Dr Hugh Deeming – Written evidence (RSK0083)

Dr Hugh Deeming is a consultant with 17-years' experience in community resilience research. In 2016 he was commissioned to write two debrief reports for Cumbria LRF following its experiences in responding to and recovering from the effects of Storm Desmond. In 2017 Hugh was a member of the panel of Lord Kerslake's review into the response to the Manchester Arena attack. Since then, he has been mainly employed in developing a resilience programme for the Department for Transport (DfT), which is focussed on building integrated emergency management and resilience capabilities within the highways sector.

This response focusses, and then expands on the first two questions asked by the committee:

1. What are the most significant extreme risks that the UK faces? Are these kinds of risks discrete, linked or systemic?

Pandemic Flu has been the principal 'high-impact, high likelihood' extreme risk on the public-facing National Risk Register (NRR) since its first publication in 2008, with 'emerging infectious disease' (e.g., a Coronavirus) rated slightly lower in impact terms, but equally high in likelihood.

Accordingly, the experience of 2020 could be said to illustrate that the likelihood of such an extreme risk manifesting "within the next 5 years" (the basis of the NRR) was reasonably calculated. However, international comparisons suggest that this same evidence also indicates that the immensity of impact of the emerging disease risk was insufficiently planned for and/or resourced.

Internationally, this raises also questions about the methodology underpinning 2019 Global Health Security (GHS) Index, which considered the US and UK to be, overall, the two most prepared nations for dealing with a pandemic: such a designation could be argued to have prompted complacency. However, if the NRR and GHS methodologies have, objectively, been found wanting, could this also indicate wider problems with the way 'extreme risks' are calculated and/or planned for?

On 8th January 2021, the House of Commons EFRA Committee published its latest review of flooding resilience. Recommendations included a statement of the importance of investing in flood defences to mitigate our current and future (climate change enhanced) flooding risks. The report, however, identified that whilst capital spending on new flood defences was high, the maintenance budget was falling behind. Does this too illustrate a level of complacency regarding our approach to flooding, which again is recorded as a high-impact, high-likelihood risk in the NRR?

Risk assessment inevitably contains an element of 'it may happen but probably not on my watch', but unfortunately risks listed on the NRR do manifest with regularity, including the most extreme risks. So, in building national resilience to hazard, threat and major accident risks there is a balance needed between giving primacy to the impact and likelihood calculations that formulate the risk

assessments, and the understanding that those calculations need to stimulate a positive feedback cycle of capability review and enhancement that ensures capabilities remain *at least* as good as when those calculations were made (i.e., *status quo*). Indeed, the expectation should be that given the effort expended in building national and local (i.e., the Community Risk Register) risk profiles, that an outcome of that process should be that subsequent work should focus on enhancing our capabilities so as to *reduce* those levels of risk.

Capabilities

In order to mitigate risk effectively, you need capabilities. These capabilities can take four forms: human (skills, training); intellectual (doctrine, concepts); structural (legislation, relationships) or physical (equipment, logistics).

Mapping capabilities against risk is, therefore, a vital component of effective risk assessment. However, mapping capabilities against individual risks in discrete risk calculations is problematic.

What our experience of Covid has illustrated is the danger inherent in understanding any of these risks as discrete phenomena. Rather, as has been regularly illustrated since the coming into effect of the Civil Contingencies Act, when dealing with manifest risks at the local scale (under the subsidiarity principle), the greatest challenges directly result from risk concurrency (more than one risk manifesting at the same time e.g., Covid and the flooding caused by Storm Christophe) and cascades (one risk triggering another e.g., flooding causing power failure).

What experience suggests is that risk concurrencies and cascades do not lend themselves to simple extrapolation:

$$1 + 1 \neq 2$$

In fact, dependent on the risks involved, a 1 + 1 concurrency could equal 3 or even 5 in terms of the additional pressures that these events place on available capabilities. Likewise, the obvious example of a risk cascade manifesting extreme impacts, is the Japanese triple disaster in 2011. Yet we have experienced cascades too, for examples of the flooding of Mythe Water Treatment works in 2007 (potable water shut off to 150,000 homes), and the electricity sub-station in Lancaster in 2015 (power outage to 61,000 properties).

Common Consequences

Looking at risks through the lenses of capabilities, concurrency and cascades, the impetus moves from thinking about what is needed to manage the impacts of discrete risks to thinking about which common consequences are we most likely going to need to mitigate?

Common consequences are promoted in the LRF document, Local Risk Management Guidance as a concept that can underpins generic emergency plans and as a lens for considering contingencies. Effectively, emergency planners are encouraged to looking across the full range of risks, to assess which consequences are most likely to manifest regardless of the precipitating risk?

In 2014 Cumbria LRF reviewed its community risk register and assessed there were 5 common consequences: transport network disruptions; displaced people; rubble and debris at response site; excess or mass fatalities; energy supplies disrupted.

This exercise in consequence mapping allowed the LRF to understand where it needed to focus its capability building, which included having discussions with a range of partners, from Cat 1 and 2 responders, business, 3rd sector and community groups, to develop realistic contingencies and to support risk-based investments (e.g., the purchase of multi-purpose 4x4 vehicles for the local highway authority's fleet).

Further to this planning, following the onset of the Covid emergency this mindset, of always considering concurrency and consequences, acted as impetus for the development of a concurrent events framework, which presents clear planning assumptions by which to set thresholds and triggers for activating higher levels of cooperation across the LRF area and/or requests for assistance from outside the County. This represents a good practice proactive use of the risk knowledge generated through statutory risk assessment processes being used to build resilience (through preparedness) into the county's response institutions.

Taking this common consequences, capabilities and concurrency lens forward it becomes clear that contingencies should not be seen as things to be developed in the abstract by a small cadre of resilience professionals within an LRF. They underpin the importance of inclusive planning processes that build all four streams of capability across not just responder organisations, but across the wider community. Understanding the nature of discrete risks is a vital component of this, but civil protection is dependent as many people as possible understanding the common aspects of those assessments in order to proactively develop the meaningful and iterative plans and partnerships needed to mitigate as much of that risk as possible.

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