Day 3: Wednesday, 23 September 2020
Theme 5: Multi-hazard Relationships, Transient Effects and Dynamic Vulnerability

#	Question	Answer(s)
1	'@Dr Joel Gill, I have a GCRF project with BGS Resilience to Coupled Human-Natural Multi-hazards Network, it would be great if you can join us,	Many thanks, yes I am already part of that project, although have been focused on another project management component. It would be good to engage more on the multi-hazards aspect in the future.
2	Joel: How can we factor in multi-hazard and multi-risk issues into real-time warnings?	In some regions I've worked in, the notifications sent to communities are 'single-hazard' focused and don't always highlight (for example) potential triggered hazards. One potential use of a comprehensive matrix is to enable communications after earthquakes, for example, to extract from this and integrate into communications more information about multi-hazard issues.
3	Is there a way for related Organization to top deforestion in the world at least to minimize it. Because we know that flood disaster occur,one of which is masive deforestion and change of climate?	This is very good point, however it is on higher level than our focus today.
4	One of the complexities in conducting hazard risk assessments is incorporating social aspects especially those data that are hard to quantify. To what extent can we ignore those factors but still have a good risk assessment?	Thank you. Several people highlighted the same question.
5	Rajib: You focus on slowly changing vulnerability. However exposure and vulnerability also change on a fast timescale - for instance as people travel to work or to school. How does this impact on risk assessment?	Important issue is to look at teh systemic risk both for slow and fast oinset of disatsers and how it affects differnt sectors of lives. Linking systemaci risk to adaptive governance is very improtant.
6	'@Rajib Shaw: Thank you, Rajib. Vulnerability and exposure are two major triggers of disasters. Could you please let us know how dynamic changes in vulnerability and exposure could be linked to decisionmaking? How can S&T contribute to this point except of producing data and knowledge? Thanks	answered live
7	Were there attempts to quantify (whether large or small scale) the impact of multi-risk/multi-hazard risk terms of economic and social costs and impact to vulnerable entities? We have made an attempt to do one with a number of limitations in developing a matrix in a previous project in the Philippines for selected developing cities. There might be new ideas from the panelists end in this regard. Thanks	This report included an attempt to quantify multi-hazard impacts in terms of economic costs, but there were many challenges - http://nora.nerc.ac.uk/id/eprint/524399/ - It would be very interesting to learn more about your work (joell@bgs.ac.uk). I think this is a challenge in DRR, perhaps you can contact the panelists per e-mails or we may discuss this during the conference next year.
8	I guess the modeling is really multi-scale, even in time? Mathematically, we say this problem is stiff, and computationally difficult. RIght now, concentrating on conceptualizing it.	This is very good point.

9	to link the social factors (as vulnerability, thanks, Rajib!) to multihazards is very interesting and necessary, but as Joel said, it is not very present in projects, guidelines and within the science community. How can we change/improve this situation?	Thank you. Several people highlighted the same question. One way (but not the only way) is to bring natural and social scientists together during university-level education to increase understanding of the data, methods and approaches used by each group... helping to foster links between them at an early stage of their career. We've written more about this here: https://nhess.copernicus.org/preprints/nhess-2020-163/
10	Olivia, we use the large multi-model ensembles to assess the uncertainty of the climate that we simulate. You are proposing using them to gain knowledge about the tails of the distributions where these uncertainties are most pronounced. Won't that amplify the uncertainty?	Dear Brian, yes you are right the structural uncertainties associated with the models remain, but the uncertainties arising from the statistical modelling of the tails substantially reduces if the data contains thousand of years of data. Here an example application: https://www.nature.com/articles/s41467-017-00275-3
11	For the panel, for multihazard cascades in time will the uncertainties in the risk always grow or is there a way for uncertainties as the chain progresses in time to be reduced.	Thank you. Several people highlighted the same question.
12	Prison inmates are one vulnerable population vis-a-vis Covid-19! Again, the sociology component pops up.	This is very good point and will keep this for the future research and meetings
13	the covid crisis influenced all the aspect. Espesially for health worker both mentally or phisically.	This is very good point which should considered in DRM
14	What is the main reason after the disastrous event policymakers make the policies but forget it's implication in tong term.	This is a good question. But it's not only policy makers but people in general. Disasters are lost in the memory of the community. It would be good to have songs, artwork and literature remind us of the lessons of disasters that strike after a long period.