Critical National Infrastructure and Climate Adaptation Inquiry

The Joint Committee on the National Security Strategy (JCNSS)

January 2022

Submission by Rowena Hill and Rich Pickford, Nottingham Trent University

This submission builds on research and partnerships developed by Associate Professor Rowena Hill from Nottingham Trent University supported by colleagues from the Department of Psychology and Nottingham Civic Exchange. Through the submission we refer to the outputs of the C19 National Foresight Group which was active from March 2020 to January 2021 providing a cross-governmental and multi-agency support function for the UKs Covid-19 response. This group produced over 60 reports. Most of these are available publicly via the Nottingham Civic Exchange webpages for the committee and other groups to learn from (https://www.ntu.ac.uk/about-us/nottingham-civic-exchange/c19-national-foresight-group/about-c19-nfg).

1. Executive Summary

1.1. For the resilience community to prepare adequately for climate change, its impacts and predicted compound effects on Critical National Infrastructure (CNI), the evidence suggests that a data ecology should be developed where the international and national foresight of climate change and its impacts are articulated at the local granular level. This is so local planning and preparedness can be achieved. Our evidence also suggests that clarification on the leadership role within the UK on climate change, and the connectivity between the local and national structures also needs to be resolved in order for the structures to work together in response and recovery from the future demands that climate change will bring. Lastly, initiating a public dialogue to support everyone's understanding of their roles in an emergency is also a priority in order to improve resilience among CNI providers through the implementation of the National Resilience Strategy and to create a whole of society approach.

1.2. In summary, this submission calls for the joint committee to review the frameworks between government departments, CNI providers, agencies and with those managing disasters and emergencies at a regional and local level in the context of climate change and to promote this approach with government. In particular to review how to improve data intelligence, clarify roles and connectivity between responsibilities and to create a structured public narrative to achieve the implementation of the National Resilience Strategy.

2. Key vulnerabilities and levels of preparedness of UK CNI to extreme weather events and other effects of climate change

2.1. Our research and those of others have frequently highlighted the need to plan around CNI in resilience preparedness, this includes preparedness for the impacts of climate change. In our work we see that local and national resilience structures plan for the impacts of extreme weather, flooding and other risks associated with climate change, however the compound effect of those impacts on CNI is frequently neglected in these preparations. There are multiple reports outlining that impacts could lead to compound issues due to the age (in some case centuries old infrastructure) and wear (lack of ability to scale up infrastructure due to its age or its location) of some key CNI in the UK. Consequently, appropriate levels of knowledge and communication between the CNI providers and the Local Resilience Forums is required in order to plan and prepare adequately for these vulnerabilities and compound effects at the local level. These include the need for training and exercising for the compound effects and the interdependencies between the different aspects of UK CNI.

2.2. An additional key vulnerability identified through our research during the Covid-19 pandemic was the need to develop and structure our data ecology in non-crisis times so that it can be effective and efficient to support decision-making during major incidents. We see that this is still an ongoing risk, but one that could be addressed within the implementation of the National Resilience Strategy amongst other changes such as the review of the Civil Contingencies Act (CCA). As with the pandemic, climate change is a global, existential threat, consequently generating multiple reports modelling and discussing the many global impacts. Many national committees and

bodies model and detail the implications on the UK, extrapolating from the international reports and national and international datasets what the national impacts and risks are likely to be. This is well provisioned and much needed quality work plays a significant role in the national level preparations. However, it is unlikely that many of the national risks (with the possible exception of heatwaves) will present themselves simultaneously across the UK, requiring the declaration of a national incident. It is more likely that the risks will be experienced more locally at regional or local level, with the compound effects of these on CNI also experienced at local level. With the premise of subsidiarity being central to the current CCA, this means that our understanding of risk of climate change and its impacts on CNI is currently at national level, but our experience of the impacts of those risks, and our response, adaptation and recovery will be at local or regional level. This means we have not articulated our understanding of the risks to the local granular level of preparedness or planning.

2.3. We have learnt from the Covid-19 pandemic that when modelling was completed at national level, it provided a picture for national level decision-making, there was little evidence that this was informing the local or regional decision-making due to the disparity in the granularity of intelligence/information. There is no reason to assume that this will be different in the future for other nationally forecasted events, there will be an absence of synthesised, articulated to the specific region or local area granular scenarios and assumptions, which should be completed for geographical areas for climate change. Although the ability to extrapolate the impacts and compound effects of climate change at local level exists, it is just not resourced, as the resourcing is held at national level within the NSRA, and key stakeholder groups (Environment Agency, Met Office, government departments etc). The ability to generate this kind of data, synthesise it, and turn it in to intelligence to inform Local Resilience Forums bespoke to their geographies and climate change risks, needs to be developed in order to mitigate a key vulnerability in our planning and preparedness for the impacts and compound effects of climate change in the UK. Our research during the Covid-19 pandemic demonstrated that when a large-scale incident occurs, the government requires the local structures to provide it with data, which it then aggregates to achieve national situational awareness. This may change with the development of the National Situation Centre, but in the context of climate change, there is little or no data at local level to provide other than the data recording the impacts (houses flooded, lives lost etc). If we could develop the data sets at local and national level ahead of the

impacts, this would significantly improve the response. Bespoke evidence-based decision-making at appropriate local granular level and improved effectiveness of mutual aid and governmental coordination of resources which plot the different pressures and articulation of impacts on geographies and possible compound effects on their CNI would be beneficial.

3. Allocation of roles and responsibilities at the national, devolved and local level, and the connections between them

3.1. Currently the roles and responsibilities at the national level for climate change and the resilience structures which will respond to the impacts are dissipated. Although BEIS have the lead role for Net Zero, there is no clear government departmental lead for climate change to provide leadership to consider the wider set of challenges, resource and response requirements to mitigate the continually emerging sets of risks and needs climate change brings. This means that the leadership to identify, prepare, plan, mitigate and respond to the impacts and effects are not sitting with one accountable lead and the connections between the different points of leadership are not coordinated by one overarching body. The responsibility to plan and prepare sits with the Local Resilience Forums and the CNI providers. However, given the challenge identified above regarding the granularity of the intelligence and the contrasting geographical levels that reasonable assumptions are developed from to prepare and plan against, this presents a challenge as to how effective this can reasonably be. We saw through our research during the Covid-19 pandemic that the current connections between the local and national structures need investment and systematisation. Currently, if a regional event were to happen as a result of climate change, several LRFs would stand up their SCGs, with no structure other than Government Liaison Officers between them and COBR. This creates bottlenecks and one way broadcasting, rather than dialogue through a two-way communication to manage the response and recovery. The allocation of responsibility for maintaining the connections between these roles needs to be addressed in order to improve the preparedness and planning for the impacts of climate change and compound effects on CNI.

3.2. Our research during the Covid-19 pandemic demonstrated that the devolved administrations have different articulations and processes within the CCA. This

ultimately resulted in a differential approach which puts pressure on the local management at the borders where the response differentiates. This is not necessarily as a result of the connections between them, but their requirements to act within their own structures and systems of working with the CCA. Recognising this increased pressure on the LRFs who's geography lies on the borders should be a key point moving forward to ensure that resources for those LRFs, and CNI providers working between devolved administrations, are adequately put in place ahead of any reasonable assumptions of regional impacts.

3.3. Regarding the role of leadership for recovery, our research from different disasters and emergencies shows that this is not resourced as acutely as response. Our research also demonstrates that after climate related disasters, recovery may not be achievable, and adaptation and stabilisation are lived within for a period of time for the local geography and communities to start to deal with the impacts of the initial emergency, flooding being a prime example. This needs to factor in when large parts of the local environment are been impacted and the community have to live within that environment for months or years after the initial emergency and response periods.

4. The role of the Government's forthcoming National Resilience Strategy, particularly in addressing opportunities for (and obstacles to) improved resilience among CNI providers

4.1. The National Resilience Strategy aims to improve resilience among CNI providers through the Whole of Society approach. The aim of bringing together local and national governments, public services, voluntary and charities sector and private organisations to address the challenges of resilience from planning, preparedness, response and recovery. The main challenge to this is that the Whole of Society approach requires significant changes to education, investment, resources and understanding of citizenship to be done in an appropriate and successfully manner. Our review of the academic publications relating to the Whole of Society approach highlighted that whilst the need to increase education, investment and resources are relatively straight forward to allocate and put in place with increased financial investment, the change to the understanding of citizenship is more significant.

4.2. Published work has evidenced that over the last twenty years our relationship between our citizens and our public services are not similar to other European or Western countries. Our citizens have developed a customer relationship with our public services, rather than a citizenship relationship. Other European countries with more systematised approaches to resilience have relationships with their public that their role in an emergency is part of their citizenship. They understand what role the public can play and what roles the public are expected to play in an emergency. Currently, the UK would need to renegotiate our understanding of what the public services and organisations who control of CNI would offer if we introduced a Whole of Society approach. This public narrative and renegotiation would need to be completed alongside the education, investment and resourcing when implementing the National Resilience Strategy, otherwise it is highly likely that the approach will fail. This is not to say that our public are not committed to helping and providing mutual aid or positive entrepreneurship to help others in an emergency, but that is a very different kind of organising than the Whole of Society approach would need in the UK given the customer-provider relationship that has been established.

5. About the Authors:

5.1. Dr Rowena Hill is an Associate Professor of Psychology from Nottingham Trent University. She was on secondment for ten months to the C19 National Foresight Group, a cross-governmental group to consider the longer-term impacts of Covid-19 and to provide academic insights and an evidence base to the considerations of the group. The C19 National Foresight Group is now decommissioned. The submission therefore draws on the work conducted by the academics on this group during it's time of operating but is not a submission on behalf of the C19 National Foresight Group. Dr Hill has led research projects funded by the ESRC.

5.2. Dr Hill has been researching emergency management and resilience for the past five years. She has been researching alongside emergency responders specifically for over 15 years and has a strong publication record. Dr Hill has also been the lead author of reports which led on roundtable discussions with practitioners involved in the Covid-19 response and produced reports on these that have been disseminated to the resilience community across England.

5.3. Dr Hill will be happy to discuss the details of any of this content at any future meeting of the committee.

5.4. Research collaborators relating to this inquiry include:

- Rich Pickford, Manager of Nottingham Civic Exchange, Nottingham Trent University. Rich was seconded part time to support NTU's work with the C19 National Foresight Group and co-wrote this submission.
- Adam Potter, contract researcher engaged by NTU for their C19 Foresight work. Adam provided research assistance.
- Dr Duncan Guest, Associate Professor, Nottingham Trent University
- Dr Stacey Stewart, contract researcher engaged by NTU for their C19 Foresight work. Dr Stewart provided research assistance.
- Stephanie Bianco, contract researcher engaged by NTU for their C19 Foresight work. Stephanie provided research assistance.
- Dr Sally Andrews, Lecturer in Psychology, Nottingham Trent University.
- Dr Lisa Sanderson, Lecturer in Psychology, Nottingham Trent University.
- Professor Thom Baguley, Professor in Psychology, Nottingham Trent University.
- Professor Nigel Wright, Former Deputy Vice-Chancellor, Nottingham Trent University.

Additional colleagues provided research and insights to the material our group has produced. These can be shared with the inquiry if required.