

**Webinar: Communicating climate information and uncertainties better: Cognitive psychology insights and practical experiences**

**Q&As**

#	Question	Answers	Additional answers
1	Who takes part in your learning labs? Are you still holding these labs?	A wide range of participants ranging from local academics, local government and para-state institutions (eg. water supply companies), NGOs (slum dwellers international, etc..) and others. We are just heading into the final round of labs in each of the cities.	
2	Are the findings and insights from different communications methods and examples going to be published in a formalised manner?	Yes, AMMA2050 partners will be producing a range of peer-review articles, policy briefs and indeed films of the range of approaches employed across the project pilots.	A report on 'Improving methods of communicating climatic uncertainties to aid decision-making' will also be made available to accompany the topics discussed on the webinar.
3	For the previous presentation, is there a benefit to using both narrative and graphs to communicate?	Yes, very much so. We present both in tandem because they support each other. The narratives help people make sense of the graphs and the graphs are interrogated to co-construct the narratives.	Both are beneficial as some people are better at taking in information in a visual way such as a graph, but others are better taking in information as narratives so texts or explanations. So both have worked for us and depends on the audience you are addressing.
4	For future agriculture planning, it is important to know which crops should be promoted at specific area. Having uncertainties in the climate information, how to advise farmers.	Yes indeed. In AMMA2050 research has focused on specific crops, including millet, as well as assessing the resilience of a range of varieties.	
5	It may be good to clarify what we mean by uncertainties in the context of climate change. CC is by nature uncertain but from scientific perspectives uncertainties are related to probabilities which are associated with the different simulations models. Depending on the decision making scale this can be confusing. How do we deal with that?	Yes this is important and this is why we don't just translate climate model ensembles into information. We need to integrate different types of uncertainty including non-climate related (eg. socio-economic/political uncertainty) and resolve contradictions between different evidence (models, observations, downscaling, etc.).	Yes, we need to be aware that uncertainty is inherent in CC information - however this does not mean decisions can not be made. For this reason we do show the range of uncertainty but also are clear on what messages we can draw from the research tailored to the audience we are addressing.
6	What incentivizes participation of communities in cities?	Well firstly we have an MoU between FRACTAL, the local university in each city, and the city municipality itself. There is funding involved and an embedded researcher paid for by FRACTAL working in the municipality. So that some incentive to be involved. For others, I think the main incentive is that they are given the opportunity to contribute their knowledge and influence city policies and plans. We have had very consistent and substantive participation in most cities so something is working!	
7	My engagement with some communities made me question our readiness to successfully implement climate change mitigation measures. Q: How can one convince rural communities to take climate change serious and for instance minimise the use of fossil fuels when they do not have (or even worse cant afford) alternatives? Should we rather focus on speeding up development and modern service provision in those areas?	The impacts of CC are already being felt, in the case of Senegal delays in the start of the rainy season is occurring. Therefore the experiences on the ground are real to many people. However advice on whether what is being experienced already this will continue in the future or what trends can be found in the projections is the area we are working in. Some adaptation options do not involve high tech actions, such as the Zai system, but their use / implementation benefits from CC projections.	
8	However, how to best deal with the natural tendency of individuals and more importantly donors (important in African context) to prefer "simpler" information, e.g. from portals that do not provide uncertainty, show information at very high spatial resolution without indicating how this information is obtained, or push development of climate adaptation decisions and policies without basing them on robust evidence and thorough data analysis (and data collection)?	Good question and very important. I think the answer is two pronged: Firstly, through these kinds of projects we can raise awareness and understanding around the limits and realities of climate science and data. We've been doing sessions with participants where we demonstrate how climate science works with a strong focus on the limits and assumptions that are made and the consequences of those. This helps participants construct better questions and be more "skeptical" of products that promise high resolution and accuracy. Secondly, we need to keep engaging with donors and data providers and highlighting the risks and ethical issues associated with providing science data.	
9	How do you define or measure intense storms?	In AMMA2050 An intense storm is defined as a cloud area greater than 25000km <sup>2</sup> with a temp of -70oC which is a proxy for intense systems. Please see the publication for further details: Taylor et al 2017 Nature volume 544, pages 475–478 (27 April 2017). In FRACTAL we use Generalised Extreme Value distributions and return period calculations. So we are looking at the changing intensity of various return period events as well as the changing return period of various magnitude events. This ties in quite well with engineering standards but isn't always that easily related to people's experience.	

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10	Do you have references for the cognitive psychology evidence for design? More specifically, do you know of work done in this area specifically regarding climate change science?	Yes... we have put together some resources on this, which can be found here: <a href="http://guidance.climate-science-cognition.com/">http://guidance.climate-science-cognition.com/</a> Also we have published a more in depth review of evidence: <a href="http://rdcu.be/m2O0">http://rdcu.be/m2O0</a> (Harold et al., 2016. <i>Nature Climate Change</i> , 6, 1080-1089)	
12	In all of these presentations, who are the different decision-makers, what are the different challenges they face in understanding climate information and uncertainty, and how can their different needs be catered for?	In the AMMA2050 project we are working with decision makers at different levels: (i) national adaptation planning (ii) local level planning. This means we adapt our message depending on who we are communicating with. For this reason we employ different tools such as a video of our current climate knowledge ( <a href="https://www.youtube.com/watch?v=vQ9OTpQE1ho">https://www.youtube.com/watch?v=vQ9OTpQE1ho</a> ); the Theater forum (or role playing) and plateau game: all described here <a href="https://www.amma2050.org/Data">https://www.amma2050.org/Data</a> .	In FRACTAL we working at the city level with local city government/municipalities as well as para-state institutions such as water utilities (eg. Lusaka Water and Sewerage Company). Also local NGOs (Slum Dwellers Intl. and others). Then national government (eg. environment ministries as well because they often have mandate within or related to cities.
14	I would love to hear more about the development of the educational games.	live answered	
15	I hoped we could focus a lot more on the challenges and insights from psychology from Jordan.	If you'd like to read more on the challenges and insights from a psychology perspective, we will be making available a report to accompany the topics discussed on the webinar. While there is a good body of evidence on the psychology of communicating probabilistic uncertainty, less is known on effective ways to communicate deeper uncertainties in decision-making contexts. For example, in the context of the 'dual process' theories of decision-making, there is a need to develop our understanding of how different 'experience-based' formats (such as climate narratives and participatory modelling), help support understandings of uncertainty, and the effect these have on decision-making processes.	