

## Joint Defra / EA Flood and Coastal Erosion Risk Management R&D Programme

SCHO0507BMTM-E-P

### Scoping the development and implementation of flood and coastal RASP models (RASP – Risk Assessment for System Planning) Science Summary SC050065/SS

Risk modelling has a key role to play in meeting the challenges set out in Making Space for Water, and the aim of the scoping study reported here is to help to plan the development and implementation of modelling tools for flood risk assessment to support flood risk management (FRM) planning and decision-making.

After extensive consultation, analysis and deliberation, the project has produced:

- an overview of the underpinning concepts of Risk Assessment for System Planning (RASP);
- an overview of the decision-making processes for flood risk management, and the role of risk assessment and management;
- identification and description of existing RASP methods and tools;
- proposals for future developments of the RASP tools and models to meet FRM customer needs, and to help to meet the aims set out in Making Space for Water.

A key conclusion is that RASP methods already support a range of purposes, using a common approach to assessing flood risk, but that more widespread use is possible. To provide the most effective support, RASP will need to be embedded within a number of planning processes and tools. These will share common data and computation modules as appropriate. The study identified three key challenges that will need to be met before RASP methods can be successfully used in practice:

- RASP methods will need to be applied to a wide range of practical situations so that their utility in the decision-making process can be demonstrated and evaluated.
- To ensure that the existing RASP methods are implemented as part of day-to-day practice, appropriate policies and supporting business processes will need to be established. Projects such

as NaFRA, MDSF2 and PAMS are starting this process but it will need to be continued.

- The science of RASP will need to be extended to support the delivery of the holistic management of water-related risks outlined in Making Space for Water.

The study has some clear recommendations for RASP-related research and development. These include proposals for the continued development of decision-specific tools, covering national policy planning, strategic planning, asset management, development control and flood incident management. These research recommendations will be reviewed and developed as appropriate with the relevant business partners – clearly any future development would need to be supported by a full appraisal of benefits, costs and risks.

The project also makes recommendations for further research, including research into sources, pathways and receptors, as well as systems analysis frameworks, decision support and software tool development. The recommendations will be carefully considered by Defra and the Environment Agency, as we develop and implement the joint R&D programme.

Finally, and perhaps most importantly, the RASP approach described can only be successful if we have high quality knowledge, information and data on a wide range of flood-related processes. In particular it depends on hydraulic, statistical, social, environmental and economic know-how. Many related projects and programmes supported by the Defra/Environment Agency programme are providing the basic knowledge, understanding and tools on which good quality risk assessment and management relies. Incorporating these new sources of information into the ongoing development of the RASP methodology will be central to successful implementation of flood and coastal risk management.

This report will be of interest to Environment Agency and Defra staff involved in risk modelling in general and RASP modelling in particular, as well as others involved in other aspects of FRM planning and decision-making.

**This summary relates to information from Science Project SC050065, reported in detail in the following report**

**Science Report: SC050065/SR**

**Title:** Scoping the development and implementation of flood and coastal RASP models (RASP – Risk Assessment for System Planning)

**ISBN:978-1-84432-777-5** May 2007

**Report Product Code: SCHO0507BMTL-E-P**

**Internal Status:** Released to all regions

**External Status:** Publicly available

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This project was funded by the Environment Agency's Science Group, which provides scientific knowledge, tools and techniques to enable us to protect and manage the environment as effectively as possible.

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