

## **Dr Simon Harwood – Written evidence (RSK0005)**

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### **1. What are the most significant extreme risks that the UK faces? Are these kinds of risks discrete, linked or systemic? What do you understand the term 'extreme risk' to mean?**

Due to the necessary brevity and classification of this document, it would not be appropriate to list the risk(s) facing the UK at this time. However, the existing process / texts mentioned in the response to question two of this evidence present a good attempt at detailing those risks – with a number of notable limitations to the lists. The main issues with the existing lists as seen are (1) the lack of understanding of the systematic nature of those risks (2) the social 'cascade' of those risks (3) the time-period in which those risk are considered, addressed and dealt within (4) the risk vs the resilience to the risk which changes its priority.

It is further worth mentioning that – perhaps unexpectedly – that narrow commercial perspectives will be a barrier to the UK's ability to cope with future crises / extreme risk. (I.e. Risk that is considered greater than the ability of a single organization to cope with or one that requires a State level response). We have built (economically) organisations that are razor-sharp in terms of conversion of resources, mapped tightly against a clear business case. But that also means operations are razor-thin. The COVID-19 pandemic has exposed everything that is brittle about making efficiency the priority for both private and public organisations.

For example, threats from a virus-related pandemic have always been prominent on the UK's National Risk Register. With this in mind, the Government ran Exercise Cygnus in October 2016 with involvement across departments and emergency services to model and test how the national infrastructure would stand up to just this kind of pandemic; reports suggest it didn't; there were frightening gaps and limitations in the response. Recommendations were made and yet the past few months have demonstrated exactly how multiple lines of fragility were left unaddressed, and in particular, the immense costs to the nation needed to fill in the gaps when it's too late. The Emergency Preparedness, Resilience and

Response (EPRR) plan was limited because the numbers in the business case had not previously made any sense: why invest in preparation for a high cost, low probability event? The response has suffered from the fractured nature of organisations like the NHS, split up for the sake of creating a more commercial market, with so many individual entities having to make their own arrangements, with PPE for example.

The UK has to be made more resilient. The next major threat to national security might be another pandemic, for which we should be more prepared or at least more familiar, but it also might be something like, a solar flare, a super-volcano, an asteroid strike; all of them will present very different sets of challenges.

So it's not just a case of learning from COVID-19 and implementing measures to improve health systems and response. Becoming genuinely resilient - not just enhanced risk assessments and precautions, but making sure we're able to prepare for, cope and recover quickly from national crises - means looking at the big picture, all the ways in which a society is connected and interdependent. We must be thinking in terms of a connected resilience. That means not just looking at the plain financial case but keeping in mind all five 'capitals', the value of the natural environment (as the basis of all life), human capital (skills and aptitudes), social capital (institutions and communities), and built capital (everything from our cities to manufactured goods). Financial capital is just the means of transfer between the other four. A specialisation of knowledge has led to a narrowing of thinking, a lost appreciation of how business, the environment, society (nationally and internationally) all need to work together. Decisions on investment into resilience can't just be made in terms of a basic XY graph that quantifies risk.

## **2. Are there types of risks to which the UK is particularly vulnerable or for which it is poorly prepared? What are the reasons for this?**

To answer this question you have to consider at least four sources...

- I. UK Government (2015). *Annex A to National Security Strategy and Strategic Defence and Security Review* – Summary of the National Security Risk Assessment 2015. UK Government, London.
- II. UK Government (2017). *National Risk Register of Civil Emergencies*. UK Government, London.
- III. World Economic Forum (2019). *Global Risks Report 2019*. World Economic Forum, Geneva, Switzerland.

- IV. Ministry of Defence (2018). *Global Strategic Trends: The sixth edition*, published by the Development, Concepts and Doctrine Centre. *Global Strategic Trends*

The answer comes in comparison of the texts (1/2 vs 3 vs 4) (and many others) – why do we each perceive different risks? The answer is because we are using different methodologies and assumptions to assess the risk. Hence, we perceive the risk to be different. None are necessarily wrong – but also none are probably wholly right.

We are poorly prepared at large as there are numerous factors to dealing with risk (i.e. our resilience) that plans do not consider.

**3. How could the Government's approach to risk assessment be strengthened to ensure that it is rigorous, wide-ranging and consistent? Your answer could refer to any aspect of the risk assessment process including, for example, its governance, the evidence base, or the degree to which it is open to scrutiny and the input of experts.**

To examine the UK's National Security risks and our preparedness, particularly in relation to economic stability and public safety, from strategic threats we need to synthesize an alternative framework for National Security Risk Assessment, and hence preparedness, with a detailed ongoing research programme to re-evaluate our resilience to identified and emergent threats. Further detail is provided below in question 5 of this evidence.

**4. Given the range of possible national risks and the need to achieve a balance between efficiency and resilience, what level of assurance should the Government be seeking on the UK's resilience to hazards? What would effective national risk management achieve, and how could its success be measured?[1]**

As has been successfully proven HMG should be the owner of the risk but not necessarily the one wholly responsible for wholly mitigating it. This could be largely driven by both greater coherence within Government but also through entrustment of elements to the open market where risk can be better mitigated through market forces.

As an example; Pool Reinsurance Ltd core purpose remains the provision of terrorism reinsurance. The organisation has long recognised that to fulfil

effectively this role, there is a need to continue to understand the contemporary terrorist threats as well as horizon scan the future landscape.

Since its inception, Pool Re has evolved rapidly from a liquidity and solvency mechanism into a sophisticated disaster-risk financing solution, which appears both profitable for the insurance industry and serves the national interest by building resilience. At the heart of this evolution has been cultural change to create the conditions (incentivisation) for the continuous transfer (and hence mitigation) of terrorism risk from the public to the private sector. i.e. The current public private partnership would appear to be working well.

Given the success of this current public private model and the strength of the Pool Re culture, it would be logical to maintain existing structural arrangements and extend the remit of this successful company to cover a range of 'catastrophic shocks' that may occur in the UK, including for example cyber and pandemics. Such an approach would build on the successful journey of this established public private partnership and assist in enhancing the resilience of the UK to such events

**5. How can the Government ensure that it identifies and considers as wide a range of risks as possible? What risks does the inclusion criteria for the National Security Risk Assessment exclude and what effect does this have on long-term resilience?**

It is offered that the current National Security Strategy and its associated risk assessment (the open source unclassified version) provides insufficient evidence as to the level of threat to act as a platform for debate, assessment and involvement of those who need to interact with it. Furthermore, the current risk is assessed from a likelihood of occurrence of the risk versus the impact of the risk rather than a more detailed assessment that would understand:

- Signals and indicators of the onset of risks, including critical thresholds
- The behaviour / characteristics and uncertainty of the risk,
- The strength and weight of evidence, including knowledge and information gaps,
- The network (cascade impact, interdependencies) of the risk,
- The social view / impact (versus the reality / scale) of the risk,
- The level of resilience, including recovery time and barriers and enablers
- Use of foresight and scenario techniques to understand risk and recovery and identify visions and roadmaps for mitigating risks and events,
- Risk perception and communication (e.g. tiered approaches for different sectors/societal groups)

- Approaches to build buffering through investment across the Five Capitals.....

We must consider this risk and resilience from the perspective of the 'five capitals' which are; the value of the **natural environment** (as the basis of all life), **human capital** (skills and aptitudes), **social capital** (institutions and communities), and **built capital** (everything from our cities to manufactured goods). **Financial capital** is just the means of transfer between the other four. It is proposed a new framework in which subject matter experts can assess individual threats should be developed to serve this purpose.

**6. How effectively do current ways of characterising risks (for example, the use of a five-point scoring system of a 'reasonable worst case scenario') support evidence-based policy decisions? What other information would be useful?**

Measuring risk versus planning resilience are two completely different things. The process should assess resilience not risk alone. It is proposed that we should establish a framework in which the (internal and external) subject matter experts can assess individual threats. A programme of work could be enabled to assess resilience, which may consider:

- A. Assessing risk / forecast 'events':** Better understanding how to be able to assess and prioritise threats, including determining their frequency and likely locations. This work will identify descriptive trends and statistics that are 'codeable' for modelling / data science purposes to understand and model threats and optimise solutions.
- B. Future threat classification / identification:** A full examination of what possible threats might look like, how interconnected they may be etc. and how realistic the threat might be. (Ref. Answer 5 of this evidence).
- C. Managing the catastrophic:** Examine how both the governmental and non-governmental sectors can better contribute and how to scale up government response in short order via an examination of complexity science.
- D. Systemic vulnerability:** Through Data science and analytics anticipate, understand and model threats and optimise solutions to develop a greater understanding of what does create resilience and how to identify and characterise the risks within interconnected complex systems is required.

**E. Resilience by design:** Examine specific physical properties of systems for systems engineering, materials research and Infrastructure engineering to design secure resilient systems to aid better planning and decision-making.

**F. People and Systems:** An examination of human capital (skills and aptitudes), social capital (institutions and communities), and built capital (everything from our cities to manufactured goods) play into complex systems.

This framework and related work will then ideally allow a systematic assessment of risk.

**7. How effectively do Departments mitigate risks? Does the Risk Assessment process and the Civil Contingencies Secretariat adequately support Government departments to address risks within their remits? Is further oversight or accountability required, and if so, what form should that take?**

The machinery of government organised by separate divisions of interest - business in one corner, defence in another, environment somewhere else - meaning risks and their mitigation can become split by accident. Risk and resilience are cross cutting not verticals.

We need leadership and decision-making from a dedicated national-level operation, capable of working internationally for global co-ordination. We can't continue to rely on the armed forces to step in and deal with any extraordinary events, as has so often happened with e.g. flooding, foot and mouth disease, disruption to the supply of petrol etc. They need to be focused on their core role. The Home Office remit is too broad to take on the role in its current form - the department needs to be broken up and put back together again around a focus of emergency management. Organisations like the Federal Emergency Management Agency in the Department for Homeland Security in the US have been shown to have their own flaws, but they are at least examples to learn from. The new emergency agency would need a budget reflecting the fundamental value of security, the underpinning to the life of the nation. It would need to be back up by the UK population, in the form of a body of volunteer reserves, a fourth emergency service able to work across communities, brought together and given regular training in medical skills, crowd control, logistics, communications, a group drilled to take their place alongside emergency services and local councils.

We also need to examine how 'scientific evidence' is provided and assessed. Talking to a scientist is not in itself evidence. Peer reviewed evidence must be used, and modelling data must be validated and verified before being relied upon..

**8. How well are national contingency plans communicated to and understood by those at a local level, including emergency responders? What could be changed to increase the capability of local responders to effectively plan for and respond to emergencies?**

Ref. Answer 7 of this evidence. We need a framework and risk / resilience assessment that allows consideration and understanding to:

- A. Allow policy makers and regulators to make informed decisions,
- B. Allow industry to undertake robust resilience planning,
- C. Act as a public source of information
- D. Highlight potential areas of research and development

**9. What is the role of the individual in relation to national crises? Are there potential benefits in increasing public involvement and transparency in emergency planning? What limitations are there to this? What lessons have been learnt or should have been learnt about the approach taken to risk assessment and risk planning in this country from the COVID-19 pandemic?**

This requires a detailed answer, but the answer is yes. See evidence question 7 for a high level overview.

**10. What challenges are there in developing resilience capability? Your answer could refer to critical infrastructure, but also to systems and networks beyond those elements. What is the role of exercising to test risk preparedness, and are these methods utilised effectively in risk assessment and risk planning in this country?**

For brevity, please infer / reference from Ref. previous answers.

**11. What can be learnt from local or corporate risk management processes, or those of other countries? Are there any specific examples of practices, processes or considerations which could improve the UK's national risk resilience? How could businesses and civil society more effectively support national resilience preparation?**

For brevity, please infer / reference from Ref. previous answers.

**12. What individual or economic behaviours would strengthen national resilience against hazards, and what mechanisms are open to the Government or society to incentivise these behaviours? How should we prioritise any changes required in approach, process or policy needed to improve risk mitigation and strengthen the UK's resilience to extreme risks and emergencies?**

For brevity, please infer / reference from Ref. previous answers.

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