

We would like to thank Referee #1 for his/her interest in the topic and for valuable comments to improve the manuscript. A point-by-point response to the comments is as follows.

R: Referee

A: Authors

General comments:

R: The main flaw of this paper is poor grammar, which thus makes for poor readability. As a suggestion, the authors should have the manuscript examined and modified to shorten sentences and reduce the superfluous use of adjectives. Some examples have been stated in the comments, but the manuscript has to be checked as only few examples have been picked.

A: We agree with this comments. The revised manuscript has been modified accordingly.

R: P7829L10-13 statement seems misleading, the RRA methodology presented here is not used for economic evaluation or social assessment, but rather the outputs of the RRA can be integrated into these assessments, see Fig.2 and P7834L15-18.

A: We do partially agree with this comment since in P7834L15-27 the role that the RRA plays with general conceptual framework of the KULTURisk methodology and its clusters of analysis is quite well explained.

R: P7838L13-22 seems at variance with the statement that the methodology is adaptable. Thus, accordingly, what are the limitations of this proposed methodology?

A: Actually, the mentioned limitations were referred to the methodology suggested by Jonkman et al. (2008) rather than to the KR-RRA. To clarify the meaning of this paragraph, we propose to modify it as follow:

In 2008, Jonkman et al. provided an in-depth review of current available methods, tools and approaches for the estimation of loss of life due to different types of floods (e.g. for dam breaks, coastal floods, tsunamis), that are normally based on empirical data of historical flood events only, without any physical direct approach. Furthermore, the same authors proposed a brand new method to estimate the risk related to the breaching of flood defences in the Netherlands and for similar low-lying areas. Despite being robust and scientifically sound, the method proposed by Jonkman et al. looks very case-specific and rather difficult to apply to a wide range of geomorphological situations and different water related hazards, as the KR-RRA is intended for.

R: P7854L2-5 the authors make reference to RRA as being an old methodology (P7835L4-10), thus the novel concepts of the KR-RRA methodology should be clearly stated?

A: We agree with this comments. To clarify the meaning of this sentence, we propose to modify it as follow:

The paper proposes a state-of-the-art methodology, based on the Regional Risk Assessment approach and shaped on the framework of the European Flood Directive, for the integrated assessment of water-related hazards at the regional scale (i.e. meso-scale) on multiple receptors/elements at risk (i.e. people, economic activities, natural and semi-natural systems and cultural heritages).

R: P7842L20-26 The statement seems to either misplaced or unclear, as the KR-RRA methodology is being presented!

A: We agree with this comments. To clarify the meaning of this sentence, we propose to modify it as follow:

In general, the above mentioned authors remarked a lack of multidimensional and dynamic approaches, and outlined some key issues that need to be addressed by an ultimate risk assessment methodology. It is worth to notice that some of these issues have been addressed by the KR-RRA, in particular as far as the involvement of end users, transferability of methods, spatial approach (GIS based) and hazard dependency are concerned.

R: P7846L22-24 The statement is unclear, based on the scale of the land-cover classification data, the agricultural buildings may be identified as buildings. Thus, the damage would be categorised as damage to buildings (depending on the intersection of the buildings and the hazard).

A: We agree with this comments. To clarify the meaning of this sentence, we propose to modify it as follow:

Specifically, the aim of the RRA methodology for agriculture is to define the percentage of the harvest loss due to a flood event, without any consideration about the damage to agricultural buildings since these have been already considered along with the assessment to the Economic Activities, see sect. 3.5.1.

R: P7854L28 The KR-RRA method seems to be a methodology to evaluate the benefit of risk prevention rather than showing that prevention is accountable? please comment

A: In fact, the methodology can compare different scenario where different prevention measures (both structural and/or non-structural) are implemented. Therefore, the prevention is accountable in the sense that the KR methodology can quantify, both in physical and monetary terms, the risk avoidance due by these measures.

Minor comments

A: We agree with these comments. The revised manuscript has been modified accordingly.