

MSc thesis proposal

as part of the *International Exchange Erasmus Student Network* <http://www.esn.org>
at *Montpellier SupAgro* <http://www.supagro.fr/web/en/>

Modelling the role of land use management and landscape design in soil protection against erosion in Mediterranean catchments.

Research Unit : UMR [LISAH](#), Montpellier (France)

Address : Campus Montpellier SupAgro, 2, place Pierre Viala 34 060 Montpellier Cedex

Supervisor :

- [Anna Smetanova](#), Post-doc Agreenskills/INRA, UMR LISAH - anna.smetanova@supagro.inra.fr

Advisors :

- Yves Le Bissonnais, DR INRA, UMR LISAH – lebisson@supagro.inra.fr
- Stéphane Follain, MCF Montpellier SupAgro, UMR LISAH – follain@supagro.inra.fr

Duration : maximum 6 month within the period January - September 2015

Description :

Our agricultural activities contribute significantly to loss of soil resources, that are inevitable to feed the Earth's growing population. The ongoing climate change causes increase in the severity of the rainfalls in many regions. It questions the ability of the land use management and landscape design to protect soils against erosion. This MSc project applies the [LANDSOIL](#) model to investigate the soil protection function of different land use scenarios in two [Mediterranean catchments](#) under different climate conditions, in order to provide sustainable and climate proved land use solution.

Previous knowledge of ArcGis, R and modelling is an asset for conducting the research in the [LISAH](#) laboratory in sunny Montpellier in France, under the supervision of [Anna Smetanova](#). The 6 month internship (in due between January and September 2015) will be further advised by Yves Le Bissonnais and Stéphane Follain and will be rewarded 430€ netto/month.

ABOUT US

We are members of the Erosion research Team of the LISAH laboratory in sunny Montpellier in France.

Anna Smetanova <http://fellows.agreenskills.eu/fellows/anna-smetanova/>
UMR LISAH <https://www.umn-lisah.fr/>

ABOUT LANDSOIL

LANDSOIL is a model developed in our research group in order to model soil water and tillage erosion.

Landsoil project <https://www.inra.fr/landsoil>

Ciampalini, R., Follain, S., Le Bissonnais, Y., (2012). LandSoil: A model for analysing the impact of erosion on agricultural landscape evolution. *Geomorphology*, 175–176, 25–37.

David, M., Follain, S., Ciampalini, R., Le Bissonnais, Y., Couturier, A., Walter, C., (2014). Simulation of medium-term soil redistributions for different land use and landscape design scenarios within a vineyard landscape in Mediterranean France. *Geomorphology*. 214,10-21.

ABOUT CATCHMENTS

The catchments are part of the international R-OSMed network and the study sites will be in different Mediterranean countries

R-OSMed network <https://sites.google.com/site/rosmedsicmed/home/study-sites-title/study-sites>