InSPiRED - Improving Subsidence PREdictions in Delta systems

Nearly 500 million people live in river deltas, among the most important areas for economic activities and food production on the planet. However, land subsidence and accelerating subsidence rates threaten the future existence of these low-lying landforms and consequently their inhabitants, environment and economy. The EU-funded InSPiRED project aims to improve the ability to quantify delayed subsidence by upgrading a novel, physics-based numerical simulator. The project also plans to develop a generic integrated approach for projecting sinking coastal–deltaic areas. The project's success will lead to the design of effective management strategies for local delta policymakers.

Almost 500 million people live in river deltas, which host among the most important areas for economic activities and global food production on the planet. Relative sea-level rise (RSLR) in delta systems is predominantly caused by land subsidence and accelerating subsidence rates threaten the future existence of these low-lying landforms, including their inhabitants, environment and economy.
Reliable projections of future RSLR are urgently needed to prospect the fate of sinking delta systems but their creation is presently hampered by our inability to accurately resolve delayed subsidence. This causes uncertainties in subsidence rate projections potentially much larger than climate-change driven rates of sea-level rise.
The InSPiRED (Improving Subsidence PREdictions in Delta systems) project aims to improve our ability to quantify delayed subsidence by upgrading a novel, physics-based numerical simulator and to develop a generic integrated approach at create accurate RSLR projections for sinking coastal-deltaic areas. These will facilitate the design of effective management strategies for local delta policymakers. The approach will be designed for different temporal and spatial scales, ranging from decennial to millennial and from a single marsh to an entire delta, respectively, in three major delta systems, the Po, Mississippi, and Mekong deltas.
Both the applicant and the research group have strong track records of cutting-edge subsidence research with different disciplinary backgrounds. The applicant will bring geomorphological and geological knowledge to the research group, leading in geomechanical engineering and numerical modelling. This will enable the inter- and multidisciplinary research required for this project and facilitate transfer of ideas. The project will strengthen the applicant numerical and geomechanical skills and reinforce his research competencies and professional networks, enhancing his career development as an independent researcher.

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Find out more: **https://cordis.europa.eu/project/id/894476**