

# Science for Environment Policy

## Flood-risk communications should be specific, tailored, and utilise social networks

**Effective flood-risk communications should include specific information on how householders can protect themselves and their property against flooding**, a recent Dutch study concludes. The researchers' evaluation of communication strategies also highlights an important role for social media in spreading messages about flood risk and protection.

**It is increasingly important to communicate flood risk to the public.** More and more people are moving to flood-prone areas and the risk of flooding is increasing under [climate change](#). Effective communication campaigns can encourage those at risk to prepare themselves for flooding. However, campaigns often fail in their aims, and there has been little research into what makes a flood-risk communication strategy successful.

This study explored the effects of different types of communication strategy. In particular, it assessed whether strategies lead to householders adopting protective measures, such as flood barriers or flood insurance. The researchers say their findings are relevant to the implementation of the EU [Floods Directive](#)<sup>1</sup>. Under this legislation, EU Member States are required to ensure communities are prepared for flooding, and this may be achieved through communications campaigns.

The researchers developed a computer model which predicted how 35 000 individual households in the Rotterdam-Rijnmond region of the Netherlands would respond to flood-risk communications. Flood-risk perception is low in this region. The model, which also considers how messages can spread throughout communities, was based on the principles of Protection Motivation Theory. This psychological theory assumes that people decide whether to change their behaviour by considering both the level of threat and their strategies for coping.

They compared the likely impacts of mass 'one-size-fits-all' government-led campaigns, referred to as 'top-down', with tailored campaigns that focus on the needs of different people, referred to as 'people-centred'. Tailored campaigns could be targeted towards groups holding certain attitudes, or groups with different cultural or local circumstances, for instance.

They also compared campaigns that only focus on communicating the potential risk of flooding, with those that also include details of coping options, such as the effectiveness and costs of specific flood-protection measures. In practice, most strategies are top-down and focus mainly on risks.

The model's results suggested that the most effective form of campaign considers coping options as well as risks, and is particularly effective if it is people-centred. Householders are 3–6.5 times more likely to implement a flood-protection measure in response to a people-centred, risk- and coping-options campaign than they are in response to a people-centred campaign that only communicates risk.

*Continued on next page.*



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**Source:** Haer, T., Botzen, W.J.W. & Aerts, J.C.J.H. (2016) The effectiveness of flood risk communication strategies and the influence of social networks—Insights from an agent-based model. *Environmental Science & Policy* 60: 44–52. DOI: 10.1016/j.envsci.2016.03.006.

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1. [Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks](#)

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The effect of this people-centred, risk- and coping-options campaign was greatest for uptake of flood barriers and purchase of flood insurance, and less strong for structural measures (e.g. strengthening your home) or adaptive building use (e.g. moving the kitchen to a safer area of the house).

The researchers suggest that a people-centred campaign that considers both risks and coping options is successful because it allows individuals to assess their own risk situation and to make informed decisions on which actions to take. Even though top-down campaigns reach more people, people-centred campaigns are more likely to produce good results, the study argues.

The effectiveness of campaigns was enhanced further when the model took account of social influences. People are more likely to put protection measures in place if friends, neighbours and relatives are also doing so, or verbally persuading them to.

The model suggested that 12% of implementation rates for flood-protection measures are due to social influence. This suggests that communication campaigns are more likely to be successful if communicated between people through social networks, and not just from government. Social media could play an important role here, as it allows quick and wide-scale interaction.



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