



Interactive comment on “Tsunami response system for ports in Korea” by H.-R. Cho et al.

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Comment-by-Comment for Anonymous Referee 3

We thank for your interest and nice comments. Your comments can improve the quality of the manuscript.

The paper presents a management plan to mitigate tsunami damages and losses to the ports along the eastern Korean Peninsula. The paper is clear, logical, and been well written. Having that said, I also feel the paper is more like a technical report from a consultant company rather than a technical paper published by academia (even though the third author has an excellent track record on conducting and publishing academic research in the subject area). But that may be just my own bias.

Based on my reading, I have the following minor comments:

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1. I do not feel the abstract tells what this paper is about. It tells the “aim,” but does not indicate or imply it is indeed a planning and management paper that mainly features guidelines associated with rules and policies. There are many ways to mitigate or minimize losses from tsunamis, including numerical modeling, physical modeling, planning and management, etc. so it is not as clear as what I would like to see.

Authors Response In this paper, the authors try to demonstrate how a port prepares against an unexpected tsunami attack. As we write in the abstract

[The aim of this study was to mitigate the casualties and property damage on the east eastern coast by developing a proper tsunami response system for important ports and harbors with high population densities and high concentrations of key national industries.]

We have revised the abstract as:

The aim of this study was to mitigate the casualties and property damage against unexpected tsunami attacks along the eastern coast of the Korean Peninsula by developing a proper tsunami response system for important ports and harbors with high population densities and high concentrations of key national industries. The system is made based on numerical and physical modelings of 3 historical and 11 virtual tsunamis events, field surveys, and extensive interviews with related people.

2. Adding an EAP flow chart would be useful. The chart may summarize the technical sections to avoid having to read through section by section again if one wants to utilize the study.

Authors Response: We have already included Table 1 showing detailed information to be included in EAP. We believe that the table lists enough information for an EAP.

3. The authors aim to mitigate losses. Losses are associated with risk. It would be useful if the authors can mention or elaborate risk or risk analysis.

Authors Response: Authors think that the risk analysis is out of the scope of the

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manuscript. However, following two papers are included with some proper comments in the manuscript.

(1) Kim, Y.-C., Choi, M. and Cho, Y.-S., 2012. Tsunami hazard area predicted by probability distribution tendency, *Journal of Coastal Research*, Vol. 28, No. 5, pp. 1,020-1,031. (2) Cho, Y.-S., Kim, Y.-C. and Kim, D.-K., 2013. On the spatial pattern of the distribution of the tsunami run-up heights, *Stochastic Environmental Research and Risk Assessment*, Vol. 27, No. 6, pp. 1,333-1,346.

4. It is misleading in the Introduction (lines 17-19, page 2026) by saying “Every year, the major seaports of Korea and their surrounding areas suffer extensive damage from marine disasters, such as tsunamis, seawater flooding, and typhoons.” Tsunamis are rare events, but it sounds like tsunamis occur every year.

Authors Response: We have revised the sentence as: The major seaports of Korea and their surrounding areas suffer extensive damage from marine disasters, such as tsunamis, seawater flooding, and typhoons frequently.

5. Line 15, page 2027 – The word “inundation” was used, but I believe the authors mean flood damages.

Authors Response: We have revised the word as the reviewer’s comment. inundation => flood damage

6. Line 3, page 2030. What do the authors mean about “Farm environments”? I don’t see a connection between that and the rest of the sentence/paragraph.

Authors Response: We have deleted the sentence as the reviewer’s comments.

7. Line 22, page 2038. What is the justification of using the 10 m elevation (even though it sounds reasonable)? It must be associated with runup from the 4 m maximum inundation depth. Please elaborate.

Authors Response: Although the maximum run-up height observed in Korea was about

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4 m (at Imwon Port during the 1983 event), shelters are recommended to locate somewhat higher places in the view of safety. The Korean government agencies believe that the elevation of 10 m is never reached height by any tsunami which is attacking the Korean Peninsula.

In general, furthermore, people are asked to evacuate into higher places than the third floor of a reinforced concrete building. Thus, we choose the elevation 10 m which is approximately equal to the height of the third floor of a building.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/3/C911/2015/nhessd-3-C911-2015-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 2025, 2015.

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