

Research and Development

Final Project Report

(Not to be used for LINK projects)

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Project title

Evaluating a Multi-Criteria Analysis (MCA) Methodology for Application to Flood Management and Coastal Defence Appraisals

DEFRA project code

FD2013

Contractor organisation and location

Risk & Policy Analysts Ltd
Farthing Green House
1 Beccles Road
Loddon, Norfolk, NR14 6LT

Total DEFRA project costs

£ 144,125.00

Project start date

01/01/03

Project end date

31/12/04

Executive summary (maximum 2 sides A4)

Background

As with all government funded activities, spending on flood risk management and coastal defence is constrained and, hence, decisions have to be made to ensure that resources are used in an efficient manner. Cost-Benefit Analysis (CBA) for flood risk management and coastal defence is well established but there is growing concern that it fails to take full account of social and environmental factors. One method of including these impacts is by using a Multi-Criteria Analysis (MCA) approach.

MCA covers a range of appraisal techniques that have the potential to capture a wide range of impacts, which may not be readily valued in monetary terms, especially those relating to social issues. MCA aims to establish preferences between options by reference to an explicit set of specified objectives and associated criteria for assessing the extent to which these objectives have been achieved. Two of the key advantages of MCA are that it can allow greater stakeholder involvement and provide greater transparency to the decisions being made at all levels of appraisal.

A scoping study was therefore undertaken in 2001/02 (FHRC/RPA, 2002) to look at the existing appraisal and decision framework and whether the use of a MCA approach would be appropriate and acceptable. Following the scoping study, the Department for the Environment, Food and Rural Affairs (Defra) and the Environment Agency decided to further investigate the potential for a methodology through the R&D project: "Evaluating a MCA Methodology for Flood Management and Coastal Defence Appraisal".

Aims and Approach

The aim of the methodology is to complement the current approach to economic appraisal, based on cost-benefit analysis, rather than substitute it. In this context, Risk & Policy Analysts (RPA) set out to develop a MCA-based component that could be added onto the current appraisal method.

The project has been approached in two phases:

- Phase 1 – included scoping of impact categories, consultation to identify issues associated with the current approaches, methodological scoping, and a seminar on the proposed methodology.
- Phase 2 – included the undertaking of a range of case studies to develop the methodology for the MCA-based component in detail and produce guidelines for its application.

Results

The Phase 1 Report sets out:

- the work carried out to date, i.e. identifies the wider impact categories that should be covered, the consultation exercise to identify problems and issues that have arisen during appraisals undertaken using current approaches, and the seminar, at which many of the issues associated with fully developing a MCA methodology were identified and discussed; and
- an introduction to appraisal summary tables (ASTs) which are central to the MCA methodology and a discussion on the use of benefits transfer (BT) within the flood risk management and coastal defence field.

The report also provides interim guidance on the use of ASTs and BT.

The Case Study Report (Phase 2) sets out the work undertaken to develop the MCA-based methodology, its application to seven case studies and the implications of the research findings for the production of guidelines for application of the methodology.

The intention of the case studies was to test the methodology and to answer two specific questions:

- does the methodology provide information in a format that can be used to inform a range of different decisions? and
- does the methodology have added value over current approaches, i.e. will it help ensure that decisions are more robust and sustainable and/or can it help to take the views of all stakeholders into account such that conflicts that have arisen can be addressed specifically in the assessment?

The Case Studies Report constitutes the first of the two milestones identified for Phase 2 of the MCA project.

The Guidance Report complements the Case Studies Report and provides general guidelines for the practitioner on using the MCA methodology within project appraisal.

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title**

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Scientific report (maximum 20 sides A4)

See main report