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Nature based solutions against environmental risks: biodegradable geosynthetics

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Landslides threaten transportation ways infrastructure, ex. after deforestation. Geotextiles on mountain sites were observed in France, including at the COST action TU1401 "Renewable energy and landscape quality" (COST RELY) final conference which at the UNESCO geoheritage of Chaîne des Puys (Pidon et al, 2016), presented in the EGU geoheritage sessions as well. This paper presents research on biodegradable geosynthetics which are also able to stabilise ground in a different large scale setting after laboratory setting. The large scale setting is stabilisation of flying ash at the thermo power of Mintia and Doicesti in Romania (Siminea and Bostenaru, 2008, Bostenaru et al, 2010), right before closure. Nature based solutions gained attention in the last decade and the blue-green infrastructure approach is reevaluated in this presentation. Preda (2011) dealt with the degradation of soil in these two locations. Pleasea (2011) dealt with how to reactivate the industrial rural area of the Doicesti thermal power as alternative to demolition, which however happened late 2020. The location of both Mintia and Doicesti is examined also from the point of view of the vicinities (the former court archeological remains in Doicesti and the neighbouring Targoviste and the castle ruins and Modernist architecture in Deva near which Mintia is). Another reevaluation is the turn towards renewable energy (see COST RELY). With this turn thermopower, one of the most important in Romania along with hydropower which has been examined in the action, needs to be rethought. The IBA Emscher Park (Shaw, 2002, Bostenaru, 2007) in the Ruhr area in Germany was a participative large scale retrofit in the 1990s of a former coal mining region and therefore the high tech renewable energy among converted industry buildings, some of which UNESCO heritage. Experience in urban renewal of industrial buildings in Germany will be compared with success stories in water industry connected to slope greening at the water works in Suceava.

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