



Sediment budgets for some valleys of Provence (France): climate and anthropogenic impacts deduced from the palaeoecological and palaeomorphological records

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Palaeoenvironmental and palaeoecological studies developed in link with archaeological investigations help to better understand the history of the human occupation, of a certain region, within their natural background along the Holocene.

The areas of Martigues (South France) and of the pond of Berre are of high palaeoenvironmental and archaeological interests since we have one of the earliest developments of the agricultural activities recorded for the whole Lower Provence area. A series of stratigraphic trenches dispatched within four catchment basins situated in the Martigues administrative area and three boreholes, with a maximum depth of ca. ten meters (all of them are located in the marine or in the lagoonal depositional sectors), were analyzed and allowed to clearly distinguish the human impact from the climate stress on the sediment transfers.

Therefore, it is possible to observe that in the upper part of the drainage basins: (1) we have a long term soil evolution achieved during the Neolithic, (2) an incision of the hydrological network just before the Bronze Age and torrential dynamics from the end of Bronze Age (2480-2210 Cal BP) and the beginning of the Iron Age.

In the lower part of the drainage basins, in the ria valleys (still affected by a silting up process), we can generally observe that (3) the sedimentation process is significantly slowing down before 7800 cal. BP. Moreover, it is revealed that we have two important, but short, sediment accretion phases during the Early Neolithic, ca. 6752-7155 and 6440-6280 cal. BP. Finally, (5) there is a strength relationship between the sea level change and the rhythms of the sediment accumulation after 8000-7720 cal BP.

The different situations, recorded within the sediments, could be explained by the contrasts of occupation within the different catchment basins and by the major role played by the first grazing activities. From this early period, the sediment accumulation ratios start to decrease with a combined action of the decrease of the material stock and a better land use policy. It is important also to say that the Pleistocene sequence are well preserved in the upper part of the drainage, in contrast they are lacking in the boreholes drilled in the lower drainage basins (e.g. in the ria valleys).