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Characteristics of dune-paleosol-sequences in Fuerteventura. – What should be questioned?

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The northern part of Fuerteventura is characterized by large dune fields. We investigated dune-paleosol-sequences in four pits to establish a robust stratigraphy and to propose a standard section. An interaction of processes like dune formation, soil formation and redeposition of soils and sand are most important to understand the principles of landscape development in the study area. To our mind a process cycle seem to be important: First climbing-dunes are formed by sand of shelf origin. Then soil formation could have taken place. Soil and/or sand were then eroded and deposited at toe slope position. This material in turn is the source of new sand supply and dune formation. The described cycle may be repeated several times and this ping-pong-process holds on. The results are sections composed of dune layers, paleosols and colluvial material interbedded. Fundamental questions still remain unanswered: Is climate change responsable for changes in process combination (e.g. from dune formation to soil formation)? Or are these features due to divergence phenomenon, where different effects/results (dune and soils) may be linked to similar causes (here: climate)?
Assuming that different features (soils and dunes) were formed under one climate, increasing soil forming intensity could be mainly a function of decreasing sand supply. This in turn could be caused by reduced sand production (s. ZECH et al. accepted).
However geochemical data and mollusc assemblages point to changing environments in space and even climate modifications in time.