The RECONDES project aimed to produce practical guidelines on use of vegetation to mitigate desertification and land degradation by developing spatial strategies related to the connectivity patterns. It involved research into processes and vegetation, combining analysis of sediment connectivity with characteristics and conditions for growth of plants to produce effective and sustainable methods of reducing erosion and sediment flux. It was based on the premise that much of the erosion and sediment flux takes place along particular pathways which can be targeted to reduce the connectivity and therefore soil loss.

The analysis of connectivity involved developing methods of mapping and measuring connectivity at various scales from plots to catchments.

Analysis of sediment connectivity in a variety of types of channel including perennial meandering channels (UK, France- with T Depret) and ephemeral systems (Spain, South Africa- with C Oldknow). Involves measurement and modelling of erosion, sediment flux and deposition; calculation of sediment budgets; assessment of effective events; development of evolutionary models of sediment fills.

A booklet of practical guidelines on reduction of connectivity by vegetation was produced (http://www.port.ac.uk/research/recondes/practicalguidelines/)

Aims

Methods

Results

 CONNECTIVITY IN RIVER CHANNELS

Analysis of influence of connectivity on flood characteristics and on erosion propagation.

MODELLING

Modelling of flow and sediment routing, channel hydraulics and influences on pathways and stores. Testing of models by field validation.

Quantification of Connectivity

Development and testing of indices of connectivity and quantification of variability; quantitative analysis of relation of influencing factors at a range of scales; testing of upscaled and downscaled techniques.

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KEY PUBLICATIONS

Depret T et al., 2014. Assessment of the degree of coarse sediment connectivity on a meander reach of the Cher river (France). Paper to be presented at SHF Colloquium on Small Scale Morphological Evolution of Coastal, Estuarine & River Systems, Nantes (October).


Hooke, J.M. and RECONDES Team (Editors) 2008. The RECONDES Project Team, The Connectivity Reduction Approach. LEUEN.

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European Commission, 39pp
