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## ABSTRACT BOOK

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JULY 28, 2015  
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# Symposia Abstracts



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## Experimental validation and regulatory application of USLE/RUSLE in Uruguay

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**Abstract:** Soil erosion is the main environmental problem that concurrently reduces soil productivity in Uruguay. From 1980 -2001, three erosion sites (soils) with “Wischmeier” runoff plots were monitored in Uruguay, generating a data base of 376 erosive storms and 144 runoff plots-years, during 16 effective years of data generation. With 17 combinations of sites-soil use and management systems, the linear regression between annual average measured soil erosion (EroExp) and USLE/RUSLE estimates was:  $EroEst = 1.485 + 0.96 EroExp$ ,  $r^2 = 0.96$ . Also, in one site a regression line was obtained between experimental Soil Loss Ratios (SLR) and SLR estimated with the RUSLE algorithm:  $SLRRusle = 0.015 + 0.016 SLRExp$ ,  $r^2 = 0.83$ , during twelve 15 days periods from May-Dec. 1997, in 6 different soil use and management systems. Once the model was validated, a software (EROSION 6.0) was developed for users (<http://www.fagro.edu.uy/~manejo/>). In 2008 soil management and conservation legislation updates began and were fully applied in 2013, after a period of training for farmers and agronomists. Cropland farmers must have a soil use and management plan (SUMP) developed by a certified agronomist that covers the expected rotation period. The SUMP has to demonstrate that the estimated annual erosion rate is below the T value established for the soil used. Each piece of land has an official approximate soil map at 1:20x103 scale, from which the Agronomist can get the soil information for each plan. The SUMP is presented on-line and it constitutes an implementation protocol that can be analyzed and monitored by the official authority (Ministry of Agriculture). Those in violation can be fined according to the regulation. At the end of the 2013-14 agricultural year, over 95% (1.438.168 há) of the Uruguayan cropland implemented the SUMPs, which is considered a success relative to mitigating soil erosion and collateral environmental impacts of runoff.

**Subject Area:** Conservation Economics and Policy \*; Adaptive Management of Conservation Efforts; Conservation Models, Tools, and Technologies

*\*denotes primary author and subject area*