

Submission number: ABSSUB-1319

Title: Smart use of flood-risk management resources starts with a flood risk vision

First Choice Theme: Risk assessment, adaptation planning and evaluation

Hanneke Vreugdenhil¹, Bas Kolen¹, Rob Ruijtenberg²

¹Risk and Safety, HKV Consultants, Lelystad,

²STOWA, Amersfoort, Netherlands

My second choice theme is: Disaster risk reduction

What is your presentation preference?: Oral

Has the submitted material been published in a journal (printed or online)?: No

Has the submitted material been presented or submitted to another event?: No

Is your abstract linked to a Focused Science Session?: No

Is your research funded by any organisation?: Yes

Organisation name:: STOWA

Is the organisation able to pay for travel and lodging?: No

Would you qualify and like to be considered for a Young Scientist Best Presentation award?: No

Research question: The concept of Multiple Layer Safety can be used to select measures for prevention, spatial planning and crisis management to reduce flood risk. Using cost-benefit analysis as the primary way to direct flood-risk management usually results in allocation of resources and budgets to preventive measures. Case studies about the implementation of multi-layer safety show that spatial planning measures are relatively costly compared to their flood-risk reduction. At this moment implementation of impact reducing measures is more or less ad hoc and randomly, instead of based on a coherent policy plan or boundary conditions. Our research focuses on the assumption that a more efficient of resources is possible if the multi-layer safety strategy is no longer applied on the level of local projects.

Methodology: Defining a 'flood risk vision' could be a first step to reduce risk with less resources (even though it might not be economically optimal), in less time to get things done. This vision can be part of all kind of planning or policy documents. This vision contains choices where and where not to reduce risks and how. In a case study we compared (1) a reference situation, which is the current policy practice, with (2) a situation with a flood risk vision on a local scale (for example a reconstruction area) and (3) a situation with a flood risk vision on regional scale, defined as the area in which the risk can be influenced by all layers. In the case study we took into account a longer period than usually in spatial planning. We assessed three parameters: flood risk, time spent by authorities and costs/investments. The results have been discussed in expert meetings.

Findings: The research shows that with a flood risk vision a more efficient use of resources is possible when boundary conditions are defined on a level on which prevention, spatial planning and crisis management can be influenced. The benefits of a translation of this vision into design criteria for local projects and spatial developments are twofold: time of local policy makers and available budget. Currently predefined project-based budgets are leading in spatial development. Design criteria in the flood risk vision enable a more efficient use of resources. This also means time saving for authorities in planning and development. Experts recommend updating the flood risk vision once in 12 years, synchronized with national political flood risk accountability. A negative implication of the flood risk vision is that local policy makers might feel uneasy in formulating specific requirements and allocating budgets for risk-reduction measures in selected areas. This might reduce their freedom for future developments. However, the need of flood risk vision for long term spatial planning and development will always be a political decision.

Significance for practical solutions: The research was limited to a fictional case. As a next step the flood risk vision can be developed for a real area. This research has been funded by STOWA.