

hydrodynamic data (perhaps real-time). In some cases there are also records of flood defence works and costs and information about planned works.

However, much of the raw data that are collected and stored in databases are, on the whole, not tailored to the needs of Performance Evaluation. Additional processing and / or data collection is generally needed to isolate specific performance indicators. Many of the databases were developed for other purposes and were now being adapted to meet the needs of risk and performance management; however, the information and even the structure of the databases is not necessarily ideal for this purpose.

Better performance indicators need to be developed to assess the social impacts of policy. Without such data and indicators, it is difficult to assess the impacts of a particular policy option on societal behaviour.

Some risk managers and planners also collect *output performance measures* (e.g. Defra High Level Targets in the United Kingdom.) These are mainly intended to monitor and audit the effectiveness and efficiency of the coastal management organisation in meeting operational targets. As such they do not refer directly to flood risk reduction and their role in assessing *outcome* performance is limited.

9. Concluding statements

1. Flood risk management (FRM) objectives come from national policy/law via strategic planning. *Outcome performance indicators* can be defined from FRM objectives.
2. Performance of linear defences (dikes) remains a key element of FRM; reliability analysis permits a consistent estimate of structure failure probability.
3. Whilst necessary, *output performance measures* of FRM organisations do not refer directly to flood risk reduction and their role in assessing *outcome* performance is limited.
4. More work is required to develop better and more consistent performance indicators in NSR countries, tailored to the policies and strategies being pursued.

10. Literature

- HR WALLINGFORD: Risk, Performance and Uncertainty in Flood and Coastal Defence – A Review. Defra / Environment Agency R&D Report FD2302, 2002. www.environment-agency.gov.uk/floodresearch
- SIMM, J. D.: Report of COMRISK Subproject 4: Performance of risk management measures. HR Wallingford and Environment Agency, 2004