



Monitoring tools for assessing the effectiveness and resilience of geotextile-supported soil bioengineering systems – a conceptual approach

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Geotextile-supported systems are widely accepted as a convenient facility for erosion control measures. Technical auxiliaries such as geotextiles are typically used where difficult site conditions and human interventions, as a result of construction activity, require instant protection until its tasks as erosion-resistant layer can be assumed by vegetation. However, erosion control within an initial phase is directly related to restoration techniques whereas vegetation plays a major role for sustainable slope protection.

To obtain desired system development over time, periodic monitoring can serve as quality assurance as well as economically viable resource. Practice shows that in-time interventions and maintenance activities have been more successful with regard to vegetation development and economic feasibility than missing supervision strategies. From the maintenance personnel perspective, monitoring tools are required to be designed for easy and valuable handling and processing. On that account specific tools for assessing the functional capacity of combined erosion control measures have been developed.

One of these tools takes advantage of digital image processing for analyzing vegetation cover in a simple but effective way. Another tool serves as classification appliance based on condition data input (e.g. degree of vegetation cover, erosion damage) to gain automated reference concerning system status, resilience and presumable future development. Beside system assessment these appliances may be considered as contribution to quality improvement and sustainable ecosystem restoration and slope protection. At the conference the practical application and of these tools are demonstrated and its substantial advantages are displayed.