

## Socio-economic development on the West African coast is a key factor for increasing flood risks

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**Anthropogenic factors on the West African coast are contributing more than global climate change to the rapid increase in vulnerability and flood risks in the region.**

**This was demonstrated by an interdisciplinary IRD team, in collaboration with West African experts and the CNES, in a pilot quantification study published in *Nature Communications Earth & Environment* on May 15, 2023. The results of the study, part of the WACA-VAR<sup>1</sup> interdisciplinary research program, highlight the need for regional and interdisciplinary coordination to address this issue.**

Rising sea levels are often assumed to be the main cause of vulnerability to West African coastal regions. However, according to this study, the anthropisation of West African coasts, leading to increased vulnerability of the environment due to human activities and the intensification of socio-economic issues, will be an even more important factor in increasing the vulnerability to and the level of risk of flooding in these regions in the years to come.

The researchers used cross-analysis of satellite data, particularly for sea levels, topographic data, and data reflecting predictions of social development to quantitatively establish the evolution of flood risks. They performed simulations projecting the impact of both factors to compare the impact of socio-economic factors with rising sea levels.

The results showed that socio-economic development in coastal areas with rapid anthropization appears to be a much greater threat than rising sea levels for increasing flood risk on the West African coast.

This sustainability science research also confirmed that the results can be applied to all West African countries, from Mauritania in the north-west to Cameroon in the south-east. The results point to the need for a coordinated action plan for the whole region that takes into account both environmental and socio-economic aspects. There is little doubt that no action would be more costly long term than a well-organised adaptation scheme. Key elements would be conservation of the coastal environment and reforms to socio-economic development.

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**Reference:** Olusegun A. Dada, Rafael Almar, Pierre Morand, Erwin W. J. Bergsma and Donatus B. Angnuureng, Philip S. J. Minderhoud. "Socioeconomic development change, rather than sea level rise, forms the main hazard for the future West African coast", *Nature Communications Earth & Environment*, May 15, 2023. DOI: 110.1038/s43247-023-00807-4.

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