



To mitigate, or not to mitigate, that is not the question: reducing risk to coastal cities from sea-level rise.

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The Paris Accord aims to hold the rise in global average temperatures to “well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels.” The implication of the Agreement is that strong, deep mitigation of emissions must occur as quickly as possible for there to be a good probability of its success. By doing so, the risk of climate-change related damage is likely to be reduced but by how much? For sea-level change, the strength of mitigation and the emissions pathway that is followed are critically important to the long term equilibrium position reached and this will directly affect exposure and risk in the coastal zone.

We make relative, regional sea-level projections that achieve 1.5 and 2 °C above pre-industrial levels by 2100 and then estimate the damage to 136 coastal cities assuming no adaptation, and city-level population/economic growth distributed equally across its spatial extent. We compare these results to a business-as-usual emissions scenario where temperature rises to ~4 °C, and the contribution from ice sheets remains highly uncertain. We find evidence that the half-degree difference in Paris targets has a strong impact upon damages by 2100 despite the global sea-level difference in the two scenarios being only 6 cm. The scale of damages increases dramatically for a business-as-usual scenario making it patently clear that the success of the Paris Accord is paramount to future coastal development.