Call for funding applications

“Emerging threats and risks”

Phase 1

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Call for funding applications - Emerging threats and risks

Brief outline

The Swedish Civil Contingencies Agency (MSB) intends to fund research on "Emerging threats and risks" for projects over 3-5 years. The call amounts to a preliminary total of SEK 20 million.

The call is conducted in two phases. In phase one, applicants submit a pre-proposal. In phase two, after an evaluation of the pre-proposals, MSB invites a number of applicants to submit full applications.

MSB estimates that no more than three projects will be funded within the call. Suggested project start is the first quarter of 2024.

MSB encourages that international perspectives are taken into account, where applicable. They could, for example, be about the Nordic countries, the EU or NATO. MSB is responsible for Sweden's bilateral cooperation agreements on research and development with the USA and Canada, and has a positive view on research collaborations with colleagues in these countries, more information is found here: https://www.msb.se/en/about-msb/international-co-operation/cooperation-with-usa-and-canada/.

Applications may be evaluated by international reviewers, and should thus be written in English.

MSB's research mission

MSB is responsible for issues concerning civil protection, public safety, emergency management and civil defence, as long as no other authority has responsibility. Responsibility refers to measures taken before, during and after an accident, crisis, war or danger of war.

Knowledge development plays a strategic role in MSB's work for a safer society. Research is an important way of developing knowledge, and MSB therefore has the task of directing, ordering and ensuring the quality of research conducted on its behalf.

MSB primarily supports applied, needs motivated research. The research covers a wide field and encompasses several disciplines. The aim is to generate practical applicable research findings that will lead to an increased ability to solve societal problems, through new understandings, new methods, better decisions or new products/services. The research that MSB funds is carried out by external actors, such as universities, colleges or research institutes.

Background of the call

Often, civil protection, civil defence and total defence are built based on how society looks today. But because society is in constant development and change, new risks and threats appear over time. Society therefore needs to develop systems to detect, deter and meet the threats and risks of the future. Early detections create room for action and can contribute to a more successful crisis management.

Scope of the call

The purpose of the call is to contribute to knowledge development about future threats and risks that are relevant to Sweden. To be granted funding, the research project must either develop methods to detect and assess emerging threats and risks, or study the interaction between detection methods and the people and organizations that apply them.

The applications must contain both a discussion about what threats and risks that will be studied, as well as a description of what the project's substantive focus is (to develop new methods, or to study the interaction between method, people and organization).

MSB welcomes projects that cover both point 1 and at least one of point 2 a or 2 b below.

1. Analysis of one or more emerging threats and risks

Similar to history and the present, the future holds a variety of threats and risks. The threats and risks that the projects deal with must be analysed based on possible future societal developments. In recent decades, for example, there has been a lot of discussion about environmental and climate changes, technological development, economic globalization, health challenges and changes to the security order. But how will these trends affect threats and risks in the future? And what other societal changes may occur, and bring new (or reoccurring) threats and risks to society? Is the likelihood of the threats occurring high or low?

MSB here requests a research-based analysis of possible societal developments: what they might look like, what threats and risks may arise in connection with them, and with what approximate probability the threats/risks might occur. The application must briefly discuss this, while the research project develops the analysis further.

The call covers multiple types of threats; ranging from intentional antagonistic threats to major natural disasters. The threats and risks may appear both in peacetime as well as in connection with a heightened state of alert. What they have in common is that they will (potentially) give rise to situations that deviate from the normal, affect many people, large parts of society or fundamental societal values. They can also result in a serious disruption of vital societal

functions and require coordinated and urgent measures from several actors.[1] If the threats may occur in the near or distant future depends on what kind of social change that is discussed. Some threats may arise within a few years, while others are more likely to emerge a couple of decades into the future.

2. Focus of the research projects

In order to tackle future threats and risks, society needs to develop methods to detect and assess them as early as possible. Moreover, the methods must work well with the people and organizations that use them. This increases the likelihood to act at an early stage, which in turn increases the likelihood to effectively avert, reduce or manage the threats and risks. MSB therefore welcomes applications that intend to a) develop new, concrete methods for detecting and assessing threats and risks, and/or b) to analyse the interaction between, on the one hand, methods for detecting threats and risks and, on the other hand, the people and organizations who apply the methods.

a) Develop methods to detect and assess threats and risks

The term method should here be understood broadly. Applications that intend to develop new methods for detecting and assessing future threats and risks may for example focus on information systems, measuring equipment, software or data collection methods. How are relevant threats and risks detected while unwanted noise is filtered out? How is it ensured that also weak signals and diffuse threats are detected? Methods are needed to both detect threats and risks, as well as to assess how serious they may become and the probability of possible cascade effects.

There are several ways to do this. The development of *completely new* methods is one. What is missing from existing information systems, measuring equipment, software or data collection methods and what could new ones add? *Connecting different existing* systems for threat detection is another way to develop the methods. For example, which technical systems could usefully be connected, how and with what result? A further possibility is to *investigate how similar sectors or organizations ensure early detection*. Can methods from one sector or organization contribute to the design of methods in another? There can, for example, be insights from one civil preparedness sector to another, or methods for threat and risk analysis that organizations with a long experience in information intense areas have developed. Are there knowledge and methods in, for example, the area of disease control, in the financial sector, in the intelligence services or in the weather services that other organizations and sectors can apply? There can also be experiences and methods developed in the private sector, which public civil preparedness organizations can benefit from. For example, are there lessons to be learned

[1] Cf. Swedish Regulation 2022:524 on public authorities' preparedness, para. 6.

from private companies that continuously carry out environmental risk analysis? The answers to these types of questions can contribute to developing new effective methods for detecting future threats and risks.

b) Analysis of interaction between method, people and organization

To avert, reduce or manage threats and risks, it is not enough to detect them; the detection must also result in actual action. This requires a well working interaction between detection methods and the people and organizations that apply them. Research projects that intend to focus on the interaction should analyse which methods that give results based on the users' human and organizational properties. It may be valuable for the research projects to apply an interdisciplinary approach, and for example combine engineering science with social science and behavioural science.

The interaction between method and people can, for example, be about how technical solutions work based on people's physical and mental capacities. How, for example, can data collection be accommodated to humans' cognitive abilities and thus avoid an unmanageable information overflow? What methods facilitate the filtering out of unimportant signals? How can methods be designed to take advantage of human senses, such as sight and hearing? It can also be about knowledge requirements; what skills are needed to be able to understand and apply a certain method?

The interaction between method, people and organization is also about which structures and ways of working that must be in place for the detection of a threat or a risk to lead to successful action. The organizations in focus are those whose mission includes civil preparedness (i.e. crisis management and civil defence), most notably agencies with a specific responsibility for civil preparedness, municipalities and county administrative boards, and the like. Both formal and informal structures that shape the organization's actions are of interest, for example organizational culture, norms, decision hierarchies, instructions and routines. Examples of questions that can be studied are what structures that work with what methods for detecting threats, as well as how individuals interact within an organization depending on its structure.

Many threats and risks are of such a nature that they require cooperation among distinct actors. Also cooperation, both inside and outside the organization, brings to the fore issues related to the interaction between method, people and organization. Here it is about creating ways of working that enable the sharing of threat and risk signals at an early stage, as well as about sharing resources for analysis in order to better detect threats and risks together. One dimension of this is how to make different organizational cultures work together, so that detection and analysis of threats and risks are not hindered or delayed. Examples of organizational cooperation can be across geographical borders (municipalities, counties, regions, states), private-public cooperation, between different civil preparedness sectors, and between civil and military organizations.

Time frames

Phase 1: Phase one of the call opens on 22 February 2023 and pre-proposals must be submitted to MSB no later than **5 April 2023**. The decision on which applicants that are invited to submit full applications in phase two will be communicated in June 2023.

Phase 2: Phase two of the call is estimated to open in June 2023 and close in September 2023. The exact date and time that the full funding applications must be submitted will be announced later. MSB's decision on which applications that are accepted for funding is estimated to be communicated in December 2023.

Selection and evaluation process

The call is conducted in two phases, as is the evaluation process. In the first phase, an internal MSB review panel evaluates submitted pre-applications. Based on needs and relevance the panel identifies the pre-applications with the highest priority.

In the second phase, applicants that were prioritised in the first phase are invited to submit full applications. Full applications are then evaluated both internally based on needs and relevance and externally based on scientific quality. The scientific quality is assessed by scientific expertise.

MSB reserves the right to contact the applicant for discussion and further information.

Evaluation criteria

Evaluation of pre-proposals is made by expert policy officers at MSB assessing mainly criteria 1-4. Full applications are evaluated both by expert policy officers internally at MSB and external scientific expertise, assessing criteria 1-5. MSB weighs together scientific quality and potential societal utilisation to identify prioritised research projects. In cases where two applications are equal in terms of needs and relevance, scientific quality is prioritised.

The following criteria are applied:

1. Relevance – To what extent does the project reflect the call text's scope and aim?
2. Needs – To what extent will the project provide new knowledge and/or solutions that strengthens civil protection, public safety, emergency management or civil defence?
3. Cooperation and communication – To what extent will the project involve cooperation and communication with relevant actors (such as stakeholders, public and private sector, etc.) as well as MSB?

4. Utilisation of results – To what extent does the project plan for the research results to be utilised and how will the project ensure that potential benefits are realised? For example, results can sometimes be used in policy development, education, evaluation and training activities.
5. Scientific quality – The application is scientifically assessed according to:
    - Scientific problem – aim, theory and novelty
    - Method and feasibility – scientific method, project plan and budget
    - Merits/competence of the applicant – the likelihood that the project will be carried out as described, based on the applicant's and co-applicants' documented experience and scientific skills.

Design of the application

Please note that all documents received by MSB are public. If an application is based on research that is fully or partially classified as secret, the application must be formulated in general terms so that classified information does not risk being disclosed.

Phase 1 – Pre-proposal

The pre-proposal is submitted via MSB's web-based application system. Visit https://etjanst.msb.se/e-tjanster/

The pre-proposal should be written in Times New Roman, 11 points with single line spacing and consist of the following:

- General information about the main applicant (in the application form that is part of MSB's web-based application system)
- Brief description of the intended project in accordance to specified headings (in the application form that is part of MSB's web-based application system)
- A research outline, including the project's purpose, aims and methodological approaches, as well as an overall description of the research frontier, research needs and future development of the area. The outline must also describe the project's target groups and intended societal utilisation, as well as an estimated total budget. (Enclose as an attachment, max. 4 pages including references.)
- Main applicant's CV (Enclose as an attachment, max. 2 pages).
- A description of the research environment with an overall picture of how to organise and staff the research project. (Enclose as an attachment, max. 1 page.)

Incomplete applications are not considered.

Phase 2 – Full funding application

In the second phase, a full funding application is submitted to MSB. The full application must include a project description that further develops the research outline of the pre-proposal, CVs for all applicants and a detailed budget. More information is provided with the invitation to phase 2.

Formal requirements and certain restrictions

MSB's formal requirements for funding applications are:

- The main applicant must hold a PhD and be employed by a Swedish higher education institution or research institute.
- The project coordinator (a researcher) must work at least 15% in the project.
- Co-applicants must work at least 10% of a full-time position in the project during the time they are part of the project.
- The application must be approved by an authorised representative of the higher education institution or research institute, and a signed form must be attached to the application. The form is found here: https://www.msb.se/sv/aktuellt/utlysning-av-forskningsmedel/
- All applicants must approve the handling of personal data in accordance to Swedish law and the European Union General Data Protection Regulation (GDPR).
- MSB cannot fund economic activities ("ekonomiska verksamheter"), as defined by the Swedish Tax Agency.[2]

To consider:

- MSB provides full cost coverage for direct and indirect costs linked to the research project. Enter the percentage for overhead costs that your higher education institution or research institute applies.
- MSB only funds actual costs that occur during the project period, at the higher education institution/institute, and that can be proven.
- The project coordinating researcher is responsible for ensuring that ethical review is carried out in cases where it is necessary. It should be stated in the application whether ethics review is relevant and how it is to be carried out.

[2] See the Swedish Tax Agency's definition:
https://www4.skatteverket.se/rattsligvagledning/321542.html

Additional information

Information on MSB's research activities can be found at:

- https://www.msb.se/en/about-msb/our-mission/research/ (English)
- www.msb.se/forskning (Swedish)
- www.msb.se/sv/aktuellt/utlysning-av-forskningsmedel/ (Swedish)
- Investering i kunskap för ett säkrare samhälle – MSB:s strategi för forskning och utveckling https://rib.msb.se/filer/pdf/28834.pdf (Swedish)

Contact persons for the call

Monica Svantesson, Research coordinator
Research and Evaluation Section
Telephone: +46 (0)10 240 45 52, e-mail: monica.svantesson@msb.se

Alternative e-mail: forskning@msb.se