



Quantification of the wind-induced material in arid mountainous soils of the Richtersveld, South Africa

A. Gröngröft (1), J. Willer (1) and A. Petersen (1)

(1) University of Hamburg, Institute of Soil Science, Germany
(a.groengroeft@ifb.uni-hamburg.de / Fax: +49 40 42838-4395)

The Richtersveld National Park is part of a mountainous region of the Namib desert at the NW border of the Republic of South Africa. The soils have developed from a variety of different rocks and are predominantly shallow and rich in coarse fragments. Acc. to the WRB most of the soils can be classified as leptosols, regosols and calcisols with only few signs of actual pedogenesis. Analyses of the grain size distribution and the geochemical composition were conducted to quantify the amount of airborne particles. From the comparison of the elemental composition of bedrock, subsoil and topsoil samples it could be shown that within the soils considerable amounts (40 – 50 %) of airborne material in the grain size of silt and fine-sand were present. In some locations another 20-30 % were classified as eroded material from upslope origin. The even depth distribution of the airborne material and the lack of actual deposits indicated that the aeolian deposition took place in the past and was followed by intensive mixing processes. Air induced fine earth particles therefore have a strong impact on the development and the properties of the soils of this region.