

Science for Environment Policy

New tool could help optimise governance of flood risk

As the climate becomes more volatile, managing the risk of flooding has never been more important. This study proposes a new framework for evaluating how flood risk is managed by governments, which is applied to reveal the strengths and weaknesses of the system in England. The researchers say their approach can help to improve flood-risk governance and could be applied to other countries as well as other types of hazard.

How best to manage flood risk has become a critical focus for policymakers, yet this remains a complex task, with many different requirements. As risk can never be eliminated, it is important to build resilience within communities, so that if a flood does occur, society can absorb and recover from the damage. More importantly, societies should adapt in order to be better prepared for floods in the future.

However, building resilience is not the only goal of effective flood-risk governance and must be balanced with other demands, such as the need to demonstrate value for public money and [efficient use of resources](#). Other requirements include the need for transparent and accountable decision-making, informed through inclusive and participatory approaches, whereby the views of all stakeholders, including civil society, are considered.

This study, based on research performed in the EU project 'STAR-FLOOD'¹, addresses these competing demands and proposes a framework for evaluating the extent to which flood-risk governance: i) enhances *societal resilience* to flooding; ii) demonstrates *resource efficiency*; and iii) demonstrates *legitimacy*. This is developed through several evaluation criteria and benchmarks of success, associated with the process, outcome and impact of flood-risk-governance systems.

To evaluate the extent to which flood-risk governance supports *societal resilience*, the researchers proposed three criteria:

- 1) Capacity to resist:** the arrangement of measures that reduce the likelihood or magnitude of the flood;
- 2) Capacity to absorb and recover:** the arrangement of measures and strategies to reduce the consequences of flooding;
- 3) Capacity to adapt:** whereby opportunities for learning and affecting change are created and future risks are incorporated into the decision-making process.

To determine *resource efficiency*, the authors distinguish economic, human and technological resources and propose multiple benchmarks for evaluation, such as the application of cost-benefit analysis, burden-sharing arrangements and duties for cooperation and collaboration.

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1. STAR FLOOD received funding from the European Commission via the Seventh Framework Programme. See: <http://www.starflood.eu/>

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Given the multi-faceted and complex concept of *legitimacy*, seven criteria are presented to determine the extent to which flood-risk governance can be described as *legitimate*:

- 1) **Social equity**: the distribution of costs and benefits and perceptions of fairness in the process, outcome and impact;
- 2) **Accountability**: the extent to which there are opportunities for stakeholders to challenge decisions and hold responsible actors to account;
- 3) **Transparency**: the degree of 'openness' of the decision-making process;
- 4) **Participation**: whether, how and at what point stakeholders are involved in the decision-making process and the extent to which these views inform the resulting outcome;
- 5) **Access to information**: the extent to which stakeholders have equal access to information about the problem and how it will be managed;
- 6) **Procedural justice**: whether stakeholders are equally able to challenge decisions and have access to an appeal process;
- 7) **Acceptability**: the degree to which decisions and decision-making processes are accepted by all stakeholders.

The framework is flexible and can be tailored to different spatial and temporal scales. To validate it, the researchers used empirical research from England, including data from national policy, legislation, spending figures and independent and public enquiries, as well as over 60 interviews with flood-risk professionals. They focus on a specific aspect of flood-risk governance concerned with *fluvial and coastal flood defence and mitigation*, which incorporates measures to reduce the likelihood and severity of flooding either by resisting water (such as embankments) or accommodating it (such as flood storage areas), respectively.

The framework revealed several ways in which *resilience*, *efficiency* and *legitimacy* are supported through flood-risk governance, but also identified entry points for improvement. These included the need to continue or extend the current investment plan once delivered in 2021, giving equal consideration to capital and revenue funding, for new defences and defence maintenance, from the outset. Moreover, reducing dependency on public finances requires a strategy to promote private-sector contributions, based on further research to understand motivations and incentive mechanisms to better encourage public-private partnerships. Finally, there is a need to better support and empower local communities and households to adopt adaptive behaviours (e.g. property-level protection measures), and manage societal expectations to facilitate acceptance of the risk-based approach and co-ownership of responsibility.

This paper presents a useful framework for evaluating flood-risk governance and identifying the strengths and weaknesses of governance arrangements. The researchers suggest that this could provide the foundation for future cross-country comparisons, from which transferable lessons could be identified. Although they acknowledge that further research is needed to adapt the framework to different contexts, the authors conclude that it provides a robust method for assessing, monitoring and improving governance of flood risk, which could be applied to other types of natural hazards.



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