

MATISSE

WORKING  
PAPERS

14

7/2007

CITIZENS' WORKSHOPS ON  
SUSTAINABLE FUTURES:  
Report on Findings

Lorraine Whitmarsh



## **Series Editors:**

Jill Jäger

*SERI Sustainable Europe Research Institute, Garnisongasse 7/27, 1090 Wien, Austria, [jill.jaeger@seri.at](mailto:jill.jaeger@seri.at)*

Paul M. Weaver

*Wolfson Research Institute, University of Durham, UK, [pweaver@noos.fr](mailto:pweaver@noos.fr)*

## **Author:**

Lorraine Whitmarsh

*Tyndall Centre for Climate Change Research*

*School of Environmental Sciences*

*University of East Anglia, Norwich UK*

*e-mail: [l.whitmarsh@uea.ac.uk](mailto:l.whitmarsh@uea.ac.uk)*

**MATISSE** (Methods and Tools for Integrated Sustainability Assessment) aims to achieve a step-wise advance in the science and application of Integrated Sustainability Assessment (ISA) of EU policies. In order to reach this objective the core activity of the MATISSE project is to improve the tools available for conducting Integrated Sustainability Assessments.

Project duration: April 1st, 2005 - March 31st, 2008

MATISSE is supported by the 6<sup>th</sup> Framework Programme of the European Union.

Contract number: 004059 (GOCE) - MATISSE

**MATISSE Working Papers** are the outcome of ongoing research activities in the integrated research project MATISSE, funded by EU 6FP. They present preliminary results, which are open for debate and improvement for publication in scientific journals. All comments and suggestions are welcome.

The MATISSE Working Papers can be downloaded at <http://www.matisse-project.net/>.

## **Preface**

### **About the MATISSE project**

The MATISSE (Methods and Tools for Integrated Sustainability Assessment) project is funded by the European Commission, DG Research, within the 6<sup>th</sup> Framework Programme. The project is interested in the role that Integrated Sustainability Assessment (ISA) could play in the process of developing and implementing policies capable of addressing persistent problems of unsustainable development and supporting transitions to a more sustainable future in Europe. The core activity of MATISSE is to develop, test and demonstrate new and improved methods and tools for conducting ISA.

This work is carried out through developing and applying a conceptual framework for ISA, looking at the linkages to other sustainability assessment processes, linking existing tools to make them more useable for ISA, developing new tools to address transitions to sustainable development and applying the new and improved tools within an ISA process through a series of case studies.

The extent to which the case studies are carrying out a complete ISA for their area of focus varies between attempts to cover all phases of an ISA process to partial implementation of the process. Equally, different case studies are oriented to developing and testing tools and approaches to some, but not all, of the methodological challenges of ISA. The case studies are complementary, however, and the set of cases offers the opportunity to address a wide range of methodological challenges and to explore linkages between cases. An evaluation of practical experiences with ISA implementation in the case studies will provide guidance on the further improvement of methods and tools. Results will also contribute to more informed policy advice.

### **What is ISA?**

Within the MATISSE project, Integrated Sustainability Assessment (ISA) has been defined as a cyclical, participatory process of scoping, envisioning, experimenting, and learning through which a shared interpretation of sustainability for a specific context is developed and applied in an integrated manner, in order to explore solutions to persistent problems of unsustainable development. ISA is conceptualised as a complement to other forms of sustainability assessment, such as Sustainability Impact Assessment, Integrated Assessment and Regulatory Impact Assessment. Whereas these other forms of assessment fulfil the pragmatic need for *ex ante* screening of incremental sectoral policies that are developed within the prevailing policy regime, ISA is conceptualised as a support to longer-term and more strategic policy processes, where the objective is to explore persistent problems of unsustainable development that have a systemic pathology and possible solutions to these. ISA is therefore oriented toward supporting the development of cross-sectoral policies that specifically address sustainable development and at exploring enabling policy regimes and institutional arrangements.

### **MATISSE Working Papers**

Matisse Working Papers are interim reports of project activities that are published in order to illustrate ongoing work and some provisional conclusions, as well as providing the opportunity for discussion of the approaches taken by the project and interim results. This discussion should be both within the project and between project members and the broader scientific and policy communities. Readers are encouraged to contact the authors to discuss the content of MATISSE Working Papers.

Jill Jäger and Paul Weaver

Editors of the MATISSE Working Paper Series

**ABSTRACT**

Four deliberative workshops were held in Norwich, UK, between September 2006 and March 2007 as part of the MATISSE project on sustainable futures and stakeholder-led policy assessment. The aims of the workshops were to elicit citizens' perspectives on transport and housing (to inform Integrated Sustainability Assessments [ISA] of these problem domains) and to test and improve participatory methods for policy assessment and social learning. An interactive workshop design was used in which citizens' spontaneous feelings and concerns were initially elicited via a 'visioning exercise', followed by expert presentations, followed by deliberation and elicitation of participants' informed opinions. Analysis of participants' responses shows these citizens support modal shift and reduced demand, as well as some personal transport; and favour affordable, rural eco-homes, in a strong, safe community with local amenities. Few 'futuristic' or unrealistic options were raised. There was no support for a business-as-usual approach, yet participants identified a range of barriers - primarily cultural, political and institutional barriers rather than technological obstacles - to achieving their ideal transport/housing futures. Participants (particularly in the transport workshops) tended to place responsibility for change with governments. Analysis of responses indicates there was rather more change in participants' views between the start and end of the workshop in the housing workshops than in the transport workshops. Overall, one-quarter stated they had changed their views, and others said they had learned something by participating. Importantly, participants at the workshops were not representative of the UK population as a whole (the former being more qualified and probably more environmentally-conscious than the latter); further work will thus compare workshop participants' views with those from other backgrounds. Stakeholders' views about transport and housing will be used in stakeholder-led ISAs of mobility and housing. Further work will also assess the role, value, and methods for stakeholder participation in ISA.

***Table of Contents***

Preface .....3

Abstract .....4

List of Tables.....6

1 Introduction .....7

2 Methodology .....7

    2.1 Materials and methods.....7

    2.2 Participants .....9

3 Results: Sustainable transport .....10

    3.1 Visions of sustainable transport .....10

    3.2 Barriers to sustainable transport.....15

    3.3 Preferred options for sustainable transport.....16

4 Results: Sustainable housing and communities.....18

    4.1 Visions of sustainable housing and communities.....18

    4.2 Barriers to sustainable housing and communities .....25

    4.3 Preferred options for sustainable housing and communities .....25

5 Learning and evaluations.....28

6 Summary and conclusion .....30

    6.1 Citizens' views on sustainable transport.....30

    6.2 Citizens' views on sustainable housing and communities .....31

    6.3 Next stages .....32

Acknowledgements .....32

References .....33

Appendix .....34

**List of Tables**

<i>Table 1. Demographic background of participants.....</i>	<i>9</i>
<i>Table 2. Responses to individual 'visioning' sheets: ideal and expected/real transport in 2030, and differences between the two visitors.....</i>	<i>11</i>
<i>Table 3. Important features of transport identified in small-group discussions .....</i>	<i>13</i>
<i>Table 4. Questionnaire responses to question: 'What are the most important features you would like to see in Norfolk's transport system in the future?'.....</i>	<i>15</i>
<i>Table 5. Barriers to ideal transport identified in small-group discussion.....</i>	<i>15</i>
<i>Table 6. Outcome of final voting exercise in sustainable transport workshops.....</i>	<i>17</i>
<i>Table 7. Questionnaire responses to question: 'Which, if any, of the options presented today do you think will do most to improve transport?'.....</i>	<i>17</i>
<i>Table 8. Responses to individual 'visioning' sheets: ideal and expected/real housing and communities in 2030, and differences between the two visions .....</i>	<i>18</i>
<i>Table 9. Important features of housing/communities identified in small-group discussion.....</i>	<i>22</i>
<i>Table 10. Questionnaire responses to question: 'What are the most important features you would like to see in Norfolk's housing and communities in the future?'.....</i>	<i>24</i>
<i>Table 11. Barriers to ideal housing/communities identified in small-group discussion.....</i>	<i>26</i>
<i>Table 12. Outcome of final voting exercise in sustainable housing/communities workshops.....</i>	<i>27</i>
<i>Table 13. Questionnaire responses to question: 'Which, if any, of the options presented today do you think will do most to improve housing and communities?'.....</i>	<i>28</i>
<i>Table 14. Questionnaire responses to question: 'Having attended this workshop, do you feel your views have changed at all?'.....</i>	<i>28</i>
<i>Table 15. Questionnaire responses to question: 'What, if anything, do you feel you have learned from this workshop?'.....</i>	<i>29</i>
<i>Table 16. Participants' comments on workshop elicited via questionnaire .....</i>	<i>29</i>

---

# CITIZENS' WORKSHOPS ON SUSTAINABLE FUTURES: Report of findings

## 1 Introduction

As part of the EU-funded MATISSE project<sup>1</sup>, four citizen workshops on sustainable futures were conducted between September 2006 and March 2007: two of these focussed on sustainable transport and two focussed on sustainable housing and communities. All four workshops engaged with citizens living in Norfolk, UK. These workshops form part of an empirical programme of work within the MATISSE project designed to elicit stakeholder input to Integrated Sustainability Assessments (Weaver & Rotmans, 2006) of these problem domains (i.e. transport and housing/communities).

Other work within this programme has included an expert stakeholder workshop on sustainable transport and hydrogen transport technologies (Whitmarsh, Wietschel, Jäger, Nykvist, Strasser, & Weaver, 2006), and desk-based research on sustainable transport (Nykvist & Whitmarsh, 2007) and housing and communities (Bergman, Whitmarsh, Köhler, Haxeltine, & Schilperoord, 2007).

The aims of the Norfolk-based citizen workshops were:

- To understand the experiences, views and concerns of citizens with regard to transport and housing, and to use this information to construct 'visions' of, and 'pathways' to, sustainable futures;
- To inform the development, in the MATISSE project, of novel modelling tools for supporting Integrated Sustainability Assessment (ISA);
- To test and improve participatory methods for policy assessment and social learning;
- To stimulate a social learning process among participants taking part in the workshops;
- To raise the profile of the MATISSE project, its work and that of participating institutions in relation to ISA and its usefulness in addressing strategic issues of long-term, sustainable development and transition.

## 2 Methodology

### 2.1 Materials and methods

The workshops were organised as part of two events to engage the public in science and environmental issues: the BA Festival of Science in September 2006, and the Norwich Forum Trust's Earth Event (EE) in March 2007. The workshops 'piggy-backed' on these broader programmes of public events in order to reduce costs (e.g., advertising, room hire). However, a drawback of this approach is that workshop participants were more highly-qualified, more environmentally-aware and more enthusiastic about public participation than citizens as a whole (see below), and so do not necessarily represent the general Norfolk or UK populations.

A methodology similar to that developed by Kasemir et al. (Kasemir, Jaeger, & Jager, 2003) in the EU-funded ULYSSES project was used, in which spontaneous feelings and concerns are initially elicited via a 'visioning exercise', followed by expert input, followed by deliberation and elicitation of participants' informed opinions. Each workshop lasted 2½ - 3 hours, with a short mid-session coffee break. Given the aims of the workshops listed above, the workshops involved two-way exchanges of

---

<sup>1</sup> Methods and Tools for Integrated Sustainability Assessment (MATISSE). See: [www.matisse-project.net](http://www.matisse-project.net)

information between and among researchers and participants, and were intended to result in mutual learning between citizens and researchers.

The initial *visioning activity* comprised an exercise in which participants individually wrote about what they wanted the future of transport/housing to be like in 2030, and then what they expected it to be like; prompts - including specific questions, images and newspaper headlines - were provided to help structure the exercise. Facilitated small-group discussion then followed, in which participants used the ideas they had generated in the individual exercise to answer two questions: '*What are the most important features you would like to see in Norfolk's transport system [/housing and communities] in the future?*' and '*Why are there differences between your ideal future and expected future?*'

Importantly, the workshops did not ask participants about what type of system they felt would be most "sustainable", as this is not a term that the public is widely familiar with (Darnton, 2004) and may have led to citizens trying to second-guess objective/expert criteria. Rather, since we were interested in eliciting subjective experiences, views and concerns, we chose to use the terms "most important", "preferred" and "ideal" instead of "sustainable" (at least during the interactive stages). Nevertheless, as the report highlights, participants raised similar environmental, social and economic criteria for their preferred transport system as are commonly understood to characterise sustainable transport (e.g., European Commission, 2001).

Brief, expert presentations provided accessible information about the problems of unsustainability in each case study area (transport, or housing and communities) and outlined the advantages and disadvantages of a range of technological, institutional, and behavioural options for addressing these issues and potentially fostering more sustainable futures. Participants then asked the presenters questions about, and discussed their views on, these options in plenary. Finally, participants were asked to vote on their preferred option for sustainable transport/housing (and to add any alternatives that had not already been mentioned, to the pre-defined list) by allotting ten 'sticky dots' amongst the options. They then completed a brief evaluation questionnaire (see Appendix), which also asked about participants' preferred criteria for future transport/housing and their preferred option presented in the workshop.

This multi-stage workshop design includes individual and group-based learning (and information elicitation). Personal views were elicited via individual exercises and questionnaires, while small-group and plenary group discussions provided fora for social learning and knowledge construction. The rationale for using both group discussion and individual self-completion questionnaires is that there are advantages and limitations to each method. Qualitative discussion is appropriate for exploring the range of beliefs, ideas and behaviours that exist in relation to a particular issue, and the way in which the issue is framed in relation to more salient concerns or broader debates. However, in a group setting, social influences (e.g., different personality types, professional credibility and status), can determine and constrain participants' contributions, while also providing an insight into the dynamic construction of attitudes (Potter & Wetherell, 1987). Furthermore, qualitative methods are not able to indicate the prevalence of particular beliefs or actions, or allow for statistical comparison between groups. On the other hand, quantitative questionnaires allow researchers to ask more focussed questions about the issue, and determine the prevalence of particular views or concerns amongst the sample. Furthermore, there may be issues that respondents would prefer not to discuss in a group that can be expressed in an anonymous questionnaire. Combining these methods thus provides a complementary strategy for knowledge elicitation and social learning.

The workshop design was intended to allow participants to 'observe' the process of knowledge elicitation/construction for themselves, with flipchart notes from the small group discussions stuck to the wall (and key points from these groups summarised by the lead facilitator); and the outcome of the voting exercise immediately visible. Participants were also asked in the evaluation questionnaire whether they would like to be sent results from the research. Providing feedback in this way is intended to highlight the value of participation and foster a sense of collaboration in the research.

## 2.2 Participants

Each workshop involved around 15 participants (in most cases, participants attended only one workshop, though a few came to more than one), most of whom lived in Norfolk. Participants were asked to book in advance (either via a designated website, or by telephone or email). Demographic information was obtained via self-completion questionnaires (see Appendix), completed by most participants at the end of each workshop.

As shown in Table 1, participants included 22 men and 17 women and a range of age groups, which broadly reflect the average Norfolk population (which is 51% female, and has a mean age of 42; the England/Wales mean age is 39). However, workshop participants were relatively well-qualified: 47% have a degree; this compares to 15% of the Norfolk population, and 20% of England and Wales, who are graduates, according to the 2001 census. The findings discussed in this report should therefore be considered in light of this bias.

Motivations for participation in the workshop were elicited through the self-completion questionnaires. Most participants expressed a personal interest or concern, and some a professional interest, in the subject.

*Table 1. Demographic background of participants*

	September 2006		March 2007	
	Transport	Housing	Transport	Housing
<b>Gender</b>				
Male	7	8	5	2
Female	2	4	5	6
Not specified in response	5	3	5	8
<b>Age group</b>				
Under 16	1	0	1	0
16-24	2	3	0	1
25-34	2	2	1	4
35-44	0	3	1	1
45-54	2	3	4	0
55-64	0	1	2	2
65-74	1	0	1	0
75 or above	1	0	0	0
Not specified in response	5	3	5	8
<b>Highest qualification</b>				
No formal qualifications	0	0	0	0
GCSE / O-Level	0	0	1	1
A-level / Higher / BTEC	2	2	0	2
Vocational / NVQ	0	0	0	0
Degree or equivalent	1	4	3	2
Postgraduate qualification	5	6	4	3
Other	1	0	0	0

Table 1 cont.

	September 2006		March 2007	
	Transport	Housing	Transport	Housing
Not specified in response	5	3	7	8
<b>Membership of environmental organisation</b>				
Yes	6	6	5	1
No	3	6	3	7
Not specified in response	5	3	7	8
<b>Nearest town/city<sup>2</sup></b>				
Norwich	6	8	10	4
Norfolk (other)	1	1	0	2
Other	2	2	0	2
Not specified in response	5	4	5	8

### 3 Results: Sustainable transport

#### 3.1 Visions of sustainable transport

Visions of future transport were explored through individual ‘visioning’ sheets and small-group discussions. The final self-completion questionnaires also elicited participants’ preferred criteria for future transport. Comparison of the visions and questionnaire responses provides an insight into attitude change and learning through the workshops.

Table 2 summarises the responses to the visioning exercise. *Overall, it is clear that modal shift and reduced demand are viewed favourably, while personal transport and a moderate amount of travel are also supported.* In respect of ideal transport systems, the most popular responses related to: use of, and improvements in, public transport; walking and cycling; local amenities/workplaces; but also cars and (some) centralised amenities/workplaces. Home-working and holidaying in the UK or Europe were also raised by several participants; more far-flung holidays were less popular. There was also some support for fiscal/policy change, such as congestion charging or severe taxes on most polluting cars. In terms of transport technologies, 4 participants wanted to see electric vehicles and 1 hydrogen transport in 2030. A further 5 also described more efficient and renewable-fuelled/clean vehicles.

Comparing the ideal and expected visions, we can see that there is little difference as regards the types of areas (rural, urban, sub-urban) in which participants saw themselves living in 2030. However, participants (particularly those in the EE workshop) were relatively pessimistic about the transport types and levels that would exist in 2030, compared to their ideals. The most prominent difference between ideal and expected futures is in respect of public transport: far fewer (16, compared to 27) saw themselves using public transport, while only 8 (compared to 17) believed it would be improved from current standards (and a further 4 explicitly stated it would be poor quality). Furthermore, several felt there would be more traffic/congestion and air travel, although the number mentioning car travel also decreased. In some cases, this was evidently because participants anticipated fuel prices and other costs to increase making travel, including car travel, more expensive and even unviable. At the same time, fewer expected workplaces and amenities to be local. *Overall, participants expected transport in*

<sup>2</sup> Participants were not asked whether they lived in urban, sub-urban or rural areas. Location may, however, have affected perceptions and attitudes to transport, and should therefore be explored in further research.

2030 to follow a business-as-usual pattern: suffering from similar (or worse) problems to the present day (e.g., congestion, fragmentation and pollution), while seeing some incremental technological improvements (e.g., more efficient vehicles). Participants nevertheless saw themselves as continuing to use public transport more often than private vehicles, despite few (or no) improvements being made to services.

The small-group discussion (see Table 3) revealed participants' interest in modal shift and, to a lesser extent, reduced transport demand (16). Slow modes (walking and cycling), localism (proximity to services, jobs, etc.), and public transport, particularly trams, were typically mentioned; although (consistent with their visioning responses) several also recognised the value of retaining some personal (motorised) transport.

In contrast, novel transport technologies (13) were less often mentioned. Those technologies that were mentioned were not restricted to vehicle/fuel technologies (e.g., bio-diesel) but included complementary/supporting technologies such as GPS and ticket machines to improve efficiency of the transport system.

Criteria (34) were less commonly cited than particular modes (58) or measures (42), but where they were most often related to *integration of modes* (e.g., *one ticket for all public transport, transport hubs*) and, to a lesser extent, environmental and economic benefits.

Responsibility was implicitly or explicitly placed with governments on the whole, with infrastructural/physical and regulatory measures (e.g., banning cars from town centres) most commonly advocated.

To some extent participants also recognised uncertainties and trade-offs in their visions of future transport, notably in relation to energy sources.

It is striking that only 2 participants mentioned more futuristic options (urban cable car system; hoverboards), while the vast majority discussed currently available options. In some cases, other European cities or countries were mentioned (e.g., Amsterdam, Copenhagen) as exemplars of successful transport systems. It seems, then, that participants considered an ideal transport system for Norfolk as emulating current European best practice, rather than consisting of futuristic innovations or technologies.

Table 2. Responses to individual 'visioning' sheets: ideal and expected/real transport in 2030, and differences between the two visions

Categories mentioned		Ideal	Real	Difference
<b>H om e</b>	Rural/village	<b>6</b>	5	<b>-1</b>
	Urban	<b>5</b>	6	<b>1</b>
	Sub-urban	4	3	<b>-1</b>
	Floating house/ canal boat	1	1	<b>0</b>
<b>M ode s/ te chn olo gie s</b>	Car	<b>12</b>	8	<b>-4</b>
	Air travel	4	5	<b>1</b>
	Public transport	<b>27</b>	16	<b>-11</b>
	Walk	<b>13</b>	10	<b>-3</b>
	Cycle	<b>12</b>	9	<b>-3</b>
	Car-share/pool, hitchhike, taxi	4	2	<b>-2</b>
	Electric vehicles	4	1	<b>-3</b>
	Hydrogen vehicles	1	1	<b>0</b>

---

Clean/efficient vehicles	5	8	3
--------------------------	---	---	---

---

Table 2 cont.

Categories mentioned		Ideal	Real	Difference
<b>T ran spo rt de ma nd/ alte rna tive</b>	Local amenities/workplace	<b>13</b>	8	<b>-5</b>
	Centralised amenities/workplace	<b>10</b>	12	<b>2</b>
	Home-working	<b>6</b>	7	<b>1</b>
	Video-conferencing	1	1	<b>0</b>
	Internet shopping	1	1	<b>0</b>
	Grow own food	3	1	<b>-2</b>
	Holidays/leisure UK	<b>6</b>	3	<b>-3</b>
	Holidays in Europe	<b>7</b>	5	<b>-2</b>
	Holidays in rest of world	2	3	<b>1</b>
<b>C har act eris tics of tra nsp ort sys tem</b>	Personal transport	3	0	<b>-3</b>
	Park-and-ride	1	2	<b>1</b>
	Reduced demand/more home-working	3	1	<b>-2</b>
	Modal shift	1	0	<b>-1</b>
	Improved/reliable/regular/integrated public transport	<b>17</b>	8	<b>-9</b>
	Safer/improved cycling facilities	4	1	<b>-3</b>
	No congestion/easy parking	2	0	<b>-2</b>
	Job creation	1	1	<b>0</b>
	Few planes	2	0	<b>-2</b>
	Improved air travel/ airport facilities	1	1	<b>0</b>
	Fast	2	3	<b>1</b>
	Fun, enjoyable	2	2	<b>0</b>
	Cheap	1	1	<b>0</b>
	Moving walkways replace roads	1	0	<b>-1</b>
	Virtual trams	1	0	<b>-1</b>
	Urban cable car system	1	1	<b>0</b>
	Fiscal/policy change (e.g., congestion charging)	5	2	<b>-3</b>
	Value change	2	0	<b>-2</b>
	No change from now / BAU	0	1	<b>1</b>
	Slow	0	1	<b>1</b>
	Expensive (e.g., inc. fuel prices)	0	3	<b>3</b>
	Security constraints	0	1	<b>1</b>
Increased travel/more contacts	0	1	<b>1</b>	
Expanded airports/more air travel	0	3	<b>3</b>	

Table 2 cont.

Categories mentioned		Ideal	Real	Difference
<b>C</b> <b>har</b> <b>. of</b> <b>tr.s</b> <b>yst.</b>	Wastelands/less greenery	0	1	<b>1</b>
	Little social interaction/few communities	0	1	<b>1</b>
	Poor quality/fragmented public transport	0	4	<b>4</b>
	More cars/lorries/congestion	0	6	<b>6</b>
	Pollution	0	2	<b>2</b>

Table 3. Important features of transport identified in small-group discussions

Category		No of times mentioned
<b>M</b> <b>o</b> <b>d</b> <b>e</b> <b>s</b>	Public transport (general)	6
	Trams	7
	Buses	6
	Trains	4
	Park-and-ride	2
	Boats	3
	Communal/hired bikes	3
	Car pools	1
	Personal (motorised) transport	8
	Air	1
	Cycling	9
	Walking	6
	Futuristic (SkyTex cable car system; hover boards)	2
	<b>R</b> <b>e</b> <b>d</b> <b>u</b> <b>c</b> <b>e</b> <b>d</b> <b>e</b> <b>m</b> <b>a</b> <b>n</b> <b>d</b>	Reduced demand (general)
Localism (proximity to services, jobs, etc.)		6
Home-working		3
'Smart'/coordinated deliveries		2
Boat houses		1
<b>T</b> <b>e</b> <b>c</b> <b>h</b> <b>n</b> <b>o</b> <b>l</b>	Bio-diesel	2
	Hydrogen	1
	Water-powered	1
	Dual-mode	1
	Small/light/efficient	2

o	Ticket machines on buses	1
g	Luggage trolleys	1
i	GPS	2
e	Moving pavements	2
s		

Table 3. cont.

	Category	No of times mentioned	
M	Physical/infrastructural change	12	
	Economic	7	
	Legislation/regulation (e.g., banning cars from town centres)	9	
	Information/education	6	
	Environmental shock (e.g., oil prices)	3	
	Lifestyle/cultural change	5	
C	Integrated	8	
	Low/no pollution	6	
	Cheap/affordable	4	
	Safe	3	
	Accessible	2	
	Aesthetic	2	
	Regular	2	
	Reliable	1	
	Job creation	1	
	Fun	1	
	Quick	1	
	Clean	1	
	Choice	1	
	Adapted to climate change (flooding)	1	
	<i>Responsibility: Government/business/universities</i>		2
	<i>Uncertainty/trade-offs (e.g., energy source, availability of land for biofuels, options for mobility impaired)</i>		5
	<i>Cite other (European) cities/countries (Lyon, Amsterdam, Holland, Copenhagen)</i>		5

Interestingly, the findings from the small groups suggest that more ideas were generated through discussions than were included on the individual visioning sheets. While this may point to time constraints in completing the visioning exercise, it is also probable that the social process of discussion itself generated novel ideas amongst participants. *This highlights the value of multiple methods for knowledge elicitation.*

The self-completion questionnaires present a similar picture of participants' preferences with respect to future transport. As summarised in Table 4, public transport was the most popular choice, followed by cycling. Reduced demand, new technologies, modal shift and attitude/behaviour change were also

mentioned by more than one participant. *However, in contrast to initial visions, personal transport is barely mentioned.*

*Table 4. Questionnaire responses to question: ‘What are the most important features you would like to see in Norfolk’s transport system in the future?’*

<b>Category</b>	<b>No of times mentioned</b>
Improved/integrated public transport	7
Improved cycle facilities	5
Reduced demand/growth	3
New technologies	3
Modal shift	2
Attitude/cultural change	2
Car pooling	1
Sustainable car travel	1
Flexible working	1
Bus tracking	1
No need for much change in Norfolk	1
Zero-emission, accessible, cheaper	1
Cable car system	1

### **3.2 Barriers to sustainable transport**

Participants in the small group discussions identified a range of political/institutional (22), cultural (17), financial (13), physical (7) and technological (5) barriers to achieving their ideal transport future (see Table 5). Implicitly, participants recognised a number of ‘lock-ins’ to unsustainable transport, including physical and cultural dependence on cars.

The greater focus on cultural, political and institutional barriers, rather than technological obstacles, is consistent with the participants’ visions, which focussed on lifestyle changes. Here again, participants also implicitly placed responsibility with governments, with 3 participants explicitly expressing a lack of personal influence in respect of improved transport.

*Table 5. Barriers to ideal transport identified in small-group discussion*

	<b>Category</b>	<b>No of times mentioned</b>
<b>Fin</b>	Money/economics (e.g., limited funding)	9
	Corporate interests/profit motive	4
<b>Cul tur al/ psy</b>	Mindsets/preferences	4
	Car culture	5
	Unattractiveness of public transport	2

<b>cho logi cal</b>	Individualism	1
	Convenience/time pressures	3
	Enjoy air travel	1
	Want choice	1

Table 5 cont.

	Category	No of times mentioned
<b>Pol itic al/ inst itut ion al</b>	Lack of political will/leadership	5
	Politics (general)	2
	Short-termism	3
	Risk aversion/inertia	3
	Inconsistency (over time)	1
	Dependence on fuel/oil	3
	Lack of personal control/influence	3
	Social inequality (e.g., rich can afford fines)	2
<b>Ph ysi cal loc k- ins</b>	Urban sprawl	2
	Built-in dependence on cars	2
	Distribution of social networks	1
	Inadequate infrastructure for cycles	1
	No local seaport	1
<b>Tec h</b>	Technological indeterminism	3
	Difficulties with energy sources (general)	1
	Not enough biofuels	1

### 3.3 Preferred options for sustainable transport

Consistent with participants' initial visions of their ideal transport system (3.1.1), the final voting exercise found modal shift and reduced demand were the most popular options for future transport (see Table 6). In general, technological options received fewer votes, although BA Festival participants rated hybrid cars relatively highly; similarly, the post-presentation discussion tended to focus more on technological queries than on behavioural/political ones at the BA Festival, while there were only two technological points raised following the EE workshop presentations. It is possible that these differences could be accounted for by the differing interests of each audience, the BA Festival being a science event, and the Earth Event focussing on environmental issues.

There was virtually no support for a business-as-usual scenario.

The self-completion questionnaires (Table 7) similarly expose the popularity of public transport, slow modes and reduced demand. Novel transport technologies were less commonly seen as solutions to transport problems. *It is interesting to speculate about whether the popularity amongst participants of cycling is partly a function of the topography of the region (East Anglia being relatively flat).*

Points raised during the post-presentation discussion included:

- a) rights of citizens versus the need for government to legislate and, in particular, ban cars;
- b) questioning the need for regional ‘growth’;
- c) the challenges of fostering cultural/attitudinal change;
- d) clarification about the process and impacts of hydrogen and fuel cell technologies (water vapour produced acting as a greenhouse gas);
- e) drawbacks of biofuels; and
- f) examples and advice relating to local transport issues (e.g., integrated bus ticketing across Norfolk; road surfacing; sourcing bio-diesel; home zones; dangerous cyclists).

Table 6. Outcome of final voting exercise in sustainable transport workshops

<b>‘Vote on your preferred options for future transport:’</b>	Sept 06	Mar 07	<b>Total</b>
<i>No change from present</i>	0	1	1
Hydrogen and fuel cell cars/buses	7	4	<b>11</b>
Hybrid cars (e.g., Toyota Prius)	10	3	<b>13</b>
Biofuel cars/buses	6	1	7
More tele-working (i.e. working from home)	7	8	<b>15</b>
Jet packs	3	1	4
Congestion charging	4	5	9
Car sharing	5	3	8
‘Home zones’	10	6	<b>16</b>
Car-free developments	10	28	<b>38</b>
Walking/cycling to work, shops etc. [EE workshop: walking and cycling separated at request of participants]	18	11 walk 23 cycle	<b>52</b>
Improved public transport	12	20	<b>32</b>
<b>Suggestions added by participants:</b>			
GPS	2		2
Bus tracking system	4		4
Improved road signage	4		4
Road-rail system (individual pods on tracks)	5		5
Bike pool	6		6
Car pools/hire		5	5

Table 7. Questionnaire responses to question: ‘Which, if any, of the options presented today do you think will do most to improve transport?’

<b>Category</b>	<b>No of times mentioned</b>
Improved/integrated public transport	5
Modal shift	3

Cycling/walking (and supporting facilities)	3
Reduced demand	3
Behaviour/value change	2
Fuel cells	1
Hybrid cars	1

Table 7 cont.

Category	No of times mentioned
Biofuels	1
Technology (general)	1
Transport information	1
Brownfield housing development	1
Education	1

## 4 Results: Sustainable housing and communities

### 4.1 Visions of sustainable housing and communities

As in the transport workshops, visions of future housing and communities were explored through individual ‘visioning’ sheets and small-group discussions. The final self-completion questionnaires also elicited participants’ preferred criteria for future housing and communities. Comparison of the visions and questionnaire responses provides an insight into attitude change and learning through the workshops.

Table 8 summarises the responses to the visioning exercise. *Overall, participants favoured rural eco-homes, with (on average) 3 bedrooms and a garden, in a strong, safe community with local amenities.* In particular, the most popular responses related to:

- *Housing:* garden (16); house (11); solar panels (10); wind turbines (10); eco/low-energy home (9); newly-built (7); recycling/waste reduction (7); composting (6); heat-pumps (6) and other renewables (6); rainwater harvesting (6);
- *Area/community:* having green space/wildlife in local area (18); rural/village location (15); close to amenities/workplace (12); local clubs/community centre (11); living with partner/family (9); safe area (9); strong/integrated community (9), including knowing/socialising with neighbours (9) and having support from them (8); home-working (6); travelling by bike (7) and on foot (6).

Table 8. Responses to individual ‘visioning’ sheets: ideal and expected/real housing and communities in 2030, and differences between the two visions

	Categories	Ideal	Real	Difference
<b>Lo cat ion</b>	Rural/village	15	10	-5
	Suburban	3	2	-1
	Urban	4	7	3

	House	<b>11</b>	8	-3
<b>Size/ style</b>	Flat	4	6	2
	Bungalow	3	1	-2
	Detached	3	2	-1
	Semi-detached	1	1	0

Table 8 cont.

	Categories	Ideal	Real	Difference
<b>Size/ style</b>	Terraced	1	1	0
	Big	1	0	-1
	Small	1	5	4
	Enough space/rooms as necessary	2	0	-2
	No. of bedrooms (total)	<b>37</b>	22	-15
	No. of other rooms (total)	<b>33</b>	24	-9
	Garage	1	1	0
<b>Materials</b>	Brick/stone	4	4	0
	Concrete	1	0	-1
	Wood	3	0	-3
	Glass	2	0	-2
	Strawbales, cob	<b>4</b>	1	-3
	Recycled materials	1	0	-1
	Hempcrete	1	0	-1
	Earthship/ earth-sheltered	<b>6</b>	2	-4
	Eco-home, zero/low energy, well-insulated, ventilation	<b>9</b>	6	-3
	Problems with retrofitting [i.e. making old houses more efficient]	0	1	1
<b>Qualities</b>	Old, e.g., Victorian	<b>4</b>	5	1
	New	<b>7</b>	5	-2
	Affordable housing	1	0	-1
	Expensive	0	2	2
	Attractive, beautiful	1	1	0
<b>Land</b>	Garden	<b>16</b>	8	-8
	High density housing, no gardens	0	4	4
	Orchard	1	0	-1
<b>Energy</b>	Solar panels	<b>10</b>	4	-6
	Wind turbines	<b>10</b>	4	-6
	Biomass	1	1	0
	Heat-pumps/ geothermal	<b>6</b>	1	-5
	Micro-renewables (general)	<b>6</b>	4	-2

CHP	2	2	0
Carbon monitoring/ smart-meters	1	0	-1
Mains/fossil energy	3	7	4
Centralised, green energy	2	1	-1
Nuclear power	1	2	1

Table 8 cont.

	Categories	Ideal	Real	Difference
<b>Waste</b>	Recycling, waste reduction	<b>7</b>	5	-2
	Composting waste	<b>6</b>	2	-4
	Self-managed waste	1	0	-1
	Waste incineration	0	1	1
	Landfill	0	1	1
<b>Water</b>	Composting toilet, septic tank, reedbed	3	2	-1
	Mains sewage	2	4	2
	Water from mains	<b>5</b>	5	0
	Water from mountain reserve	1	0	-1
	Rainwater harvesting	<b>6</b>	2	-4
	Greywater recycling	<b>4</b>	2	-2
<b>Transport</b>	Close to transport links	<b>4</b>	0	-4
	Poor transport links	0	1	1
	Close to amenities/workplace	<b>12</b>	10	-2
	Centralised amenities/workplace	2	7	5
	Home-working	<b>6</b>	0	-6
	Internet shopping, home deliveries	2	2	0
	Grow own food	<b>5</b>	2	-3
	Travel by car	<b>5</b>	6	1
	Travel by public transport	3	2	-1
	Car pooling/ shared transport	2	0	-2
	Alternative fuel/propulsion vehicles	<b>4</b>	0	-4
	Car-free development, no traffic	2	0	-2
	Travel by bike	<b>7</b>	5	-2
	Travel on foot	<b>6</b>	5	-1
<b>Environment</b>	Green space, wildlife	<b>18</b>	6	-12
	Limited green space	0	5	5
	Biodiversity loss	0	1	1
	Pollution	0	1	1
	Climate impacts (e.g., erosion)	0	6	6

	Resources scarce (e.g., no gas for heating, energy rationed)	0	2	2
<b>Economic</b>	Voluntary work	1	0	-1
	Independent shops, local produce	3	0	-3
	Bartering, no shops	1	0	-1
	Economic opportunities	1	0	-1

Table 8 cont.

	Categories	Ideal	Real	Difference
<b>Economic</b>	Economic opportunities	1	0	-1
	Fewer economic opportunities	0	1	1
	Regional increase in population (and housing demand)	0	1	1
<b>Social/community</b>	Live with partner/family	<b>9</b>	4	-5
	Live with friends/ co-housing	2	4	2
	Live alone	0	1	1
	Local decision-making, democratic involvement	2	1	-1
	Community recycling, waste mgt	3	2	-1
	Community energy generation	<b>4</b>	1	-3
	Community garden, allotment	2	0	-2
	Strong/integrated community	<b>9</b>	7	-2
	Know, socialise with neighbours	<b>9</b>	5	-4
	Support from neighbours	<b>8</b>	2	-6
	Local clubs, activities, community centre	<b>11</b>	6	-5
	Church	1	0	-1
	Limited/no social interaction, support	0	10	10
	Safe	<b>9</b>	4	-5
	Not very safe	0	1	1
	<b>Politics</b>	Education for value change	1	0
Political support (e.g., 80% grants for sustainable homes)		1	0	-1
Lack of political will		0	1	1
Limited green developments		0	1	1
More housing estates		0	1	1

When we compare participants' ideal visions and their expectations for 2030, we see that many were pessimistic about the types of housing and the level of community integration that would exist. *As in the transport workshops, the EE participants were more pessimistic than the BA Festival participants. The most prominent differences between the ideal and expected futures are in respect of house size, green space and community interaction: most participants foresaw they would live in smaller homes than they would have liked, with limited greenery and community spirit.* Under the 'expected' scenario, a smaller proportion than under the ideal scenario believed energy would be micro-generated

or renewable, or that water and waste would be self-managed. Amenities and workplaces would tend to be more centralised than local; and climate impacts would be significant.

In the small-group discussions (see Table 9), the most popular themes relating to housing/communities were energy (28), community/social aspects (26), transport (21), and environment/aesthetics (17).

*Overall, the small-group discussions indicated a strong preference for affordable environmentally friendly homes, green spaces, local amenities, and community values. Evidently, this group was not concerned with attaining luxury in a materialist sense but rather in minimising their environmental damage and increasing social interaction.*

To a limited extent, there was disagreement about some options and discussion of trade-offs between competing values. For example, while communal space was considered important, personal space was also explicitly valued by several participants. Furthermore, there was some discussion of the value of ‘neighbourhood watch’ type schemes that could promote a safe environment, but impinge on individuals’ privacy.

*Table 9. Important features of housing/communities identified in small-group discussions*

	Category	No of times mentioned
<b>Home type</b>	eco-house	2
	zero-emissions	2
	earth-sheltered	2
	straw-bale	1
	house-boat/stilts	1
	co-housing	1
	insulation/ventilation	1
	community/self-build (not volume builders)	2
	volume built eco-homes	1
	<b>Energy</b>	micro-generation
community generation		3
solar panels/PVs		3
passive solar		2
wind power		3
geothermal		1
renewable energy (general)		1
smart-meters		1
nuclear fusion		1
hydrogen		1
low-energy appliances		1
technology (general)		1
gas		1
not gas		1
efficiency (general)		5

<b>Food</b>	home-grown food	3
	permaculture	1
	local produce	1
	farmers' markets	1

Table 9 cont.

	<b>Category</b>	<b>No of times mentioned</b>
<b>Other resources</b>	waste minimisation	3
	rainwater harvesting	2
	grey water recycling	2
	local water sources	1
<b>Transport</b>	local amenities/workplaces	5
	no cars/car-free developments	4
	reduce need to travel/ home-working	2
	less traffic	2
	public transport	2
	car sharing	2
	electric cars	2
	hydrogen cars	1
	biofuel jetpacks	1
<b>Environment/aesthetic</b>	green/wild spaces	9
	urban regeneration	1
	pretty	1
	no noise	3
	no light pollution	2
<b>Community/social</b>	air quality	1
	communal/sharing	8
	social interaction	4
	live with family	1
	personal space	4
	no chavs	1
	safety	4
	autonomy	1
	not autonomy	1
education	2	

<b>Econ</b>	affordable	6
	housing (no., type) supply meets demand	1

Table 9 cont.

	<b>Category</b>	<b>No of times mentioned</b>
<b>Measures</b>	legislation/regulations	4
	information	2
	grants/subsidies	2
	home zones	1
	design homes for sustainability	1
	<i>Trade-off</i> (e.g., privacy versus safety; aesthetics versus safety)	3
	<i>Cite other countries (Sweden)</i>	1

As in the transport discussions, few truly ‘futuristic’ options (e.g., nuclear fusion, jet-packs) were raised. Most technological options raised are currently available, though not yet mainstream (e.g., solar/wind power, rainwater harvesting). Other countries were mentioned less often as exemplars in these discussions, compared to the transport discussions.

It is noteworthy that ‘affordability’ was only raised by 1 participant in the individual visioning exercises, while this was mentioned 6 times in the small-group discussions. As in the transport workshop, this suggests that additional (or different) ideas can be generated through discussions than by individuals: the group is not simply the sum of its parts.

Table 10. Questionnaire responses to question: ‘What are the most important features you would like to see in Norfolk’s housing and communities in the future?’

<b>Category</b>	<b>No of times mentioned</b>
Eco-/environmental homes/developments	6
Micro-generation, solar panels	4
Community	4
Fewer cars, car-free developments, live-work areas	4
Lower resource use <sup>3</sup>	3
Green space	2
Increased investment in/support for sust. technologies/projects	2

<sup>3</sup> It is interesting to note that this criterion may be incompatible with some others raised, e.g., use of solar panels. This reminds us that integrated sustainability assessment can expose conflicting priorities and trade-offs involved in sustainability issues (see conclusion).

Enable/empower communities, local decision-making	2
Affordable	1
Fewer new builds	1
Renewable energy	1
Building regulations	1
Smart meters	1

As in the small-group discussions, the final questionnaire (see Table 10) highlights the importance of environmentally-friendly homes, green spaces, local amenities, and community values. These questionnaire responses more closely match the individual visions elicited at the start of the workshop, than the small-group discussions. In particular, affordability was not as popular a theme in the final questionnaires as it was in initial discussions; and two participants raised empowerment/governance, a theme not evident in the earlier discussions.

## 4.2 Barriers to sustainable housing and communities

Consistent with the discussion above about visions of housing/communities, participants saw few technological barriers to realising their visions. Rather, they highlighted political/institutional (40), economic/financial (23), cultural/psychological (19), and physical/environmental barriers (20) (see Table 11). In particular, political inaction, cost of sustainable technologies/homes, skills shortages, individualistic/materialistic culture, physical dependency on cars and a shortage of land for new-builds were the most commonly raised points. While many of these barriers were understood as the legacy of past decisions, there was often disappointment regarding the lack of leadership by government, and limited community/individual support, in making the necessary changes.

Participants often combined their discussion of barriers to improved housing/communities with suggested solutions or strategies for overcoming them. These included: community skills exchanges; demonstration projects; finding a substitute for the enjoyment/identity currently attached to car use; building own homes to cut costs; targets for affordable and efficient homes; growing own vegetables.

## 4.3 Preferred options for sustainable housing and communities

As in the transport workshops, the voting exercise found no support for a business-as-usual scenario (see Table 12). However, in the housing workshops there appears to have been rather more change between the start and end of the workshop. Although participants continued to favour environmentally-friendly homes and community values, there is convergence towards a more limited number of options, several of which were discussed by presenters: earthships, micro-generation, intelligent homes, co-housing, live-work areas, and rainwater harvesting. As before, there seems to be a desire to balance communal and personal space, with co-housing being considerably more popular than communes. Interestingly, ‘intelligent homes’ were neither raised by presenters nor included in the initial small-group discussions; nevertheless, the inclusion of this item in the final voting list seems to have attracted many participants’ attention.

Responses to the self-completion questionnaire (see Table 13) are somewhat divergent from the voting results. Here participants did not mention rainwater harvesting at all (the most popular option in the voting exercise), but instead most frequently mentioned energy efficient technologies, ‘earthships’ (a type of autonomous, self-build home)<sup>4</sup> and refurbishment.

The group discussion following the presentations particularly centred around sharing best practice (including more futuristic concepts seen on television, such as pod-housing or ‘Hedgehog’ self-build

<sup>4</sup> [www.lowcarbon.co.uk/earthships.html](http://www.lowcarbon.co.uk/earthships.html)

housing<sup>5</sup>) and personal experiences of sustainable housing (e.g., challenges of sourcing eco-materials and finding land to build on). This reflects the composition of the groups, in which many of the participants had themselves adopted sustainable technologies or joined sustainable housing/community groups.

Other discussion points raised included government inaction (particularly compared to the rest of Europe) and technical/practical queries (e.g., payback time for photovoltaics, thickness of BedZed's [Beddington Zero Energy Development, South London<sup>6</sup>] walls, how to obtain a grant).

Table 11. Barriers to ideal housing/communities identified in small-group discussion

	Category	No of times mentioned
<b>Economic / financial</b>	sustainable technologies/homes too expensive	7
	sustainable houses less profitable	5
	lack of government investment	4
	lack of local economic opportunities	2
	initial cost of energy efficiency measures	2
	global recession	1
	lack of support from financial institutions	1
<b>Cultural/psychological</b>	coal-based economy <sup>7</sup>	1
	individualism/people don't care about community	4
	image of alternatives/affordable housing	4
	car culture/status	3
	attitudes (general)	2
	inertia	2
<b>Political/institutional</b>	finding like-minded people	2
	second-homers	2
	lack of political will/action	10
	inconsistent political goals/institutions	5
	skills shortage	5
	building regulations	4
	lack of public/political education	4
	lack of transparent/accessible information	3
	communities disempowered	2
building industry fragmented	1	
building industry conservative	1	
bureaucracy	1	

<sup>5</sup> [www.segselfbuild.co.uk/projects/hedgehog.html](http://www.segselfbuild.co.uk/projects/hedgehog.html)

<sup>6</sup> [www.peabody.org.uk/bedZED](http://www.peabody.org.uk/bedZED)

<sup>7</sup> NB - The UK no longer has a coal-based economy, but *does* have a fossil-based economy.

	no incentive for businesses to have sustainable buildings	1
	planning doesn't support affordable housing	1
	no facilities for teenagers to socialise	1
	vandalism by teenagers	1
<b>Tech</b>	technological uncertainty	1

Table 11 cont.

	Category	No of times mentioned
<b>Ph ysi cal/ env</b>	limited land availability	5
	dependence on car for amenities/work	5
	climate change impacts/adaptation	4
	hard to change existing buildings	2
	• lack of waste/recycling amenities	2
	energy shortages/power cuts	2
<b>Pop'n</b>	migration within UK (N to S/ London to Norfolk)	3
	ageing population	2
	<i>Future is out of our control</i>	1

Table 12. Outcome of final voting exercise in sustainable housing/communities workshops

'Vote on your preferred options for future housing and communities:'	Sept 06	Mar 07	Total
<i>No change from present</i>	0	0	0
'Earthships' (type of eco-housing)	8	18	<b>26</b>
Car-free housing developments	7	6	<b>13</b>
Micro-generation (each home generates own, renewable energy)	17	8	<b>25</b>
'Smart-meters' installed in homes (to display current energy use)	6	10	<b>16</b>
'Intelligent' homes, which automatically reduce energy wastage (e.g., turning off unused lights)	12	14	<b>26</b>
Communes	4	1	5
Co-housing (neighbourhoods with shared facilities, e.g., dining room, gardens)	9	14	<b>23</b>
More live-work areas (i.e. workplaces near homes)	11	12	<b>23</b>
High-density urban housing	5	6	<b>11</b>

More rural development	2	1	3
Fines for not recycling	4	4	8
Rainwater harvesting	12	16	<b>28</b>
Straw-bale housing	4	14	<b>18</b>
<b>Suggestions added by participants:</b>			
Perma-culture/green spaces around residences	16		<b>16</b>

Table 13. Questionnaire responses to question: ‘Which, if any, of the options presented today do you think will do most to improve housing and communities?’

Categories	No of times mentioned
Energy efficiency technologies/ products (inc. insulation)	3
Earthships	2
Renovation, refurbishment	2
Recycling, reuse	1
Co-housing	1
Sustainable communities	1
Renewable energy	1
Smart-meters	1
Sustainable design	1
Planning for future	1
Need variety of solutions	1
Any	2

## 5 Learning and evaluation

One of the main aims of the groups was to test whether the workshops effectively enabled participants to learn and deliberate. Evaluation questionnaires measured individuals’ perceptions of learning via two questions (see Tables 14 and 15).

One in four (25%) participants felt they had changed their views as a result of attending the workshop. Most nevertheless felt they had learnt something from the workshop. The two most common areas of learning for participants were technological aspects (9) and others’ attitudes/views (9).

It is interesting to note the divergence in optimism versus pessimism in participants’ attitudes on leaving the workshops. Whereas five participants highlighted the challenges in bringing about change, or government inaction; eight individuals mentioned hope, enthusiasm, choice and public support for sustainability.

As mentioned earlier, a further aspect of participant learning is indicated by the greater number of ideas generated through discussions than when participants worked individually.

Table 14. Questionnaire responses to question: 'Having attended this workshop, do you feel your views have changed at all?'

	September 2006		March 2007		Total
	Transport	Housing	Transport	Housing	
Yes	3	4	5	3	15
No	4	5	4	4	17
Don't know	2	3	0	0	5
Other/not known	5	3	6	9	23

Table 15. Questionnaire responses to question: 'What, if anything, do you feel you have learned from this workshop?'

	September 2006		March 2007		Total
	Transport	Housing	Transport	Housing	
Technological aspects	4	2	3	0	9
Social/behavioural aspects	0	3	0	0	3
New insights (general)	0	1	2	0	3
New points of view/others' attitudes	3	1	4	1	9
Public support for sust./saving the world	0	1	1	1	3
Convergence of attitudes	0	1	0	0	1
Complexity/difficulty of change in transport	2	2	0	0	4
Choice/many options	0	0	0	3	3
Enthusiasm/hope	0	0	1	1	2
About other countries	1	0	1	0	2
The need for strategic thinking in planning	0	1	0	0	1
Government not going to act	0	0	0	1	1
Problems with rural areas	1	0	0	0	1
About UEA's research	0	0	1	0	1
Workshop better than lectures	0	1	0	0	1
Difficult to understand	0	1	0	0	1

Comments about the workshop were also elicited via the questionnaires (see Table 16). In general, responses were very positive. The criticisms from the initial BA Festival workshops relating to wasteful resource use were addressed by significantly reducing the amount of paper used in the EE workshops.

Table 16. Participants' comments on workshop elicited via questionnaires

	Transport	Housing
BA Festival	Worked well	Good way to discuss issues - noticed city/country divide
I	I felt it was very informative	Interesting, lively

Well-organised; but the info pack is profligate with paper	Any course on sustainability should minimise its own environmental impact. Put the print on as little paper as possible; don't supply shop-bought bottled water; provide for recycling of paper and of tea-bags. You could make a virtue of all this!
Great	Well-run - good balance of presentation and participation
Very well-led, informative, encouraged sharing views/ experiences	Stimulating

Table 16 cont.

	Transport	Housing
<b>BA Festiva I</b>	The final poll should not have lumped together walking and cycling - walking is much more sustainable	
	Thought-provoking	
<b>EE</b>	Very pleased to have attended and taken part in an EU project	Very interesting
	Generally very interesting; general group discussion could have been better managed to stop certain personalities dominating discussions!	Very good!
	Please come and present ideas at schools	Nice informal approach; enjoyed the discussion
	Excellent presentations	Really good; helpful; and it has made me more aware that we need to start improving our lifestyles
	Very good having these talks, and I would come again	Excellent format; interesting speakers, fab all round
	I enjoyed listening to all the views given. And felt that we may be able to change people's views on transport. Very optimistic	
	I enjoyed it, although felt: a) You tried to cover too much in the time available - at the cost of depth of understanding; b) I think the presentations should have come first (I'm aware of the risks of this, but given the time constraints, I think it would have accelerated people's thinking)	
	The workshop I attended look at wider issues such as energy 'generation' and use	

## 6 Summary and conclusion

Four workshops were held in Norwich between September 2006 and March 2007 as part of the European project, MATISSE, on sustainable futures and policy assessment. Two of the workshops focussed on sustainable transport and two focussed on sustainable housing and communities. The aims

of the workshops were to elicit citizens' perspectives on transport and housing, and to use this information to inform an Integrated Sustainability Assessments (ISA) of mobility and housing/communities. The workshops also aimed to test and improve participatory methods for policy assessment and social learning; and to stimulate a social learning process among participants taking part in the workshops. Key findings from these workshops are outlined in this section.

## 6.1 Citizens' views on sustainable transport

- *Ideal future*: Modal shift and reduced demand are viewed favourably, while personal transport and a moderate amount of travel are also supported. Participants tended to focus more on lifestyle change (modal shift and demand management) than on transport technologies as solutions to tackle transport problems. There was virtually no support for a business-as-usual approach.
- *Futuristic options* were rarely mentioned; rather, participants considered an ideal transport system for Norfolk as emulating current European best practice, rather than consisting of radical innovations or technologies.
- *Expected future*: Participants expected transport in 2030 to follow a business-as-usual pattern: suffering from similar (or worse) problems to the present day (e.g., congestion, fragmentation and pollution), while seeing some incremental technological improvements (e.g., more efficient vehicles). Participants nevertheless saw themselves as continuing to use public transport more often than private vehicles, despite few (or no) improvements being made to services.
- *Barriers to sustainable transport*: Participants identified a range of barriers - primarily cultural, political and institutional barriers rather than technological obstacles - to achieving their ideal transport future. Participants also recognised a number of 'lock-ins' to unsustainable transport, including physical and cultural dependence on cars.
- *Responsibility for change*: Participants tended to place responsibility for change with governments, and some expressed a lack of personal influence in respect of improved transport.
- *Learning during the workshops*: There was little overall change in participants' preferences over the course of the workshop (public transport remaining the most popular), although personal transport appears to have declined in importance. Over one-quarter (28%) stated they had changed their views as a result of attending the workshop; while others said they had learned something (particularly about technologies).

## 6.2 Citizens' views on sustainable housing and communities

*Ideal future*: Participants favoured rural eco-homes, with (on average) 3 bedrooms and a garden, in a strong, safe community with local amenities. Affordability was also raised in the small-group discussions. Evidently, this group was not concerned with attaining luxury in a materialist sense but rather in minimising their environmental damage and increasing social interaction. There seems to be a desire to balance communal and personal space, with co-housing being considerably more popular than communes. There was no support for a business-as-usual approach.

As in the transport discussions, few truly 'futuristic' options were raised.

*Expected future*: As in the transport workshops, the EE participants were more pessimistic than the BA Festival participants. The most prominent differences between ideal and expected futures are in respect of house size, green space and community interaction: most participants foresaw they would live in smaller homes than they would have liked, with limited greenery and community spirit.

*Barriers to sustainable housing and communities*: Participants saw few technological barriers to realising their visions; rather, they highlighted political/institutional, as well as economic/financial,

cultural/psychological, and physical/environmental barriers. In particular, political inaction, cost of sustainable technologies/homes, skills shortages, individualistic/materialistic culture, physical dependency on cars and a shortage of land for new-builds were the most commonly raised points.

*Responsibility for change:* While many of these barriers were understood as the legacy of past decisions, there was often disappointment with the lack of leadership by government, and limited community/individual support, in making the necessary changes. Nevertheless, participants were keen to suggest and share solutions which they could implement, indicating a more pragmatic focus than in the transport workshops.

*Learning during the workshops:* In the housing workshops there appears to have been rather more change between the start and end of the workshop. Although participants continued to favour environmentally-friendly homes and community values, there is convergence towards a more limited number of options, several of which were discussed by presenters: ‘earthships’, micro-generation (small-scale renewable energy generation), ‘intelligent homes’ (optimised and automated domestic energy), co-housing, live-work (mixed zone) areas, and rainwater harvesting (i.e. collecting rainwater for domestic/garden use). Just under one-quarter (23%) stated they had changed their views as a result of attending the workshop; while others said they had learned something (e.g., about social/behavioural aspects).

### 6.3 Next stages

These workshops provide an exploration into deliberative methods for citizen participation in ISA, and offer some insights into the concerns and experiences of citizens in respect of two sustainability issues: transport and housing/communities. While these insights are in themselves valuable, they are not representative of the UK population as a whole. Further work will therefore draw on government surveys and other literature on attitudes to transport and transport policies amongst the UK public (e.g., Department for Transport, 2007; Lethbridge, 2001).

This research will then be used to explore in which ways citizens’ and experts’ views differ in respect of sustainable transport, by comparing citizen responses with those of the hydrogen/transport workshop participants in February 2006 (Whitmarsh et al., 2006). As noted elsewhere (e.g., Davies, Burgess, Eames, Mayer, Staley, Stirling, & Williamson, 2003), there are often many commonalities, as well as some differences, between expert and lay perceptions of technical/societal problems.

This comparative work will feed into an analysis of the role, value, and methods for stakeholder participation in ISA. This analysis will consider, amongst other things, how divergent values and information are dealt with through participatory approaches. It has been noted in this paper that participants were often aware of the trade-offs in some aspects of the sustainability issues discussed. At other times, the tensions and conflicts between different priorities and concerns were only apparent through a comparison of individual responses. The challenge for policy-makers and other decision-makers who apply participatory methods is to decide how (and whether) conflicts and uncertainties can be managed for effective solution design.

Finally, the citizens’ and experts’ views about transport and housing elicited via these workshops will be used within stakeholder-led ISAs of mobility and housing. Stakeholders’ criteria for sustainability will be incorporated into the new modelling tools being developed within the MATISSE project to assess whether particular policy interventions and social changes would foster more sustainable futures.

### **Acknowledgements**

Enormous thanks go to the other workshop facilitators and presenters—Gill Seyfang, Jacky Pett, Noam Bergman, Björn Nykvist, Jonathan Köhler, Gemma Crawley, Mark Thompson, Melissa Burgan, Nicholas Doyle, Sophie Nicholson-Cole, Anita Wreford, and Julian Briggs—and to the workshop

participants for their time and contributions to making the workshops a success. The author is also indebted to Jill Jäger and Paul Weaver for their valuable comments and edits on an earlier draft of this paper.

## References

- Bergman, N., Whitmarsh, L., Köhler, J., Haxeltine, A., & Schilperoord, M. (2007). *Assessing transitions to sustainable housing and communities in the UK*. Paper presented at the International Conference on Whole Life Urban Sustainability and its Assessment, Glasgow, June 27th-29th.
- Darnton, A. (2004). *Driving Public Behaviours for Sustainable Lifestyles: Report 2 of Desk Research commissioned by COI on behalf of DEFRA*. Available from: [www.defra.gov.uk](http://www.defra.gov.uk); Andrew Darnton Research & Analysis.
- Davies, G., Burgess, J., Eames, M., Mayer, S., Staley, K., Stirling, A., et al. (2003). *Deliberative Mapping: Appraising Options for Addressing the Kidney Gap*: The Wellcome Trust/UCL/SPRU/PSI.
- Department for Transport. (2007). *Attitudes to climate change and the impact of transport*: Transport Statistics, DfT: <http://www.dft.gov.uk/162259/162469/221412/221513/222693/AttToCCReport.pdf>.
- European Commission. (2001). *European transport policy for 2010: time to decide. White Paper*. Brussels: European Commission.
- Kasemir, B., Jaeger, C. C., & Jager, J. (2003). Citizen participation in sustainability assessments. In B. Kasemir, J. Jager, C. C. Jaeger & M. T. Gardner (Eds.), *Public Participation in Sustainability Science: A handbook* (pp. 1-36). Cambridge: Cambridge University Press.
- Lethbridge, N. (2001). *Transport trends: Understanding attitudes to transport policy*. DETR, [www.dft.gov.uk/pgr/statistics/datatablespublications/trends/2001/articles/article2understandingattitud5436](http://www.dft.gov.uk/pgr/statistics/datatablespublications/trends/2001/articles/article2understandingattitud5436)
- Nykvist, B., & Whitmarsh, L. (2007). Niche development and accumulation for sustainable mobility transitions: Evidence from the UK and Sweden. *Submitted to Technological Forecasting and Social Change*.
- Potter, J., & Wetherell, M. (1987). *Discourse and Social Psychology: Beyond attitudes and behaviour*. London: Sage Publications.
- Weaver, P. M., & Rotmans, J. (2006). Integrated sustainability assessment: what is it, why do it and how? *International Journal of Innovation and Sustainable Development*, 1(4), 284 - 303.
- Whitmarsh, L., Wietschel, M., Jäger, J., Nykvist, B., Strasser, S., & Weaver, P. (2006). *MATISSE WP7.1 - Hydrogen Transport Stakeholder Workshop: Findings from Break-Out Group Discussions and Questionnaires*: MATISSE Internal Report. [www.matisse-project.net](http://www.matisse-project.net).

## ***Appendix - Evaluation questionnaire (transport version)***

### **Sustainable Transport Workshop - Evaluation Questionnaire**

Many thanks for coming along and participating in our workshop today. We would be very grateful if you could take a few moments to complete this evaluation questionnaire to enable us to assess the impact of the workshop. This will support our research on citizens' visions of sustainable futures. All information gathered is **completely confidential**.

#### ***Section A      Your feedback on the workshop***

1. Why did you attend this workshop?

2. Having attended this workshop, do you feel your views have changed at all?

Yes

No

Don't know

3. What, if anything, do you feel you have learned from this workshop?

4. What are the most important features you would like to see in Norfolk's transport system in the future?

5. Which, if any, of the options presented today do you think will do most to improve transport?

6. Please write your comments about the workshop here:



If yes, please write your email / postal address here:

---

**Thank you very much for taking the time to complete this questionnaire.**

***Published by***

SERI Nachhaltigkeitsforschungs und -kommunikations GmbH  
Garnisongasse 7/27, A - 1090 Wien  
Tel.: 01/9690728-0, Fax.: 01/9690728-17  
[www.seri.at](http://www.seri.at); [office@seri.at](mailto:office@seri.at)

Download available <http://www.matisse-project.net>