

PLANNING FOR FUTURE CLIMATE CHANGE CRISES

SUMMARY OF HUMANITARIAN FUTURES PROGRAMME
WORKSHOP - 16TH JANUARY 2009



Background to the Humanitarian Futures Group

The *Humanitarian Futures Programme* (HFP) aims to help organisations engaged in prevention, preparedness and response prepare for the changing nature, scale and locality of future humanitarian crises. The HFP believes that effective engagement with the natural and social sciences is key to identifying and preparing for the complex threats which will increasingly characterise the future humanitarian environment.

The programme's Futures Group helps organisations prepare for this future by strengthening links between scientists and humanitarian policy makers, to ensure that emerging threats and possible solutions identified in scientific research

are incorporated into humanitarian planning. The Futures Group has been holding a series of seminars on specific issues of future vulnerability and innovative technologies, and approaches which can reduce vulnerability and enhance capacity for effective response. There remains, however, a need to develop understanding of how organisations engage with scientific uncertainty and build the organisational capacity to integrate evolving scientific learning within their planning processes. Consideration of how humanitarian organisations are taking on climate change provides just such an opportunity, and was the focus of the first Futures Group seminar on planning for uncertainty and future climate change crises.

Planning for future climate change crises: A summary of the seminar discussions

The Humanitarian Futures Group held a seminar on 16 January 2009 to promote dialogue between climate scientists and humanitarian policy makers about the types of climate information required for effective humanitarian planning.

This seminar highlighted future climate change crises as an essential focus for dialogue between scientists and humanitarian policy makers for a number of reasons:

- ▶ Evolving scientific understanding has made clear the anticipated global scale and impacts of climate change. It has also highlighted the particularly severe impacts for many developing countries.
- ▶ HFP has found that humanitarian planning timeframes generally range from three to ten years. These timeframes lie beyond verifiable seasonal forecasting systems (climate variability) and ahead of existing climate projections (climate change). This 'gap' in climate information requires that humanitarian organisations source climate change information from both the climate variability community and climate change community.
- ▶ This 'gap' between climate variability and climate research programmes is becoming a major focus for climate science research, and there are important opportunities for humanitarian organisations to get involved in research, and highlight which types of climate information they need.
- ▶ As recognised by climate scientists, there are uncertainties in current climate information, as well as a need to prevent misleading use of climate information by user communities.
- ▶ While humanitarian planning is focussed on meeting the immediate needs of crisis-affected populations,

areas of short-term support, such as infrastructure for the provision of water and shelter, have long-term implications and need to be more fully informed by climate science.

- ▶ Humanitarian organisations are able to act as disseminators, translators and gatherers of climate information. A number of organisations are already collating communities' knowledge of climate change and using this to inform disaster risk reduction efforts. Effective pooling of this knowledge might support efforts to address the current gap in information between climate and weather research.

The seminar made clear that effective and systematic direct dialogue has yet to be created between climate scientists and the humanitarian community. To enable such a dialogue, scientists need to know what knowledge humanitarian groups have of existing sources of climate information, what humanitarian organisations want to know, and how they need it to be conveyed to them. As such, if humanitarian organisations are to be able to ask the right questions of scientists, they need a more informed understanding of the range of existing sources of climate information.

To inform planning, humanitarian organisations also need to be able to gauge how important the impacts of climate change are compared to other hazards. While some humanitarian policy makers see climate change as yet one more 'layer' of vulnerability, alongside such issues as HIV, age and gender, others recognise that it demands that humanitarian organisation extend their planning horizons to take account of the future vulnerabilities which climate change will bring.

Seminar discussion identified a number of concrete ways to strengthen the dialogue between humanitarian policy makers and climate scientists, including:

- ▶ Carrying out an assessment of the climate information requirements of humanitarian organisations;
- ▶ Encouraging increased representation of humanitarian and development organisations at climate fora, and inviting climate scientists to inform humanitarian planning discussions;
- ▶ Promoting direct dialogue between humanitarian organisations and climate scientists through a series of in-house exchanges and ‘hands on’ workshops; and

- ▶ Creating a resource centre for climate change information, pooling relevant tailored climate products.

Discussion highlighted that effective dialogue and collaboration between climate scientists and humanitarian policy makers will be key to maximising the real-world benefits of climate information. HFP seeks to promote a number of the seminar proposals with a range of partner organisations and, as a first step, is initiating a series of pilot exchanges between humanitarian policy makers and climate scientists between March-June 2009.

Introduction

In seeking to promote the dialogue between scientists and humanitarian policy makers on future vulnerabilities, the Humanitarian Futures Group held an initial seminar on 16 January 2009 to consider how humanitarian organisations can most effectively engage with climate science. The seminar specifically sought to heighten understanding of the climate information required for effective humanitarian planning and to consider avenues for strengthening humanitarian policy makers’ engagement with climate science.

Scientific participants came from both the climate variability and climate change communities,¹ while humanitarian policy makers included both those whose responsibilities are focused on climate change, as well

as those charged with covering a wider range of disaster and humanitarian concerns.² Presentations, a background note and a list of participants can be viewed on the Humanitarian Futures Programme website.³

Background to the seminar

In HFP’s research with partner organisations, climate change is consistently identified as one of the most important drivers of future crises. Yet recent research as well as discussions carried out in preparation for this seminar made clear that the capacity to engage with climate science varies greatly across international NGOs.⁴ The degree to which organisations have been able to take on climate science within their humanitarian policies and planning varies even more widely.

Box 1 — Focus on: how different is climate change?

How different is climate change for organisations which have always been working with people in situations of change? To what extent do humanitarian organisations need to invest in engaging with climate information?

Humanitarian organisations are constantly having to work with new crises and combinations of vulnerability. Amongst some humanitarian policy makers, climate change is seen as yet one more ‘layer’ of vulnerability, alongside such issues as HIV, food security, disability, gender and age. In line with this view, the focus should be to build people’s capacity to adapt, with climate change just another thing that they need to adapt to. Others felt that climate change required, and offered the opportunity for, a significant change in organisational approach. Indeed, evolving understanding of the impacts of climate change necessitates that humanitarian organisations extend their planning horizons to take on the future vulnerabilities identified. However, unless climate scientists can provide more definitive answers as to when, where and how much impact future climate change crises will have, then it is likely that organisational focus on climate change will remain largely confined to a policy focus and fail to fully inform humanitarian planning.

1 Scientific participants came from: the Universities of East Anglia, Exeter, London, Lancaster, Liverpool, Oxford and Sussex, the Government of Nepal, the Hadley Centre, the Tyndall Centre/Overseas Development Institute and private institutions.

2 Amongst humanitarian and development organisations represented were: CAFOD, Christian Aid, Focus Humanitarian Assistance, HelpAge International, Merlin, Oxfam, Plan International, TearFund, World Vision UK and the UK Government’s Department for International Development.

3 www.humanitarianfutures.org

4 HFP Planning for future climate change crises: A draft note from discussions preparing for the Futures Group seminar, 2009, available at www.humanitarianfutures.org; N Brooks and N Grist, Development Futures in the light of climate change: creating new insights into the past, the present and global futures, 2008, and M Rowling, Integrating climate change adaptation into relief and development; strategic approaches among international NGOs, April 2008.

Box 2 — Focus on: changing vulnerability

Improved understanding of how vulnerability is changing, and where the changes in risk are coming from

Seminar participants repeatedly stressed the importance of situating climate change discussion within a good understanding of the different vulnerabilities and pressures that people are already facing. One scientist described their work in identifying key risks in the agricultural sector in China through using high-resolution regional climate models, together with expert understanding of present day vulnerabilities and the perspectives of stakeholder communities.

There are various reasons for this, including: a lack of in-house scientific expertise; climate information available in forms which are not readily understandable or translatable to existing humanitarian planning timeframes; conflicting organisational priorities and the need to respond to current emergencies; and the difficulty of identifying appropriate forms of adaptation given the information available. In order to facilitate the understanding, translation and integration of climate information within humanitarian planning, there is a need to be aware of the wide range of 'end users' of this information (see Box 5).

In seeking to channel climate information effectively, it is also important to be aware of the way in which understanding of climate change has been advanced

within an organisation. This process often leaves a legacy, impacting on where climate change responsibility is situated and the channels through which it is able to inform work across an organisation. Some staff felt that their organisation's approach to climate change lacked credibility. They felt that the approach had been based on scientific reports rather than the experiences of the communities with whom they work. In other organisations, the focus on climate change originates from their work with communities and scientific data is used as a way of corroborating what the organisation is being told from the community level. An understanding of climate change, and methodologies for integration of that understanding within programming, appears further advanced within some of these latter organisations.

Understanding climate information: Presentations by humanitarian policy-makers

The seminar began with presentations from humanitarian and development organisations about the sources of climate science used to inform humanitarian policies and practise, how the organisations assess the validity of and uncertainty within this information, why they consider this the best approach to climate change and the additional areas of climate information which might best assist their organisation.

Within their humanitarian policies and planning processes, many humanitarian organisations make use of some sources of climate change information, such as the reports of the Intergovernmental Panel on Climate Change (IPCC), but fewer seem to make use of other sources, such as extended seasonal forecasts, which might be of even greater relevance to current humanitarian planning timeframes. While a number of organisations have developed their own ties with scientific institutions, such as that between the Catholic Agency for Overseas Development (CAFOD) and the Benfield University College, London Hazard Research Centre, the seminar made clear that effective and systematic direct dialogue has yet to be created between a range of climate scientists and the humanitarian community.

Humanitarian presentations sought to identify the specific areas of humanitarian work which climate information can usefully inform, including: investments intended for long-term use, such as public health engineering, and identifying step changes in hazard profiles to inform contingency planning. To these ends, humanitarian organisations also need to be able to gauge how important climate change is compared to other hazards (see Boxes 1 and 2). More broadly, local climate information is vital in enabling humanitarian and development organisations to understand how changes in the environment have affected local communities, with wider climate science used as a cross referencing tool for this local knowledge. There is an identified need to strengthen local-level climate information and local centres of climate knowledge.⁵

While identifying their desire for more local and short-term climate information, humanitarian participants were aware of some of the current limits of climate information. For example, while humanitarian planning would ideally look for regional predictions at usable temporal and spatial scales, they recognise that it is unlikely that these would be available in the near future.

5 In this regard, reference was made to the work of the International Federation of Red Cross and Red Crescent Societies in establishing local centres of climate knowledge.

Box 3 — What climate information do humanitarian policy-makers most need?

- ▶ Who are the most vulnerable people?
- ▶ How does climate change impact on existing vulnerabilities?
- ▶ How will future extreme events vary in frequency, intensity and location?
- ▶ How important is climate change compared to other hazards, both globally and for particular risk areas?
- ▶ What are the thresholds or step changes in climate change? Humanitarian participants highlighted the need to identify climatic tipping points – non-linear climate change impacts on a scale which people have not encountered before – to further understanding of when observed changes are ‘normal’ or part of underlying patterns of more permanent change, and whether these changes are human or climate-induced.
- ▶ Locally-focused climate information, including down-scaled climate models and reliable seasonal forecasts produced in accessible language.

Using climate science information: Presentations by and discussion amongst climate scientists

A number of scientists were then asked to briefly present on how their expertise has been used by humanitarian and development organisations, including the processes by which they communicated climate information, how this was taken up within the organisations, and specific issues of climate information about which they feel organisations are not sufficiently aware.

Within the ensuing discussion, a number of climate scientists identified a tendency to overestimate the certainty of climate projections and identified some naïve use of ‘off the shelf’ models. Existing models cannot, for example, pick up geographical variability and only coarse-scale information may currently be available to guide humanitarian and development planners in screening existing activities and assessing the feasibility of major developments, such as hydropower. Yet other climate scientists warned of the dangers of suggesting that climate models are not useful in the majority of cases.

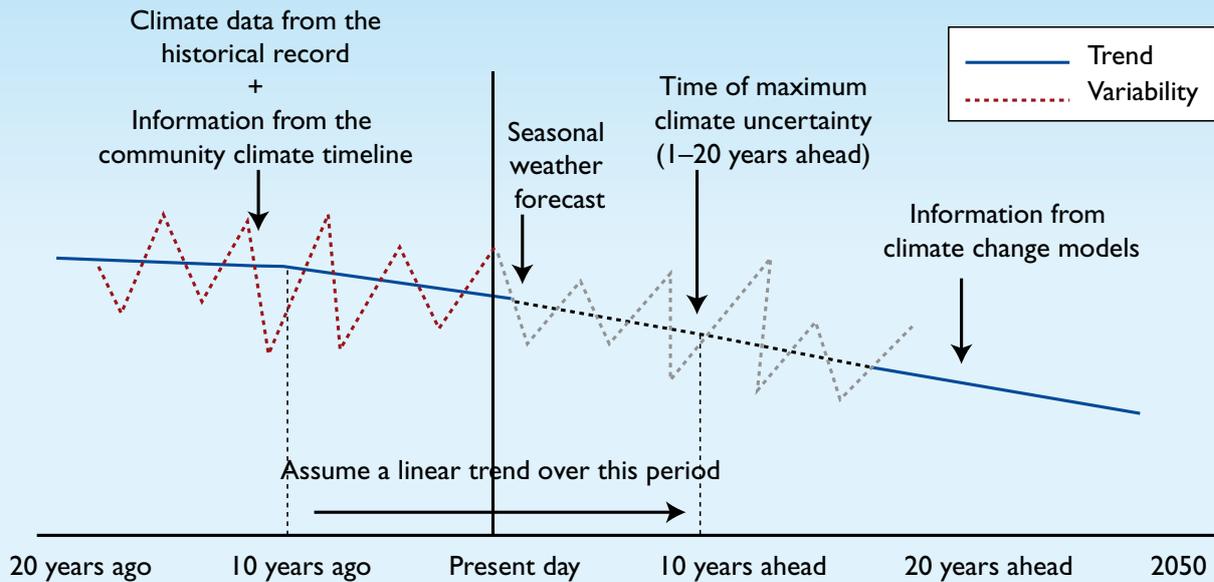
There was, however, agreement on the need to encourage a critical application of the multiple available sources of climate data, awareness of the high uncertainty of impacts, and clear understanding of the context in which climate data is to be used. Scientists agreed that it would be useful to rate the information quality of existing sources of climate science. While climate models are, for example, combined to obtain the best available information, there remains a need to identify the best models and screen out

‘noise’ within the creation of multi-models. Existing data can also be processed in different ways, with scientists having to be sure that the way in which you ‘slice’ the data shows you something useful. The data used to produce the UNDP climate change country profiles⁶ could, for example, be differently sliced to provide information on zones within countries.

Discussion also highlighted the need to be clear about certainty within different areas and periods of climate information. There is, for example, greater confidence about future temperatures, and less about precipitation. In considering the next 5–10 years, historical and existing sources of information may still be the most reliable sources of information. In this regard it could be particularly important to remember that there is a huge amount of qualitative local climate change information which humanitarian and development organisations could bring to scientists, including through tapping the knowledge of the older members of the community.

6 <http://country-profiles.geog.ox.ac.uk>

Dealing with uncertainty



Source: Christian Aid (seminar presentation by Richard Ewbank and Jose Luis Penya)

Box 4 — Focus on: difference in time frames

How can knowledge about future vulnerabilities inform current decision-making: the spatial and temporal gaps between existing climate information and information which is useful for humanitarian planning

The common humanitarian planning time frame of three to ten years lies at the interface of now proven and verifiable seasonal forecasting systems (climate variability) and climate projections (climate change) that have to date concentrated on climate change scenarios towards the end of the 21st Century.

In structured interviews with humanitarian partners, HFP has found that the strategic planning timeframes used by humanitarian policy makers ranged from three to ten years, with the most frequent being the five-year strategic plan (*Promoting the dialogue between scientists and humanitarians*, Humanitarian Futures Briefing paper, September 2007, p5). The timescale of interest for humanitarian planning thus lies in the 'decadal gap' between climate and weather research programmes, which is becoming a major focus for climate science research initiatives. This gap in climate information requires that humanitarian organisations source climate information from both the climate change community and the climate variability community, as these often form different communities (Andy Morse, University of Liverpool, input from his note for 16 January 2009 seminar).

While evolving understanding of the impacts of climate change necessitates that humanitarian organisations extend their planning horizons to take on the future vulnerabilities identified, there was discussion about the usefulness of climate scenarios to guide humanitarian and development planning, particularly for regions where the resolution of this information remains coarse. In many such instances, scenario-based adaptation may be no more helpful than employing a precautionary principle to meet current and futures risks.

Yet climate scientists also highlighted the danger of 'mis-messaging' by suggesting that climate models are not useful in the majority of cases. Indeed, a number of humanitarian organisations already recognise that if an organisation is making an investment that is meant to have long-term viability, for example in the siting of a tube well, then it is worth understanding the climate twenty to thirty years ahead. In many cases, however, this recognition has yet to be fully translated within humanitarian programming processes.

Promoting effective dialogue between climate scientists and humanitarian policy makers

The seminar concluded with discussions amongst mixed groups of scientists and humanitarians to identify the areas of climate science which humanitarian organisations most need (see Box 3) and the best ways for climate change science to inform humanitarian policymaking. Discussion made clear that scientists need to know what humanitarian groups know about existing sources of climate information, what humanitarian organisations want to know, and how they need it conveyed to them. Yet if humanitarian organisations are to be able to ask the right questions of scientists, they need a more informed understanding of the range of existing sources of climate information. While a number of studies have assessed awareness of climate information amongst humanitarian and development organisations, efforts to support more effective use of the range of existing sources need to be underpinned by a more in-depth and wide ranging assessment.

Building an effective dialogue between humanitarian policy makers and climate scientists requires establishing understanding of each other's terminology. As in other areas of the scientist-humanitarian dialogue which the Humanitarian Futures Group has sought to address,⁷

there is a need for translators and agreed measures of comparison. It was considered that tipping points for climate models might be very different to tipping points for social issues. A very small change in temperature might, for example, have a considerable social impact, and this could be an extremely fruitful focus for future research.

Climate science does not currently have sufficient information for the community which deals with the impacts of climate variability and change. To address this gap, humanitarian organisations need to be 'at the table' of climate change discussions. In the lead up to the December 2009 UN Climate Change Convention conference, there is an important opportunity for humanitarian organisations to lobby for what they need from climate science.

Box 5 — Focus on: making climate science usable

Developing contextually relevant climate information

There is a wide range of end users of climate information within the humanitarian sector, from ministers to those communities which are extremely vulnerable to changes in climate, encompassing a huge diversity of levels of education, cultural backgrounds, perceptions and interests. Climate information needs to be provided in formats that are accessible and useful, with different types of climate information likely to be required at different points within the range of humanitarian and development policy and programming processes.

Box 6 — Focus on: access to climate data

Overcoming data restrictions

Discussion made clear that there are a number of barriers to overcome in efforts to ensure that climate information informs humanitarian planning. Whilst some of these concern issues of language and culture, it is also clear that there are restrictions to accessing climate data from some institutions. These barriers were not thought to be insurmountable, but, once again, are closely concerned with building the capacity of humanitarian organisations to be able to ask the relevant questions of the relevant institutions.

⁷ See for instance the note on the Second Humanitarian Futures Group meeting, 7 December 2006.

Next steps: what are the best ways for climate information to inform humanitarian policy-making?

- ▶ An assessment of what humanitarian groups know about existing sources of climate information;
- ▶ Developing an agreed understanding of each other's languages and terminology;
- ▶ Identifying the areas of humanitarian work which climate information can inform;
- ▶ Identifying climate information which could usefully inform humanitarian planning, including: appropriate local predictions and projections of climate variability (on the timescale from days to months to 3-5 years). Coarse resolution models can, for example, be downscaled where there is good local record of station data;
- ▶ Creating follow on seminars and/or 'hands-on' workshops to show the types of climate information and climate change products which are available, specifically on climate variability (such as extended seasonal forecasting) and climate change (climate projections, such as regional climate models);
- ▶ Considering potential useful avenues for climate institutions to support the building of climate change capacity within humanitarian organisations and partners, through such channels as local media and existing farmers' schools and agricultural outreach services;
- ▶ Supporting local, national, regional and international collaborative climate information networks;
- ▶ Encouraging increased representation of humanitarian and development organisations at climate discussions, and inviting climate scientists to humanitarian planning fora;
- ▶ Exploring the links between climatic and social tipping points;
- ▶ Promoting direct dialogue between humanitarian organisations and climate scientists through establishing a series of short in-house exchanges;
- ▶ Identifying credible translators of climate science for humanitarian planning, and enhancing scientists' capacity for communicating with non-scientists;
- ▶ Creating a resource centre for climate change information, perhaps in the form of a website to pool relevant tailored climate products, such as the UNDP climate change country profiles, rather than only meteorological information.

Conclusion

To make effective use of climate information there is a need to understand the uncertainties within it. Humanitarian organisations need to understand enough about climate science to be able to ask appropriate questions. To maximise the real-world benefit of climate information, climate scientists need to appreciate the information requirements of its end users.

Humanitarian and development organisations are constantly having to adjust to new crises and combinations of vulnerability, with climate change yet one more layer of vulnerability, alongside such issues as HIV, food security, and age. Yet climate change also requires and offers an important opportunity for a significant change in organisational approach. Evolving understanding

of climate change necessitates that humanitarian organisations extend their planning horizons to take on the future vulnerabilities identified.

Collaboration is key. To avoid duplication and maximise evolving understanding, there is a need to develop an effective interface between scientists and those using the information, as well as joint investment in initiatives to promote dialogue, such as the proposed resource centre for climate change information.

Presentations

Below is a brief summary of how each presenter addressed the key questions posed during the seminar. You can watch the full presentations and see the associated powerpoint slides on the Humanitarian Futures Programme website:

http://www.humanitarianfutures.org/mainsite/events/view_events.php?page_ID=24

Humanitarian organisations

	What areas of climate science have you drawn upon to inform your organisation's policies and practices?	How did you assess the validity of the information and deal with uncertainty within it?	What additional climate change information would assist your organisation?
Dr Mike Edwards CAFOD	<p>IPCC, but there is a need to critique and analyse the science before basing all messaging on it.</p> <p>Smaller agencies lack the capacity to develop climate change expertise. CAFOD have started a formal partnership with Benfield Centre to bring in this expertise from outside.</p>	<p>NGOs need to measure and assess risks, and take decisions about the level of risk that they are willing to accept. One approach is to assume the worst case scenario and put resources in place to deal with it.</p>	<p>Regional predictions with local and temporal resolutions useful to local partners.</p> <p>Analysis of how climate change affects who is most vulnerable</p> <p>How climate change relate to other hazards</p>
Nigel Timmins & Sarah Wiggins Tearfund	<p>IPCC, accepting that the information provided is reliable</p> <p>Experience and knowledge of climate change from partners and communities in the South</p>	<p>Combine scientific information with the real situation experienced by partners</p> <p>Climate Change and Environmental Degradation Risk and Adaptation Assessment (CEDRA): a strategic planning tool that allows managers to screen and prioritise environmental risks</p>	<p>Changes in the "norm" to which the climate returns after a disaster</p> <p>Changes in the severity and frequency of future disasters</p> <p>Contextually relevant and accessible information</p>
Dr Steve Jennings, Oxfam	<p>Areas of humanitarian work which climate information can usefully inform:</p> <p>Public health engineering: e.g. information on future flooding to inform location of tube wells</p> <p>Policy advocacy and communications: impact studies and some modelling</p> <p>Contingency planning: gradual changes in the intensity and frequency of hazards should be picked up by rolling plans</p> <p>Early warning systems: limitation is not with availability of data but how it is interpreted, disseminated, communicated and acted upon.</p>		<p>"When, where and how much": if climate science cannot provide this information then it is likely to remain in the policy and funding sphere rather than the humanitarian sphere.</p>
Jose Luis Peña & Richard Ewbank Christian Aid	<p>Challenge for climate change to inform policy when NGOs only plan 5 years ahead. Development work should take into account shifting climate patterns.</p> <p>Diversity of climate science users is a challenge, such as part-time field staff who lack the time to learn about climate science.</p>	<p>Climate science as a cross referencing tool for local knowledge.</p>	<p>Strengthened climate science capacity in developing countries.</p> <p>Accessibility: downscaling of climate models to allow field officers to run tests themselves and reliable seasonable forecasts in accessible languages.</p> <p>More opportunities for climate scientists and humanitarians to come together and strengthen dialogue.</p>

Scientists

	How have you communicated climate science to organisations and how has the information been taken up?	How are humanitarian/development organisations responding to climate science?	Of what other issues should organisations be aware?
<p>Dr Stephen Edwards</p> <p>Aon Benfield Hazard Centre, UCL</p>	<p>New partnership with CAFOD</p> <p>Support to insurance sector, including training courses on interpreting climate science, and annual Hazard and Risk Science Review summarising important research papers.</p> <p>Research partnerships, e.g. UCL project on tropical storm risks.</p>	<p>Humanitarian organisations are in a similar situation now to where the insurance industry was 10-15 years ago, needing to develop climate science expertise to respond to impacts of climate change on their business.</p>	<p>Scientists need to know what humanitarian organisations know, what they need and in what form they need that information communicated to them.</p>
<p>Dr David Frame</p> <p>Smith School of Enterprise and the Environment</p>	<p>Scientists have a narrow range of expertise and are not in general good at policy. Climate scientists have an exaggerated role compared to experts in other areas of science.</p> <p>Organisations need to think about which part of the climate science community they should engage with. Scientists working on seasonal/ decadal forecasting are probably more relevant than those working on climate models</p>	<p>Focus on mitigation draws attention away from the adaptation challenges of the most vulnerable.</p>	<p>Models are more reliable for some regions than others, where they cannot provide fine resolution.</p> <p>Ensemble approach is promising, but in some cases taking a multi-model mean reduces the reliability of the information. A multi-model mean for the top 5 models works quite well, but when you add in all the other models, as the IPCC does, you erode the accuracy.</p>
<p>Dr Declan Conway</p> <p>University of East Anglia</p>	<p>Difficulty in generating interest and uptake of information among policy makers over long timescales (e.g. 2020 and beyond). More effective approach to generate interest and policy responses is to combine climate science information (such as high resolution models) with expert opinion of vulnerability.</p>		<p>Climate change needs to be situated within understanding of the wider vulnerabilities facing communities.</p> <p>Need greater understanding of changing vulnerabilities and where the changing risk factors are coming from, based on careful monitoring of frequency and intensity of hazards.</p>
<p>Dr Suraje Dessai, presenting on behalf of Professor Rob Wilby, University of Lancaster</p>	<p>A top down scenario approach is only useful in certain situations where the majority of models suggest that change will happen. In regions where there is less consensus from the models on future change, a bottom up “low regret” approach is more appropriate: measures that reduce poverty or vulnerability to hazards in the short term but also address longer term risk.</p>		
<p>Dr Richard Jones</p> <p>Met Office Hadley Centre</p>	<p>Met Office provides a tool which allows people to do climate modelling and develop regional climate scenarios, including workshops on climate modelling. Also helps with sources of information and support to develop projects on climate impacts and adaptation.</p> <p>The process of developing projects itself, including getting them funded by international agencies, supports the communication of climate science as people need to reach a certain level of understanding in order to put the project together.</p>	<p>Process helps local scientists to understand more about climate science in their areas, and develop their messages. Researchers and the policy makers they are interacting with have been given confidence to start investigating adaptations to climate change, and the confidence within local administrations and governments to get more involved in the lobby for mitigation.</p>	<p>Value of improved understanding of what climate variability means and its impact on climate change, including the notion that there is a whole “envelope” of climate that is shifting and the implications of this for climate-related disasters.</p> <p>Tendency to overestimate reliability of climate projections, and for this reason organisations are recommended to go to the IPCC for information on which to build policy. The IPCC “bends over backwards” to not overestimate the reliability of the projections, so confidence can be put in the statements included in the reports.</p>

Scientists (cont'd)

	How have you communicated climate science to organisations and how has the information been taken up?	How are humanitarian/development organisations responding to climate science?	Of what other issues should organisations be aware?
Jagadishwar Karmacharya MET Office Nepal	Produce publicly available climate reports on weekly, monthly and annual scale as well as historical reports and specific climate change scenarios. Also workshops to discuss new issues and findings, and collaborative projects e.g. with government.	NGOs are more interested in vulnerability, impact and adaptation, rather than understanding the climate models.	
Dr Mark New University of Oxford	UNDP project to provide IPCC style information reports at a country level. The same data can be “sliced” in different ways to provide different information, so it is necessary to know what kind of information is useful to user communities.		In existing data, the resolution is often too coarse to be useful. At finer resolutions the number of climate models available reduces, which makes it harder to capture the spread of different options and reduce uncertainty.
Dr Andy Morse University of Liverpool	Forecasts at the weather-climate interface, those made with seasonal (six month) lead times, are routinely produced by the major forecasting centres around the world but rarely used by humanitarian agencies, possibly due to lack of awareness and limited contact with climate scientists. Agencies need to take advantage of opportunities to promote their needs on the research agenda	Often climate information is used by external agencies with no regard to uncertainty and biases in the forecast and projection products with potentially costly or misleading results. There is a pressing initial need for the climate science community to collaborate with humanitarian agencies to avoid the poor use of climate data.	Humanitarian planning time scales of 3 to 10 years is at the interface between now proven and verifiable seasonal forecasting systems (climate variability) and climate projections (climate change). There is considerable research interest (and funding) for this timescale and opportunities for humanitarian agencies to get involved in research.
Dr Natasha Grist Overseas Development Institute/Tyndall Centre for Climate Change Research	Different approaches for taking on climate science, including climate proofing, developing specific climate projects, public climate campaigns, advocacy, often in coalitions, and internal carbon footprinting. It is important to take into account subtle organisational change and strategy issues that impact on ability to take on climate change information, such as: leadership, tipping points, step changes and external environmental factors, such as the financial environment.	Challenges: ‘Urgent and important’ comes before ‘important’ Integrating climate change into existing strategy processes Financial allocations for climate change Finding experts able to effectively communicate complex science Different timescales for climate science and humanitarian planning Need to prioritise at which policy level to concentrate efforts (local, national, international)	Tyndall scenario development processes (using qualitative scenarios, that are very different from scenarios from climate models) for people within organisations who are not necessarily climate scientists. The scenarios are designed to explore perceptions and understanding of climate change and promote greater consideration of the strategic options for the future. Tools which are available to help organisations change their policies to take on climate change work, e.g. the World Bank’s ADAPT (Assessment and Design for Adaptation to Climate Change: a Prototype Tool), DFID’s ORCHID (Opportunities and Risks from Climate Change and Disasters), Community Based Adaptation Exchange and the IISD, IUCN, SEI-US CRiSTYL (Community-based Risk Screening Tool – Adaptation and Livelihoods)



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Alternatively contact us at info@humanitarianfutures.org, or go to our website at www.humanitarianfutures.org

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