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Interactive comment on “Robust, multifunctional flood protection zones in the Dutch Rural Riverine area” by J. M. van Loon-Steensma and P. Vellinga

Anonymous Referee #2

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Robust, multifunctional flood protection zones in the Dutch Rural Riverine area

General; the term unbreachable is often used (sometime between brackets, sometimes not) , but for me it is not clear how it is defined. The question that need to be addressed is: how to design these flood defences form a flood risk perspective. page 3859: with a frequency of once in 1250 yr up to once in20 10 000 yr ; These are averages,hence: with a frequency of on average once

page 3859 (also 3868): Dutch flood protection policy mandates robust design of dike reinforcements: what is the definition of robust?

page 3860: . . .and are slightly over-dimensioned: also during its expected life-time? What is the definition of over-dimensioned?

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page 3860: the development of “delta dikes”, which are virtually unbreachable due to their width, height, or inner construction.: what is meant by virtually unbreachable? How to design these dikes?

page 3864: For each of the five locations, the flood-protection task to be accomplished . . .: the flood risk reduction only works if it is applied to a dike ring, not to a section

page 3868: The second group of stakeholders considered it wise to make flood defenses more robust than current knowledge suggests: they support the current practice?

page 3869: over-dimensional multifunctional flood defenses can be implemented only if all parties voluntarily participate : that is true, but also the taxpayer is involved!

page 3871: the recommendations imply that the authors think that robust, multifunctional flood defences are for dike rings attractive, otherwise you should not perform experiments. This is, however, not based on scientific evidence.

page 3978: the table is not complete. Example: advantage is: greater flood protection (is that correct English), but weakness is that it is far more expensive, so it only works if additional functions pay for it. Also, the governance is much more complicated. The table is only based on interviews, do the authors think it is complete?

Figure 1: This concept of broad dikes only works if it is applied to the total dike ring length: the damage curves do not apply to a dike section, but to a dike ring

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