

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



**Linking R&D and Policy in
Flood Risk Management**

**Workshop summary
International CRUE workshop,
Den Haag (NL), 17.-18.04.2007**

DISCLAIMER

Workshop summary of the international CRUE workshop on „Linking R&D and Policy on Flood Risk Management - Tapping into the best of European and national research programmes“, held in Den Haag, The Netherlands, on 17 - 18 April 2007.

The intent of this summary is to provide relevant information and to stimulate discussion of those having an interest in flood risk management research and the dissemination and communication of its results. This summary is made available to governments at all levels, research funding bodies, universities, industries, practitioners, and the public by way of the CRUE website (<http://www.crue-eranet.net>).

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Executive Summary

CRUE ERA-Net

CRUE ERA-Net is an initiative under the European Commission's Sixth Framework Programme. CRUE ERA-Net is a network of research funders on Flood Risk Management across 13 European Member States. The network aims to introduce structure within the area of European Flood Research by improving co-ordination between national programmes.

The vision for the CRUE ERA-Net action on flooding is to develop strategic integration of research at the national funding and policy development levels within Europe to provide knowledge and understanding for the sustainable management of flood risks.

On 17 - 18 April 2007 CRUE organised an international workshop in Den Haag entitled „Linking R&D and Policy on Flood Risk Management“.

Workshop

Workshop objectives

This international workshop in Den Haag (NL) brought together approximately 100 policy-makers, researchers, managers, academics and practitioners from 15 countries with the aim of defining an initial stage of a shared vision for European research on flood-related research needs over the coming 5 – 10 years.

Scope of the workshop

After an introduction about CRUE and the concept of ERA-Nets, the workshop focussed on exchange and interaction between research and policy and on defining a vision for European research on flooding.

Interaction between research and policy

Delegates underlined the importance of strengthening the link between policy, research and practice. CRUE can play a catalytic role in this. Research output can be made more readily

available to the relevant user groups if CRUE succeeds in cooperating with flood and water relevant ERA-Nets, Networks of Excellence, Integrated Projects such as FLOODsite, INTERREG programmes and national research initiatives in the partner countries.

Vision for European research on flooding

Some of the key research topics to emerge from the above mentioned workshop included:

- (i) assessment/evaluation of historic and future flood risk management strategies;
- (ii) vulnerability assessment and adaptation measures;
- (iii) perception and awareness of flood risks and the effect of those perceptions.

There was strong emphasis on applied methodological research and interdisciplinary research. This is more easily arranged by the European Commission than on a national level. Results from the workshop indicate a need for more research on the safety chain elements of „protection“ and „preparedness“. Additional research was also needed for the elements „emergency response“ and „recovery and lessons learned“. Notable, was the fact that the element of „prevention“ was not explicitly mentioned as a research need in the workshop.

Further actions by CRUE

CRUE will now produce a comprehensive research agenda for Flood Risk Management for the next 5 – 10 years, based on a more detailed look at the workshop outputs, together with an analysis of research needs and gaps from national programmes. This medium-term plan will articulate the research needs of key national and European policy-makers. It will be used to influence several research programmes, including the second CRUE joint call (starting July 2008), a rolling programme of future collaborative research amongst CRUE partners), the FP7 work programmes on climate change and natural hazards, as well as national research programmes.

1 Introduction and context

1.1 Introduction

The workshop was hosted by the Dutch Ministry of Transport, Public Works and Water Management from The Netherlands. The two day event was chaired by [Mr Henk Nijland](#), from Rijkswaterstaat Regional Department of the Eastern part of The Netherlands – a department under the same Ministry.

The main purpose of this workshop was to provide a forum for both policy and academics concerned with flood risk management and to give an opportunity for the 100 invited delegates from across Europe to learn from each other and to contribute to a discussion and debate about the vision and content of a upcoming European research agenda on flood risk management. Delegates came from Austria, Czech Republic, Denmark, England, France, Germany, Hungary, Italy, The Netherlands, Poland, Romania, Scotland, Spain, and USA.

CRUE ERA-Net (<http://www.crue-eranet.net>) is a FP6 project (European Commission's Sixth Framework Programme). The network of research funders on flood risk management across 11 European Member States has been set up to consolidate existing European flood research programmes, promote good practice, and identify gaps and opportunities for collaboration on future research activities. Network partners come from most European countries that have been particularly badly affected by flooding. By supporting good practice on research management and dissemination, and the spread of knowledge, they expect to improve flood management in their own countries and the rest of Europe.

1.2 Scope of Workshop

The workshop spanned one and a half days. The span being divided into five sessions, each one focussing on a particular aspect in the development of a common and shared research agenda on flooding.

In detail, the workshop wanted to

- Examine the principal policy issues that should shape European research on flooding, including implications of the EU Floods Directive
- Enhance the relationship between academics, practitioners and policy-makers
- Share the results of existing ongoing research programmes on flood risk management across Europe
- Develop a vision for common research needs in flood risk management for the European Research Area over the next 5 – 10 years
- Look at ways to improve integration of European research on flooding into the policy-making process and improve links with other national and international research programmes

1.2.1 Workshop - Day 1

The workshop was officially opened by [Anita Wouters](#). Mrs Wouters is the Deputy Director General at the Directorate-General for Water Affairs (DG Water) in Den Haag. This is the policy division of the Ministry of Transport, Public Works and Water Management responsible for arranging and maintaining a sustainable water system. She emphasised that they strive to do this at a cost that is acceptable to society.

She described the existing situation at national level in The Netherlands with regards to the Dutch approach to Flood Risk Management. Within the context of "Global Warming" she referred to the search for new and innovative solutions for dealing with the still very prominent "fight against water" for the Dutch population. Here she mentioned the project "**Room for the River**".

Mrs Wouters stressed that the Dutch are always open to learning from others e.g. exchanging knowledge within the CRUE network.

This could be done for certain focus areas that the Dutch have highlighted for the coming period in Flood Risk Management in The Netherlands.

These four focus areas are as follows:

- Spatial planning
- Physical measures behind the dikes
- Organisational aspects
- Flood risk awareness

By making efficient use of both existing and future research opportunities, Mrs Wouters hoped that this would contribute to the long term goal of the Ministry to create a new policy with regard to Flood Risk Management. This should be a joint venture between both partners in and outside The Netherlands, concentrating on the area of safety and bilateral co-operations. Mention was made here of the new Dutch centre of excellence to be established this year called the “Deltares”. This will be an institute for applied research and specialist consultancy and its goal is to improve the habitability of vulnerable delta areas

Mrs Wouters went on further to say that an enormous amount of research is being carried out throughout Europe and that this would probably increase due to the European Floods Directive. However, it would be a frustrating process and a waste of money if the results could not be absorbed or digested by policy makers and politicians. This would be the case if there are too many or contradicting results, or if the outcome is not translated from technical facts to policy related information. She challenged all present, researchers and policy-makers alike to develop realistic, solid and politically relevant research programmes.

Mrs Wouters concluded her opening speech by urging all delegates to actively participate in the workshop for a fruitful and inspiring result.

Dr Sebastian Catovsky (Defra, CRUE Programme Coordinator) then introduced the CRUE ERA-Net and the aim of the workshop.

Dr Catovsky thanked the Dutch Ministry for hosting and organising the workshop and gave a short summary of the agenda over the coming two days.

Dr Catovsky expressed his enthusiasm for the extensive networks across Europe which in his view would increase the competitiveness of Europe within this arena. However, he did point out that there were different ERA-Nets (European Research Area Networks) moving in the same direction within Europe, but at different speeds.

He went on to define CRUE’s role in this whole process. He expressed the hope that policy-makers would perceive the CRUE network as a source of expertise. He re-iterated that policy decisions must be based on facts and figures. CRUE envisages its role in bringing these facts and research needs together and setting new points on the European agenda in the near future.

CRUE has made progress in establishing exactly what research is available (Analysis Work Package 5) and in which areas or under what categories it is concentrated. One of the main aims of this workshop is therefore to identify the gaps in this research area.

He stressed the importance of the discussions that would take place in this workshop as having an influence on the decisions still to be made for for the Commission’s Seventh Framework Programme (FP7), as there would be representatives from the European Commission in attendance at the CRUE workshop. He stressed how important it was that this research be fed into policy decisions that were currently being made. He pointed out that the largest research programmes originated from countries that are faced with the greatest risk.

Mention of the database ([CRUISE](#)) launch from CRUE, was made, in order to promote awareness of its existence and the possibility to access it. The intricacies of the first Common Call in CRUE were briefly summarised for the audience and mention was made of the second Common Call (due to start in July 2008).

Dr Catovsky explained that the outputs of the workshop would be brought together with the analysis that had been done to date in order to have a comprehensive set of topics for an European “agenda”.

With a view to the future of CRUE – the question was how to work together as a network on flood risk areas as well as looking for new full or

associate partners who could participate in the network.

ERA-Net CRUE is not a single or isolated project in Europe. Therefore an "ERA-Net Panel" gave delegates the opportunity to get an insight into the work done by other ERA-Nets which are related to environmental research.

Natacha Amorsi (International Office for Water, France) started this session with an introduction into the ERA-Net "IWRM.net" (Integrated Water Resource Management). The aim in this project is to implement joint activities on issues of Integrated Water Resources Management and adapt a methodology on how to work together. The first Pilot call hopes to identify the short term needs within this field and to establish links with the Water Framework Directive (WFD).

This was followed by the presentation from **Stefan Vetter** (BMLFUW, Austria) with the "**SNOWMAN**" ERA-Net project (Sustainable management of soil and groundwater under the pressure of soil pollution and soil contamination). SNOWMAN's ambitions are similar to those of CRUE. The first Pilot Call was launched in December 2006 and implemented in February 2007. They too hope to influence the research programme agenda in Brussels. They aim to expand their network by adding new partners to the existing project consortium.

Lorraine Hutt (Environment Agency, UK) completed the look at the wider role of ERA-Nets in supporting the development of European policy and research with a presentation of the "**SKEP**" ERA-Net (Scientific Knowledge for Environmental Protection). The main goal of ERA-Net SKEP is to link Science with Policy. It comes as no surprise therefore that the purpose of the deliverables of the project are to feed those links. Other pressing issues are : how do you disseminate information from the science world into the policy environment? And how do you evaluate the results? The first Pilot Call in SKEP is planned for 2008 and the Final Call for 2009.

The panel discussion afterwards showed clearly the need for further co-ordination and collaboration between the individual ERA-Nets in order to learn from each other and to avoid competitive mechanisms in research funding or in the duplication of research agendas.

The next session concerned information exchange and interaction issues was chaired by **Andrea Moser** (BMLFUW, Austria). In her presentation she point up what the main problems of interaction between policy and researchers are and how CRUE will contribute to strengthen the link between policy-makers, researchers and practitioners. Then, during a breakout session, delegates focused on developing a list of key recommendations for the CRUE ERA-Net team in order to improve the link between R&D and Policy (please refer in detail to Section 2).

1.2.2 Workshop - Day 2

Wednesday, April 18, opened with a presentation, given by **Phillippe Quevauviller** (EC Water and Marine Unit, Environment Directorate-General, Brussels). He had the task of giving the 'big picture' on the EC Policy context to flood risk management research. One of the main conclusions of his presentation was the demand for a better integration of the findings of national research programmes or initiatives into EU policy development and implementation. He felt that there is a "missing link" between national or regional research programmes and EU-policy development and he expect that the ERA-Net scheme could support to fill this gap by providing a platform for information exchange on national research.

He went on to say that there was a limited amount of research feeding the policy agenda. He suggested that the ERA-NetS could be the key access to national research and that the Commission was very curious to see how this will develop in the projects.

He proposed testing the quality of scientific results so that they are judged according to:

- Increasing awareness
- Improving communication
- Planning

The **WISE** database launched last month and managed by the European Environment Agency is a source of consolidated expertise in RTD of water management. The main line of this Portal will guide information needed to form policy. But this alone is not sufficient. In addition language barriers should be broken.

The speaker however made it very clear that if the users did not find the information they required within two minutes on WISE they would go to an

internet search engine like Google™ and that will mean the failure of WISE and a waste of resources.

He referred to the **CIS** – Common Implementation Strategy 2007-2009 – of the Water Framework Directive. But stressed that it would take time and good convincing arguments to make it work. It should be made more prominent and it should have at least one pilot river basin per country.

The next presentations focused on the research perspective and were given by **Marcel Bottema** (RIZA, The Netherlands) and **Paul Samuels** (HR Wallingford, UK and “FLOODsite” co-ordinator). Both speakers examined how the European Research Area is already starting to tackle the policy challenges mentioned.

Marcel Bottema started with a presentation on the results of his initial analysis on flood-related research gaps and needs based on an inventory of national programmes and projects. He noted that present R&D in the CRUE Partner countries is focusing on “protection” and “hazards” only, and there is a broadly shared research need on “forecasting” and “risk mapping approaches”. He noted that future research initiatives should give more attention to the safety chain elements “prevention” and “preparedness”, rather than “protection”.

Paul Samuels then had the task of drawing the various research activities within the FP6 European-wide research programme “**FLOODsite**” together. His presentation emphasised that “Warning for Flash Flood Risk mitigation”, “Flood defence infrastructures”, “Large-scale and rapid inundation modelling”, “Risk evaluation” and the improvement of “Decision Support Systems (DSS)” are key areas of science. He stressed that “FLOODsite” has produced a number of contributions and implications in order to deal with the EC “Floods Directive” and he recommended that CRUE consider the research done by the FLOODsite consortium in this area in the upcoming CRUE research agenda.

Henk Nijland then introduced delegates to the breakout sessions in order to specify research gaps and needs in the area of Flood Risk Management and emphasised the importance and impact of the outcome of the day’s discussions on CRUE specifically and the development of an European research agenda in general. Separated into eight groups - each dedicated to one main flood-related research topic - delegates focused their discussions on examining what information and tools/techniques are required to better manage Flood Risk, what research is underway to provide this information or these tools/techniques, and where the research gaps are. For the detailed version of this session, please refer to Section 3.

2 Linking R&D and Policy

On the afternoon of the first day of workshop, a special session was dedicated to the topic „Linking R&D and Policy in Flood Risk Management“. Background to this session is the endeavour by the CRUE ERA-Net to strengthen the link between academics, practitioners and policy-makers in order to optimise the output and outcome of flood-related research for both, the policy and funders of research and the researchers itself. The purpose of the session was to have a contribution by the delegates to the overarching question on how policy, research and practice can be linked up to improve their impact on a mid- to long-term based research agenda on flood risk management.

The session then was comprised of two parts. The first part consisted of a short presentation by **Andrea Moser**, highlighting some of the obstacles found by the CRUE Team on linking better policy and research. Researchers have become increasingly aware of the need to get their research output into policy and practice, and there is some evidence that they have got better at this. In addition, active dissemination and communication of research is often under-resourced by research commissioners and researchers what complicates an effective use of the output of research activities. The key to deal with these problems is to improve appropriate communication between the stakeholders (policy-makers, funders, researchers) and to sharing information and knowledge on completed and on-going research activities across Member States. „Networking“ between researchers, policy-makers and practitioners will become more and more importance and will be one of the key's to a successful integration of research into policy and practice.

The second part of the session consisted of breakout group discussions on specific dissemination and communication areas. Each breakout group, consisting of a balance on policy-makers, researchers, research funders, and practitioners, was asked to address the following:

- Please identify the main obstacles, from your point of view (as policy-maker, researcher, practitioner), for an efficient transfer from science into practice / into policy?
- What routes (on dissemination/communication) could researchers use to boost the relevance of their work (in order to be noticed by policy-makers and practitioners as well)? Please identify a list on opportunities for interaction and exchange between policy-makers, practitioners and researchers.
- How can ERA-Net CRUE contribute to better disseminating / communicating European research on flood risk management? What are your expectations on these issues (dissemination / communication) from an active research network like CRUE?

Each breakout group was asked to focus on one of the three questions above, but they are invited to contribute.

Considering the first issue, attendees identified and summarised as main obstacles for an efficient transfer from science into practice/policy the following:

- Science needs translation into practice and policy
- Policy and research work on different timescales (good science often needs time but policy often requests a simple and quick response)
- Policy-makers ask more questions to delay decisions that they are not willing to take
- Policy-makers and researchers communicate in different languages and ways
- Researchers often do not know, what are the key issues of policy-makers are; subjects of interest for researchers do not fit with policy-makers because of

- different „looks into future“ or simply uncertainties of methodologies etc.
- At present, the quality of research is measured by an amount of scientific publications, not by the transferability of research into policy or practice
 - There is a lack of appropriate communication tools
 - Most prestigious research is blue sky and single discipline, as this is easier for scientific publishing
 - Policy-makers and engineers only look at economics first and are not prepared to listen to arguments towards other benefits to society or the environment. The problem is that the environment (and health) is difficult to evaluate in monetary terms.
 - The role of media is complex - they follow politicians but are also able to trigger opinion movements

Issues, raised by the delegates to the second question on possible routes to improve communication and links between policy and research included:

- „Dating games“ between scientists and policy-makers or practitioners
- Stakeholder participation in projects from the beginning
- Definition of target groups prior to research initiation
- Scientists should be able and prepared to explain their research to a 10-year old child
- Establishing a open consultation forum for practitioners and scientists
- The issue of „translating“ science output into policy or practice was raised again
- Releasing of budget in order to cover additional costs related with more dissemination/communication

Finally, some of the expectations of the session participants on further actions done for ERA-Net CRUE on how to better disseminate / communicate European research on flood risk management resulted into the following recommendations:

- To re-think what CRUE is: a network of research programming/funding organisations

- Implementation of present research results in INTERREG projects
- Development and publication of a flood-related evidence base what supports national and European policy development and implementation, like the „IPCC report“

Both with the discussion in the several breakout groups and the feedback from the panel, numerous aspects of Linking R&D and Policy in Flood Risk Management have been raised and addressed. One can summarise the workshop session highlights as follows:

- It was commonly agreed that science has been increasingly called upon to inform and support policy, but successful linkages between the two have been very difficult to achieve
- Delegates underlined the importance of strengthen the link between policy, research and practice and encouraged CRUE to further elaborate on this issue.
- They found that CRUE should play a catalytic role in the process of linking policy with research.
- Building networks will establish stronger bridges between institutions and stakeholders at different levels.
- If scientists really wants to influence policy more, researchers need to become more visible, and clearer about the kind of changes they are aiming for, and are able to achieve.
- ERA-Net CRUE should improve access to research results and outcome and generally to information on on-going or completed research as well.
- Research can be more focussed on the issues of concern to policy demands.
- Most of the research reporting is hard to interpret in everyday terms. Scientists should be aware of the fact that the completion of a research study is the beginning, not the end, of a mission.
- There is certainly more financial support necessary to cover all the costs related to professional dissemination and communication. Researchers themselves can develop some skills of communication and promotion or assign professionals with the promotion of their work.

Implications for the CRUE Network

ERA-Net CRUE is aiming to strengthen the link between policy, research and practice in the area of flood risk management. Therefore, the CRUE partners are seeking for ways how to consider the present raised needs and recommendations into national and joint based research activities. It is obvious that the vision of a long-term based strategy for dissemination and communication of the results of research cannot be achieved as a stand-alone activity in the framework of ERA-Net CRUE. The establishment of contacts, the co-ordination and the exchange of information between flood and water relevant ERA-Nets (e.g. IWRM.net, SNOWMAN, CIRCLE; SKEP), Networks of Excellence, Integrated Projects (e.g. FLOODsite), INTERREG programmes and also any other national research initiatives in the partner countries will be crucial for a successful implementation of CRUE's vision to make research output more readily available to the relevant user groups.

With (i) CRUISE, a trans-national based database on flood-related research, (ii) more research focussing on the issues of concern to policy-makers and stakeholders (CRUE Pilot Call), and (iii) the identification of gaps and opportunities in research output dissemination & communication (task in CRUE's WP 4) a first step towards a enhancement of the relationship between policy, research and practice has been achieved. Further actions will respond to the recommendations mentioned above. The recommendations raised by the workshop participants are also considered now in the development of the second Common Call and the upcoming research agenda on Flood Risk Management.



3 Defining a Vision for European Research on Flooding

WL | Delft Hydraulics is an independent research institute and specialist consultancy based in the Netherlands. WL/Delft Hydraulics submitted a report covering the research needs identified at the workshop. Here below we have listed the summary and conclusions from this report. But for the complete report please refer the following link on the CRUE ERA-Net website: http://www.crue-eranet.net/meetings_events.asp.

3.1 Summary

The participants of the CRUE ERA-Net workshop on 17 - 18 April in Den Haag, identified the following as the most important research needs on Flood Risk Management (in order of importance):

- Assessment/evaluation of historic and future Flood Risk Management strategies, including costs and benefits, social impacts and intangibles;
- Flood event management - crisis communication, decision-making during flood events and flood forecasting systems;
- Perception and awareness of flood risks, of potential actions, and of flood risk maps and the effect of those perceptions on flood risks and flood risk management;
- Vulnerability assessment and adaptation measures - vulnerability to climate change and how to adapt to climate change
- Flood risk mapping: who uses flood risk maps, what information do they need, what indicators of flood risks should be mapped, visualization techniques etc.

Research needs focus on methods and on interdisciplinary research. This is valuable for the EU because international research on methods results in consensus, it enhances exchange of results, and it ensures that different partners use the same definitions and terms.

3.2 Conclusions

The workshop resulted in important conclusions with respect to research needs. The most important main research subjects which were mentioned are:

- A. Assessment/evaluation of historic and future flood risk management strategies - includes the evaluation of current and past strategies. It aims to study why certain strategies do function in one country, while in other countries other strategies are favoured. It also includes the evaluation of structural and non-structural measures. The evaluation itself should include criteria which are meaningful for stakeholders, which include cost-benefit aspects, social impacts and other intangible aspects.
- B. Vulnerability assessment and adaptation measures - involves research to determine if and how we can adapt to climate change. It also includes research on the vulnerability to climate change effects.
- C. Perception and awareness of flood risks, of potential actions, and of flood risk maps and the effect of those perceptions - involves research on the perception of people on flood risks and flood risk measures, on how this perception affects flood risk management, and how this perception may be changed.
- D. Flood risk mapping - includes research questions on who uses flood risk maps, what information do these users need, what should be on the flood risk maps and how these maps may be developed
- E. Flood event management - includes crisis communication, decision-making during flood events and flood forecasting, which all improve flood event management.
- F. Hazard definition and incorporation

- G. Piloting innovative approaches
- H. Event documentation
- I. Strength and design of structures and embankments

Context of the research needs, framework and classification

In the identified needs, there was strong emphasis on applied methodological research and on interdisciplinary research. This is valuable for the EC because cooperation in methodological research may result in mutual understanding, consensus, harmonisation of methods and it enhances the exchange of data and results. Large inter-disciplinary research projects are more easily arranged by the EC than on a national level. This type of research projects thus uses the additional value of research on a European scale.

The identified research topics cover most elements of the safety chain, which describes the different elements in the process of flood risk management (prevention, protection, preparedness emergency response, recovery). Research needs as identified in the workshop point at the safety chain elements 'protection' and 'preparedness' as the elements where research is needed most. They also indicate research needs on the safety chain elements 'emergency response' and 'recovery and lessons learned'. The research needs related to the safety chain element 'protection' mainly focus on evaluation of flood risk management strategies, and hazard definitions. Research needs related to 'preparedness' includes research on awareness and perception of risks and measures.

4 Implications for the CRUE network

CRUE will now produce a comprehensive research agenda for Flood Management for the next 5 – 10 years, based on a more detailed look at workshop outputs, together with an analysis of research needs and gaps from national programmes. This medium-term plan will articulate the research needs of key national and European policy-makers. It will be used to influence several research programmes, including the second CRUE joint call (starting July 2008), a rolling programme of future collaborative research amongst CRUE partners, the FP7 work programmes on climate change and natural hazards, and national research programmes.

CRUE ERA-Net has established itself as an active network of research funders in flood risk management, sharing information on national research programmes and establishing a programme of collaborative research across Europe. Senior policy-makers who joined CRUE partners at the recent workshop in Den Haag were keen to see the EC investment in developing the CRUE network taken forward as an enduring partnership integrated into the activities of Working Group F.



(The CRUE ERA-Net Team at Madurodam, Den Haag, 18 April 2007)