

# Urgent action needed to address climate change threats to coastal areas

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Global coastal adaptations are "incremental in scale," short-sighted and inadequate to address the root causes of vulnerability to climate change, according to an international team of researchers.

The 17 experts, including Prof Robert Nicholls, Professor of Climate Adaptation at the University of East Anglia (UEA), have contributed to the paper, "Status of global coastal adaptation," which was published in *Nature Climate Change*.

Prof Nicholls said, "Recent analyses conclude that despite adaptation undertaken in all regions and sectors, global action remains incremental in scale: policies and projects are usually short-sighted and single hazard-focused, inadequately address the root causes of exposure and vulnerability, and are poorly monitored. There is also little evidence of effective risk reduction in relation to implemented responses."

To address these problems, the experts say decisive action by the international policy community is needed to identify and tackle global priorities in key risk areas across countries.

Dr. Alexandre Magnan, of the Institute for Sustainable Development and International Relations (IDDRI), is first author of the paper.

Dr. Magnan said, "Assessing [climate adaptation](#) is a burning scientific and policy question because, as today's global [climate](#) risk will experience a two- to four-fold increase by the end of this century depending on the global greenhouse gas emissions trajectory, we need to know the current status toward addressing its consequences.

"New, alternative methods to assess adaptation are urgently needed in order carry out effective planning and action, evidence on risk reduction, capabilities and create a long-term vision."

The paper considered 61 coastal case studies to develop a locally informed perspective on the state of global coastal adaptation. It looked at both [extreme events](#) and low-onset [climate change](#), including [coastal erosion](#), marine flooding, sea-level rise and extremes, soil and

groundwater salinization, inland flooding resulting from heavy precipitations, and permafrost thaw.

While strategies for urban coastal areas are generally more advanced than rural ones, the experts said plans for long-term adaptations remain limited.

The experts concluded that today's global coastal adaptation is half-way to the full adaptation potential. Taking [sea-level rise](#) as one example, the [experts](#) said the risks to low-lying coasts are already detectable.

Prof Nicholls said, "By the end of the century and in the absence of ambitious adaptation efforts, these risks will become significant, widespread and possibly irreversible in atolls and arctic coasts. The lower estimates for deltas are still a concern given these geographies' population sizes and economic importance globally."

The expert group developed a qualitative structured judgment—the Global Adaptation Progress Tracker (GAP-Track)—to assess adaptation efforts, progress and gaps, as part of the framework for the Global Goal on Adaptation established under the Paris Agreement in 2015.

Dr. Magnan said, "Countries still struggle finding a way to operationalize the Global Goal on Adaptation and to conduct the Global Stocktake (GST) series that aims to collectively track adaptation progress and gaps, with a first iteration due at COP28 in the United Arab Emirates.

"The multi-dimensional and locally grounded assessment developed in this study for coastal adaptation confirms the need to drastically scale up adaptation policy and action around the globe, from [local governments](#) and stakeholders to the international climate policy arena.

"We are arguing that the approach developed in this paper can play a

decisive role in helping refine both targets and priorities."

**More information:** Alexandre Magnan et al, Status of global coastal adaptation, *Nature Climate Change* (2023). [DOI: 10.1038/s41558-023-01834-x](https://doi.org/10.1038/s41558-023-01834-x)

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