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Geoarchaeological results on the Northern Peruvian coast: environmental changes and societal responses in the Sechura Desert during the last two millennia

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We present here recent results of a geoarchaeological study on the Northern coast of Peru. Concerning the scientific context, excavation of new or already known archaeological sites in the Sechura Desert, since 2012, revealed the high potential of the area to reconstruct Human-Environment interactions during the last two millennia at least. The present geographical setting with an arid and unoccupied coast contrasts with the past activities, as fishing and prepared fish trade, of prehispanic societies which have occupied the coast of the desert. These populations used some natural resources which are not available anymore nowadays (water, fish, mollusks, wood). A pluridisciplinary approach associating geomorphological, palaeoenvironmental and geoscientific methods, allows to reconstruct the past middles and landscapes in the vicinity of the archaeological sites. Deposits from the filling of the costal depression of Las Salinas closed by a sand bar and from a shore area at the Nunura's bay have been investigated in terms of sedimentary facies, of mollusc isotopic geochemistry, of ostracod identification and of radiocarbon datings. Results show the variability of the environments during the studied period and further during the Holocene, in terms of climate, landscapes or shoreline position, with e.g. succession of several lagoons in the Las Salinas depression. These data are obviously cross-studied with archaeological and archaeozoological data from excavations which confirm and supply environmental scenarios. Through this research, we aim to characterize the origins of environmental changes in this singular region of the world, between palaeoclimatic trends, ENSO events and geomorphological dynamics, and to determine the responses of societies to these latters, in space and time.