

6

Local Authority, emergency services and recovery costs

OVERVIEW

Emergency and recovery costs during flood events such as autumn 2000 and summer 2007 are substantial, but not all these costs are allowable as contributing to the benefits of flood risk management schemes. This is for two reasons: a) some of these costs are covered elsewhere in the benefit assessment; b) some items, such as sandbagging, prevent damage in themselves, and project appraisals can assume that this damage does not therefore occur. For this reason, identifying and highlighting the costs related to emergency activity and recovery can be very difficult.

Flood-related expenditure varies between Local Authorities; depending on those assets which were affected by flooding. Overall, the most significant category of flood-related expenditure in 2007 was the cost of repair and reconstruction of infrastructure assets which accounted for close to three-quarters of Local Authority costs. Indeed, the total recovery cost for the sixteen most affected Local Authorities was £194.3 million.

These expenses included the considerable costs necessary to repair assets such as highways, schools and other council owned property.

LESSONS FROM EXPERIENCE

- There will be circumstances in project appraisals where the use of the standard data is not appropriate, or not considered accurate enough for project appraisal purposes;
- There are clear relations between flood emergency costs and the numbers of properties flooded. However, while this is interesting (and logical), it is not always sensible to use this approach for scaling purposes, not least because much of the emergency costs are spent in preventing property being flooded, such that it is perfectly possible for there to be substantial emergency services costs without any property being flooded at all;
- There is a difficulty in estimating marginal costs for many organisations as these can vary significantly. For instance, during the 2007 floods the expenditure for the sixteen most affected Local Authorities ranged from £2.2 million to £29 million.

TYPES OF COST

The benefits of flood risk management include reducing the costs incurred by a number of organisations in tackling flood incidents and in the recovery process. Depending upon the severity of the flood event, several emergency services may be involved in both emergency works and clean-up operations, during and after the flood event. Extra staff time and materials may be required, and additional administrative costs may be involved. Authorities and bodies providing emergency services include the following:

- local authorities;
- police authorities;
- fire services;
- ambulance operations;
- the Environment Agency/Natural Resources Wales;
- voluntary services; and
- the armed forces.

Care should be taken in this exercise to separate fixed costs from marginal costs. Local authorities and the Environment Agency have staff who are employed specifically to deal with emergencies, and a reduction in flooding will not necessarily lead to a reduction in these costs. Similarly, both the police and the fire authorities are themselves emergency services, and the reduction in flooding or coastal erosion would not necessarily reduce the costs to the nation of these services. Therefore, their fixed costs cannot legitimately be included within the benefits of flood risk management. Nevertheless, all these emergency services may incur extra costs as a result of particular flood events (marginal costs), which may be counted in the benefits of flood risk management.

STANDARD DATA

Organisations active in the flood management and recovery phases are allowed to recoup a proportion of their costs from central government under what is termed the Bellwin Scheme. This process insists that eligible expenditure be made 'on or in connection with the immediate action to protect life or property,' (HM Government 1989, Section 155). The system of thresholds is based on the judgement that prudent authorities should budget to cover a proportion of the costs of emergencies from their own reserves and resources. Annual guidance provided by the Ministry of Housing, Communities & Local Government describes the procedures and rules that Local Authorities must adhere to when claiming Bellwin assistance (DLUHC and MHCLG, 2023¹).

Local authorities in England and Wales are also eligible to apply for financial aid from the European Union Solidarity Fund (EUSF) in the event of major natural disasters, including floods (Council of the European Union, 2002). The summer 2007 floods qualified as one of the forty-nine EUSF interventions since 2002, whereby €162.3 million was granted in aid to the United Kingdom (European Commission, 2013). Both the Bellwin claims data and the applications to the EUSF provide data from which to estimate the costs of emergency and recovery activities.

The approach adopted by the MCM has been derived from research taking the total emergency costs incurred by local authorities, the severe weather payments such as to Highway Authorities, and the Environment Agency's emergency costs and recovery, and allowing only those costs appropriate to project appraisals (i.e. deducting for betterment).

¹ NB: Guidance is provided when specific Bellwin Schemes are initiated and therefore guidance may be updated. Different guidance documents on the Bellwin Scheme are available for Scotland and Wales.

Expressing this amount as a percentage of the total economic property losses in Autumn 2000 gave a percentage of 10.7%. This, therefore, represents a multiplier on top of property damages that accounts adequately and appropriately for emergency costs and recovery.

The same approach was adopted for assessing the total emergency costs and recovery during the summer 2007 floods in England. The total emergency costs (Table 6.23) are £110 million, that is 5.6% of the total economic property losses.

The difference in terms of percentage between 2000 and 2007 floods may be explained by an effect of economy of scale. Indeed the 2007 summer floods affected a higher number of properties (up to 73,000 versus about 10,000 properties) but a lower number of Local Authorities claiming under the Bellwin scheme (38 versus 87 Local Authorities). In other words, the figure obtained from autumn 2000 reflects dispersed flood affected communities whereas the figure obtained from the Summer 2007 floods reflects more densely populated communities.

The capped AAD (residential and non-residential) property values calculated in project appraisals of flood alleviation schemes should therefore be multiplied by a factor ranging between 1.107 and 1.056 to allow for the emergency and recovery costs that can be justified as real economic costs, not counted elsewhere in the benefit assessments. This figure should be applied for floods at all annual probabilities and for all scales of flood alleviation scheme, in the absence of better information. We recommend that the lower factor should be applied in urban areas to reflect economy of scale in emergency services.

SITE SPECIFIC ASSESSMENTS

There will be circumstances in project appraisals where the use of the standard data as given above is not appropriate, or not considered accurate enough for project appraisal purposes.

In this case, it will be necessary to collect data from the authorities relevant to the area in question. This is not easy, particularly in the absence of a recent flood, and care needs to be taken to ensure that fixed and marginal costs are separated, in order to identify just the latter for counting within project appraisals.

Notwithstanding the above comments, a standard checklist is provided in the Additional Resources for Chapter 6 on MCM-Online as a guide to obtaining these data.

Table 6.23 Overall emergency costs as applicable to project appraisals (Summer 2007 Floods)

| Emergency costs applicable to project appraisals (based on Summer 2007 Floods - England) | | | |
|---|----------------|------------------------|----------------|
| Cost item | Amount | Allowed* amount (%) | Allowed amount |
| Total Bellwin and roads: | | | |
| Bellwin | £30.20 | 42.5 | £12.84 |
| Roads infrastructure | £175.00 | 50 | £87.50 |
| Environment Agency costs+: | | | |
| Emergency repairs** | £14.80 | 50 | £7.40 |
| Emergency response | £2.20 | 100 | £2.20 |
| TOTAL | £222.20 | | £109.94 |
| | | | |
| As % of economic property losses of £1,942m = | | | 5.57% |

* Judged to be proper economic costs, not counted elsewhere in Benefit-Cost Analyses. The figure for roads recognizes some betterment after repair (hence the 50% taken).

** As for roads, some element of betterment here, hence 50% taken.

+ England and Wales

Source: Chatterton *et al.* (2010).

REFERENCES AND DATA SOURCES

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