

TERTIARY SEDIMENTARY ARCHITECTURE, CONTROLS AND PALAEOGEOGRAPHIC EVOLUTION OF CENTRAL PORTUGAL

CUNHA, P. PROENÇA Depart. Ciências da Terra, Centro Geociências, Univers. Coimbra, Portugal

The onshore Tertiary of central Portugal (western Iberian margin) reaches 1.1 km thick. It comprises alluvial deposits interfingering with marginal marine siliciclastics, which can be grouped into several unconformity-bounded stratigraphic units (UBS). Sedimentology and biostratigraphy (continental and marine taxa) allowed the interpretation of the sedimentary controls balance and detailed the palaeogeographic evolution. The main unconformities are angular discordances and the others result from the interplay between tectonics, eustasy and climate. They can be recognised throughout the Mondego and Lower Tagus Tertiary basins and reflect large changes in the evolutionary trends of the sedimentary infill and in the palaeogeography. Each UBS includes one or more depositional sequences, mainly controlled by eustasy but faulting can be responsible for significant local or regional changes in facies and thickness. Tectonic and sedimentary stages are recognised: 1) late Campanian-early Ypresian - volcanism, diapirism (N-S) and dominant NE-SW faulting, with fluvial sediments (recycled) drained to NW; 2) middle Eocene-Oligocene - erosion of the Hercynian basement promoted by NNE-SSW and NE-SW distensive faulting resulted in coarse siliciclastic deposition (endorreic alluvial fans in the Lower Tagus basin and braided fluvial systems in the Mondego basin); 3) Aquitanian-early Tortonian - sandy braided fluvial systems drained both basins into estuaries; 4) middle Tortonian-Quaternary - intense compression led to basin inversion (uplift reaching 1 km, controlled by NE-SW reverse and NNE-SSW strike-slip faults); until Piacenzian sedimentation was endorreic.