e.g. through the use of models or pilot demonstrations.

6.2.4. Completion of the preparatory phase

The planning phase was completed in early 1999, through the submission of SB's final report to tenant representatives for approval. The report *Kollektivhuset Trekanten i Förändring* (Svenska Bostäder, 1998) provided a detailed plan for the environmental project with the working groups' lists of requirements attached. Up to this point, SB had covered the costs related to the preparatory work, but for the forthcoming construction process the challenge in some SB officers' view (18-02-99, 12-02-99) was to make the project financially viable given its experimental nature. However, after new cost calculations it was realised that the project expenditures would be higher than expected, so that a rent increase of 50 SEK per flat per month (approximately 1-1.5 %) would be necessary if the project were to break even (12-05-99). Consequently, the Tenant Association decided to carry out a voting procedure in which the tenants through a questionnaire could vote for or against the reconstruction work. Of the 42 respondents (max one per household) 72% voted for the realisation of the project and 24 % voted against it. Despite the relatively large majority in favour of the project, several tenants claimed that there was widespread scepticism about the realisation of the project. One can assume that the relatively low number of respondents (42 out of 78 households) reflects this lack of concern or scepticism among tenants. This assumption is confirmed by the following comment by a tenant:

T: (...) There has been a lot of discussions afterwards, not least that referendum we had concerning the rent increase. Perhaps it wasn't done in a correct manner. (...) Perhaps there were some people in the board who took the ultimate decision how the results would be interpreted. The Rental Agreement only requires a 2/3 majority. Primarily now afterwards I can feel that we should have given it another thought at that stage. Even if I were really pleased that it would be implemented, because I'm a positive person. But it has been a little hard personally in all discussions that followed.' (27-11-00).

When the preparation phase was completed, and the transformation work eventually was to start, there were some complications that would delay the rebuilding process. First, there was some disagreement between the project team and the Chief of the day-care centre as to what measures were to be made in the yard. The day-care centre is located in a detached house in the yard and the child minders and the children use parts of the yard as a playground. Basically, the Chief of the day-care centre did not consent to the ideas of changing the yard including the playground, although this, in some SB officers' perspective, had been discussed and agreed upon in the working groups and in meetings. According to her, she had not been informed beforehand, whereas a SB officer's version of the incident was as follows:

E: 'Then we found ourselves in a position where we had a local tenant, the Chief of the day care centre who claimed that they weren't at all informed about the project and when we came there she was questioning the whole thing and she was prepared to stop it. Our version is that she'd been informed about it before. But in this situation we couldn't just say that we were going to launch the work. But we asked a former Chairperson whether we would initiate phase one and we got a yes and started. But what happened naturally caused hesitation at our end'. (16-01-01).

One active tenant had a different explanation to the dispute between the SB team and the Head of the day-care centre:

T: 'Initially they were a little active, they produced a list of proposals with some small and simple measures. So I think it was a problem at SB's end, because they didn't do anything about those suggestions they got from them [the day-care centre staff]. For example they [the day-care centre staff] wanted keys to the refuse room, and yet they couldn't even get that from them. And they still don't have keys as far as I understand. I think they [the day-care centre staff] had been much more positive to the whole project, the extension and reconstruction of the yard, if SB had given them what they requested. Now the situation became more like we tenants wanted to impose things on them because they got nothing of what they really wanted.' (27-01-00).

It thus appears that there were some incidents that complicated and delayed the construction work somewhat.

6.3. Results and perspectives of the project

6.3.1. The construction work

The main aim of promoting local participation in the project was to ensure that the tenants' needs and requirements were taken into account in the planning and decision-making before the construction work started. Previously, SB's Project Co-ordinator had represented the tenants and kept them informed of the progress of the project. By mid-1999, the Co-ordinator's and the working groups' roles were phased out as the actual physical work was to start. In order to ensure that tenants' views and interests were continuously represented throughout the construction work, the board of the Tenants' Association decided by tenants' consent that two elected tenants' representatives would continue to participate in the project meetings.

The construction was initiated in July 1999 and was roughly completed by August 2000, with the exception of some work in the yard. Apart from the new balconies, the more visible changes were made in the yard. On the roofs, solar panels and two small-scale wind power plants were installed. These will eventually generate electricity for the indoor lighting in the common areas. In conjunction with light and motion detectors indoors, estimated to cut the energy use by 80 % in the common space, they would contribute to reducing the energy use in the house (Svenska Bostäder 2000). However, by the time this research was completed, the SB electrical engineer had not been able to complete the installation due to illness (16-01-01). The ultimate purpose of the environmental improvement measures in the yard was to achieve complete local ecological sustainability on the estate. At the centre of the yard, SB and its contractors dug and prepared a water rill that would conduct rainwater from the estate's roof to a tank in order to serve as a water reservoir for irrigation of the allotments. A sun terrace was built with adjoining grass and herb beds on the top of the common kitchen and dining room in the lower building. From this roof, a grass-covered hill came to serve as the roof of an earth cellar in which the yield from the allotments would be stored. New soil is taken from a temperate compost store in the Environmental House, where the recycling scheme is located. It takes about five weeks for the organic waste to become

new soil. Vegetables from the allotments are prepared in the common kitchen and the organic waste from the kitchen and the flats is thrown into the temperate compost. By the end of this field study, it was still too early to assess the outcome of the local ecological sustainability initiative. It was generally envisaged that the first tangible results would be evident after the summer season of 2001, when the rainwater has been used for the first time and all herbs, plants and bushes in the yard have grown up considerably.

In the house, balconies were built in the majority of flats and electricity and ventilation systems were exchanged for new ones (including detectors) with the purpose of saving energy, reducing noise and getting fresher indoor air. The indoor work was entirely completed in 2000.

6.3.2. After project completion

In March 2001, the project was formally completed and the books were closed (financial year of 2000). However, in practice there were still discussions going on about how to finish the work in the yard, as we have seen. One reason for the delay was the apparent confusion between tenants and the SB team as to what activities were to be carried out during the two phases of the yard work. In SB's view, Phase One implied reconstruction of the yard in conjunction with the house construction (e.g. installations of wind and solar power schemes), whereas Phase Two included improvement measures of the municipality's adjoining parkland and expansion of the day-care centre's garden. One expert explained his view of the misunderstanding in the following words:

E: 'There was a little misunderstanding because of problems with the municipality's land. It was anticipated that we could expand and make use of the municipality's land. And now there is divergence of opinion as to what was said at the beginning, They [the tenants] got a rent increase due to higher costs and prolonged [reconstruction] process and they claim that we endorsed this under the condition that this part would also be included in the increased rent. But the municipality hasn't been willing to provide us with any parkland at all as indicated before. But I think we will be able to solve it. And we'll meet the tenants again soon.' (16-01-01).

According to some tenants (27-11-00), the yard work was entirely part of Phase Two. It included the extension of the yard for cultivation purposes, by making use of the municipality's adjoining land. Basically, the tenants were annoyed because they had a rent increase before Phase Two had been completed, which in the Tenants' Association's

view was not part of the agreement. Again this reinforces the earlier discussion about the problems of communication between the parties. As noted in 6.3.1, there were also some delays due to technical problems with the installation of the photovoltaic-driven fountain and the solar panels and the collection of the rainwater. Up to now there has not been any environmental evaluation of the project, but it is estimated that this will be undertaken during 2002 (14-03-01).¹¹

The tenants' reactions to the outcome of the project have been varied and for obvious reasons it is not possible to reproduce everything here. With regard to the physical results of the project, both positive and negative views emerged in the discussions. Some examples of more positive experiences are given below:

R: 'How do you think that the environmental project matches up with the tenants' expectations and requirements of housing?'

T₁: 'These suggestions that were put forward are based on the notion that the yard should be not only greener but also environment-friendly. The environmental improvement measures should be also aesthetically attractive. And I think that has been very positive in this project, that we complement these two ends, like in the case of the composting and the earth cellar initiatives. That we do it in a way that looks good and it's useful for us and at the same time it contributes to reducing the environmental burdens. In that way it has been good and we've come up with good suggestions.' (01-06-99).

R: 'How do you think the tenants' requirements of good housing has generally been fulfilled by the project?'

T₂: 'Some people are probably satisfied but not all people. (...) But there are also a lot of people who think it's getting nicer in the yard and that the solar veranda is beautiful. And they think the roofs are fantastic (...) And the fact that butterflies and bumble-bees and birds are now coming into the yard is viewed as very positive. And they also think it's good that we collect and clean the rainwater, at least those people I meet and talk with. And especially the earth cellar, that it was constructed after all. It is now fitted up and we will start using it now. There are 25 persons who have announced their interest in using it.' (22-11-00).

T₃: 'The balconies was an example of a good initiative. If we had speeded up the process more at the beginning, I don't think it would have worked as well as it did. It was good that people had the chance to reflect over the situation and choose (...) Before we really understood how the balconies would look, it wasn't possible to go ahead. This way people had the chance to take a stand and choose if they wanted a balcony or not. (27-11-00).

There were also comments concerning negative effects of the physical work, as illustrated below:

T₁: 'I had a lot of noise in my flat before, and that has stopped now. But there are several things related to the ventilation that is worse now, things I thought would get better. That we wouldn't have any problems with the smell from other flats for instance. But that has been almost worse now, you know.' (27-11-00).

T₂: 'Regarding the recycling initiative, my feeling is that SB hasn't got a holistic view of the measures in the yard. It has been done hastily, it feels like they have done certain things just to get them done and also because they would have something concrete to point at. But then they haven't done other things that were necessary in order for everything to work functionally (...). We don't have sorting of waste under the [compost] compartments but instead we ourselves have to put up bins and sort all the waste at home and carry it down (...). It would be much easier to get people sorting the waste if they would facilitate us doing it at the site (...). Now it feels like they only want to show that there's indeed a recycling room but don't care if it's properly used. They think about the image in the first place.' (27-11-00).

With respect to tenants' views on organisation and management of the project, the reactions were predominantly negative in the discussions. Among the critiques that emerged was the issue of lack of clear role divisions between SB and tenants. In addition, in line with the findings in 6.2.2, several comments reflected a feeling of mistrust in SB because they had not shown a clear commitment to the tenants' preferences prior to and during the project:

T₁: 'The issue of the role division is very hard, we can see that clearly if we look back. You could say that the initiative came from the residents and I think that's a very important fact. But SB delayed it all and then people lost interest. There were those who thought there would be something and now they didn't have the energy to run it. And then when it got off the ground, I think people tended to rely too much on SB, that they would take the responsibility as the commander of this initiative. (...) It's feels like they've taken on different roles in different phases without informing us. At the beginning I think their role was to allow the residents themselves to design a lot and determine what they want and when it was decided, SB should take the responsibility for how it's implemented. And here I don't think they have succeeded very well. Nor have they managed to get people active.'

R: 'What made people feel they didn't have the chance, or didn't want to be more active?'

T₂: 'My feeling is that at the start, it was presented as if we would get a lot of stuff. We sat there with long lists, they were really long, and people had a hell of a lot of proposals. But then, you know, little by little they were discarded and we found out that the funds this project would get didn't exist.¹² That's why people were let down.' (27-01-00).

T₃: 'It's difficult if you've got to co-operate with an actor such as SB. Their interest in working with us is largely because they want to show off the project to outsiders. (...) And the environmental issues are of burning interest so they have most likely stricter policies for environmental adaptation of building nowadays. And now they have done their share and want to continue with something else. But we want to proceed with this, but now it's difficult because it's they who have the funds.'

T₄: (...) 'They [SB] want it to become beautiful here so that it is visible from the outside. They want to display this project. It feels that every municipal housing company with self-esteem in Stockholm has got a house they want to attach a project to. The first time this became evident was during the Cultural Capital year when they said joyfully 'there will be so many Japanese people coming here to look here, that's something you have to be prepared for.' Then it becomes clear how their impetus differs from ours. (...) And if we have different ideas from them they don't like that. So what are their interests in this really? There is an imbalance there, and they get disturbed when we want other things.'

T₅: 'Yeah, they want financial profit in their activities and we want a comfortable housing environment.'
(01-06-99)

The interviewed SB consultant team were far from equally critical of the project management or the actual results. All of them did however reflect upon lessons learnt in the project, as exemplified below. These lessons were, however, of rather different character:

E₁: 'I think it's important to have a dialogue at early stage about ecology, what is important and not so important here. The things have to be called what they really are. You don't need an ecology stamp on everything, because the residents have other interests in housing than the pure ecological considerations, you know, practical usefulness and so on. There was an ambition to make a pure ecologically oriented housing project and you might say that it steered the project too much in that direction. But there's a risk that one creates symbolic values that don't manage to excite people and I feel that was the case here (...) The tenants were clever though, they wanted concrete improvements so for them it was unimportant what terminology was used in the reports.' (22-11-00).

E₂: 'It gets difficult if you cope with a lot of people with different ideas (...) It's important that you provide information and that you speak very clearly and clarify things to them. You probably have to involve financial discussion at early stage in discussions with the tenants, so that they can better understand the preconditions.' (15-01-10).

Interestingly, as we have seen previously, several points that were made here (e.g. the need for clarifying the real circumstances; adapting the environmental initiative to tenants' overall requirements and preferences, rooting the initiative locally) were frequently found in tenants' arguments also.

Overall, in this section we have learnt that there were diverse opinions about the physical changes that the project resulted in, whereas the tenants' perspectives of the organisation and management of the project were typically of a somewhat negative character. Several of the lessons learned were the same among tenants and experts.

6.4. Conclusion

SB's realisation of the reconstruction and environmental improvement initiative in Trekanten has resulted in some improvements in terms of standard, comfort as well as reduced environmental impacts. Irrespective of the positive benefits, however, this participatory research study suggests that the Trekanten project did not manage to promote meaningful local participation throughout the process, despite the fact that SB adopted a participatory approach based on a large scope for information sharing and awareness raising opportunities. The reasons provided varied across interviewees, but commonly tenants thought there was a considerable level of local interest initially, but that this was stifled by the slow progress and SB's lack of ability to motivate people to get involved. SB officers, on the other hand, argued it was mainly a result of the project's inability to fulfil all tenants' preferences and needs or the project deviating from its original plans. It thus appears that the project's aims to 'promote and encourage tenants to take responsibility for the maintenance of the estate' as well as 'implement the transformation work in close co-operation with tenants' were not successfully realised. In contrast to the objectives, a number of tenants felt unjustifiably excluded from the planning and decision-making processes. The main reasons given by tenants concerned inadequate communication relating to the project framework and the decision-making, as well as lack of uptake of tenants' concerns and needs in the decision-making process.

Both tenants and SB representatives felt there was mutual miscommunication between the groups, and that this had caused some problems in their relations. However, more typically tenants blamed SB for being neglectful about informing and communicating during critical stages of the decision-making; for their unreflective assumptions about what was relevant to the local tenants; or for taking decisions that rested in important part upon the SB experts' own interests. At SB's end, it appeared that the seeming 'lack of' tenant participation in the project caused disappointment among the project managers on

the grounds that the tenants were given the opportunity to influence the project design and implementation but did not grasp it.

The study also indicated that the trustworthiness of experts and involved institutions were critical determinants for local participation in the project. There was a general concern and sometimes suspicion or scepticism about the SB officers/contracted experts not being truly committed to the tenants' needs or for not being respectful of the contributions of local tenants in the process. Despite the rhetoric, there was a prevailing feeling that the SB team did not have the intention to really give tenants a large measure of control over the assessment process. This was claimed to inhibit the local sense of agency further. Yet a number of tenants appreciated sharing expert knowledge in order to gain insight in the relevant issues and to feel confident in deliberating on the relevant (technical) matters. In order for expert information to be effective for their assessment, tenants suggested it would be conveyed in a simplified, concrete and visible fashion.

Interestingly, perhaps, this general critical view of the role of outside experts in the project and the sometimes flawed access to expert knowledge did not arouse any apparent sense of local expertise and feeling of self-reliance among tenants in the assessment and implementation processes of the project: they clearly expected the SB staff and its contractors to share their expert knowledge in order for the local tenants to assess the options on the basis of their local needs and concerns.

Overall, the Trekanten study suggests that in order for participatory environment-oriented housing to be effective and fair, there should be a perceived local need for action in the first place and secondly there is a need to create relevant and appropriate conditions for meaningful tenant participation in order to sustain and stimulate the local involvement throughout the process. The research suggests that the local interest and involvement has to be cared for at an early stage, since it may be difficult to re-establish and stimulate both tenants' sense of agency as well as the actual degree of local participation at later stages of the process when a widespread scepticism or sense of indifference has emerged.

6.5. References

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7. Ecological housing in Understenshöjden

The Understenshöjden case is one of two housing initiatives under scrutiny in the Stockholm case study. The empirical data in this chapter draws on interviews carried out between April 1999 and May 2001. Apart from the literature indicated in the endnotes, data has been collected through one focus group and six individual interviews with a total of 12 persons: two interviews with active residents (19-04-99 and 17-01-01); four interviews with involved experts at City of Stockholm, HSB and Platzner (see below), one of which was conducted on the telephone (16-08-00, 19-01-01, 16-02-01 and 16-05-01) and through a focus group with six local residents (26-05-99). All these people have been actively involved in the planning, preparation and realisation of the eco-village. The quotations derive from the transcribed interviews, the focus group and literature citations.

7.1. Introduction

The Swedish authority *Boverket* (the National Board of Housing, Building and Planning) is responsible for developing the criteria for ecological village (hereafter eco-village) activities in Sweden. According to their list of standards, to be defined as an ‘eco-village’, the village in question has to be an experimental construction initiative, where communal life is at the heart of residents’ lives. It has to be locally ecologically sustainable to a significant extent in terms of raw materials and energy. In addition, living in the village must be healthy and not in any way harmful to the environment. By the end of 1999, there were 15 eco-villages in Sweden that met these criteria, but a great number of eco-villages were in the planning phase (Berglund 1999).

The *Understenshöjden* eco-village represents the first truly bottom-up initiative in Sweden with regard to far-reaching ecological-oriented housing¹³. The project dates back to 1989, when Mia Torpe, an architecture student and environmentalist, heard a lecture about ecological housing which inspired her to start formulating ideas about an ecological housing project in her neighbourhood southeast of the Stockholm city. As elsewhere, the area of sustainable housing had received little attention at the time, and there was still no eco-village in the Stockholm region. Her novel idea was however not solely to implement the building, but to involve ordinary residents as much as possible in the design, construction and maintenance of the eco-village.

In early 1990, together with another four enthusiastic environmentalists, Mia Torpe formed an association, EBBA, short for ‘Ecological Building in Björkhagen’ (*Ekologiskt Byggande i Björkhagen*), and later for ‘Ecological Housing in Björkhagen’ (*Ekologiskt Boende i Björkhagen*). The news about EBBA spread in the neighbourhood through allotment groups, playgrounds and so on, and inspired numerous people to join the association and work towards the realisation of the eco-village in their area. After having requested the Street and Real Estate Administration (*Gatu och Fastighetskontoret*) of City of Stockholm to release a piece of land in the area, they were informed that there was land available in the street called Understensvägen in Björkhagen, adjacent to the great Nacka nature reserve. It was important to tie the idea to the Stockholm City Planning Committee (*Stadsbyggnadsnämnden*), which holds overall responsibility for the physical planning of the City, and its City Planning Administration (*Stadsbyggnadskontoret*). After having lobbied among local politicians and authority officials, in May 1990 EBBA managed to get approval from the municipality to initiate the preparation of the building of the ecological-oriented properties. The preparatory paper work was completed the same month, and EBBA held its first meetings with about a hundred interested citizens in the neighbourhood.

Since EBBA was a non-profit organisation, in order to get the necessary permits, it was instructed by City of Stockholm to collaborate with a public real-estate company during the building process. For this purpose EBBA initiated discussions with Tenants’ Savings and Building Society, *HSB*, a building proprietor and Sweden’s largest ‘housing co-operative’ organisation with 550,000 members, 41 regional HSB associations and 4,000 local condominium associations (HSB Stockholm 2001). By the early 1990s, when the discussions with EBBA started, HSB had not yet developed a strong environmental profile in Sweden, but the organisation had been involved in one eco-village earlier, as commissioner of the building of *Solbyn*. HSB proved interested in becoming the commissioner of the construction work of the Understenshöjden properties, particularly since the initiative conformed with the organisation’s future plans to become a leading environmental company in house construction and administration of housing matters (16-05-01). In 1994, a year before the building was launched, HSB formulated its first environmental policy.¹⁴

In 1990, EBBA contracted HSB to undertake the construction work in close co-operation with its own members. In addition, Småa, Small Houses for Self-Building (*Småhus för Självbyggeri*), a building commissioner and association that supports the efforts of individual house builders, was contracted to assist the house owners in their own initiatives. In order to determine the general interest in living in Understenshöjden, in 1991, members of the three organisations arranged a joint meeting, where truly interested people were placed in a queue system for 44 planned flats in 14 one- or two-storey houses in the area with the following ranking: 1: EBBA 2: HSB 3: Småa. In practice, three queues were initially formed, in which families were placed on the basis of membership in the concerned associations. Many EBBA members who got involved late in that process dropped out when they realised that the chances of getting a contract were small, but some 75 families decided to proceed with the project. Some years later, after a number of people had dropped out, the queues were merged into one.

In the spring 1992, the condominium association *Kretsloppet* was established (later renamed Understenshöjden). Quite unique for the organisation was that the residents-to-be already at this stage were represented as full members with rights to vote in the association's board. *Kretsloppet* also formed the Co-operating Committee (*Samarbetskommittén, SAK*) to manage and represent the working groups' perspectives when dealing with the other parties. During this period of time, *Kretsloppet* established contacts with other Swedish eco-villages and their joint association NJORD. The same year, a crisis became apparent as a result of the different cultures, ideas and approaches of the various parties involved (Lind 1996:18-21). In reality, there were a series of incidents that threw a spanner into the works and slowed down the project development in the ensuing years, up to 1994. The housing programme was completed in late 1992, with HSB responsible for the plan-drawing, preparation and management of the construction work.

In early 1994, the City Planning Administration and HSB approved the detailed plan for the house construction, and half a year later the process of selling began. At this period of time, negotiations were held with different potential building contractors and in August 1994, a regular commercial building company named Platzter got the contract. Parallel to this, HSB and EBBA forced through a solution that conflicted with Småa's interests, suggesting that the accountability for the home-building be moved from Småa to Platzter.

This way, the costs were reduced substantially in relation to what would have been the case had Småa been in charge. Shortly after, an agreement was entered with the would-be residents, after which they could start planning and designing their own flats in conjunction with a contracted architect. The municipality agreed to account for costs related to an ecological protection area, which was established as the public entrance to the Nacka reserve. In December 1994, the building of the properties started, and in May 1995, the first residents moved in at the street Understensvägen. The same year, HSB ceased its work for Understenshöjden, the latter becoming a legally and economically independent body.

7.2. Organisation and management in the preparatory phase

7.2.1. From EBBA members to Understenshöjden residents

Common to all those who were enthused by the Understenshöjden promoters in the early 1990s was their wish to obtain a house near the great Nacka reserve, ‘...to live in the city and in the countryside at the same time’ (17-04-99). For some people the environmental protection arguments were central to their choice of living, as we shall see below. A number of the persons who joined the association were professional people, e.g. architects, engineers and urban/physical planners. Thus it is hardly surprising that these persons also possessed specific interests and knowledge relating to housing and the unconventional building materials and techniques that were chosen. Apart from those persons, people with diverse educational backgrounds and professions signed on, although several interviewees claimed that well educated people were always over-represented in EBBA. As indicated above, the most enthusiastic persons remained in the association throughout the long and often burdensome preparatory work that would eventually end up in the cutting of the first sod on the site (the day-to-day work will be discussed in the sections 7.2.3 and 7.2.4). Regardless of their level of expertise in the field, common to all the EBBA members was, according to one of the initiators, that they were generally environmentally concerned and caring persons. He also believed that those who did not already have expertise gained necessary skills during the preparatory process:

R: 'What characterises the people in Understenshöjden?'

Understenshöjden resident (U): 'That they care about the environment and they are concerned about things in general. They aren't extreme in any sense but they are cautious and think before they act. In short, they are friendly, caring people. But then they may have different professions and many people aren't professionally skilled but have learnt about all technicalities during the course of the work.' (17-01-01).

Some focus group participants discussed in more detail the specific personal characteristics that in their view had been critical for the sustainability of the project. Their main perspectives are highlighted in the following sequence:

R: 'Do you think a special type of personality is required, individuals with certain characteristics, in order to run this type of project?'

U₁: 'I think there is a need for people with a certain sense of leadership [...] If you're the kind of person who cares only about myself and what is mine, and believes that is the most important, then I think you would prefer to live in a villa, or terraced house as we talked about before. There's a limit to people's engagement there. But in this project, on the one hand I think we're normal people, but the strength of this project you know, is that we here wanted to get something more out of it. Something else, and a bit different. [...] I also believe that the process has enabled a lot of people taking responsibility, thinking of what's best for themselves, to think democratically and work democratically.'

U₂: 'But wasn't it also the case that the people who dropped out weren't sufficiently persistent?'

U₃: 'Yes, I think so.'

U₄: 'But in some cases those who didn't have the economic possibilities still were the right type of people. But there was a lot of unemployment those years, we shouldn't forget that.'

U₅: 'Yea, but I also think that the fact that people here are well educated is important in this regard. It's not only the ordinary person who is here, but there are people who have knowledge about this, and are able to manage this.'

U₃: 'Oh yes.'

U₅: 'And who can also take the responsibility upon oneself. And somebody who can resolve some problems and sit and discuss them. Then you need to have some basic insights in the issues.' (26-05-99).

According to these members, there are several personal characteristics that have been critical for the outcome of the project: technical knowledge, collective engagement/interest, and leadership skills, although other factors (like economic means) have had an impact on the persistence of individuals. One of the persons also pointed out that not only are certain characteristics required, but the project has also fostered a particular 'spirit of democracy' among its members that was imperative for the realisation of the eco-village (see further below).

In the interviews and the literature, the reasons for joining the association and living in the ecological-oriented properties of Understenshögden appeared to be somewhat diverse. The main arguments, however, typically concerned the social benefits of co-housing, the appearance and comfort related to both choice of locality and (individual) housing design, and environmental conservation. For example:

U₁: 'I don't think one should talk only about the technical solutions. The social side of this sort of living is also important. It will be fun to live together with all these people you have fought together with for a long time. To get a simple every-day spirit of community and to be able to share each others' problem and solve them together.' (HSB, 1995:18).

U₂: 'It has to be both practical and beautiful if you are going to enjoy your own home. Those conditions are basic for everybody, also for us, but to that we here can also add the issue of local environmental sustainability. I'm quite proud of what we're doing.' (26-05-99).

U₃: 'To us it was important to live in the city but as rural as possible. And we really wanted to have full control over the design of our house and this was a great opportunity for us.' (26-05-99).

Several focus group participants valued the possibility of addressing these three ends simultaneously, as the following passage illustrates:

U₁: 'I was thinking about what I said before, that some people want it to be more ecological-orientated here. In relation to that I think it's really important that we have indeed created such a trend here. Just consider all this beauty, that it's nice and light and all that. And yet it's environment-friendly, but it's not solely environment-friendly. I think this is the principal achievement we've made here.'

U₂: 'Yes, we don't regret that, do we?'

U₃: 'Certainly not'.

U₁: 'That we have these windows and it's light in the houses and we can still enjoy all that. That's a wonderful thing really. And the houses are good from an ecological point of view, it's all part of the local ecological sustainability.'

U₂: 'Yes, I don't think we should tone down the ecological benefits here. Most people who pay a visit here live in ordinary conventional houses. In comparison to that, we do have a lot here. After all, we have urine-separating toilets, and live on unexploited ground [...] And we have renewable energy, we even buy wind energy now and so on, don't we?'

U₁: 'Yes and we're sorting waste and composting. So it isn't that bad after all.'

U₃: 'But we're so used to it that we hardly reflect on it any more.'

U₂: 'And we've got solar panels on the roof. We do all that, and not least, we have an incredible feeling of social solidarity while cultivating ecologically.' (26-05-99).

From these quotations, it thus appears that a number of local residents were by and large pleased with the multiple achievements they had made since the project's start. I will discuss the residents' experiences in more detail in the remaining part of the chapter. For the moment, let us consider these comments from the five persons above in relation to with the fact that, up to the point this empirical research was finalised (May 2001), in five years only three sales have been carried out among the 44 properties. It seems reasonable to view this as an indication that many residents are largely satisfied with living in the residential area of Understenshöjden.

7.2.2. Approaches to resident participation

Since the Understenshöjden project was a completely bottom-up initiative, EBBA's organisational and management structures were entirely formulated by the local citizens. The basic thought was that everybody should participate in the planning, decision-making and the actual work as well as the maintenance of the eco-village and its adjoining land. To achieve this, the management team developed several strategies that were endorsed by the EBBA members at general meetings. For example, they were from the outset concerned to have only truly committed people in the queue lists: not only would this reduce the high demand for a house contract, but also ensure that the eco-village and its collective activities would become sustainable in the long term. In order to get rid of less enthusiastic people among the vast number of interested parties, EBBA introduced a system in which they charged a monthly fee of 50 SEK (approx. £ 3.30) per member family. According to several focus group members, this proved to be an efficient tool in the subsequent screening process, as the following quotation reflects:

U: 'Concerning the queue system, we learnt that from the Nacka eco-village. They said 'charge money from the people, no matter if it is only 50 [Swedish] crowns'. We started with that immediately and the number of people whined and then they dropped out. And yet it was only 50 crowns a month. And if you're not prepared to pay 50 crowns, you're not the right person for this, that is a persistent type of fellow'. (26-05-99).

The money went to EBBA's trust fund and was used to cover the costs of information material and literature, visits to other eco-village sites, and training activities led by invited experts such as environmental scientists, architects and builders. The members considered particularly the latter activity important, in order to acquire necessary

knowledge on environment-friendly options for building material and techniques, and ecologically friendly housekeeping measures.

Another approach to democratic planning and decision-making was that nobody would be indispensable in the project, wherefore a turnover of board members and other active members was encouraged. Some promoters even suggested that the most critical and sceptical people or the 'think-tankers' would be encouraged to become board representatives. One interviewee ascribed the project initiator the credit for introducing these effective rules, which demonstrated how good she was at the democracy aspect and at getting people engaged and make them feel important in the process, '...that everybody is needed' (19-04-99). But it was clear to the same person that the democratic process required a lot of time and that it could be frustrating for other project partners to deal with all members' requirements, especially during the early days of planning and construction. However, by 1994, she felt that EBBA had become much better organised and things were running more smoothly than before. This was also reflected in an increased level of participation at meetings and in the activities.

Another way of attracting truly committed people and ensuring full participation was enabled through the establishment of a 'time-bank', introduced in 1993. Through this, the members committed themselves to spending 10 hours per month on housing activities (ranging from participation in meetings and in the working groups to cleaning). The idea was copied from another eco-village where it had proved successful. In EBBA's case, it was decided that if a member did not succeed in meeting this time devotion requirement, he/she was obliged to pay a penalty fee of 30 SEK (approximately £ 2) per non-worked hour to the trust fund. This soon proved to be an efficient method to ensure high attendance at meetings as well as in the preparatory work. This also appeared to be yet another way of getting rid of less committed people who ultimately realised that EBBA membership required significant time sacrifices and mandatory participation in the preparatory work (see e.g. Nilsson 1995:22). Several residents thought this was an important screening process though, which is reflected below:

U: 'We demanded that one has to participate in study circles, and that one has to go to meetings. And we established the time bank, which we learnt from somebody else. And, I think many of these things we

introduced were necessary. Some people left, but I still think that was important decision by us. It didn't come out of my mind, but we learnt because we went around a lot and got a lot of tips.' (26-05-99).

In large part these policies resulted in numerous members dropping out of EBBA and hence the queue system. Some others thought there was too much democracy or collectivism involved in the project (19-04-99). One prior member describes the reasons for withdrawing his membership in the following words:

U: 'I got involved with the project because I saw something of value there for me and my family. But when things got rolling I lost my regular job, so it was for primarily economic reasons that we dropped out. Perhaps it was also because we got the feeling that this community might be too much of a collective. The personal chemistry wasn't 100 percent with all of our would-be neighbours.' (HSB Stockholm 1995).

While realising the difficulties for many others, several of those persons who remained in the association had a more positive attitude to EBBA's approach and even viewed the purge of members as necessary for the realisation of the project. For example:

U: 'I think it was necessary in order for us to be able to move ahead. It sounds cynical but we had to get rid of those who wouldn't be committed anyway. This way we ensured that people did want to do something and that we had common visions for our homes and adjoining areas which was important in order to realise them.' (26-05-99).

The screening process indeed proved effective insofar as those members who stayed on in the association and eventually became Understenshöjden residents were active participants at meetings and in the actual work. Some comments below from involved outside experts¹⁵ strengthen this argument:

Expert 1 (E₁): 'I think that the engagement was unusually great among the residents compared to other projects I've been involved in. It's huge. And that was obvious in the meetings we had where people participated and were enthusiastic. It was almost as if there was a podium placed up there at all meetings so to speak. My perception is that this would never have come true at all if it weren't for the high level of local involvement and engagement (...) Those who decided to live here knew what they wanted and focused on realising their dreams. They were concerned about quality of life.' (19-01-01).

E₂: 'The strong wills and the high level of action and engagement were quite extraordinary I think. In a way I admire that they endured, because they had a hard time during some preparatory years. It's not easy to take the lead and go against authorities and the construction industry and argue something differently

from the established groups. They persisted though, and they got what they deserved, that is in large part what they wanted. Only sometimes they had to comply with the official demands.’ (16-05-01).

Several of the residents expressed ambivalent feelings about the high level of individual influence over EBBA’s decisions. On the one hand, most of them felt that the decision-making was generally too long and difficult in the implementation process. On the other hand, the bottom-up approach seemed necessary to maintain individual residents’ control over the housing activities and there were no other obvious alternative paths to follow in order to achieve this end:

U₁: ‘That discussion about the trees, that was very hard. Sometimes there appears to be some sort of reversed democracy, where one person can scream aloud and go against plans, while another two want to implement something. Then nothing can be done about it whatsoever. That’s very difficult.’

Monica: ‘Yes, we’ve had difficulties finding the right approach to some decisions. You know, ‘shall we have majority decisions, or are we going to apply the consensus principle here?’

Marlene: ‘Or shall the working group take the decisions?’

Joel: ‘Or should it be the board? How do you handle all this?’ (26-05-99).

U₂: ‘Something I’ve been thinking about is that I keep hearing a lot of whining about us having so many meetings. And surely we did have a lot of meetings. But on the other hand, not only you feel that [turning to another resident] we all feel that. Me too, since I had to organise them, which was very hard work. It required a lot of preparation and so on. But on the other hand, people requested this degree of influence and they would have been upset if they hadn’t been consulted about something, you know. So surely there is demand for democracy here, which doesn’t correspond to our opinions about actually participating. And these issues are so difficult to deal with in a different manner. I think that’s the problem of the society: everybody wants to have a say, but how awful isn’t it having to attend political meetings? I mean, how does one solve this? I still think that’s really tricky. How do you allow people to have impact, or make them take control without having to impose? What are the other forms?’ (26-05-99).

U₃: ‘One of the advantages in this form of organisation is that everybody is involved and engaged in all matters. You can’t say ‘no I oppose that’ when it has been settled because you always have the chance to speak your mind before it’s decided. Then it’s your own fault and you can’t blame anybody else for bulldozing you. And that people have to show interest and participate to be able to have influence. They know that once they’ve neglected the debate, they’ve lost the chance to have their say. So, even though it’s quite complicated with the consensus approach to decisions and often involves too much time and energy sacrifices, I can’t see any other obvious alternative approach in eco-villages that are based on residents’ own ideas and initiatives.’ (26-05-99).

Notwithstanding the inherent difficulties, there was a prevalent feeling among residents that the high degree of resident participation was one of the keys to success in the project. For example:

U₁: 'I'm quite fascinated by the democratic process here. When we have problems with this and that, I've never ever heard any person complaining about somebody else's decisions in this association, we can't say, 'why didn't the energy group do it like this instead'? Because we're collectively responsible for everything. We can't say, [a member's name], why didn't you push for this or that'? I know what [this person] did and why.[...] And today I know that there is a great chance we're succeeding because of this sense of community.' (26-05-99).

U₂: 'When looking back, you really see that, even if I happened to be one of the initiators and was running it for a while, you can see that this is really a group's work. If all people hadn't popped into the meetings, and for example you [turning to a group member] had inspired to organise the kitchen group and worked out the colours in the kitchen and so on, it wouldn't simply have worked out. Everybody did their share, and developed their competence and some always made the coffee at the meetings. All these values are contingent on the collective work, that everybody launched their own initiatives and took responsibility for them. Otherwise it wouldn't be possible to run this type of thing, if one person had managed it all. Never.' (26-05-99).

Some residents claimed that EBBA, due to the high degree of involvement and commitment, developed into a well-organised, powerful group with a strong sense of community in the work towards the realisation of the eco-village:

R: 'It sounds like there are a lot of people involved with a strong power of initiative. Is it that you are somewhat special group of people, or individuals, or is it the nature of the project that is key to the achievements?'

U₁: 'I think that's both the chicken and the egg.'

U₂: 'Well, me too. I think that there aren't that many people that are enterprising, but there are certainly more than in a control group of 74 others, I think. But at the same time I believe that if you really find the keys, then the right energies, the power among the members and a common sense of community is triggered. Then a group like this becomes almost unconquerable I think.'

U₁: 'And it can be repeated again. There's no ways to attain this without working hard on it. But with proper organisation and management one can trigger this social power I'm talking about, through a housing collective initiative. When people decide to get together and do something, I think some kind of social pressure is created. I believe that out of these processes others are generated that bring joint action toward a common goal.' (26-05-99).

Overall, despite the demanding and time consuming work, it thus appears that a great number of interviewees viewed the local residents' characteristics and their bottom-up approach to decision-making as valuable for EBBA's efforts in shaping an ecological form of housing in Understenshöjden. In addition, the high level of individual commitments proved to be beneficial for the entire eco-village community in its joint endeavours.

7.2.3. Participation in technical decision making

The decision-making process in EBBA has since its inception been characterised by a bottom-up approach with informal, collective discussions and consensus-based decisions. The meetings were usually organised by some of the more active members. All aspects of housing were discussed at meetings, ranging from organisational and administrative matters to ecological-oriented construction and housekeeping issues. Overall, the assessment and decision-making has, as indicated in earlier sections, involved technical facets of housing, ranging from design and construction techniques to the choice of building materials. As noted previously, this was largely enabled through the relatively high degree of local technical knowledge in the field of housing and construction. One interviewee maintained though that in more recent years, the nature of issues and the hard-line consensus requirements have become more moderate, as the nature of issues and the association's day-to-day work and concerns on housing changed when the house construction was completed and they moved in (17-01-01).

During the planning phase, HSB and EBBA invited external experts to meetings to train EBBA members in ecological housing matters, e.g. eco-friendly construction techniques and materials. One resident recalled from these early events:

U: 'That was a very good way of making us inspired in the work initially. And for those of us who didn't have the knowledge but were just curious or knew vaguely, we could now understand the whole framework and get even more motivated in choosing environment-friendly options.' (26-05-99).

At a later stage, the bulk of this technical information gathering and awareness-making was obtained through the efforts of a number of working groups that were established around the themes Kitchen, Water cycles, Energy, Flooring, Earth, Laundry, the Outdoors and Price. The working groups were formed already in 1991, i.e. over two years before the construction work was launched, in order to facilitate the day-to-day

planning and decision-making during the preparation and construction processes. Through the group gatherings, the members met frequently in order to discuss, read and learn. Between the meetings they carried out investigations and market inventories on matters ranging from environment-friendly paint and wallpaper to equipment, construction and maintenance techniques. One member described what input she viewed as significant for this knowledge gathering process:

U: 'We went to some study tours and I went to the window factories to check available windows and all such things. We were working like dogs really. Some things got off the ground, and others didn't. But just us ourselves in a vacuum would never have worked out they way it actually did. And the international developments had an impact as well. I read newspapers and books and I phoned people and they phoned us. All that was invaluable for this project.' (26-05-99).

With respect to the formulation of ideas and decision-making, the residents-to-be relied largely on themselves as individual members for issues related to their own houses, and on the entire co-housing association for the overall design and construction of the site. This high degree of residents' control over the decision-making even in more technical matters is rather unique in Understenshöjden and cannot be regarded as typical for Swedish eco-villages (16-02-01, 17-01-01, 16-05-01). Despite the fact that most decisions were already made by EBBA, the working group representatives discussed the ideas with Platzer, HSB, and at the earliest stage, Småa. These inter-organisational meetings tended to be more informal than EBBA's own gatherings, partly because they involved a great number of participants and voting procedures. After the expert-EBBA meetings, the working groups' ideas and proposals were discussed at EBBA's meetings, where they became subject to voting. Some of the contractors attended these meetings and could have a say in the matters although they did not take part in the voting process. In some cases, it was difficult for the members to appraise the most environment-friendly, comfortable and cheap options, but generally the members relied on the working groups' recommendations for their assessments (19-04-99). One person explained how this was possible:

U: 'The idea of the working groups was grand. Normally we've had faith in their recommendations. There was neither time nor a need to question their findings. They've simply done a great job'. (26-05-99).

EBBA insisted on acquiring the necessary information to be able to make the assessments and decisions themselves as much as possible, no matter how technical the matters were. This was enabled through drawing on the members' joint contributions, interests and knowledges:

U: 'I think those who didn't have that much knowledge had the right attitude and were determined to learn from the others of us with more technical skills. There was obvious interest among all of us to have all necessary facts on the table, no matter what our backgrounds. And there's always a place where you can go and find out about it. And no other person had total insight.' (26-05-99).

Not only the lay members, but also several of the technically professional members of EBBA claimed that they could benefit from this largely self-training process. One local architect described her experiences from the process as follows:

R: 'Have you benefited from the project in your jobs?'

U: 'Yes, sure. My colleagues come up to me and ask about a lot of things. I've received comprehensive construction training.' (Jondell 1995:12).

All in all, it took several years to get the necessary knowledge base to be able to identify the best technical solutions and techniques, to understand where and how to have them implemented as well as the nature of their long-term effects. The following sample of statements about residents' experiences from the technical assessment process underlines the significance of the internal, joint discussions, in combination with input from external, experienced sources for this process:

U₁: 'It was time consuming more than anything else. Sometimes it was difficult to understand all the details, but we were many people who could discuss and raise our concerns and weigh pros against cons and so on. Everybody contributed in his or her own way. The study circles really helped a lot.' (26-05-99).

U₂: 'We got great help from talking to people from other eco-villages too. We could learn from practical examples, which was invaluable. A lot of things were entirely novel and we had to rely on ourselves through thorough research. We read and discussed a lot with the producers of the materials and we tested them out.' (26-05-99).

After intense discussions both internally and with HSB, Platzer and other consultants, a number of criteria were decided upon to facilitate the decision-making and ensure certain levels of environment-friendliness, comfort and beauty: attractive windows, wooden

flooring, terra cotta roofing tiles, floor-plan flexibility, healthy materials, a ceiling height of 2.7 metres, low-impact construction, roof-mounted solar panels (for heating water), and water treatment. Water consumption was to be minimised and sophisticated water treatment to be carried out on site. EBBA also decided to install a new toilet that separates liquid and solid wastes, *Dubletten*, which had not yet been tried out on a large-scale (HSB Stockholm, 1997). Sometimes HSB overruled the suggested measures and options, but typically EBBA, which represented a united voice, managed to get their ideas endorsed, largely because they were well organised and prepared for these negotiations (see further 7.3).

Some technical solutions appeared to be unrealistic, usually too costly, for the association. In such cases, the working group members had to revisit the market options again. Some ideas never got off the ground, whereas others, after some investigations and discussions internally and with outside experts, appeared to be effective and cheap. In some cases, EBBA got sponsorship from the companies that sold the products they had chosen. Many of these products were still not well-tried, and the manufacturers apparently saw the possibility to market and try out their products in practice, e.g. terra cotta bathrooms, eco-fibres for the walls and the *Dubletten* toilet.

To sum up, in this section we have learned that the Understenshöjden residents have had far-reaching local control over the technical decision-making over matters relating to design, planning and construction of their eco-village. This was mainly a result of both the generally high level of local knowledge in, and commitment to construction and housing, successful organisation as well as knowledge gathering exercises, such as the working group activities, expert training and interaction with other eco-villages.

7.2.4. Expert input and interactions

Over the centuries, the shaping of Stockholm through planning and construction has always been regulated and controlled by the municipality (Stadsbyggnadskontoret, 2001). The formal approval of building the Understenshöjden properties lay with the Stockholm City Planning Committee (*Stadsbyggnadsnämnden*). Under the Committee's direction, the City Planning Administration is in charge of land parcelling, registration of property, for granting building permits, providing maps, and making housing accessible to the handicapped. All its endeavours include '...weighing public and private interests

and protecting the beauty of the city by safeguarding its profile and landscape' (Stadsbyggnadskontoret 2001). Accordingly, its role in the Understenshöjden project was to produce detailed plans and prepare the consultation process in connection to these in the early planning phase 1990-1993 (Lind 1996). In 1990, HSB and Småa were granted land parcelling by the Administration and asked to collaborate with the local group of citizens through the newly formed EBBA. On behalf of EBBA, the Co-operative Committee (SAK) was instructed by the municipality to send out the draft plan for consideration to some other concerned authorities, *Stockholm Vatten* and *Fritidsförvaltningen*.¹⁶ In August, the detailed plan of the drawing proposal was revised.

Being one of Sweden's largest building commissioners, HSB with its project team had expertise in the field of housing planning, purchasing of building contractors and construction. HSB had little experience of full-scale ecological construction prior to the Understenshöjden project although it had been involved in the building of the Solbyn eco-village in the 1980's. One HSB Officer argued that there was little knowledge of ecological thinking in the organisation, although it had, to some extent, applied environment-friendly technology earlier as well:

E: 'At HSB, there was modest knowledge about the ecological thinking at the level of administrators. Additionally, much of what is regarded ecological today already existed to a certain degree in the technology then, although it wasn't fashionable yet to call it as such. (...) The label wasn't 'environment' but instead it was incorporated in the solutions that perhaps were good also from an environmental perspective.' (16-05-01).

Platzer was appointed in 1994 to become the building contractor for the eco-village properties. It was a traditional building company in the sense it was not specialised in alternative, ecological construction prior to their involvement in the Understenshöjden project. Through the assigned Project Leader, Platzer had though some earlier experiences with ecological construction: he had been involved in the application of environment-friendly technology in conventional building, but nothing that matched up with Understenshöjden (interview 19-01-01). This was also mainly the reason why EBBA chose Platzer as building contractor. Platzer managed to get the contract under hard negotiations: the economic recession in Sweden in the early 1990's had repercussions for the building industry for years to come. According to some focus group

participants, EBBA had been able to force the prices down and get additional extras for the original price.

Småa had experience from 70 years of building of residential properties of all sizes in the Stockholm region. It holds expertise in detailed plan work, land and housing planning and in assisting local self-builders in decoration and building. In Understenshöjden, Småa was commissioned in the first place to help the local residents in their own building efforts.

As already noted, the preparatory phase was rather slow and problematic due to disagreements between the involved parties, which all had their own specific requirements and interests¹⁷. It appears from different protocols and documents that there was a clash of interests between the residents' group on the one hand, and the project management team¹⁸ on the other. In general, the latter group sought to assert the different conditions as early as possible whereas EBBA strove to maintain flexibility in the project. According to the project management team, '...the cost calculations were obstructed by SAK's way of working' and '(p)re-agreements could not be arrived at since important preconditions were missing in the collaboration process'(Lind 1996:21). There were several factors of uncertainty prevailing, e.g. it was unclear how much the new system solutions would cost and how to involve risk assessments in the cost estimates¹⁹. The internal crisis was accentuated by the general uncertainty in Sweden due to the economic crisis in the early 1990's (ibid 1996:22). Consequently, the would-be residents were unable to carry out the house purchase and HSB did not want to initiate the production under such uncertain circumstances. The co-operation was further obstructed by an internal reorganisation of Småa²⁰.

In the meantime, SAK had proposed to EBBA to employ a local *ombudsman* to relieve the overburdened SAK representatives of some of their tasks that became nearly unmanageable during this critical period. Subsequently, the initiator Mia Torpe was appointed as the 'users' ombudsman' (*brukarombud*) of the association in dealing with other parties. That year, HSB Stockholm also employed her as Environmental Chief of their regional offices. According to some members (Focus group 26-05-99 and interview 19-04-99), this was a critical step towards realising EBBA's original ideas and plans, since it allowed the residents' group to interact more directly and informally with the

HSB project leaders, and to attain a stronger impact on the building contractors' work. Later in 1993, the preparatory work began to run more smoothly again and the land parcelling worked out well (19-04-99, Lind 1996:24-25).

Despite its substantial degree of self-reliance, EBBA also consulted with experts from HSB, their own (independent) consultants, and Platzer throughout the building process. As indicated above, quite often it appeared that they had different views on the best technology and strategies for the building work. In general, EBBA pushed for more radical innovative solutions, while HSB opted for more mainstream, conventional ones (19-04-99). EBBA's approach was, according to one of the interviewees, '...to be one step ahead of HSB in the planning' (26-05-99). Sometimes they managed to persuade HSB and the building contractors that their decisions were to be implemented even though those actors were of a different opinion. In some cases, EBBA gave in to the outside experts' requirements. Regardless of the nature of input from outside experts, however, it seemed as though EBBA was very organised and had taken a clear position beforehand on its own preferences. With hindsight, some residents even felt that they should have been more open to the outside experts' advice in some cases. For example:

U: 'Perhaps we were sometimes too difficult to deal with. And perhaps we should have listened a bit to them [the HSB experts] concerning the ventilation. We absolutely wanted natural air circulation in the houses, and in this matter they actually managed to overrule us for a change.' (26-05-99).

A consultant at *Aton Teknikkonsult*, who led an independent HSB investigation of the energy consumption in the Understenshöjden properties in the year 2000, confirmed that: '(t)he residents seem to have made a point of not listening to those with technical knowledge'. (Gustavsson 2000). However, he continued, '(o)ne also has to think about why the contractor did not react when heating pipes are placed on the wrong side of the construction'. Another article quotes the authors in the report's conclusion, contending that '(t)his project was from the beginning managed with the best ideas to achieve something good. But the contracted experts did not possess full competence in all areas and would have needed a powerful co-ordinator.' (Bengtsson and Elfving 2000). Thus the evaluators gave support to the local people's preferences while offering an explanation why EBBA had reasons not to accept entirely the advice of available outside experts, i.e. the technical problems that they were accountable for. Similar insights

emerged in the investigation of the quality of air and ventilation in the houses. In an article, a scientist at *KTH Byggt teknik*, who was commissioned by HSB to carry out the study, found that: ‘(t)he lack of draughtproofness is a result of construction errors, not the technology that was used.’ (Nordling 2000:39). In the same article, EBBA’s construction inspector and local resident was very critical of how the contracted building firm handled the work: ‘I pointed out the defects as I discovered them, but with no effect. They did not seem to want to come to a good result.’ (ibid:39).

In yet another article, one resident tells about the periodically poisoned atmosphere between EBBA and the builders. Once they pointed out to the builders that there were gaps between the erected walls and the foundation, he explains, they were met with contempt: ‘They ridiculed us and said, well you want to have somewhat old-fashioned and draughty houses’. (Gustavsson 2000:4). Overall, not only do these findings point out that there were technical flaws related to the contractors’ mistakes or carelessness, they also suggest that the problems were not the result of inappropriate choice of technology *per se*.

Not surprisingly, the involved builders disputed this perspective. They generally viewed the technical problems as a result of the inherent defects in the unconventional techniques and materials that were applied in accordance with EBBA’s preferences (16-08-00, Gustavsson 2000; Berglund 2000, Nordling 2000). The Head of the Development Unit at HSB subscribed somewhat to this point of view, claiming that: ‘(t)he group of residents had very firm opinions about the design of Understenshöjden. They themselves chose some solutions that led to this outcome. Perhaps we should have put a brake on it earlier.’ (Westmar 2000:2).

All in all, in the context of expert-lay interface, despite the word-against-word situation, the samples of comments above as well as others from the concerned local residents and the scientific evaluators clearly indicate that some of the outside experts were neglectful of the residents’ preferences and needs during the construction process. This in turn has created a feeling of distrust among local residents in the builder’s ambition to meet the residents’ preferences with regard to housing, an insight that is further strengthened by comments made by other residents in a film highlighting the interaction during the building process²¹.

Analogous findings derive from my own empirical research. An interviewed expert contended that there had indeed been problems of neglect during the construction work. He also explained his view of why the adopted technological approach was blamed by the media:

E: '[The EBBA's building controller] was involved in the process and he pointed out the construction mistakes early on. But they didn't take any measures. (...) In times of prosperity one tries to find errors in the ecological construction business so I wasn't surprised that they (the media) use that argument without having acquired enough insights into the problem. It's the media that pictures it this way. They could have made it more in a matter-of-fact manner.' (16-02-01).

Excerpts from the discussions indicate that there was a locally perceived feeling that outside experts lacked faith in the residents' competence as well as disrespected their concerns in the field. These views were obviously two reasons for the local people's mutual distrust in, and scepticism towards, their commitments, input and competence in the matters. For example:

U: 'The builders were very sceptical about it [the ecological building project]. They said 'that doesn't work', and they changed stuff they didn't believe in.'

R: 'Without consulting with you first?'

U: 'Yes, sure. There was for example a particular paint that we had decided on, and when I came there they were painting with another one.'

R: 'What was the reason for their scepticism, do you think?'

U: 'Lack of knowledge. They thought we were strange and they wanted to decide quite a lot and tell us how we would do things, rather than the opposite.' (17-01-01).

U: 'When we realised that they [contractors] were not really paying attention to our concerns and not even to doing a really good job, they were cheating really, then I got suspicious of their commitments. To them we were only ordinary residents who shouldn't interfere in their work. That was their basic view.' (26-05-99).

U₁: 'The contracted parties weren't particularly enthusiastic about our way of working.'

U₂: 'That was a real understatement.'

U₁: 'I never forget when we were at HSB in one of those traditional meetings. It was just like an atmosphere of confirmation classes there really. 'Now it's beginning to cost money, now we have to consider this and that'. It felt like we were teenagers. And when the level of competence was below ours and we understood they didn't know how to go on. But we came to the insight that it was also the reason why we managed to get our bits of control over the construction, in terms of knowledge input. And clearly you encounter resistance then, even though there were supportive people as well.' (26-05-99).

U: 'The poor old building industry. I know it's changing now, but at the time, it was still the waste product of a male dominated organisation that had cultivated its characters for some decades. They didn't sympathise with us despite the fact that we too were knowledgeable in the field, and we even knew more about ecological solutions than they did. Quite often they ignored our viewpoints and concerns during the building. And with this attitude of course you don't do a particularly good job. There was no comprehensive view of things and no co-ordination. We fought this all the time, their incapability of working from a different perspective.' (26-05-99).

Accordingly, it appears that several interviewed residents had rather negative experiences from interacting with some of the expert groups. However, a few persons pointed out though, that the external resistance stemmed from the concerned organisations' traditional cultures rather than from involved individuals *per se*. One resident explicitly stressed the significance of these individuals' competence and support, and need to recognise them for their input to the project:

U: 'I also remember many good meetings with these guys during the course of the work. At the beginning there was a really good bloke at Småa who was great, but he retired later. (...) He was ready to try out new ideas, for example the one concerning the merging of the queues, and lots of other things. (...) I think it's important to understand that all these individual actors are caught up in a system and it's not easy to get out of it. They are expected to have a certain position that follows the internal traditional pattern (...) There are individual builders who have put their hearts and souls into this area, it's important to remember that. (...) Otherwise they won't have the strength to continue if they don't get the recognition they deserve.' (26-05-99).

One contracted consultant strengthened the argument that more established groups on the whole worked against EBBA rather than supported them in their efforts. He also gave two reasons, one external and one internal factor, why the project came into being at all: the level of local engagement and the economic situation in Sweden at the time:

E: (...) 'This project met a lot of resistance all the time.'

R: 'Where do you feel this resistance came from?'

E: 'Well, from authorities and everybody around them. The reason why this group managed to force through this was their level of engagement.'

R: 'What was the reason for the resistance they met?'

E: 'I think it's the building industry's constant dilemma, that you want to work the way you always have done things. In this area, you are closer yourself than anybody else, and these things [residents involvement] only make things more complicated. (...) The time constraints make you strive to do things

the way you are used to. But this came into being during the economic recession so that's probably why the conditions were more favourable than today.' (16-02-01).

However, according to one source at HSB, there is another explanation for the apparent scepticism among EBBA members towards external expertise during the building process:

E: 'In Understenshöjden, EBBA felt as if HSB was imposed on them. A co-operation never works well under circumstances when you are landed with a co-operative partner. It creates certain sentiments and suspicion. (...) There wasn't much knowledge about the ecological aspects at the level of officials.' (16-05-01).

While yet another expert recognised that some contractors were critical of the level of resident's influence over the project, he also felt that there was a mutually disrespectful attitude among the residents towards the outside expertise, since they did not possess all necessary knowledge:

E: Well, I've noticed a tendency [among the builders] not to take the residents' view that seriously, that they think they have too much influence. But I think that it's also important for the residents themselves to show a humble spirit to the expertise. To consider the pros and cons and why and how and not only dash off with your own notion of what is right and what is wrong. (...) Surely they also had their experts and people with more or less of experience, but it wasn't really enough (...). It seemed like they didn't really have an understanding of the general routines and available expertise.' (19-01-01).

Yet, while some contractors recognised that there was a general 'attitude problem' (16-05-01) amongst the contractors, several of them felt that they had personally benefited from the residents' involvement in the project:

R: 'Could you and other experts benefit from collaborating with the residents in the process?'

E: 'Oh yes, sure. Understenshöjden is an example of how some 50 families and their working groups could fish out the proper technical solutions. Not even a consultancy team would get near that accomplishment. It's quite incredible really.'

R: 'Do you think it was appreciated as such by other experts?'

E: 'I don't think so. There is a fundamental conflict here, but the building industry has to change in this regard. Now there is talk of bringing a change to it, but it's a long way to go from rhetoric to action. It's about viewing housing as a market product and not only a social right the way it used to be viewed before. Then we have to adjust to the customers and approach those people we are dealing with and try and meet their needs.' (19-01-01).

E: 'I've learnt incredibly much. (...) I got technical information of how things work. If you are technically interested like myself, you appreciate to learn how urine-separation functions and how to get rid of waste products. I didn't know this before (...) These are the sort of things the local residents themselves with their own visions and ideas can bring us in the building industry to open our minds for.' (16-02-01)

E: 'You always benefit something from the local users if they're somehow involved in the process. This project was special in many ways and collaborating closely with these folks who knew what they wanted, perhaps more than most others, was exciting in many ways. Tiring, but exciting. I think we all know more about the new solutions and systems, why some of them didn't work and that others can actually work in the right settings.' (16-05-01).

Interestingly, these comments from the three experts all reflect positive experiences with lay input in the technology assessment process. More explicitly, it appears that the local citizens assisted in the quality assurance of planning and building, not only through their monitoring of the actual physical construction work, but also through their contributions to the development and testing out of new products and technologies. While recognising the benefits, however, the same contractors felt that it was also a challenging venture to interact with the local residents, given their high level of influence over the decisions:

E: 'Well, it wasn't easy really. It was a massive role you had to play as architect. You make your sketches and present them to some 50 families. And then there is a discussion and you have to go back and redo the sketches again in order to be able to come to a decision. There were a lot of discussions and numerous issues, it was both positive and difficult since it was a new role for me. (...) And the residents wanted to influence strongly on the design of the houses. And I have to admit that it was hard before I realised that it naturally results in something else if you have a dialogue with the local residents compared to if you sit and do it yourself at your drawing desk. It's not my own house drawings and can I then stand by what I've done? But then I realised that it wasn't my own product that I offered, but my professional skills if I do what they want me to do. That made it easier.' (16-02-01).

E: 'It was decided that the residents in this area would contribute with different things within our [the building contractor's] own time frame. But it was hard to make that system work. It took a long time and it was difficult to carry out everything that had been agreed upon earlier. Too many voices with differing opinions doesn't make it easy really. (...) The difficult part of it was that we've got certain delivery cycles that we have to stick to. It's tricky because the period of time when the residents wanted the material varied from person to person. It's always easier for us to build the entire houses no 1, 2, 3 and 4 and so on according to our own schedules. We're good at handling these time schedules ourselves.' (19-01-01).

E: 'In the Understenshøjden case they had us HSB as building commissioner and we claimed certain technical solutions but the residents or lay people couldn't accept that and say 'OK, you're right'. But then

you really had to prove in every moment that you were right. Otherwise the residents' group would turn to another company and claim that 'they think this and that', which is something else. That's hard, to be questioned all the time, and in front of the residents group always try and prove that you're right in your argument. It's not enough to say 'I've done this for ten years and know exactly how it is.' (16-05-01).

Apart from the technical constraints touched upon here (see also 7.3.), it thus appears that there were some difficulties relating to the challenges of public-expert interface in the project that may occur when two different cultures clash: the enthusiastic residents who had strong wills and their own preferences although many of them were lay persons in the field; and on the other hand, experienced builders who did not want their professional competence to be questioned and challenged by the local residents (for an interesting and a more detailed analysis on the public-expert interface as well as the learning process in Understenshöjden, see Hollander 1998).

With regard to lay understanding of technical and scientific knowledge, the mainstream view of the involved outside expertise seemed to be that, despite the relatively high degree of local knowledge, the complexity of the issues subject to local validation made it too difficult for the local citizens as a group to participate fully in the process (see e.g. Godée 1996). In this empirical study, it was for example argued:

E: 'It was difficult. The applied technical solutions are rather complex. And it's possible that we went too far in that respect in Understenshöjden, because we tested almost everything simultaneously. And it's not problem-free when you break new ground with new technical innovations. But at the same time it appears that there is mould and dampness in several of those houses that were the flagships in Sweden. So there is a need for new methods that are also endorsed by the local people. Every third child in Sweden has allergies of some kind'. (16-02-01).

E: 'There is a better way [for residents' involvement] that becomes manageable if one limits the scope for the level of [residents'] influence. That means that we ourselves got a chance to establish a fixed time frame that includes what we have to decide about and when, and the decisions must come before that deadline. Then after that you can process it, and they [the residents] can participate in the follow up of the actual work, the cost figures and so on. But you have to simplify it to allow them to really be able to influence.' (16-05-01).

Apart from local conditions, there are also external factors that determine the possibilities for residents' participation in technical assessment and decision-making in housing. In May 2001, the practical aspects of co-housing initiatives came under scrutiny in an

article in one of Sweden's leading newspapers (Svärd 2001:2). The author found that the interest in co-housing had increased with the rising housing shortage, but a number of legal and economic barriers confront these organisations. For example, there are difficulties finding land for the properties, co-housing rights of tenancy usually end up in higher costs than conventional houses with rights of tenancy, and the estate owner takes higher financial risks than others. In existing houses, other problems relating to financing and judicial aspects appear and it is harder for associations to purchase a house than for companies. The estate owner must be of the opinion that co-housing is a good business, something that the municipal housing companies believed strongly in during the 1980s.

Some of these problems explicitly faced the people of Understenshöjden as well. Apart from the difficulty in getting land for the eco-village properties, as suggested by two of the interviewed contractors (one local and one external), there were some legal obstacles to local residents' involvement during the construction work:

E: 'One external problem is related to the work place and potential injuries to the third person which the contractor is held responsible for against the authorities. (...) It implies that when relatives and friends or other groups are involved in the work somehow, they aren't insured when they enter the [building] site. That's the sort of problems you encounter in these situations when ordinary people are involved. We noticed that when our local manager declared himself not responsible for the [work on the] site after 5 p.m. Then he simply closed the building site. Otherwise he is held liable to authorities and under the law. Those are the kind of problems you get which are difficult to deal with in these sorts of systems.' (17-01-01).

R: 'Which role do the residents have in this type of initiative?'

E: 'They have possibilities to do something, but the possibility to really succeed is almost non-existent. Because here in Sweden the residents are completely without legal rights in the building system that we have. We have no say in it. It's the builder and the building commissioner and there are mainly large building commissioners here. The little resident should be happy if he is allowed to move in. (19-01-01).

In sum, the main insights in this section appear to be that the interaction between local citizens and experts during the planning and implementation of Understenshöjden was largely problematic and challenging for both parties. Apart from the significance of the prevailing technical problems, the reasons can be summarised in terms of tension due to dissimilarities in knowledges, attitudes and values (often typical for the organisations they represent), as well as the institutional inflexibility with regard to ways of working and routines. While giving credit to individual outside expert input, the locally prevailing

feeling of resistance or ignorance on the part of involved institutions in turn engendered distrust in, and non-receptivity to, expert claims. The local involvement was further restrained by external conditions that prevail in the building industry, i.e. regulations that discriminate against lay participation in housing initiatives.

With regard to the perspectives of the outside expertise, some experts viewed the overall interaction process as beneficial for themselves in that it provided them the opportunity to understand local values and needs, and to learn about new innovative construction techniques and materials. Consequently it appears that the local involvement in the quality assessment of the planning and building processes has contributed to developing and testing out new technologies and products for ecological-oriented housing, thereby contributing supplementary knowledge to the existing scientific understanding in a valid and useful manner.

7.3. The construction phase

In December 1994, Platzer launched the construction by preparing the ground. Early on, EBBA had decided that the natural landscape would be utilised, but disturbed as little as possible, and that the houses would be “lowered out of thin air”. In practice, this meant that they were put on pillars, and all foot paths, roads and structures were carefully placed alongside the trees. Wiring was laid under the paths and efforts were made not to destroy the ground along these channels. Fruit trees and bushes were planted along the Ecological Passage, mainly for beauty’s sake, but also to act as a windbreak and as a buffer to the adjacent sport facility’s parking lot (HSB, 1997).

According to the building-plan of the area, five groups of terrace houses were to be erected, each with its own unique design. To suit differing financial capabilities, residents were given the option of buying their house at one of the following three levels of completion: 1. Framed and covered 2: Framed and covered, with floors and walls 3. Turn-key. Most residents had decided to do most of the interior fittings themselves, including installation of household machines, paper-hanging, painting of walls and ceiling etc. The cost of these fittings was about 163,000 SEK (about £ 10,870) per house. The total cost of the medium level was 185,000 SEK (approx. £12,330), which

corresponded to a saving of 53,000 SEK (£ 3,530), as compared to new standard constructions. (19-04-99).

EBBA had also decided that the residential area would serve as a completely ecologically sustainable small-scale society. In accordance with EBBA's requests, the contractors carried out a number of measures in the houses and in the adjacent yard. With regard to house construction, they installed Dubletten toilets as well as solar panels on the roofs of the houses. In the yard, the builders constructed a local water treatment plant with purification at two sites that end up at two water dams. An adjacent marshland became the water reservoir for the residential quarter, with outlets in the Saltsjön (part of the sea). Understenshöjden was connected to the municipal water system, which harnesses Lake Mälaren as its reservoir. The level of municipal water consumption, however, has been minimised and wastewater treatment is now performed on site. To meet Understenshöjden's energy demand, Platzer constructed one waste-wood furnace and a local piped-water heating system. However, the contractors had miscalculated the heating demand, and the furnace turned out to be too small-scale for its purposes. This resulted in low indoor temperature in all houses during the first winter. The pipes froze and sometimes the residents did not have access to water in the houses. As of spring 2001, they were still working on the insulation improvements of the pipes (19-01-01).

Apart from participating in the joint discussions, each house-owner had the possibility of designing the interior of his/her own house, including walls, door openings etc. In 20% of the houses, only the framing and covering of the houses was completed, and the owners did the remaining work. In 60% of the cases, the residents painted and undertook carpentry in their properties. Apart from that, the residents had the ultimate say in most of the issues relating to the design and installation, thus making them rather unique among eco-villagers in Sweden. Accordingly, Platzer had to carry out what EBBA had requested them to do, but in practice quite often there were intense discussions about the best approach. While reflecting on the temporary disagreements between residents and builders' in this interface, one local resident admitted that '(p)erhaps it hasn't always been the best solutions from a construction perspective, but for us this has been about building homes, not only houses' (Monzón-Preis and Gillow 1996:10). Thus, while recognising that the builders had a more technically correct approach, he demonstrates

how the local preferences were more central to the local citizens than the expert claims of good practice.

EBBA's consultant inspector, who was also a resident-to-be, oversaw the entire construction work to assure that the work was done in accordance with EBBA's requirements. He summarised the building process in the following words:

U: 'Regarding the technical part, there were some errors that were made. The builders didn't listen to us and thought we were unskilled people who only wanted to use natural materials. So they didn't make an effort to make it well. And that's why we have such a high energy consumption today. And that's bad.'

R: 'In your view, was that a result of construction errors or was it you opting for inappropriate technical solutions?'

U: 'We argue that it's construction errors, but they said that you can't build with such materials, you see. They don't even want to learn, but rather buy new paint and just put it on.' (17-05-01).

As indicated above as well as earlier, since many eco-friendly materials had barely been tried out beforehand, there was little experience among the professional staff with using these materials. As noted previously, this made the building more difficult for them. Moreover, the asymmetry of the houses caused problems during the installation of the floors and the interior and exterior walls. Hence the standard techniques proved to be unsuitable and the entire construction required new technical solutions. Consequently, Platzer had anticipated it would take about two days of work per house, but now it appeared to take much longer. This caused some apparent irritation among the building workers. On the other hand, several EBBA members believed that HSB and Platzer thought the residents were whiners who were overly picky about small details (16-04-99). Also the residents experienced difficulties in their own efforts. Some of the materials were difficult to use, like the putty and the paint. The tempura paint appeared to absorb oxygen, which resulted in somewhat different shades than were expected by the house-owners. It also took a long time for the paint and the putty to dry fully. In most cases, however, many residents eventually appeared to be satisfied with the choice of materials (26-05-99, Nordling 2000).

In May 1995, after over five months of construction work, the residents were able to move into the Understenshöjden properties. Many of the households were still not

completely decorated at the time, and a great number of residents continued on their own finishing their new homes.

7.4. Results and perspectives after completion of the eco-village

Ever since the completion of the construction and decoration work, the residents' collective housing activities have in large part become of more social nature than is typical for co-housing initiatives: sport/game/leisure activities, mutual co-operation in the garden and the allotments, jointly organised purchase of wind energy, and ecological food from nearby farmers, 'food-cooking team', and not least, Stockholm's first car-sharing initiative. Any maintenance work of the properties is carried out on private basis. In 1999, a common activity house (*gemensamhetshuset*) was finished where the members convene at parties and meetings etc. Even though environmental issues have lost much of their previous prominence in the joint debates (26-05-99, 17-01-01), in accordance with the original plans, each household separates its waste and recyclable products, utilises the waste-water and heating systems and the toilet on an everyday basis. The organic wastes are composted in a warm compost outdoors. Municipal refuse collectors collect other wastes while recyclable materials are stored in a room for pick-up. Another room is available for storage of items that might be practical for other families to re-use. In addition, rainwater is collected in barrels and re-used for watering plants on the site.

Much of the recent attention of the Understenshöjden eco-village has been centred on the technological facets of ecological construction and housing. As noted in the previous section, the Understenshöjden properties have experienced technical problems to a varying degree. Due to high levels of phosphorous in the water, as of spring 2001 the water purification did not work properly, nor did the waste-wood furnace or the solar panels work satisfactorily. Moreover, the Dubletten toilet has had some problems with the nitrogen level due to low levels of micro-organisms breaking down the components. Many households have experienced discomfort with draughts and dampness. However, the most alarming problem has been the residential area's high energy use. In an investigation as of 2000, it was found that the energy use is higher in the eco-village than in average houses; moreover, the houses were draughty, damp and had cold floors. (Bengtsson and Elfving 2000, Westmar, 2000). The outer walls were not insulated and in some houses, contracted builders or residents have opened and filled in the cavity filling

afterwards. The balcony door towards the terrace had proved to be a critical source of the draught. In addition, the roof-mounted solar panels, which are heating up the water, did not work satisfactorily. All in all, these and other details had contributed to the excessive energy use amounting to about 300 kWh/m³ per year instead of the estimated 140 kWh/m³ per year. (Bengtsson and Elfving 2000). Some of the findings were hardly surprising to many residents, as reflected below:

U: 'We are afraid that there will be a backlash for the ecological building. We are aware that the energy consumption is high and it is something we are working on. But we are of the opinion that it is the result of construction errors.' (Gustavsson 2000).

As indicated in 7.2.4, in rough terms there is a word-against-word situation between the contracted builders on the one hand, and local residents and some outside experts on the other, as to whom to blame for the technology-related troubles. With the media's general interpretation of the problems in terms of 'technological failures of the eco-village' (Westmar, 2000), 'energy-bluff' and 'fiasco village' (Arnstad, 2000), the technological matters have cast a cloud over the Understenshöjden eco-village in recent years. Conversely, some authors, researchers and not least local residents prefer to emphasise the positive aspects of the eco-village's achievements: they live in a healthier home environment than ordinary people, they have more sustainable lifestyles, a greater sense of social intercourse and spirit of community with their neighbours, and their homes are designed to suit their own preferences with regard to comfort, practicability and beauty (17-01-01, 16-02-01, 26-05-99, Jondell 1995, Nordling 2000, Berglund 2000, Gustavsson 2000). Some excerpts of quotations may illustrate how several interviewed residents perceived the difficult but rewarding work during the course of the preparation and construction, and the ultimate satisfaction with having reached the state of living in Understenshöjden:

U: 'During the first year, we were all fascinated by the project itself and all we had to learn. The difficulties with moving in came later. Togetherness is important but not always the best. When people stand on their lot or in their house and say they want things a certain way, that's when conflicts arise. But we've learned that it's possible to solve them. Now it's wonderful to know that so many residents are so satisfied with having built their own house the way they wanted it. We hardly imagined it was possible.' (HSB Stockholm 1997:2).

U: 'I think if you look back at it, the results exceed my previous expectations. Since we worked against the mainstream, against the society if you want, all its institutions. Even if one were positive on the surface, there was no single step that wasn't incredibly cumbersome where we had to find new approaches and make the City accept them, and the builders and so on. And keeping all that in mind, there was a lot of pressure already before we had moved here but in a way we already lived here then. And then we had to sort out everything. And we have been very stubborn and a strong group. Many others had given up, I think, and then things had turned out differently. But there was much of the sentiment 'we claim this, and we don't give in' here. So, during the whole journey we've put ourselves on a somewhat too high level and that's why it has been so exhausting I think. But on the other hand, we're already there now. And most people really enjoy it here. We've had two sales, and one is apparently pending. But that's very little turn-over since people like it so much here.' (26-05-99).

U: 'There were incredibly many troubles with the building contractor during long periods. It's a miracle that it stands here at all and that it works so well today. But all that meant a lot of cleaning up after the mess, which in turn has resulted in the settling-down phase being drawn out. Now I actually feel that we've reached our goals. Even if we lost the hope sometimes, now we can say it was worth the hard work. We've got very nice area here and we enjoy our lives together in houses that we've designed ourselves. That's actually quite wonderful.' (26-05-99).

From these persons' perspective it seems evident that, despite the external and internal difficulties facing the association during the planning and implementation, EBBA members managed to succeed beyond their expectations, given their hard work and stubbornness. Whilst recognising the local residents' preferences with regard to housing, one of the contractors gave them a lot of credit for achieving these ends:

E: 'I'd prefer that the whole process coming into being in this project would be repeated again. That you discuss through all the various options. Because the needs are different from place to place and from one group of residents to another group. And I find this dynamic process as very exciting. (...) I think that this [involving the local people] is really the way one should be working as far as possible, within a certain framework. Of course it's different from project to project, but there's a local engagement that I believe is important to draw upon to achieve good results. And the residents enjoy their home environment when they are involved. And that's evident in Understenshöjden today: they are engaged in the communal life, not the technical solutions they have used.' (16-02-01).

Some other contractors reflected more explicitly over the lessons learnt from the project and what they would have done similarly and differently in a new ecological housing initiative today:

U: 'The residents would absolutely be part of it from the outset. And again, you would have to commit yourself from the start to achieve some particular goals. If you don't you shouldn't be part of it and start it up at all. And you should have a checklist with specific time frames as to what to fulfil when, and what we [the residents] ourselves are going to decide. And you have to have professionals involved too who have done this before and who can be involved in the management of the work. There has to be perhaps a hand-full of people who can take turns and run it. And it has to be set up in the right place. The right people in the right place.'

R: 'How relevant is it to have somebody [local residents] employed like you did?'

U: 'It's important in order to have enough time and energy to look after your interests. If you're not there in a meeting they decide something differently. (17-01-01).

E: 'I would have structured things in another way. When it comes to the building process, it should have been divided into different areas. I would have put an effort into assisting those groups who needed it compared to the way it normally is. Another thing is that you should have presented a greater sample of products and not just say that this product has everything and the name is this and that. One should have been able to see that there are products that has both pros and cons and make an assessment, on the basis of that and perhaps have listened more carefully to the experts' views of how it works in building projects.' (19-01-01)

E: 'The only chance is that the existing building commissioner sets out clear and limited scope for the implementation and says 'this is what we feel are the financially feasible alternatives'. And the group of residents may then freely influence the decisions but under a limited budget. Then they get more or less what they want but have more realistic and feasible options.' (17-05-01).

Apparently, these experts would opt for more structured and organised assessment and implementation processes if they were currently involved in a similar project. The first person also pointed out the need to have local residents professionally involved in the initiative in order to ensure that the experts took the residents' interests into account. Interestingly, the three outside experts interviewed in depth in this study claimed that they had benefited from interacting with the residents in the project, although the last comment in the following sequence reveals a patronising attitude towards the residents:

R: 'What did you learn from the project that you can take advantage of today?'

E: 'Well, it's mainly the issue of resident participation, the dialogue with the residents which is the greatest experience. That it works to try and make something new and it can develop into something good. It's the way it should work really. But perhaps I won't have the opportunity again, it was quite a unique experiment.' (16-02-01).

E: 'In this project there was much more of local involvement than we are used to in our business. Of course it meant a great challenge for us, that ordinary people questioned the people who know how it works by routine and scientifically. But it was also an interesting process to learn about the local people's concerns and how their ideas differ from yours. Sometimes the perspectives were very different but we had to accept that. In the end I began to understand a bit how these people viewed the relationship between housing and good lifestyles. In a way, that's how other people should view it as well.' (19-01-01).

R: 'Do you feel that you have benefited in anyway from the interaction with the local residents?'

E: 'Yes, absolutely. It's always the case with residents' involvement. It's like having children who question your opinions and knowledge in a sensible way, and you are compelled to test your viewpoints. 'Why do I think this really, is this reasonable?' Perhaps you get even more certain about your claims and also understand what is valuable to the end users. If there is only remote contact with them, it's very easy to believe that your assumptions are valid. The close contact is very inspiring. Also, in both Gebers [another ecological housing project] and Understenshöjden, they [the local residents] have created a spirit of community that helps preventing from a lot of whining and discontent as to why things turned out the way it did. That's very important.' (17-05-01).

To sum up, despite hard work for all parties concerned as well as the technical problems that occurred, a number of stakeholders were of the opinion that they had managed beyond their expectations in bringing about an ecological housing initiative with largely satisfied local residents, who now live in accordance with EBBA's original visions of such in the Understenshöjden residential area. Both residents and outside experts claimed that they have gained from the interaction and assessment processes, not least in terms of acquisition of technical knowledge.

7.5. Conclusion

Located only 15 minutes from the Stockholm city centre, Understenshöjden has developed into a strong social unit more typical of a small community. The residents not only look after their own homes but also take part in the day-to-day maintenance of the residential area. In addition, the initiative has had some spin-offs such as the Stockholm's first car-sharing activity as of 1998, some co-operation with the school and a local cultural association, and collective purchase of ecological food and wind-energy.

Being highly experimental and innovative in nature, Understenshöjden must be viewed as a unique Swedish eco-village project in that since the outset it has been based on a

large degree of residents' control over the technical planning and decision-making of the eco-village construction. This is largely a result of the presence of enthusiastic and dedicated local individuals and their hard-line bottom-up approach that proved critical for both developing the project idea, and for implementing them, in conjunction with local authorities and outside experts. Moreover, the high degree of local knowledge in house construction was beneficial for the process of designing and implementing the ecological-oriented properties. Had there not been this great number of technically skilled residents, the level of residents' control would with all probability not have been pushed that far from the outset, nor would the residents-to-be have managed to maintain the level of control over the decision-making in relation to outside expertise and local authorities. Moreover, the extent to which the local citizens were collectively organised appears to have been an important variable since their organisation already from the outset allowed them to validate and compare experiences and values, accumulate local knowledges as well as scientific/technical accounts. Clearly, the organisation allowed them to be well prepared for, and have confidence in, the negotiations with the authorities and the contracted experts.

Undoubtedly, there was a strong learning process in ecology, organisation and management, technology, and social community on the part of the residents, of whom a majority were lay people in design and management of ecological housing. From the interviews with the experts and the literature review, it appeared that the Understenshöjden initiative represented an important learning process also for those actors, who had benefited not least in terms of acquisition of technical knowledge.

The technical problems are still a matter of concern among the involved residents, but also the authorities, the scientific community and the media. What seems clear from this study is that the methodological issues and their potential implications for future eco-housing initiatives based on local participation have had to make way for the technological aspects of the Understenshöjden initiative, which have attracted most attention lately in the public debate. In fact, from this empirical research as well as the available literature, it seems evident that the project has proven successful in many ways: in terms of the testing out of novel ecological construction techniques, satisfaction among residents (in part due to the large scope of local ownership), economic viability, application of environmentally sound options and measures, and alteration of lifestyles.

Perhaps more important than the outcome of this experimental project at the local level, are the effects at the national scale. Regardless of all the technical problems and difficulties, the Understenshöjden initiative must be regarded as a flagship and spearhead of all future ecological housing activities in Sweden, where residents almost exclusively have an essential role in the validation of novel ecological construction technology. By incorporating local citizens' perspectives and knowledges into the assessment of ecological housing matters to such a great extent, the Swedish building industry has been able to learn more about how to design and manage future ecological construction exercises based on local participation in the validation and decision-making processes. Both products and techniques have advanced to a great extent since the planning of the Understenshöjden project, and both authors of the reviewed literature as well as some interviewees in this study claimed that this is partly a result of the lessons learnt from this initiative (see e.g. Berglund 1999 and 2000, Gustavsson 2000, Nilsson 2001). Recent ecological-oriented housing projects such as Kullön (Vaxholm), Hågaby (Uppsala) and Gebers (Stockholm) have been able to benefit from lessons learnt from Understenshöjden perhaps more than any other eco-housing initiative, not least from a technological point of view. Accordingly, the Understenshöjden citizens have assisted the evaluation process of environmental-oriented housing by contributing their values, analytical assumptions and knowledge, thus bringing a broader set of knowledge, views and ethical concerns into the assessment process than has been common practise in the building industry before. Nevertheless, unconventional innovative projects of this kind appear to be risky ventures, at least in Sweden, since they do not enjoy mainstream support from the institutions, and there is no regulation in favour of residents' involvement, and no tradition among local authorities and the building industry of working to these principles.

More importantly, however, the lessons learned from this study clearly indicate that local residents, in using their local knowledge, values and views are capable of assessing technical environmental housing policy matters and contributing to environmental housing policy formation to a significant degree.

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8. Stockholms Bilpool, a car-sharing initiative in the city of Stockholm

Stockholms Bilpool represents the single transport related activity in the Swedish study. The empirical research, which was carried out between August 2000 and November 2001, include a total of 10 interviews with 17 persons. Seven interviews were conducted with a sample of active members, two of which were through email communication (25-09-01, 20-11-01) and the others were ordinary meetings (24-08-00, 25-08-00, 15-05-01, 17-05-01, 18-05-01). Two interviews were held with local government officers of the City of Stockholm (15-05-01) and the City district of Maria-Gamla Stan (24-11-00). In addition, I carried out two group interviews with members of two of the existing working groups: five members of 'the Car Group' (21-11-00) and three members of 'the Parking Group' (17-05-01₂). All the interviews were taped and transcribed. Some complementary information was provided by e-mail by two of the above members (06-10-01, 07-11-01) and by phone (06-11-01). The illustrative quotations derive from the interviews, the email responses as well as the reviewed literature.

8.1. Introduction

Car travelling represents one of the individual largest environmental burdens in the transport sector in Sweden. In 1998, the car transport accounted for 13% of total national energy consumption and 19.5 % of the total CO₂ emissions from the Stockholm region (Miljöförvaltningen 1998:6)²². In economic terms, the costs of congestion, accidents, air pollution, and noise are estimated at over 10 billions SEK (£ 670,000,000) per year in Stockholm (Stockholm Stad 2000). Yet, this figure excludes the transport sector's impact on climate change through its high emissions of mainly CO₂ emissions into the atmosphere. Although public transport is well developed in Stockholm compared to many other large cities, the general tendency in recent decades has been that the building density in the city is thinning out, which results in longer transport distances and poorer conditions for collective transport (Miljöförvaltningen 2000). Despite all the negative effects, the prominence of motor vehicles, which has largely contributed to the rapid change of the modern world, still appear to be unchallengeable: private vehicles account for approximately 80% of all motorised passenger travel in virtually all OECD countries (Sperling and Shaheen 2000:4).

In the last decades, however, transportation alternatives have become very much at the centre of the environment and transport debates in Sweden and elsewhere. Among the

alternatives, car-sharing appears to be an effective means of decreasing dependence on motor vehicles and hence reducing the related environmental and economic burdens deriving from transportation.²³ In broad terms, in car-sharing efforts ‘(...) individuals potentially gain the benefits of private car use without the costs and responsibilities of ownership, while society potentially benefits from more efficient vehicle usage.’ (ibid 2000:5). Thus, from a societal perspective, the benefits from car-sharing services appear to be potentially large. They generally allow ordinary citizens to combine the use of public transport, bicycles and walking with access to cars as needed, i.e. a number of (e.g. shorter and spontaneous) distances are often avoided. Moreover, the cars used for car-sharing purposes are typically used in an optimal manner and tend to be newer and cleaner than average cars, at least in Sweden. Thus, while addressing the problem of congestion, they help reduce space devoted to transportation infrastructure and reduce the emissions related to car traffic. Apart from the environmental impact, more indirectly, car-sharing is likely to contribute to decreased noise from, and fewer accidents in, traffic as well as fewer health-related problems caused by air pollution. At an individual level, for citizens who do not use cars intensively, sharing cars with others should result in more convenience and reduced transport costs (i.e. no expenses for purchase, insurance, registration and depreciation) since one pays for actual usage (Sperling and Shaheen 2000). It is, however, still difficult to quantify the societal and the environmental gains, as car-sharing efforts still proportionally operate at a small scale in all societies. One recent study has found that car-sharing has generally had little influence on traffic (ibid:10).

Car-sharing in Sweden dates back to 1983, with the formation of *Vivalla Bil* initiative in the city of Örebro. At the time, car-sharing was largely an unknown and untried venture worldwide. In October 2001, the number of car-sharing services in Sweden was 42 (Ekokompaniets Bilpoolsregister 2001). In order to facilitate their activities, their joint co-operative organisation ‘Car-sharing in Sweden’ (*Bilpoolerna i Sverige*) has been formed; about half the schemes are represented in this organisation.

Launched in 1997, *Stockholms Bilpool* (approximately Stockholm’s Car-sharing Initiative) represents one of the first car-sharing efforts in the Stockholm region. Today there are 92 members and another 36 users who drive about 3,000-15,000 km/year in the association’s eight vehicles (September 2001). The initiative grew out of a project funded

by *Miljöfonden för Agenda 21 i Stockholm Stad* (the Environmental Fund for Agenda 21 of the City of Stockholm), *Kretsloppsföreningen* (Association for Ecological Sustainability) and Svenska Bostäder and implemented by *Gröna Bilister* (the Association of Green Motorists)²⁴ during 1996-1997. The aim of the project was to investigate the interest in car-sharing in the Stockholm region and to attempt to support and make people interested in joining new car-sharing initiatives. For these purposes, during the second half of 1996, Gröna Bilister launched the preparatory stage by making contacts with a number of real estate companies, car rental services and the non-profit Local Cooperative Development Agency (Kooperativt idécentrum) (Gabrielsson 1997:1-2).

In January 1997, a sample of 6,277 households in the city districts of Skärholmen and Södermalm (both south of the city centre) were contacted by mail and invited to attend a meeting to discuss the formation of a car-sharing initiative. Out of these, 1% initially announced their interest in joining a car-sharing activity. It appeared that most of the positive respondents lived in Södermalm, just south of the city centre, where Stockholms Bilpool later came to be based. At this period, Gröna Bilister produced a background document outlining the economic preconditions for the planned car-sharing association and a press release went out to the local newspaper editors with information about the plans. Subsequently, meetings were organised and held with interested citizens in Skärholmen (17 persons), and Södermalm (35 persons). After some follow-up meetings in each residential area in March, some working groups consisting of interested citizens were set up to prepare for the potential formation of car-sharing initiatives in both areas. In Södermalm, the more centrally located of the two areas, the working group accepted Gröna Bilister's offer to contact local companies to investigate the interest in car-sharing and to try to solicit some members with the aim of starting the activity (ibid 1997:3). In June 1997, the voluntary association Södermalms Bilpool was set up and six months later, the economic association of Stockholms Bilpool was formed. In March 1998, the first car rolled out on the streets of Stockholm City.

This chapter focuses on Stockholms Bilpool, not in its capacity as the first private, large-scale car-sharing initiative in Stockholm, but on issues that are of particular interest to this study: the efforts of a novel transport initiative where local citizens, by using their local expertise and obtaining specific knowledge, attempt to assess relatively technical

matters of car-sharing and, to some degree, transport management policy. More specifically, the study offers an example of a car-sharing initiative where local citizens test the idea of lay involvement in technical matters through their input on issues such as choice of cars and related accessories, parking strategies, booking systems as well as experimental vehicles. Apart from reflecting upon the approaches towards achieving these ends, the chapter will explore whether there are limits to the interest in, or lack of opportunities in, the field of transport policy.

8.2. Organisation and management of the car-sharing initiative

8.2.1. The organisational structure

Car-sharing services can take a variety of forms and involve different groups of individuals, e.g. company employees or residents/households of a specific area. In Sweden, there are basically two ways of working: services that are initiated by, or in conjunction with, car rental services, in which the car-sharing organisation rents the cars under certain agreements, and car-sharing initiatives which buy their own cars and set their own rules and statutes.²⁵ The members generally pay a monthly fee and the actual costs for car usage, either a distance or time dependent fee. Altogether, the proceeds of the members' fees should cover all the costs relating to the car rental or purchase as well as running expenses and administrative costs.²⁶

Stockholms Bilpool initially drew on experiences from other Swedish car-sharing initiatives whereas some experiences derive from other countries, mainly Germany. The voluntary body decided that Stockholms Bilpool would formally be set up as an economic association, a structure that had been adopted by the two Swedish models. Moreover, this organisational form is quite common for business and finance-oriented associations in Sweden. Like its model car-sharing initiatives, Stockholms Bilpool decided to purchase its own cars, in large part because it had proved successful and financially viable in those models as well as in other initiatives studied (24-08-00).²⁷

The decision-making in Stockholms Bilpool is also somewhat typical of any organisations in Sweden and elsewhere. The Board consists of the Chairperson, the Vice Chairperson, the Secretary, the Treasurer, and three persons who are responsible for specific programme areas represented by some of the existing working groups:

‘Vehicles’, ‘Booking and Finances’, and ‘Information’. The board members generally meet at board meetings and at larger meetings with the association’s members. The board takes decisions relating to rules, fees, suspensions, exclusions and economic decisions that have not been delegated to the working groups. On a more day-to-day basis, they keep contact with the convenors of the working groups and may in some cases also be responsible for car bookings (Stockholms Bilpool 2001a).

A number of working groups were formed in 1998 to take the lead on a number of areas of activities²⁸. ‘The Information Group’ is responsible for information/out-reach campaigns, the production and distribution of the Newsletter and the general internal information between members. ‘The Economy Group’ takes care of budget-related issues, book-keeping, internal auditing, the booking system, insurances, and payment checks. The task of ‘The Car Group’ is to plan and implement purchase, exchange, and maintenance of the cars. The entire car-sharing association then takes care of each car in accordance with the members’ decisions (see 8.2.5). ‘The Car Booking Group’ takes care of issues relating to car reservations, including development of the (increasingly automated) booking system. ‘The Parking Group’ is responsible for providing garage space and all related facilities e.g. key and lock boxes. ‘The Web Group’ consists of a Web Editor, a Web Master and representatives responsible for the updating of information on the public web site and the internet-booking system. In 2000, residents of another city district got together and formed ‘the Gubbängen Group’ of Stockholms Bilpool, in order to represent members from the Gubbängen area, further south of the City of Stockholm. The group is associated with Stockholms Bilpool but still works as a relatively independent body with their own vehicles placed in the area. The association strives to have members of all working groups represented in the board, with the exception of the Gubbängen Group. (Stockholms Bilpool 2001a). According to some interviewees, however, this goal has not been fully achieved in reality (21-11-00, 15-05-01).

8.2.2. Members’ characteristics and initial perspectives

What characterises the members of Stockholms Bilpool? The question has been asked internally at meetings and even addressed in a questionnaire that was circulated in 1999 (Stockholms Bilpool 1999a). According to some members who were asked explicitly about this in the interviews, it was rather indisputedly claimed that they are a diverse

group of people with different interests, professions and experiences who in one way or another want to improve the quality of their use of transportation in the city. However, there also seemed to be some common characteristics among them. Most members who were asked about this perceived the average Stockholms Bilpool member to be engaged in societal issues and well educated. The questionnaire completed by 39 members in 1999, confirmed the high level of educated people: 34 of the 39 had a university education (Stockholms Bilpool 1999).

There were different reasons as to why the members joined the association and have remained as members over the past years. One of the most common arguments in favour of car-sharing in the interviews concerned the economic aspect: the members were attracted to the association, because they found it the cheapest transport mode for themselves and their families. Another commonly perceived advantage related to the comfort of having access to new, safe and well equipped cars, little or limited responsibility for the maintenance of them, and limited problems of parking. It was claimed by several members that this was beneficial since they generally do not use a car on an everyday basis. For example:

Member 1 (M₁): 'It's mainly the economic aspect. It's very expensive to own cars and awkward to deal with them, at least for an uninterested person like me. It's not a status thing for me. Then it's also more practical for me. Transportation is about moving from A to B, and that has to be done in the simplest way. Buses and the underground is enough during the working days. But still I do need a car sometimes when I travel outside the city, then it's good to have access to one. It's worth the effort of booking in advance and so on.' (17-05-01₂).

M₂: 'Well, I simply think it's fun with cars, that was the main reason for me. To be able to have access to different new and fresh-looking cars for different purposes. Then there are many other positive things as well, but you could say that this was the reason to join at the very beginning.' (21-11-00)

A number of members highlighted the environmental benefits of car-sharing as one of the primary reasons to join the car-sharing initiative. However, as illustrated below, these were not viewed out of context of the economic and convenience aspects:

M: 'For me it was the environment aspect in the first place. But after a while, when everything became more concrete, when the working day started and we got our two first cars that we started to drive, then I realised the other advantages. Ecology and economy belong together, and they have the same roots in

Greek, house. To look after your own home, so to speak, that is, you can actually save money on this. And it was clear to us since we lived in an expensive flat and it was practical to get access to a car which we couldn't afford to buy. So the option would be to ask to borrow one from somebody else or skip that trip to our friends' cottage.' (18-05-01).

When asked about the significance of environmental benefits to them personally, a number of the other interviewees claimed that the environmental gains were positive but this appeared to play a secondary role in their decisions (21-11-00 and 18-05-01), for example as an assurance that the initiative was good in itself:

M: 'All of us know that this is good also for the environment. That's a good thing. But it's not really the prime reason why I joined, or most others as well I think, but in a way it's a confirmation that we are doing the right thing. What is practical for us personally doesn't disagree with the needs of the nature and the society.' (17-05-01₂).

The environmental considerations are perhaps not so surprising given that Stockholms Bilpool was at least in part marketed as an environmental initiative at the outset and given that the aim of promoting sustainability is adopted in the statutes, stipulating that '(t)he association shall furthermore strive to ensure that the car use is in accordance with the needs of an ecologically sustainable development of the society'. (Stockholms Bilpool 1998). In the discussions, however, it emerged that the environmental arguments among members appeared to be generally less accentuated today than in earlier years. For example:

M: 'I have the feeling that we discussed the ecological aspects a lot more during the first years. OK, it's still there and every now and then people bring up the environmental issues in the meetings. But most issues deal with the practicalities, how to make everything work and at as low cost as possible'. (17-05-01₁).

Some environmentally concerned persons had the following explanations as to why ordinary car-sharing members tend to prioritise the economic and practical day-to-day issues when managing the car-sharing activities, regardless of the potential environmental concerns:

M: 'After all, we're an economic association and not an environmental organisation. This organisation has attracted ordinary people who need practical solutions in their lives, no matter what their general concerns

are about the environment. Then the environmental benefits are probably viewed by most of us as positive effects, but they aren't determinants whether or not to become a member.' (25-08-00).

M: 'Those who were with us from the start, it feels like we talked a lot about the environmental aspects. But as time went by, we got a bigger group and the economic incentives for joining became more apparent. And most categories are looking for more practical ways of living. (...) I think it's mainly the economic and service issues that are most central to people because those are the issues they mainly bring up at the meetings. (...) But on the other hand, you can think of and discuss environmental issues whenever, but when we get together in meetings, we have to deal with the practical issues of the car-sharing (18-05-01).

A former Local Agenda 21 Officer, who was engaged in Stockholms Bilpool earlier, did not view the likely prominence of economic incentives as determinants for car-sharing membership as a problem. Rather, he believed it was positive that members could benefit economically and personally from what is also good for the environment:

Expert (E)²⁹: 'It's very interesting finding, as regards car-sharing initiatives, if they're perceived as economically good alternatives while simultaneously yielding environmental gains. Then it's a win-win situation, an example that proves that environmental projects don't automatically undermine the economy. So I think that's great. Then of course I'm grateful if they buy cars with good environmental performances, or cars that have low fuel consumption. But again, that's also economically satisfactory.' (24-11-00).

In sum, in this section it has emerged that Stockholms Bilpool is composed of well educated, but a generally diverse group of people who were attracted to the car-sharing initiative because they sought alternative means of mobility in and outside the city, which implied cheaper, more convenient and environmentally sound transport options. The environmental arguments were claimed to be less salient in the current debates than previously. This seemed to be contingent on the recent changes in the nature of the organisation as well as the increasingly economic incentives that attract new members to the association.

8.2.3. Approaches to member participation

There are mainly two bodies through which the members can participate in the planning, decision-making and implementation of their activities: the board and the six working groups. In terms of the division of labour, the working groups carry out the principal work in the association, whereas the board takes formal decisions and mediate between working groups if they are on a collision course. Moreover, the board represents the car-

sharing organisation's image, to ensure that different issues and topical themes from the outside world are put on the agenda by the board and delegated to the working groups. (25-09-01).

The working groups were designed to make the organisation more democratic and fair in terms of power distribution and the division of tasks (25-08-00). In practice, those members who are not on the board participate in a working group. The groups meet more or less regularly, between once per month up to every three months, to discuss the items on their respective agendas and to decide on the activities to be undertaken. Sometimes the board requests the working groups to carry out investigations and assess the various options before making suggestions to the board. In this way, the role of the ordinary members through their participation in planning, implementation and decision-making procedures in the working groups has become more significant in the car-sharing effort in recent years. In reality, in some cases the collaboration between the groups and the board was in one way or another perceived to be somewhat unsatisfactory by members, as the following sequence illustrates:

M: (...) 'When I was involved in the board I was certainly involved in the decision-making, but as I haven't been on the board ever since I can really see the difference. There is a little gap between the working groups' function and the board's. Sometimes it feels like the working groups live their own lives and the board has its own. The purpose is in principle that there should be a contact person for the working groups on the board, but it has been argued since a couple of years that the person doesn't have to attend the working group's meetings, then there becomes a gap there.'

R: 'Isn't there any exchange of minutes and documents between them?'

M: 'Yes, or at least it should be. (...) Sometimes it seems to happen that they [the board] decide about things that you feel they should have done differently.'

R: Whose responsibility is it to inform the other?

M: 'Well, there's a common responsibility. But if the board takes decisions about things that concerns the whole association, it's good if they've had a discussion beforehand. Often they do that but not always.' (15-05-01).

The scope for participation varies greatly among the members and somewhat from working group to working group. Basically, in several active members' view, there are great opportunities for member participation if one takes an active role in the everyday work of the working groups, for example:

M₁: 'The members have influence in relation to their involvement and their work-related efforts. The person who has opinions, but does not engage does not get far, but that one who commits him/herself and carries out work gets considerably more power, at least within the subject area that this person chooses to be involved in. I think it's fair and has to be that way, since we do not have any employees who are charged with carrying out certain tasks, but all work is based on voluntary efforts.' (25-09-01).

M₂: 'There is scope for individual involvement if you want to be involved. There is an endless amount of work to do and quite often you get the credit for the efforts and naturally you also get more influence over the suggestions and decisions that we take, either in the working groups if there are smaller decisions, or in the board or jointly in the association's general meetings. And there's a group of active people, usually at least somebody in each working group. But the problem is also that a lot of people aren't interested in taking part in the more detailed work, or they simply don't have the time to be heavily involved.' (25-08-00).

As exemplified in the second quotation, according to several interviewees, there was a problem of lack of involvement on the part of a number of members. This problem was recognised not least by the board itself, which in early 2000 adopted a new approach to increasing member participation through the working groups' efforts. On the one hand, it was considered important to promote decentralisation and more informal assessment and decision-making procedures, and on the other hand, it was regarded as necessary to retain some of the formal hierarchical structure for the overall management of the car-sharing initiative:

M: 'The idea that the core of the association has, remains to be that we should share all the work in the association in a sensible way. And last winter [2000] we put forward a new proposal for an organisational structure that suggests that the work should be more fairly divided between the working groups. So on the one hand there's some kind of development in the association where the existing organisation, which is rather stilted and hierarchically structured, doesn't fit in. It's difficult for a static structure to survive this and it really has to be based on more informality and delegation. On the other hand, some parts of the organisation have to continue to function the way they do. I think that the board has to remain in charge of the more important decisions and functions, while a lot of other decisions that are less crucial can be delegated to the groups.' (25-08-00).

Accordingly, the approach was that the work would be dealt with primarily within the respective working groups, divided equally between members to prevent individuals from becoming over-burdened, and on the basis of their findings developed jointly by the association. As a matter of principle, no individual was expected to carry out more than one task apart from being recipients of car reservations, unless this was done on

voluntary basis. (Stockholms Bilpool 2000b). Despite the somewhat unbalanced degree of participation across members, some comments provided a clear indication that the decentralisation strategy had improved the conditions for the management of the initiative. For example:

M: 'Earlier on, the board worked really a great deal. The board meetings started at 6 p.m. and finished at 12 and then you had to get up in the morning. It was really a lot and all that left us shattered. Right from the beginning we had working groups, the car group, the info group, the economy group and then the economy group was split up into economy and booking groups and some other new groups were formed. But it's only now that the work has become a bit more justly divided.' (24-08-00).

Although the aim is to even out the amount of work and enhance the degree of democracy among members, some interviewees argued that there are limits to the degree of member participation which can realistically be aspired to in the car-sharing initiative. For example:

R: 'Is it optimal to strive to have all members participating in all decisions or are there limits to it?'

M: 'Yeah, I think you have to strive for the golden mean. (...) It may very well be in a big city that people are very busy. They have a lot of things to do, and the focus isn't necessarily on being a good and ambitious member of an organisation. I think many of the members belong to the group of committed citizens, if I may boast a bit. But there are many other things that demand your attention and tempt you. So if you ask too much in any way, then there is a risk that the whole thing thins out, that the level of commitment decreases. Then it would be rather complicated instead of smooth, if everybody has a say in everything. Many people are almost certainly happy if some major decisions are taken at the highest level, that is, at ours in the board, but all people probably want to feel that the decisions take into account their own viewpoints.' (18-05-01).

Thus, as illustrated in the samples of quotations and the discussion in this section, there is a large scope for participation in the car-sharing activities if one takes an active role in the efforts. The prevailing system was often perceived to be fair insofar as the level of influence is in proportion to the degree of involvement. In addition, in order to cope with the new challenges of the association, the members felt a need to improve and adjust the organisational structure to ensure more flexibility and to allow for a larger measure of member participation through the working groups, although it was also recognised that the more comprehensive, strategic decisions ought to lay with the board. Even though the new structural approach had helped overcome these problems to some extent, up to the point when this field research was carried out, there were some concerns about the

prevailing problem of disproportionate involvement of active versus non-active members, as well as about the organisational structure and management procedures not being entirely effective.

8.2.4. Expert input and interactions

A number of both governmental and non-governmental organisations have been involved in Stockholms Bilpool since its inception. A Project Manager at Gröna Bilister was assigned to manage the project and facilitate the formation of the association. Already at an early stage, one of the 18 local municipal agencies of the City of Stockholm, Maria-Gamla Stan's City District Administration (*stadsdelsförvaltning*) became interested in supporting the project. Gröna Bilister's Agenda 21 project appeared to be very much in line with its Environmental Policy, to '...stimulate both residents and personnel to take own actions towards an environmental and ecologically sustainable development through a dynamic dialogue concerning environmental issues' and 'through Agenda 21 efforts facilitate the alteration of consumption behaviours and in any other way, lifestyles, with the purpose of decreasing the negative ecological impacts of our actions'. (Stockholm Stad 1997:1). Apparently, the relatively small resources that the City of Stockholm initially allocated to the project, approximately 3,000 SEK (£ 200) for hiring of premises plus costs related to advertisement and correspondence with local households, was significant for the launch of the project. Later on, the Local Agenda 21 unit of Maria-Gamla Stan's City District Administration was involved in the planning and arrangement of first meetings with different parties and helping in making contact with citizens through information dissemination. According to a member, this support was significant to them:

M: 'That's really a good way that the municipality can support these sort of initiatives. I'm aware they generally lack resources to provide funds for implementing similar projects. But modest funds and back-up, even symbolic such, may be a great help and not least a hint to the public that it's good to care and to take action.' (25-08-00).

A more significant amount of funds was provided by the City of Stockholm's Environmental Fund for Agenda 21 (*Miljöfonden för Agenda 21 i Stockholm Stad*) and *Kretslopps föreningen* (approx. the Association for Ecological Sustainability): 95,000 SEK (approx. £ 6,500) and 75,000 SEK (£ 5,000) respectively. In addition, the non-profit association The Local Cooperative Development Agency of Stockholm (*Kooperativt*

IdéCentrum) was involved initially through the provision of training on co-operative organisational matters³⁰. At an early stage, the semi-governmental real estate company Svenska Bostäder contributed some funds to cover expenses (for garage rental and correspondence) and human resources to the efforts to reach out to households in the residential area.

Despite the relatively significant involvement of these institutions at the outset, apart from maintaining more informal contacts, Stockholms Bilpool has since remained independent from these bodies. By 1997, car-sharing was still a largely unexplored venture in the transport policy domain in Sweden and most expertise has been developed within locally managed and commercial car-sharing initiatives that have been established ever since. Apart from reading the available literature on car-sharing and interacting with Gröna Bilister, it was thus natural for the association to turn to some of the most advanced national car-sharing initiatives, in particular *Majornas Bilkooperativ* in Gothenburg, *Ekobil* in Örebro along with some car-sharing services in Germany, to exchange ideas and learn from their experiences in the field. More recently, through its membership in the network organisation 'Car-sharing in Sweden' (*Föreningen Bilpooler i Sverige*) Stockholms Bilpool has shared ideas and experiences with representatives of other Swedish car-sharing initiatives.³¹ After having obtained sufficient understanding on the matters, the issues were discussed at board level and at the association's general meetings. According to most members, they have gained their expertise in primarily organisational matters of car-sharing during the very course of the work. For example:

R: 'Have there been any external experts involved in the car-sharing initiative?'

M₁: 'Well, we've mainly been the experts ourselves. There are no persons who know more about it than ourselves. We probably know most in Sweden, along with some other car-sharing organisations. Then there are those who are more skilful in specific aspects than us in the association, for example the development of economic systems and the charging of fees and the like. In this area, we've been quite indecisive. We didn't have enough competence in the field when we started. But we've advanced now and I think that we would have needed more of the car hire competence previously, but we've also learned a lot during the course of the work in this unique niche (...) And we've sufficiently good knowledge about the specific vehicles, although many others have that competence as well. But in broad terms, we're especially good at the phenomenon of car sharing as such, how to design the practical parts of it.' (25-08-00).

M₂: 'I think the members have learned a lot during the process. That is, concerning how to make things work in today's society, if one organises together, e.g. the discounts we got for car purchase, the ranking of

priority as regards identifying garage space etc.(...) The members in the groups have acquired expertise within their respective areas, for example the car group's members have test driven a number of cars and developed the technical and practical basis for these. Some members in the groups have been more knowledgeable than others and have in such cases transferred that knowledge during the course of the work. There hasn't been a need for specific policies on all this, but it has been a natural phenomenon during the work process.' (25-09-01).

Thus, apart from learning from other, more experienced car-sharing services, the members have relied largely on their own, aggregated local knowledge and experiences when building up the organisation. However, it was also clear that the involvement of some key persons had been more crucial than others in this process, which is reflected in a sample of quotations below:

M₁: 'We have divided up the work in different areas in which we have developed our knowledges. But those who you would perhaps perceive as the most evident experts are probably the persons who know about the car purchase. It's probably [two Car Group members] who offer the greatest expertise there. But also those who are dealing with the management of the economic aspects are also important. (...) Then, more recently [a Web Group member's] function when it comes to managing things via Internet has become important. These are probably the most prominent experts. (...) But there are quite a few who possess knowledges in all possible fields, so we have to make sure that the person who is, for example, responsible for insurance also is the one who knows most about it, and to [make sure that we] share all tasks accordingly in the association.' (15-05-01).

M₂: 'It's also an advantage of being so numerous, because now all the expertise derives from our members. (...) But the car-sharing initiative is and has always been dependent on some specific persons' special competence. We would never have been able to construct the home page for example without this. It simply wouldn't work. As regards the programmer, it has to be somebody who is doing this or has worked with it professionally. And it's the same thing with the finances and so on.' (17-05-01₁).

Thus it appears that much of the local expertise derives from people's professional skills in different areas. The internal policy has been to remain largely independent also when it comes to services that may be otherwise assigned to external experts. An exception is the bookkeeping matters, which are managed by a former member who is now a consultant (15-05-01). According to two interviewees, this earlier policy may change though as the association is steadily growing and there is a perceived need by some people to employ people to take over some of the routines that are undertaken by internal, voluntary forces (27-09-01, 06-11-01).

It follows from the discussion above that Stockholms Bilpool's members have principally relied on themselves in building up the capacity and competence in their car-sharing activities. The most significant support from municipal and non-governmental bodies during the first year was of a financial character, since there was little expertise within the field of car-sharing among those institutions at the time. Thus, apart from drawing on experiences from other car-sharing initiatives and Gröna Bilister, most of the local expertise in Stockholms Bilpool was developed rather independently from outside expertise, in large part due to the effective knowledge gathering during the course of the work, as well as the effective utilisation of individual members' professional competence in the different relevant areas.

8.2.5. Participation in technical decision making

A great majority of the original group of members who joined the association back in 1997-1998 were laypersons in the field of car-sharing. During this period, Gröna Bilister's Project Manager and a core group of other committed people had already got together and formed the board. This body came to undertake most of the tasks that would enable the car-sharing association to get off the ground, including carrying out assessment of, and taking decisions about, technical matters such as vehicles and related equipment. In order to attain certain levels of knowledge and to acquire the best possible and economically feasible service, agreements and products, the first couple of years were mainly devoted to information gathering, investigations and assessments of mainly private institutions. Accordingly, efforts were made to identify for example the most suitable bank, insurance company, garage hire companies, and car sales and car repair agencies in order to get good deals and agreements.

As time went by and more members joined, the conditions for the organisational management changed somewhat. Consequently, attempts to enhance participation also in the more technical matters of policy and decision-making have been brought to a head. Whilst some of the formal division of tasks and mandate between different working groups and the board remains, the more formal decision-making processes are now loosening up to become a more interactive process between the bodies, implying that there are and potentially will be more opportunities for member participation in decision-making procedures. This is however not to say that all members seize the opportunity of getting involved in these matters: the discussions in both the preceding and the current

sections suggest that there is a slight concern about lack of involvement on the part of a great number of members. Moreover, the car-sharing association's statutes remain the same, claiming for example that '(t)he board decides about sale or purchase of vehicles. The [association's] assembly can decide on further conditions and guidelines for purchase and selling of vehicles.' (Stockholms Bilpool 1998). An active member described the general trend in the following words:

R: 'The working groups that you have (...). Are they some kind of decision-making bodies?'

M: 'The thought is that it should be delegated more to the working groups. But it also depends a little to what extent a working group takes on its responsibility or not, if we can allow them in to the decision-making field. And we haven't really got that far yet. We've just shifted from being a smaller group with some loosely tied people outside, which has had total control over what is happening, where it has been fairly easy to have a dialogue with each other, into a larger organisation with a widened influence. But now the association encompasses much more than before and there are many more members, which means that we don't have that close contact any more and can't get to decisions that easily. (...) It's the board that is involved in this [decision-making] part of the work and in the working groups there are some who participate. And then there's those who don't turn up at the group meetings and stay out in the periphery. (...).'

R: 'Let's put it this way: Are there opportunities for those who want to be involved in the decision-making?'

M: 'Yes, certainly.'

R: 'Does it happen in reality?'

M: 'Well yes, it happens every now and then. It's in this direction I feel we are developing now. The board isn't prepared to lead the process anymore, but we want to focus on making things work'. (25-08-00).

Those individuals who perhaps take a more active part in the technical assessment and also indirectly in the decision-making, are the Car Group members. One previous board member explained how this process tend to work out in reality in the field of car purchase:

M: '(...) For example, after joint discussions in meetings and so on, the board can ask some people to investigate what sort of car we could buy. When it comes to the actual decisions to buy cars, the board decides to give the Car Group the mandate to assess the options and conditions. 'OK, you can check it out, the members seem to want this type of car and to spend this amount on it. Do something within the framework of this'. Then we give them a total budget and some other requests if there are any. And then it's up to the Car Group to handle it. But there's always a dialogue and contacts between the responsible person in the association.' (25-08-00).

As indicated above, the Car Group is delegated some of the technology assessment and decisions in a dialogue with the board. More specifically, the group members examine the car market and related accessories and try to find vehicles that match up to the car-sharing members' requirements and needs. The members' viewpoints are collected mainly through some questionnaires and are sometimes discussed in the general meetings. Subsequently, the Car Group puts forward a written or verbal presentation that forms the basis for decisions to be taken by the board. The process involves a lot of reading and occasional visits to car retailers and car repair agencies to find the best options for their purposes (21-11-00).

Several of the Car Group members were said to be knowledgeable about the design and features of motor vehicles (24-08-00, 25-08-00, 16-05-00), and the board tends to rely heavily on the group's advice for their decisions: up to the end of 2000, the group's recommendations had exclusively given rise to the purchase of the proposed vehicles. There is no systematic feedback from members as to whether the existing cars suit their purposes, although everybody can express such concerns if they want to, e.g. at meetings or under the Members Pages on the web site (21-11-00). As illustrated in the following quotation, however, selecting cars and related accessories is by no means an easy and straightforward task and this appears to be largely related to the inadequate feedback from the ordinary member:

M: 'When I work in the Car Group, my focus is the practical issues that appear when we negotiate and obtain a new car. The question that arises is 'for whom are we really doing this?' when choosing cars. It's not the situation that you yourself buy them because you personally think they are nice looking, but we try to anticipate what the average member wants. (...) Should we consider in the first place whether they are spacious for load, or the safety aspect? Sometimes there are conflicting desires. And these smaller cars that we have aren't always the best from an environmental viewpoint. Then I tend to feel like, 'damn, why can't we get more of feedback on these issues too? Now that we've got a booking [web] page, why can't we have a question of the day there which goes, 'what do you think is most important as regards the next car, the colour, the size, the safety, or the environment' or something like that. Then the job would become easier for us.' (18-05-01).

Apart from indicating that there are some challenges in identifying the most suitable options of cars, this comment suggests that the environmental performance is not always considered to be among the most important criteria for the choice of vehicles. In some interviewees' view, this had probably to do with at least partly the fact that the

association had quite bad experiences from driving an experimental vehicle during its first years in operation (25-08-00, 15-05-01). After discussions with City of Stockholm's *Materialförsörjningsorganisationen*, MFO (approximately the Agency for Material Supply) back in 1998, Stockholms Bilpool had decided that its first car would be an electric vehicle, a Renault Trio rented by MFO at low cost.³² However, the association had problems with it, in part because the vehicle did not work satisfactorily due to technical defects, in part because the (frequent) charging of the battery was not always done as required. Thus, after some incidents of engine failures causing great problems for the subsequent driver, a widespread discontent emerged among the members. According to one person, the association had expected MFO to be more supportive when it came to assisting with the technical matters '(...) but it wasn't possible to establish such a collaboration' (15-05-01). After a while, many members did not want to continue using the vehicle, and hence it was not financially viable anymore. One person summarised the situation and the ensuing debate accordingly:

M: 'The technique was too undeveloped I think. People are afraid of driving electric cars. And then there were joint discussions how far we could go in terms of subsidising a technology that is more environmentally benign. (...) And there was a fairly heated debate because some people felt 'oh no, now let's go for the cheap option' while some others thought 'come on, we have to give the environmental issues a chance'. Today, a few years later, we can see that we were a little too early in trying it out.' (18-05-01).

There is, however, still an explicit goal to obtain vehicles that are less harmful to the environment. This is achieved through reviewing of environmental classifications and levels of fuel consumption of vehicles on the market (06-11-01). However, this criterion is one out of several, and as indicated in a previous quotation, in some cases it was not considered to be among the primary ones. Formally, the main ambition of the car-sharing association is 'to offer cars with the current optimal combination of performance for the price, to work for a division of [the car-sharing association's] car models across the size spectrum (with emphasis on the smaller scale), and to maintain the ambition of flexible and many-faceted cars.' (Stockholms Bilpool, 1999b:3). In reality, by the end of 1999, the criteria for car purchase had resulted in '(...) cars with four five doors, towing hook, roof-rack, RDS stereo and studded tyres'. In conjunction with these criteria, however, it is also stated that '(t)he cars should also promote an ecological view - as much as possible with cars.' (ibid). However, the criteria that were set up to serve as the basis for

decisions on the choice of vehicles do not specify in more detail what environmental impacts are considered.

In practice, the assessment of cars has not resulted in the purchase of alternative fuel vehicles, but on the other hand in cars with generally good environmental performances (see e.g. Gröna Bilister 2001). A second-hand Opel Corsa replaced the electric car back in 1999. Ever since, Stockholms Bilpool has bought and replaced several cars and as of October 2001, there are eight cars owned by the association: four Ford Focus estate cars, an Opel Corsa, a Toyota Avensis Touring, a Volkswagen Polo Variant and a Skoda Fabia. (Stockholms Bilpool 2001b). Two of them, the Opel Corsa and the Toyota Avensis, have been awarded among the best marks in Gröna Bilister's annual survey of environmental performances of car models available on the market (Gröna Bilister 2001, Stockholms Bilpool 1999c). By the time this research was undertaken, there had been some internal discussions about obtaining an ethanol-fuel car, but no concrete steps had been taken in that direction. It is interesting to note in this context that alternative fuel vehicles are approximately 20,000 SEK (£1,330) more expensive than an equivalent petrol-fuel vehicle in Sweden (Gröna Bilister 2001), a fact that is likely to discourage anybody considering obtaining such a vehicle unless strongly environmentally concerned or pursuing such novel vehicles for business-oriented purposes.

Despite the challenge of assessing the performances and identifying the best possible cars for the association, as illustrated in the following section, several car group members felt that their joint efforts had resulted in some notable accomplishments:

R: 'What do you feel that have you achieved in the Car Group?'

M₁: 'We've made sure we've got good cars in the car-sharing organisation I think.'

M₂: 'We've made a good analysis of the market supply of cars and ensured that we buy those cars. And I think that we can be satisfied with them when it comes to many aspects, like operation, economy, safety, comfort and reliability.'

M₃: 'Not forgetting what has been done beforehand. There has been some questionnaires circulated to members, so I think we could say that we haven't just bought cars on the basis of what the car group feels, but we have also distributed questionnaires to find out about which type of cars people are mostly interested in.' (21-11-00).

Apart from contributing their views on the choice of vehicles, the car-sharing members jointly decide about the cars' locations. The policy is that the more members there are in an area, the greater the likelihood that a new car is placed there (Stockholms Bilpool 2001a). In this context, a car group member's skills in Geographic Information System (GIS) techniques³³ have proven to be a useful source of expert information for the assessment processes. This member has at several occasions produced digital maps indicating all members' areas of residence (displayed as small points on the maps) in relation to each other, with the aim of facilitating the determination of the best possible sites for car placement. According to him, the parking group members have been able to draw on these GIS maps when comparing different garage options, choosing the best garage locations and organising subgroups of members to be tied to each car (06-11-01). Hence this initiative serves as a good example of how local expertise has been utilised, and enabled the validation of relatively technical matters by a broader group of car-sharing members for strategic planning purposes.

The attempts to reorganise the car-sharing initiative has had implications also for the responsibility for the cars. Previously, the Car Group tended to be more involved in the supervision of these, since some of its members were responsible for ensuring that the single cars were adequately taken care of. While the Car Group remains in charge of the more strategic issues concerning all vehicles, from early 2001 onwards, all members, with one contact person, are tied to (usually) the closest vehicle, and each group has assumed the responsibility for maintaining that specific car. This does not mean though that members cannot book other cars than the one they are associated with. All members are entitled to use any of the vehicles if they book them via the booking system on-line, but it does increase the chances that the cars will be appropriately kept as well as ensuring that all members do their share as regards maintenance of the cars.³⁴ (21-11-00, 06-11-01, 15-05-01).

The Web Group's activities offer yet another concrete example of the car-sharing members' efforts and competence in technology evaluation, but in the field of computer science. In 2000, the then Home Page Group (now the Web Group) was requested by the board to assess the feasibility of carrying out the car booking on-line. After internal discussions among group members, where it among other things emerged that the option of developing their own system appeared to be too time-consuming, the group members

decided to purchase *Vafalls* Internet booking system. In a web group member's view, Vafalls, which is a small company, was not capable of providing the required support service. After further discussions, they eventually agreed on delivery in early 2001. However, after a short trial period, the Web Group discovered that there were some serious flaws in the system including some bugs that needed to be sorted out if the system was to work effectively for their purposes. Vafalls then fixed the problems and the system was installed on Stockholms Bilpool's web server, where it was tested out for a month or so in early 2001. Since then, the on-line booking system has been improved and developed further by the web master. Currently, the revised car booking system has supplementary capacities with new functions and pages. (11-02-01).

Since early 2001, Stockholms Bilpool's web site has had a Members' Forum, where members can ask questions and debate things with each other. Moreover, there are schedules for meetings and other joint activities, information from the respective working groups, garage information, instructions for assembling key locks, fee information and forms for notification of changes of address. In the future, it will be possible to report on faults and damage to the cars and to conduct driving journals on-line. Thus the recent information technology development has enabled the members to communicate and carry out the booking and other car-sharing related services from their homes, their work or elsewhere. In the interviews, it appeared that this development and improvement of services has greatly facilitated the operation of Stockholms Bilpool, which is illustrated in a comment by a Web Group member:

M: 'It would never have worked without it [electronic communication and services] (...) But the obvious option was to email and avoid getting the information across ten times to different people. If somebody phones and asks something, I write something about it and send the information to all people. It's time efficient and simple. Then we've got meetings as well, but emailing and sharing information on the web site has been a rational way of organising ourselves and informing each other on a day-to-day basis. And then we have meetings when necessary. This is the way it works in the board and generally in the association. And the Newsletter goes out via Internet. And it's good for the economy as well to plan and construct everything electronically.' (17-05-01₁).

The efforts of Stockholms Bilpool have been mainly devoted to developing the organisation and management structures and exchanging ideas and views with other car-sharing organisations and local government agencies, whilst there have been few

attempts to influence the local transport policymaking in the City³⁵. The only concrete example derives from the Car Group's efforts to influence the formulation of a new parking strategy in the City of Stockholm in late 1999. The reason was that Stockholms Bilpool was not entitled to local residents' parking permits, since the cars are shared by several residents, who would have been entitled to one permit each if the vehicles were owned by individuals³⁶. In an attempt to moderate the existing parking policy, the Car Group wrote a letter to, as well as arranged meetings with, a politician from each political party that is represented in the City of Stockholm to request parking permits also for shared cars. They also had contact with local politicians from *Gatu- och Fastighetsnämnden* (the Transport Committee of the Street and Real Estate Committee)³⁷ and *Gatu- och Fastighetskontoret* (the Street and Real Estate Office) officials who would answer the queries that had resulted from the car group's letter. The final decision was that they would be granted the permission only if they lived in the same residential area, for example were members of same condominium association, whereas it would not be possible if they lived in different city districts (Stockholms Bilpool 2000a):

'It would be desirable if locally managed car-sharing initiatives, for example those which are managed by condominium associations, are given the right to have the possibility to obtain local resident's permit as the members have individually. The Street and Real Estate Office should therefore explore the possibilities to grant local resident's permit in that parking zone where the car-sharing has its domicile.' (§ 46 of *Gatu och Fastighetsnämnden's* minutes of meeting, 25-01-00).

Thus the amended parking policy of City of Stockholm did not result in the entitlement of local residents' permits to the Stockholms Bilpool members as they live in different areas and belong to different condominium and tenants associations. Apparently the car-sharing members were not satisfied with the decision, but did not take the case further. One of the persons who was active in this initiative summarised his experiences from the process in the following words:

M: 'I think it's a good way to influence, at least on individual issues. Most politicians listened and were understanding while the officials at the Street and Real Estate Office didn't do a great deal to solve the problem, but hid behind the transport regulation's text. I think that they would have been able to help us if they'd really wanted to find a leeway in the law, and managed to get the politicians' support for that. The politicians then bought the officials' view and we didn't know enough about the practice of the law in order to mount an opposition. The compromise was the HSB associations' car-sharing initiatives can get cheap parking but not us. (...) Had I not been free between two jobs I don't think we as a group would

have undertaken it. I don't say this because I want to flatter myself, but rather because I believe that nobody else would have had time to grasp the issue as much as I had time to do.' (06-10-01)

Accordingly, in this person's view, there was no sincere attempt to improve the conditions for car-sharing in Stockholms Bilpool at government official level: although the initiative did result in local resident's parking permits for other, more locally concentrated car-sharing efforts, it did not have any impact on their own activities. Besides this particular event, there have been no other tangible attempts to impact on local transport policy, simply because this sort of initiative is not included in the association's ambitions:

M: '(...) I think that the parking group's efforts has been the only one, since our aim has been mainly to manage our own organisation and to get more members. Influencing the transport policy has never been a purpose but was more of a supplementary effort. The calling on the political level was far from the most important item on the group's agenda.' (07-11-01).

In sum, it follows from the discussion in this section that the Stockholms Bilpool members have largely depended upon themselves in the technical assessment and decision-making over its car-sharing activities. This has been made possible by drawing on their own knowledge-gathering efforts and using their local expertise when building up the organisation and in transforming it into a buoyant car-sharing service. Whilst the Car Group, and to somewhat lesser extent the Web Group, have had more active roles in assessing technology matters that provide the basis for decisions taken by the board, a general tendency is that in the future, Stockholms Bilpool's joint efforts will require more input from the respective working groups also in these practices. In particular the Car Group carries out a considerable degree of technology validation and contributes largely to the decision-making with respect to choice of cars and related accessories. While most efforts have been targeted at building up and managing their own organisation, few attempts have been made to reach out to policymakers with the aim of influencing local transport policy processes. The only concrete initiative in this field is the Parking Group's attempt to influence local parking policy in the City of Stockholm. However, there are no indications that this effort has resulted in any amended policy formulations that embrace Stockholms Bilpool's activities.

8.3. Results and perspectives subsequent to the launch

As already noted, Stockholms Bilpool has now been in full swing for a few years. As of September 2001, there were 92 members and another 36 users of the eight vehicles. In order to cope with the challenges owing to the growth of the association, at an extra general assembly in October 2001, it was decided that the association would assign an authorised auditor for auditing of the accounts and the closing of the books in the near future. The reason for this decision that Stockholms Bilpool was about to reach a turnover of 1 million SEK (approximately £ 67,000) a year and that the density of vehicles (eight cars) implies a significant capital holding, which means that the association is now obliged to pay VAT. (27-09-01).

Despite the difficulties and challenges that have confronted the association over the past years, all the interviewees were by and large positive about the initiative, both for them personally as well as more indirectly for society at large. This finding is illustrated below:

R: 'Do you think that most members' requirements and demands have been satisfied through their involvement?'

M₁: 'Yeah, more and more I think. At the beginning it was rather so-so. Everything was new and everybody had worked hard to establish things to make it all work out fine. (...). But we struggled on, it was simply the best thing to do. There was nobody to blame for things that didn't work. It was more of the feeling 'oh, that was a pity, then we'll have to try something else instead'. And at the beginning we also had difficulties in borrowing money because we didn't have any auditing before we started, since we didn't have any ongoing car-sharing activities yet and couldn't show them any closing of the accounts. And the banks demanded accounts before we could borrow money. But then we managed to get a loan from [a car company]. And eventually things got rolling for us. (...) But this is something you can do yourself to adjust your needs of a car to others and thereby improve the society. This way you satisfy your own requirements while there are fewer vehicles and fewer trips. It feels sensible to be a member of a car-sharing effort because all parties benefit from it.' (24-08-00).

M₂: 'You own a car in a practical way. You don't have to deal with the troubles of being a car owner, having a parking place and scraping the windows in the mornings and so on. That kind of practical stuff takes a lot of time, time that I prefer to devote to something else. Instead you can focus on those issues you like most when dealing with cars. Then I also appreciate the environmental arguments. I thought it was a pity that we got rid of the electric car, because I preferred to drive it when on duty [as environmental consultant]. It was nice driving it when visiting clients.' (15-05-01).

M₃: ‘Yes, I think so [that it has been mainly positive to members], particularly now that the booking has become so much easier. Just consider the fact that we’ve got Internet booking, and better and faster e-mail communication now. And it’s close [distance to the cars] for those people who travel using our cars.’ (18-05-01).

Despite most members being generally positive, as suggested above, a number of members have also had some negative experiences from participating in Stockholms Bilpool. The seemingly most common drawback relates to the time aspect: the membership involved time sacrifices to take part in general meetings and the preparatory work of the working groups, reading email correspondences etc. One member argued that some people who had left the association did so because of the considerable amount of hard and time-consuming work in relation to the actual car usage (15-05-01). Another commonly perceived disadvantage concerned periodical difficulties in getting access to vehicles as required. For example:

M₁: ‘In the board, we tend to work in a rather bureaucratic manner. This means that we sit and discuss a lot about what items to put on the agenda and such things. I understand that it has to be this way, that there has to be a board that works in a bureaucratic and formal way, but it isn’t something that appeals to me. It’s boring and soul-destroying with this kind of meetings and now as we are becoming so many, it can take an enormous amount of time to get to the decisions.’ (17-05-01₁)

M₂: ‘Well, it also requires a lot of hard work, especially during the first years, when we had to establish a good structure and rules for everything. It’s not that hard anymore, but it still means that you have to be organised and go to meetings with your working group and to the general meetings.’ (17-05-01₂).

M₃: It’s particularly difficult during the summer months, because that’s when most people want to use the car to go out of the city a lot. Then it can be quite tricky to get a car, if you don’t book well in advance. But sometimes you want to be able to book it the last week or so.’ (21-11-00)

When asked about what could be improved, most suggestions expressed by members concerned the organisational aspects of managing the car-sharing activities. For example:

M₁: ‘What can be improved is that certain working groups need more active members to be able to manage their tasks, whereas others could do without all their members. This changes somewhat continuously depending on what sort of issues the car-sharing organisation is dealing with.’ (25-09-01).

M₂: 'Without making it too bureaucratic perhaps it would be good to have a more formalised exposition of the issues that the board is dealing with, by linking the contact persons on the board with maybe the one who is convenor of the group. Something along that line. It could be the case that you could make a phone call just before the meeting and check things out and then after the meeting. It doesn't have to be more than that. (...) Today it works fine in some groups whereas others don't work that well.' (15-05-01).

Interestingly, the two interviewed environmental and transport experts from the City of Stockholm appeared to be positive about the Stockholms Bilpool initiative in every respect. They both believed that the greatest attainments were at the societal level, in boosting the general interest, awareness and confidence in car-sharing efforts in general:

E₁: 'The greatest benefit of Stockholms Bilpool probably isn't its actual impact on the environment and reduced traffic with all related problems, but rather that the initiative in the long term contributes to an increased interest in, and understanding of their activities, but also that it gives more confidence in car-sharing services' existence. That it actually works and pays its way financially.' (15-05-01).

E₂: 'It's great to see that locally managed transport initiatives can operate at a local scale and still generate an increasing interest [in car-sharing] around the country. Obviously it's they themselves who perceive the results of their actions and can enjoy the advantages, but I don't think you should underestimate its role for society at large. To contribute to paving the way for other car-sharing organisations or perhaps simply to enhance a general awareness of the car's significance for the environment among their neighbours.' (24-11-00).

In retrospect, the latter expert, who was involved initially, was enthusiastic about the results of the initiative and contended that the allocated funds were correctly targeted:

E: 'It wasn't that big amount of money that they got from us. But I thought it was a great way of using Agenda 21 funds. (...) But they claimed that it was really valuable for them in order for them to really be able to gather more people, so that they could form the formal association. And they got enough number of people who paid the investment fee so that they could move ahead and buy the first car. So in that sense, it has been great and fun to contribute and support a little.' (24-11-00).

The two experts agreed that the resources were too scarce at municipal level to support car-sharing initiatives a great deal, but they had somewhat different perspectives as to what was required in this respect. One of them argued that the inherent complexities of the transport issue was a rationale for supporting these locally initiated initiatives, mainly through the introduction of favourable regulations:

E: 'We have to move ahead through decision-making to find ways to make sure that people can contribute at the local level through e.g. car-sharing, along with the promotion of public transport (...). And we have to make sure that these sorts of initiatives are promoted, sometimes with regulation. Just because the traffic problems are so complex, we have to reach out in many different levels, but we don't really have the resources to do that, to create incentives for citizens. It's both the technique, the lifestyle, the infrastructure with roads and cars and fuel, and it's the people in all this, and there are both active and passive ones. But this complexity makes it even more imperative to support such cases where citizens themselves take the initiative and manage it all, such as Stockholms Bilpool, and surely there are things to do in terms of regulations in this field.' (15-05-01).

The other expert emphasised the benefit of contributing (even small) grants alongside having a supportive and encouraging attitude to local car-sharing initiatives:

E: 'Surely there are things that the City can help its citizens with in the face of transport-related problems. And it doesn't have to involve a lot of sacrifices or funds, but by giving that little extra at this early vulnerable stage, can be enough to trigger an enormous interest and engagement. Funding the rented premises for the meetings may help a great deal for instance as well as to maintain the contact after the initiative is up and running. To give them some credit and legitimacy so that they know that what they're doing is great.' (24-01-00).

The members also discussed what City of Stockholm could do to support car-sharing activities. In this light, it appeared that some respondents felt that some local district administrations are supporting car-sharing services to a considerable degree, but several people felt that they generally could do more in this field than is the case today, for example through providing free parking, (more) financial support at the outset, and general encouragement. For example:

M₁: 'I think one should provide incentives. There are different political values as to the degree to which this sort of initiatives should be controlled in Sweden. But perhaps the City could be in charge of the control of local residents' parking. (...) Or perhaps even more radically, just like they offer parking for disabled people, I sometimes feel they should earmark parking places for car-sharing services'. (15-05-01)

M₂: 'At a local level [the city district level], the co-operation works really fine, both with the municipality and the citizens. At central level [City of Stockholm], you could wish there was more of an understanding and engagement from the municipality's side. The municipality has a significant role to play as regards furthering the formation of car-sharing services, e.g. through different types of perks such as free parking, and partly from its participation confirm to different groups of residents and other actors that car-sharing is something good. (...) Earlier, Farsta's City District Administration contributed local advertising campaigns when the car-sharing unit in Gubbängen was to be formed. Östermalm's City District Administration is

doing the same thing now to launch a car-sharing unit at Gärdet. The Street and Real Estate Office and the Environment and Health Protection Administration in the city have initiated various attempts with car-sharing initiatives, even if the City's political majority up to now has opposed it on their part, mainly because they feel that City of Stockholm shouldn't get involved and promote something that could potentially compete with commercial car rental firms.' (25-09-01).

In sum, it appears that both the interviewed members and experts were largely positive about the Stockholms' Bilpool initiative. The individual benefits, particularly emphasised by members, were claimed to be that it offers practical and financially viable transport options for those concerned, while the transport experts emphasised the initiative's role for society, by paving the way for other similar efforts. Although significant steps had been taken to facilitate their joint efforts by drawing on recent progresses in information technology, some members felt that the organisational matters, particularly the collaboration between the working groups and the board, could be improved further. Moreover, both transport experts and members felt that, although there were supportive initiatives in the City of Stockholm, much more could be done to promote these local transport initiatives.

8.4. Conclusion

The members of Stockholms Bilpool were attracted to the car-sharing initiative because, instead of embracing conventional car ownership, they sought alternative ways to gain access to travel, which implied cheaper, more convenient and environmentally sound options. In their capacity as ordinary Stockholm citizens, the members have largely relied on themselves in building up their own expertise in the field of car-sharing and in transforming the organisation into a bouyant car-sharing service. The local expertise derives both from the gaining of knowledge during the course of the work and from people's professional skills in different areas. Although some government and non-governmental institutions provided support to Stockholms Bilpool during its first year in operation (the most significant contribution being of a financial character) there was limited expertise at both government and non-government institutional level at the time.

Through members' involvement in the board and in the six working groups, there is a large scope for participation in the Stockholms Bilpool's day-to-day activities. This was generally perceived to be fair insofar as the level of influence was in proportion to the

actual degree of involvement. Regardless of the actual degree of participation of members, they all have the opportunity to both learn about, make use of and evaluate technological artefacts and designs, as shown in the discussed examples concerning the Internet services including the car booking system, GIS maps, garaging and car locking systems. Moreover, the members have the opportunity to learn about, make use of and assess technological practices through deliberating on the choice of cars and related accessories, driving and maintaining the vehicles, assessing the GIS maps, carrying out computerised book-keeping and internal auditing. Thus, if technology is defined in a broad sense (e.g. designs and systems requiring elements of high knowledge base) there is certainly a large scope for citizen participation in technology assessment in this initiative, even though many of them, such as the booking of cars via Internet, have become mundane tasks for the ordinary member. If defined more narrowly (e.g. high-technology designs and systems), technology validation is more confined to a smaller group of members represented in the Car Group and the Web Group. In particular the former group has had a key role in assessing technology matters that provide the basis for decisions with respect to choice of cars and all related accessories. However, following the recent reorganisation and decentralisation initiative, a general tendency is that in the future the joint efforts will allow for a larger measure of member participation and require more input from the respective working groups also in decision-making procedures.

While most efforts have aimed at building up and managing the association, few attempts have been made to influence local transport policy formulation, the reason being that it simply is not among Stockholms Bilpool's primary ambitions. The Parking Group's parking strategy initiative is the single concrete example where the association's members have really reached out to policymakers and, by contributing their values and concerns, have tried to impact on the local transport policymaking procedures. However, despite the hard and time-consuming preparations in this context, this initiative did not have any direct policy impact on their own car-sharing effort, but on the other hand, on other local car-sharing organisations in which the members reside in the same area. Accordingly, on the basis of these findings, it appears that there are both limited opportunities for influencing policy-making in the transport domain and limits to the interest in it on the part of Stockholms Bilpool's members.

Obviously, a lot has happened in terms of development of car-sharing expertise and actual support to car-sharing efforts in Stockholm and elsewhere since the launch of the Local Agenda 21 project, which was the starting point of the Stockholms Bilpool initiative. Today, a number of City District Administrations' in Stockholm provide more sophisticated support to newly established car-sharing services than was the case back in 1996-1997. Whilst being a strong proponent of car-sharing efforts in the rhetoric, however, from these findings it appears that the City of Stockholm in its entirety could do more to promote car-sharing initiatives in the city than is currently the situation. The study has shown that the current parking policy is even discouraging for a number of car-sharing initiatives, since it excludes a number of car-sharing initiatives' members from the right to obtain resident's parking permits which ordinary car owners enjoy. In addition, the absence of regulations for taxation of alternative fuel vehicles is equally discouraging for any car owner, whether an individual or a car-sharing member, who opts for the use of cars that are less harmful to the environment, since alternative fuel vehicles are more expensive than an equivalent petrol-fuel car.

Since the emergence of car-sharing in Sweden, local citizens involved in these efforts have come to possess considerably more expertise in car-sharing than government institutions, although expertise is building up at this institutional level as well. As long as this is the situation, however, it seems likely that policy measures will not be taken to improve the conditions for locally managed and commercial car-sharing initiatives, unless these organisations manage to put pressure on policymaking institutions to revise current transport policies in ways that are to the advantage of car-sharing efforts.

8.5. References

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9. Citizen consultation in air quality management in Leeds and York

The research conducted for this first UK case is based on 13 interviews carried out between March 1999 and January 2002, minutes of meetings as well as literature review. Six interviews were carried out with four Leeds City Council Officers (two interviews at different occasions with two officers) of the Departments of Housing and Environmental Health Services; and Highways and Transportation Planning and a Council Officer who is Coordinator of the Otley and Wharfedale Community Involvement Team (CIT) (17-06-99, 11-10-00₁, 11-10-00₂, 15-10-01₁, 15-10-01₂, 16-10-01₁). Three interviews were conducted with local citizens who are representatives of the CIT of Otley, one of which was carried out on the telephone (16-10-01₂, 16-10-01₃, 14-01-02). For the York case, I carried out four interviews, two with City of York Council Officers (18-10-01₁ and 23-01-02 and a follow-up response by email 29-05-02) and two involved researchers of the Stockholm Environment Institute (SEI) of York who were involved in the citizen consultation process (18-10-01₂, 19-10-01). The reason for the low number of citizens interviewed for this empirical case is the limited public response in the case of the Leeds initiative, whereas in the York case, I draw on already available data from minutes of joint council and citizen meetings that were arranged by the City of York Council (26-05-01, 27-05-01, 30-07-01). In Leeds, I have attempted to find some residents who have expressed concerns about air quality in their residential area. For this reason, I chose to focus on a suburban area where citizens have voiced opinions and concerns about local air quality, although this area has not been declared an Air Quality Management Area. The chapter focuses in particular on citizen consultation during the third review stage process.

9.1. Introduction

Over the last decades, air quality has become a matter of concern in the UK. Although great progress has been made through the Clean Air Act since the smogs of 1950s, poor air quality remains a problem for environmental and human health as well as one of the major environmental challenges confronting progress towards sustainable development worldwide (see e.g. chapter 9 of Agenda 21, Keating 1993). Recognising this problem, during its Presidency of the EU in January-June 1998, the UK government had air quality on the agenda, aiming at making progress on legislation on air quality, vehicle emissions, fuel quality and the control of air-borne heavy metals and persistent organic pollutants (DETR 1998:3-5).

The UK National Air Quality Strategy, the first of its kind in Europe, was published in March 1997 at the close of the Conservative Administration.³⁸ The document fulfils requirements under the Environment Act 1995 (HMSO 1995) on policies for the

management of ambient air quality in the country³⁹. The subsequent document as of 1998 revises the Strategy and introduces tighter air quality objectives for some pollutants (DETR 1998:3-5). Accordingly, the current Strategy outlines *inter alia* objectives for eight pollutants to protect health, vegetation and ecosystems: benzene; 1,3-butadiene; carbon monoxide; lead; nitrogen dioxide; ozone, particulates (PM 10) and sulphur dioxide⁴⁰. The objectives for each pollutant, except ozone, have been given statutory status under the Air Quality Regulations 1997⁴¹ (ibid).

In response to this requirement and in accordance with Part IV of the Environmental Act 1995 (Section 84), since December 1997 each local authority in the UK has been carrying out a review and assessment of both existing and likely future air quality in its area⁴² with the aim of ensuring that the national air quality objectives will be attained throughout the country by the year 2005. The initiative involves measuring air pollution, trying to predict how it will change in the near future and mapping out the future of air quality policy in the UK to 2005 and beyond. Moreover, where one or more of the air quality objectives is not likely to be met, by the end of 2005 local authorities in consultation with local and neighbouring local authorities, bodies representing local business interests, the county council (if applicable) must declare Air Quality Management Areas (AQMAs) and produce action plans for measures to be taken to improve air quality to meet the national air quality objectives (ibid: 3-5).

The review and assessment is typically undertaken in two or three stages that end up in the delivery of a three-stage review report to the central government. In essence, the information needed for the first report includes lists of pollutants and locations (if any) that need further investigation; details of significant transport related and industrial sources of local and regional pollution and the identification of existing or proposed processes or activities. The second-stage review report screens pollutant concentrations still further and provides details of monitoring and modelling and review and assessment methodology. In the third-stage review, after having employed more sophisticated modelling and monitoring techniques, the authority is expected to carry out an accurate and detailed review and assessment of current and future air quality in those locations where the previous review processes had revealed a significant risk of an air quality objective not being met for any pollutant of concern. The third stage report is to provide information about these processes and, for each pollutant, to describe the areas where it

may be an exceedence over the relevant averaging period and where the authority proposes to designate an AQMA (DETR 2000b:12-16).

The UK Government recommends that ‘local authorities think about consulting with community and environmental groups’ and that ‘(l)ocal communities should feel involved in action plans and local air quality strategies. Local authorities should also look for opportunities to draw the community into the process.’ (2000b:25). After having consulted on the third stage review and assessment report with stakeholders and community groups, the local authority is recommended to designate an AQMA as soon as possible, no later than four months after the third stage review and assessment. The Government and the National Assembly of Wales do not impose a statutory deadline for local authorities to complete their reviews and assessments of air quality, but have only provided a suggested timescale for these processes. After having designated AQMAs, the local authority is to put together a plan to improve the air quality, a Local Air Quality Action Plan. (2000b:19). As of March 2002, 96 out of 366 local authorities had declared AQMAs in their area (Air quality information archive 2001)⁴³.

This chapter highlights the efforts of two local authorities in Yorkshire, City of York Council and Leeds City Council, in their undertaking of the air quality review and assessment in their respective areas. The initiative is particularly interesting for these purposes because it is the only nationwide effort that attempts to involve citizens in the assessment of relatively technical matters of local transport policy issues. Moreover, a recent national survey of public attitudes to transport, found that ‘(t)ransport dominates the local agenda with more people spontaneously mentioning a transport-related issue than any other when asked what the major problems are’. (Department for Transport 2001:1). Leeds City Council has declared seven small AQMAs (as well as one where domestic coal burning is a problem) (1 July 2001), whereas the City of York Council has declared one AQMA (January 2002). As we shall see, both city councils have aimed at involving the public in the review and assessment processes, by informing them of air pollutants and their potential problems and risks, and then allowing them to contribute their local knowledge and express their concerns on existing problem areas. Only the Leeds City Council has so far drawn up a draft Action Plan, but both councils have completed the third stage reviews and have attempted to consult with citizens, particularly during the third stage. As we shall see, the two city councils have adopted

very different approaches to citizen consultation; this has, as of January 2002, resulted in very different outcomes. The focus of this chapter will be on the two city councils' approaches towards citizen consultation in the review and assessment of air quality matters as well as the preliminary outcomes of these⁴⁴.

9.2. Strategy and process in Leeds

The Leeds City Council departments of Housing and Environmental Health Services; Highways and Transport Planning; and Planning and Environment, were assigned the responsibility for undertaking the air quality review and assessment process⁴⁵. Staff from these three departments formed The Air Quality Management Team (AQMT) in 1998 to begin working towards realising the objectives set out in the Environment Act and the National Air Quality Strategy (HSMO 1995a).

As required, the air quality review and assessment was undertaken in three stages. The First Stage contained a tentative assessment of the likelihood of each of the pollutants under scrutiny complying with the objectives set. The 1999 Stage One Review report identifies the sources of the pollutants, whereas the Stage Two document (Leeds City Council 2000a) summarises the work that was carried out to show that four of the pollutants under consideration, carbon monoxide, benzene, 1,3-butadiene and lead achieved the appropriate standards and were estimated to continue to do so without any special action needing to be taken. The third stage review report (Leeds City Council 2000b) identifies the levels and the sources of the pollutants that are anticipated to exceed the national standards and were thus subjected to the more rigorous assessment: sulphur dioxide, nitrogen dioxide and PM₁₀ particles. The report also provides a non-technical assessment of the main conclusions of the three documents and seeks advice from the public as a part of the consultation process by which AQMAs would be declared. After publication, all reports were sent out to representatives of non-governmental bodies, government and private institutions and were available for citizens in public places (Leeds City Council 1999). The AQMT also gave the councillors a briefing in December 2000 and offered to give presentations to all Community Involvement Teams (CIT)⁴⁶ in the Leeds area. In late 2000, the council's Executive Board approved the Stage Three Review report.

The AQMT declared two Air Quality Management Orders and five AQMAs on 1 July 2001, after consultation with Leeds Councillors and reporting to the Department of Housing and Environmental Health Services' Decision Panel. As illustrated below, the identification and the declaration of AQMAs was done mainly on a technical basis, drawing on the air quality model (INDIC) output:

R: 'How do you move from the identified afflicted areas to decide where the AQMAs will be?'

Council expert (E): 'That's just done on a fairly technical basis. Our model has done its best to try and predict what the likely air quality is going to be by the end of the year 2005. We then look on the map and see within that area, where are the sensitive areas, where do people live and then it's been drawn around those areas.'

R: 'So who makes the judgement on the boundaries of these areas?'

E: 'Well, it's this corporate group [the AQMT] so we discuss the boundaries. (...). There was an awful lot of time spent dealing with the probability and obviously the model gives you an indication. And we try to increase the accuracy of the model by looking at probabilities, so we think we've taken a reasonable approach. So what the model has eventually shown, we used that and then looked to see where the sensitive areas are within that area and designated it around that.' (16-10-01₁).

The following section looks at how the AQMT has attempted to involve citizens in the review and assessment process. More specifically, it will uncover the reasons why the declaration of AQMAs and the drafting of transport policy options in Leeds were undertaken largely independently of citizen involvement in the air quality validation process.

9.3. Approaches to citizen consultation in Leeds

9.3.1. The strategy and general public response

The first consultation phase was launched as early as in 1999 with the dissemination of the First Stage Review report. The AQMT consulted with neighbouring authorities seeking advice on among other things problems known about in their own wards. The corporate group also approached identified local parties (also referred to as 'members' or 'consultees') in order to obtain their assessments of the air quality issue in Leeds. For this purpose, copies of the stage reports were sent to identified parties such as health authorities/trusts, the Environment Agency, Metro PTE, Leeds' major utilities, the two universities, the airport and local NGOs as well as local representatives of international NGOs and Community Networks.

The responsible council departments decided at an early stage to include ordinary Leeds citizens in the consultation process. In order to reach out to the wider public, the scientific information was presented through the use of media outlets including radio, press releases available at public areas e.g. libraries and in Leeds newspapers⁴⁷. A display was created for the Civic Hall and the Central Library of Leeds in which literature (including maps and leaflets) and an air quality management video explaining the air quality management process were available to the general public (17-06-99, Leeds City Council 1998). In addition, a questionnaire was produced and made available in these and other public buildings.⁴⁸ All these steps were taken to ensure that the information could be disseminated ‘...successfully in order to raise awareness levels and to ensure that people can also contribute their ideas and concerns’ (Leeds City Council 2000d). The same procedure was followed for the following Stage Two and Stage Three Reports⁴⁹.

The main aim of citizen consultation, according to the interviewed council officers, was mainly to raise citizens’ awareness of air quality and its links with the transport issue, and eventually to change citizens’ transport behaviour in Leeds. For example:

E: (...) ‘It’s to give them more information that I think would actually reduce their fears about what’s going on. I think the average person in Leeds doesn’t really know what is happening. Probably he doesn’t know that we’ve just completed an air quality review. They’ll probably think that Leeds is a polluted city and they probably think that traffic is the problem. (...) Everyone blames buses, it’s always the buses’ fault because they’re dirty, which is quite interesting. (...) So I think I’d like to have an opportunity to get across the benefits of public transport so that people realise this is actually a good option. (...) I think generally I’d just like to tell people more about what the situation is and how important it is for the public to do their bit.’ (16-10-01₁).

Early in the process, some AQMT staff outlined their ideas for citizen consultation on air quality that included extensive information dissemination and the use of focus groups. (Department of Housing and Environmental Services 2000). The AQMT addressed the CITs throughout Leeds in particular since these community networks consist of citizens, which represent the voice of the community in question. However, according to two officers, there has been very little response from consultees as well as citizens to this consultation exercise (15-10-01₁, 16-10-01₁). Out of 99 contacted organisations and

companies, only four representatives turned up at the meeting in 2000. One officer described this particular event in the following words:

E: 'We got together and provided a presentation to the members and explaining exactly how this air quality process, how we actually worked through it. It was about a three-year process, where the problems were likely to occur and what we've done. And we also contacted all the CIT chairs and it was interesting that there was very little interest. I think there were only four out of 99 members who came to listen to it. And we invited the whole lot (...). We all had PowerPoint presentations with a lot of pictures trying to make it simple and understandable and I wanted to go out to the various CIT areas' evening meeting and things, but we were never asked. Only Otley [CIT] responded to our request and showed any interest in the issues. (...) So yeah, I'm a little disappointed really.' (16-10-01₁).

The low level of response also applied to individual citizens of Leeds. Apart from the public information that citizens could share, the AQMT had hoped and expected to get feedback particularly from the residents within the affected areas where they had distributed leaflets to 300 concerned households. Despite these attempts, however, only five citizens got in touch with the Council Officers. One of the experts described what kind of response they had received so far:

E: 'We've received five phone calls as a result of the declaration of the AQMAs. The first one was from a coal merchant who wanted to know whether he could still sell coal in Micklefield. We've had a telephone call from somebody in the area of Micklefield asking what we would do about smell from the landfill site that is nearby. I had a phone call from an elderly vicar who lives close to the inner road. And in effect that was the only genuine response that I've got that is applicable to the AQMA from somebody actually living there that was going to be affected. He also asked questions about it but he also raised some interesting points about air quality, I think. (...) And then I got a phone call from a lady living in Micklefield saying that I own my own property. Are you going to tell me that I mustn't burn any coal anymore.' (15-10-01₁).

From the quotation above, it appears that at least four of the five citizens who responded did so because they wanted to enquire about air quality and were concerned about poor air quality affecting them personally, for convenience or economic reasons. Only one citizen explicitly shared his own judgements about the state of air quality in Leeds, although the expert's comment above did not reveal what these were. In the expert's view, this low degree of response is related to the general apathy towards air quality issues among the wider public and this is not unique for the City of Leeds:

E: 'The reaction of the general public is poor. You may find an odd person who says air quality is bad but the general attitude of the public is of no concern whatsoever. They simply don't want to deal with it. And it's not something that is particular to it in Leeds. And Sheffield went through the same process some 12-15 years ago and they found exactly the same thing. People wouldn't respond, people didn't show general interest if they didn't have an interest in air quality issues or in environmental issues. When it came to what do you want to do about it, more recently Leicester has been trying to consult with members of the public. They sat in a market stall a Saturday and were physically dragging people in and saying 'you will come up with your views, won't you?' (...) If you're actually to ask people on the street are you interested in air quality issues, the bottom-line is no, they are not particularly prepared to do anything themselves about it.' (15-10-01₁).

As reflected in the quotation below, this kind of outcome of the citizen consultation process is not really what the AQMT had aimed for when launching the citizen consultation exercise. For example:

E: 'I think actually within our group I was the one who really would have liked more consultation with the public. I actually like talking to the public because I know people have misconceptions of what is going on. It was really disappointing when only four of our members turned up. Had there been massive interest then at this Members' meeting, then we could have done that [arranged a meeting with citizens]. I mean, I was sort of hoping anyway to go out to some of the CITs, probably a group of three wards. I'd be quite willing to go out and discuss and explain what we're doing and how we hope to achieve our air quality goals. But as I said, we were never asked.' (16-10-01₁).

Despite the low level of feedback from ordinary citizens in the affected areas as well as generally, the AQMT did not intend to try any other approach towards citizen consultation in order to obtain more meaningful public participation in the assessment, in part because they felt that they had tried a reasonable approach and in part because they felt that they were now running out of time. The Department of Highways and Transportation Planning officers have already drafted the tentative action plan on transport initiatives to improve air quality and expect there will be only small changes to the proposed actions. (15-10-01₁,16-10-01₁). One of the AQMT experts claimed though that the AQMT intended to consult with the public on the draft action plan as well, although he did not expect considerably more feedback from the citizens in the affected areas then:

E: 'For the consultation on the action plan, we have to come up with proposals for an action plan and then go out to public consultation. What we're planning to do is the action plan and the stage four review report will have to be published by 1 July [2002]. We're working towards producing a draft report by the end of

January [2002] next year. We're then going to take it to various actors and to the councillors again and we will then anticipate we will do the public consultation in May, so we then have about six weeks so that the public can see what's on the action plan.'

R: 'How would you reach out to them?'

E: 'I would expect really in the same manner as we've done up to now. It will become a public document, which is available for comments and we'll advise the press to issue copies to public libraries to have. And it isn't likely to contain anything that isn't already in the public domain. Now these affected areas, I would be amazed if there were significantly different proposals coming through from those people. (...) If a member of the public would turn up and say 'why haven't you considered this' and it's generally something that we haven't looked at, well, yea, we would do some head scratching and see how we can accommodate it.' (15-10-01₁).

Another officer was seemingly more cynical about the actual degree of public involvement in the final policy development process that could eventually be expected:

R: 'So how about citizen participation in the second process deciding where the actual areas will be, will there be any involvement in drawing up action plans?'

E: 'Well, it's hard to see how there will be any citizen involvement because no one has come back to us saying that they're really upset over what's going on. So as things stand at the moment I don't think there will be any more because there has been very little feedback. But we'd be willing to speak to anyone that has concerns.' (16-10-01₁).

Thus it follows that, despite the intentions of the council officers, there has been, and is continuously envisaged as being, limited citizen participation in the Leeds air quality review and assessment initiative. Accordingly, the declaration of the AQMA as well as the ensuing policy formulation have up to this point (January 2002) relied essentially on technical results and expert judgements. In addition, there is not much of anticipation that there will be much of public feedback over the last period of months, which would have considerable impact on the formulation and implementation of local transport policy options.

As we shall see below, the only CIT group that has appeared to show any significant interest in the initiative is that of Otley, a town about 20 kilometres northwest of Leeds, which is part of the Leeds Metropolitan area⁵⁰. Interestingly, the area has not been declared an AQMA and hence Leeds City Council has not principally targeted it during the consultation process. Yet, the Otley case is interesting insofar as it demonstrates that there is potential for citizen participation in the Leeds area and thus it contrasts with the

AQMT's experiences of public apathy during their consultation process in the affected areas of the city. The next section discusses the case of Otley, how the air quality review and assessment process was undertaken in the town, the public response to the initiative, as well as the outcome of the consultation process.

9.3.2. Air quality monitoring and public response: the case of Otley

Already a while before the Leeds City Council initiative became known to the CIT members, some of them had raised the issue of poor air quality in Otley and called for actions to be taken to combat the associated problems (15-10-01₂). The person who brought this up in the first place explained the reasons why he regarded air quality to be a problem in Otley:

C: 'Well, initially I brought up the issue at the CIT here in Otley. Most of the problem has to do with the heavy traffic that we've got continuously through this town. Unfortunately we have a series of traffic lights and the vehicles have to stop there. They're left standing with the engines running and you got a lot of victims of this, which they don't realise in this country. The fumes from those, if you are walking up and down that pavement daily as in my case, you get this volume of traffic producing all these fumes. And I raised this point, I said I think it should be monitored and then that something should be done about it.' (16-10-01₂).

Apparently, his view was consistent with a number of citizens in the town. A local council officer described the prevailing public concern about air quality in Otley accordingly:

E: 'The concern is Otley, there's a big hill out there (indicating it on a map) and all around here and in North Yorkshire as well, there are gravel pits everywhere, and there is extraction going on from the ground. So Otley has a number, lots and lots of lorries going through the middle of the town. Because any traffic coming from the north has to come through the town and then the traffic going in to Leeds as well, it goes through the town. So there's an awful lot of traffic in the town. Cars and lorries going to Harrogate carrying in extractions from the gravel pits. So you will find, going through Otley town by the traffic lights, you will find that there's always lots of traffic. So the person's concern was that all the traffic, just the fact that it went in plus the fact that there's always quite a lot of mist here as well, they are concerned about the quality of the air in the town. So that's why it was raised by that member originally.' (15-10-01₂).

When speaking of air quality in Otley, the local interviewees referred to their own experiences and observations as proof of bad air quality, for example:

C: 'Basically you can tell it from sweeping the street from stuff that comes out from the vehicles, a lot of it dust and the grind. About a year ago, there was a problem because people couldn't get petrol [September 2000]. And the level of traffic was just very, very low. And people couldn't believe it, they said 'oh, it's wonderful'. First of all we could walk around much more safely. And secondly we could actually be able to smell the country air again. We can't smell the country air in the centre of Otley. All you do is walking up the road you smell the car fumes and the lorry fumes. And you can see it on people's windowsills, you know, the black dust that actually collects there.' (16-10-01₃).

In line with the requirements of the air quality management initiative, the council team carried out monitoring of air pollutants in Otley in 2000. This first monitoring process was undertaken at Prince Henry's Grammar School outside the town centre before the discussions were held with the local CIT. The monitoring results showed that the levels of pollutants under investigation were within the levels of acceptable pollutants. However, the scientific output from the monitoring exercise was not typically received as a reassurance of Otley's clean bill of health by the ordinary citizen, since many local people perceived air pollution to be a real problem in the town (15-10-01₂, 14-01-02). In some people's view, the apparent problem of the monitoring exercise was the location of the monitoring station, as illustrated below:

C₁: 'At the CIT we talked mainly about the monitoring [of air quality]. It was initially up at Prince Henry's, which is ridiculous because you can really see the difference. If you walked over the river you can see the difference there to the town centre.' (16-10-01₃).

C₂: 'Of course I see the difference in this machine that they put up in the Prince Henrys' school over the bridge, miles out of town and our perceptions of where the real problem is, that is in the town centre.' (16-10-01₂).

Another issue that was raised in this context related to the results of the monitoring exercise. In the first quotation below, the person was critical about the general lack of information sharing of the scientific results, whereas the latter person's comment revealed a mistrust in the model output since it conflicted with his and other citizens' local knowledges:

C₁: 'For example, we've been told that the results are nothing to worry about. But we've not been given the complete results so what I don't know is how some of that testing that went on at Prince Henry's has been used here, you know what I mean? I mean, I've done research myself and I have to say you can collect data and information but that's only a part of it. You've got to make sure that you share it out to people. I mean,

we haven't been shared that information, we haven't seen what the results are. I'd liked to see what the results are because I'd like to ask more questions. But I don't know what questions to ask if I haven't got the results.' (16-10-01₃).

C₂: 'What we've got now, with no diversion to take it away from the town, we've got a series of traffic lights through the town and you've got a constant build up of fumes and it's so bad sometimes honestly you couldn't even breath. Now if the machine can't prove that, well I don't know why everybody else in the town is complaining about this as well. Because indeed they've been very interested in this issue and have complained about it and we all know what we are talking about. If it's affecting me, why doesn't it affect other people? And then we've got people with asthma and old people have respiratory troubles who are affected by it.' (16-10-01₂).

According to one of the experts, this is the single case where a CIT has responded to the City Council's request for public feedback on the air quality review process in Leeds (15-10-01₁). A year earlier, in 2000, one of the AQMT experts paid a visit to the town to discuss the issue of air pollution and hear concerns from another local community group, Otley and District Road Safety Committee on the matter (16-10-01₁). One of the citizens, an environmentalist and a former member of the Wharfedale Environment Trust and Otley Road Safety Committee, had prepared a report on pollution for council officers which, in his view, indicated that there was constant pollution levels posing threats to the human health (Wharfedale Observer 2001). Together with some other active Committee members, he called for action to be taken by the Leeds City Council to reduce the traffic and divert it from the town (16-10-01₁). In response to this, according to a city council spokesman, 'environmental officers would continue to do tests on the air in Otley because of residents' concerns'. (Wharfedale Observer 2001).⁵¹

In response to the widespread public concern about poor air quality in Otley, in February 2001 the AQMT again placed one of its mobile air pollution stations in the locality, but this time at Manor Square in the town centre. This site was chosen, as it was a location close to the major road junction in the town centre and that it also met practical considerations such as road safety and power supply requirements. The Chair of the Otley CIT agreed with the choice of the location, and thought that '(t)he new station in Manor Square will be ideally placed to give us the definitive information we all seek.' (Leeds City Council 2001). In June, after four months of monitoring, the results indicated that again the levels of sulphur dioxide, nitrogen dioxide and PM₁₀ particles were below

the national safety levels. Whether or not the scientific results indicated exceedances of the standards of pollutants or not, this was not felt to be crucial for taking action or not among the interviewed citizens. In fact, all three local interviewees even believed that the high volume of traffic in the town centre is an undeniable fact and that measures have to be taken to reduce the traffic even if the area was not going to be declared an AQMA. For example:

C: 'When they've done this monitoring again and they can come up with something positive I'd be happy. And that means to me that something can be done about the problems. If they come back with a negative result, well I still would be happy about it, because you still have to address the problem. That's my opinion about it.'

R: 'Do you or don't trust the techniques they use to assess the level of pollution?'

C: 'I trust it to the fact that it must provide hotspots. But frankly speaking, whether it shows it or not, it doesn't deny the fact that it's still swamped with cars and lorries in the town where you have to shop. If there's traffic going around the town in a ring and you are in the middle, there's traffic everywhere you go. You can't escape it.' (16-10-01₂).

In light of the experts' experiences from the consultation exercise, overall these comments reflect an exceptional public concern about air quality in Otley in relation to other (more central) parts of Leeds. Despite this, because the levels of air pollutants did not exceed the technical breach, it will be difficult to implement local transport policy measures to reduce the traffic in the town. According to an active CIT member, with working experience from within the city council, it is beyond the council's authority to attend to the transport issue by imposing restrictions of heavy traffic through the town. On the other hand, he contended that more could be done to involve local interest groups in the discussions:

C: 'They [local people] feel frustrated that where there's an indication of the problem, that apparently nothing is going to be done about it. So as far as the programme is concerned, apart from very general objectives, there was no specific action identified for Otley. So it will all be in terms of very general objectives, which you can rely on from private transport. What people would like to see here is restriction of heavy traffic going through the town. Now, to do that, it requires, it's not within the power of local governments to do that. It requires consultation with the road transport industry and government offices on the identification of reasonable alternative routes which are going to put less of a polluting burden on the whole environment. So there's some cynicism among people, but it didn't in my view entirely justify the lack of response because there are many different local interest groups here.' (14-01-02).

Another person appeared to be even more understanding of the council's apparent lack of response to the Otley residents' call for the implementation of local transport policy measures, although she does agree with the opinion that there is generally a lack of dialogue between the council and its citizens:

C: 'Leeds City Council cannot agree to get the bypass done because that comes through the government side. Leeds City Council cannot influence the decisions on the buses because they're privatised, so all the kind of the traditional players that did have some influence and power have in a way been marginalized, for all sorts of different reasons. (...). Well, I have to say, that by and large the city council doesn't have a dialogue with its citizens. Like most large city councils they don't have dialogue with their citizens and this is something that needs to be improved. They're just about to try to keep up with problems, getting the rubbish collected, repairing the streets, collecting the money and they're strapped. Because there is an issue in this country, we all know that the central government has marginalized the local government.' (16-10-01₃).

In addition to this 'political dilemma', as referred to by another interviewee (14-01-02), one could also argue it would be difficult for Leeds City Council to act on the perceived transport problem in Otley within the framework of this particular air quality management initiative: as noted before, the scientific results clearly indicated that the area was not likely to fail the national specific objective values for air quality to be achieved by 2005. In addition, there is evidence that the AQMT took the local citizens' concerns seriously as the monitoring exercise was redone on a suggested spot in the town in order to check the validity of the previous technical results. On the other hand, the study of Otley also suggests that there are potentials for citizen participation in air quality matters in the Leeds area and that more could have presumably been done by local as well as national authorities to address the transport issue where the problems are locally perceived to be bad. At the least, one may wish that the councils in relevant cases will advise the central (authorised) government to take appropriate action at the local scale, or alternatively delegate this task to the concerned local authority. One of the citizens was clear about what responsibilities the various stakeholders have in the air quality management process:

C: 'I think the national government has got to lay down regulations, and I think the councils have got to make sure that the sort of statutory regulations are being applied and operated. And I think we individuals have got to do things to change our lifestyles and act in accordance with our aspirations.' (16-10-01₃).

9.3.3. Overall findings

The study of Otley demonstrates that there is a potential for citizen consultation in air quality matters in the Leeds area, despite the fact that the Leeds City Council experts concluded the contrary. The council experts appeared to interpret their role in the consultation process primarily in terms of information providers and educators. However, despite their seemingly sincere intentions, the findings here suggest that information dissemination is not sufficient to alert and motivate citizens to participate in the assessment of air quality and ensuing policy options, no matter the quantity of press coverage and access of informative material in public areas. Conversely, the Otley case suggests that if there are incentives for citizens to be involved, e.g. if there is a perceived need to take action at the local level, and/or if there are opportunities to develop the interests to engage meaningfully through e.g. a public forum such as the active CIT of Otley, people are more likely to engage in air quality review and assessment processes.

The Leeds study also suggests that there are gaps in the perceptions and existing knowledge base between experts and the public on air quality matters. In comparison with the scientific results of the monitoring and modelling work, it emerged that the Otley citizens overestimated the actual levels of local air pollution, which is probably due to the immediacy of personal daily experience through the senses. Alternatively, the standard thresholds are set too high by the Central Government, but if so, this should be an issue in other investigated areas of the country as well. The interviewed citizens clearly trusted their own perceptions of the quality of the air in Otley more than the scientific output, largely because the monitoring was carried out outside the town whereas citizens feel the problems of air pollution are limited to the centre of the town. However, even after the monitoring was redone in the town centre, the interviewees found it hard to trust the scientific results since it conflicted with their own perceptions and local knowledges of local air quality. In addition, whether or not the science would indicate that actions were needed or not, this was not considered to be crucial for the implementation of policy measures on the part of the citizens.

Despite the fact that the citizen consultation process did not work out as envisaged by the AQMT, there is evidence that there has been expert uptake of citizens' concerns and values in the process in Otley, despite that there was no scientific rationality for not trusting their own expertise and data. This was illustrated in the decision to carry out the

monitoring again in a more central location of the town. Although it did not change the final outcome of the review process, and obviously it does not suffice to meet local people's preferences, it did give the local people legitimacy in the consultation exercise. Yet, even if declaring an AQMA in Otley is not formally possible within the framework of this particular national air quality review and assessment activity, and despite that any other conceivable policy measures are obstructed by the lack of political power at the council level, the question remains whether Leeds City Council could have done something to improve the air quality in the town: as indicated in a quotation above, perhaps a good start would be to launch a consultation process with other stakeholders at all levels.

9.4. Strategy and process in York

Since 1998, the City of York Council Environmental Protection Unit of the Environmental and Development Services Department has monitored air pollution across the City on a regular basis⁵². In this initiative, the Unit also collaborates with the Transportation Planning Unit, which is responsible for planning and developing transport policies that will form the Local Action Plan for any AQMA in York.⁵³ In response to the National Air Quality Management Strategy requirements, in December 1998 the City of York Council published its *First Stage Review and Assessment of Air Quality in York*. The report contends that the air quality objectives for benzene, 1,3 butadiene, carbon monoxide and lead will be met through existing national policies and that no further measures were required by the Council for these pollutants. For three others under scrutiny, sulphur dioxide, nitrogen dioxide and PM₁₀ particles, it is recommended that the Council undertake a more detailed review and assessment.

The City of York Council carried out further review and assessment of local air quality that ended up in the publication of the report *Second and Third Stage Review and Assessment of Air Quality in York* in January 2001, which was formally approved by the Department of the Environment, Transport and the Regions (DETR) in March 2001. The document concludes that the objectives for sulphur dioxide and PM₁₀ will be met, whereas for nitrogen dioxide five relevant locations have been identified on or adjacent to the Inner Ring Road where '...it cannot be certain that the annual average nitrogen

dioxide objective will be met' (ibid). Thus in areas where the City of York cannot be sure that the annual average nitrogen dioxide objective will be met, it must declare an AQMA.

In early 2001, the Environmental Protection Unit produced two possible options for an AQMA on the basis of use of data from the ADMS URBAN model. However, the need to declare AQMAs was not based on modelled outputs, but rather on monitored data and a strong scientific basis (City of York has a large amount of monitoring data from both real time analysers and the use of 300 diffusion tubes). To get the boundaries of the AQMA options, the council referred to the Government guidance. Their map A shows the five separate areas of technical breach, i.e. areas where residents would be exposed over the relevant averaging periods. Adopting this map would lead to five different AQMAs being declared, which cover the minimum locations that the Council must declare. Map B is one single area joined together with the heavily trafficked roads, allowing a more strategic option to the action planning process. Adopting this map would result in a single AQMA being declared. Map A was the science-based information submitted to Department of Environment, Food and Rural Affairs (DEFRA) for approval. Once the Local Authorities know about the areas of technical breach, they have an opportunity to declare a larger area if they wish.

These tasks had up to this point (early 2001) been undertaken by the two council departments without any involvement of citizens in the assessment process, the reason being that the processes were based on scientific outputs along with the Government requirements and hence there was no role for citizen participation in this early process. Interestingly, however, as we shall see below, neither of these scientific maps were to be chosen for an AQMA in the City of York. Instead, on the basis of findings from the ensuing citizen consultation exercise, on 8 January 2002 the Council's Elected Members approved a third option, a public map (Map C) as an AQMA for the York area. After the decision was ratified, the area was declared on 21 January 2002, and the following week was duly advertised in a public notice in the local newspaper (before the declaration came into force to allow citizens to contact the city council about it), on the radio and at a public reception arranged by the Council.

The following section discusses the City of York Council's consultation approach and how this exercise came to result in the declaration of an AQMA that was based on citizens' preferences and local knowledge rather than scientific knowledge.

9.5. Approaches to citizen consultation in York

9.5.1. Strategy and process

For York, the consultation and participation took place on a wide scale following the production of the technical documents that were submitted to DEFRA. During the process, City of York consulted with the statutory consultees and also kept the public, residents and businesses informed of the work being performed, including through Key Stakeholder Seminars, attendance at ward committees, local articles, press releases, and through the production of papers for members.

During discussions between the concerned council departments in 2001, it became clear that there was some uncertainty as to how to deal with the designation of an AQMA in the city of York. The main reason for the council officers' concern related to the historical importance of York among UK cities, with tourism as the major income generating activity and there are strong business interests in York that would quite likely be affected by environmental regulations and transport policies resulting from the declaration of an AQMA. Consequently, the council wanted to make sure that it had considered the comments from all sectors to ensure that the conclusions drawn reflected the various economic, environmental and transport-related interests.

The department officers had held discussions with researchers from the Stockholm Environment Institute (SEI) at the University of York from time to time since 1999 and knew about SEI's expertise in the field of participatory science. During joint discussions in early 2001, SEI staff suggested that they would undertake the entire citizen consultation process on the behalf of the City of York Council, while the Council would be more directly involved in some other participatory exercises (leaflets and ward committee meetings). There were mainly two reasons for SEI's interests in doing this: the researchers had already developed a participatory technique for the case of local air quality management and now the scientists were interested in gathering more data for their overall research in urban regions of the UK. According to one of the SEI

researchers, the council was thus faced with a good opportunity to solve this issue by assigning SEI the task of carrying out the consultation process through which the public would have their say in the identification of an AQMA for the city (18-10-01₂). This also fitted well with the Council's intentions, as they somehow wanted to involve citizens in the process but had no way of obtaining this participation in a more effective way in-house. According to some council officers, there were several other reasons for the decision to let SEI undertake the participatory research:

E: 'It gives us a kind of impartiality, they conduct the consultation on our behalf. (...) They've carried out research on perceptions of air quality before and that was useful because we wanted to engage local people in this air quality consultation and it seemed sensible to merge the two projects together. That would resolve some of our problems as well as give SEI some data for their research.' (18-10-01₁).

E: 'To be blunt we hadn't got any funding [separate allocated funds for the AQMA process] to fund the consultation exercise and I think through a mutual benefit it worked out to be a very useful thing because a lot of questions on the consultation were actually put in by SEI. (...) It did work out very well. It could be seen as a very contentious issue saying the air quality in York is not good. And from our point of view SEI really did the consultation for us, I mean the leaflets were produced by them in conjunction with ourselves, but SEI also did all the focus groups. (...) It was good because it was done almost independently of, or at arm's length from the council. We got the results we needed and the research team got some data they needed for their participatory research.' (23-01-02).

Thus the rationales of the City of York Council were SEI's expertise in the field, the benefits of independent research at arm's length from the council, the mutual advantages of the research findings as well as the greater legitimacy and impartiality that the involvement of a research team would give to the consultation process. The research team already had funding from the Economic and Social Research Council (ESRC), covering the period March 2000- April 2002, to carry out focus group research, whilst City of York Council paid for a questionnaire survey and some of the other work performed as part of the consultation exercise.

For the purpose of the focus group method, SEI applied a participatory mapping technique in the context of the Citizen Consultation Groups, which has been developed in conjunction with the Department of Sociology of University of York through their joint air quality management studies in the cities of Sheffield and Bristol (Bailey *et al.* 1999,

Yearley *et al.* 2003 and 2001). However, the participatory mapping exercise was adjusted to the specific requirements and needs of the City of York initiative.

The consultation exercise was carried out between May and July 2001 in parallel with the questionnaire survey. The SEI team invited members of the public from some wards overlapping the city centre, Fishergate, Bishophill and Guildhall Wards, to four Citizen Consultation Groups (including one reconvened group meeting) consisting of between eight and 14 participants, to discuss whether they perceived that their York area suffers from air pollution problems⁵⁴. One of the groups, a control group consisting of women was recruited by a market research company, which did not reveal the discussion theme beforehand. By using their local knowledge and their own preferences in the discussions, the citizens in all four groups had an opportunity to draw their own map with their own proposals as to where AQMAs should be designated. The research team decided to not display the council's model maps to the participants:

SEI researcher (S): 'We were trying to get their own [the participants'] perceptions of the issues so we didn't show them the official council map. As I said we wanted their own map.' (19-10-01).

SEI made it clear to the participants that the council's maps were based on scientific measurements, which indicated where oxide of nitrogen was likely to exceed limits. They then asked the participants to tell them where they themselves experienced air pollution in the City of York. For this purpose, the citizens were provided with maps of the city where they, on the basis of their knowledge and experience, could draw up their own area where air quality was considered to be a problem. The mapping exercise included ranking of the areas that the citizens considered to be badly affected by poor air quality. Each group chose how many stages of ranking they wanted and the different groups tended to settle four or five rates, typically including the categories 'fairly good', 'moderately bad', 'bad' and 'very bad'. After the participants had drawn the areas (usually in different colours) on their own, collective map, the research team cut out all places that the citizens had perceived as only a little or moderately bad, and digitised them. (18-10-01). By employing a novel mapping technique, termed 'Geographic Information System (GIS) for Participation' (Cinderby, 1999), SEI incorporated citizens' views with additional digital basemaps before they were presented to the council officers.⁵⁵

After the first Citizen Consultation exercise in May-July, in August 2001 a reconvened group of York citizens who participated in the first Consultation meetings were gathered by SEI to discuss the previous citizens' map and whether the participants felt that it indicated the most suitable locations for the AQMAs in York. At this meeting, the SEI researchers presented the digitised maps in PowerPoint and asked the participants to evaluate the map and say whether it actually represented their ideas correctly. One of the reasons they did so was 'to get something like a ranking to make sure that these rankings were agreed across the whole city.' (18-10-01₁). The citizens' feedback in the consultation exercise resulted in a new map, Map C, which indicated a large area where the York citizens felt air quality in the city needed to be improved. Being included in the consultation exercise for the city, choosing this map would lead to a single larger AQMA for the city of York.

Apart from the mapping exercise, SEI has documented the Citizen Consultation discussions in full transcripts and videotapes that will aid with interpreting maps to align text with drawing and colouring. This data will help SEI to do further analysis for their own research, as well as make recommendations to the Council about actions to be taken for the City's air quality in the long term in case the Council is interested in such data (19-01-02, 18-10-01₁). As of January 2002, this analysis is still in progress.

9.5.2. Public response and overall findings

One of the involved researchers explained how the citizens arrived at a bigger AQMA that included all the five areas indicated in the two scientific maps. This was done on the basis of their own observations as to where air pollution is immediate to York residents:

S: 'So by and large people were identifying areas such as three bridges over the river, not because they were saying the air pollution is worst here, but the air pollution is more of a problem, because there are things we can observe. The footpaths are more narrow, so they're channelled very close to the traffic. And if you're standing near the traffic, you experience the pollution worse. (...) Interestingly enough, when we did these groups, we came up with a bigger map, which were the five areas which the public all validated as it where, a case of public validated science. The public all agreed that these five areas where all bad areas. But they identified some other areas, which were not shown up in the modelling process, some areas, which they thought were very bad. (...) And what they were largely telling us was where they could either smell traffic pollution, or where they would see some of the results, or sense a slight bristle in the throat, you know that dry feeling you get in the throat sometimes from either low-level ozone or oxides of nitrogen or sulphur'. (18-10-01₁)

Another SEI researcher emphasised the correspondence of the general public understanding of local air quality issues with scientific results:

S: 'If you compared it [public understanding of air quality] with the results coming out of the maps as a result of the monitoring and the modelling, then within the broader assessment there seemed to be quite good correspondence as to where the public see the problems to go and where the monitoring and modelling found the problems to be. So the mapping also puts it into more of a context of experience that the people have. (...) In the women's group we got people with push chairs with their child half a metre above the ground and they see that directly in several parts of York, so they walk through areas where there's a lot of traffic and feel there is much more of a problem than the modelling and the monitoring are picking up. So we're trying to put into context how people experience the pollution rather than just how the monitoring and modelling have identified the problems. (...) So my overview at the moment seems to be that the public assessment of the issue seems quite good and it does add something more than you get from the monitoring and the modelling that is done in the traditional methods'. (19-10-01).

According to this person, there are even more insights deriving from the local knowledges of air quality matters than from the scientific output in the air quality management process: not only did the York citizens have a good sense of identifying where the scientifically proved problem areas are; they also appeared to have more sensitiveness to those affected areas than the model output indicated.⁵⁶

These perspectives differ somewhat from that of one of the council officer's. While being of the opinion that lay involvement in technical assessment procedures helps guiding and reassuring the council of democratic decision-making and problem-solving, he also contended that there are limits to the prospects of lay people's capability of evaluating technical policy matters:

S: 'It's useful in the process just to know where people think the problems are and they're very, very good at judging actually in the assessment. So it strengthens the argument for taking action on our part. But of course there is a difference between what local people generally are happy with as regards the quality of the environment and where we know there's an actual problem, because people tend to overestimate the problems a bit. (...) Another factor is that we're here to represent the people and they need to tell us where they feel there is a problem and if there is a problem maybe we should respond to that. So by doing this we have initiated a different approach and discussion amongst council officers. (...) It's quite difficult for a lot of people to grasp because it's something they can't see. It requires a lot of technical knowledge and there's probably some misunderstanding and they see black smoke coming out of buses and they're thinking that is the biggest problem. But quite likely it isn't. I mean the critical stuff is coming out of

maybe cars in front of that bus. So there's an imbalance of knowledge in the discussions that the lay people, the residents, have.' (18-10-01₂).

Another council officer felt that, by choosing Map C, there was strong indication that the York citizens want the Council to go beyond the requirements of the Central Government to consider areas where the pollution levels do not meet the objectives, but where it could improve the levels and thereby the quality of life and general environment. (29-05-02).

Apart from contributing their lay knowledges about local air quality by putting it into the context of citizens' everyday observations, one of the researchers thought there were some other notable benefits from the consultation process: by enhancing citizens' engagement in, and commitment to solving the problems and accepting the ensuing air quality policies, as well as by providing insights as to what other perceived problems there are in the city for the council to act upon:

S: 'Well, the other thing that has come out is that there are other issues that the public is concerned about. The council, it may be hard for them to decide on things they should deal with next, so for example noise issues, smell issues, for certain things like problems with the tourist boats. Specific people have raised specific issues to do with the fumes from the old boats whereas the council says it isn't any problem. So that came up in the meetings. Even if it smells bad for people, well maybe it isn't a big problem except for the residents. So it's not generally thought of as a huge problem unless there's something they can see and smell. And the other thing they got out of it was possibly in engaging the public in setting the AQMA. Because if the public could help identify the area they might want to be involved in solving the actual problems and be more willing to accept the changes that go along the management of air quality. And this is mainly because they participated actively in setting where the area was and because it reflects their concerns.' (19-10-01).

A council expert agreed that the main benefits of citizen involvement in the air quality management activity related to changed public (transport) behaviour, but also pointed out that it gives the council more credibility and the public more ownership over the decision-making process:

E: 'Both of these options were proposed by the council. For us to say that this was one that was drawn by the public and then chosen by the public, kind of gives us more credibility and them more ownership over the decision. Rather than the local authority imposing something on them, they are part of that decision-making process and then ultimately they decided which they wanted. Well now the [City of York Council] members could have turned that down, they have the power to say 'we're doing this' but I think it adds

more validity to the process. (...) The difficulty is solving the problems and then you've got to have people behind you. And I think that by allowing them to participate in the process will ultimately I hope, make it slightly easier as we go through the process and make people realise they have to do their bit.' (23-01-02).

As discussed in 9.5.1, SEI arranged a reconvened group in August 2001, where the ultimate participatory map, Map C, was validated. During this exercise, SEI found that 'there was more or less agreement across the city as to what was good and what was bad' in terms of air quality (18-10-01₂). After having been improved by the participants, Map C was then presented to the City of York Council staff in September 2001.

After the citizen consultation exercise was completed, a total of 6,187 leaflets were distributed to households in the City of York enquiring with local people about their perceptions where the AQMA should be. Of these, 681 were completed, giving a response rate of 11%. Interestingly, 64% of the residents who responded voted for the citizens' map, where 49% of the business representatives opted for Map C (18-10-01₁). This shows a clear indication that the Citizen Consultation Group participants' validation of local air quality represent the typical York citizen's preferences much more accurately than the scientific maps did. In addition, it indicates that most citizens were in favour of a bigger area than the scientific based results Map A, which was the scientific map requested by, and then approved by DEFRA. Moreover, the results of the participatory exercise indicate that citizens typically wanted the AQMA to include their own residential area. According to a researcher; '(t)he assumption that the council officers had, had been that people would want to be out of the AQMA, but we found from the groups that by and large people thought it might be better to be in an AQMA.' (18-10-01₂). This finding accords with results from the city-wide consultation of the latest York Local Transport Plan, which had suggested that 'the citizens of York were strongly in favour of the more radical traffic management solutions to resolve traffic congestion and air quality problems' (City of York Council 2001:2).

In parallel to this, the city council arranged three ward committee meetings⁵⁷, one with each of the three central wards that were mostly affected by the air pollutants under scrutiny, as well as a business forum meeting. At those meetings, SEI presented the participatory map to the participants in a PowerPoint presentation and council experts described the air quality management initiative. From the transcripts and detailed minutes

of those meetings (26-05-01, 27-05-01, 30-07-01), it appeared that many local residents living in these three wards were concerned about the council adopting transport policy measures that would improve the air quality in their area.

The entire consultation process had taken a year and a half. According to one researcher, the citizen consultation process had been well received among council officers, but it had also proved to be more costly, time-consuming and complex than the council officers had envisaged beforehand. (18-10-01₂).

On 8 January the City of York Council Members took a decision about which of the three suggested options would become the AQMA of City of York. Interestingly, the Members chose the public map, Map C, and the following week the area was officially declared an AQMA. From this date, the City of York Council has one year to decide on how it is going to improve the air quality and develop an Action Plan for the area. Since nitrogen dioxide is essentially caused by road traffic, the primary objective will be to find a transport solution to reduce the high levels of nitrogen dioxides and this heavily involves the Transport Planning Unit in the action planning process as well as the Environment and Development Services of City of York Council. It is not yet determined how citizens of York will be involved in the process of developing the action plan but there are plans to involve members of the public in the process. (23-01-02).

9.6. Conclusion

This comparative study of air quality management in Leeds and York shows two very different ways of following through public consultation on air quality matters, but not necessarily in a strictly participatory manner. Regardless of its true intentions, by applying a more traditional information provider approach, the Leeds City Council did not manage to get local citizens involved in the review and assessment process to a significant degree throughout the first three stage review processes. Given the complexity and perceived remoteness of the issues involved, mere dissemination of scientific information appear to be insufficient in order to engage citizens in the assessment of air quality problems and risks. The case of Otley challenges the public apathy perspective and indicates that there is an existing public concern about air quality as well as that there is potential for citizen participation in air quality management in the Leeds area.

However, the study of Otley also suggests that there are some factors that are likely to enhance the public engagement in air quality assessment and decision-making: a perceived (widespread) local need for local action, a local community network or forum where the issues can be articulated and the citizens' views could be channelled through to relevant political instances.

In York, on the other hand, the public consultation process became more successful and a more fully participatory exercise. Clearly, the City of York Council's decision to take the consultation process seriously and beyond the Government requirements was the foundation for this success. However, a deeper look at the York case suggests that actual embracement of a more meaningful participatory exercise was not the result of City of York Council's own devised idea, but rather an outcome of the council seizing the opportunity to commission independent scientists to undertake the consultation process.

By employing well-tried participatory techniques and in-house modelling expertise, the research team's approach enabled public validation of the science based maps as well as the production of residents' own map reflecting their lay knowledges and views in a way that would just not be possible through more traditional public consultation techniques (e.g. questionnaire surveys). Moreover, the devised 'GIS for Participation' method enabled citizen participation straight into the decision-making on air quality matters in a rather unique fashion. The fact that a number of participatory research and policy studies claim that the applied participatory tools and methods are essential, if not crucial, for the actual level of public response and degree of participation in science and technology assessment processes (see e.g. Kuper 1997; Renn *et al.* 1995) strengthens the arguments for the use of participatory techniques that give more citizen control over these processes. On the other hand, the more traditional method of questionnaire survey along with the ward meetings became good complementary exercises that allowed the results of the indicative sample of residents involved in the Citizen Consultation Groups to be checked and generalised into a larger population. To the City of York Council's advantage was also the fact that the study was funded by external sources along with some council funds: according to two council officers, most city councils would not have any financial resources to put into their citizen consultation exercises within the framework of the air quality management initiative (24-01-01, 15-10-01₁). Still, the participatory process

proved more costly, time-consuming and complex than the council officers had envisaged beforehand.

There were, however, some notable similarities between the Otley and York citizens' perceptions and understanding of the quality of air in their respective areas. Interestingly, in both cases the citizens perceived the problems to be more severe than the expert knowledge suggested. In York, although there was an overall similarity between people's views and the monitored data, the residents opted for a larger AQMA than the two scientific maps had suggested. In Otley, despite the lack of scientific rationality for declaring an AQMA in the town, the citizens wanted either an AQMA with ensuing policy measures, or any other direct actions to be taken by the authorities to reduce the local transport problems. It is thus clear that the local knowledges of air quality (through everyday empirical observations) among local residents in the both areas were felt to be more central to them than any scientific claims. The fact that the citizens generally felt the problems were more severe but in the same areas, may be down to people judging the issue holistically, in terms of air quality, noise and nuisance as well as obvious signs of excess traffic.

All in all, the insights from the study indicate that citizen consultation on air quality management is by no means an easy and straightforward undertaking that can be pursued without considering how to get ordinary citizens involved in assessment processes in an effective manner. A consultation process on a complex issue such as air quality requires a method that alerts people and make them feel committed to participating in the first place, and then secondly a participatory exercise that creates an open-ended and informative dialogue where representatives of the general public are offered sufficient time and access to expert information that is presented in a user-friendly manner in order to allow citizens to deliberate on the issues.

9.7. References

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10. Tenant participation in home energy schemes in Kirklees

This second UK case and last empirical study in this thesis discusses a housing initiative concerning energy efficiency schemes in the Kirklees district, West Yorkshire. Apart from official literature, the data collected for the study is based on interviews with 20 persons in Dewsbury and Huddersfield, most of which were undertaken between June 1998 and February 1999 (with the exception of an interview in May 2002). The empirical data is based on transcripts from three focus groups: one with three Energy Advisors of the Energy Unit (19-11-98), one with seven tenant representatives of Kirklees Federation of Tenants and Residents Associations, KFTRA (22-09-98), and one group gathering six tenants and one Energy Advisor from the Housing Services Energy Unit (24-02-99). In addition, the field data further draws on minutes of meetings with two Energy Advisors from the Energy Unit (08-06-98, 09-06-98), a KFTRA employee (14-08-98); and one Environment Officer of Kirklees Environment Unit (16-05-02). The last interview was conducted with the purpose of obtaining up-to-date information about recent developments pertaining to the initiative.

10.1. Introduction

Reducing greenhouse gas emissions and halting the anthropogenic impact on global warming has become the ultimate test for environmental science, policy and management worldwide. The response of the UK Government to its obligations under the United Nations Framework Convention on Climate Change (UNFCCC), together with its search for a Sustainable Development strategy, have given new political urgency to the task of reducing energy use in the country. While the overall trend of CO₂ emissions has been downwards in the UK, in part due to fuel-switching from coal to gas⁵⁸, further substantial reductions are still to be implemented within a relatively short timescale: under the Kyoto Protocol of the UNFCCC, the UK is obliged to reduce its greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012, whereas the average for EU Member States is -8% (O’Riordan 2000:196). For the first time, these targets will be legally binding and countries have different targets to reflect their circumstances.

The UK’s domestic sector is recognised to be one of the critical areas where considerable energy savings could be achieved through effective policy formulation and implementation. The sector’s contribution of atmospheric emissions of CO₂ is about 16% of the national total and it is envisaged that significant levels of energy efficiency are to be attained through the implementation of some recent government initiatives in the housing policy arena. The UK Climate Change Programme of 2000, for example, sets out

an integrated package of policies and measures *inter alia* for promoting better energy efficiency in the domestic sector. It is estimated that the effect of the Programme's additional measures of energy efficiency within this sector will result in an emission cut of 2.6-3.7 Mega tonne of Carbon (DETR 2000c:103, table 8.7)⁵⁹.

The most significant and comprehensive housing policy initiative, however, is the Home Energy Conservation Act (HECA) of 1995 (HSMO 1995b). The document requires all local UK authorities to produce an Energy Conservation Action Plan for their area, which must demonstrate how the Council proposes to substantially reduce domestic energy consumption by 30% (from an April 1996 base) across all housing tenures within their administrative area within a 10 to 15 year period. The annual reporting structure of HECA provides a mechanism for the Authority to assess the success of its strategy (HMSO 1995b).

One of the regions where this task is currently being addressed by local authorities is Kirklees Metropolitan Council in West Yorkshire, the seventh largest Metropolitan Authority in the UK. With a population of approximately 395,000 people (2000) over an area of approx. 400 km², Kirklees covers a wide range of area types from urban to rural but with a majority of inhabitants focused around the conurbations of Dewsbury, Huddersfield and Batley. Many of the approximately 161,000 properties in the area are faced with a very high demand for heating and insulation improvements. According to the results of the English House Condition Survey 1996 in the Energy report 2000 (DETR 2000a), more than half of elderly and single parent households experience fuel poverty. In addition, in 1996, 37.6% of the properties had no form of central heating, and the average Kirklees property produced 8.7 tonnes of CO₂ emissions per year, corresponding to a total for all the housing stock of 1,464,000 tonnes per year (Kirklees Metropolitan Council 1996a); this compares with the national annual average of 6.37 tonnes per dwelling. (DETR 2000a). In 2002, the average in Kirklees has decreased to 7.3 tonnes of CO₂ emissions per capita (16-05-02).⁶⁰

In response to HECA, in November 1996 Kirklees Metropolitan Council produced a report for the Central Government, *Health, Wealth and Comfort*, which provides data on the energy efficiency of the Kirklees district's housing stock and outlines an energy conservation action plan for the area's Council properties (Kirklees Metropolitan Council

1996a). In this document, the Council suggests measures to achieve the targeted 30% improvement in energy efficiency through provision of energy advice to tenants and the implementation of energy efficiency schemes and an Affordable Warmth Programme in close co-operation with its tenants. An updated version with energy reduction strategies and measures is described in *Kirklees Energy Strategy of 2000* (Kirklees Metropolitan Council 2000a), whereas the achievements to date are reported in the annual progress report of the devolved Authorities. The fifth and last HECA annual progress report was completed in mid-2001 (Kirklees Housing 2001).

This is not the first time the Kirklees Council has sought to involve tenants in domestic energy efficiency schemes: the Council has since the mid-80s attempted to engage tenants in decisions about energy use in their homes (08-06-98). However, subject to HECA, the challenge for the Council is to use all the available mechanisms for tenant participation and consultation to provide electricity and heating that is acceptable to as many Kirklees Council tenants as possible in the area, while working towards the realisation of the targeted 30% energy reduction in the entire area.

This final empirical chapter explores the attempts of the Energy Unit of Kirklees Metropolitan Council to involve tenants in implementation and decision-making for energy efficiency schemes in Kirklees district in order to meet the national energy targets and respond to local energy policy requirements.

10.2. Organisation and management of home energy schemes in Kirklees

10.2.1. Organisational structure and policy framework

In line with requirements set out in HECA, Kirklees Metropolitan Council aims to reduce CO₂ emissions by 30% by 2005 from a 1990 baseline in their own buildings and across the district and to source 10% of their energy requirements from renewable energy by 2010 (Kirklees Metropolitan Council 1996a).⁶¹ However, the Council's commitment to promotion of sustainable energy use and heating within Council housing stock precedes this and other national policy initiatives. Already in 1994, in a partnership with Kirklees Federation of Tenants and Residents Associations (KFTRA), Kirklees Housing Services identified affordable warmth as one of the primary objectives of its tenants within the public sector. The aim of the subsequent Affordable Warmth Strategy was to assist

tenants more readily to achieve affordable warmth levels within their homes and reduce the emissions of climate change gases. This would be achieved by provision of a minimum standard, which resulted in significant energy related investment target through Council wide schemes across the housing stock. The minimum standard in the Council housing stock was: provision of 100 mm loft insulation; installation of cavity wall insulation, replacement of the existing electric under-floor heating; the appointment of an energy unit consisting of five members of staff; a dedicated home energy advice service to Council tenants; ongoing energy advice training to staff and tenants; production of articles for publication; and telephone energy advice information to the private sector. (Kirklees Metropolitan Council 2000a:17). Over the next six years, the authority committed significant resource (over £1M pa) on energy specific investment⁶² (ibid 2000a:6).

In response to the Affordable Warmth Strategy, with limited resources KFTRA and Housing Services decided to fund an Energy Unit of five staff (an Energy Efficiency Co-ordinator and four Energy Advisors) within Kirklees Housing Services to develop policies and target investment to reduce the effects of climate change and fuel poverty with the Council housing stock⁶³. Since its formation in 1996, the Energy Unit has had a key role in implementing energy reduction within the housing sector and thus it is charged with the responsibility of delivering the national and local energy targets within the domestic sector⁶⁴. More specifically, the Unit's tasks are to manage projects of energy efficiency schemes; pursue external sources of funding for energy efficiency measures; provide energy advice training; and undertake energy rating of Kirklees Housing Stock for planning future programmes. (Kirklees Metropolitan Council 1996a). However, there are no formal criteria as regards prioritising certain areas of energy services in the Energy Unit's work (19-11-98).

During its early days in 1996, the Energy Unit produced the Council's response to HECA, *Health, Wealth and Comfort* (Kirklees Metropolitan Council 1996a), which developed the existing Affordable Warmth Strategy.⁶⁵ In 2000, the Unit prepared a follow-up policy document, the Kirklees Energy Strategy 2000-2005, which sets out a new strategy to meet the HECA energy reduction targets up to the year 2005 (Kirklees Metropolitan Council 2000a).

In 1998, after the majority of the Council Housing accommodation had received energy investment through the Affordable Warmth Strategy, Housing Services developed the Warm Homes Strategy, which targeted investment more specifically through three distinct elements: the Strategic Energy Conservation Programme; Local Energy Action Plans (LEAPs)⁶⁶, and consideration of energy conservation in all schemes. (ibid 2000a:19). The Warm Homes Strategy is funded by a part of the Warm Homes budget (£500,000 in financial year 2000-2001) with the aim of continuing meeting Housing Services ongoing commitments from the existing Warm Home Strategy to tenants by upgrading partial central heated properties and installing central heating to four-bedroom houses. The Warm Homes budget is ‘...a significant investment in improving the energy efficiency of the Council’s properties and providing warm healthy homes for its tenants.’ (ibid 2000a:24-25).

Apart from the Housing Services, there are some other Council bodies supporting sustainable energy use in the public housing sector in Kirklees. In mid 1990’s, Kirklees Council established Kirklees Environment Unit and made a corporate commitment to the Friends of the Earth Climate Resolution to try to achieve a 30% reduction in CO₂ by 2005 (Kirklees Metropolitan Council 2000a:21). For this purpose, already in 1995, the Environment Unit produced an Energy Efficiency Strategy and a year later, in response to the Climate Resolution, the Kirklees Environment Policy (updated in 1999).⁶⁷ (Kirklees Metropolitan Council 1996b, 1999). More recently, the Environment Unit has developed an energy work programme that has clear targets for 2000-2001 and beyond, as well as the Kirklees Agenda 21 Action Plan 2000. (Kirklees Metropolitan Council 2000b). Another Council body, the non-profit making company Kirklees Energy Services was established in early 2002 to act as a regional energy centre charged with promotion of the take up of energy efficiency measures in the private sector with support by an Energy Saving Trust part funded Energy Efficiency Advice Centre (EEAC) (ibid:21)⁶⁸. These are integrated into the overall 2000 Kirklees Energy Strategy (ibid:21-22). The work is partly supported in partnership with Kirklees Agenda 21, along with other initiatives. The Energy Unit’s housing schemes, for example, are included under the Local Agenda 21 banner, although the activities were not set up as such. (08-06-98, 16-05-02).⁶⁹

There are approximately 30,000 council properties in Kirklees district. The housing in Kirklees is diverse, covering old terrace housing and rural and urban housing estates, flats and tower blocks and new houses built by private sector developments, the Council and housing associations (Kirklees Metropolitan Council 1996a). Tenants and residents in these properties are organised under 130 Tenants and Residents Associations (TRA) and approximately 120 of these community organisations (no private residents' associations, but some who own their own house on council estates) are united under the umbrella organisation KFTRA⁷⁰. The Federation was set up as a grass-roots initiative, triggered by local people's dissatisfaction with the former Tory Government's council property policy and their proposals to bring in stricter housing legislation. Led by tenants elected from every Council estate, KFTRA strives to promote tenants' rights, and through partnership with Kirklees Housing Services, to ensure that tenants have a say in the decisions about their homes and estates. The TRAs have lobbied and negotiated with the Council to develop a structure allowing high level of participation in KFTRA, and the Federation clearly states that decisions have to be taken locally. For this purpose, the structure was set up so as to include local tenants at different levels in the decision-making and to promote fair treatment among different groups of representatives. (14-08-98).

KFTRA's organisational structure has evolved over 15 years of operation. Today, the Federation is composed of a number of committees and working groups as well as fieldworkers who work closely with the TRAs throughout the district. The eight Management Committees representing each ward in the district have extensive power of policy formulation and scrutiny and a monitoring role for the effectiveness and efficiency of housing services. Management Committee members and Housing officers meet regularly to review the policies and procedures of Council housing. In 1997, a number of working groups was set up to formulate new initiatives and monitor progress on a number of themes to ensure that tenants' priorities for the service get heard on issues such as equal opportunities, monitoring, housing investment, publicity, estate maintenance, youth repairs and training (KFTRA 2001). KFTRA has received funding from the Kirklees Council from the outset. The bulk of the money comes from the housing revenue grant and tenants' and residents' rents, but there are also some sources coming from a general fund of council tax. (14-09-98).

10.2.2. Approaches to tenant participation in energy efficiency schemes

In Kirklees, council tenants have the right to fully participate in decisions about housing policy, investment, and management and rent levels through elected and publicly accountable tenants associations. Through lobbying, campaigning and negotiating activities and partnership with the Energy Unit, as an umbrella organisation of council tenants, KFTRA has a unique role in ensuring tenant participation in housing schemes in Kirklees.

There are a number of different ways for tenants to be involved in housing schemes through KFTRA. Since 1992, KFTRA has worked closely with Kirklees Housing Services to develop a Tenants Consultation Charter, a procedural manual that sets out how tenants are involved in the decision-making on housing as individuals, through TRAs, by representation on committees and as members of KFTRA. The Charter was first signed with Kirklees Council in January 1992 and revised in 1995 (see Kirklees Metropolitan Council 1995). KFTRA's more recent Tenant Participation Compact 2000 is a revised version of this charter and a response to the national Government requirements of 1999, under which local authorities are required to develop a Compact in consultation with their tenants, saying how tenants can be involved in decisions about their homes and estates (DETR 1999). The Council uses this framework to consult KFTRA delegates about key issues among tenant associations' meetings.

Through tenant monitoring, tenants are involved in setting service standards for housing. Monitoring reports are presented to tenants at formal sub-committees of the Housing Services department. These committees scrutinise housing performance and can serve improvement notices and penalties. Moreover, the Federation sets its priorities for improvements to the housing service at a service review seminar held jointly with Housing Services each year. These discussions impact on annual management and maintenance budgets. In January each year, Housing Services officers produce costed options for improving this service, which are discussed at rent consultation meetings with the tenants' movement every year. Tenants also take part in an annual investment seminar to discuss the priorities for major repairs and improvements. (KFTRA 2002). Through Area Forums and TRAs and representation on Housing Management Committees, tenants are involved at every stage of the Affordable Warmth Strategy and Programme.

Another important participatory instrument is the production of estate manifestos, which serve as the foundation of the Association's housing strategy. Each of the TRAs in Kirklees is encouraged to produce an estate manifesto for KFTRA, that should reflect the views of all people living on a particular estate on four particular key themes: maintaining and upgrading homes, improving the environment; improving Council services and other community issues. For this purpose, various approaches are used to collect local tenants' and residents' views, e.g. door-to-door canvassing, public meetings, workshops, and particular social events and displays gathering local people on the estate⁷¹. The main use of estate manifestos is as a campaigning tool for the local TRA (Kirklees Metropolitan Council 1998:15-16), but individual schemes from the estate manifestos are fed into the Council's Investment Plan (KFTRA 2002).

In the field of home energy, tenant participation in assessment and decision-making of energy efficiency schemes is enabled both at the Council's end, through Housing Services Energy Unit policies and activities, as well as through KFTRA's organisation. However, whilst KFTRA is generally involved in grass roots decisions about their homes and communities, energy appears to be one out of numerous issues on the Federation's agenda. A review of both somewhat older KFTRA documents (e.g. the 1995 Tenants' Consultation Charter and KFTRA's annual report of 1997-1998, see Kirklees Metropolitan Council 1995 and KFTRA 1998) as well as more recent literature (e.g. KFTRA's annual reports of 1999-2001, see KFTRA 2000, 2001, 2002), suggest that there are other issues of primary concern but home energy efficiency. A review of these documents as well as KFTRA's web site suggest that tenants' main priorities are other issues such as: high quality repairs service; the maintenance of estates; the cleaning and repairing of empty properties; fighting against the transfer of council homes to the private sector and campaigning for a change in the unfair housing benefit rules; tenant participation in setting rent levels; and social issues such as combating racial harassment and fighting robbery/burglary.

Comments made in the focus groups strengthen the argument that home energy is not ranked among the most important housing issues to the ordinary tenant. According to the empirical data available from this research, it rather appears that social issues around housing are more central to people's concerns and that this is reflected in KFTRA's efforts. To put it in some KFTRA representative's own words:

Tenant (T)₁: ‘I wouldn’t say that our tenants generally give highest priority to the issue of energy efficiency in their homes. People do care about the price of electricity and heating, but social problems like drug taking and poverty on the estates are more central to them. And local tenants’ needs and priorities are reflected in KFTRA’s work.’

(...)

T₂: ‘Well, surely energy is important to our tenants, but there are other things that are more important for us as an organisation to deal with. Things like rent setting and equal opportunities in delivery of services and involvement of young people in action programmes like the one on drugs awareness.’ (22-09-98)

It thus follows that through KFTRA, there is a sophisticated organisational and policy framework in place for extensive tenant involvement in council energy efficiency schemes in Kirklees. Since 1992, KFTRA is also a recognised collaborative partner of the Kirklees Housing Services, which should open up opportunities for council - tenant interface in this field. Apart from the Affordable Warmth Strategy programme, however, a review of both empirical and documented data on tenants’ priorities of housing matters suggest that home energy has not been given a prominent position in the work towards tenants’ involvement in council housing schemes in Kirklees.

10.3. Expertise, expert input and interactions

10.3.1. Energy training and awareness raising

The Energy Unit has a multi-pronged approach to the delivery of energy advice and awareness raising on domestic energy use. One of the everyday activities of the Unit’s staff is to give phone advice and answer queries to tenants who have enquiries, concerns or complaints to put forward to the Council by telephone. They also do a lot of door knocking exercises, the best way of out-reaching ordinary people according to one interviewed expert (09-06-98). Through regular visits to tenants’ homes, the energy experts attempt to promote energy-efficient devices and practices, e.g. low energy appliance promotion scheme, double-glazing, cheap low-energy bulbs etc. In addition, a range of leaflets on energy issues is available from Area Housing Offices. (08-06-98). Two energy experts explained the Energy Unit’s work accordingly:

Expert (E)₁: ‘We have people referred to us through the area housing offices, which report on a number of problems that they’re having. Mainly it’s about keeping the house warm, so the arrangement is resulting from this, and the action that we take by the end are things like loft insulation, draught proof, cavity wall insulation. And we also have schemes that are running, such as central and additional heating schemes.’

And there are bigger schemes such as houses with partial heating and the upgrading to central heating or what you can call central heating schemes. And we also deal with queries from all sectors, about both social and housing and private sector queries.'

E₂: 'It's like a personal service to tenants, so if someone is particularly struggling, and they've got very large fuel bills, we can go and visit them. And we can have a total look at the house and everything, and then look at the fuel bills as well and see if there is any way we can help reduce the fuel bills, maybe by installation or maybe by changing the method that they pay for the bills.' (19-11-98)

Apart from these day-to-day energy awareness activities, on a more irregular basis the Unit arranges energy training events for Kirklees tenants. One main target group in the energy training is the tenants representatives, who are representing the tenants on each estate in KFTRA⁷². A number of one-day training courses have been organised for tenant representatives on themes such as: budget and discount payment methods available for paying bills; most efficient use of heating controls; grants available for energy efficiency measures; reading electricity and gas meters; measuring the energy use of appliances and prevention of condensation. The energy training is also an essential feature of the Affordable Warmth Strategy which in this respect aims at ensuring that tenants are confident in using new heating systems or use them in the most cost-effective way (see further below). One officer explained that the prime reason for organising these exercises was to reduce their own workload and to allow themselves to focus on helping people in real need:

E: 'We try to train up on energy efficiency, each area officer. Because then they can recognise the problems and try and sort them out rather independently, together with the tenants in the area. Because often the poor people would come in and say that they are feeling really cold and they wouldn't know that something could be done about it. It could be heaters faulty or whatever at one time and they would come through to us. And no matter what we do, but there are things that can be sorted out by the area officers which give us more time to deal with the parts that actually want and need visits, you know.' (19-11-98).

For ordinary tenants, Home Energy Advice Training is being offered through four offices in approximately 7,500 houses respectively in a total of 16 areas. At these meetings, the Energy Unit provides information guidance and advice on how to control heating and hot water efficiently; how to keep fuel bills under control; how to obtain grants for insulation and draught proofing, and how to combat condensation. (19-11-98). According to the interviewed energy experts, this training had proved a beneficial exercise:

E: 'Certainly training is a very worthwhile benefit on the energy efficiency issue because it's such a common sense thing to do. People don't realise that there's a lot to do for them here and that we deal with energy efficiency. And they tend to think: 'oh, this is so technical' but really it's just common sense to learn about and once you break down those barriers, people can start defining energy efficiency themselves and decide what is the cheapest and best option for them in their homes, you know. And I think we've made progress in these areas.' (19-11-98).

According to the interviewed energy experts, the advice and training had proved effective in terms of enhancing awareness on energy efficiency among tenants, improving electricity and heating standards in many households, increasing tenants' capabilities of managing technical equipment, and reducing energy costs. Conversely, by the end of 1998, the Council's energy efficiency schemes had not resulted in any tangible output in terms of energy savings and reductions of CO₂ emissions. One expert described the logics behind this accordingly:

R: 'Do you know how much the Energy Unit has managed to reduce the CO₂ emissions in the domestic sector throughout the district?'

E: 'We did get some figures. It's not very much, because we're working in social housing and the problem with fuel poverty. If you insulate homes, you're not necessarily reducing the amount of energy that they use, but you're making that bit of energy that they use going further so they can warm up the houses. You know, generally speaking, we're not even reducing the bills, we're just making better living conditions to the persons. (...) So rather than reducing carbon dioxide, we've been in a way increasing it in some ways by each property having one or two more gas fires put in. But, even despite this I think we have made a light saving, about two or three percent. Something like that, which isn't massive.' (22-09-98).

In this context, another Energy Advisor described the inherent difficulties of enhancing tenants' awareness of the environmental impacts of domestic energy use:

E: 'That's something really tricky. We've made progress in this field but I would say it's a slow progress. And it's a fairly small number of tenants that has got the message through. It takes a lot of time and we try to keep up with our advice on more concrete stuff like installation of meters, the use of energy efficient electric appliances, the benefits of cavity wall insulation and so on. And people tend to think about the costs of energy use more than anything else. And understanding the links between energy use in their homes and CO₂ emissions and climate change requires more than a door-knocking and a chat over their meter or electric installations.' (22-09-98).

Also in the focus groups with tenants, it emerged that a large proportion of Kirklees tenants were not concerned about the environmental impacts of energy use. Rather, the

main reason for public concern about domestic energy appeared to be the financial costs of heating and electricity for the household. For example:

T₁: 'Well, the first requirement is for most people, when we get any new system put in at all is 'can we afford to run it?' (...) It's a cost issue for most people, and I don't think that most people can afford to run the extra fires that are put in.' (22-09-98).

T₂: 'It's good that the Energy Unit provides these energy efficiency schemes, so that people who are struggling can afford heating their homes. And there are a lot of people who can't in this part of the country.' (24-02-99).

T₃: 'Most of the tenants don't know about the links between energy and environment I don't think. We're concerned about the costs of heating our homes and running our electric appliances. But on the other hand that's also good for the environment, it goes hand-in-hand.' (24-02-99).

R: 'What are the challenges that need to be addressed when it comes to electricity use in Kirklees properties?'

T₁: 'To increase the energy efficiency really.'

T₂: 'Yeah, in order to get the bills reduced.'

R: 'Is energy efficiency a matter of cost or something else?'

T₁: Well, yeah, I think with energy efficiency you will get more energy savings by using low-energy alternatives. The cost comes with energy efficiency. You can't have one without the other.' (22-09-98).

As illustrated in the quotations above, it was evident that most tenants' orientation in the field of home energy was that of consumers rather than local experts in, or actors concerned with, domestic energy and climate policy issues. In line with suggestions by an Energy Advisor (19-11-98), perhaps this general attitude is contingent on the relatively large number of low-income earners and unemployed people matters, as these tend to be the ones who cannot afford to buy their own houses but are renting from the Council.

Another recognised problem of the energy awareness raising process was the apparent scarcity of Energy Unit staff that could enable training events be held on a regular basis:

E: 'But we haven't actually done that for a year now because we've been short of staff. But hopefully we will be fully staffed to begin with it, because it was quite worthwhile and interesting for people.' (24-02-99).

As indicated above, by the autumn of 1998, the tenants had not been offered any energy training for roughly a year due to a shortage of staff, and quite likely this is one reason why so few of the interviewed tenants were familiar with the energy training activities at all. For example:

T: I've been to all sorts of courses. I went to a course arranged by KFTRA, a tenants' course quite recently. But no energy courses, because I haven't come across these courses at all. (24-02-99).

In fact, only two out of eight persons in the focus group with ordinary tenants had participated in any energy training events. Those two persons had nevertheless found it a worthwhile effort. For example:

T: 'Yeah, I think it was beneficial. We learned how to save money by saving energy. This was achieved by making sure that you have the right meter and the right electric appliances and loft and cavity insulation and all that. I don't remember the details but I remember that it was a good way to learn about energy.' (24-02-99).

Not only was there little awareness of the opportunities for energy advice training in the both tenants focus groups: the participants generally appeared to be quite unfamiliar with the Energy Unit's role and the services it was providing. Even one of the tenant representatives and KFTRA members revealed that: 'Quite honestly, I didn't know we had an energy unit' (22-09-98). Moreover, quite interestingly, nobody of the six tenant representatives in the focus group had been involved in energy training (22-09-98). On the other hand, a majority of the KFTRA interviewees contended that there had been some modest contact between the Federation and the Energy Unit in general:

R: 'Do you think it would it be useful to learn from the staff of the energy efficiency scheme about how much energy is being used and how it could become more efficient?'

T₁: 'Well it would be. But I don't think a lot of people are aware of it.'

T₂: 'Probably not. We haven't had that much contact with them either and still we're the ones who are aware of the council's housing services.'

T₃: 'No, we're not dealing much with them.'

T₄: 'I just know because I had the central heating put in by them and it's a good central heating system. They put it in for us but it's a really good system that we have in so I don't think it will be wasted.' (22-09-98).

On the basis of these findings, it thus appears that one of the Kirklees Council's real challenges is to promote tenants' awareness of the environmental impacts of domestic energy use in order to fulfil the endorsed national and local policy requirements. Although tenants mainly through KFTRA may have a say in the formulation of home energy policy and strategies, most interviewed tenants were, as indicated above, concerned about saving money and did not usually think about energy efficiency in terms of environmental values and policies. On the other hand, through implementation of home energy schemes, the standard and comfort has been improved in a large number of council properties (16-05-02, 19-11-98, Kirklees Housing 2001). In addition, as we shall see in 10.4, more recent council initiatives have enabled substantial progress in increased energy efficiency and reduced CO₂ emission levels through other measures in the domestic sector.

10.3.2. Council - tenant expertise and interface

As of early 1999, in terms of training and expertise, the Housing Services Energy Unit's staff represented a rather diverse group with different academic backgrounds. However, most of the Energy Advisors had completed courses on housing services, construction, management and budget matters, including energy-related issues such as energy awareness, home energy efficiency schemes, condensation etc. (19-11-98).

Also the interviewed KFTRA workers had undertaken training activities prior to and after having become tenant representatives in KFTRA. However, as illustrated below, most of them felt that they themselves were the experts in the field of housing as well as that they had gained their local expertise primarily through their everyday (voluntary) work in KFTRA:

T: 'I represent one estate north of Huddersfield and I've been involved in KFTRA for several years now. And I think I've learned lots of things, such as how to organise meetings and present things to those I represent and to others that is necessary in my role. And how to communicate with council officials and councillors and so on. That's the organisational side of it. On top of that, I've learned about what issues people on the estate are concerned about and how to deal with problems on the estate'. (22-09-98).

Researcher (R): 'Who do you consider to have professional knowledge on housing matters?'

T₁: 'We do.'

Several: 'Yes, we ourselves.'

T₂: 'We, the ordinary [KFTRA] workers have a lot of knowledge about housing'.

T₁: 'Yes, I mean, we do a lot of training now on these issues and it's something you get out to other tenants we're representing. We have various training courses on housing issues, equal opportunities, investment, budgetary matters and things like that, so I think we have gathered expertise in these areas. I mean, that can be my field in itself, knowing what part of the money is for what. (...) But the interesting thing is that we are people living in the houses, you know, and we know what is going on around about us and what people's needs are and no outside experts know all this. Some fellow that lives in Leeds somewhere, you know, in a five bedroom detached house, he can't tell me what, you know, what I need on my estate.'

T₃: 'And it's mainly a matter of us gaining knowledge while doing our everyday work, so it isn't only about us going to courses and learning from the experts, is it?' (22-09-98).

T: 'In a professional capacity, I'm grateful for [two KFTRA members], the workers in the office who do the admin work. They can work with computers and other administrative things and are specialists on this, but I can't do that. So I mean, there are a lot of other aspects of professionalism that we ourselves ignore in our work, you know. So I'm really grateful to them. And the fieldworkers, they do a lot of field research. We don't have the time to do the research that they do. So I think we're all contributing our share in one way or another.' (22-09-98).

This sample of quotations indicates that the KFTRA members did not typically rely on outside expertise in their everyday work, but they considered themselves to be the key experts on housing, which for them meant knowledge about living well in the Council properties. However, home energy was not singled out as a particular area of local expertise among the tenant representatives.

The Kirklees Housing Services Energy Unit has had direct contact with Kirklees Council tenants mainly through the Unit's energy advice and training activities. Although there are no formal criteria with regard to the Energy Unit's work priorities, the Energy Advisors try to keep track of the general state of the properties in different areas, and prioritise properties where modest resources have been spent earlier on housing improvements as well as properties with a generally poor standard. There are different requirements on the part of different tenants, but usually the priority of measures taken by the Housing Services is determined by the age of the properties as well as what technical appliances there are since the houses were built during different periods using different technology. The majority of requests put forward to the Energy Unit come from elderly people and people on benefits, but these people are also usually those with properties in the poorest condition. The Energy Unit also has social workers working for

them who deal with tenants in the tenants' homes, through which they can find out what people think about the Energy Unit's work and what they should be doing. (19-11-98).

According to some interviewed Energy Advisors, as of November 1998, it was also in the field of expert-tenant interface that the Energy Unit's major achievements had been made: by making people aware of energy efficiency and by helping them solve the energy related problems and improving the standard and comfort in tenants' properties:

R: 'I would like to ask you what you think are the major achievements on the part of the energy unit?'

E₁: 'Making people aware that energy efficiency is something that, you know, it's not something that is difficult to do. And to some degree we've broken down the barriers of understanding that there are things that you can do to reduce carbon dioxide emissions. (...). So education, really, and, I mean, every physical thing to do with tenants. We're there to help them solve the problems but also to educate them because they need energy advice on the things that they can do, and I can tell that they get interested you know. 'Oh really, gosh wow', and you get the impression that they are interested in that, and that when we've left, it's not all going to be forgotten. I'm sure there are things that will be forgotten, but you will have made them a bit more aware of energy issues and make them understand how they can reduce the energy costs and how they can help themselves keep warmer as well.'

E₂: 'Yeah, another major one is the amount of properties that have actually been improved since the start. I think there are more now. Thousands of rented properties have got improved insulation. So in five years we've insulated and cavity filled, draught proofed thousands of properties and we've also improved the heating. We've actually given people heating upstairs in the properties who haven't had it for 20 odd years.' (19-11-98).

However, the bulk of the information on tenants' needs and preferences with regard to home energy is provided to the Energy Unit by KFTRA. As noted earlier, the council-tenant collaboration on housing dates back to mid-1990s, when KFTRA and Housing Services formulated the ideas of an Affordable Warmth Strategy on the basis of identified council tenants' priorities of housing schemes. After having had rather low level of exchange of contact earlier (19-11-98, 22-09-98, 14-08-98), this collaboration has been gradually strengthened ever since (16-05-02, see e.g. Kirklees Housing 2001, and Kirklees Metropolitan Council 2000a) and has come to include a wide range of activities through which grass-roots tenants can get their voices heard at council level through KFTRA. The communication between KFTRA and the Kirklees Housing Services ranges from chatting an issue through with a group of housing managers and tenants' representatives, to formal meetings involving tenants' representatives, housing

managers and councillors. At the more formal level, KFTRA is one of the Energy Unit's partners in the ongoing work towards targeting the majority of energy efficiency and conservation investment within Council stock at properties with the least energy efficient rating, as well as towards exploring the potential in establishing leasing packages for energy efficiency and conservation improvements. (ibid: 24-26).

Despite the growing interaction between the Kirklees council and tenants in the housing sector, however, a review of recent documents reveals that KFTRA is not formally involved in other council-run energy related housing activities such as monitoring, promotion and advice, information and education or environmental validation of home energy schemes (ibid: 3-31). Instead, efforts in this field are mainly confined to the council's units of Planning, Energy and Environment, in conjunction with the EU and private sector bodies. Ongoing housing activities in the environmental arena include assessment of the potential of utilising renewable technology within Housing Improvements, implementation of an emissions inventory for the housing stock; meeting the Friends of the Earth's 30% CO₂ reduction target date of 2005 by making use of a database and by actual consumption monitoring to assess if the target has been met. (Kirklees Metropolitan Council 2000a:59-60).

There is further evidence that tenants have had less influence over, and collective interests in, home energy issues than many other aspects of housing. As pointed out in the previous section, a number of focus group participants, both non-active tenants as well as KFTRA members, had no personal experiences from dealing with Kirklees council energy experts and some of them did not know that such a unit existed. Irrespective of this, as illustrated below, most of the tenant representatives seemed to think energy services provided by the Energy Unit could be useful for tenants:

R: 'Have you come across this energy advice service provided by the Energy Unit before?'

Several: 'No.'

T₁: 'Well, I didn't know that such a unit exists. No I haven't heard about them. Not that I'm active in any way but seriously I didn't have a clue.'

T₂: 'I knew about them before.'

T₃: 'Me too.'

T₂: 'I had contact with the energy unit when I had problems with my old fridge and wanted to replace it with a new one. So they gave me advice on an energy efficient fridge and we had that installed. And it's good, so I was happy with their visit.'

(...)

R: 'Would you be willing to go to an energy course arranged by the unit, if they would start up again?'

Several: Yeah.

T₁: 'Yes, certainly.'

T₄: Even receiving energy information from them through the doors would be good.'

T₅: It's a huge problem here with old people who can't afford heating their homes. Perhaps they would benefit from that course as well.' (24-02-99).

One tenant representative offered the following explanation as to why there had been relatively low degree of tenant – Energy Unit interaction, which supports the argument of an energy officer regarding the heavy workload of Energy Unit staff, highlighted in 10.2.2:

T: 'I think with the current workload, the energy advisors probably have to focus on areas where there are huge problems, you know, like [an area in Kirklees]. They have a big problem with damp in their houses and they have condensation and things like that. So at the moment a lot of the work is about solving that, and there isn't much heat and there isn't much ventilation in the properties out there. I think that's where a lot of their energy services are concentrated on at the moment, in areas where they have specific problems. That's probably why we haven't got much of contact with them in our areas.' (22-09-98)

Apart from the collaboration with the Energy Unit, KFTRA's tenant representatives also interact with councillors on housing matters in various ways. One tenant representative described how the interaction with the councillors worked out satisfactorily through a bottom-up approach:

T: 'The councillors themselves, they are, I mean we forced them into these discussions on housing issues so therefore they become a tool for our use. You know, we feed our ideas to them and we tell them what we want on our estate, how we want our estate to be run and things like that. So they actually have to learn from us rather than vice versa, so it's rather bottom-up here really. And it all helps a great deal, but I don't think they had any training like us'. (22-09-98)

Even though a number of ordinary tenants saw a natural role for themselves in the assessment of various options of individual home energy schemes, as is evident from the following sequence, most of them felt that their technical competence was too limited to engage in technical decision-making and more hands-on work relating to these schemes:

R: 'Would you like to be involved in decisions concerning more technical issues of energy efficiency schemes or not?'

T₁: 'Well, once the contract is done, they get a contractor to show you what to do when it comes to using electricity appliances at home and all that basics. And that's fine with me. Now, if it's something like getting insights into the heating system itself, no I don't want to get involved in that.'

T₂: 'No, I wouldn't want to deal too much with the technical stuff myself.'

T₃: 'I think the gas heater would explode if I put it in place.'

T₁: 'There's so much you can do, but there's so much you can't. And you've got to work towards the best option for your family and take a stand as to what sort of heating you prefer and can afford and all that. But if you try and install appliances yourself for example, you could cause a lot of damage. You just got to try and see if there's something you can do in the meantime until they come and have it done for you. And that would be ideal, if it could be dealt with by the experts really.'

T₄: 'Plus you also got to remember that if you're a pensioner that will be even more difficult. They don't know what is going on really. My understanding is that as for heating, I just got a new heater put in and if it broke down, then they [the Energy Unit staff] can come down and see and have a look at the heating system. But if they gave me instructions by phone what to do, no chance. So I think you've got to really recognise people's limits.' (24-02-99).

In the other focus group with KFTRA representatives, the participants tended to be more in favour of tenant involvement in technical decisions as well as the actual physical work pertaining to home energy schemes:

R: 'Would you prefer to be involved in the technical decisions concerning the energy efficiency schemes or not?'

T₁: 'You see, this is such a technical issue really, I don't think many of us are familiar with the best options, what schemes to put in or how to do it. This is the energy people's role here. If they tell us, we listen to them.'

T₂: 'But ideally, they [the energy experts] can teach tenants to check their faulty meters and things like that.'

T₃: 'That's something that we're actually fighting for at the moment. I actually wrote that down as one of the ideals, tenants to be involved from the very beginning and in all details of the scheme. That's something that we all share and are working towards I think'.

(...)

T₄: 'But now we've all got central heating in our houses, but if we hadn't I think I'd want some more technical training myself so that I'd feel that I'm capable of understanding what everybody was telling me. You know, because at the moment I know we have a good system in but before it was put in I wouldn't have known the difference between a good one, or a bad one. So I think as tenants maybe we should be looking into getting more information about energy schemes.' (24-02-99).

To sum up, although the interviewed Energy Advisors as well as tenants generally had a positive attitude to the actual or imaginable home energy advice training activities, there was generally limited awareness among tenants about this council service, as well as modest resources on the part of the Kirklees Housing Services to deliver this service to all its tenants. It has also emerged that many Kirklees tenants have a consumer's orientation to home energy and do not usually think about energy efficiency in terms of environmental values. These circumstances pose challenges to the Unit's staff in their attempts to promote sustainable energy use in council properties as well as tenants' awareness of the environmental impacts of domestic energy use, in order to comply with the HECA requirements. On the other hand, while there appeared to be rather limited awareness of the very existence of the Energy Unit in the empirical study, recently strengthened partnership between the Unit and KFTRA suggests that there is and will be a larger scope for organised tenant participation in the local energy policy domain in the future. In terms of local versus outside expertise in housing, it has also become apparent that the tenant representatives tended to view themselves as the local experts on housing matters in general and hence they did not rely on outside experts for carrying out their work on the estates. However, in the more technical areas of home energy, tenants typically preferred expert advice and training in order to be confident in the assessment and decision-making of individual home energy schemes.

10.4. Recent developments and perspectives

After the empirical research for this study was undertaken in 1998 and 1999, there has been considerable progress made in the field of energy efficiency in Kirklees Council's housing stock (16-05-02). Perhaps the most significant improvement in terms of energy savings has been made over the last five years or so, in part due to the implementation of Affordable Warmth Strategy and Warm Homes Strategy. Between April 2000-March 2001, for example, the council could report on an average 2.52% improvement in energy efficiency for the housing sectors Owner/Occupied, Local Authority, Private Rented and Housing Associations, which corresponded to a total of 25,600 tonnes of reduction in CO₂ emissions over the year (Kirklees Housing 2001:10-11).

Achievements have also been made over the past few years in the field of energy scheme grants that are now available for individual Kirklees householders. The biggest scheme,

New Home Energy Efficiency Scheme (HEES) (for people receiving an income related benefits or disabled) and New HEES Plus (for people over 60 years) are both available to people seeking funds for heating and insulation investments in their homes. In late 2000, a new energy efficiency grant called Calderdale and Kirklees Energy Savers Scheme received £50,000 to provide home improvements for people in the area. Through this scheme, residents can apply for funds up to 25% to install insulation or improve heating systems through installation of condensing boilers worth up to £300. (Kirklees Housing 2001, app. 3). One person, who has received the grant, contended: 'Our house now feels much warmer and we expect to make savings on our fuel bills.' (Huddersfield Daily Examiner 2000). In addition, up to December 2000, 250 homeowners had benefited from cash back by having cavity wall insulation (120 homes), loft insulation (86) and/or replacement condensing boilers (122) installed. Apart from reducing the heating costs of the home, these initiatives represent lifetime savings of 6,000 tonnes of CO₂. (ibid). According to KFTRA, 'Housing's Energy Unit has put a lot of effort into getting a good take-up of these grants, targeting smaller homes that can get full central heating through HEES.' (KFTRA 2001:21).

In 2000, another £200,000 from the EU, the Kirklees Council and other energy bodies were committed to fund an EEAC over a three-year period. Through the EEAC, together with the Calderdale and Wakefield councils, Kirklees provides free energy efficiency advice specifically tailored to residents' own homes. An Environment Unit Officer envisaged that: '(t)hrough these actions we aim to meet our target for 10% of our energy to come from renewable sources by 2010. We hope other councils will follow suit.' (Parkins, 2000). According to a national newspaper, Kirklees Metropolitan Council's advocacy of solar energy has contributed to positioning the council as one of the championing UK authorities in the field of energy efficiency (Salma 2001).

During the past few years, the development has also enabled a higher degree of organised tenant participation in domestic energy policy matters through KFTRA. For example, together with Elected Members, Housing Services, Kirklees Energy Services and other council services, KFTRA was involved in the development of the Kirklees Domestic Energy Strategy, including a draft Fuel Poverty Strategy, expecting to set out a clear approach in developing activities for the coming five years to support reductions of fuel

poverty incidence and climate change within the Kirklees council. (Kirklees Housing, 2001:6).

As discussed in 10.2.2, the national Tenant Participation Compact has become a key instrument under which local authorities are required to formulate how tenants can be involved in decisions about their homes and estates. KFTRA has taken a proactive role in this initiative, both by developing a Tenant Participation Compact for Kirklees (as of 2000), by supporting other council's tenants in developing their Compacts as well as by responding to the DETR consultation process on Tenant Participation Compacts. Under this policy framework, councils are also required to produce a Best Value Performance Plan setting targets for improving their services. KFTRA has made sure that tenant priorities such as high quality repairs service, the maintenance of the estates, the cleaning and repairing of empty properties will be given priority in the Kirklees Council's Best Value Performance Plan for Housing. Other currently prioritised areas of KFTRA are housing investment plans and prioritising under-represented groups like young people and minority ethnic tenants. (KFTRA 2002).

During the past few years, KFTRA has become more engaged in the field of in-home energy efficiency than earlier. For example, in 2001, KFTRA's Housing Investment Working Group was heavily involved in the review of the Warm Homes Strategy, raising the need to focus on homes which cannot have their walls insulated and those with only partial warm-air central heating. Since 2000, a new database is being developed that will provide a lot more information about the energy efficiency of the homes and KFTRA hopes that this will help target resources for improvements in heating and insulation in tenants' homes. (KFTRA 2001:21).

In addition, in late 2000, the Energy Unit and KFTRA were planning to investigate the potential of establishing a network of local neighbourhood energy advisors, either based geographically or within the community. No progress was reported on this in the 2001 HECA progress report (Kirklees Metropolitan Council 2000a:54-57).

10.5. Conclusion

Over the past decade, the Housing Services Energy Unit's and KFTRA's relations have developed into a strong collaboration on housing, with an apparently large potential for citizen-expert interface in the field of domestic energy efficiency schemes at first sight. Besides the fact that the Kirklees Council has chosen to work closely with KFTRA in home energy matters, another favourable factor relates to the democratic nature of KFTRA's organisation that is based on extensive tenant involvement in housing planning and decision-making processes.

However, while there is convincing evidence that KFTRA has been successful in ensuring tenant participation in housing and community issues in general, considerably less attention appears to have been paid to the issues of energy efficiency and environmental impacts of housing than to social problems, maintenance of the estates and setting the rents. Although there is allegedly scope for tenant participation in the technology assessment of energy efficiency schemes within the council's properties (19-11-98, 08-06-98), in this research there is little evidence that the local tenants have actually participated in the overall environmental policy framework of these matters. In this respect, the interviewed tenants did not appear to consider themselves to have any expertise in home energy schemes and the associated climate change debate, nor did they claim any influential role over these domains: their orientation was essentially that of energy consumers rather than local experts in, or citizens claiming their rights to participate in assessments and decision-making on, domestic energy policy issues. Rather, their own notion of local expertise on housing related to living well in the council properties and it was also in this area that they through KFTRA played an active role in the housing policy formulation and implementation.

Thus, in terms of local expertise and rationale for citizen participation in technical assessment of environmental policy-making, the findings of the Kirklees study differ from those of the researched Swedish housing activities. Unlike in the Kirklees case, a large proportion of the Understenshöjden residents were enthusiastic about the eco-housing construction idea on environmental-ideological grounds (as well as living comfortably and healthy) and considered themselves to be experts on ecological housing matters. The Understenshöjden residents also came to play a crucial role in the design

and construction of the eco-village as well as in the environmental housing policy debate at national level. Also the Trekanten study differs from the Kirklees case in this respect, mainly in terms of the local perspectives of expert knowledge on housing. From the Trekanten study, we learned that the tenants who were engaged by the real estate company in the (environmental) reconstruction of their estate did not really consider themselves to possess local expertise on relevant matters. However, in the Trekanten case, there was a prevalent feeling among local tenants that they had a right to share outside expertise to validate the best options of housing reconstruction, including environmental impacts of construction and home energy, on the basis of the local people's concerns and needs. This contrasts with the perspectives of the Kirklees tenants, who typically considered themselves to be local experts on housing matters in general, but did not endorse the environmental arguments of energy efficiency to a notable degree.

More recently, progress has been made in terms of providing council grants to individual Kirklees residents seeking energy efficient measures for their homes. This has contributed to some reductions of CO₂ emissions from the council's housing stock as well as improvement of standard and comfort in the homes (16-05-02, Kirklees Housing 2001). In addition, the collaboration between Kirklees Housing Services and KFTRA has consolidated since this research was carried out in 1998-1999, and this is a promising step towards increased home energy efficiency and climate change reductions on the part of the council, as well as increased comfort and standard of living on the part of the tenants. Even if Kirklees tenants will not come to play a more active role in the technical assessment and decision-making of home energy schemes in the near future, given the Kirklees Council's apparent advocacy of domestic energy efficiency measures there still appears to be prospects for meeting the national and local energy and climate policy targets in the area.

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11. Conclusion

The preceding chapters have explored how citizen participation has come to play a significant role in the policy debates, with particular focus on the sustainable development process. Through a case study approach, complemented with a literature review, I have attempted to highlight the existing experiences of five cases of transport and housing initiatives in Sweden and the UK, which all have adopted a participatory approach to technical assessment of local environmental policy. By doing this, I want to contribute to a better understanding of the potential for citizen participation in relatively technical facets of environmental policy formation and implementation in the wake of Agenda 21.

Both in the theoretical and the empirical chapters, it has been argued that participation in decision-making for environmental management is appropriate for a number of reasons: it provides more equitable means of planning and implementing policies and programmes and a greater likelihood that the outcome is sustained: by serving as a means of quality assurance; by improving local awareness of and commitment to sustainable development; and by incorporating the diverse range of human values, local knowledges and individual agendas at an early stage. Moreover, a better collaborative relationship between experts and lay people plays an important role in a pragmatic sense, by legitimating policy and decision-making, and is likely to result in improved mutual understanding and learning of each other's perspectives and sharing of expertise. Thus it is from the understanding that citizen participation is desirable for good governance of sustainable development, that I will revisit and conclude the main findings of the previous discussion.

11.1. *Main theoretical findings*

In the theoretical chapters of part I, I have discussed the main arguments in favour of citizen participation, in particular those that apply to local environmental initiatives in support of sustainable development. More specifically, in chapter 2, I highlighted how the concepts of participation and citizenship emerged historically, from the first applications in the ancient Greece up to the era of global environmental agreements by

the turn of the 21st century. I uncovered the basic elements of the multiple meanings of and scope for public participation and argued that the ambiguity of objectives and programmes pursued under the banner public or citizen participation has resulted in different interpretations of the nature of, and extent to which it should be promoted in society. Traditionally, more conventional, top-down approaches have been adopted typically without achieving meaningful public involvement in the matters. Often, there may have been genuine intentions to involve the public in the concerned programmes, but in many cases such conventional methods have been applied as mere tokenism, to legitimate decisions by outside expertise and policy-makers and to promote status quo. Despite the conceptual and interpretative problems, today there is a growing recognition and understanding of the benefits of genuine public involvement in decision-making.

In recent years, a number of different arguments have emerged for public engagement in environmental management initiatives. The role of and rationale behind citizen participation in decision-making in science and policy spheres, as well as the ideas about the extent to which lay people should be involved in these matters, vary greatly across different commentators. In chapter 3, I distinguished between the three most common perspectives on participation that are apparent in the contemporary science and policy discourse. Adherents of the perspective of *participation as a democratic goal* claim that citizens have the right, and should be given the opportunity, to have a say in matters that concern them, even if these matters are so technical that they have commonly been delegated to experts and officials. Moreover, advocates of the participatory democracy approach often stress the issue of fairness and the critical educative role that participation has for citizens. The second category refers to *participation for the sake of quality assurance through extended peer reviews*. This perspective suggests that an extended peer community is required in post-normal scientific matters, i.e. cases of extreme uncertainty in scientific knowledge and methods, or cases where the stakes are exceptionally high. Thus, the rationale for participation arises not out of concerns for knowledge generation, political equality or education among ordinary citizens *per se*, but in order to ensure quality assurance in science for policy-making. A third perspective emphasises *participation for the sake of knowledge generation in science and policy spheres*. This approach suggests that ordinary citizens may have access to local lay knowledge that is unfamiliar to authorised expert communities and hence they possess expertise in the contexts of their local experience and discourse, which is valuable for the

production of scientific knowledge and policies. Notwithstanding the differences between the three perspectives, together they reinforce the appeals to participation in science and technology assessment for sustainable development.

In chapter 4, I discussed how participation has emerged in the environmental politics debate and how it was endorsed and practised during the late 20th century. More specifically, I described the emergence of the sustainable development approach, arguing that the term sustainable development has come to be widely associated with the 1987 WCED report *Our Common Future* as it used a broader understanding and systematic analysis of the concept of sustainable development than previously. Further, I explored how participation was endorsed at the Earth Summit in Rio, and how it has come to gain an unprecedented status in the sustainable development process in the wake of Agenda 21 (A21).

11.2. Main empirical findings

For the empirical study, highlighted in part II of the thesis, I have sought to identify the most promising cases of two urban regions in Sweden and the UK, where local citizens and authorities attempt to collaborate in the assessment and decision-making on relatively technical aspects of local environmental housing and transport policy. As much of the rhetoric and the actual environmental work in Sweden and the UK are heavily based upon the A21 principles, one could assume that the most promising examples of activities with a participatory dimension in the more technical areas would be Local Agenda (LA) 21 activities. Interestingly, however, this turned out not to be the case in my study. Instead, all the five selected activities were launched quite independently of the LA21 processes in the respective areas, although some of them, Understenshöjden, Stockholms Bilpool and Kirklees, have been loosely linked to the LA21 process afterwards. This suggests that the claims for participation following UNCED have spread outside the boundaries of the existing LA21 frameworks in these regions, and that there is an uptake of participatory claims and practices in local authorities' everyday work.

Although all five cases match my selection criteria, they are quite different from one another in many ways: they all relate to environmental-oriented transport or housing issues, but differ in terms of organisational and management structures, participatory

methods, stakeholders, policy framework, implementation procedures and nature of collaboration. Yet, together they provide an indication of the various obstacles likely to be encountered when pursuing a participatory approach to (environmental) science and technology domains that deserves some attention below.

The following discussion considers the empirical experiences in terms of nature of and opportunities for participation; barriers to citizen participation in technical assessment; as well as its impact on the local environmental housing or transport policy. I further discuss the empirical cases in relation to the three theoretical perspectives of participation, highlighted in chapter 3. This is followed by a brief concluding discussion of the potential for participation and its future challenges. Table 1 and 2 are intended to support the analysis of the researched activities. For ease of exposition, below I refer to the cases simply as the ‘Leeds’, (or ‘Leeds/York’, when referring to the cases as one single air quality management initiative, and ‘Leeds/Otley’ when referring to the specific experiences of Otley town in the Leeds area), ‘Kirklees’, ‘York’, ‘Stockholms Bilpool’, ‘Trekanten’ and ‘Understenshöjden’ initiatives.

11.2.1. Nature of and opportunities for participation

Three of the five initiatives, Leeds/York, Kirklees and Trekanten, were launched by local government (in the latter case by a government-owned real estate company). In Kirklees, public participation in home energy policy matters is largely enabled through membership in Kirklees Federation of Tenants and Residents Associations (KFTRA). Through extensive collaboration with local authorities such as the Energy Unit, coupled with a democratic structure and policy framework, KFTRA is well equipped to maintain a high degree of tenant involvement in a wide range of housing and community policy matters. However, the study showed that, compared to other issues, there has been limited collective priority given to the issue of home energy policy, and that individual tenants were largely unaware of the energy training as well as the Kirklees Council’s attempts to meet the environmental targets through tenant involvement in home energy efficiency schemes. Nor did tenants claim any local expertise in, or influence over, energy and climate change policies of housing matters: their main orientation was typically that of energy consumers rather than stakeholders in (environmental) policy-making procedures. Although there appears to be growing local involvement in home energy policy-making efforts on the part of KFTRA representatives in recent years, the

empirical study suggests that there are opportunities for tenant participation in environmental aspects of home energy efficiency but limited interest in it on the part of Kirklees tenants.

In the other officially government-based cases, Leeds/York and Trekanten, information dissemination and awareness raising exercises were regarded as important elements in promoting public involvement in the concerned activity. Only in the Trekanten project did a large proportion of the local tenants respond enthusiastically to the project team's calls for tenant participation (in York, there was a fair degree of citizen involvement, but far from the same share of the population as in Trekanten). Compared to the Leeds/York initiative, it is perhaps not so surprising that the Trekanten tenants were committed to participating, since the housing reconstruction and environmental improvements of their block of flats concerned their own living environment and hence the local action would benefit them personally. On the other hand, the project did not manage to promote a high degree of participation in the assessment and decision-making throughout the implementation process, largely because tenants' involvement and commitments were undermined due to lack of uptake of tenants' preferences into decision-making. Accordingly, the initially high level of participation declined gradually and often left tenants dissatisfied, frustrated and cynical about the management team's genuine intentions with the alleged bottom-up approach in the first place. In contrast to the Kirklees case, however, the Trekanten study indicates that there were indeed good prospects of local participation originally, as there were both opportunities for, and considerable interests in, involvement in the validation of expert knowledge on environment-oriented housing policy options among tenants.

It thus appears that participatory skills and ambitions as well as the employment of an adequate participatory approach are critical for achieving effective and fair implementation outcomes. The Trekanten example clearly showed how a public commitment and involvement can be lost due to lack of managerial and methodological skills on the part of outside stakeholders. The related problem in Kirklees was primarily lack of human and financial resources to engage local tenants in the home energy efficiency training exercises.

The Leeds example illustrates that a more traditional information provider approach does not suffice to engage citizens in technical matters such as air quality, where the risks and problems tend to be conceived as remote, delayed, complex and diffuse to large segments of the population. Despite the rich flow of expert information to the wider public, the citizens hardly responded at all to the council's request for public feedback on the air quality management initiative. Presumably, this was because the technical reports were considered too complex to read or comprehend, there was simply no obvious incentive for local people to get involved, and perhaps it was not thought of as an issue of primary concern to many of them. On the other hand, and somewhat ironically perhaps, the example of the Otley community challenges the public apathy perspective suggested by the Leeds council experts. Through their Community Involvement Team, Otley citizens had expressed concerns about the poor air quality long before they became aware of the Leeds Council's air quality management activity. Accordingly, they saw the council initiative as a good opportunity to get the local authorities to act on the perceived transport problems in and around the town. Thus, there was a commonly perceived local need for action to combat transport and air pollution problems in the area, which became the driving force in the local engagement in local air quality assessment. In addition, there was a well-established local community forum in place where the issues could be articulated and channelled in a more organised way to Leeds Council officers. Had there been a better approach to reach out to the wider Leeds community, it is likely the council would have been more successful in getting the required public feedback from citizens in also those areas that were mostly affected by poor air quality, just the way the City of York Council did.

The York case illustrates an example where a local authority has managed to involve local citizens to a fair degree in technical matters of local transport policy. In the study, it appeared that this was mainly a result of a successful combination of access to outside researchers' participatory expertise and techniques, access to external funding, along with the Council's commitment to public consultation. However, a deeper look at the York initiative indicates that the use of an effective participatory method was not the result of the City of York Council's own devised approach, but rather an outcome of the council commissioning a research team to carry out the participatory work at arm's length from the council. In this respect, the key to success appeared to be the employment of well-tried participatory techniques and in-house modelling expertise that

enabled citizen assessment of science-based maps reflecting their local knowledges and values in a way that would just not be possible through the application of more conventional participatory methods. Thus the York case is a good example how a (local) authority can draw on experiences from earlier relevant participatory research efforts and existing expertise when conducting participatory exercises in technical matters of local environmental policy with effective outcomes.

In terms of nature of and opportunities for participation, there appears to be a number of similarities between the two locally initiated activities, Stockholms Bilpool and Understenshöjden. First, there was a large scope and opportunities for participation in technical decision-making procedures of local housing or transport issues, although the Understenshöjden residents faced difficulties maintaining their high level of control over the implementation process. In both cases, there was a remarkably high level of local commitment and involvement right from the beginning and only to some extent did this decline in course of time. In both examples, the instigators were driven by environmental concerns, but clearly there were also expected personal benefits from participating, in terms of improving their own quality of life in the transport or housing spheres. Stockholms Bilpool basically attracted citizens who sought alternatives to travelling, which meant cheaper, more convenient and environment-friendly modes of transport, while Understenshöjden residents-to-be sought alternative ways of living, in healthy, eco-friendly properties within the city but as rural as possible. Not only were local prime movers in both cases crucial for the establishment of an internal organisation based on democratic principles as well as the implementation of the activities, they also came to greatly influence the other local people's attitudes and commitments in a positive manner. Yet, besides the undertaking of compulsory work tasks, not even in these locally based initiatives has there been 'full participation' among the local citizens.

Another important variable for the effectiveness of local participation in the two initiatives relates to the internal, democratic organisational structure with mandatory membership in working group activities. This not only ensured more or less full participation in technology assessment procedures and more proportionally divided workload amongst the group members, it also helped the local people to validate and compare experiences and values, accumulate local knowledges as well as scientific and technical accounts. In Understenshöjden, it also allowed the residents-to-be to be well

prepared for, and have confidence in, the sometimes heated debates with the concerned local authorities and the building commissioner.

In both activities, the local citizens came to possess considerably more local expertise in car-sharing or ecological housing issues than most other stakeholders in the field. The high degree of local expertise in organisation and management of ecological housing or transport matters appears to have been more critical for the achievements made in these citizen-based initiatives than in the government-based activities. In Understenhöjden, the very existence of local technically skilled and interested residents-to-be was crucial for the employment of innovative technology design and construction techniques. With respect to Stockholms Bilpool, local expertise has proved central in building up the organisational structure and managerial skills and in transforming the organisation into a buoyant car-sharing initiative. This is largely because there were limited experiences of carsharing efforts in Sweden at the time. Consequently, the association has become attractive to many other citizens who seek alternatives to conventional car ownership, which has led to a considerable expansion in terms of membership and vehicles in a few years time.

In sum, the empirical study suggests that there are certain preconditions that favour citizen participation in technical assessment of local environmental policy (and many of these conditions are applicable to other issues as well). First, in order to encourage and maintain a high level of citizen participation, there should be a commonly perceived need and common interests among local citizens to work towards a specific goal. The envisaged benefits of concerned individuals must outweigh the costs of their involvement in the initiative. Clearly, there are better prospects for participatory exercises to bear fruit if the local people will gain personally and directly from being involved. These conditions were, to a varying degree, present in the Trekanten, Otley, Understenhöjden and Stockholms Bilpool efforts. In the two latter cases, it certainly helped a great deal that the local people possessed technical knowledge in relevant issues, especially as the activities were of experimental character, including the testing out of innovative technology design and construction techniques. This was particularly important as they sought to stay rather independent from external stakeholder involvement.

However, from the case study it has also emerged that local conditions such as a local thrust, knowledges and an adequate internal organisational and management structure are not sufficient in order to achieve meaningful public participation in technical assessment processes. Equally important, perhaps, the employment of a participatory approach that gives citizens control over the planning and implementation processes is another important determinant for a successful implementation outcome. Preferably, the stakeholders, both local, experts and policy-makers, should have a shared understanding, ambition, capacity, management, and knowledge to manage to implement the intended tasks. In addition, participation should be promoted throughout the assessment and decision-making process, from the beginning to the end. Citizen participation, which may be intense when the participatory process is developed, fades gradually if the common understanding of intentions and goals do not materialise. These methodological considerations appear most relevant for initiatives that are imposed by external stakeholders.

In addition, it has emerged that in all researched cases, there were opportunities for local learning about relatively technical aspects of environmental policy options and for assessing these options and their likely consequences using local lay preferences, values and knowledges. The extent varies though, ranging from high or relatively high in the Understenshöjden, Trekanten, York, and Stockholms Bilpool initiatives, to a somewhat lower extent in Kirklees and Leeds. In the first category, the opportunities for citizen participation in technical assessment were largely enabled by local people in the Stockholms Bilpool and Understenshöjden cases, and by the local governments in the case of Trekanten and York. In the latter category, including the Leeds and Kirklees cases, the limits to the opportunities were not because of obstruction due to lack of will on the part of the concerned authorities. Rather, the problem appeared to be misguided attempts (Leeds) and lack of resources (Kirklees) to enable citizen assessment through an open-ended and informative dialogue between experts and lay people, which could enable citizens to comprehend and validate the scientific information using their local knowledges and values in a permissive fashion.

11.2.2. Barriers to participation in technical assessment

Participation in technical assessment for sustainability is an appropriate and realistic goal, but this is not to claim that it is an easy route to explore. Although there may be

good opportunities for public assessment of technical matters of environment-oriented transport and housing policies, the empirical study has illustrated how external structural barriers may hamper such efforts at an early stage. For this reason, it seems important that those intending to involve local citizens in decision-making processes are aware of the difficulties that are likely to occur if the initiative has not been preceded by careful planning and sharing of experiences from other similar ventures. Below I will uncover some apparent obstacles to participation that has emerged in the case study.

From all the researched cases, it appears that citizen participation is less straightforward than may appear at first sight. Conversely, it has proven to be a time-consuming and energy demanding exercise, which means that a lot of financial and human resources will be devoted to the collaborative process, even long before the policy formation and implementation phases take place. This was the case also in more successful participatory activities such as Stockholms' Bilpool, York and Understenshöjden. In York and Understenshöjden, for example, in spite of successful participatory outcome, the processes proved more costly, time-consuming and complex than several stakeholders had imagined beforehand. However, rather than dismissing participatory approaches to environmental management and policy-making because of the apparent risks of encountering difficulties in the short term, it is wise to consider how such obstacles to the participatory process could be avoided or minimised from the outset.

As experienced primarily in Understenshöjden and during the later phase of the Trekanten project, citizen-expert collaboration typically means that interests multiply, which in turn is likely to generate conflict over matters. In Understenshöjden, occasional disputes typically emerged between outside experts and local residents, over whether to employ more conventional construction techniques, advocated by the building contractors, or innovative technology options, which were preferred by the local residents-to-be. In addition, it appeared that the residents encountered resistance from involved experts and authorities because the latter group perceived their authority to be threatened and their professional expertise to be questioned when the local people claimed their right to take their own decisions on technology design and construction options. In Trekanten, there was some friction between the management team and tenants when the tenants felt that their preferences were partly disregarded in the decision-

making process. In both cases, the problematic relationship contributed to a widespread local mistrust in the concerned experts' attitudes and work procedures.

Already in the previous section, I highlighted the need for careful selection and adoption of an appropriate participatory approach for effective and fair policy outcomes. In two of the three government-based initiatives, Trekanten and Leeds/Otley, the applied participatory methods proved inadequate to achieve meaningful public involvement in, and influence over, the policy-making process, despite there being local interest and public engagement in the issues. It is already widely recognised in science and technology studies that public participation in technical matters such as air quality issues, require much more than the traditional techniques, such as consultation in an ordinary sense, information dissemination and questionnaire surveys, can offer. Given the complex nature of the issue, if seeking a participatory approach, these methods do not suffice to give lay people control over the assessment process, but rather they can serve as good complementary tools during the follow-up phase, for example by allowing cross-checking of findings and an indicative sample of respondents to become more representative of a larger population. The York initiative is a good example of how different participatory methods have been combined in a useful way.

Thus the need for realistic ambitions and plans for participation appears to be even more relevant to science and technology matters, which require a high knowledge base among the stakeholders, and where there is little or no tradition and experience of previous expert-lay interface. In such cases, outside experts may be particularly unwilling to yield some of their power and responsibilities to the local citizens, or in any other respect appear ignorant of the local lay knowledges, values and concerns. Moreover, the technical nature and the perceived remoteness of the issue of concern may put many non-experts off, or they may simply ignore them, which appeared to be the case in the Kirklees initiative. Quite possibly, this perception also applied to the larger population of the Leeds community since so few people responded to the council's request for citizen input into the review and assessment exercise. The case study suggests that these problems can often be avoided if the participatory exercise is carefully planned, and adequate participatory methods are applied allowing lay people to deliberate on the issues in an interactive, open-ended and permissive dialogue with experts.

Another important issue to consider is the degree to which participation can realistically be aspired to in the process. As we learned above, even with the best intentions, skills and resources, achieving full, i.e. 100 per cent involvement of local citizens, appears to be an unrealistic goal. There will always be people who are unwilling to give, or incapable of giving, their time and energy to voluntary commitments that are beyond their everyday duties. Those who feel they have some professional knowledge tend to be more committed because they have particular interests in the issues concerned and feel that they can contribute productively. This was most evident in the Trekanten, Understenshöjden and Stockholms Bilpool activities. Even in the two latter citizen-based initiatives, the efforts of a core team of skilled and committed enthusiasts were indeed critical for the realisation of the ecological residential area and the car-sharing organisation. The tenants of the Trekanten flats were not characterized by such ambitions: here people already living in the block of flats decided whether or not to engage in a local environmental housing project that was basically imposed on them. It is hardly surprising therefore that the residents-to-be in Understenshöjden endured time delays, technological problems and resistance from outsiders to a greater extent than the Trekanten tenants did. Yet, the fact that the Trekanten tenants were motivated to get actively involved in the first place was because they themselves felt they would benefit personally from the outcome of the project. In other cases, like in Kirklees, the absence of citizen involvement may also result from people being largely unaware of their opportunities to provide input into environmental assessment processes.

It has also emerged that existing policies and legislation may serve as yet another barrier to citizen participation in the environmental policy-making and management spheres. The Leeds/Otley case suggested that the undermining of the local government authority in relation to Central Government power may inhibit the collaborative relationship between citizens and the local authority. In the Stockholms Bilpool study, it appeared that current local transport policies of City of Stockholm discriminated against carsharing members as opposed to private car users. Equally, a number of legal as well as economic barriers hamper locally initiated Swedish eco-village communities, and some of these have directly affected Understenshöjden in a negative sense.

11.2.3. Impact on local environmental policy

Although local citizens in the researched cases provided a broad range of more or less policy relevant insights, this fact does not guarantee that there is an uptake of lay knowledges and preferences into the existing policy frameworks. Sometimes it was not even a primary goal of the local people, as the study of the two citizen-based activities, Stockholms Bilpool and Understenshöjden clearly indicated. Rather, such policy impact outcomes were chiefly a product of citizens' attempts to implement their everyday tasks within the framework of the respective activity.

The actual degree of impact on local environmental-oriented housing and transport policies that can be ascribed to citizen involvement varies greatly between the five empirical cases. The most influential activities are Understenshöjden and York, and the least ones are Leeds and Kirklees. In York, the citizens who participated in the Citizen Consultation Group process contributed to the development of a citizen-based map of an Air Quality Management Area (AQMA). Together with the two scientific maps, the citizen-based map became subject to voting in a leaflet survey among a larger sample of the York population. The survey found that 64% of the citizens and 49% of the business respondents voted for the citizens' map, which clearly demonstrates that the Citizen Consultation Group participants' views and experiences of local air quality represented the typical York citizen's views and experiences much more accurately than the scientific maps did. In addition, it confirmed that most citizens preferred a bigger AQMA than the scientific based results had suggested. This map was also the one that came to be declared an AQMA for the York area by the Council. Thus, the York case serves as a good example of an initiative where local citizens' preferences and knowledges have greatly influenced the future local transport action plans and policies.

The Understenshöjden eco-village serves as another example in which local citizens have contributed a fair degree to local environmental policy-making on technical issues. Without primary ambitions in influencing policy-making procedures, the residents have assisted in the evaluation process of national environmental-oriented housing by contributing their values, analytical assumptions and local knowledge. Hence the residents have brought a broader set of knowledge, views and concerns into the validation process than has been common practice in the Swedish building industry before.

Following the early LA21 support and interface, the Stockholms Bilpool members have chosen to remain largely independent from outside policy-makers and expertise. Given the general success of the initiative, its role as a model for other carsharing efforts, and the indirect impacts on the transport and parking situation in the city district, one could assume that Stockholms Bilpool would have come to influence the local policy formulation and implementation to a greater extent than has been the case. However, the limited exchange with policy-making instances has resulted in relatively limited impact on the City of Stockholm's current transport policies and strategy. There is only one concrete example where members have attempted to make suggestions to policy-makers for a revised parking strategy for the City of Stockholm. There are some indications that local policy-makers have considered adopting new parking policies that do not discriminate against carsharing services, but there is no evidence that this is a direct outcome of Stockholms Bilpool members' efforts.

The experience of Leeds/Otley was of a different character. Despite extensive local action to address the perceived problem of poor air quality in and around Otley town, the citizens did not manage to influence the overall transport policy outcome. Although there were signs of expert uptake of citizens' preferences through the redoing of the monitoring in the locality, this never changed the final outcome of the air quality review process, nor did it result in reconsideration of local transport policy measures. Even if declaring an AQMA in Otley was not formally possible within the framework of this particular project, and despite that other policy options are hindered by the lack of political authority at the council level, the question remains whether Leeds City Council could have done something to address the citizens' concerns about poor air quality in the area.

There is little evidence that the Trekanten environmental housing project has resulted in tangible impact on local environmental housing policy-making in the Stockholm Region in general and in Svenska Bostäder initiatives in particular. However, it is premature to assess whether and how Svenska Bostäder will consider the lessons learnt from the Trekanten project in their future environmental housing activities.

The Kirklees study found that council tenants traditionally have had little impact on local environmental policies of home energy schemes. The main reason appears to be tenants'

general lack of concern and interest in, and awareness of the opportunities for local involvement in, environmental assessment of home energy efficiency matters. However, more recent policy documents reveals that the collaboration between Kirklees Council and KFTRA has consolidated since the empirical study was undertaken, and that there now appears to be better prospects for organised tenant participation in home energy schemes, albeit not in the environmental field. This development appears to be a promising step towards increased home energy efficiency and towards meeting the climate change reductions for the area.

In sum, it has emerged that, although there are opportunities for local assessment of expert knowledge in all the researched cases, in most cases there appears to be limits to the degree of policy impact that can be ascribed to the participatory exercise.

11.2.4. Application of participatory perspectives to empirical cases

As highlighted in part 1, many arguments have emerged for encouraging public participation in the sustainable development field. In chapter 3, I considered three main perspectives of participation that are apparent in the contemporary science and policy debate. Below I discuss how well the case studies comply with these different ideas on participation, as well as the relevance of different ideas on participation to science and technology policy for environmental management.

The Trekanten project was mainly launched as a pilot project with the aim of trying out a democratic bottom-up approach towards a participatory culture in housing matters, and thereby comply with the company's newly adopted environmental profile. There were also some rhetorical arguments about the need for incorporating local knowledges into the testing of new technology in older house settings and more generally in the implementation process, but there is little evidence that this argument was embraced in reality. Accordingly, there is applicability to the perspective participation as a democratic goal.

In Kirklees, tenant participation in home energy schemes is sought to provide electricity and heating that is acceptable to as many council tenants as possible in the area, while working towards the realisation of the targeted 30% energy reduction in the district. Thus the main ambition at council level is to raise awareness of energy efficiency and its

environmental implications in order to bring about public response to climate change targets in the housing sector. There is also an explicit goal to identify tenants concerns and priorities as to relevant energy efficiency strategies and to improve the standard and comfort in the council properties. However, this appears to have less to do with interest in getting access to local knowledge than to gain public assent to the council's home energy services. KFTRA highlights the democratic principles of tenant involvement in housing matters at community level. Thus, there is relevance to the democratic principles of participation both on the part of KFTRA, and indirectly through the council's educational approach.

In Understenshöjden, the basic ideology of the eco-village was grounded on principles of democracy, bottom-up and collective spirit of eco-housing. This is evident from the organisational and management structure that has been instrumental for the involvement of residents-to-be in collective decision-making as well as individual decision-making, and equal division of workload. Another important nucleus among the residents-to-be was to promote the generation of local knowledge on experimental housing technology, in order to be able to validate the best technology design and construction options on the basis of local values and preferences. Another aspect of this was to be able to stay rather independent from outside expertise and maintain control over the decision-making processes. This indicates that there is relevance both to the participatory democracy rationale as well as the rationale for lay participation for the sake of knowledge generation in science and policy domains.

The Leeds and York initiative is the only example that lends empirical support to the approach highlighting the requirements of lay participation in the extended peer review process for the sake of quality assurance. This is also the only empirical case (or cases), which more directly relates to the issue of (technical and methodological) systems uncertainty of environmental risks and problems: the air quality management initiative attempts to predict future levels and distribution of local airborne pollutants that are likely to cause environmental and health problems, but the applied technical tools are only capable of developing course estimates. Although the participatory review and assessment process drew on scientific model output, it was recognised that the decisions cannot be made on technical grounds alone, hence the local citizens were granted a role in this review and assessment process of the scientific data on local air quality. The

uncertainty and decisions stakes aspects of local air quality management were more explicit in York, where there was political debate about the issue of AQMA boundaries, and the council produced two scientific maps indicating two possible areas. In both areas, there was some interest in tapping local knowledges about the situation of air quality in the local areas, but the main purpose appeared to be the legitimatisation of, and assent to, adopting local air quality policies and regulations among the wider public. In this respect, there is some relevance to the perspective emphasising lay participation for the sake of knowledge generation. In Leeds, there is some application to participatory democracy in a narrow sense, since the main argument for public consultation was the need for enhanced local lay awareness in order to bring about better transport behaviour.

Since its inception, the Stockholms Bilpool initiative has fundamentally been based on democratic principles, characterised by co-operative ideas of organisation, proportionally divided workload and distribution of power. One of the main participatory goals is to generate and draw on local expertise in managing the carsharing initiative, but also more specifically in validating innovative technical options of carsharing matters, due to the limited experiences and expertise in the field. Accordingly, there is relevance both to the participatory democracy approach as well as the lay participation for the sake of knowledge generation approach.

Thus it follows that the rationales for participation in four of the five empirical cases are most directly associated with the democratic arguments of citizen participation in environmental policy-making. However, with regard to the government-based activities, it appears to be characterization of democracy in a narrow sense, stressing the educational role of participation rather than the rights of citizens to influence decision-making processes. Among the three government-based activities, there appears to be modest empirical relevance to the perspective advocating lay participation for the sake of knowledge generation in science and policy domains. Interestingly, however, in the two citizen-based initiatives, Stockholms Bilpool and Understenshöjden, the approaches to citizen participation are based on the principles of both democracy in a wide sense, as well as local knowledge generation for the purpose of local management and technical validation of ecological housing and carsharing options. Of all cases, only the Leeds and York initiatives fit well with the extended peer review approach.

The logical conclusion of this seems to be that the *raison d'être* of public participation in technical issues of local environmental policy, practised in the government-initiated case studies, is primarily to raise awareness among citizens to bring about changed lifestyles and sustainable behaviour among the wider public, and hence comply with obligations under existing environmental policy frameworks at all levels, as well as to gain public assent to such policies. On the other hand, there is little talk and recognition of the complexity and richness of citizens' perspectives and the contributions of local lay knowledge for the purpose of effective and more accurate policy formulation and implementation. In the citizen-based cases, the impetus of the participatory approach is characterised by claims for democratic rights to a participatory role, as well as recognition of local capacities and competences in the field of (technical) knowledge generation and access among themselves.

As has been argued throughout this thesis, all three perspectives are appropriate for exploring participation in policy-making on a more general level. However, when participation is explored in the field of science and technology policy for sustainable development, a wider recognition of the benefits of lay involvement seems to be required where local citizens' knowledges and perspectives are recognised and incorporated in the policy and decision-making processes. In this light, I propose a Public Understanding of Science (PUS) related and softer form of constructivist approach to environmental policy and management, where a collaborative relationship between scientific experts and lay people is established and where both groups' expertise are mutually recognised and utilised. On the basis of the case study, it appears that such an approach would require a shift of balance from expert authority towards citizen control over the participatory process (including the lay-expert interface). I do not claim that, in order for participatory approaches to sustainable development to become effective and fair, they need to score on all three different types of rationale for participation. However, those cases where citizen participation have proved more effective and fair in sustainable housing and transport policy issues all in one way or another appeal to lay involvement for the purpose of knowledge generation or quality assurance in science and policy domains. The most common rationale for participation, participation as a democratic goal, appears to be legitimately targeted in all policy related issues. Despite such widespread appeals to participatory democracy for sustainable development, this study suggests that this

rationale appears insufficient in the more technical sphere, and should therefore be complemented with either or both of the other two types of rationales.

11.2.5. Citizen participation: potentials and future challenges

Ten years after the endorsement of Agenda 21, there appear to be relatively poor overall conditions for citizen participation in technical matters of environmental policy in Sweden and UK, despite that both countries have enthusiastically endorsed participation in the sustainable development process. In the empirical study, this was evidenced in terms of embracement of inappropriate participatory approaches; lack of managerial skills; inadequate policy and legislation; and flawed institutional practices.

Notwithstanding the negative consequences that such external factors have for participation, in this study it has emerged that local lay people, if given the opportunity and inclined to take it, are indeed capable of validating relatively technical matters of environmental housing and transport policy. In other words, given effective participatory practices and a genuine will to co-operate, there is a good potential for democratisation of expertise in the process towards global environmental management. However, for experts and policy-makers seeking to involve lay people in such processes, it is critical to ensure that there is a local need and interest in the issues; that appropriate participatory methods are applied and the process is carefully prepared; and that there are genuine intentions to promote local participation throughout the entire project life. With regard to citizen-based initiatives, it is important for outside stakeholders to offer required institutional support and expertise, while accepting that the local citizens have control over the planning and implementation processes.

The study further illustrates that the involved lay people are often willing to share expert knowledge on environmental policy options in order to assess these options and their likely consequences using their local lay knowledge, preferences and values. However, many citizens are strongly concerned about the way in which the scientific information is conveyed to them. Typically they want to have control over the process through which they obtain access to expert knowledge that it is well tailored to their needs. Moreover, such information should be communicated in a user-friendly manner, providing the lay people sufficient time to deliberate on the issues in a permissive setting.

There are of course situations where local citizens may be uninterested in participating in environmental assessment processes, or simply claim that they do not have the required competence to participate in these processes. Alternatively, for an outsider intending to involve local communities in such processes, it is possible to focus on local issues in which there is a commonly perceived need and common interests to local people. Even a project like Stockholms Bilpool, which was not primarily set up as an environmental activity, may be as relevant and effective in terms of reducing climate change within the transport sector as an environment-labelled project. In such a situation, it may be wise to ensure that the concerned citizens are aware of the likely environmental consequences of their actions, but there is no reason to expect them to give up their own agendas and concerns for the sake of global sustainability.

The challenge in the near future is to greatly improve the existing policy and institutional frameworks and practices, as well as the methods of practising citizen participation in technical matters of environmental policy and implementation. This is necessary if we are to come to terms with the global environmental risks and problems over the next decades.

| Table 1 | Nature/ characteristics of participation | Opportunity for local assessment of expert knowledge | Barriers to participation in technical matters | Degree of policy impact |
|---|--|--|--|--|
| The Trekanten housing project | Tenants participated in working groups on a voluntary basis, and gave recommendations for technical options and policies to experts. | Yes. The tenants assessed experts' maps and drawings verbally and wrote their recommendations to project experts. | Tenants' requirements not fulfilled as expected; conflicts and lack of will generated widespread local mistrust and declining participation | Rather limited. Often expected by local tenants to be higher than appeared to be the case. Premature to judge the long-term impact on future SB housing policy. |
| The Understens- höjden eco-village | Very high degree of involvement/control over construction and design. Complete bottom-up initiative in which local residents reached out to experts/authorities to get political legitimacy, expert input and funding. | Yes. To a large extent the residents held professional expertise. Sometimes there was resistance among outside building contractors and authorities to the level of residents' control over decision-making. | Some conflicts between residents and expertise over innovative versus conventional techniques. Existing policies and legislation unfavourable to resident involvement. | Quite high. Many policy insights and lessons learned emerged from the building process. Has served as a model for future eco-villages. |
| Stockholms Bilpool carsharing initiative | High degree of participation ensured through commitment to working groups' tasks, and board members' work. Working group proposals are presented to the board, which takes the ultimate decisions. Difficulties in promoting full member participation. | Yes, quite high. The members have to a various degree shared expert knowledge, but mostly through validation of members' own research efforts, empirical observations and through individuals' professional knowledge | Not much of problem, but full participation difficult to achieve. Heavy workload on the most active members. Existing local policy unfavourable to carsharing efforts. | Appears to be rather limited. Policy-making is not of primary concern among members. Local policymaking bodies consider policy options for carsharing services, but little evidence this is a result of e.g. efforts in the field. |
| Air quality initiative in York and Leeds | Citizens directly targeted in the assessment process of AQMA boundaries. Little public feedback in Leeds, much feedback in York. The different outcomes mainly a result of nature of participatory methods and resources. | Yes, to some extent in Leeds where technical reports were disseminated for public response. To a high degree in York, where citizens were able to express their concerns in focus groups, ward meetings, and through a leaflet survey. | Inadequate participatory approach in Leeds, which at least partly resulted in poor public response to the initiative. Lack of uptake of local preferences of Otley citizens. Lack of political authority at council level. | Very high in York, where the citizens' maps came to result in an identical AQMA boundary. No direct policy impact in Leeds, where Otley citizens' views resulted in new monitoring efforts, but with the same results. |
| Home energy schemes in Kirklees | Participation enabled in an organised manner through KFTRA, but little evidence of local interest in influencing home energy efficiency policy. Rather consumerist attitudes to electricity and heating. Participation stronger in other, higher priority housing matters. | Yes, but limited access to expert information through energy efficiency workshops and energy advice training exercises. Many residents are unaware of the opportunities but interested for the sake of costs rather than environmental benefits. | Lack of resources to promote tenant participation in energy training activities. Low level of local awareness of opportunities to participate in home energy policy issues. Other competing issues on the agenda. | Quite limited. There are recent signs of increasing local interests in, and opportunities for, policy impact on home energy schemes today (based on recent literature review). |

| Table 2 | Application to the perspective: 'Participation as a democratic goal' | <i>Application to the perspective: 'Quality assurance through extended peer reviews'</i> | Application to the perspective: 'Lay participation for the sake of knowledge generation in science and policy' |
|--|---|---|---|
| The Trekanten environmental and reconstruction project | Yes, mainly democratic rationale behind the real estate company's approach and rhetoric. | No relevance. | Some rhetorical arguments on this in project documents, but no evidence in reality. |
| Ecological housing initiative in Understenshöjden | Yes, chiefly democratic arguments and issue of fairness behind the local organisation and management approach | No relevance. | Yes, local expertise considered important determinants throughout the eco-village design and construction phases. |
| Carsharing in the Stockholms Bilpool initiative | Yes, the organisation is built on democratic principles and educative purposes. | No relevance. | Yes. The association draws heavily on local expertise when evaluating technical options and in the everyday management. |
| Air quality review and assessment initiatives in York and Leeds | Some relevance in a narrow sense, as to the educational aspect especially in Leeds where the main goal of consultation was to raise awareness and interest among citizens and to change transport behaviour. Not explicit in the DETR national policy framework. | Yes. Recognition that decisions cannot be based on technical grounds alone. More explicit relevance in York where the council saw the need for local input on AQMA boundaries due to scientific-political uncertainty as to future problems and likely action response. | Some arguments about the importance of lay knowledge in the situation of air quality in local areas and feedback on transport action plans. Appears to be mainly for the purpose of public acceptance of future policies. |
| Tenant involvement in Housing schemes in Kirklees district | Yes, KFTRA builds upon democratic arguments. Some relevance as to Kirklees council's emphasis on the educational aspect. | No relevance. | No relevance. |

ENDNOTES

¹ Besides Agenda 21, the Earth Summit led to the endorsement of the 27 principles of the Rio Declaration on Environment and Development and two legally binding conventions: on Biodiversity and the Framework Convention on Climate Change (UNFCCC) as well as a Statement of Forest Principles.

² Art. 14 of the Malmö Ministerial Declaration (First Global Ministerial Environment Forum, Malmö, Sweden, 29-31 May 2000).

³ The House of Lords has been restructured since the document referred to here was written.

⁴ Initially I intended to identify three pairs of cases in two urban regions: the Stockholm region and an urban region in Northern England. In order to arrive at two to three cases within one and the same region country, I spoke to local authority officials, researchers/ academics and NGO workers who were engaged in local/regional environmental policy and/or management initiatives. It was relatively easy to find three housing and transport-related activities involving local citizens in the technical assessment and decision-making processes in Stockholm. However, after some research on existing transport and housing initiatives in Lancaster/Lancashire, Newcastle, Manchester, Sheffield, Liverpool, and West Yorkshire, I found that the two most promising cases were within the boundaries of West and North Yorkshire. These were a housing initiative in Kirklees district and a national air quality management initiative carried out in parallel in the cities of Leeds and York.

⁵ The five involved authorities were the Association of District Councils, the Association of County Councils, the Association of Metro Authorities, the Confederation of Scottish Local Authorities and the Association of Local Authorities in Northern Ireland.

⁶ Throughout this chapter, the terms 'tenants' and 'residents' both refer to the same group of people living in Trekanten. 'Resident' is used only when the interviewees' and the referenced literature use this appellation. In my own discussion and analysis, I refer to the local citizens as 'tenants'.

⁷ A *housing collective* is a special kind of cohousing community in Sweden where tenants share common facilities of the estate (e.g. dining room, fitness room, indoor play ground) and the responsibility for carrying out housing activities (like cooking and cleaning of common space). The purpose is normally to reduce the costs of rents and promote democracy, joint co-operation and social intercourse among tenants. Today housing collectives typically attract people with different social backgrounds, whereas traditionally there were mostly left leaning people who moved into housing collectives. In the municipality of Stockholm there are 12 housing collectives with rights of tenancy.

⁸ Launched on 13 June 1985 by the Council of Ministers, the European Capital of Culture initiative is conceived as a means of bringing European citizens closer together.

⁹ The JORA compost was rejected at later stage by the tenants but included again by SB on their own initiative. Some tenants in the last focus group did not really understand why it was removed from their lists of priorities, whereas some others felt it was wrong of SB to include it again without agreeing it with the tenants.

¹⁰ As an example of good practice, he referred to a project at Gullmarsplan, south of Stockholm, where SB set up an Experimental House and organised an Environmental School for children. In response to the children's queries, a contracted architect informed them about technical design and calculated the costs for the suggested technical measures. This made the discussions more focused and helped the children to better understand the technical matters of environmental housing.

¹¹ The quantitative survey will most likely focus on the issues of energy use in common areas, refuse collection and the use of the compost, prior to and after the project. There are no figures available yet as regards refuse collection or potential energy savings, but SB estimates that 50% of the 78 households use the compost regularly.

¹² Funds that were sought from the City of Stockholm's 'Local Investment Programme's trust fund.

¹³ The very first eco-village in Sweden, *Rumpan* was built on a local initiative in the 1960's southeast of Sundsvall city. Completed in 1984, *Tuggelite* outside Karlstad was the second eco-village in Sweden. Like in Rumpan, the local residents were the initiators and also had knowledge in housing planning and were active in the planning and implementation phases. In the third one, *Solbyn*, HSB was the commissioner of the building. Unlike Tuggelite, the people who moved in did not have professional experiences in housing planning and the eco-village initiative was designed and implemented by traditional professionals to residents' consent. There are yet another eight eco-villages that preceded Understenshöjden, most of them were planned in the 80s but completed in the early 90s. (Ekoboföreningen NJORD, available at www.crosswinds.net/). According to the interviewed HSB experts and an environmental expert, there was an unprecedented degree of residents' influence in all (technical) matters during the whole process of the realisation of the Understenshöjden eco-village

¹⁴ As revised in 2000, this policy states that HSB's environmental efforts shall include: sustainable use of resources; use of sound and ecologically-sustainable material and methods; conformity with valid environmental legislation; pursuit of continuous improvement; and encouragement of people's commitment. HSB's prioritised

environmental objectives are: 1) Saving resources in transport, energy, waste, water and sanitation, and building material; 2) Sound ecologically sustainable sites through targeting substances hazardous to environment and health, air, sound, light and electro-magnetic fields; and 3) Healthy living environment through a spirit of community, planning and management of green structures in yards and other green areas. Every HSB association applies the HSB movement's overall environmental policy in accordance with its own unique conditions, but as a general tendency more and more HSB's condominium associations are formulating specific environmental plans. In recent years, HSB has implemented a number of environmental projects, the most truly ecological initiative being the new ecological city district Kullön, situated in Vaxholm north-east of Stockholm city. In other ecological construction projects there are a number of far-reaching environmental efforts, for example the high-rise project Turning Torso in Malmö, south of Sweden. (HSB, 2001).

¹⁵ For clarification purposes, in this chapter I refer to 'outside experts' rather than 'experts' solely when I speak of the contracted or otherwise involved external, professionally skilled people. The reason is that there are many local members/residents with professional background in (ecological) planning, construction and housing, who must be regarded as experts as well. In this sense, Understenshöjden is rather unique eco-village in Sweden.

¹⁶ *Stockholm Vatten*, a municipal company with the City of Stockholm as the principal stockholder, is responsible for Stockholm's and eight other neighbouring municipalities' water supply and wastewater handling. Its activities include the production and distribution of potable water, the transport and purification of wastewater, as well as the implementation of measures to keep Stockholm's lakes and sea area pollution-free. The Administration for Recreational Activities' (*Fritidsförvaltningen*, today *Idrottsförvaltningen*) area of responsibility includes promoting rich and active sports and recreational activities for the City's inhabitants.

¹⁷ For example, the Stockholm Fire Department (*Brandförsvaret*) and the Council for Disabled People (*Handikapprådet*) had certain viewpoints on the access roads, the Environmental and Health Administration and water and sewage agencies had concerns about the design and construction of the local wastewater treatment.

¹⁸ Consisting of representatives from HSB, Småa and the City Planning Administration.

¹⁹ One particular disagreement concerned the cost estimates. In 1993, HSB and EBBA had agreed on a ceiling amount of 10,900 SEK (approx. £ 740) /m³, but according to some EBBA members (26-05-99), HSB's calculations varied from time to time, and they could not agree on the total estimated costs and suggested measures. In May 1993, the board of the association finally approved a cost calculation that EBBA and HSB experts had prepared together. To reach the ceiling amount of 10,900 SEK/m³, however, they had jointly agreed on priorities and on promoting self-building efforts to a greater extent.

²⁰ This had some negative practical consequences. For example, it was nearly impossible for EBBA to get fresh information about the queue system at Småa.

²¹ Film by Mats Godée, local resident (1996): *Att bygga ekologiskt: en film om bnf Understenshöjden i Stockholm*.

²² City of Stockholm emits 7 % or roughly 4 Million tonnes of CO₂ released annually throughout Sweden. Electricity and heating correspond to two thirds of the emissions and the rest is basically from the transport sector. Stockholm City has decided that the emissions should reduce by 20% between 1990 and 2005 and in the longer term with 60-80%. (www.stockholm.se).

²³ For example, the City of Stockholm has produced a great number of government bills, formal reports on politician's opinions, and minutes etc. suggesting measures to promote car-sharing efforts in Stockholm. Most of them concern how to promote car-sharing by introducing economic incentives, e.g. discount on public transport fares (see e.g. Kommunstyrelsens utlåtande 2000:102 RIII Dnr 664/99). The Street and Real Estate Office contends that : '...car-sharing initiatives have positive impact on the transport situation in Stockholm. There is therefore a reason for the City to support existing car-sharing efforts as well as the formation of new ones.' (Stockholm's Stad, 2000). The Office supports a car-sharing initiative in the newly built ecological offices of Hammarby Sjöstad, south of the city centre. The Stockholm City Environment and Health Administration (*Miljöförvaltningen*) also stipulates that car-sharing is an efficient means to reducing car driving in the City (see e.g. *Handlingsprogrammet mot växthusgaser*, 1998: 10). Several city district administrations of the City also encourage car-sharing efforts, e.g. Farsta, Östermalm and Maria-Gamla Stan.

²⁴ Gröna Bilister is a small NGO that aims at making road transport friendlier to the environment and to promote public transport and bicycling as options, particularly in urban areas. Gröna Bilister collaborates with the European Federation for Transport and Environment, trying to influence the EU's policies on exhaust emissions, fuel quality, alternative fuels and the taxation of road transport (internalising external costs). At national scale, Gröna Bilister publishes an annual report on the environmental performance of new car models and label the best as 'a good environmental choice' as well as produces guidelines for municipalities on how to integrate transport issues in the local Agenda 21. Special efforts are made to create car-sharing systems in Sweden as well as to make authorities and local communities include more of environmental demands and safety requirements in public procurement of vehicles, fuels and transport services. (Gröna bilister, 2001b)

²⁵ For example, until recently, there was a large-scale co-operation between OK, a petrol company with car rental services, and HSB, Sweden's largest housing co-operative organisation. In mid-2001, HSB changed collaborating partner to Statoil. According to the agreement, 12 households can establish a HSB car-sharing initiative, where households get together in order to share a car. The participants are charged a monthly fee, and a distance or time dependent fee when using the car. Examples of car-sharing services that have their own cars include Stockholms Bilpool, and its two model initiatives Majornas Bilkoooperativ and Ekobil.

²⁶ In mid-2001, the members paid an annual fee of 500 SEK (£ 33) to the association and then 1.20 SEK (8 pence) per km +10-18 SEK (£0.67-1.2) per hour (the hourly cost depends on which vehicle it is) for the actual car use, maximum 10 hours a day. One person claimed that, according to internal calculations, members save money if they drive between 3,000-15,000 km/year, and that most members drive within this range (15-01-01).

²⁷ The economic risks are deemed smaller in economic associations, than for example the case of voluntary organisations, and they concern the members' private economy more than ordinary voluntary associations. A voluntary association that deals with commerce is not protected under the Swedish law (Gabrielsson, 1997).

²⁸ The former 'Business Group' was dissolved in 2001, due to its difficulties in soliciting members from businesses to increase the usage of cars. Its members are now divided between the other working groups.

²⁹ In this chapter, I refer to outside experts in their capacity of transport and environmental issues rather than the phenomenon car-sharing as such. Local citizens involved in car-sharing initiatives hold most car-sharing expertise.

³⁰ KIC's main objective is '...to stimulate and facilitate the establishment of new co-operatives and other democratic forms of joint undertakings' by offering '(...) advice, instructions and information for interested groups and the general public' The agency carries out its services in these areas free of charge, and receives government and municipal grants to finance its activities. (KIC 2001, available on: www.kic.se).

³¹ Bilpooler i Sverige (BIS) consists of representatives of Swedish car-sharing initiatives that assists in the formation of new car-sharing efforts as well as supports them in their activities. See further www.bildelning.nu/

³² Stockholm MFO (Materialförsörjningsorganisationen) AB is a service organisation created for City of Stockholm's agencies and companies. It provides joint supply of services and resources to these local government bodies, including letting of vehicles on a long-term basis. In 1997-1998, MFO supplied Stockholms Bilpool with an experimental electric vehicle that was under development.

³³ GIS is '...a means of integrating spatial and non-spatial information into a single computer system for analysis and graphical display' (Cinderby, 1999).

³⁴ In order to ensure that all members take part in the maintenance work, a recent policy has been introduced specifying that each team member who does not turn up for these events will be charged a penalty fee.

³⁵ It is difficult to draw the line between initiatives in which members have targeted policymakers with the aim to have a policy impact, and other initiatives in which members have discussed and propagated for car-sharing services with both governmental and non-governmental bodies. One example of an ill-defined case derives from a Web Group member, who has written articles about car-sharing with the purpose to market this type of organisation. It is difficult to identify and quantify the results of such an activity, regardless of the original intentions.

³⁶ There are on average ten members per vehicle in Stockholms Bilpool.

³⁷ The Street and Real Estate Office has responsibility for land administration, exploitation, road maintenance and traffic surveillance as well as a liability for administration of the City's estates as well as implementing plans concerning the physical environment in Stockholm.

³⁸ The leading agency in the national air quality strategy initiative, the Scottish Executive Air Quality Team, develops domestic policies and initiatives to improve air quality and reduce the risks to human health. The team works in partnership with the other Devolved Administrations and the Department of the Environment, Transport and the Regions (DETR) to ensure objectives set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland are achieved. In relation to European and International issues it takes forward the transposition and implementation of European Commission (EC) and other international obligations.

³⁹ HMCO, 1995. Environmental Act 1995 is accessible in UK reference libraries.

⁴⁰ The predominant source for most of these pollutants is road traffic, but domestic and industrial sources are also major contributions.

⁴¹ Ozone was not included in the Regulations because the concentrations of ozone is heavily influenced by transboundary pollutants and hence it is not considered appropriate to take steps at local level to meet the objective (DETR, 1998:5).

⁴² Under the Local Air Quality Management (LAQM) legislation in the Act, each local authority is required to carry out periodic review and assessment of air quality

⁴³ Available at <http://ariadne.aeat.co.uk/netcen/airqual/aqma/home.html>

⁴⁴ This chapter differs somewhat from the other empirical chapters in so far as there are two initiatives under scrutiny here. For this reason, I haven chosen to condense the more general description and discussion of the

initiatives and to exclude a look at e.g. the organisation and management of the overall initiatives as well as the role and expertise of the governmental bodies that are involved. It is important to note that discussion is based on preliminary outcomes, and the consultation process has not been completed by the time of the undertaking of this research. However, in the Leeds case, the discussions in the interviews with council officers indicate that little changes are expected to these tentative results, as the council does not attempt to carry on the citizen consultation process, and because the deadline of submitting the stage four review report on 1 July 2002 was drawing closer in time.

⁴⁵ The Department of Housing and Environmental Health Services carries out monitoring of pollutants in the atmosphere and of the ambient air. Department of Highways, Transportation Planning has expertise in modelling of road traffic and predicting likelihood of future traffic, designing traffic monitoring schemes and traffic control schemes. Department of Planning and Environment is responsible for the regulation of land use and new building throughout Leeds Metropolitan District

⁴⁶ Due to changes in Local Government, the Leeds City Council has established 16 CITs in the Leeds Metropolitan District, aiming at involving citizens in the development of the Community Plan and in validating how the local council services are delivered in their area.

⁴⁷ See e.g. articles in *Wharfe Valley Times* (24-06-99), 'Wharfe pollution hotspots targeted'; *Leeds*, Issue 6, (February 2000). 'Panel of 1,000 to give their views' and 'Have your say'; and *Morley Observer* (24-06-99) 'Survey to ensure a breath of fresh air', p.18.

⁴⁸ The questionnaire incorporated feedback type of responses where the respondents could mark the statements that they supported, and they were also asked to contact the Department of Housing and Environmental Services to express their views on air quality in their area.

⁴⁹ The second stage report was entirely of technical nature so the AQMT did not expect any public feedback on the document.

⁵⁰ *The Community Involvement Team of Otley and Wharfedale* serves the neighbouring communities of: Otley, and Pool in Wharfedale, Arthington, Carlton and parts of Rawdon and Yeadon. In this thesis, the CIT is simply referred to as the CIT of Otley. (Leeds City Council, 2000c)

⁵¹ After having lived in the town for 15 years, the man left Otley for a healthier sea-side resort. He also claimed that he was the third person to move out the town due to health problems.

⁵² The Environmental Protection Unit under the Directorate of Environmental and Development Services, is responsible for monitoring, modelling, declaration and action planning of air quality matters. It also deals with issues such as contaminated land, land planning liaison, noise, authorisations for public premises etc. This particular initiative has involved four staff: two Air Quality Strategy Officers, a Modelling Officer and the Head of Environmental Health Services.

⁵³ The Transport Planning Unit is a strategic unit that develops transportation strategies for the council and the city for five years. The strategy, with policies contained within it, form the basis of the City of York Local Transport Plan. Moreover the Unit organises information campaigns to improve transport behaviour in the City. In this particular initiative, primarily a TravelWise Officer has been heavily involved.

⁵⁴ Yet another Consultation Group was arranged with members of local businesses. However, the findings from this particular group will not be discussed here.

⁵⁵ GIS is 'a means of integrating special and non-spatial information into a single computer system for analysis and graphical display'. The GIS for Participation technique, developed by SEI, '...attempts to promote bottom-up policy development by incorporating local concerns and knowledge within a spatial database.' (Cinderby, 1999:305-306).

⁵⁶ The levels that the City of York Council reports to the Government are health based standards, which were introduced to ensure that people who were vulnerable were not affected by the levels.

⁵⁷ Local meetings with local councillors in each ward of City of York. Members of the public are allowed to attend and express their views and enquire things.

⁵⁸ One exception was the year 2000, which saw a small increase in CO₂ emissions of 2% as the coal used as fuel in electricity generation increased (as did gas to a lesser extent), while nuclear electricity generation fell. This resulted in slightly higher levels of CO₂ emissions that year (DTI, 2001).

⁵⁹ As of 1996, the total CO₂ release from the English housing stock is 125 million tonnes/year, with about three quarters of this coming from the owner occupied stock. (DETR, 2000a:103).

⁶⁰ CO₂ corresponds to 83% of the potential global warming effect of anthropogenic emissions of greenhouse gases. (DTI, 2001).

⁶¹ More recently, the Department for Environment, Food and Rural Affairs (DEFRA) has carried out and drafted a *Review of Policy Framework for Local Authority Energy Efficiency Activity*, within which local authorities implement their energy efficiency activities. The objective of the review was to identify changes to the existing policy framework that would allow authorities to pursue energy efficiency in a more effective, coherent and strategic manner. Among other things, it considered the future operation of HECA; whether there were

opportunities for greater co-operation between local authorities and other stakeholders and relevant climate change initiatives. Once the details of the Home Energy Conservation Bill are finalised, DEFRA will complete and publish the review, which will outline the next step for local authorities to be taken within the field of energy policy. (DEFRA, 2001). DEFRA has also produced a wide range of other policy documents and launched strategies relating to energy efficiency in the UK, such as the 2001 *UK Fuel Poverty Strategy* (November 2001), the *Home Energy Efficiency Scheme* (HEES) (June 2000); the *Energy Efficiency Commitment* for 2002 to 2005 (2001). However, of these countrywide policy initiatives, in this chapter I will only focus on the Kirklees Council's response to HECA.

⁶² This initiative has raised the Council stock, average National Home Energy Rating (NHER) system energy grade from 3.4 in 1994 to 4.6 in 2000.

⁶³ In 1996 at least 4.3 million households in England had to spend more than 10 per cent of their household income on fuel - the customary definition of 'fuel poverty'. (DEFRA's home page, 2002).

⁶⁴ While all UK Councils have Housing Services, only a few of them, like Kirklees, have Energy Units. The Unit is funded by tenants and the Council through investments in energy efficiency measures, but they also seek other funding sources such as regional electricity companies and the Energy Advice Grants Agency.

⁶⁵ This strategy sets out how the Council will provide heating, draught-proofing to all properties; access external resources especially Standard of Performance (SOP) and Home Energy Efficiency Scheme (HEES)⁶⁵ grant monies; develop a database that will enable individual property Standard Assessment Procedure (SAP)⁶⁵ and National Home Energy Ratings (NHER); and encourage the development of discretionary energy efficiency grants and bulk purchase schemes.

⁶⁶ LEAP is a primary investment element of Housing Services' Warm Homes strategy and enables resource to be targeted at the least energy efficiency properties identified by Tenants and Residents Associations (TRAs) and Area Offices.

⁶⁷ The Environment Policy seeks the highest levels of energy conservation, use of energy efficient appliances and alternative sources such as biomass, energy from waste, biogas, solar and wind power and aims at providing adequate office heating avoiding excessive temperatures following government guidance. The recommended maximum temperature for office heating is 19 degrees C.

⁶⁸ The EEAC provides energy related grant advice, information, promotion and training to the domestic sector, covering between 250 – 700k households and is partly funded by the Energy Saving Trust. (Kirklees Metropolitan Council, 2000). These council bodies are not directly involved in provision of energy efficiency schemes to Kirklees Council tenants, and will therefore not be treated in this chapter.

⁶⁹ According to one expert, the integration is, as far as he knows, formalised only in terms of inclusion in the Environmental Units' documents, though meetings with Local Agenda 21 staff are held on a more or less regular basis to inform each other of energy related issues. (08-06-98).

⁷⁰ For more information about KFTRA, see <http://www.kftra.demon.co.uk>

⁷¹ A draft manifesto is often translated into a questionnaire including summaries of ideas that have come forward from initial consultation exercises, which are distributed to all households in the area. Once the findings have been endorsed, these can be written up in a manifesto, which is distributed to each household on the estate.

⁷² Throughout this chapter I distinguish between 'tenants', who are defined as ordinary tenants not involved in housing schemes in an organised way; and 'tenant representatives' who represent tenants in their areas in KFTRA.

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