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GEO-Inquire Project

Cross-Border Hazard: PTHA in Pilot Areas of Pakistan and Iran.

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*North-West Indian Ocean Regional Workshops on
Tsunami Inundation Mapping and Evacuation Planning
Muscat, 21-25 April 2024*

GEO-Inquire description



Geo-INQUIRE started on 1 October 2022. It will provide and enhance access to selected key data, products, and services, enabling the dynamic processes within the geosphere to be monitored and modelled at new levels of spatial and temporal detail and precision.

Geo-INQUIRE benefits from a unique partnership of 51 partners consisting of major national research institutes, universities, national geological surveys, and European consortia. Geo-INQUIRE will enhance and make interoperable the activities of the involved. A portfolio of 150 Virtual Access (VA) and Transnational Access (TA, both virtual and on-site) installations will be offered to the scientific community.

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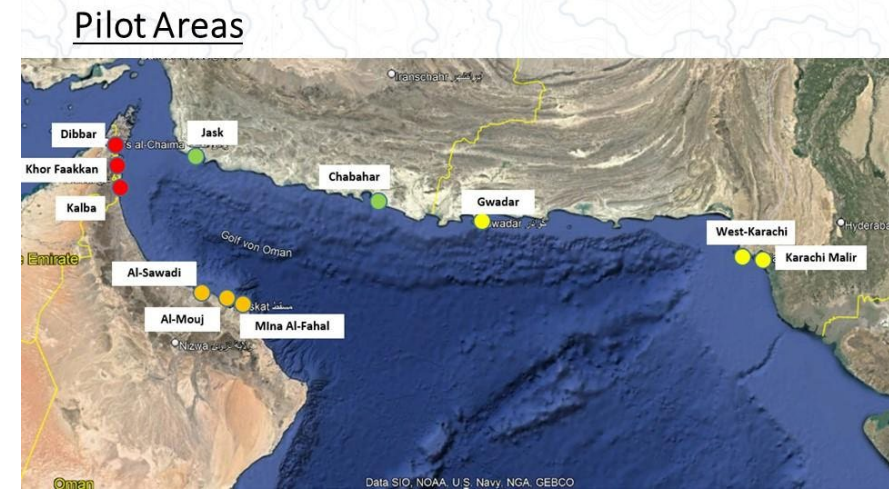


Project description



Cross-Border Hazard: PTHA assessment in Pilot Areas of Pakistan and Iran.

The study will deploy high resolution, high accuracy models (based on surveyed data) for pilot areas in Iran and elevation models integrating SRTM 30M, 1M DEM from stereoscopic images, surveyed data and sounding data from the nautical charts to establish the modelling domains in pilot areas of Pakistan. The DEM is improved by validation against ground survey data for vertical accuracy errors in SRTM. These improved elevation model at a resolution of 10M will serve as primary input data in simulation of tsunami.



The study will develop and use a new combined catalogue of earthquakes in Pakistan and Iran, spanning beyond recorded history to evaluate the mean annual rates of occurrence required for PTHA.

Project description



Cross-Border Hazard: PTHA assessment in Pilot Areas of Pakistan and Iran.

A large number of tsunami events will be simulated using probabilistic tsunami hazard assessment (Ch-PTHA workflow). The outcomes will be hazard curves and maps at the target pilot areas along the coasts of the two cities. The information gained from the study and the developed high resolution hazard maps will be used for better preparedness of the communities and hence to improve resilience.

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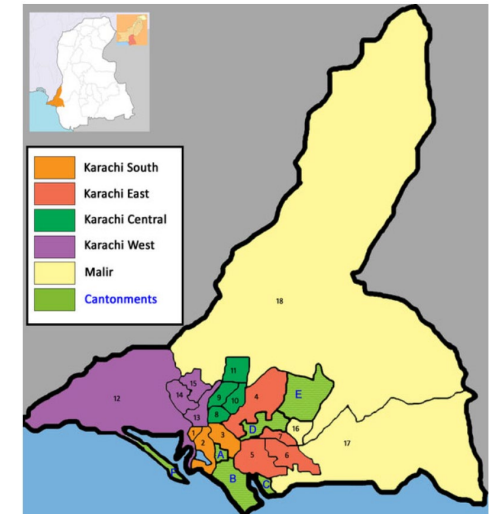


Project description

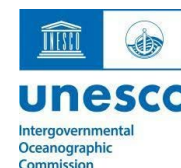


Cross-Border Hazard: PTHA assessment in Pilot Areas of Pakistan and Iran.

- Performing PTHA for the pilot areas of the cities of Karachi and Chabahar while using recently collected high resolution (10 m) bathymetric and topographic grids for the two cities.
- This kind of local scale study has not been carried out in the two cities before.
- The two cities are densely populated port cities and reliable estimates of hazard are necessary for mitigation purposes. Hence, it is essential to possess high-quality tsunami inundation maps.
- The study will not only promote cross-disciplinary work but also promote cross border collaboration to work towards resilient communities.
- A unified study can show many differences and similarities along the coast of Pakistan and Iran in terms of hazard posed to the communities and may lead to further development of unified DRR techniques in the region.



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Project status



Cross-Border Hazard: PTHA assessment in Pilot Areas of Pakistan and Iran.

There are two rounds of review processes; technical and scientific. The proposal has made it successfully through the first round of review. The results of the second round are expected within few weeks.

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THANK YOU