



*Integrate, Consolidate  
and Disseminate  
European Flood Risk  
Management Research*

**2<sup>nd</sup> ERA-Net CRUE Funding Initiative for Research in Flood Risk Management  
Call for Proposals for Joint Research Projects on**

**“Flood resilient communities – managing the consequences of  
flooding”**

**20 May, 2008**

**FINAL VERSION**

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**Announcement of the Scottish Government**

Environmental Quality Directorate  
Flooding Policy

**2<sup>nd</sup> ERA-Net CRUE Funding Initiative for Research in Flood Risk  
Management**

**Call for Proposals for Joint Research Projects on**

**“Flood resilient communities – managing the consequences of flooding”**

**4 June, 2008**

**Preamble**

The management of flood risk is a critical component of public safety and quality of life. In the past, EU member states and associated states have mainly promoted their own national flood research without comprehensive co-ordination between their programmes, entailing the risk of redundancies and of neglecting potential synergies. The vision for the ERA-Net CRUE action is to support and develop an extensive coordination and integration of regional, national, and European research programmes and policies in the field of flood risk management (FRM). This will provide knowledge and understanding for the sustainable management of flood risks in river basins and coastal plains. Moreover, the ERA-Net CRUE consortium has initiated, on a broad basis, the establishment of a European research agenda intending to map the top priority FRM research topics in Europe for the next 5 to 10 years. The present call initiates the first funding activity based on this focussing process.

As a supplementary directive to the Water Framework Directive (WFD; 2000/60/EC), the European Union has adopted the “European Directive on the Assessment and Management of

Flood Risks (2007/60/EC)” – the Floods Directive, on 23 October, 2007. The Floods Directive requires a preliminary assessment of flood risk, followed by the establishment of hazard and risk maps and, finally, flood risk management plans. The management plans will be required for potentially endangered river basins, coastal areas and other flood-prone areas in the EU Member States until 2015. The implementation of the Floods Directive will require a broad basis of knowledge and tools and, moreover, the development of improved management and governance strategies. Accepting these challenges means a demand for new research outputs. CRUE aims to contribute to this research by its 2<sup>nd</sup> Funding Initiative.

This announcement represents the second of two pilot calls agreed to be part of the ERA-NET CRUE coordination action. The objective is to establish transnational collaborative research projects on a specific area within flood risk management research called: “Flood resilient communities – managing the consequences of flooding”. The call focuses on two thematic areas considered key elements of future flood risk management: (1) Improvement of risk awareness and increasing public participation and (2) Flood event management (cf. section A.1, Funding purpose and object of funding).

The following partner institutions from the ERA-NET CRUE consortium offer funding for transnational research projects under this call:

- Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW), Austria
- Environment Agency (EA), England and Wales
- Ministry of Agriculture and Forestry (MMM), Finland
- Flanders Hydraulics Research, Flanders
- Ministry of Ecology, Energy, Sustainable Development and Land use planning (MEEDDAT), France
- Federal Ministry of Education and Research (BMBF), Germany
- Office of Public Works (OPW), Ireland
- Agency for Environmental Protection and Technical Services (APAT), Italy
- National Centre for Research and Development (NCBiR), Poland
- The Scottish Government, Environmental Quality Directorate (SG-EQD), Scotland
- Ministry of Science and Innovation (MICINN), Spain

- Ministry of Transport, Public Works and Water Management (MinVenW), The Netherlands

– hereafter called PARTNERS.

As a rule, funding is granted nationally according to the ‘virtual common pot’ model. This means that, whilst observing a set of common rules, each CRUE PARTNER participating in this funding initiative funds its own national applicants taking part in the joint research projects.

Therefore, the call is divided into two parts:

1. A common section, which is published within all PARTNER countries participating in the pilot call in the same form (Preamble and part A, “Common Regulations”)
2. National regulations, which are individually published by the funding institutions only in their countries (part B, “Specific Regulations”).

In specific cases, there may be good reasons for the CRUE Steering Committee to vote for alternative modes of funding. This will normally apply when there are no other ways to fund a joint project after it has been positively evaluated and approved by the Steering Committee:

- A project partner in a joint project may be funded by another PARTNER country (e. g., via subcontracting)
- The CRUE Steering Committee may decide that one PARTNER country funds entirely a joint project

In these cases, the applicant will have to follow the national administrative rules and eligibility and contractual requirements applied by the respective PARTNER.

## A. Common Regulations

### A.1 Funding Purpose and Object of Funding

Flooding from rivers, estuaries and the sea threatens millions of European citizens. According to a statement by the European Commission, there have been more than 100 large flooding events in Europe during the last ten years. These events have caused more than 700 casualties and damages of at least 25 billion Euro. In addition to the effects of river regulations, urbanisation and changes in land use, social and economic development have increased the potential for flood damage in many river basins and coastal plains by concentrating damage potential in threatened areas. Climate change promoting extreme weather events and, despite recent legislative initiatives, the progressive accumulation of assets in densely populated flood-prone areas, lead to a further enhancement of flood risks.

In recent years, there has been an increasing focus away from “flood defence” towards “flood risk management” (FRM). This new, multidisciplinary approach goes beyond traditional engineering approaches; it recognises that we cannot stop all floods from occurring and should also consider how to manage the *consequences* of flooding. This integrated approach implies a range of regulatory, social and economic responses, including tighter planning controls in floodplains, role of insurance to spread risk, improved information and maps on flood risk to inform and involve citizens, together with better emergency preparedness and crisis management.

The term resilience represents a new way of thinking about risk management. Resilience is the capacity of a system or a person to succeed and develop, in a way socially acceptable, when confronted with stress or an adversity. In developing a European research agenda for flood risk management, CRUE has recognised the importance of public response to flood risk and flood events in mitigating the consequences. These are key strategic areas for further work. As a result, the PARTNERS have agreed that the second common call will focus on the two following thematic priorities:

## 1 Improving risk awareness and increasing public participation

One elementary task for flood risk managers, which is evolving from the Floods Directive, will be adequate communication of the risk of being flooded to the people who are potentially affected. As an instrument for this, the Floods Directive defines the mandatory publication of hazard and risk maps, and, furthermore, of FRM plans.

Improving our understanding and ability to communicate risk across the institutional framework is an important issue for all stakeholders involved in FRM. A particular challenge for governmental institutions and water authorities is to strengthen public participation in the establishment of future approaches to flood risk management [cf. Article 10 of the Floods Directive]. The encouragement of public participation can be a key element of 'good governance'.<sup>1</sup>

It is expected that such an enhanced risk communication, if consequently applied, will have a great impact on risk perception. In turn, this will lead to changes in the level of individual preparedness, and may in the medium term also affect processes like spatial development and economic growth in flood-prone areas. These potential changes are of particular interest for local and regional flood risk management interventions, particularly in densely populated areas, where the greatest damage potential accumulates. However, the river basin scale must always be taken into account, as any decision for FRM in one region may influence the risk of flooding in other regions along a river.

Against this background, applicants are requested to submit proposals for joint research projects dealing with one or possibly more of the questions stated below. Projects are expected to be application-oriented. Case studies may be an adequate instrument to collect and analyse, in a first step, the required information. Products could be, for example, guidelines or recommendations for good practice, worked out in cooperation with water authorities or public bodies involved in the projects.

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<sup>1</sup> Governance is here understood as a steering and regulation system which is represented not only by governmental institutions, but integrates private companies and associations, alliances, interest groups etc.

### **1.1 Improvement of risk awareness and increased public participation**

- a. What is the relationship between true flood risk and the public's risk perception? What factors determine this relationship? What are the implications for FRM policy?
- b. How can flood hazard and risk maps be improved as an instrument of risk communication? How can data from hazard and vulnerability analyses be used to initiate a public dialogue?
- c. How can public participation in flood risk management be increased through better risk communication and greater risk awareness? Are financial (e. g., insurance-related) incentives suitable to enhance risk perception and what is their effectiveness compared to risk communication?
- d. How can participation in the establishment of FRM plans be encouraged and improved as a feature of "good governance"?
- e. What can institutions learn from improved understanding of risk communication approaches, tools and techniques? How can this learning be applied to improve the effectiveness of communications to the public (across a range of FRM activities, e.g. mapping, planning, event management etc.)?

### **1.2 Effects of improved risk communication**

- a. What are the effects of improved risk communication on peoples' behaviour and on the development of infrastructure (social and economic items, spatial development / development of land-use patterns) in flood-prone areas?
- b. What unexpected consequences might this have?

### **1.3 Communicating the residual risk and uncertainties**

- a. People living in the vicinity of protective structures like dikes or retention basins may tend to feel absolutely safe. What is the effect of structural (technical) flood protection on risk perception and how can residual risk be communicated?
- b. What is the effect of (large) uncertainties in flood risks on public perception?

- c. How do we deal with uncertainties in flooding probability at a given time/location, when crisis managers and the public just want an unambiguous yes/no answer?

## 2 Flood event management

Through the establishment of FRM plans, the Floods Directive aims at providing better information to, and even the involvement of, stakeholders in flood-prone areas. It is likely that an enhanced risk awareness and preparedness will have a great influence on how people behave when a flood occurs.

The behaviour of the population affected is a part of the interplay of different ‘actors’ (people exposed – authorities – emergency task forces...) which has to come into force at the time of a crisis. As an efficient crisis communication and a deliberate sharing of responsibilities will reduce damages and may save lives, it is important to understand how the interaction between people affected, task forces and authorities can be improved.

Flood event management also includes consideration of technical systems. Many early warning systems have been developed, tailored to the individual conditions in specific river basins. However, the question remains how to optimise the utilisation of these systems. Do we still need technical improvements, and/or improvements at the interface between technical tools and human beings?

As a final step in flood event management, recovery from being flooded will also play an important role. If people in a flood-prone area have been prepared in a methodical manner, and society has succeeded in establishing a well-adapted infrastructure, this will facilitate recovery from the consequences of flooding. Thus, it is an important question which qualities may be crucial to allow a ‘resilient’ reaction of a flooded area.

Looking at flood event management, it is important to widen the focus, because operational measures taken on local scales within a river basin are often closely interconnected. The Floods Directive therefore requires the establishment of coordinated FRM plans [Article 8], which includes concerted event management strategies agreed by all potentially affected parties.

Considering the above context, applicants are requested to submit proposals for joint research projects dealing with one or more of the below-mentioned questions. The hints concerning practical relevance given for thematic priority 1 are equally applicable here. Proposals should not merely concentrate on technical aspects of flood event management, but always include aspects of event management related to the 'human factor', as explained above.

### **2.1 Interaction of different actors**

- a. How can the interplay of different actors and sharing of responsibilities (authorities; rescue teams and task forces; people affected by the flood etc.) during flood events be improved?
- b. How can crisis communication and coordination be optimised (flood forecasts and warning measures, information channels and tools; interaction between actors and technical systems; responsibilities; clearness and comprehensibility, etc.; in near-normal situations, but also in complex and unexpected situations)?

### **2.2 Flood event management: Tools and improvements**

- a. How to evaluate the effectiveness and the robustness of flood event management plans?
- b. Do we need additional tools and technical systems for the improvement of flood event management? How to design tools and technical systems to manage complexity? How can the ability of current tools and technical systems to face future flood conditions be assessed and evaluated?
- c. What are necessary and/or easily achievable improvements in technical systems, and what is the impact of these improvements in the flood event management process?

### **2.3 Interaction of local scale and basin scale**

- a. How can event management on the local scale be better coordinated with management measures on large (basin) scales? This includes transboundary coordination strategies.
- b. Are there any chances for quick wins (much gain with little effort) in the way forward towards transboundary flood event management?

## 2.4 Facilitation of recovery

- a. How should the infrastructure (in a broad sense) of a flood-prone area be organised to reduce the efforts for recovery? What is the most (cost-) effective way of recovery: partially or fully, on what time scale, with low-investment or high-investment measures?

As densely populated areas in European countries may be affected by all types of floods (quickly occurring floods, including events caused by heavy rainfalls or coming from the sewer system; flash floods or slow swell floods occurring in river basins; coastal floods), all these types and the relations between them are considered potential fields of research within this funding initiative.

Applicants submitting proposals to this call are expected to make themselves familiar with the contents and, as far as they have been published, with the results of the FLOODsite project ([http://www.floodsite.net/html/project\\_overview.htm](http://www.floodsite.net/html/project_overview.htm)). In particular, applicants should check whether the focus chosen by them within the thematic framework of this call overlaps with the following FLOODsite themes to avoid redundancies:

- FLOODsite sub-theme 1.3, “Vulnerability”, Task 11 “Risk perception, community behaviour and social resilience”
- FLOODsite sub-theme 2.2, “Flood-event measures”, Task 13 “Investigation of integrated strategies considering planning and communicative instruments (to increase preparedness)”, Task 14 “Designing and *ex-ante* evaluation of innovative strategies for flood risk management”, Task 16 “Real-time guidance for flash-flood risk management“, and Task 17 “Emergency flood management – evacuation planning”
- FLOODsite Sub-theme 2.3, “Post-flood measures”
- FLOODsite Theme 3, “Frameworks for technological integration”, Task 19 “Framework for flood event management planning”

A similar line of reasoning applies for other projects and activities which are related to the topics of this call, like EXCIMAP, FLAPP ([www.flapp.org](http://www.flapp.org)) and Safecoast ([www.safecoast.org](http://www.safecoast.org)).

### **3 Scientific coordination project**

It is intended to establish a scientific coordination of the second ERA-Net CRUE Funding Initiative by a separate project. This scientific coordination project will perform accompanying research and networking activities. It will support CRUE and the CRUE Steering Committee in fulfilling their higher-level coordination tasks associated with implementing the second common call.

Proposals for the scientific coordination project are not to be submitted by international consortia, but by a single institution from one of the PARTNER countries which executes the project in case of approval. The scientific coordination project will be selected in a separate evaluation process. The following criteria have been agreed:

- Scientific qualification and expertise related to FRM research
- Qualification and expertise related to research coordination and programme management
- Relevance of the proposal to the tasks expected by CRUE (cf. below)
- Adequacy of estimated costs
- Prospects for success with regard to the work and financial plan including time schedule

A specific application form is to be used which can be found on the CRUE website (<http://www.crue-eranet.net/calls.asp>). Similar to the joint research projects, application is carried out in a one-step procedure, i.e. applicants will have to submit full proposals. The cut-off date for submission stated under A.5 also applies to proposals for the scientific coordination project.

The tasks of the coordination project are related to the scientific monitoring and organisational management of the Funding Initiative. These tasks include, for example, scrutinising the European Research Area and worldwide scientific community for research related to the 2<sup>nd</sup> Funding Initiative; the monitoring of the 2<sup>nd</sup> Funding Initiative (e. g., support to the preparation and monitoring of joint projects' reporting - interim and final reports - and synthesis report); preparation, support and documentation of meetings (kick-off meeting, mid-term seminar, final symposium); support to the evaluation process of ongoing projects and programme evaluation, and dissemination of results.

These tasks will be fulfilled in close coordination with the CRUE Steering Committee. This means that the project is accountable not only to its national funding body, but to the CRUE Steering Committee as a whole. The project will report regularly to the Steering Committee.

The scientific coordination project will be approved for a duration of up to 30 months (joint research projects: 24 months). It is assumed that the tasks described above can be carried out by a scientist working half time on the project.

## **A.2 Joint Research Project Structure and Management**

With the exception of the scientific coordination project, it is a requirement of the call that scientific work will be undertaken within transnational collaborative projects, operating on the basis of an interdisciplinary approach and of work-sharing. The applicants' cooperation and coordination with the national/regional water authorities, public bodies etc. responsible for flood risk management in the areas under investigation is to be assured. Names of contact persons and information about the project partners must be given explicitly in the proposal.

There are basically three possibilities or stages for actively including practitioners and stakeholders in the research projects:

1. Exchange of information between the research groups and the practitioners and stakeholders via meetings, workshops, conferences etc.
2. Involvement of practitioners and stakeholders in project-related bodies (e.g. advisory board)
3. Inclusion of practitioners and stakeholders in the research work as project partners and recipients of funding

The final option in particular enables very intensive cooperation to be established in the form of transdisciplinary work in which the objectives and needs of the users are included in the projects from the very beginning.

Each joint research project consists of several sub-projects/participants sharing several work packages. Each joint research project is to include participants from a minimum of three and an unrestricted maximum number of PARTNER countries. Nonetheless, applicants should take into account that the building and management of large consortia with more than five project partners might be too time-consuming under the given framework conditions. It is also permissible to have participants from third countries (eligible third countries are EU countries plus Norway, Switzerland, and acceding countries). However, applicants from non-PARTNER countries must provide their own funding for their entire contribution and no funding will be available from the PARTNERS for those applicants.

The maximum project duration is 24 months.

Each joint research project is managed by a project coordinator. Each participant in a joint project is committed to supporting the joint project coordinator, who is responsible for the project to the CRUE Steering Committee. The CRUE Steering Committee is constituted by representatives of all national funding organisations participating in the ERA-Net CRUE and involved in this Funding Initiative.

Every joint research project will be attended by a joint project officer from one of the CRUE funding organisations. Apart from the CRUE Steering Committee, the joint project officer is the main contact person for the whole project consortium. The joint project coordinator and the leaders of the sub-projects have to communicate their progress regularly to the joint project officer (cf. A.5.3, Project Monitoring).

### **A.3 Consortium Agreement for Joint Research Projects**

Before the first payment of grants, a consortium agreement appropriate to the aims of the ERA-Net CRUE funding initiative and to the aims of the specific project has to be agreed between all the partners of a joint project. The consortium agreement has to be drawn up by the project coordinator. He/she has to confirm the conclusion of the consortium agreement to each of the national funding organisations responsible for the project partners (cf. section B, Specific Regulations). As a minimum, this document should cover the responsibilities and rights of the partners. This includes a clause that not only the joint project coordinator, but the whole

consortium of a joint project is accountable to the CRUE Steering Committee and, moreover, to the joint project officer (cf. A.2).

In particular, the responsibilities of the project partners with regard to the following requirements of the CRUE funding initiative have to be addressed:

- Presentation of the project and its results in kick-off, mid-term and final meeting
- Project website
- Contributions to different information and dissemination activities in the context of the whole CRUE funding initiative (e.g. newsletter, fact sheets, key messages for synthesis report, etc.)
- Common reporting
- If requested by the Steering Committee or the responsible project officer: Extra reports or presentations in meetings

Moreover, the consortium agreement should comprise arrangements for

- the organisation and management of the project
- scientific management
- the involvement of third parties
- role and responsibilities of the coordinator
- the existing intellectual property rights of participants and the arrangements for the protection and exploitation of results
- provision and coordination of deliverables
- resources, funding and financial management
- confidentiality and publishing
- decision making within the consortium
- handling of internal disputes
- liabilities of the participants towards one another (including the handling of default of contract)

No part of the consortium agreement may contradict the terms of the ERA-NET CRUE Funding Initiative or the funding rules established by the PARTNERS.

Applicants may wish to refer to web pages providing model consortium agreements and recommendations in the context of the EU FP7 like <http://www.desca-fp7.eu/> which provide more detailed suggestions for the possible content of consortium agreements.

#### **A.4 Prerequisites for the Awarding of Grants to Joint Research Projects / Basis for Assessment**

There are two sets of criteria providing the basis for the assessment of joint research project proposals, resulting in two stages of the assessment procedure. The first stage is based on the following general criteria (exclusion criteria):

1. The submitted project outline includes research institutions or companies from at least three of the PARTNER countries and is written in English.
2. Project partners from third countries which are involved in the submitted project outline furnish proof of their own funding. Eligible third countries are EU countries plus Norway, Switzerland, and acceding countries.
3. The given deadline for application is met. The form of the project outline and further formal criteria are in line with the regulations in this announcement.

The second stage of the assessment procedure is based on the following specific criteria:

1. Added value for the European flood management policy
2. Thematic relevance in regard to the objectives of this call
3. Potential for solving problems
4. Innovation
5. Qualification and expertise of the coordinator and the project partners
6. Inter- and transdisciplinarity
7. Prospects for success with regard to the work and financial plan including time schedule
8. Quality of the management
9. Expected exploitability of results
10. Transnational linkage and benefit of cooperation

Criteria 2, 7, 9 and 10 will be double-weighted in the evaluation.

## **A.5 Procedure – Common Regulations for Joint Research Projects**

### A.5.1 Submission of Project Proposals

Application is carried out in a one-step procedure, i.e. applicants will have to submit full proposals.

Form No. 1 - Common Application Form: For drafting proposals of joint collaborative projects, a form is to be used which is available for downloading at <http://www.crue-eranet.net/calls.asp> (For applications for the scientific coordination project – cf. section A.1 -, a special application form is provided on the same website.) The form is to be completed in English and requires information on administrative details, a summary of the proposal, a list of work packages, calculated costs for each project partner and requested funding, time schedule and a detailed project description. The filled in Common Application Form is to be submitted using the ERA-Net CRUE online submission tool under <http://www.crue-eranet.net/calls.asp> Please refer to part B, Specific Regulations to check whether your national funding rules additionally require the submission of a printed version.

Form No. 2 - National Application Form: Additionally, the individual project partners may have to submit a proposal according to the national funding rules. For details, see part B, Specific Regulations.

### A.5.2 Selection and Decision Making Procedure

The selection and decision making procedure on the submitted proposals will take place in three steps:

In the first step, the proposals will be assessed according to the aforementioned general criteria (cf. section A.4). The project coordinators will receive information in writing on the results of this assessment within one month.

In the second step, the project proposals evaluated positively will be assessed according to the specific assessment criteria (details in section A.4) by an international Scientific Advisory Board appointed by the CRUE Steering Committee. Each of the PARTNERS will delegate at least one national expert who will be member of this Scientific Advisory Board. Based on written evaluations by selected members of the Scientific Advisory Board, all proposals will be commonly discussed to achieve a final scientific assessment in a meeting of the international Scientific Advisory Board.

In the third step, the project proposals will be ranked according to the final results of the assessment. The CRUE Steering Committee will then decide upon funding within the framework of strategic priorities and the available budgets. All applicants will receive information on the results within one month after the Steering Committee's decision.

According to current budget estimates, it is expected that the PARTNERS will be able to fund up to 7 joint research projects, each with 3 project partners, for two years.

#### A.5.3 Project Monitoring

The researchers involved in the collaborative projects submit common scientific reports to the CRUE Steering Committee, via their Project Officer, which are written in English. These reports are independent from national reporting.

There will be one interim report and one final report. The delivery of the common interim report will be connected to a mid-term seminar which will be organised as part of the 2<sup>nd</sup> CRUE Funding Initiative. (The mid-term seminar will take place approximately half way through the duration of the research projects.)

The submission date for the joint projects' common interim and final reports will be specified in the funding contracts or notifications.

The common reports have to be submitted in printed and in electronic form. The same applies to scientific publications evolving from the research projects. Common reporting is to be controlled by the coordinator of the joint research project.

For national reporting requirements, please cf. part B, Specific Regulations.

During the CRUE funding initiative, three meetings will be summoned for participation of all joint project coordinators and sub-project leaders: A kick-off, a mid-term and a final meeting. The meetings will be attended by the Scientific Advisory Board, by the CRUE Steering Committee and by further stakeholders in the area of flood risk management.

Funding recipients are required to establish an internet presentation on their website giving a description of their research project, at the latest 3 months after the start of the project.

#### A.5.4 Submission

The cut-off date for submitting the proposals (Common Application Forms and National Applications) is **15 October, 2008, 6:00 p.m. local time**. This date applies both to joint research projects and to the scientific coordination project.

It is planned that the selection of projects will take place in January, 2009. Accordingly, it is expected that project starts will be in spring / early summer, 2009.