

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
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Comment on nhess-2021-8

Anonymous Referee #2

Referee comment on "Bangladesh's vulnerability to cyclonic coastal flooding" by Aurélia Bernard et al., Nat. Hazards Earth Syst. Sci. Discuss.,
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Review NHESSD

This article develops the socio-spatial vulnerability of 16 coastal districts of Bangladesh based on the vulnerability indicators at district levels. The contribution of this analysis is not new, as the authors have already shown in their literature review that a growing body of literature describes how vulnerable the coastal communities in Bangladesh are. In this paper, the specification that I see is the combination of people and place vulnerability to compare the districts, which are mostly known from various studies. I am a bit concerned about the literature search portal, like google is not such confident sources for academic publication searches. Then it is needed to describe how the final list of the review prepared, based on what criteria the article was selected for review, i.e. exclusion criteria must be written in the methodology section. Although the literature review is well-organized and written, I would suggest that the author recheck a few recent scholarships, which may add new dimensions in vulnerability indicators.

Adnan et al. (2019) Have coastal embankments reduced flooding in Bangladesh? Science of The Total Environment, Volume 682, Pages 405-416,

Feroz et al. (2019) Flood risk assessment due to cyclone-induced dike breaching in coastal areas of Bangladesh, Nat. Hazards Earth Syst. Sci., 19, 353–368, 2019

Younus, M.A.F. (2017) An assessment of vulnerability and adaptation to cyclones through impact assessment guidelines: a bottom-up case study from Bangladesh coast. Nat Hazards 89, 1437–1459

Though the authors have mentioned based on their reviews that cyclonic storms are the

major environmental threat in the coastal districts, also the tidal-surge induced floods needed to be considered, and the severity of vulnerability due to such tidal-surged induced inundations can change overall land use and livelihood pattern of the people. An example can be taken from cyclone Aila 2009, which also motivates people to shift from shrimp to rice cultivation which is absent in their discussion. Authors are suggested to revisit such land use transformation. Temporal migration or translocal livelihood is one of the major aspects of the vulnerability constructs of the people living in this region. However, the author has not taken into consideration this displacement indicator into their vulnerability index. Taking the displacement indicator of each district might result in different vulnerability indexes for major cities (i.e. districts). Data collected from different years and sources raise the homogeneity in nature and the temporality of analysis. I propose to describe these as limitations.

Besides the flood risks management is not very new in Bangladesh; it has a long history, including the polderization and adopted indigenous knowledge. It would be great if the author could add/ review how the flood risk management knowledge evolved in these coastal settings and justify why their study related to coastal flooding's socio-spatial vulnerability index is essential. Polderization and the recent Delta Plan 2100 should be taken into consideration.

The authors also address the cyclone shelter and evacuation process into the indicator lists. However, they do not mention how the community people decide the location of those cyclone shelter cum primary schools or any other community infrastructure and how the social elite controls the planning procedures. These are significant short-comings along with the revision of the motivations of the study. I would suggest that authors specify why their contribution is novel despite having a larger body of literature on vulnerability assessment of coastal Bangladesh.