

# FOI and the needs of the total defence

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**Strategic Outlook 8 highlights important perspectives with regard to technological and global development, as well as related challenges. There is a major need for continuous and coherent development of knowledge if the Swedish total defence is to be able to deal with these changes, including the new threats faced. FOI has developed a model relating to perspectives on knowledge development in order to meet the needs of the total defence. The aim of this model is to facilitate discussion among various authorities and other total defence stakeholders.**

## FOI'S KNOWLEDGE MODEL

The new total defence has some major knowledge requirements involving many different fields. Knowledge relating to different security threats and ways of dealing with them provides a fundamental starting point for both the crisis management system and the total defence. Frequently, this knowledge is highly specific and requires both basic and applied strategic research in a number of different fields; the spread of viral diseases, extremist propaganda in social media and the interpretation of nuclear weapon doctrines, for instance.

If the development of knowledge about threats is to have the desired effect in the development of the total defence, it needs to be made available in the vital societal functions where the knowledge is to be applied, such as healthcare, payment systems and power supply systems. This is by no means a simple task as it involves many different stakeholders such as authorities, municipalities and private industry, from a wide range of sectors with different prerequisites, needs and roles.

The figure below presents a model that includes areas of knowledge to meet the needs of the total

defence. The model was originally designed to provide a platform for FOI's ongoing total defence efforts, allowing FOI to clarify – in discussions with principals – specific fields in which FOI could make contributions. However, the model can of course also be used as a more universal foundation for discussion with regard to the knowledge needs of the total defence. The model illustrates four different knowledge layers.

## KNOWLEDGE OF THREATS – THE FIRST LAYER

Identifying, understanding, analysing and responding to antagonistic threats involves fundamental expertise and cutting-edge competence on threats and adequate countermeasures. Knowledge of threats, for example, comprises information security and cyber issues, as well as military threats and protection against conventional weapons and hazardous substances (chemical, biological, radioactive and nuclear). Potential vulnerabilities resulting from technological development also have to be considered as threats.

Threats also include influence operations, terrorism, sabotage and organised crime, for example, when what are known as 'grey zone threats' are included in the total defence perspective. It is all a matter of finding ways to protect people, societal functions, soldiers, military systems, civilian infrastructure, property, social systems, values, etc. Knowledge of threats also involves ways of analysing individual threats and how these can be handled. Methods include modelling, simulation and metrological methodology.

## METHODOLOGICAL KNOWLEDGE – THE SECOND LAYER

Methodological knowledge involves supporting analysis and decision-making processes in various ways, thereby reinforcing the abilities of the relevant

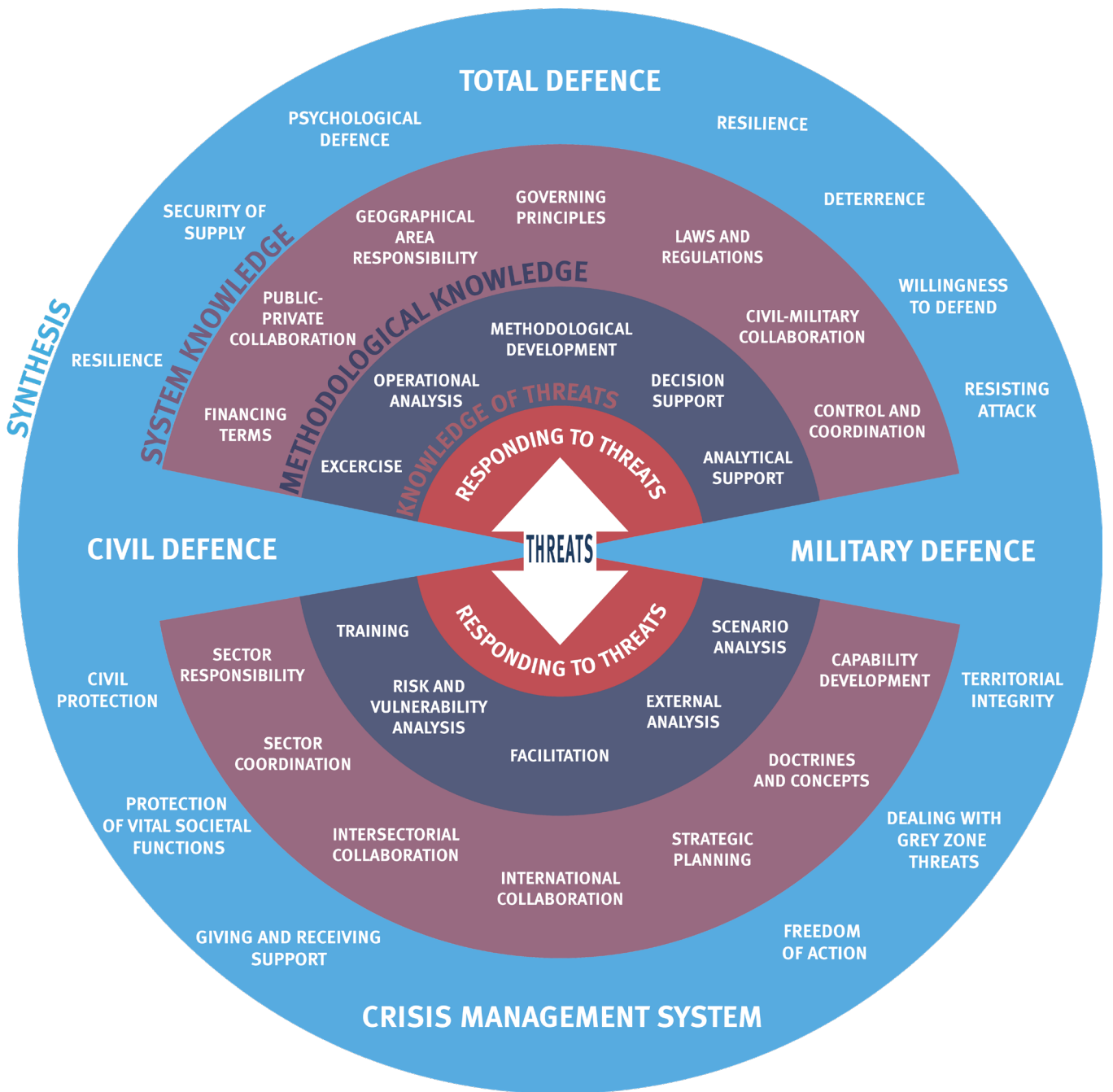


Figure 1. A model for building knowledge for a changing total defence.

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total defence stakeholders to identify and respond to threats. This involves knowledge on how to support others, making it possible to build up and utilise knowledge held by other stakeholders, or together with them: in others words overall methodological knowledge.

This knowledge is required in scenario methodology and gaming, for example, where scenarios are used to describe threats and develop the utilisation of expertise through emergency response planning in the various sectors and functions of society. Vulnerabilities can be identified and managed by examining them and attempting to devise appropriate measures. This may involve risk and vulnerability analyses, scenario exercises where participants can identify and discuss vulnerabilities, identifying which stakeholders need to work together in order to respond to threats, or identifying which command and control systems are required for the stakeholders involved to be able to work in a coordinated fashion. It may also involve looking at how stakeholders can work together to exploit information from existing technical sensors and other data in order to achieve enhanced operational situation awareness, allowing them to communicate robustly with one another.

### **SYSTEM KNOWLEDGE – THE THIRD LAYER**

System knowledge comprises an overall understanding of the system in which knowledge of threats and methods are to be used, such as in policy development and strategic planning, doctrine and concept development and capability development. System knowledge also includes the prevailing criteria in these contexts: responsibilities, funding conditions and various forms of coordination and collaboration, for instance.

### **SYNTHESIS – THE FOURTH LAYER**

Coherent total defence requires coherent development of knowledge. Synthesis includes knowledge relating to the various elements of the total defence that affect the prerequisites, objectives and key tasks of the crisis management system, civil defence and military defence. Knowledge on how important sectors of society actually function in practice is also required in this regard.

This knowledge layer also includes an understanding of how security and defence policies influence the total defence, as well as the ability to

identify specific needs for the total defence; which in turn may require new research and long-term technological and concept development.

### **KNOWLEDGE DEVELOPMENT FOR A COHERENT TOTAL DEFENCE**

In conclusion, it needs to be possible to integrate the four different knowledge layers in order to guarantee the development of an appropriate and coherent total defence, regardless of where this knowledge is actually developed. Both methodological and system knowledge are required in order to utilise specialised knowledge of threats in the various operations and development processes of the total defence. FOI's ambition and objective is to continue supporting the various elements of society by providing expert knowledge, analyses, decision support and strategic decision data – which covers all the knowledge layers.

