Seasonal assessment of coastal risks of the Moroccan Mediterranean coast between Ksar Sghir and Fnid'q, Morocco.

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The Mediterranean coast between Ksar Sghir and Fnid'q, the most important coastal part of the Tangier-Tetouan-Al Hoceima region, is home to the largest port in Africa "Tangier Med Port". The coastal environment in this region is affected by several factors, including demographic pressure, important economic activities and the impact of climate change.

The objective of this work is to detect coastal areas vulnerable to coastal erosion and especially to assess the impact of climate change on the perspective of an increase in sea level.

In order to achieve this objective, a multidisciplinary approach was adopted, encompassing both sedimentological and mineralogical analysis with the use of GIS tools (Arc Gis and QGis) for data processing and presentation. In our study, we relied on Copernicus data hup and Marine Copernicus.

Several profiles at 2 ranges were sampled seasonally. Over 10 samples were taken. The sedimentological and mineralogical Study of sands allowed us to characterize them and to know the hydrodynamic conditions controlling their transport and their implementation.

Analysis of the coastal dynamics and seasonal variations of the selected beaches revealed a marked regressive trend of the shoreline, particularly during the winter season. This trend is explained by heavy erosion. However, there are a few areas with a tendency for sand accumulation.

The preliminary study of sedimentological and mineralogical data revealed sands rich in quartz and some carbonates rather of continental origin. The presence of some heavy minerals was noted along with organic materials.

Keywords: The coastal zone, the Mediterranean Sea, climate change, seasonal variation, cartography, sedimentology, mineralogy, coastline, GIS.