**Modelling UK supply chains as complex systems for resilience**

Apply for funding for a Network Plus to model UK supply chains as complex systems to strengthen resilience. The Network must have a focus on cascading risks in food, critical minerals, and fashion and use data-led and conceptual modelling to inform policy and practice.

One 4-year interdisciplinary Network Plus will be funded by UKRI. The full economic cost of your network can be up to £6,250,000. UKRI will fund 80% of the full economic cost.

The Network can be led by any discipline in collaboration with government, business and the third sector.

Your Network should start on 1 April 2024 and run until 31 March 2028.

Before applying for funding, check the following:

* [the ESRC eligibility guidance for applicants](https://www.ukri.org/councils/esrc/guidance-for-applicants/check-if-you-are-eligible-for-funding/)
* [the eligibility of your organisation](https://www.ukri.org/apply-for-funding/before-you-apply/check-if-you-are-eligible-for-research-and-innovation-funding/eligibility-as-an-organisation/#contents-list)

As this is a UKRI wide funding opportunity, being delivered through ESRC, the application does not need to meet a 50% social science remit as specified in the ESRC eligibility guidelines. However, it does need to be interdisciplinary, incorporating at least three of the UKRI disciplines.

UKRI is introducing [new role types](https://www.ukri.org/publications/roles-in-funding-applications/roles-in-funding-applications-eligibility-responsibilities-and-costings-guidance/) for opportunities being run on the new Funding Service from 22 May 2023.  For full details, visit [Eligibility as an individual](https://www.ukri.org/apply-for-funding/before-you-apply/check-if-you-are-eligible-for-research-and-innovation-funding/eligibility-as-an-individual/#contents-list).

### Who is eligible to apply

The project lead must be based [at a UK research organisation eligible for ESRC funding](https://www.ukri.org/apply-for-funding/before-you-apply/check-if-you-are-eligible-for-research-and-innovation-funding/who-can-apply-for-funding/). That organisation will be responsible for submitting the grant application to UKRI.

The project co-leads can be based at a UK research organisation eligible for ESRC funding, or at UK businesses, public sector, third sector or eligible public sector research establishments (PSREs). Read our guidance on the  [Inclusion of business, third sector or government body Co-Is on ESRC proposals](https://www.ukri.org/publications/including-project-co-leads-from-business-third-sector-or-government-bodies/)

### International applicants

Project leads from non-UK organisations are not eligible to apply for funding for this opportunity.

Project co-leads based in non-UK organisations are not eligible to be included in applications for this opportunity.

### Equality, diversity and inclusion

We are committed to achieving equality of opportunity for all funding applicants. We encourage applications from a diverse range of researchers.

We support people to work in a way that suits their personal circumstances. This includes:

* career breaks
* support for people with caring responsibilities
* flexible working
* alternative working patterns

Find out more about [equality, diversity and inclusion at UKRI](https://www.ukri.org/what-we-offer/supporting-healthy-research-and-innovation-culture/equality-diversity-and-inclusion/).

### Scope

A Network Plus is a strategic investment that brings together new or disparate communities from across the research and development system and identifies, prioritises and develops emerging research and knowledge exchange challenges. It provides leadership across disciplines and sectors and tailors its activities to the needs in its area. In this Network Plus, the project team will also undertake modelling of supply chains as complex systems and the development of interventions.

A Network Plus is expected to establish and maintain appropriate links with relevant activities and research users to achieve its aims of increasing collaborative working across disciplines and sectors, and connecting the research and innovation landscape.

The funding for this Network Plus funding opportunity is from the [UKRI Strategic Theme on Building a Secure and Resilient World](https://www.ukri.org/what-we-offer/browse-our-areas-of-investment-and-support/building-a-secure-and-resilient-world/) (BSRW) which aims to strengthen social and economic resilience, and enhance national security across virtual and physical environments, by improving awareness of risks and threats, preparedness, informed decision-making and response. It will work towards change being understood as a force for good.

All proposals should be interdisciplinary and involve 3 or more different disciplines. There are many disciplines that could help to address supply chain challenges, for example the biological sciences, engineering and physical sciences, environmental sciences, economic and social sciences and the arts and humanities. Proposals must take a systems approach and consider how risks might cascade within and beyond the supply chains being considered.

### Background to the Opportunity

Supply chains have increasingly been impacted by a number of systemic issues, such as an energy-supply crisis, geopolitical events, extreme weather, and the COVID-19 pandemic. Supply chains operate as complex systems; systems that are composed of many interacting components and interdependencies. These consist of physical infrastructure (for example; materials, transport/shipping routes, storage, labour, energy availability), social infrastructure (for example; markets) and digital infrastructure (for example; data and automated systems) with individual parts of these supply chains interacting both with each other and with wider externalities. These wider externalities include climate change, natural disasters and disease threats which can disrupt supply chain activities. These challenges are compounded by increasing global competition for natural resources, and an increasing need to source goods and raw materials in the most sustainable way with minimal environmental impact.

World business today depends on just-in-time supply chains. This system, by which businesses rely on deliveries of raw materials or stocks exactly when they are needed, has become an entrenched feature of global trade, enabled by falling transport and communication costs. While just-in-time supply chain approaches improve efficiency by eliminating waste (for example; of time, space or stock); they allow for little slack in the system making supply chains vulnerable to disruption. In this context, there is a need to understand the potential risks, how they might cascade through supply chains when they are considered as complex systems, and the interventions that might be needed to increase their resilience. As an example, cascading risks in food supply chains might involve extreme weather abroad reducing imports of fruit and vegetables and an increase in energy prices reducing domestic production, both leading to empty supermarket shelves and higher food prices.

The lack of functional redundancy in supply chains combined with systemic pressures and externalities make them vulnerable to shocks, with shortages of raw materials, ingredients, or stocks, now commonplace across the UK and much of the world. The resilience of supply chains must be strengthened if they are to be viable, productive, and sustainable.

### Opportunity

The full economic cost of your network can be up to £6,250,000. UKRI will fund 80% of the full economic cost.

We are looking for proposals to establish a ‘modelling supply chains as complex systems’ Network Plus that will harness the power of data and scenario modelling to identify cascading risks, and the associated impacts and trade-offs, across the environment, society and economy to inform and test targeted interventions to strengthen supply chain resilience. It is expected that the project team will undertake the majority of the modelling in collaboration with related investments and stakeholders.

This Network Plus should focus on the following three key supply chains, and their risks that are strategically important for the UK:

* food (for example; extreme weather and increased energy costs leading to UK food shortages)
* critical minerals (for example; increased competition for natural resources and a recent shortage of both construction materials and semiconductor chips)
* fashion (for example; reduced petrochemicals availability leading to shortages of synthetic fibres and dyes in the context of rapidly changing consumer demand)

These are just a few examples of potential risks, and we would welcome a mapping of risks in each supply chain as part of the work, in collaboration with related investments and key stakeholders.

While these individual sectors have their own specific challenges, there are many commonalities that operate across all supply chains that might lead to common interventions; for example, their just-in-time nature, exposure to a number of cascading risks, labour and logistics issues, their reliance on natural capital, and their increasing need to demonstrate ever higher environmental and ethical credentials. Any outcomes or interventions developed should tackle the issues within the specific supply chains but they may also have broader applicability to all supply chains.

There are three components of resilience that might be considered in this funding opportunity:

* robustness – the ability of a system to resist disruptions and maintain the status quo
* recovery – the ability of a system to bounce back to the status quo after a disruption
* reorientation – the ability of a system to transform before or after a disruption for improved outcomes

We would particularly welcome proposals addressing ‘reorientation’ and how to transform supply chains to make them more resilient, recognising that the status quo may not be optimal.

### Objectives, agenda and outputs

The objectives of this Network will be:

* to use complex systems modelling to increase supply chain resilience in food, critical minerals and fashion
* to coordinate research investments and develop an interdisciplinary community of researchers and stakeholders focused on resilient supply chains.
* to understand and mitigate cascading risks, impacts and trade-offs across the environment, society and economy to supply chains focusing on food, critical minerals and fashion
* to inform policy and practice through short-term interventions (robustness and recovery to maintain the current system) and medium-term interventions (reorientation to transform the current system).

The modelling supply chains as complex systems Network Plus will have an agenda that:

* provides modelling capability and potential interventions in the three supply chains identified when considering these as complex systems. This includes data-led modelling, looking at different types of data collected in different parts of supply chains and how to integrate this data through new digital approaches. This could build on the progress that has taken place in fields such as digital twinning and complexity science research. Equally relevant is conceptual modelling, for example modelling future scenarios and decisions that might need to be taken by stakeholders
* works with stakeholders to identify a set of systemic issues to be addressed in each supply chain, with a focus on cascading risks, impacts and trade-offs across the environment, society and economy
* identifies a set of interventions that enable resilience when considering supply chains as complex systems, including the actors, activities and outcomes involved, how they are connected, key vulnerabilities and interdependencies
* engages and networks with other UKRI activities, and stakeholders in academia, government (local/devolved/national), business and third sector in the UK and internationally, connecting and coordinating across a diverse range of disciplines and backgrounds
* assesses and determines what the UK needs in terms of research, research infrastructure and skills to develop capability in supply chain resilience when viewing supply chains as complex systems
* provides thought leadership and a clear vision for modelling the risks and interventions in the three specific supply chains, how complex system thinking can help achieve this, and the broader supply chain issues that the findings of this Network Plus can be applied to
* fairly develops and runs open opportunities for small projects, events or activities (between £500,000 to £1 million of the total budget) in the area of supply chain resilience.

Your network should include representation from academia, government (local/devolved/national), business and the third sector

By the end of the funding period, the Network Plus should have enabled a step-change in knowledge, connectivity and coordination of researchers and stakeholders in this field. It should have:

* generated new insights through modelling supply chains as complex systems, identifying risks and developing potential interventions in critical minerals, food and fashion, as well as broader lessons learned across all supply chains
* developed new research areas building on new interdisciplinary capability in this area, linking existing (and establishing new) transdisciplinary, multidisciplinary and interdisciplinary partnerships, bringing together new approaches and developing conceptual, methodological, theoretical and leadership skills of researchers at all career stages
* enabled a coherent and connected resilient supply chain as complex systems landscape across disciplines, stakeholders and sectors, by bridging existing structures, identifying needs through relationship building, co-creation, and sustained engagement
* informed policy, practice and public understanding through understanding emerging and evolving stakeholder needs and enabling insights to feed into development processes for policy, practice and new research, with the aim of strengthening UK supply chains

Specifically, it should have the following outputs:

* new data-driven and conceptual models on supply chains and their interdependencies
* new knowledge on cascading risks in supply chains and interventions to increase resilience
* new knowledge on the interplay between environmental and socio-economic cascading risks, impacts and trade-offs in supply chains and interventions to increase resilience
* new collaborations and partnerships between the research base and stakeholders focused on supply chains as complex systems
* new approaches to improving resilience are explored within the food, critical minerals and fashion supply chains
* synthesis reports and policy and practice notes

The network should aim for the following outcomes:

* modelling and policy and practice advice informs short and medium term interventions to increase the resilience of supply chains
* increased capability and capacity for complex system research across supply chains
* increased coordination and collaboration on supply chain resilience amongst stakeholders
* increased coordination and integration of research across different parts of supply chains
* increased awareness of supply chain resilience
* modelling informs UKRI supply chain research investments as well as investments outside of UKRI

The Network Plus will play an important strategic role in delivering the UKRI ‘[Building a Secure and Resilient World’ strategic theme](https://www.ukri.org/what-we-offer/browse-our-areas-of-investment-and-support/building-a-secure-and-resilient-world/) and sub-theme on resilient supply chains.

The Network Plus will be expected to establish and maintain appropriate links with relevant UKRI investments (See Related Contents and Opportunities section below), to achieve its aims of increasing collaborative working across disciplines and connecting the research landscape.

### Your team

The Network’s core team will build sustained engagement and collaboration on emerging research and knowledge exchange areas, engage research users and run training and capacity building activities for core staff and those in the wider network and beyond. The Network’s core team should have suitable capability and capacity to undertake both the data-led and conceptual modelling work and undertake engagement activities such as:

* workshops
* events
* communications and outreach
* projects (which could be research, knowledge exchange, evidence synthesis, capacity building methods development, or other relevant activity),
* producing key outputs, for example synthesis reports and policy and practice notes
* horizon scanning

The core team should include people at different career stages, who collectively offer:

* expertise from 3 or more different disciplines with an in-depth understanding of modelling, policy and practice challenges and evidence needs. Examples of possible disciplines include, but are not limited to: the biological sciences, engineering and physical sciences, environmental sciences, economic and social sciences and the arts and humanities
* thematic expertise within and beyond academia, reflecting the communities that will be engaged in the network
* an ability to engage and collaborate with diverse disciplines and stakeholders through a range of activities and outputs
* an ability to articulate a clear vision for engagement with communities working in this area and new partners from relevant disciplines or elsewhere
* an ability to deliver complex projects to time, considering the variety of activities and outputs
* specialist expertise (academic and non-academic) to support the desired outcomes, which may include sector representatives, programme management, project management and finance expertise, a communications function, administrative support and knowledge mobilisation expertise
* an ability to bring together diverse expertise within projects, conceptually, methodologically and theoretically

The Network Plus will be responsible for the formation of suitable advisory structures. Proposals should include detail of the advisory group, including academic and non-academic members, that will support the research and oversee the development of key activities. UKRI reserves the right to attend and observe advisory group meetings. Grant holders will also be asked to provide regular and ad hoc project progress reports to the UKRI governance groups as needed.

### Duration

The duration of this award is 4 years.

Projects must start 1 April 2024

### Funding available

The full economic cost of your network can be up to £6.25 million.

UKRI will fund 80% of the full economic cost, up to £5 million.

### What we will fund

The main function of the project team, using the majority of the funding, will be to work with disciplines, stakeholders and related investments to model supply chains as complex systems and generate new insights and interventions to strengthen resilience to cascading risks. Alongside this major function we anticipate sustained engagement with related investments and research users to improve coordination, collaboration and to maximise two-way knowledge exchange, thereby creating an active hub on supply chains as complex systems.

#### Flexible funding for small projects or activities

As part of running the Network Plus you will be expected to use part of the grant funding to develop and run opportunities for small projects and other activities. These opportunities are an important way of bringing individuals and organisations into the network and growing connections. Activities can take place at any point during the grant, but their timing should be considered and justified.

The network can use its flexible funding pot to support activities such as:

* workshops led by others in the network
* events led by others in the network
* funding small projects (which could be research, knowledge exchange, evidence synthesis, horizon scanning, capacity building, methods development, or other relevant activity)

You should budget for between £500,000 to £1 million to be assigned to the flexible fund and this should not include core programme team costs for managing the fund. The flexible fund should be used to support innovative projects and activities undertaken by researchers outside of the Network’s core team. The Network’s core team members should not be supported by the flexible fund. UKRI will fund 80% of the flexible fund’s full economic cost. Flexible fund costs should be included in applications as ‘Other Directly Incurred’.

You must define and justify your objectives for the flexible fund and outline how it will be operationalised, governed and, where appropriate, distributed through a competitive process. Before expenditure commences, UKRI requires the submission of an outline of how the funds will be utilised, for approval. You should ensure that funds genuinely enable new work (instead of going towards existing activities) while giving due consideration to ensuring diversity and capacity-building.

UKRI should be consulted throughout the award to ensure good practice is followed in the assessment and allocation of flexible funds. The Network’s core team should make it clear that activities funded through the flexible fund are expected to engage with the wider programme of activity and to report their progress and outcomes to the core team.

### What we will not fund

Associated studentships are not eligible for inclusion.

A proposal will be automatically excluded from consideration:

* if it does not include three different disciplines in the project team and the work proposed
* if it does not take a systems approach considering at least two or more cascading risks in each supply chain
* if it does not have a primary focus on UK supply chains
* if it does not include at least one stakeholder from each of government, business and the third sector
* if it focuses solely on sustainability. Proposals should focus on resilience recognising that sustainability is linked to this and can feature as part of the network

### Capacity building

We will look for evidence of a strong commitment to supporting the development of researchers at all stages of their career and capacity-building. We expect this to include a strong career development programme, shaped to suit the stage of the researchers’ career and providing increased opportunities for professional development. This should include, but not be limited to, the early career stage. We encourage you to consider how you can support the career development of all members of the core network team.

Increasing capacity contributes to the quality and impact of the research. Examples of building capacity include:

* Support and mentoring
* Management and leadership training

Proposals should include the outline of a career development programme (including research, leadership and management skills) shaped to the career stage of each member of the core network team. Career development outside of the core team can be supported via the flexible fund, with activities weighted to early and mid-career researchers.

### Supporting skills and talent

We encourage you to follow the principles of the [Concordat to Support the Career Development of Researchers](https://researcherdevelopmentconcordat.ac.uk/) and the [Technician Commitment](https://www.techniciancommitment.org.uk/).

### Impact, innovation and interdisciplinarity

We expect applicants to consider the potential [scientific, societal and economic impacts of their research](https://www.ukri.org/publications/including-impact-in-your-research-proposal/). Outputs, dissemination and impact are key criteria for the assessment process. We also encourage applications that demonstrate [innovation and interdisciplinarity](https://www.ukri.org/councils/esrc/guidance-for-applicants/impact-innovation-and-interdisciplinarity-expectations/) (research combining approaches from more than one discipline).

Post-award, within the first three months, the successful applicants will work with the funders to develop a monitoring and evaluation plan that will form the basis of ongoing monitoring, evaluation and reporting arrangements, to learn from what works, track the impact of the investment and ensure value for money.

### International collaboration

If your application includes international collaborators, visit [Trusted Research](https://www.cpni.gov.uk/trusted-research) for more information on effective international collaboration.

### Demand Management

Research Organisations can only act as the lead organisation (the organisation where the project lead is based) on one submission to this opportunity.

Project leads on applications to this funding opportunity cannot also be project leads on applications to the following funding opportunities:

[ESRC Policy Talent Accelerator Network Plus](https://www.ukri.org/opportunity/esrc-policy-talent-accelerator-network-plus/)

[Resilient UK coastal communities and seas Network Plus](https://www.ukri.org/opportunity/resilient-uk-coastal-communities-and-seas-network-plus/)

[Dementia Network Plus](https://www.ukri.org/opportunity/dementia-network-plus/)

[Polarities and Regions Network Plus](https://www.ukri.org/opportunity/polarities-and-regions-network-plus/)

[Behavioural Science for Security and Defence Network Plus](https://www.ukri.org/opportunity/behavioural-science-for-security-and-defence-network-plus/)

### UK Research and Innovation (UKRI) Funding Service

We are running the funding opportunity on the new UKRI Funding Service. You cannot apply for this opportunity on the Joint Electronic Submissions (Je-S) system.

If you do not already have an account with the UKRI Funding Service, you will be able to create one by selecting the ‘start application’ button at the start of this page. Creating an account is a 2-minute process requiring you to verify your email address and set a password.

If you are a member of an organisation with a research office that we do not have contact details for, we will contact them to enable administrator access. This provides:

* oversight of every UKRI Funding Service application opened on behalf of your organisation
* the ability to review and submit applications

Research offices that have not already received an invitation to open an account should email [support@funding-service.ukri.org](mailto:support@funding-service.ukri.org)

### Submitting your application

Applications should be prepared and submitted by the lead research organisation but should be co-created with input from all investigators, and project partners, and should represent the proposed work of the entire consortia.

To apply:

1. Select the ‘Start application’ button at the start of this page.
2. This will open the ‘Sign in’ page of UKRI’s Funding Service. If you do not already have an account, you’ll be able to create one. This is a 2-minute process requiring you to verify your email address and set a password.
3. Start answering the questions detailed in this section of ‘How to apply’. You can save your work and come back to it later. You can also work ‘offline’, copying and pasting into the text boxes provided for your answers.
4. Once complete, use the service to send your application to your research office for review. They’ll check it and return it to you if it needs editing.
5. Once happy, your research office will submit it to UKRI for assessment. Only they can do this.

As citations can be integral to a case for support, you should balance their inclusion and the benefit they provide against the inclusion of other parts of your answer to each question. Bear in mind that citations, associated reference lists or bibliographies, or both, contribute to, and are included in, the word count of the relevant section.

We are running this funding opportunity on the new UKRI Funding Service. You cannot apply on the Joint Electronic Submissions (Je-S) system.

The project lead is responsible for completing the application process on the Funding Service, but we expect all team members and project partners to contribute to the application.

Only the lead research organisation can submit an application to UKRI.

To apply:

1. Select ‘Start application’ near the beginning of this page.
2. Confirm you are the project lead.
3. Sign in or create a Funding Service account. To create an account, select your organisation, verify your email address, and set a password. If your organisation is not listed, email [support@funding-service.ukri.org](mailto:support@funding-service.ukri.org)
4. Answer questions directly in the text boxes. You can save your answers and come back to them, or work offline and return to copy and paste your answers. All questions and assessment criteria are listed in the ‘How to apply’ section on this Funding finder page.
5. Send the completed application to your research office for checking. They will return it to you if it needs editing.
6. Your research office will submit the completed and checked application to UKRI.

Watch our [research office webinars about the new UKRI Funding Service](https://www.ukri.org/apply-for-funding/improving-your-funding-experience/about-simpler-and-better-funding/).

### Deadline

ESRC must receive your application by 12 October 2023 at 4:00pm UK time.

You will not be able to apply after this time.

You should ensure you are aware of and follow any internal institutional deadlines that may be in place.

UKRI will need to collect some personal information to manage your funding service account and the registration of your funding applications.

We will handle personal data in line with UK data protection legislation and manage it securely. For more information, including how to exercise your rights, read our [privacy notice](https://www.ukri.org/about-us/privacy-notice/).

If your application is successful, some personal information will be published via the [UKRI Gateway to Research](https://gtr.ukri.org/). UKRI will publish the outcomes of this funding Opportunity on its website.

### UKRI Funding Service: section guidance

#### Summary

In plain English, provide a summary that can be sent to potential reviewers to determine if your proposal is within their field of expertise.

This summary may be made publicly available on external facing websites, so please ensure it can be understood by a variety of readers, for example:

* opinion-formers
* policymakers
* the general public
* the wider research community.

##### Guidance for writing a summary

Succinctly describe your proposed work in terms of:

* its context
* the challenge the project addresses and how it will be applied to this
* its aims and objectives
* its potential applications and benefits.

Word count: 550

#### Core team

List the key members of your team and assign them roles from the following:

* Project lead (PL)
* Project co-lead (UK) (PcL)
* Specialist
* Grant manager
* Professional enabling staff
* Research and innovation associate
* Technician
* Visiting researcher
* You should only list 1 individual as project lead.

[Find out more about UKRI Roles in funding applications.](https://www.ukri.org/publications/roles-in-funding-applications/roles-in-funding-applications-eligibility-responsibilities-and-costings-guidance/)

#### Section: Vision and Approach

Question: What are you hoping to achieve with your proposed work and how will you deliver it?

We will ask you to submit a single seven-page PDF attachment covering the ‘Vision’ and ‘Approach’ sections of the application and enter the words ‘attachment supplied’ in the text box below. The document must have single line spacing, margins of at least 2 cm and be typed using Arial 11pt, or another ‘sans serif’ font with an equivalent size to Arial 11pt.

##### What the assessors are looking for in your response

For the Vision, explain how your proposed work:

* is of excellent quality and importance within or beyond the field(s) or area(s)
* has the potential to advance current understanding, generates new knowledge, interventions thinking or discovery within or beyond the field or area
* is timely given current trends, context and needs
* impacts world-leading research, society, the economy or the environment

Within the Vision we also expect you to:

* identify the potential direct or indirect benefits and who the beneficiaries might be

For the Approach, explain how you have designed your work so that it:

* is effective and appropriate to achieve your objectives
* is feasible, and comprehensively identifies any risks to delivery and how they will be managed
* if applicable, uses a clear and transparent methodology
* if applicable, summarises the previous work and describes how this will be built upon and progressed
* will maximise translation of outputs into outcomes and impacts
* describes how your, and if applicable your team’s, research environment (in terms of the place, its location, and relevance to the project) will contribute to the success of the work

Within the Approach we also expect you to:

* ensure you have addressed all the requirements described in the ‘What we are looking for’ information for this opportunity
* describe how academia, government, business and third sector has been engaged in the co-development of the proposal, and will continue to be engaged throughout the lifetime of the network plus.
* provide a detailed and comprehensive visual representation of the project plan including milestones and timelines

#### Section: Flexible fund

Question: How will you use and manage the Network’s flexible fund?

##### What the assessors are looking for in your response

Explain how you will use and manage the flexible fund so that it:

* supports the Network’s objectives
* distributes funding appropriately across a diverse range of activities
* where appropriate, distributes funding through clear, transparent competitive processes
* builds capacity in key fields and career stages
* ensures appropriate processes for monitoring, reporting and governance of funded activities

Word count: 1,000

#### Section: Data management and sharing

Question: how will you manage and share data collected or acquired through the proposed research?

##### What the assessors are looking for in your response

Provide a data management plan which should clearly detail how you will comply with ESRC’s published [Data Sharing Policy](https://www.ukri.org/councils/esrc/guidance-for-applicants/research-ethics-guidance/data-requirements/), which includes detailed guidance notes.

Word count: 1000

#### Section:  Your Organisation’s Support

Question: provide details of support from your research organisation.

##### What the assessors are looking for in your response

Provide a Statement of Support from your research organisation detailing why the proposed work is needed. This should include details of any matched funding that will be provided to support the activity and any additional support that might add value to the work.

Assessors will be looking for a strong statement of commitment from your research organisation.

UKRI recognises that in some instances, this information may be provided by the Research Office, the Technology Transfer Office (TTO) or equivalent, or a combination of both.

You must also include the following details:

* a significant person’s name and their position, from the TTO or Research Office, or both
* office address or web link

Upload details are provided within the service on the actual application.

Word count: 500

#### Section: Project partners: contributions

Question: provide details about any project partners’ contributions using the template provided.

##### What the assessors are looking for in your response

If you do not have any project partners, simply add ‘N/A’ into the text box, mark this section as complete and move to the next section.

Your Network Plus should include at least one representative from each of academia, government, business and the third sector. Contributions from these representatives should be described in your Vision and Approach section.

If you do have project partners, [download and complete the project partner contributions template (DOCX, 52KB)](https://ukri-tfs-prod-assets.s3.eu-west-2.amazonaws.com/Project-partner-contributions-template.docx) then copy and paste the table within it into the text box below.

Ensure you have obtained prior agreement from project partners that, should you be offered funding, they will support your project as indicated in the template.

Word count: 1000

#### Section: Project Partners: letters (or emails) of support

Question: upload a single PDF containing the letters or emails of support from each partner you named in the table in the previous ‘contributions’ section.

##### What the assessors are looking for in your response

If you do not have any project partners, simply add ‘N/A’ into the text box, mark this section as complete and move to the next section.

If you have named project partners in the previous ‘contributions’ section, enter the words ‘attachment supplied’ in the text box below.

Each letter or email you provide should:

* confirm the partner’s commitment to the project
* clearly explain the value, relevance and possible benefits of the work to them
* describe any additional value that they bring to the project
* please refer to ESRC’s guide for more guidance.

Please do not provide letters of support from host and project co-leads research organisations.

Unless specifically requested, please do not include any personal data within the attachment.

Upload details are provided within the service on the actual application.

For audit purposes, UKRI requires formal collaboration agreements to be put in place if an award is made.

#### Section: Applicant and team capability to deliver

Question: Why are you the right individual or team to successfully deliver the proposed work?

Evidence of how you, and if relevant your team, have:

* the relevant experience (appropriate to career stage) to deliver the proposed work
* the right balance of skills and expertise to cover the proposed work
* the appropriate leadership and management skills to deliver the work and your approach to develop others
* contributed to developing a positive research environment and wider community

Use the Résumé for Research and Innovation (R4RI) format to showcase the range of relevant skills you, and if relevant your team (investigators, researchers, other (technical) staff for example research software engineers, data scientists and so on, and partners), have and how this will help to deliver the proposed work. You can include individuals’ specific achievements but only choose past contributions that best evidence their ability to deliver this work.

Complete this section using the R4RI module headings listed below. You should use each heading once and include a response for the whole team, see the [UKRI guidance on R4RI](https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/). You can enter N/A for any you think irrelevant, and will not be penalised for doing so, but it is recommended that you carefully consider the breadth of your experience:

* Contributions to the generation of new ideas, tools, methodologies, or knowledge
* The development of others and maintenance of effective working relationships
* Contributions to the wider research and innovation community
* Contributions to broader research or innovation users and audiences and towards wider societal benefit

Additions: Provide any further details relevant to your application. This section is optional and can be up to 500 words. You should not use it to describe additional skills, experiences or outputs, but you can use it to describe any factors that provide context for the rest of your R4RI (for example, details of career breaks if you wish to disclose them)

The word count for this section is 1500 words, 1000 words to be used for R4RI modules and, if necessary, a further 500 words for Additions.

Word count: 1500

#### Section: Intellectual property rights (IPR)

Question: provide a brief description of the intellectual assets underpinning the proposed work

##### What the assessors are looking for in your response

Include any IPR if appropriate. If your IPR is a patent, please include the patent number or numbers along with a summary scope of the claims. UKRI recognises that not all applications to the Modelling UK supply chains as complex systems for resilience Network Plus funding opportunity will have a patent or other IPR.

Word count: 500

#### Section: Outsourcing

Question: are you outsourcing any activity?

If you are not, enter ‘N/A’ in the text box, mark this section as complete and move to the next question.

##### What the assessors are looking for in your response

UKRI recognises that in some instances, it may be appropriate to outsource elements of the proposed work. If that is the case in this application, please provide the following information:

* the scope of the outsourced activity, that means what is being undertaken and what will be delivered
* the relevance of the outsourced activity to the application
* why the outsourced activity cannot be undertaken in house
* why this provider is the most appropriate
* the cost or costs of the outsourced activity and the tendering process that has been followed.

Please provide any goods and services quotations.

Word count: 1000

#### Section: Ethics and Responsible Research and Innovation (RRI)

Question: What are the ethical or RRI implications and issues relating to the proposed work?  If you do not think that the proposed work raises any ethical or RRI issues, explain why.

##### What the assessors are looking for in your response

Using the text box, demonstrate that you have identified and evaluated the relevant ethical or responsible research and innovation considerations, and how you will manage them.

If you are collecting or using data you should identify:

* any legal and ethical considerations of collecting, releasing or storing the data including consent, confidentiality, anonymisation, security and other ethical considerations and, in particular, strategies taken to not preclude further reuse of data
* formal information standards with which study will be compliant

Word count: 1000

#### Section: Genetic and Biological Risk

Question: does your proposed research involve any genetic or biological risk?

If not, enter ‘N/A’ into the text box, mark this section as complete and move on to the next section.

##### What the assessors are looking for in your response

In respect of animals, plants or microbes, are you proposing to:

* use genetic modification as an experimental tool, like studying gene function in a genetically modified organism
* release genetically modified organisms
* ultimately develop commercial and industrial genetically modified outcomes?

If yes, provide the name of any required approving body and state if approval is already in place. If it is not, provide an indicative timeframe for obtaining the required approval.

Identify the organism or organisms as a plant, animal or microbe and specify the species and which of the three categories the research relates to.

Identify the genetic and biological risks resulting from the proposed research, their implications and any mitigation you plan on taking. Assessors will want to know you have considered the risks and their implications to justify that any identified risks do not outweigh any benefits of the proposed research.

Word count: 700

#### Section: Research involving the use of animals

Question: does your proposed research involve the use of vertebrate animals or other organisms covered by the Animals Scientific Procedures Act?

If not, enter ‘N/A’ into the text box, mark this section as complete and do the same for the next question.

##### What the assessors are looking for in your response

If you are proposing research that requires using animals, write ‘Yes’ in the text box. Then, [download and complete this document (DOCX, 74KB)](https://ukri-tfs-prod-assets.s3.eu-west-2.amazonaws.com/AnimalResearchQuestionTemplate-BBSRC.docx), which contains all the questions relating to research using vertebrate animals or other Animals (Scientific Procedures) Act 1986 regulated organisms. Then, save it as a PDF.

Word count: 700

#### Section: Conducting research with animal overseas

Question: will any of the proposed animal research be conducted overseas?

If not, enter ‘N/A’ in the text box, mark as complete and move to the next question.

##### What the assessors are looking for in your response

If you are proposing to conduct overseas research, it must be conducted in accordance with welfare standards consistent with those in the UK, as per [Responsibility in the Use of Animals in Bioscience Research](https://www.nc3rs.org.uk/3rs-resources/responsibility-use-animals-bioscience-research), on page 14.

You should also ensure all named applicants in the UK and overseas are aware of this requirement and provide a statement below to confirm that:

* all named applicants are aware of the requirements and have agreed to abide by them
* this overseas research will be conducted in accordance with welfare standards consistent with the principles of UK legislation
* the expectation set out in ‘[Responsibility in the Use of Animals in Bioscience Research’](https://www.nc3rs.org.uk/responsibility-use-animals-bioscience-research) will be applied and maintained
* appropriate national and institutional approvals are in place.

Overseas studies proposing to use non-human primates, cats, dogs, equines or pigs, will be assessed during [NC3Rs review](https://www.nc3rs.org.uk/who-we-are-and-what-we-do#services) of research proposals. The required information should be provided by completing the template from the question ‘Research Involving the use of animals’.

For studies involving other species, you should select the relevant checklist or checklists, complete it and save it as a PDF and use the file upload feature to attach. If you need to complete more than one checklist, you should merge them into a single document and then save it as a PDF before uploading it.

Species checklists:

* [Additional questions on the use of rodents overseas.](https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20rodents%20overseas%20%286%29_0.docx)
* [Additional questions on the use of rabbits overseas.](https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20rabbits%20overseas.docx)
* [Additional questions on the use of sheep overseas.](https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20sheep%20overseas.docx)
* [Additional questions on the use of goats overseas.](https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20goats%20overseas.docx)
* [Additional questions on the use of pigs overseas.](https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20pigs%20overseas.docx)
* [Additional questions on the use of cattle overseas.](https://nc3rs.org.uk/sites/default/files/2021-12/Additional%20questions%20on%20the%20use%20of%20cattle%20overseas.docx)
* [Additional questions on the use of Xenopus laevis and Xenopus tropicalis overseas.](https://nc3rs.org.uk/sites/default/files/Additional%20questions%20on%20the%20use%20of%20Xenopus%20laevis%20%26%20%20Xenopus%20tropicalis%20overseas.docx)

Word count: 700

#### Section: Research involving human participation

Question: will the project involve the use of human subjects or their personal information?

##### What the assessors are looking for in your response

If not, enter ‘N/A’ into the text box, mark this section as complete and move on to the next section.

If you are proposing research that requires the involvement of human subjects, provide the name of any required approving body and whether approval is already in place. Then, justify the number and the diversity of the participants involved, as well as any procedures.

Provide details of any areas of substantial or moderate severity of impact.

Word count: 700

#### Section: Research involving human tissues or biological samples

Question: does your proposed research involve the use of human tissues, or biological samples?

##### What the assessors are looking for in your response

If not, enter ‘N/A’ into the text box, mark this section as complete and move on to the next section.

If you’re answering ‘yes’, provide the name of any required approving body and whether approval is already in place.

You should justify the use of human tissue or biological samples specifying the nature and quantity of the material to be used and its source.

Word count: 700

#### Section: References

Question: list the references you’ve use to support your application.

##### What the assessors are looking for in your response

Ensure your application is a self-contained description. You can provide hyperlinks to relevant publications or online resources. However, assessors are not obliged to access the information they lead to or consider it in their assessment of your application. You must not include links to web resources in order to extend your application. If linking to web resources, to ensure the information’s integrity is maintained include, where possible, persistent identifiers such as digital object identifiers.

Word count: 250

#### Section: Facilities

Question: does your proposed research require the support and use of a facility?

##### What the assessors are looking for in your response

If not, enter N/A into the text box, mark this section as complete and move on to the next section.

If you will need to use a facility, you should follow your proposed facility’s normal access request procedures. Where prior agreement is required, ensure you obtain their agreement that, should you be offered funding, they will support the use of their facility on your project.

In the text box below, for each requested facility you should provide:

* the name of facility, copied and pasted from [this list (DOCX, 35KB)](https://ukri-tfs-prod-assets.s3.eu-west-2.amazonaws.com/Facility+Information+for+TFS.docx)
* the proposed usage or costs, or costs per unit where indicted on that list
* confirmation you have their agreement where required

Do not put the facility contact details in your response.

Word count: 100

#### Section: Resources and cost justification

Question: what will you need to deliver your proposed work and how much will it cost?

##### What the assessors are looking for in your response

Use the resources and cost summary table to enter the full costs. Include high-level costs only, not a breakdown of individual items. Use the Justification textbox to demonstrate how the resources you anticipate needing for your proposed work:

* are comprehensive, appropriate, and justified
* represent the optimal use of resources to achieve the intended outcomes
* maximise potential outcomes and impacts

This section should not simply be a list of the resources requested, as this will already be given in the detailed ‘costs’ table. Costings should be justified on the basis of [full economic costs (FEC)](https://www.ukri.org/councils/epsrc/guidance-for-applicants/costs-you-can-apply-for/principles-of-full-economic-costing-fec/) of the project, not just on the costs expected from UKRI. For some items we do not expect you to justify the monetary value, rather the type of resource, such as amount of time or type of staff requested.

Where you do not provide adequate justification for a resource, we may deduct it from any funding awarded.

Council specific optional guidance can be appended to clarify how we expect applicants to provide answers to the above criteria. Such as mentioning some exemplars:

You should identify:

* support for activities to either increase impact, for public engagement, knowledge exchange or to support responsible innovation
* support for access to facilities, infrastructure or procurement of equipment
* support for preserving, long-term storage, or sharing of data
* support from your organisation or partner organisations and how that enhances value for money

Word count: 1000

### Assessment process

We will assess your application using the following process.

#### Peer review

We will invite academic and user experts to review your application independently, against the specified criteria for this opportunity.

#### Response to Peer review

If a proposal meets the standard minimum quality threshold, the principal investigator is given the opportunity to respond to the peer reviewers’ comments.

#### Panel

We will invite experts to join an assessment panel which will collectively review your application against the criteria and rank it alongside other applications before making a funding recommendation.

UKRI reserves the right to modify the assessment process as needed.

UKRI will make the final funding decision.

Find out more about [ESRC’s assessment process](https://www.ukri.org/councils/esrc/guidance-for-reviewers/peer-reviews/).

#### Timescale

We aim to complete the assessment process in February 2024.

#### Feedback

You will receive anonymised versions of peer reviews on your application. If your application was discussed by a panel, we will give feedback on the outcome of your application.

### Principles of assessment

We support the San Francisco [declaration on research assessment (DORA)](https://sfdora.org/read/) and recognise the relationship between research assessment and research integrity.

Find out about the [UKRI Principles of Assessment and Decision Making (PDF, 176KB)](https://www.ukri.org/publications/ukri-principles-of-assessment-and-decision-making/).

We reserve the right to modify the assessment process as needed.

### Assessment criteria

#### What we are looking for

##### Section: Vision

Have the applicants demonstrated how the work they are proposing:

* is of excellent quality and importance within or beyond the field(s) or area(s)
* has the potential to advance current understanding, generates new knowledge, thinking or discovery within or beyond the field or area
* is timely given current trends, context and needs
* will impact world-leading research, society, the economy or the environment

##### Section: Approach

Have the applicants demonstrated that they have designed their approach so that it:

* is effective and appropriate to achieve their objectives
* is feasible, and comprehensively identifies any risks to delivery and how they will be managed
* if applicable, uses a clear and transparent methodology
* if applicable, summarises the previous work and describes how this will be built upon and progressed
* will maximise translation of outputs into outcomes and impacts
* describes how their, and if applicable their team’s, research environment (in terms of the place, its location and relevance to the project) will contribute to the success of the proposed work

##### Custom Section: Flexible Fund

Have the applicants provided evidence of how they will use and manage the Network’s flexible fund so that it:

* supports the Network’s objectives
* distributes funding appropriately across a diverse range of activities
* where appropriate, distributes funding through clear, transparent competitive processes
* builds capacity in key fields and career stages
* ensures appropriate processes for monitoring, reporting and governance of funded activities

##### Section: Applicant and team capability to deliver

Have the applicants provided evidence of how they, and if relevant their team, have:

* the relevant experience (appropriate to career stage) to deliver the proposed work
* the right balance of skills and expertise to cover the proposed work
* the appropriate leadership and management skills to deliver the work and their approach to develop others
* contributed to developing a positive research environment and wider community

##### Section: Resources and cost justification

Have the applicants demonstrated how the resources they anticipate needing for their proposed work:

* are comprehensive, appropriate, and justified
* represent the optimal use of resources to achieve the intended outcomes
* maximise potential outcomes and impacts

##### Section: Ethics and Responsible Research and Innovation (RRI)

Have the applicants identified and evaluated the relevant ethical or responsible research and innovation considerations, and how they will be managed.

### Background

Building a secure and resilient world strategic theme

The [UKRI strategy for 2022 to 2027: transforming tomorrow together](https://www.ukri.org/publications/ukri-strategy-2022-to-2027/), outlines 5 strategic themes that look to harness the full power of the UK’s research and innovation system to address major national and global challenges.

‘Building a secure and resilient world’ is one of the themes under the auspices of which UKRI will catalyse, convene and conduct research and innovation, through taking a systemic approach that is human-centred, aimed at strengthening societal and economic resilience. The theme aims to enhance national security across virtual and physical environments, by improving awareness of risks and threats, preparedness, informed decision making and response, and allowing change to be understood as a force for good.

The funding for this Network Plus funding opportunity is from the [UKRI Strategic Theme on Building a Secure and Resilient World](https://www.ukri.org/what-we-offer/browse-our-areas-of-investment-and-support/building-a-secure-and-resilient-world/) (BSRW).

BSRW directly tackles core methodologies for supporting a better and more robust approach to managing crisis from business to government to communities. A core focus of the theme is on supporting systems thinking and decision making to reduce risk and strengthen our security and resilience, and showing how this should support, and be implemented by, communities at every level, from local to international.

We have identified 5 interrelated sub-themes, through which UKRI will deliver a range of activities tailored to enable resilience to different risks in different systems that:

* is built on the strengths of our current economy and society
* helps reduce vulnerability
* prepares for robust and rapid responses and enhances recovery
* encourages approaches which bring positive transformation

The 5 sub-themes are:

* global order in a time of change: enable UK to take one of the leading positions in shaping an international order that is secure, resilient and just
* technologies for resilience, security and defence: advance capacity of state defence and security, society and economy to reduce vulnerabilities, to respond to and recover from shocks through innovation and technological advancement
* resilient and secure supply chains: increase the resilience of supply chains (food, critical materials, manufacturing, complex systems) to a wide variety to potentially interacting shocks
* behavioural and cultural resilience: reduce the impact of shocks on individuals and communities through adaptation and embracing change, deployment of resources for personal resilience that is fair and just
* strengthening resilience in natural and built environment: mitigate impact of natural and anthropogenic hazards and risks on wider societal processes and operations in rural and urban contexts being responsive to particular requirements of place

This specific investment will help to address and manage the impact of repeated systemic shocks to supply chains. It will build on core R&I investments to strengthen societal and economic resilience through improved awareness of risks and threats to supply chains. The research will be strongly focused on securing positive outcomes for people and society.

UKRI has invested in several Network Pluses. The following lessons learned should be taken into consideration:

* a clear, well-defined topic for the network is needed to focus plans and activities. The activity supported by a network needs to be regularly reviewed
* sufficient administrative and host institution support for the network – including dedicated financial services support – is vital to support activities such as the flexible fund, impact, engagement and communications
* different scales of funding are appropriate for different research topics or disciplines supported via the flexible fund
* different assessment processes may be required relative to the value of projects funded via the flexible fund
* expectation and arrangements for full economic costing of network activities need to be clear across all parties
* advertising of events needs to be included in the budget
* long-term plans for the legacy and sustainability of the network need to be considered early on

### Supporting documents

[Equality impact assessment (PDF, 229KB)](https://www.ukri.org/wp-content/uploads/2023/06/BBSRC-080623-NetworkPlusEIA.pdf)

### Webinar for potential applicants

A webinar was held on 29 June 2023 giving more details about the funding opportunity followed by a question and answer session from participants.

[Watch webinar recording on Zoom](https://ukri.zoom.us/rec/share/N9S1bG-mncfzlSqJU-jJpLhW3jXbsjuMKkowXqfYZmovyMunmnfWU4CXorhv2vGz.kzjzZ4Nb3dPE7n8R) (passcode: 2t=7B5!N)

There will also be a UKRI Network Plus webinar on 20 July 2023 at 11:00am UK time, which will be a chance to learn more about the Network Plus model and to ask specific questions on Network Pluses.

[Register for the webinar (Zoom)](https://ukri.zoom.us/webinar/register/WN_TFPGOXg4RhqkrF3uDqP0oQ#/registration)

### Supporting links

* [Building a Secure and Resilient World](https://www.ukri.org/what-we-offer/browse-our-areas-of-investment-and-support/building-a-secure-and-resilient-world/) – one of the UKRI Strategic Themes of [UKRI Strategy 2022-2027](https://www.ukri.org/wp-content/uploads/2022/03/UKRI-210422-Strategy2022To2027TransformingTomorrowTogether.pdf)
* Workshop report ‘[Building Back Better for increased resilience of the UK food system to future shocks’](https://www.foodsecurity.ac.uk/publications/building-back-better-for-increased-resilience-of-the-uk-food-system-to-future-shocks.pdf)
* [Transforming the UK Food Systems Strategic Priorities Fund](https://ukfoodsystems.ukri.org/) – a £47.5 million programme which aims to fundamentally transform the UK food system by placing healthy people and a healthy natural environment at its centre.
* [Strategic Priorities Fund – National Interdisciplinary Circular Economy Research Programme (NICER](https://www.ukri.org/news/circular-economy-centres-to-drive-uk-to-a-sustainable-future/)): Investment into 5 interdisciplinary resource flow specific circular economy research centres and a coordinating CE-hub which aims to move the UK towards a circular economy
* [Made Smarter Innovation – Digital Supply Chain Hub](https://digitalsupplychainhub.uk/about-the-programme/). Newly commissioned £25 million “Digital Supply Chain Hub” investment delivered by the Innovate UK Digital Catapult
* [AgZero+](https://www.ceh.ac.uk/our-science/projects/agzero): supporting the UK’s transition towards domestic food production that is sustainable, carbon-neutral and has a positive effect on nature.
* [Innovate UK AgriTech Centres](https://www.agritechcentres.com/): four UK Agri-Tech Centres working to support a successful and sustainable agrifood sector
* [Develop a UK digital twinning research community with a NetworkPlus](https://www.ukri.org/opportunity/develop-a-uk-digital-twinning-research-community-with-a-networkplus/) – Recent investment to establish a multidisciplinary research community in digital twinning, complementing the existing industry-led multisector digital twins community
* [Circular fashion and textile programme](https://www.ukri.org/opportunity/ukri-circular-fashion-and-textile-programme-networkplus/): NetworkPlus (made of three sub-networks) to understand and drive the fashion and textiles industry towards sustainable and responsible practices (closed)
* [Innovate UK CircuLar critical MATErials Supply chains (CLIMATES) programme](https://www.gov.uk/government/news/15-million-funding-boost-to-strengthen-supply-of-critical-minerals): focused on Rare Earth Elements and will address both primary and secondary materials supply chain opportunities
  + [Critical Materials for Magnets – strand one, feasibility studies](https://www.ukri.org/opportunity/critical-materials-for-magnets-strand-one-feasibility-studies/) and [Critical Materials for Magnets: strand two, mid and late stage R&D](https://www.ukri.org/opportunity/critical-materials-for-magnets-strand-two-mid-and-late-stage-rd/) – UK registered businesses can apply for a share of up to £5 million for innovative projects that stimulate growth in the rare earth elements critical materials supply chain. (Closing date 21 June 2023)
* [Land use for net zero](https://www.ukri.org/opportunity/land-use-for-net-zero-research-lunz-research/) (NERC/BBSRC/DEFRA) planned investment – focused predominately on primary production rather than wider food supply chain (Closing date 11 July 2023)
* [Mineral Resources for the Energy Transition](https://www.ukri.org/opportunity/centre-for-doctoral-training-mineral-resources-for-energy-transition/) (NERC)- a new Centre for Doctoral Training (CDT) in mineral resources for the energy transition to minimise the environmental impacts of responsibly securing required mineral resources. (Closing date 27 July 2023)
* Food System Resilience – potential funding opportunity as part of the building a Secure and Resilient world theme to be launched in November 2023.
* [Building a Secure and Resilient World: Research and Coordination Hub – UKRI](https://www.ukri.org/opportunity/building-a-secure-and-resilient-world-research-and-coordination-hub/)