

# Communicating Climate Change Consequences for Land Use

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## **Table of Contents**

1. Executive Summary	2
2. Project Contact	2
3. Introduction	3
3.1. Rationale	3
3.2. Objectives	3
3.3. The C4LU approach	4
4. Scientific Background	5
5. Materials and Methods	6
5.1. Evaluating the utility of the indicators	7
5.2. Evaluating the outcomes	8
6. Evaluation	9
6.1. Utility of the indicators for workshop participants	9
6.2. Outcomes for the workshops reported by participants	11
7. Conclusions and next steps	16
8. Acknowledgements	17

## **List of Figures**

Figure 1 - Elements of the C4LU workshop process	4
Figure 2 - Utility of the C4LU Indicators	9
Figure 3 - Responses per Indicator	10
Figure 4 - Overall C4LU responses	12
Figure 5 - Kyle C4LU responses	12
Figure 6 - Golspie C4LU responses	13
Figure 7 - Oban C4LU responses	13
Figure 8 - Aviemore C4LU responses	14
Figure 9 - Profile of the Stakeholder responses	15

## **List of Tables**

Table 1 - Workshop Programme and Locations	6
Table 2 - Typical Workshop Programme	7
Table 3 - Outcome Questions	9

## 1. EXECUTIVE SUMMARY

The Communicating Climate Change Consequences for Land Use project was a project co-funded by a Scottish Government Science Engagement Grant and the RERAD Environment: Land Use and Rural Stewardship research programme. Four workshops were run bringing together Macaulay Institute scientists actively engaged in climate change research with influential stakeholders in remote rural areas of Scotland (Argyll, NW and NE Highlands and Badenoch and Strathspey). In the workshops a cooperative analysis of the possible consequences of climate change for land use was undertaken and possible adaptive responses debated. The workshop programme built on previous pilot events organised with FWAG, NFUS and the Soil Association in which agro-meteorological indicators for a future climate were presented for evaluation. The events were effective in strengthening the partnerships between the researchers and the NGOs, broadening the range of contacts, refining the research outputs and improving the workshop processes. The workshops were seen by participants as informative with 90% reporting that new information had been presented. The research content was valid, useful and influential with 58% of the responses to the agro-meteorological indicators being classified as very or quite useful for decision making and only 5% seen as not useful. The workshop process of interactive presentation of research outputs combined with active participation in debate on the issues raised was very effective in changing attitudes on the issue with 58% of participants reporting that they had changed their views. Local and national NGO organisers associated with the events also continue to report that the issues raised are being debated within their ongoing programmes of meetings, indicating that the events were successful in stimulating activity beyond the workshops. The underpinning research programme is also exploring issues identified in the workshops with new analyses and further refining the social learning approaches used.

## 2. PROJECT CONTACT

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### **3. INTRODUCTION**

This document reports on a series of workshops entitled Communicating Climate Change Consequences for Land Use (C4LU). These events debated with stakeholders the possible impacts of climate change on farming systems and likely adaptive responses. These workshops specifically targeted land managers in remote-rural areas of Scotland, and their prime purposes were to raise the awareness of potential climate change effects and to improve effective linkages between the research and land management communities in Scotland.

#### **3.1. Rationale**

Climate change is identified as a key threat to rural communities in Scotland's Sustainable Development and Climate Change Strategies (Scottish Executive, 2005; Scottish Executive, 2006). A key challenge for scientists is that the nature of the climatic changes faced by these communities (including uncertainties) needs to be communicated to them in ways that are meaningful to their decision making (Matthews et al., 2008b). The communication should not only be from researchers to stakeholders. Structured communication with stakeholders provides an opportunity for communities to articulate:

- 1) the pressures that climate change would impose
- 2) their preferred adaptive responses and
- 3) their capacity to undertake these changes.

The latter may identify key areas where policy could be effective in supporting effective adaptation. To this end, Macaulay has developed in partnership with stakeholder groups, workshop-based processes to discuss and debate the potential effects of climate change and opportunities for adaptation and mitigation. These events are organised and run in collaboration with rural NGO's.

#### **3.2. Objectives**

The objectives of the C4LU project were to:

1. Further develop science-stakeholder partnerships between the research team and key actors and opinion formers in rural communities across Scotland;
2. Raise awareness of the issues;
3. Communicate specific outcomes of research;
4. Ensure through debate that the research is valid, useful and influential;
5. Begin to stimulate thinking about appropriate adaptive responses.

### 3.3. The C4LU approach

The project drew on the research team’s expertise in communicating cutting edge climate change science to stakeholders with interests (directly and indirectly) linked to land management practices. The underpinning research (see Section 4) is innovative since it integrates outcomes from both natural and social sciences. The research seeks to link environmental change with outcomes for individual stakeholders, helping answer the questions “What will it mean for me?” and “What can I do?”

The C4LU workshop process is illustrated in Figure 1, adapted for C4LU from (Matthews et al., 2007). The workshops are research-based in that they use the outcomes of ongoing scientific research – in this case the downscaling of regional climate change model data, the development of agro-meteorological metrics to characterise impacts and the choice and structuring of these metrics into a framework of indicators (those metrics relevant to decision making). The process uses local case studies with both the status quo presented and the magnitude of change that can occur without adaptation. The workshop phase of the process sees the presentation of both the case studies and the underpinning scientific analyses so that the credibility of the information can be established. The latter can involve a “lively” debate over the existence or nature of changes to climate.

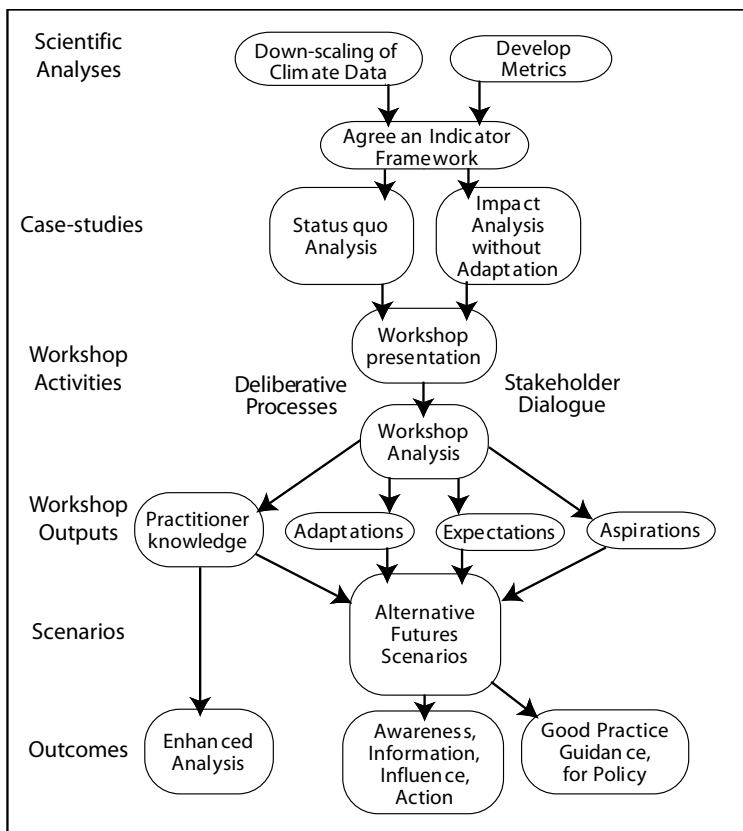


Figure 1 - Elements of the C4LU workshop process

The deliberation on the case-studies and wider issues (shown as Workshop Analysis in Figure 1) is the key element of the process and provides a rich variety of outputs. First there is the capturing of practitioner knowledge. This knowledge can be:

- on the content of the workshop (e.g. new way of presenting or analysis of data) which enhances analyses in subsequent workshops;
- the process of how the workshop is run or by better contextualising the research data and contributing to the development of alternative future scenarios.

The deliberation also identifies possible aspirations (what stakeholders would like to happen), expectations (what they think will happen) and possible adaptations (what can happen).

Through the co-development of the alternative future scenarios it is possible to raise awareness of the issues, provide new information, influence attitudes and begin to stimulate action. The workshops can also lead to the development of good practice guidance for other similar issues.

The use of local case-studies, in particular, increases the credibility of the research outcomes since stakeholders can make direct comparisons with their own experience. This has been found to be a key factor when communicating future climate scenarios with significant and irreducible uncertainty (Matthews et al., 2008b). The use of case-studies in workshops has previously been effective in allowing stakeholders with conflicting concerns to articulate and debate their concerns indirectly through the cases rather than confrontationally from entrenched positions, for example on issues of CAP reform (Matthews et al., 2006b). By using these social learning methodologies the workshops try to encourage participants to deliberate on issues and to stimulate peer-to-peer learning. Through engaging with the existing peer-networks associated with NGOs it is possible to be proactive in targeting opinion formers within communities and to ensure added-value through further word-of-mouth dissemination. The case-study and workshop approach has been endorsed as both innovative and effective by the UK Climate Impact Programme technical director Dr Roger Street (pers comm. 2007).

#### **4. SCIENTIFIC BACKGROUND**

The underpinning research for the C4LU project has its origins in the research team's interest in the consequences of using alternative sources of meteorological data (Rivington et al., 2005; Rivington et al., 2006) in the cropping systems components of the Land Allocations Decision Support System (LADSS)<sup>1</sup> (Matthews et al., 2006a). Interest in using climate change data from UKCIP02<sup>2</sup> for local case studies led to a desire to test the effectiveness of the Hadley Centre Regional Climate Model (HadRM3) in replicating historic conditions. Testing these *hindcasts*

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<sup>1</sup> <http://www.macauley.ac.uk/LADSS>

<sup>2</sup> United Kingdom Climate Impact Programme

allowed the development of simple downscaling methods to correct for representational and other biases within the HadRM3 data for particular sites to increase the confidence in the data for use at specific case study locations (Rivington et al., 2008). These monthly correction factors were also applied to the future scenarios on the assumption that the representational bias would still be present and other biases were likely to remain. In parallel with the climate data and modelling a project developing agro-meteorological metrics was undertaken with selected stakeholders. This project has been reported elsewhere (Matthews et al., 2008b) but in this context the key features were that it tested the utility of existing agro-meteorological metrics as a basis for first characterising future climate change scenarios and secondarily for stimulating deliberation on possible adaptive strategies that could be adopted by land managers.

## 5. MATERIALS AND METHODS

The workshop programme and locations are shown in Table 1.

**Table 1 - Workshop Programme and Locations**

<b>Date</b>	<b>Time</b>	<b>Location</b>
28 February 2008	7pm - 9.30pm	Kyle of Lochalsh
6 March 2008	7pm - 9.30pm	Sutherland Arms Hotel, Golspie
13 March 2008	6.30pm - 9.00pm	St Moluag's Centre, Oban
20 March 2008	7pm - 9.30pm	Cairngorm Hotel, Aviemore

The workshops were organised with local contacts who sought participants who were influential in the local communities. In the remote rural areas targeted in the current programme the numbers of participants were smaller than had been the case for some previous meetings in less rural areas (average n=10) but in all cases the quality of debate and deliberation of the issues was very high (well informed and insightful). Indeed it is becoming the view of the research team that more than 12 or so active participants become difficult to coordinate. The total number of participants in the programme of workshops was 40. The breakdown of the participants reflected the local populations of land managers, more older than younger, more men than women and more long-term residents rather than new arrivals. There was, however, considerable diversity in the socio-economic backgrounds of participants.

The workshops were scheduled for two hours but usually over-ran (in one case by 1½ hours) indicating a strong degree of enthusiasm from the delegates. The workshops used a round table discussion format with large-format handouts shared between delegates. A typical workshop

programme, with annotations is provided in Table 2 and the handouts used in the workshops can be accessed from the C4LU website<sup>3</sup>.

**Table 2 - Typical Workshop Programme**

<b>Activity</b>	<b>Description</b>	<b>Annotations</b>
<b>Arrival</b>	Informal icebreaker over refreshments	This is a chance for participants to network with their peers and ask informal questions of the research team.
<b>Introduction</b>	Explanation of the workshop process and introductions from the research team and participants	Opportunity to assess the types of land using enterprises being considered and to note the backgrounds of the participants.
<b>Background</b>	Team introduces the scientific basis for the project, the limits of the data and answers participants' questions.	This is an opportunity to establish the credibility of the research team and the materials being presented. There can be vigorous debate over what climate change is and what is causing it. The research team make use of supplementary illustrative materials to respond to specific questions.
<b>Utility &amp; Adaptation analysis</b>	a) The data for current and future scenarios is presented. b) Q&A on the basis of the indicators and suggestions on how they could be improved c) Discussion on the possible responses to the changes identified	This activity takes the bulk of the meeting and is usually a highly interactive session with the team responding to many questions and seeking clarification of delegates' views.
<b>Evaluation of the process</b>	Filling in the evaluation questions and making any additional notes for the research team.	This activity concludes the workshop – the delegates are then provided with a booklet of the handouts and additional information.

All the workshops were digitally recorded, with the permission of the workshop delegates. The voice files have been archived to a secure file store and will be further analysed for thematic content in collaboration with colleagues from the Macaulay Institute's socio-economic research group.

### **5.1. Evaluating the utility of the indicators**

The workshop discussions were given a focus by asking the workshop delegates to evaluate the utility of each of the metrics and to comment on whether there was evidence of the predicted changes already occurring. Each participant filled in a check-box based utility evaluation sheet after presentation of the indicator for current and future climates and after debate within the

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<sup>3</sup> [http://www.macaulay.ac.uk/LADSS/comm\\_cc\\_consequences.html](http://www.macaulay.ac.uk/LADSS/comm_cc_consequences.html)



group. An example of the utility evaluation sheets is provided in Appendix I. The delegates were also asked to comment on the adaptive responses needed to changes shown by the indicator and to assess how feasible such change would be to implement.

## **5.2. Evaluating the outcomes**

In addition to evaluating the utility of the research the team also collected simple information on the outcomes of the workshops. Evaluation of outcomes from workshops confronts several taxing issues, including:

1. Intangibility of many outcomes that can lead to just measuring what can be measured and calling that success.
2. Difficulty of attributing any outcomes to any particular intervention in a complex social system (Bellamy et al., 2001).
3. Long term and cumulative nature of change may mean that the project makes a significant but not discernable change since the project team may have moved on to new research long before the outcomes can be measured (Blackstock et al., 2007).
4. Even where outcomes can be distinguished in some way, then there will be considerable disagreement on the relative importance of individual outcomes (Kirk et al., 2007).

These issues are discussed in the paper by Matthews et al. (2008a) based on this project.

Given these caveats the team were anxious not to fall into the trap of judging success by the easily measured outputs, e.g. numbers of people attending. This would compromise our participatory research approaches by simply increasing the number of people at the expense of the quality of interactions, whilst not necessarily improving outcomes (increased awareness and understandings). Outcome evaluation questions were added to the materials used within the workshop to allow a subsequent analysis of how participants responded to the information in discussion. Five questions (shown in Table 3) were asked with tick box answers. These questions sought to assess how effective the deliberative workshop process was 1) to raise awareness, 2) to provide new information and 3) to influence attitudes. The research team did not attempt to measure changes in participants' practices, given that literature on barriers to changing farmers' behaviour (Burton et al., 2007; Kaljonen, 2006) suggests it would be impossible to rigorously assess the degree to which C4LU alone was responsible for change (or the lack thereof).

A preliminary analysis of the four workshops is presented in Section 6.2 but this represents just a first step in the analysis of the very rich data provided by the interaction with stakeholders.

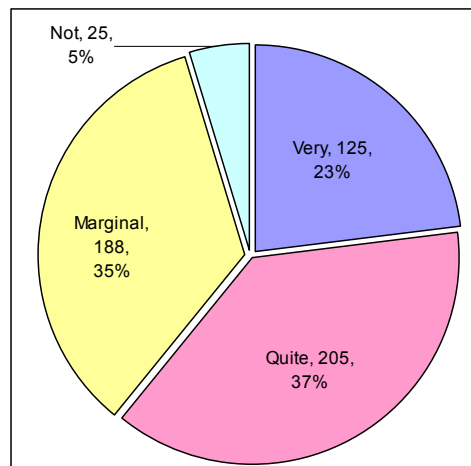
**Table 3 - Outcome Questions**

Q1	Did you know about the Macaulay Institute’s research before you attended the workshop? (Y/N)
Q2	How much did you know about climate change before you attended the workshop? (Nothing, Little, Fair Amount, Expert)
Q3	Has the workshop provided new information on the topic? (Y/N)
Q4	Have you changed or adapted your views on climate change after the workshop? (Y/N)
Q5	Where do you work? (Academic Institution, Government, NGO, Private Sector, Other)

**6. EVALUATION**

**6.1. Utility of the indicators for workshop participants**

The overall responses on the utility of the 15 indicators for each of the attendees (n = 543 since not all responses were complete) are shown in Figure 2. The previous pilot workshops have been successful in largely eliminating indicators that are not seen as relevant (Not = 5%) and the top two categories (Very and Quite) account for 58% of the responses. A middle category was deliberately not provided to avoid “neutral responses” but some stakeholders felt the four categories were insufficiently fine grained. An enterprise specific category that allowed delegates to highlight indicators that were important but only for a narrower set of circumstances or activities was suggested.



**Figure 2 - Utility of the C4LU Indicators – responses per attendee (40) for each of the metrics (15) – total responses (543) and the percentage of the overall responses**

The breakdown for each of the indicators is summarised in Figure 3, with the counts of the Very and Quite useful responses shown. This highlights the importance of growing season and access periods, but particularly the increasing view that metrics showing the monthly distributions of phenomena are useful (growing days, dry soil days, access days or their

combinations). The continuing importance of climate metrics in the survey does not match well with the comments within the later discussions, suggesting the higher score for these indicators may be the result of their appearance first in the workshops (the delegates having nothing to compare the indicators with at that stage). This possible artefact highlights the need for particular care in designing and interpreting evaluation outcomes.

Figure 3 also shows the preference for the compound indicator *access during the growing season*. This indicator and the way in which it is presented was the outcome of earlier rounds of workshops. The benefits of processes that can encompass aspects of learning are thus evident. However, such flexibility and process evolution can conflict with the formalisms of conventional science where replication is required. Such methodological approaches may inadvertently constrain the ability to achieve the outcomes sought (increased awareness, knowledge and adaptation) by stifling adaptive participatory processes.

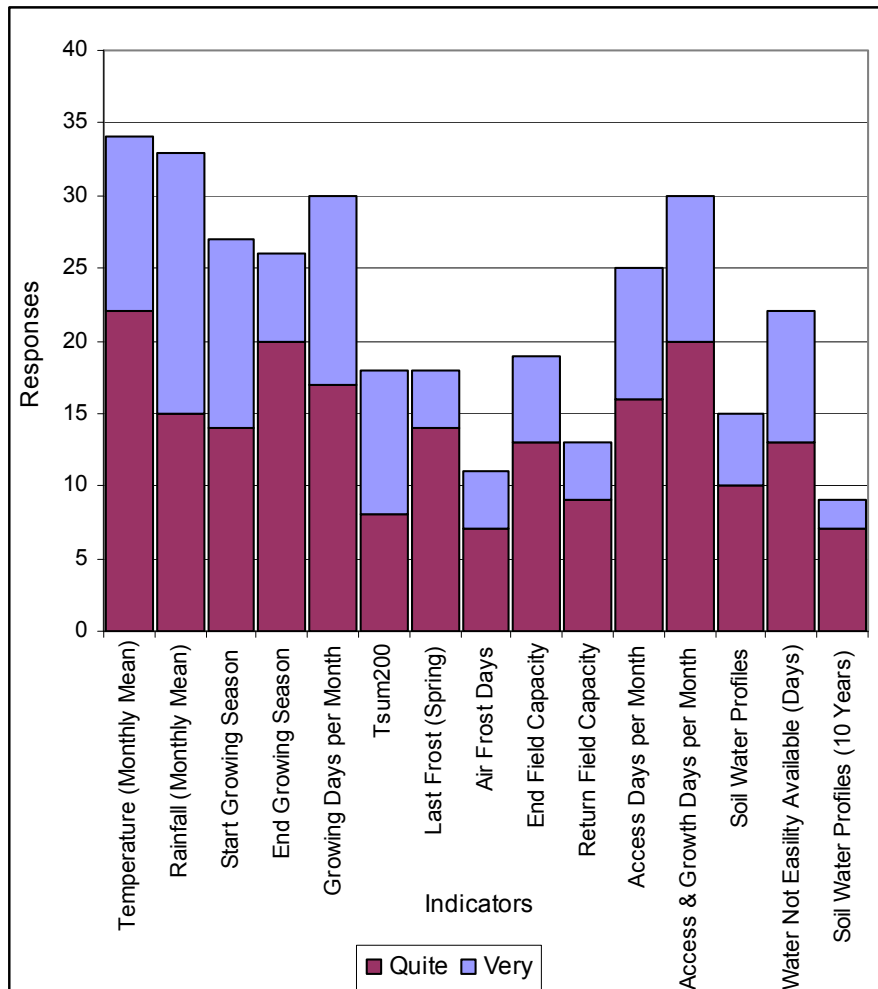


Figure 3 - Responses per Indicator

## 6.2. Outcomes for the workshops reported by participants

The outcome responses from the C4LU workshops are summarised in Figure 4 whilst individual workshop responses are shown in Figures 5, 6, 7, and 8. These show that the participants were predominantly from the private sector with smaller numbers from the government, NGO and academic sectors. Of the private sector participants all were actively involved in land management decision making either in farming, forestry, fishing/hunting or in related activities such as tourism and the agri-food supply chain. In many cases the participants ran diversified businesses and thus had a broad view of potential climate change impacts. There was a significant representation of agri-environmental interests so the discourse was not dominated by productivism (land management with a singular focus on maximising yields), though food security issues were frequently raised.

In terms of awareness of the Macaulay Institute's research, the workshops were marginally effective (5/40), but this reflects the fact that the Institute is already successful in raising awareness of its research activities (Figure 4). The participants are aware that research is carried out but the topics of research (even at a headline level such as climate change) are poorly understood or are those of earlier programmes. The workshops thus represent a significant opportunity to raise awareness for particular projects and the wider programmes of research. In our view such awareness is vital if there is to be continued support for public-good funded research.

Considering all the workshop participants (Figure 4) in terms of expertise, all had at least a "little" knowledge (perhaps reflecting the efforts in the mass media and trade journals to inform on the issues of climate change). There were more participants classifying themselves as having a fair knowledge (and the lack of any classifying themselves as experts may be due to modesty – considering how well informed many of the participants were). There was a fair degree of variation in the level of reported knowledge – with the Golspie case study (Figure 6) reporting lower levels of knowledge compared with for example Aviemore (Figure 8). This perhaps reflects the backgrounds and interests of the land managers in Golspie where main-stream mixed-farming systems dominate rather than the Aviemore land managers who had highly diversified enterprises and with a strong agri-environmental representation.

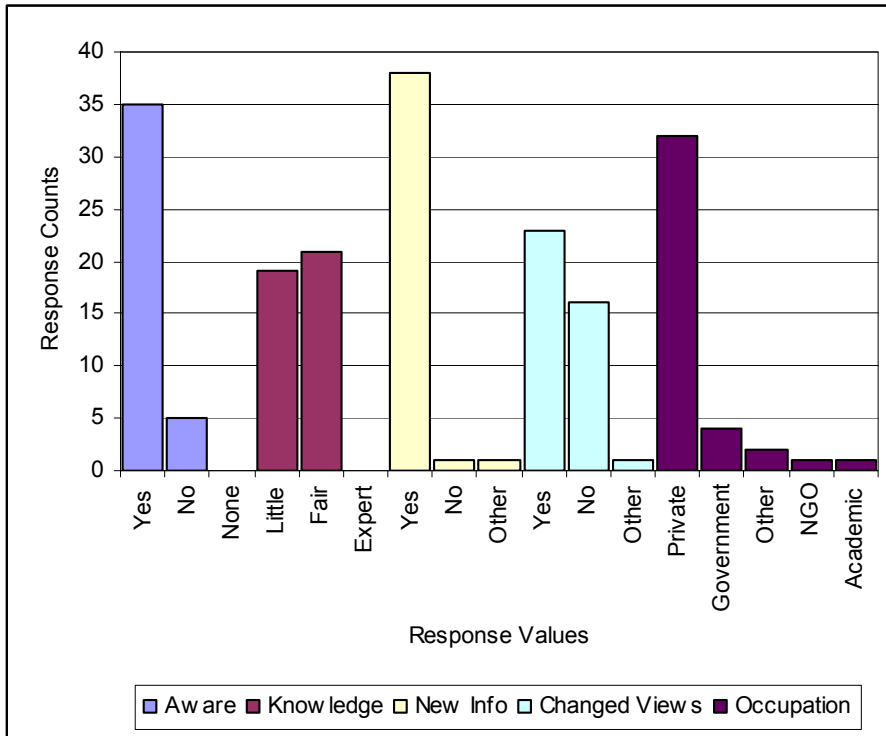


Figure 4 - Overall C4LU responses

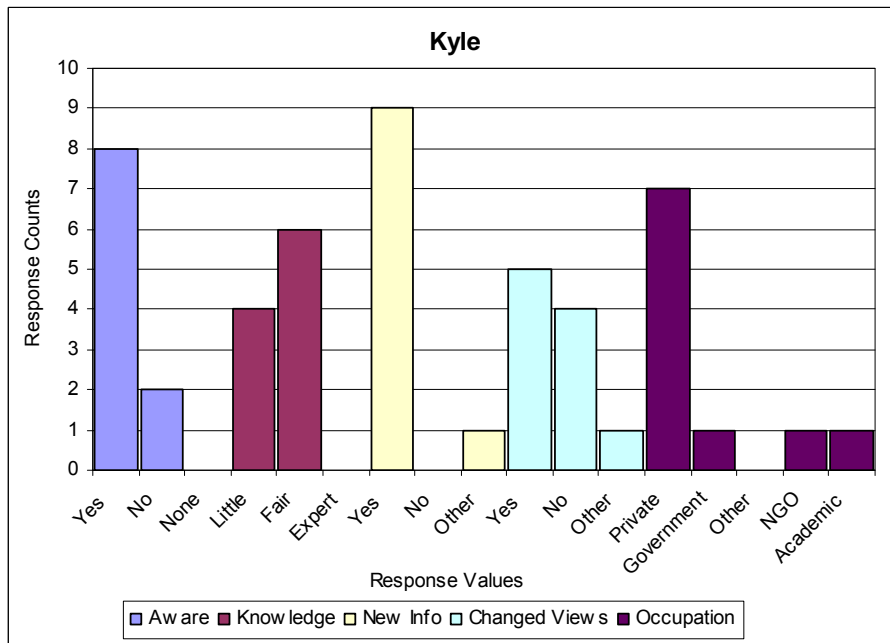


Figure 5 - Kyle C4LU Responses

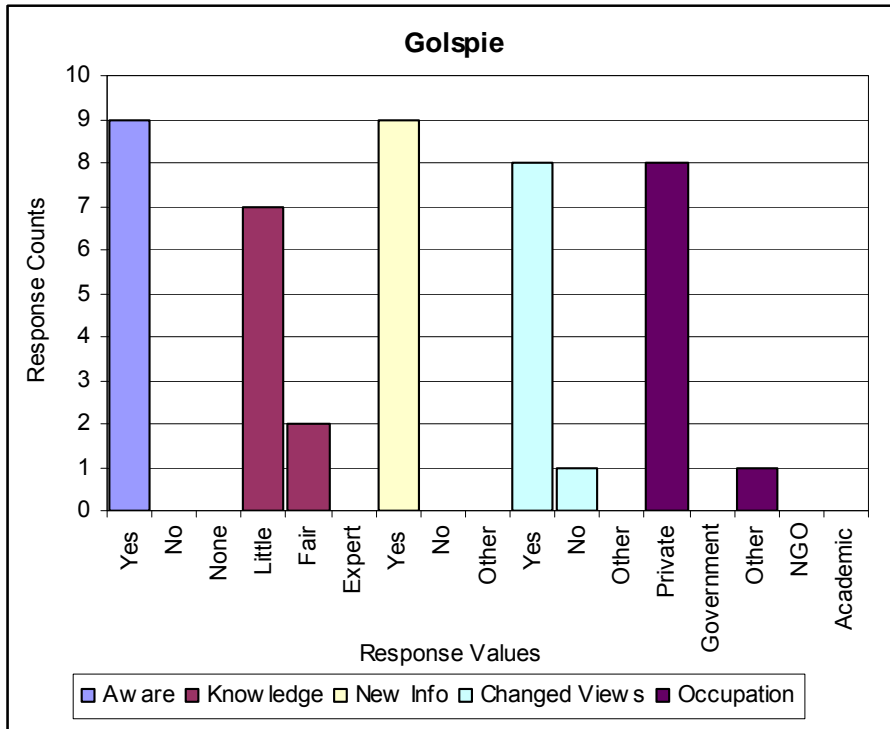


Figure 6 - Golspie C4LU responses

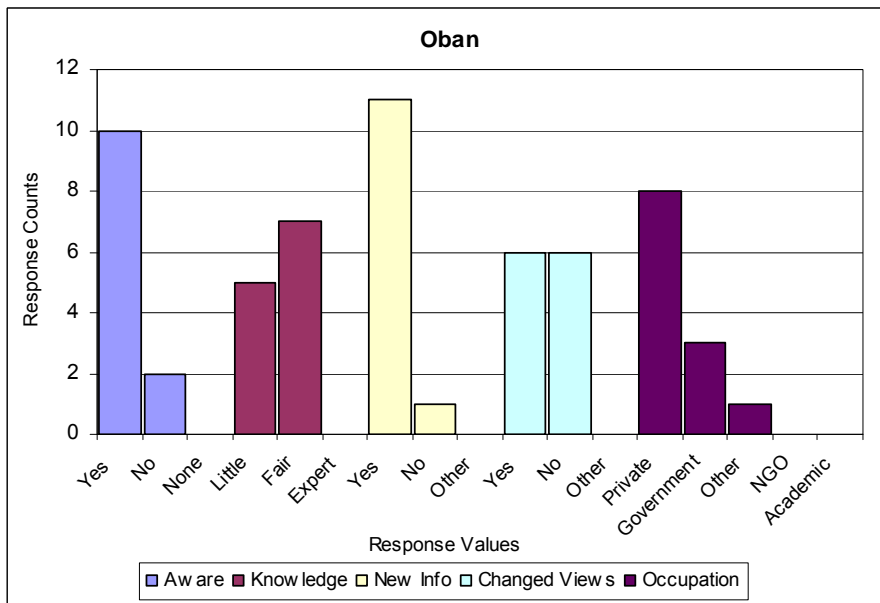
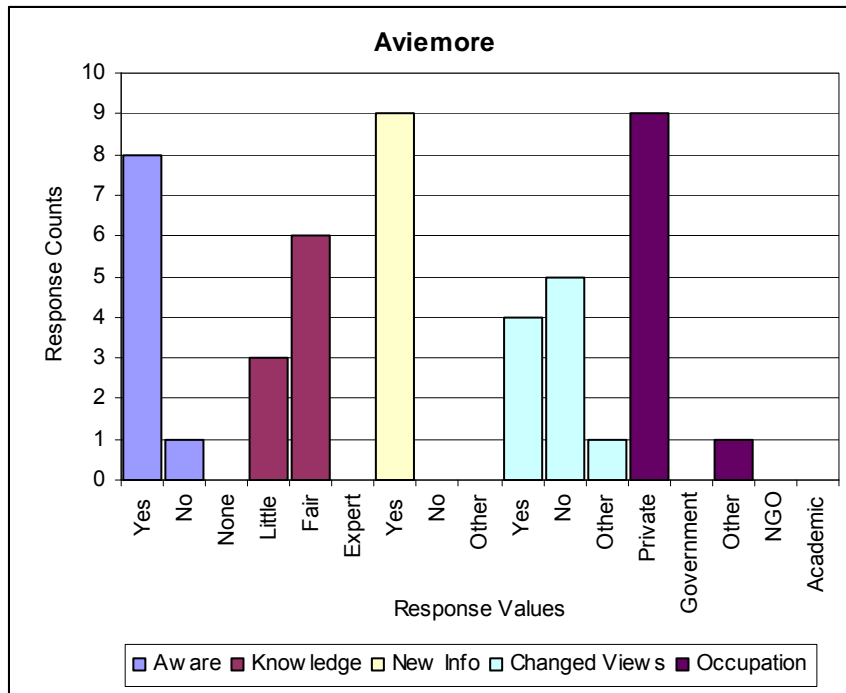


Figure 7 - Oban C4LU responses



**Figure 8 - Aviemore C4LU responses**

In almost all cases (38/40) the workshops were successful in providing new information (Figure 4). The two cases where this was not the case were government and academic colleagues who were participating in the workshops as participants but also providing expert interpretations of the implications of the metrics for particular sectors (e.g. forestry). The new information test is a key baseline for the evaluation since this is the conventional role for scientific research – failure to be providing new information would raise serious questions of whether the research was relevant to the decision makers at all. The success in this evaluation reinforces the utility analysis reported in Section 6.2.

The acid test for the workshops was in changing or adapting views on climate change. In a majority of cases (23/40) the participants had changed their views on climate change. (Further analysis of the discussion may also indicate if those who have not changed their view already felt adapting to climate change was important). This was interesting as previous research had found that climate change was not seen by land managers as a priority for action or one for which they had much adaptive capacity. The message of the workshops was that mitigation efforts will be important but that change in climate will have to be planned for and adapted to since a certain degree of change has already been entrained by previous emissions. The authors think this message was more successfully delivered through the collective evaluation of the indicators than by using conventional research presentations.

The survey, however, only sought to evaluate if people’s views had changed, not how they had changed. This reflected a desire to keep the form as simple as possible and not to alienate participants by use of a complex questionnaire. Since the questionnaire is backed up by an audio-recording of the workshop, these more nuanced questions can be addressed using qualitative analysis methods. This multi-method approach avoids a more explicit focus on changes in attitude *within* the workshop, which could be quite confronting in a group based process.

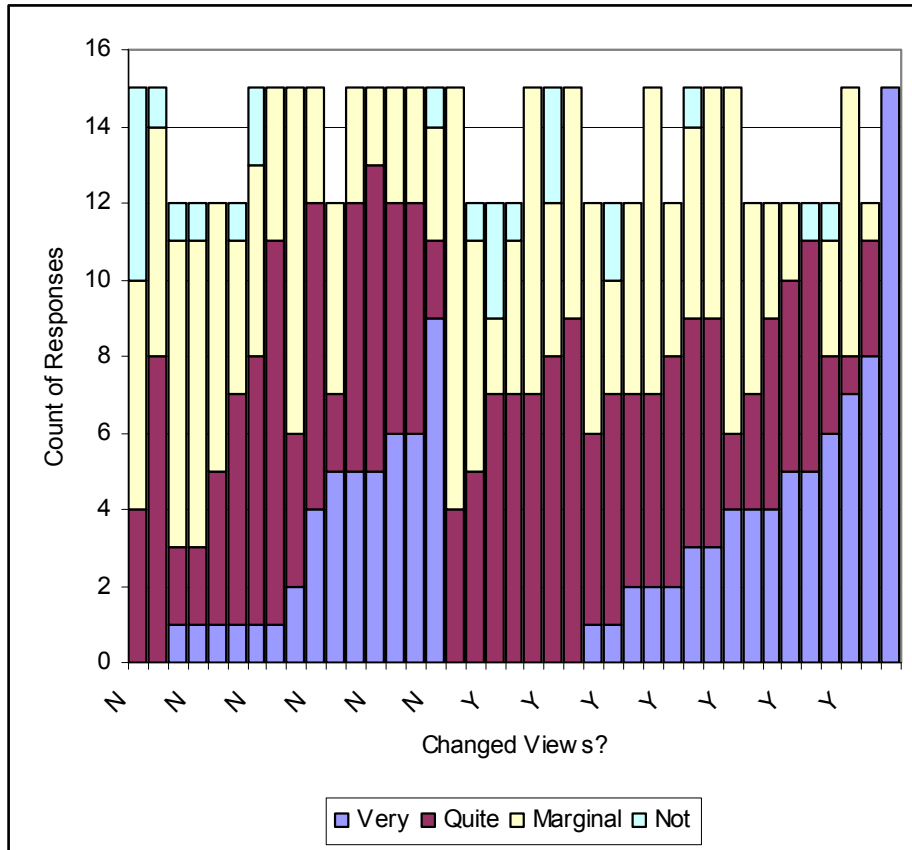


Figure 9 - Profile of the Stakeholder Responses

By combining the utility and evaluation datasets the authors attempted to develop a “profile” of the participants to explore if there was a strong link between the reported utility of the indicators and whether workshop participants has altered their views. Figure 9 shows each participant’s judgement of the utility of each indicator, with the participants sorted into those who did not change their views (on the left) or did change (on the right). Note the difference in heights for some of the bars is a consequence of adding more options to the evaluations sheet in the last two meetings. There is no clear difference between the two profiles of the change and no-change groups. This suggests that individual actors have a complex set of values, interests and existing knowledge that strongly modify their responses to any research based intervention. It is interesting to note that the case-study with the greatest rate of change in view was Golspie (Figure 6) where the level of reported knowledge was lowest. This perhaps reflects that it is



easiest to make a bigger impact in areas (in this case geographic but also by extension for subjects) where the existing knowledge base is less well developed and where perhaps actors have less entrenched views. The inference from this finding is perhaps that researchers need to engage with key actors and decision makers as early as possible rather than trying to reshape a debate that has already “solidified” such that research outcomes are ignored rather than incorporated.

## **7. CONCLUSIONS AND NEXT STEPS**

The C4LU programme of workshops has been very effective in strengthening the partnerships between the research team and key actors and organisations in Scotland. The particular focus on remote-rural areas has broadened the range of stakeholders and the types of land using enterprises considered. The feedback from the local organisers of the meetings is that the debates started in the workshops have continued and that the format was seen as informative and useful. In terms of communicating the specific outcomes of the research the workshops have been successful with a strong majority of participants having learned something useful from the events. The interactive nature of the workshops and the research methods has also ensured that there has been buy-in from the stakeholders ensuring the research is seen as valid, useful and thus has the potential to be influential. The workshops have changed or reinforced a significant number of influential stakeholders’ views of climate change, its consequences and the likely responses required. It is hoped that with further support these stakeholders will be able to begin to anticipate, plan for and adapt to a changing climate. The workshops may thus be argued to have made a small but positive contribution to the adaptive capacity of these remote rural areas.

The work within the C4LU project continues to be followed up by the research team. New formats for data presentations based on stakeholder suggestions are being developed. In particular effort will be made to incorporate day length into visualisations of distributions of events. This reflects the view that “One good day in June’s worth more than two good days in October”. These analyses and presentations have formed the basis of a bid to UKCIP for the work to be included as one of the “worked examples” that will accompany the publication of the UKCIP08 data. The research team are also pursuing further opportunities for engagement with stakeholders including a seminar with FWAG in Shetland and as part of the Macaulay Institute’s stand at the Royal Highland Show in June 2008. The Macaulay is also actively considering whether the success of this project is such that we should be considering embedding this approach in our future practice. While we have stakeholder consultative groups within the RERAD research programme it is possible that these may be strengthened though linking the

research teams with a wider network of existing panels or groups to enhance our programme of science engagement.

## **8. ACKNOWLEDGEMENTS**

This project was made possible by funding from a Scottish Government's Science Engagement Grant 2007-08 with co-finance from the Knowledge Exchange fund of the RERAD research programme, Environment: Land Use and Rural Stewardship (Programme 3). The underpinning research is funded by the RERAD research programme on Sustainable Farming Systems part of the Environment: Land Use and Rural Stewardship programme and draws heavily on previous SEERAD research programmes at the Macaulay Institute.

The authors would also like to acknowledge the invaluable assistance given to the research team in organising the Kyle of Lochalsh, Golspie and Aviemore meetings by Farming and Wildlife Advisory Group (Scotland), particularly Alison McKnight, Alan Boulton and Michael Blackburn. The authors are also grateful for the assistance provided by Marina Curran-Colthart, Local Biodiversity Officer with Argyll and Bute Council for organising the Oban workshop through the Argyll Rural Forum.

Finally the authors are indebted to all the workshops participants for their enthusiasm and willingness to engage in a debate on the consequences of climate change for Scotland's land use systems.

**APPENDIX 1 – Example Evaluation Sheet (Aviemore)**

**Welcome to the Workshop.** During the session we would ask you to complete the questionnaire. The first part looks for your views on the usefulness of the particular climate change information we are providing and the second part tries to evaluate how useful the workshop approach is.

**PART I**

Please check one box to show how useful the indicator would be, and if there is early evidence of change

Chart	Indicator	Usefulness				Happening Now?
		Not	Marginal	Quite	Very	Yes/No
1	Average Daily Temp. (°C)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
2	Average Annual Rainfall (mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
3	Start of Growing Season (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
3	End of Growing Season (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
N/A	Growing Season Length (days)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
4	Growing Days by Month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
5	Tsum200 (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
6	Last Air Frost in Spring (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
7	Air Frost Days by Month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
8	End of Field Capacity (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
8	Return to Field Capacity (day)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
9	Access Days by Month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
10	Access & Growing Days by Month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
11-13	Soil Water Profiles – Dry, Wet & Typical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
14	Water not Easily Available (days)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N
15	Soil Water Profiles – Ten Years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Y--N

My Indicator would be:

**Part II**

**Q1. Did you know about the Macaulay Institute’s research before you attended the workshop?**

YES                       NO

**Q2. How much did you know about climate change before you attended the workshop?**

NOTHING                       A LITTLE                       FAIR AMOUNT                       EXPERT

**Q3. Has the workshop provided new information on the topic?**

YES                       NO

**Q4. Have you changed or adapted your views on climate change after the workshop?**

YES                       NO

**Q5. Where do you work?**

- Academic Institution       Government       NGO  
 Private Sector       Other (please state)  
.....

**Please add any further comments on the back of this form if you would like to**

**Comments:**

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