



Analysing slope failures as a decision support for soil bioengineering techniques

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Nowadays soil bioengineering measures are becoming more and more state of the art for solutions of engineering problems, in particular for ecological river engineering and stabilising shallow slope failures and surface erosion. Engineering problems are solved in an ecological and sustainable way and constructions are integrated aesthetically in the landscape. Living plants and auxiliary materials are used in a multitude of techniques. Plants are selected for criteria such as pioneer plant character, dense and deep rooting system, potential of adventitious rooting system and fast and simple propagation. The selection of the techniques is based on an assessment of different processes on the site for the function needed to stabilise and protect the slope. Slope processes have to be considered as complex interactions of vegetation types, soil and geomorphological parameters. The results from analysing of this complex situation can assist in a first step the definition of the scope of a soil bioengineering solution and in a further step the selection of a suitable soil bioengineering technique. Behind other criteria, such as availability of suitable plants and auxiliary materials and socio economical resources this is fundamental for the optimisation of the function of the used bioengineering technique.

The presentation shows several case studies which are carried out at characteristic slope sites within the torrent catchment area of the Trattenbach (Salzburg, Austria). The procedure from the detection and analysis of different slope failure sites as a decision support for the selection of the soil bioengineering methods will be presented.