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Soil mapping and processes modelling for sustainable land management: a review

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Soil maps and models are fundamental for a correct and sustainable land management (Pereira et al., 2017). They are an important in the assessment of the territory and implementation of sustainable measures in urban areas, agriculture, forests, ecosystem services, among others. Soil maps represent an important basis for the evaluation and restoration of degraded areas, an important issue for our society, as consequence of climate change and the increasing pressure of humans on the ecosystems (Brevik et al. 2016; Depellegrin et al., 2016). The understanding of soil spatial variability and the phenomena that influence this dynamic is crucial to the implementation of sustainable practices that prevent degradation, and decrease the economic costs of soil restoration. In this context, soil maps and models are important to identify areas affected by degradation and optimize the resources available to restore them. Overall, soil data alone or integrated with data from other sciences, is an important part of sustainable land management. This information is extremely important land managers and decision maker's implements sustainable land management policies. The objective of this work is to present a review about the advantages of soil mapping and process modeling for sustainable land management.

References

Brevik, E., Calzolari, C., Miller, B., Pereira, P., Kabala, C., Baumgarten, A., Jordán, A. (2016) Historical perspectives and future needs in soil mapping, classification and pedological modelling, Geoderma, 264, Part B, 256-274.

Depellegrin, D.A., Pereira, P., Misiune, I., Egarter-Vigl, L. (2016) Mapping Ecosystem Services in Lithuania. International Journal of Sustainable Development and World Ecology, 23, 441–455.

Pereira, P., Brevik, E., Munoz-Rojas, M., Miller, B., Smetanova, A., Depellegrin, D., Misiune, I., Novara, A., Cerda, A. (2017) Soil mapping and process modelling for sustainable land management. In: Pereira, P., Brevik, E., Munoz-Rojas, M., Miller, B. (Eds.) Soil mapping and process modelling for sustainable land use management (Elsevier Publishing House) ISBN: 9780128052006