



Does land use or climate dominate desertification in the Levant? A critical re-examination from Northern Jordan.

B. Lucke (1), M. Schmidt (1), R. Bäumler (2)

(1) Chair of Environmental Planning, Brandenburg University of Technology Cottbus, P.O. box 101344, 03013 Cottbus, Germany

(2) Institute of Geography, Friedrich-Alexander University of Erlangen-Nürnberg, Kochstr. 4/4, 91054 Erlangen, Germany

It is widely accepted that historic land use caused significant soil erosion in cultural landscapes of the Levant. Based on this idea, extensive development projects were launched, aiming to implement soil conservation measures in order to combat desertification. However, many of these projects could not achieve their aims. In this context, our detailed study of soil development and colluvia in the Decapolis region (Northern Jordan) revealed patterns of soil development which point to climate change as the main agent of landscape change. It seems that land use played a significant role for soil development, but did not simply lead to deterioration. Land use intensities and periods might be reconstructed according to soil properties and material culture, as distinct soil development stages are present on one and the same geological and relief units, while historic sources, aerial photos and archaeological material suggest a connection of soil development and land use. Accelerated erosion is present only locally and happened nearly exclusively in form of land slides. Buried red Mediterranean soils and wadi sediments point to droughts being most important for erosion, as these periods seemingly witnessed an increased number of extreme precipitation events, too. Future management plans should focus on integrated land management practice rather than sole soil conservation measures, which proved to have little effect.