



The coastal protection function of Managed Realignments – a review of the available evidence

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Globally, increased coastal flooding is considered as one of the main consequences of climate change in coastal zones. To mitigate coastal flood risks nature-based solutions that complement traditional engineering approaches are increasingly considered as a key adaptation strategy. A widespread form of a coastal nature-based solution is managed realignment (MR), i.e. the inland realignment of coastal defences and the creation of coastal ecosystems (mostly saltmarshes) in the intervening space. However, these approaches involve giving-up previously reclaimed, now agricultural, land to the sea, often resulting in low local-community support. This is not only because coastal retreat may conflict with community values and interests, but also due to low public trust in the success of nature-based adaptation.

Here, we show that the available evidence underlining the coastal protection function of MRs is primarily based on research from natural, mostly large, saltmarshes, where wave heights during storms and tidal surges are effectively attenuated, while available evidence for the effectiveness of MRs is very limited. This means that often local communities have no conclusive evidence of the schemes' actual flood-risk reduction potential. Indeed, the little available evidence on the coastal protection function of MRs suggests that only MRs exceeding a particular size may be effective in reducing coastal flood risks, hence local community support is becoming even more important. We therefore propose a novel co-production process for the planning and implementation of MRs, where coastal communities are involved in the production of knowledge to establish the coastal protection function of MRs.