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GEO-ENVIRONMENT OF THE THU BON ALLUVIAL PLAIN, CENTRAL VIETNAM IN RELATION TO ITS LATE HOLOCENE LANDFORM EVOLUTION

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Abstract

Objective of this study is to make clear the geo-environment of an alluvial lowland in relation to its landform evolution during the late Holocene. Study area is the Thu Bon alluvial plain, central Vietnam. Micro-landforms of the plain in relation to the flood condition were classified from their elevation and terrain relief based on SRTM DEM. Geological sequences of the lowland were investigated based on the collected boring logs and the results of the hand auger drilling survey. Landforms of the plain are characterized by the floodplain with numerous natural levees and flood basins surrounded by the levees. Distinct coastal barriers as sand bars and dunes develop along the coast and the mouth of the Thu Bon river is partially blocked up by the barriers. Paleo-embayment during the middle Holocene were found in the areas along the lowest reaches of the Thu Bon river and south of Da Nang city, and the areas are corresponding to the vulnerable flooding areas of the plain. The findings of this study revealed the close interaction between the geomorphologic characteristics and flood evidences, and the geomorphic characteristics are closely related to the sedimentary sequences and landform evolution of the plain during the late Holocene. Flooding and sedimentary mechanism causes the dynamic reformation of fluvial and coastal landforms; and those geomorphologic features inversely affect flood situation.

Key words: alluvial plain, geo-environment, landform classification map, flood hazard, sedimentary sequences, Holocene.