

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

### Background to R&D project

This project represents the second phase of research and development to update the FHRC's previous project appraisal Manuals for Flood and Coastal Erosion Risk Management [FCERM]. Those Manual were published in 1977; 1987; & 1992. The first phase was undertaken in project FD 1705 between 2001 and 2003 and resulted in the draft Multi-Coloured Manual and CD that was finished in December 2003. During this time Government policy for flood and coastal erosion risk management has changed significantly from that of the 1990s. The Department for the Environment, Food and Rural Affairs (Defra) has superseded the Ministry of Agriculture, Fisheries and Food (MAFF) as the government department responsible for flood and coastal erosion risk management (previously 'flood defence' and before that 'land drainage'). In turn, Defra has developed an important new FCERM policy in the form of *'Making Space for Water'* which has significant implications for project appraisal – e.g. balancing national and local priorities – and for government investment priorities.

The rationale of the Manual and Handbook that are the result of this project is to aid and improve investment decision-making so as to try *"To deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles"*. The relevant decisions are about investment in fluvial flood risk management schemes (including non-structural projects), and at the coast in schemes to manage the risks of both coastal flooding and the erosion of the land by the sea. These decisions should be seen in the context of the modern philosophy of an integrated approach to catchment and coastal zone management.

The Manual and Handbook do not exist in isolation. They sit alongside Defra and HM Treasury guidance on the appraisal of FCERM schemes and public sector investment generally. The Manual and the associated CD together provide much of the benefit data on which project appraisals are based, in the context of the theoretical and policy context provided by the other documents.

### Results of R&D project

The main enhancements in the Multicoloured Manual are as follows:

- An experimental scheme for assessing the impact of data quality on the appraisal process (Ch. 3).
- A better set of data on flood damages to residential properties, on the MC CD, backed up with a better system for updating that data in the future.
- Better data on the impact of social class on flood damages with which to base the weighting of flood damages to houses by Distributional Weights (on the MC CD).
- More data on flood damages to Non-Residential properties, although this data set is by no means as good as the one for residential properties (because of the high variance in the NRP sector).

- Better data (by a long way) on the damage-reducing effects of flood warnings to residential properties.
- A significantly better Chapter on the impact of FCERM schemes on recreation (Ch. 8).
- A new approach to the assessment of the benefits of FRM for agriculture, that is consistent with Defra guidance.
- An enhanced chapter on the impacts of FCERM schemes on the environment.
- A report on the economic methods for valuing wetland resources (from the University of East Anglia)

As far as residential and non-residential flood damages and other losses are concerned:

- The potential damage to residential properties is much higher than we had hitherto assessed.
- The potential flood damage to NRPs is also much higher than we had hitherto assessed.
- The variance of damages within this NRP sector is large and generalisation and averaging is problematic (i.e. the data is subject to large standard errors).
- Only in rare cases of extreme floods affecting major utility installations would the impacts be large enough to warrant intensive study of utility impacts within a benefit assessment in a project appraisal.
- The new approach to appraising the benefits of FCERM to agriculture will result in values that will be higher than hitherto as the subsidies to agriculture are not now included in the calculations.

As far as the Manual/handbook are concerned:

- The 2005 MCM has been based heavily on the 2003 MCM. The 2003 to 2005 period has been used to “Road-test” the Manual, involving widespread stakeholder consultation.
- The Manual (and CD) has come through that process successfully, but with numerous changes that should enhance its value to its users.
- In turn this has made possible the development of the parallel Handbook, which should ease the benefit assessment process considerably.
- The last major update of this Manual material – before 2003 – occurred in 1992 (now 13 years ago). The evidence from the FD2014 project suggests that a period of less than 10 years between major updates is desirable for the Manual to remain in tune with both Defra policy and its users’ needs.
- A system for updating the data on the MCM CD and in the MCM in the future needs to be agreed with the Environment Agency.

## R&D Outputs and their Use

- R&D Technical Reports – FD2014/TR 1) Objective 13 Report and Questionnaire; 2) Objective 14 Report
- SID 5 – FD2014
- FHRC Multi-Coloured Handbook and CD - Unavailable in electronic form. Refer to FHRC
- FHRC Multi-Coloured Manual - Unavailable in electronic form. Refer to FHRC
- FHRC Revision of PAG Spreadsheets PAG31; PAG32;PAG33;PAG34
- FHRC User Report for Revision of PAG3 Spreadsheets
- FHRC/UEA Wetlands Evaluation Report
- Report on data assumptions within FHRC benefits datasets, as part of informing FD2018 Sugden Approach research.

This R&D Technical Summary relates to R&D Project FD2014

Publication Internal Status: Released Internally External Status: Released to Public Domain

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The above outputs may be downloaded from the Defra/EA Joint R&D FCERM Programme website ([www.defra.gov.uk/environ/fcd/research](http://www.defra.gov.uk/environ/fcd/research)). Copies are also available via the Environment Agency’s science publications catalogue (<http://publications.environment-agency.gov.uk/epages/eapublications.storefront>) on a print-on-demand basis.

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