

# **Adapting to Climate Change: Guidance notes on running community engagement workshops**

**for the Scottish Climate Change Impacts Partnership (SCCIP)  
and Perth and Kinross Council**

STAR Development Group and LUC

April 2011

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Thanks to Graham Esson and colleagues at Perth and Kinross Council, Colin Roxburgh (STAR) and Nick James (LUC) for their invaluable input and work in developing and running the workshops.

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## 1 INTRODUCTION

1.1 Whilst much can be done at the national, regional and local authority levels to build adaptive capacity, address immediate risks and plan for future changes in climate, it is important to recognise that individual communities have a very important role to play in adapting to climate change.

1.2 SCCIP is tasked through the Low Carbon Scotland Public Engagement Strategy (Scottish Government, December 2010) with developing a community engagement programme to increase awareness of the impacts of climate change and improve the capacity of communities to adapt. Steps must be taken to 1) identify ways of raising awareness of climate change impacts among communities and, 2) suggest mechanisms by which communities can actively feed directly into policy and planning processes that will influence their adaptive capacity and sensitivity to climate change.

1.3 Community engagement workshops provide an important mechanism for both raising awareness of climate change impacts and providing a means for communities to feed in their views regarding priority climate change impacts and adaptation actions of direct local relevance. This report provides a step by step guide to running community engagement workshops that raise awareness of climate change and work with stakeholders to identify local impacts and potential adaptation actions.

## 2 BACKGROUND INFORMATION

The workshops described in this report were run during February and March 2011 as part of a larger suite of work developed through SCCIP's [A9 project: Climate Change in the Central Highlands](#). The workshops were run in partnership with Perth and Kinross Council and were carried out with community representatives from the Carse of Gowrie, an area of low lying land in rural Perthshire.

The workshops aimed to:

- Raise awareness among the community of the changes in climate projected for this century;
- Identify how the community is currently impacted by weather events and discuss the types of impacts that might occur in the future;
- Identify adaptation options that will reduce vulnerability to climate change and maximise opportunities.

The workshops were developed and run by the Small Town and Rural Development Group (STAR) and Land Use Consultants (LUC). This report, written by STAR and LUC, provides a practical guide to the process, tools and techniques that were used at the workshops, in particular it provides:

- Information on organising the workshops;
- Agendas for the workshops and accompanying notes to assist in facilitation;
- Templates for the workshop exercises - within the appendix;
- Links to the presentational material that was used in the Carse of Gowrie.

1.3 The presentations and resources referred to throughout this document are available online at: <http://www.sccip.org.uk/12/106/0/Community-Engagement-Pilot.aspx>

## **2. ORGANISING THE WORKSHOPS**

The workshops were planned and organised over a six week period in January / February 2011. This provided sufficient time to book a suitable venue, invite and recruit participants and develop content for the workshops. Key details regarding planning and organising the workshops are outlined below:

### **Number of workshops**

2.1 In total it was thought that there was a need to hold at least 3 workshops to allow sufficient time to discuss and work through the process of thinking about adaptation.

2.2 The notion of 3 workshops was based on the thinking that:

- The first workshop would take stock of the area and what was in it, look at past climate change and also the likely climate change that could be expected in the next 50 - 80 years;
- The second workshop would explore the likely impacts and effects of climate change on the area;
- The third workshop would focus on identifying actions to adapt to the main challenges and opportunities.

### **Timing of the workshops**

2.3 It was thought that the workshops should be held quite closely together - over 3 consecutive weeks. They were all organised for the same day of the week - in the Carse of Gowrie case - on Tuesday nights. They were run as 2 hour sessions - 6.30 - 8.30 pm - with people invited to attend for light refreshments from 6.00 pm.

### **Facilitation**

2.4 The facilitation of workshops is an important consideration - and organisers should be aware of key community issues that might highlight existing tensions and potential conflicts of interest. In the Carse of Gowrie, Perth and Kinross Council (PKC) was familiar with many issues in the area and the project engaged professional facilitators experienced in working with communities. The resulting workshops were able to explore contentious local issues while remaining productive and convivial throughout - a well planned approach to facilitation played an important role in achieving this.

### **Location**

2.5 The workshops were held in a comfortable hotel central to the area - the Inchtute Hotel in the Carse of Gowrie - as it was thought that it was important to provide a pleasant welcoming experience to those attending.

### **Invitations**

2.6 The workshops were hosted by PKC and SCCIP, with PKC taking the lead in identifying people and organisations to attend. A copy of the invitation letter is included in Appendix 1. PKC worked through their local Community Learning and Development Staff to promote the workshops to make sure there was a good mix of people and organisations represented. The aim was to secure attendance from around 25 - 30 people in total. The invite needs to make clear that that people are expected to attend all 3 workshops to ensure there was continuity in discussion and debate.

2.7 People interested in attending were invited to either phone, email or register on line. Around 50% of the participants in the Carse of Gowrie chose to register on line.

2.8 In aiming for a 'good mix' of people the basic premise is to try to cover a cross section of local interests (main organisations, community, land management, environment heritage, business), with a good spread of age groups (young, working age, retired), and geography (different villages / villages and outlying areas) as well as taking account of other demographic issues if possible (e.g. long term residents, newer members of the community).

### **Climate Change Panel**

2.9 A key feature of the invitation to take part was that it invited local people to take part in the 'Climate Change Panel' Workshops for the Carse of Gowrie. It was felt important that people attending should view themselves as taking an active part in Panel discussions rather than as passive recipients and questioners of information at a consultation workshop.

### **Organisational format of the workshops**

2.10 All workshops followed the same basic principles:

- People arrived, were welcomed, signed in, and had refreshments and an opportunity to network before the formal workshop started.
- The workshops were organised in 'cabaret' format - with 5 tables seating 6 people at each table.
- The workshops all involved a mix of powerpoint presentations made by the facilitators (using laptop/digital projector and screen); guided small group discussions at the tables, and feedback.
- The workshops all built on each other so what participants had said at one workshop was written up and presented back or used in subsequent workshops.
- The second and third workshops included a recap 'the story so far' - covering a quick review of what had been discussed at the previous workshops.

## **Background Information Pack**

2.11 All participants were presented with a background information pack with information on climate change. The Information Pack for the Carse of Gowrie can be accessed by following the link provided in the background information section.

2.12 The aim was to reduce the potential for information overload at the first workshop and to give participants some time to start thinking about the subject before arriving. It was important to emphasise that much of the information would be 'gone over' in the first workshop and that it was not a requirement of attendance to have studied the information in great detail - in case that put participants off.

## **Preparation before and in-between workshops**

2.13 The background information pack is one example of the amount of preparation work that needs to go in to ensure the success of the workshops. Between Session 1 and 2 there is a need to write up the session notes from 1 - and incorporate findings into presentational material (as part of feedback) and to use the findings from Session 1 to prepare 'headings' for worksheets for Session 2. This can require around 2 days of time put in between workshops.

2.14 Similar time and activity needs to be allowed between Session 2 and Session 3. It was also useful for all organising parties to meet (PKC, SCCIP, and the facilitators) between Session 2 and 3 to discuss findings to date, agree emerging themes and jointly plan how Session 3 should unfold. This is best done in the light of what has already happened and might mean some redesign of Session 3 to build on what has already happened or to address issues that have arisen during the work to date.

2.15 Practical preparation involves making sure all the work sheets and presentations are prepared and in sufficient quantity before each workshop, and that on the night sufficient organising time is allowed (at least 1 hour prior to the workshop) to prepare the room, projectors, screens, tables, worksheets, pens etc.

## **Incentives to attend**

2.16 As a small recognition of participants having given up their time there was a raffle at each workshop for a hamper of local produce. It may also be appropriate to look at ways of reimbursing participants travel expenses.

## **Next Steps - Continuity**

2.17 It is hoped that the bringing together of a local Climate Change Panel for these 3 workshops helps to stimulate ongoing discussion, research and action - and feeds into the planning and work of local community organisations and businesses, local authorities, other public agencies, and ultimately influences change and development within the area as a whole.



2.18 It is important that the last session leaves enough time to discuss next steps and look at how they might be supported. Support in the Carse of Gowrie will include providing feedback of all the sessions to participants, 'brokering' the findings of the Climate Change Panel within and across public agencies, and supporting local action through continued contact and updating (a local newsletter) as well as an organising an initial opportunity for the Panel to reconvene in 3 months time. This call back workshop will focus on a further exploration of the next steps once people have had time to reflect on what came out of the Panel sessions and how ongoing work might best be absorbed and organised within the community and supported by other partners.

### 3. AGENDAS AND NOTES

3.1 The three agendas are shown here with some notes on what was done in each session. Some guideline timings are also provided.

#### First workshop

<b>PANEL WORKSHOP 1</b>		
<b>OUR AREA AND CLIMATE CHANGE</b>		
<b>1.</b>	<b>Welcome and Introduction</b> <ul style="list-style-type: none"><li>• Background and aims</li><li>• Overview of the 3 sessions</li><li>• Hopes</li></ul>	<b>15 minutes</b>
<b>2.</b>	<b>Our place</b> Defining the community <ul style="list-style-type: none"><li>• Its extent</li><li>• Its strengths and weaknesses<ul style="list-style-type: none"><li>○ natural environment/built environment/local economy/social and community/culture and heritage</li></ul></li></ul>	<b>45 minutes</b>
<b>3.</b>	<b>Climate Change in the Past</b> <ul style="list-style-type: none"><li>• Presentation</li><li>• What we have noticed</li><li>• Any ways in which we have already adapted</li></ul>	<b>30 minutes</b>
<b>4.</b>	<b>Climate Change in the Future</b> <ul style="list-style-type: none"><li>• Presentation</li><li>• Initial reaction on likely impacts</li></ul>	<b>30 minutes</b>

#### Notes

##### Welcome and introduction

##### *Introductions all around*

3.2 As it is the first workshop it is appropriate for people to introduce themselves saying where they are from/which community/which organisation/ and any interest or direct experience or knowledge they might have on the subject

### *The context and aims of the workshops*

3.3 It is important to provide both the context for the workshops and an overview of the 3 sessions at the outset. In the Carse of Gowrie's case, PKC and SCCIP both explained their role in hosting the events and their hopes that the outcomes from the sessions would influence their understanding of the issues in the Carse of Gowrie and would help shape their thinking on planning and development in the future. This helps participants to understand that the workshops are an opportunity to have some influence on policy - and gives a sense of value and purpose.

3.4 It is equally important to emphasise that the workshops are primarily an opportunity for the community to consider how to proactively think about and address the likely impacts and effects of climate change.

### *An explanation of each session*

3.5 The introduction is also an opportunity to explain the 3 sessions and how one follows on from the other. The main information to impart is that:

- The first session looks at defining the area - its strengths and weaknesses, and then presents information on past climate change and looks at the changes in climate that may affect the area in the future. It is essentially a session that takes stock of what is known about the area and about climate change. Taking stock of the area allows us to define aspects of the community that might be impacted by climate change.
- The second session looks in detail at what the impacts and effects of climate change might be. It explores what the physical impacts might be and what the effects of these might be on quality of life and livelihoods. It is important to recognise that there might be positive as well as negative effects.
- The third session focuses on how the community might proactively adapt and organise in order to tackle negative impacts and effects or make the most of any opportunities that might arise.

## Our place

### *Agreeing the extent of the area*

3.6 Firstly a map is presented of the area - shown on powerpoint with a paper A1 copy on each table. Participants consider the map and agree or alter the definition/boundaries of the area. In the Carse of Gowrie participants felt the map accurately described their area but that the western edge could be extended slightly towards Perth. This discussion should only last for a few minutes but allows participants to lay claim to their area and agree its extent.

*What we know about the areas strengths and weaknesses*

3.7 This is extended small group exercise taking around 40 - 45 minutes to define the areas strengths and weaknesses. The area is considered under 5 themes - therefore 1 theme per table:

- Built Environment
- Natural Environment
- Culture and Heritage
- Local Economy
- Social and Community Facilities and Services.

Templates for the Theme Sheets are provided in Appendix 2.

3.8 Each table is invited to identify the strengths and weaknesses under their theme. The way we ran the sessions in the Carse of Gowrie was to give 10 minutes to fill in the theme sheet, then invite people to move to another table and theme (with everyone moving tables in a clockwise direction).....and so on. This allows everyone to have a go at adding to the strengths and weaknesses under each theme - and to see what everyone else has written. An alternative to moving people around is to move the sheets so people stay static but the sheets move - slightly less fun!

3.9 As everyone has seen what has been written there is no need for feedback - which would take too long anyway. It is therefore important to note this, and to explain that the sheets will be written up and presented back as information at the next workshop.....as well as used in considering the impacts and effects of climate change.

Climate Change in the past

*Presentation*

3.10 A presentation on how climate change has affected the area. The presentation used for the Carse of Gowrie has been uploaded onto the web and can be accessed by following the links provided in the background information section.

*Short discussion*

3.11 The presentation is followed by a short discussion at each table on whether the changes presented had been observed locally and in what ways. The aim is to give participants an opportunity to relate their own personal experiences of change.

3.12 The discussion at each table is captured on flip chart and presented back so that any common or different experiences can be heard by the full workshop.

## Climate change in the Future

### *Presentation*

3.13 The workshop concludes with a presentation on the likely climate change scenarios for the future. The presentation used for the Carse of Gowrie can be accessed using the link provided in the background information section.

3.14 At the end is useful to give participants a chance to voice their initial reactions to what has been presented as a way of setting the scene for next week's session. This can be done as a short concluding plenary session.

## Second workshop

<b>PANEL WORKSHOP 2</b>		
<b>IDENTIFYING IMPACTS, VULNERABILITIES AND OPPORTUNITIES</b>		
<b>1.</b>	<b>Introduction and Review</b>	<b>15 minutes</b>
<b>2.</b>	<b>Impact and effects on</b> <ul style="list-style-type: none"><li>• Natural Environment</li><li>• Built Environment</li><li>• Local Economy</li><li>• Social and Community</li><li>• Culture and Heritage</li></ul>	<b>1 hour</b>
<b>3.</b>	<b>Priorities</b> Identifying priorities	<b>10 minutes</b>
<b>4</b>	<b>Main themes - issues and challenges</b> Small group discussions on the main themes that have emerged so far and thinking through the key issues and challenges for adaptation.	<b>30 minutes</b>
<b>5.</b>	<b>Finish</b>	<b>5 minutes</b>

### Notes

All presentations referred to are available by following the link provided in the background information section.

#### Introduction and Review

##### *Review and results from Session 1*

3.15 The introduction sets the scene for this session and includes a powerpoint presentation feeding back the information from session 1. The presentation is backed up by A3 sheets provided on each table showing the results of the Our Place exercise. They are a verbatim transcript of what was written onto the template sheets used in Session 1 (See appendix 2).

*Presentation on likely impacts and effects*

3.16 The review presentation is followed by a presentation on the likely impacts and effects. It introduces the concepts of effects due to direct change, mitigation, and adaptation.

What are the likely impacts and effects in the Carse of Gowrie

*Presentation of a priority list*

3.17 Drawing from the work in Session 1 - it was possible to propose a list of around 20 features/assets/ or aspects of the community that might be affected by climate change. The list for the Carse of Gowrie is shown in Appendix 3. To be able to present this there needs to be work done between Session 1 and 2 not just to write up the Our Place findings from Session 1 but to analyse it to see what can be drawn from it in terms of a priority list.

*Working in pairs - to assess the impacts and effects*

3.18 Participants were asked to work in pairs to assess the likely impacts and effects of climate change on the priority list. Each pair was only given around 6-7 topics out of the 20 identified to assess. This meant that if there were 6 people at each table the full list of 20 or so topics could be covered at each table - divided up between the 3 pairs.

*Method of assessing*

3.19 The template used by each pair for assessing was the H Form - a participatory tool for identifying the effects of change. A blank and then an example of a completed form is shown in Appendix 4. As mentioned above each pair took around 6 or 7 H Forms that already had the topic heading on it. H Forms were provided on A3 sheets. This again requires preparation of the H Forms prior to Session 2.

*Guide for completion of the H Forms*

3.20 Looking at the H Form in the Appendix.....participants should first aim to identify the likely climate change impacts that will affect the named topic, then comment on the likely negative or positive effects this will have. They can then attribute a negative and/or positive score based on their assessment of the severity or seriousness of the effects they have described. 1 =small effect, 2 = medium effect, 3 = large effect.

## Priorities

### *Seeing what the scores are*

3.21 As pairs complete their 6 or 7 H Forms they are then invited to log their scores on an A1 sheet that is stuck up on the walls. They do this by using sticky dots to record their scores on the sheet. The sheet is included in Appendix 5. It allows all participants to see what has come out of the H Form exercise in terms of scoring and patterns of negative and positive effects.

## Theme Small Group Discussions

3.22 The identification of the most important aspects of the community to be impacted on at the start of the workshop (the 20 or so features identified out of the stock taking exercise) and then the H Form scoring - allows us to shape up some main themes from the work so far. In the Carse of Gowrie the main emerging themes were Farming, Recreation and Tourism, Natural and Cultural Environment, Transport/Social/Community Facilities, Housing and Flooding.

3.23 Each of these themes was allocated a table for further small group discussion. Participants were for this final exercise invited to sit at a Theme Table that they were most interested in. They then had a free hand to discuss the main issues and challenges for this Theme and having discussed them to write the main Issues and Challenges down on a blank sheet of Flip Chart paper.

## Finish

3.24 This second session concludes with a summary of the evenings work and sets the scene for the final session - reminding participants that the aim of the final session is to think about how the community and its partners will proactively tackle the issues and challenges that we are starting to identify.



## Third workshop

<b>PANEL WORKSHOP 3</b>	
<b>ADAPTATION ACTION PLAN</b>	
<b>1.</b>	<b>Introduction and Review</b>
<b>2.</b>	<b>Options for Adaptation – Presentation</b>
<b>3.</b>	<b>Agreeing the Impacts and Challenges</b> Reviewing and agreeing the impacts and challenges for each theme
<b>4.</b>	<b>What action is needed</b>
<b>5.</b>	<b>Final assessment of vulnerability and resilience</b>
<b>6.</b>	<b>Next steps</b>
<b>7.</b>	<b>Evaluation</b>
<b>7.</b>	<b>Finish</b>

### Notes

All presentations referred to are available by following the link provided in the background information section.

#### Introduction and Review

3.25 A short introduction on the purposes of the workshop and how it builds on the work of the Panel in previous workshops. A powerpoint presentation was used to review outputs from the previous session.

#### Options for adaptations

3.26 A further presentation gave some examples of the typical choices that had to be made under key topics.

#### Agreeing the impacts and challenges

*Small group discussions for each topic*

3.27 Participants were invited to sit at one of five topic tables. The topics reflected the work that had been done in the last session and in the Carse of Gowrie the five topics were: Agriculture, Housing and Flooding, Natural & Cultural Heritage, Tourism & Recreation, and Transport, Social, Community Services & Infrastructure.

Pre prepared A3 sheets described the likely impacts, issues and challenges that climate change would bring to each topic. Participants at each table were asked to read and review these and agree them or add or change them as they saw fit.

#### What action is needed

3.28 Having done this participants moved on to consider how to adapt - by describing what needed to be done to address the issues, challenges and opportunities identified - and who should be involved.

3.29 A1 sheets for this exercise were prepared prior to the session with the main impacts described for each topic. An example for Agriculture is attached in Appendix 6.

3.30 Following discussion and completion of the forms there is an opportunity for feedback of the key findings from each topic table.

#### Final assessment of vulnerability and resilience

3.31 Finally participants were asked to form a view on the overall vulnerability or resilience of their topic to climate change. They did this by simply circling one of the options on the Vulnerability/Resilience Sheet shown in Appendix 7. The sheet was produced on A3 landscape. Having done this, participants were then asked to mark either a V or R against their priorities within the topic. They could again 'score' each priority with 1-3 Vs or R's depending on their assessment of the how vulnerable or how resilient. *(Note - we did not have time to complete this exercise in the Carse of Gowrie and decided that we had already covered enough ground. We have included it within the guide in case it is thought to be useful and there is time to carry it out!).*

#### Next steps

3.32 This short session started to wind down the proceedings. It included short presentations from SCCIP and PKC to outline how they would take away some of the lessons learnt from the Panel workshops and how they might influence their strategies and policies.

3.34 It also involved asking the participants what follow up they would like to see locally and which organisations should be involved.

3.35 In the Carse of Gowrie it was agreed to hold a follow up workshop in 3 months time that would again be hosted by PKC and SCCIP to further explore how adaptation was progressed.

### Evaluation

3.36 We used a simple evaluation form - see Appendix 8 - to gather views on proceedings from participants.

## APPENDIX 1: INVITATION TO THE WORKSHOPS

Dear Participant

### **CARSE OF GOWRIE ADAPTING TO CLIMATE CHANGE PANEL WORKSHOPS**

**Tuesdays - 22<sup>nd</sup> February, 1<sup>st</sup> March, 8<sup>th</sup> March**

**Inchtute Hotel**

**Arrive at 6.00pm for soup and sandwiches, Workshop from 6.30pm - 8.30pm.**

We would like to invite you to take part in these three workshops that are to be held in late February/early March in the Inchtute Hotel. The aim of the workshops is to look at how climate change is likely to affect the Carse of Gowrie over the coming years and to start to think through what measures might need to be taken to adapt and prepare for change.

The workshops are being sponsored by Perth and Kinross Council in association with the Scottish Climate Change Impacts Partnership (SCCIP) - an initiative that brings together stakeholders in Scotland to collectively address and prepare for the impacts of climate change. PKC and SCCIP are keen to engage with one community in more depth and to listen closely to their views on climate change.

The Carse of Gowrie has been identified as the location for this work for a number of reasons including:

- Existing and potential flooding issues
- Productive agricultural land
- Distinctive settlements and communities
- Important road, rail routes, pylon and pipeline routes
- Proximity to Perth and Dundee

The workshops will include presentations on climate change and will then spend time exploring what the impacts and effects might be in the Carse of Gowrie. Participants will discuss what matters most to them and identify the action that needs to be taken to adapt for change. It is hoped that the results of the workshops will be used to direct the future work of local organisations and influence planning and programmes within Perth and Kinross Council and other key organisations such as Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA)

I have enclosed a copy of the agendas for the workshops with this invitation. It is intended that participants take part in all 3 workshops so there is a continuity of discussion and involvement. We will be limiting participant numbers to around 24 so please let us know as soon as possible whether you are able to attend.

Once you have confirmed your attendance we will send you out a small introductory pack of information to provide further background on the workshops and on climate change and its likely effects.

There will be a raffle for a hamper of local produce at each workshop and we will also be able to pay a small cost towards participants travel expenses.

Please email us to confirm attendance:

Colin Roxburgh [colinroxstar@tiscali.co.uk](mailto:colinroxstar@tiscali.co.uk) and/or

Nick James [nick.james@landuse.co.uk](mailto:nick.james@landuse.co.uk)

Alternatively you can telephone 01764 -670658 or 0141 -334 -9595

Kind regards

Colin Roxburgh

Small Town and Rural Development Group

Nick James

Land Use Consultants

**APPENDIX 2: OUR AREA - SHEETS FOR THE SMALL GROUP EXERCISE**

**BUILT ENVIRONMENT**

Roads, Buildings, Infrastructure

STRENGTHS	WEAKNESSES

**OUR NATURAL ENVIRONMENT**

**Forests and Woodlands, Rivers and Lochs, Mountains and Moorland, Coast and Sea,  
Fields and Farmland, Flora and Fauna**

STRENGTHS	WEAKNESSES

**LOCAL ECONOMY**

Different sectors e.g. farming, forestry, tourism and hospitality, manufacturing, trades retail, services etc; workspace, IT and communication, marketing and promotion

STRENGTHS	WEAKNESSES



**OUR COMMUNITY FACILITIES AND SERVICES**

Community facilities, services, organisations, activities, governance

STRENGTHS	WEAKNESSES

**OUR HERITAGE AND CULTURE**

Local Heritage and Archaeology, arts and music, organisations and events

STRENGTHS	WEAKNESSES

### **APPENDIX 3: SAMPLE LIST OF PRIORITY FEATURES/ASSETS/WEAKNESSES FOR THE CARSE OF GOWRIE**

- Housing Development sites
- Historic listed buildings and gardens
- Farmland/Polytunnels and Agric Sector
- Drainage and soil systems
- Opportunities for local food production
- Archaeological Sites
- The Braes
- Historic Villages fitting well into landscape
- Historic/new orchards
- Designated landscapes/SSSIs
- River Tay
- Trees and woodland - some special and ancient trees/ lack of woodland
- No renewable/ low carbon initiatives
- Road infrastructure/ commuter reliance on
- Paths/Cycle network
- Tourism/lack of tourist infrastructure
- Need for community facilities/services
- Need for communications/ other networks
- Other??

#### **Considering impact of climate change>>>>**

How is climate change likely to impact on these physical sites or land use matters?

Does climate change mean that weaknesses would be even greater weaknesses e.g. lack of tourist infrastructure, lack of renewables, reliance on road networks?

Does climate change mean that opportunities e.g. local food production - will become more important and easier to realise?

Does climate change mean that needs e.g. need for community facilities, need for improved communication networks - will become more or less important?

**APPENDIX 4: BLANK H FORM/ AND COMPLETED EXAMPLE**

**Adapting to Climate Change in the Carse of Gowrie  
E.G: River Tay**

**What negative effects could this have?**

**Will climate change have a negative and / or positive impact on this feature**

**What positive effects could this have?**

Score -3 to + 3

Circle your score

-3,-2, -1

0

+1, +2, +3

---

**What climate change impact do you foresee**

**APPENDIX 5: IMPACTS SCORING**

**Adapting to Climate Change in the Carse of Gowrie**

**IMPACT ASSESSMENT: MARK UP YOUR SCORES!**

STRENGTHS/WEAKNESSES	-3	-2	-1	0	+1	+2	+3

## APPENDIX 6: SAMPLE ISSUES AND CHALLENGES TEXT

### Agriculture

#### The changing climate

Climate change projections suggest that the Carse of Gowrie is likely to experience milder wetter and winters, drier and hotter summers, an extended 'growing season', an increase in heavy rainfall events, rising sea levels and changing patterns of coastal erosion and deposition.

#### The effects

This could have a number of effects on agriculture across the Carse, including:

- Wetter winters resulting in waterlogging, restricting the use of machinery, sowing of crops and potentially limiting the growing season
- Milder winters affecting fruit crops (e.g. blackcurrant), survival of pests and diseases
- Storm damage to crops and farm infrastructure
- Drier and warmer summers resulting in water shortages, damaging crops, reducing productivity
- Potentially better growing conditions in the summer
- Opportunities to grow a broader range of crops and to expand into currently less productive areas
- Loss of land through coastal erosion and coastal flooding
- Changes in the water table as a result of sea level rise - higher water table, possible salination of ground water.

#### Key challenges

- **Water management** - how do we deal with the combined impacts of winter flooding, summer drought, rising water tables, impacts on soils and land management practices?
- **Realising the potential** - how do we ensure that the Carse of Gowrie is able to benefit from better summer growing conditions and its competitive advantage over other areas? What information and advice do farmers need to help them adapt land management practices, crop types etc?
- **Conserving the identity and culture** of the Carse of Gowrie - how do we make sure that changes in land management retain the area's distinctive identity, as far as possible?
- **What do we need to start doing** to help us rise to these challenges?

**APPENDIX 7 SAMPLE PRIORITIES AND ACTIONS SHEET**

**AGRICULTURE: What should we do?**

	Farmers	Local community	Pows commission	P+KC	Government and Govt Agencies	Others?
Flooding / waterlogging of farmland due to wetter winters						
Loss and damage to soils, due to erosion and compaction						
Warmer and drier summers leading to drought						
Reduction in frost, wetter winters, drier summers impacting on fruit crops						
Increase in pests and diseases due to milder conditions						
Warmer and longer growing season						

(subject to workable soils in spring and autumn)						
Loss of coastal farmland as a result of sea level rise and coastal erosion						
Others?						



**APPENDIX 8: VULNERABILITY AND RESILIENCE ASSESSMENT SHEET FOR EACH THEME**

**Summary - how vulnerable/ resilient are we?**

	High	Medium	Low
How sensitive is farming to the impacts of climate change?	Climate change will have a major negative impact on farming overall	Climate change will have a minor or neutral impact on farming overall	Climate change will have a major positive impact on farming overall
What is our existing capacity to adapt to these changes?	We currently have no means of avoiding these impacts	We currently have some ability to avoid these impacts	We are currently well equipped to avoid impacts and maximise benefits
How easy or difficult will it be to improve our ability to adapt	There are no easy ways of helping us adapt in the future	There are some ways of helping us adapt in the future, but it will not be straightforward	There are things we can do to help us adapt relatively easily, including maximising benefits

**APPENDIX 9: EVALUATION SHEET**

**CARSE OF GOWRIE: ADAPTING TO CLIMATE CHANGE**

**CLIMATE CHANGE EVALUATION SHEET**

1. In a sentence or two can you tell us what your overall view of the workshops is? Were they worth participating in? What did they achieve from your point of view?

2. Thinking about the 3 sessions

	<b>WHAT WORKED WELL</b>	<b>WHAT COULD HAVE BEEN BETTER?</b>
<b>SESSION 1</b>		
<b>SESSION 2</b>		
<b>SESSION 3</b>		

3. Would you recommend this process to another community? Yes/No