

SALIENT Working Paper #1

Characterising the landscape of UKRI funded national security and resilience research

Dr Ian Tellam

**Building a secure and resilient world: Research and coordination hub (SALIENT),
part of the Thomas Ashton Institute, at The University of Manchester.**

November 2024



Executive Summary

The “Building a Secure and Resilient World” (BSRW) strategic theme, led by the Arts and Humanities Research Council (AHRC), is a core element of UKRI's *“Transforming Tomorrow Together”* strategy for 2022-2027. This initiative focuses on enhancing societal and economic resilience whilst strengthening national security in physical and digital environments. This working paper is designed to aid understanding of the landscape of investments across the BSRW strategic theme, by mapping existing research activity to support evidence gap identification and stakeholder engagement. This document also serves to inform investment decisions within the SALIENT devolved funding portfolio and speak to the wider policy agenda associated with the UK's national security and resilience.

Key Findings

Analysis of the BSRW portfolio reveals that research projects under this strategic theme are not uniformly categorized, creating challenges in determining their relevance to the five sub-themes. In this report, we utilize three main data sets - a dataset sourced from the Gateway to Research (GTR), filtered for projects starting from 2022, yielding over 4,900 relevant projects and two internal UKRI datasets from 2023 and 2024, derived from keyword-driven analysis of the research portfolio.

The analysis of these datasets uncovered significant variability in project distribution across the sub-themes, particularly highlighting a bias towards technology-related projects. This indicates a potential underrepresentation of research in areas such as behavioural and cultural resilience or global order, which may warrant further exploration.

Further to this initial analysis the study also presents a content analysis of the datasets deriving a series of inductive analyses of the data, providing breakdowns of the data in

alternative categories to better provide an overview of the scope of the current BSRW project portfolio.

Strategic Recommendations

The report identifies four recommendations to support the further development of the BSRW research agenda:

- **Interdisciplinary Research Focus:** Emphasizing projects that cross thematic boundaries may enhance the resilience-focused outcomes of the BSRW strategy. SALIENT, as a cross-cutting research initiative, is uniquely positioned to drive interdisciplinary collaboration.
- **Ground-Up Community Engagement:** Enhanced efforts to engage with communities, especially underrepresented voices, may help ensure that resilience strategies are inclusive and reflective of societal needs.
- **Refinement of Resilience Definitions:** A clearer, goal-oriented definition of resilience is needed to guide research, assess project contributions, and ensure alignment with the overarching goals of the BSRW strategy.
- **Exploration of Alternative Security Approaches:** Resilience should not be the sole focus of disaster management strategies. Alternative approaches, including transformative change and proactive solutions, should also be considered to address complex societal challenges.

Conclusion

The UKRI BSRW strategic theme presents an opportunity to convene and coordinate a comprehensive approach to strengthen resilience across various key sectors. However, there is an opportunity to broaden its research scope, address gaps in current thematic focus areas, and foster greater interdisciplinary collaboration. By refining their approaches, UKRI investments can ensure that their work meets the evolving needs of society and thus contributes to the long-term security and resilience of the UK.

Contents Page

Executive Summary	2
Contents Page	4
Introduction	5
Problem Description	7
Solution Overview	19
Conclusion	25
References	26
Appendices	27

Introduction

The Building a Secure and Resilient World (BSRW) strategic theme, led by UK Research and Innovation (UKRI) and the Arts and Humanities Research Council (AHRC), is part of the broader '*Transforming Tomorrow Together*' strategy. The initiative aims to enhance societal and economic resilience whilst bolstering national security across both physical and virtual spaces. By adopting a human-centred, systems-based approach, BSRW addresses various global challenges, such as financial crises, pandemics, climate change, and conflict.

BSRW is structured around five interconnected sub-themes:

1. Global Order in a Time of Change: This focuses on how the UK can lead in shaping an international order resilient to economic, social, and security-related shocks. The research aims to support diplomacy and collaboration, understanding Britain's global role in this evolving context.

2. Technologies for Resilience, Security, and Defence: This sub-theme investigates the use of technology to bolster national security by enhancing the robustness of digital and physical systems. It involves exploring system interconnectivity and ethical design, ensuring that key networks and infrastructures are secure and adaptive to emerging threats.

3. Resilient and Secure Supply Chains: Given the disruptions caused by events like the COVID-19 pandemic, this sub-theme explores ways to make global and domestic supply chains more resilient. The study highlights the vulnerabilities of just-in-time supply systems and proposes measures to ensure continued function in the face of shocks.

4. Behavioural and Cultural Resilience: This theme addresses how communities respond to shocks and how resilience is shaped by social, cultural, and behavioural factors. It focuses on enhancing communication, social cohesion, and decision-making at individual, community, and governmental levels.

5. Strengthening Resilience in Natural and Built Environments: The final sub-theme deals with environmental risks and how they affect both rural and urban areas. It emphasizes the need for systemic understanding and decision-making that considers environmental, social, and technological interdependencies.

The BSRW project includes a scoping study to map current research, identify key gaps, and engage stakeholders. This study is intended to inform future investments, guide decision-making, and shape policies aimed at enhancing national resilience to various threats.

The scope of this working paper addresses three core questions:

1. What projects included under the Building a Secure and Resilient World strategy pertain to each of the sub-themes described above.
2. What research openings (gaps) exist, and
3. Where should SALIENT invest to ensure complementarity with the existing UKRI research portfolio.

Various factors pertaining to the BSRW portfolio and the way in which it is collated and interpreted prompted further analysis beyond the initial 5 sub-themes. The intention with this further interrogation of the available datasets is intended to provide a broader overview of the BSRW portfolio and its current focus. In addition, the core concepts of the BSRW project are considered based on current scholarship, and potential opportunities for future research taking advantage of SALIENT's position as a cross-cutting research project are outlined.

Problem Description

The following section involves a look at data describing the research portfolio that pertains to BSRW and the subthemes it encompasses. There are 3 groups of data that will be used to develop analysis of this portfolio.

What research projects are officially part of the BSRW strategy is not publicly available information and is, to my understanding, a somewhat nebulous concept internally. While a list of projects officially 'badged' under the UKRI theme exists internally, this data is not publicly available and contains such a small subset of the portfolio it is not representative of the wider BSRW portfolio as it is considered by UKRI.

There are 3 data sets being compared here which have been used to create a comparative overview or map of the UKRI projects pertaining to the BSRW themes across the entire UKRI portfolio.

1. **Gateway to Research site search.** This is a search based on a Python 3 script searching 'building a safe and resilient world' using the GTR API to pull down all projects that are identified with this phrase using the GTR search engine. Only projects with a start date from 2022 (the start of the BSRW scheme) were considered by this particular search. Even with this restriction in place the size of this data set ran to 22,124 entries. This set was then further filtered to categorise them into the sub themes based on the abstracts for each study - projects that did not fit well into the subthemes were discarded as 'uncertain' yielding a final total of 4941 projects. Given the large size of this data set the search yielded several thousand results and for the purposes of analysis AI was used to assist in the sorting process according to a series of themes based on thematic analysis provided by comparison with the BSRW subthemes available through the UKRI website and related materials.

2. **The second data set was provided by UKRI based on their internal data teams sorting of projects based on a series of keywords.** The keywords provided were (provide keywords). This data was produced for internal review in 2023.

3. The third was produced by request from the UKRI data team along similar lines to the sorting of the 2nd set. It is correct as of October 2024. It was extracted using the same keyword search as the previous year’s list, although it was also filtered and sorted manually by UKRI.

UKRI themselves do not specifically allocate funding according to individual sub themes or specifically divide out projects under the BSRW banner from new or existing projects that simply align with the goals of this project. Therefore, reviewing the research requires reviewing the entire UKRI portfolio in order to identify projects which align with the goals of the BSRW scheme, and subsequently dividing them into appropriate subthemes based on thematic and keyword analysis.

Table 1 and Figure 1 an illustration of the data and a breakdown of the number of projects that correspond to each sub-theme.

Table 1: Analysis of UKRI funded research by BSRW sub theme

Gateway to Research (GTR) Search	
Sub-theme	Number of Projects
Behavioural & Cultural	104
Technologies	3585
Environment	438
Supply Chains	178
Global Order	160

Fig 1: Analysis of UKRI funded research by BSRW sub theme

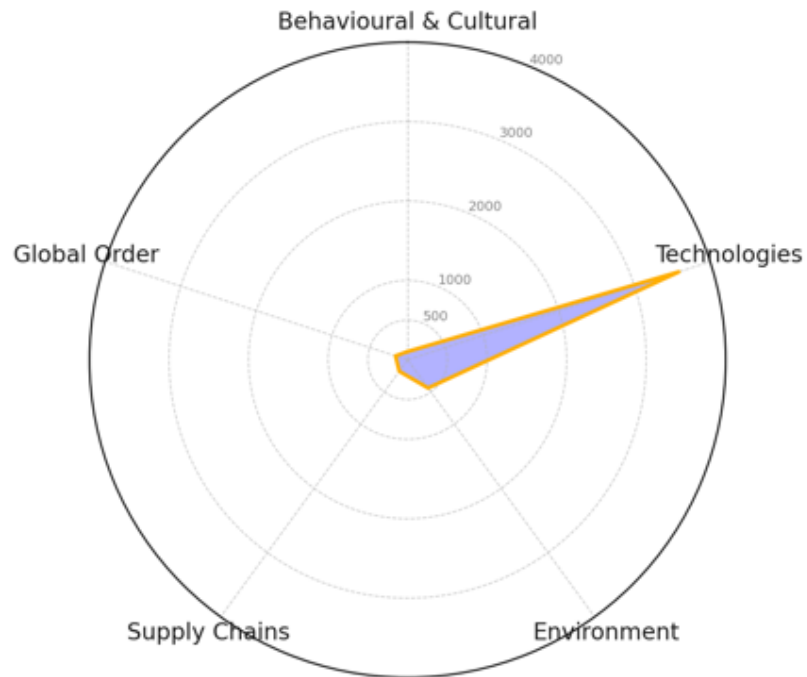


Table 2: Analysis of UKRI funded research by BSRW sub-theme (2023 dataset)

UKRI 2023	Number of Projects
Behavioural & Cultural	67
Technologies	92
Environment	95
Supply Chains	145
Global Order	118

Figure 2: Analysis of UKRI funded research by BSRW sub-theme (2023 dataset)

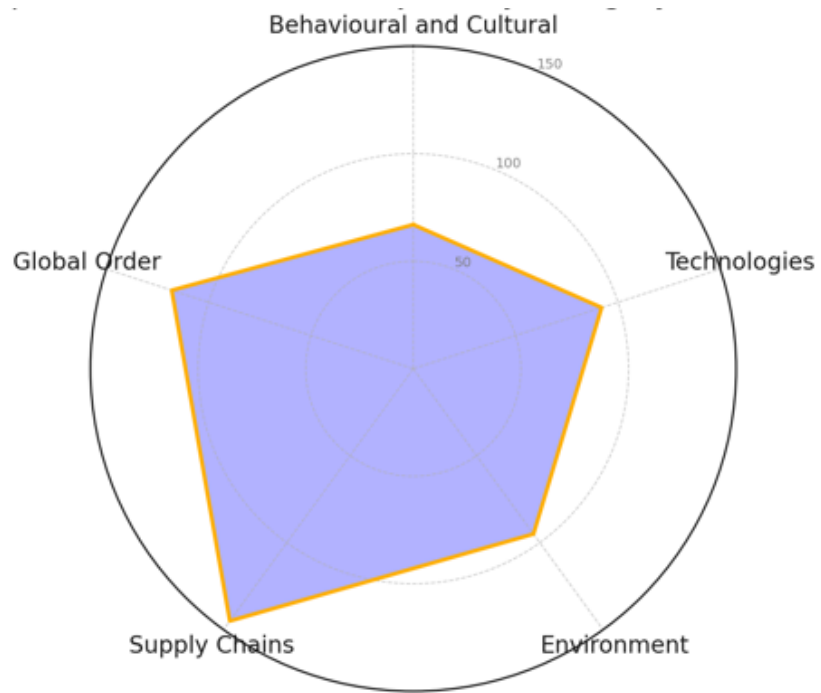
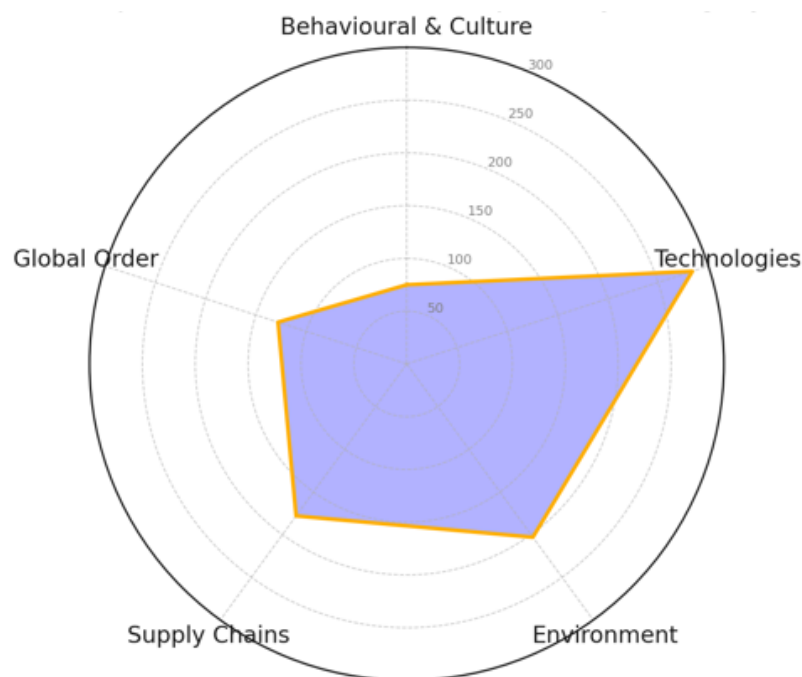


Table 3: Analysis of UKRI funded research by BSRW sub-theme (2024 dataset)

UKRI 2024	
Sub theme	Number of Projects
Behavioural & Cultural	75
Technologies	284
Environment	203
Supply Chains	178
Global Order	128

Figure 3: Analysis of UKRI funded research by BSRW sub-theme (2024 dataset)



Commentary

The data has been primarily analysed according to the number of projects rather than the amount of funding spent on the projects falling under each subtheme. This decision was made as some sorts of research or fields of study are likely to inherently cost more, for example due to specialist equipment required, laboratory time etc. Counting by number of projects was ascertained to be a fairer comparison to the research 'effort' expended in each subtheme than funding. Analysis based on funding amount was carried out but showed a huge disparity towards science and technology projects most likely for the aforementioned reasons (although combined funding is included in the tabulated results for the sake of illustration). Nevertheless, even when analysed only according to the number of projects this bias still seems to be the case, or at least in two instances.

Each set of data reveals a somewhat different view on the portfolio. In the data derived from the GTR search, a data set that encompasses a much larger set of projects, there

is clearly a very significant bias towards projects that align with the ‘technologies’ subtheme. This is reproduced in a less drastic fashion in set 3, the recent data set provided by UKRI.

This bias is, however, absent in the second data set, which shows a greater number of projects corresponding to the ‘supply chains’ and ‘global order’ sub themes.

How to view the data.

This disparity in data sets does not reflect, for instance, an increase in projects pertaining to a specific sub-theme being started in the years 2022-2024. Rather, disparities occur due to a high level of subjectivity in categorising projects as pertaining to one sub theme or another, and even whether they fall under the remit of BSRW altogether.

When asserting whether projects fall under one category or another the results depend heavily on the themes and/or keywords used to sort the data. In these particular case projects must also fall in one category or another rather than encompassing multiple sub-themes. This possibility is not considered in the UKRI sorted data and in the initial data sets derived from the GTR search.¹

¹ As an exploratory measure, we analysed a subset of data according to the possibility of projects falling into multiple categories and this yielded a similar distribution pattern of projects (although less extremely biased towards the technology category). Given the issues already present and the fact that UKRI themselves do not allow for multiple categorisations in this manner, it was decided that this more complex form of analysis (such as considering the proportion to which each project pertained to one category or another) added little to the final review.

The search performed on the GTR site is sorted according to a thematic analysis based on key words and concepts derived from the description of the sub themes as provided by the UKRI web site and related materials.

The UKRI 2023 data is sorted according to the below set of keywords and the projects drawn from their internal database:

Supply chains (supply chain shocks, shortages of products and resources, self-sufficiency, international supply chains, scarce global resources, resource scarcity resource sustainability, resilient food systems, food safety, critical national infrastructure, global interdependencies, trade barriers, domestic production, and supplies. Manufacturing and materials, critical materials)

Technologies for Resilience, Security and Defence (self-explanatory, but also includes cybersecurity, cyber-crime, robotics and autonomous systems, quantum technologies, digital twins and synthetic environments, engineering biology, artificial intelligence, innovation in digital technologies, changing nature of threats, 'digital people'/digital community,

Strengthening resilience in natural and built environment (natural disasters, natural shocks, floods, physical environments, urban environments, geohazards, water security, energy security, nature-based solutions, urban blue and green spaces, environmental humanities, heritage, and climate change

Behavioural and cultural resilience (individual and community resilience, personal resilience, social resilience, fairness and justice across generations/intergenerational justice, cross-cultural perspective and resilience, risks and decision-making, threat assessment,

Global order (international order, international law, conflict and violence, extremism, state fragility, forced displacement, global interdependence, global economics and finance, global Britain, diplomacy, foreign policy, area studies, trust in government)

Interpretation

Over the course of this study, it became apparent that given the small number of projects that are internally 'officially badged' as BSRW, a wider range of projects, including projects that pre-exist the BSRW call are routinely included as being part of the BSRW portfolio.

This data is characterised by two facts:

1. That BSRW projects are identified based on the opinion of an individual or group within UKRI as 'being' BSRW projects. There are no specific criteria for this and with no official designation this status is not necessarily fixed.
2. Which sub-theme any potential project may fit under is similarly open to individual interpretation rather than a specific set of criteria.

In addition to this it is also worth noting that despite 'resilience' being a key component of this strategy, there is no particular agreed definition of 'resilience' in use by UKRI, which adds uncertainty as to how projects contribute to the general goals of BSRW.

Additional analysis

As well as categorising the projects based on the stated BSRW sub-themes, further thematic analysis was combined with closer reading of projects and abstracts to generate a more intuitive understanding of the portfolio which would factor into the final analysis. Some of this analysis is included here to help shed more light on the dataset.

The data may be divided up in various ways depending on the goals of the researcher. The following example uses keyword-based thematic analysis to take a closer look at the UKRI 2024 data, as the most up to date and official data set. Rather than dividing the projects according to existing sub-themes, this is a look across the whole BSRW dataset arranged based on alternative criteria as a way to identify potential areas for

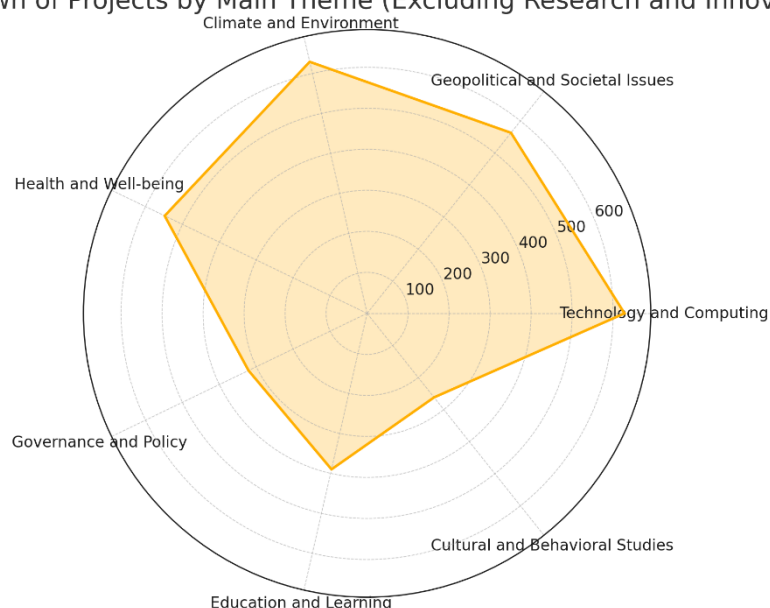
further research. These themes were identified based on a broad literature review of resilience studies and related scholarship but are not intended to be an exhaustive analysis of all possible avenues for resilience studies. Rather it is an exercise to augment the existing sub-theme-based analysis by illustrating some potential alternative ways of viewing the data and what may be derived by doing so. (Note: in this particular analysis, unlike the sub-theme categorization, projects can be considered as falling under multiple categories.)

Project Counts by Category

- Technology and Computing: 628
- Geopolitical and Societal Issues: 563
- Climate and Environment: 629
- Health and Well-being: 548
- Governance and Policy: 321
- Education and Learning: 390
- Cultural and Behavioural Studies: 262

Figure 4 Breakdown of projects by main theme

Breakdown of Projects by Main Theme (Excluding Research and Innovation)



The BSRW strategy states 3 core aims:

- strengthen social and economic resilience
- enhance national security across virtual and physical spaces
- ensure the UK can absorb adversity, deal with change, and respond to emerging threats and opportunities

Recurring themes were drawn from the dataset and a keyword analysis based on lists of terms and themes was used to categorise the projects on whether they fit well with these aims, or whether it was not clear from the data set how it aligned with them.

Note that it is not necessarily the case simply because it is unclear how it fits the aims of the strategy that it cannot be categorised under a specific sub-theme as in many respects the sub-themes expand the possibilities for research. Also, the potentially broad definition of 'resilience' and what might strengthen it makes this highly subjective. 'Economic resilience' could mean anything which is potentially profitable or developing competing products. In addition, unfamiliarity with every field of research

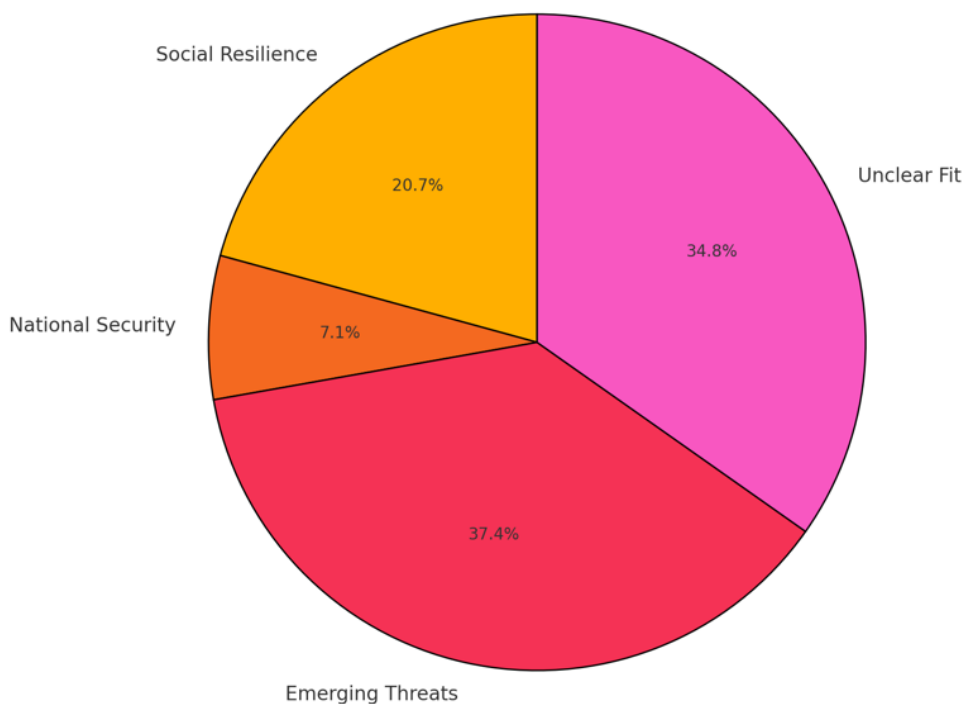
made projects such as “Using atom interferometry to search for masses behind barriers” included in the UKRI dataset difficult to categorise in terms of their benefits towards the overarching BSRW goals.

The distribution here may be heavily influenced by the large number of projects which reference climate change and other environmental issues as an ‘emerging threat.’ In addition, issues of national security spill into social resilience concerns when dealing with aspects of the internet.

Table 4 Categorisation of projects

Aim Category	Number of Projects
Social Resilience	220
National Security	75
Emerging Threats	397
Unclear Fit	369

Figure 5: Categorisation of projects by percentage value



Finally, keyword analysis shows that among the 868 projects in the UKRI 2024 dataset, 143 specifically reference multi-disciplinary or interdisciplinary approaches (16.5%).

Results

Given the nebulous, subjective, and shifting nature of the data and how it may be included or excluded, or how particular projects may be categorised, considering the overall purpose of this study analysis according to sub-theme is not a particularly effective way of viewing the data. To identify potential gaps in the current UKRI portfolio alternative criteria will instead be considered:

1. The overarching goal of the BSRW strategy. This includes a consideration of its objective of 'resilience' and how this may be achieved through the BSRW call and its stated sub-themes.
2. The nature of the projects currently funded and considered to be part of the BSRW portfolio. How do these projects contribute to the goal of the BSRW project now defined as contributing toward resilience?
3. How can the specifically cross-cutting nature of SALIENT's remit contribute to the BSRW goal and in what way is it uniquely positioned to do so.

Over the next sections these questions will be considered with reference to appropriate scholarship and current thinking on the concept of resilience.

Solution Overview

Resilience as a theme that is central to BSRW

Resilience as a societal concept has risen in prominence over the last 15 years. Despite its ubiquity in discussions of governance and the general "proliferation of resilience-speak" (Olssen et al 2017) in fields such as crisis and risk-management pinning down a precise definition of the term is often difficult. As previously mentioned, there is no definition of resilience as it pertains to the BSRW strategic theme, and yet as a key stated goal of the project what series of attributes constitutes a 'resilient world' needs to be considered when considering research direction.

From an etymological perspective, resilience has its roots in the concept of 'bouncing back from problems or perturbations or disturbances'. In modern discourse it is usually associated with "a new awareness of insecurity or contingency" (Chandler & Coaffee 2017). Problems, including disasters, are frequently not avoidable, nor can they necessarily be predicted. The aim, therefore, is not so much to solve problems, or attempt to avoid them, but to assume they will happen and therefore to increase the capacity of a society to absorb these issues and ultimately return to a position of notional normality or homeostasis. Alternatively, resilience may be seen as an opportunity for returning to a prior state, but as an opportunity for learning, and future growth, hopefully obtaining a state with an increasing ability to absorb threats to the status quo in the future.

Resilience is an approach which aligns and follows from a concept of risk-society (e.g. Beck 1987) where insecurity and uncertainty are constants, and the minimisation of risk is an outcome of "a new awareness of insecurity or contingency" and the existence of constant uncertainty is seen as a constant in society. (Chandler and Coaffee 2017)

Why Resilience?

Advocating for a resilience-based approach to governance is a form of admission that the complexity and interdependency inherent in society makes the future ultimately unknowable, and not something that can be controlled or managed with absolute certainty. Rather than bringing nature or society under absolute control, resilience suggests an orientation to the future built on concepts of fluidity and responsiveness. It must be open to feedback and ready to adapt, often in iterative and reflexive ways. It's a society that is self-analytical and dynamic:

"Progress today is not so much about storing up, extracting and universalising knowledge but rather about being more relationally aware of our own systems of organisation - politically, culturally, socially and economically - and about the interactive effects of these forms of organisation with the external, changing environment and international context". (Chandler & Coaffee 2017)

The Study of Resilience

As it begins with the assumption that problems are not avoidable or preventable, and that society and its corresponding risks that it faces exist in a state of constant uncertainty, the focus of resilience studies is on rethinking various forms of societal organisation to improve its ability to absorb adversity. (Chandler and Coaffee 2017)) Research intended to improve societal resilience will focus on identifying weaknesses in structures, systems, and policies. Resilience-oriented studies are often focused on participatory or collaborative practices to identify and assess sources of risk with the aim of informing policy and practice to address these issues.

A challenge of resilience studies lies in the understanding of resilience itself. "It is a moving target", subject to interpretation and both between individuals or groups and definitions can be highly context-dependent (Rogers 2017).

Resilience studies often focus on interdisciplinary approaches. The complexity of issues pertaining to resilience makes it an "interdisciplinary bridge builder" (Bourbeau 2017)

benefiting from reaching across disciplinary boundaries and encouraging collaborative approaches to generate novel solutions to social, political, and economic issues.

Issues with resilience

Resilience can be seen as identifying a solution before the problem. Given the accepted degree of uncertainty in the world that underpins resilience-thinking problems, and their nature cannot always be predicted. The goal is to build or reinforce a system so that it is better able to survive these as yet unknown issues.

Whether or not 'resilience' is a positive normative concept or not remains a point of debate. Depending on its interpretation, the context in which it is deployed and the way resilience-based policies are executed, rendering social structures and institutions as 'resilient' might manifest as resistance to positive change (Olssen et al 2017). Social theories which are based on the concepts of change over stability or continuity " have difficulties in accepting the resilience concept, let alone resilience theory" (Olssen et al 2017: 49)

Characterisations of economic disasters, for instance, as similarly inevitable and unavoidable as natural disasters and being subject to a similar approach to building resilience into affective communities may reinforce or ossify problematic policy, where recognition of the need for underlying transformative change may be a more effective and appropriate response.

In this vein, criticisms of resilience being employed as an ethos of governance see it as an extension of a neoliberal philosophy whereby self-reliance and individual responsibility are elevated as proper and correct aspects of citizenship. Concomitantly, alternative modes of behaviour may be discouraged, and specific relationships with the natural and urban environment become enforced as moral imperatives. Under this version of resilient society subaltern voices may be disregarded or dismissed and the public "relegated to a largely passive role" (Rogers 2017). The risk in attempting to build

resilient communities is that the act of building resilience is accompanied by a lack of consultation and engagement, especially with hard-to-reach elements of the communities, elements of society which often appear in the planning processes of resilience-oriented strategies but may be underrepresented or absent from stages of consultation.

Salience to potential research

None of this is to say that resilience-based strategies are inherently problematic, but rather that potential issues with the execution of such approaches need to be considered. Resilience as an unexamined concept and a universal response to (potential) adversity can also risk eliding other, either more novel or traditional, responses to societal challenges or disasters. It follows that a complimentary programme of research can serve to provide reflexivity and responsiveness to the broader strategy and portfolio of research currently being undertaken under the BSRW banner. With this analysis in mind the following section outlines a series of potential approaches intended to add value to the current UKRI portfolio as it pertains to the BSRW scheme.

Implementation

SALIENT's position as a multi-disciplinary and cross-cutting programme allows it to take a unique position within the BSRW strategic theme. Rather than viewing the sub-themes as discrete but collectively all-encompassing aspects of resilience research which are being served to a greater or lesser degree by the range of research funded by UKRI, the possibility is open to consider projects which cut across multiple themes. Such research would need to self-consciously think beyond these boundaries devising new ways to combine and conceptualise resilience themes, providing value to the portfolio through a distinctive approach to its own research.

SALIENT can act to provide examination of and counterpoint to resilience assumptions through empirical research, highlighting issues from a more grass roots level.

It is important to not presume aspects of resilience as normatively positive. Examining the assumptions of resilience as a guiding factor for policy is important to inform the direction of further research. Reviewing and analysing the implementation of previous resilience-based policy is important to ensure the reflexivity necessary for consistent improvement.

Ground up research into new modes of community engagement.

This requires new efforts to engage with communities, and hard to reach voices in communities, to help avoid blind spots in the assessment of resilience-based regimes. Research into new methods of community engagement and assessment of existing programmes of resilience-building are required to ensure policy is being enacted that provides beneficial outcomes to all stakeholders.

Clearer and more goal-oriented definitions of the concept 'resilience' help direct research and review the scope of existing research. Why is resilience important and what does a programme of research based around the concept hope to achieve?

Weak definitions of resilience present problems not only in guiding the direction of research, but also in terms of assessing the research portfolio. While there is not a fixed definition of the concept, a clearer delineation of what the programme is looking to achieve, and therefore what may fall inside or outside of its remit with regards to achieving its goals. What is the contribution a particular project is making to the overarching goals of the scheme, and how should the portfolio be mapped and reviewed to provide feedback?

Alternative approaches should not be ignored. Security isn't necessarily all about resilience. Is a 'secure world' always a 'resilient' one?

Other approaches to disaster management and risk mitigation should not be pushed aside in the name of resilience alone. Sometimes difficult issues can be 'solved'. Sometimes change is necessary, and the breakdown of existing systems is required in order to enable this. While this may appear to be outside of the scope of 'building a secure and resilient world' with its conceptual focus it is important when assessing the value projects represent. A critical assessment of this can also provide value for future strategies. Alternative approaches and interventions to security and change should not be disregarded.

Conclusion

This working paper presents an analysis of the distribution of UKRI funding among the sub-themes of the BSRW strategy. Over the course of the study several datasets were analysed according to multiple themes and categories derived inductively from the range of projects which make up the portfolio. Based on this extended analysis with consideration of recent scholarship on resilience, this paper recommended several approaches intended to add value to the BSRW portfolio of projects. This research is in line with the overall goals of 'Building a Secure and Resilient World' and, more broadly, the overarching 'Transforming Tomorrow Together' strategy.

References

- Beck, U. (1992) *Risk Society: Towards a New Modernity*. First edition. London; Newbury Park, Calif: SAGE Publications Ltd.
- Bourbeau, P. (2017) *Resilience, security, and world politics*, in Chandler, D. and Coaffee, J. (eds) (2017) *The Routledge Handbook of International Resilience*.
- Chandler and Coaffee (2017) *Introduction: contested paradigms of international resilience*, in Chandler, D. and Coaffee, J. (eds) (2017) *The Routledge Handbook of International Resilience*.
- Coaffee, J. (eds) (2017) *The Routledge Handbook of International Resilience*.
- Rogers, P. (2017) *The etymology and genealogy of a contested concept*, in Chandler, D. and Coaffee, J. (eds) (2017) *The Routledge Handbook of International Resilience*.

Appendices

Projects by research organization (UKRI 2024 dataset)

Research Organisation	Number of Projects
Loughborough University	17
University of Manchester	14
University College London (UCL)	10
University of Edinburgh	9
University of Leeds	9
University of Liverpool	9
University of Oxford	8
Imperial College London	8
UK Centre for Ecology & Hydrology	6
University of Southampton	6
University of Nottingham	5
University of Strathclyde	5
King's College London (KCL)	5
University of East Anglia	4
University of Reading	4
Lancaster University	4
Newcastle University	4
Heriot-Watt University	3
University of Glasgow	3
Bath Spa University	3
University of Aberdeen	3
British Geological Survey	3
University of Bristol	3
University of Cambridge	3
Cardiff University	3
University of Warwick	3
Cranfield University	3
University of Plymouth	3
University of Stirling	3
Durham University	3
Innovate UK	3
University of Exeter	3
University of Hull	3
University of Brighton	2
University of Birmingham	2
The Open University	2
Northumbria University	2
Scottish Association for Marine Science	2
National Water Authority of Peru	2
University of York	2
Bangor University	2
Environment Agency	2

Research Organisation	Number of Projects
London School of Economics and Political Science	2
Manchester Metropolitan University	2
University of St Andrews	2
Royal Holloway University of London	2
National Oceanography Centre	2
University of Sheffield	2
University of Kent	2
Plymouth Marine Laboratory	2
Queen Mary University of London	2
Robert Gordon University	2
Royal College of Art	2
University of Nairobi	1
University of Surrey	1
University of Sussex	1
University of Leicester	1
Aberystwyth University	1
The National Lottery Heritage Fund	1
University of Huddersfield	1
National Physical Laboratory	1
Anglia Ruskin University	1
Central Water Commission of India	1
Glasgow Caledonian University	1
INTODESIGN Lab	1
Integrated Environmental Solutions (United Kingdom)	1
James Hutton Institute	1
Marine Scotland	1
Natural History Museum	1
University of Essex	1
Partners for Health and Development in Africa	1
Sheffield Hallam University	1
Strathmore University	1
Alliant International University	1
University of Bath	1
University of Central Asia	1
University of Dundee	1
University of the Arts London	1

Projects by start date and average length (UKRI 2024 dataset)

Start Year	Number of Projects	Average Length (Years, Months)
2019	15	2 years, 11 months
2020	23	3 years, 2 months
2021	12	3 years, 3 months
2022	80	3 years, 2 months
2023	34	2 years, 10 months
2024	26	2 years, 10 months

UKRI is the largest public funder of research and innovation in the UK, investing £8 billion annually spanning all disciplines and all sectors. UKRI are nine councils, drawing on a unique breadth and depth of expertise to work with government and other stakeholders to enrich lives, by increasing understanding of world around us supporting innovative businesses and public services, and creating high-quality jobs throughout the UK.