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Agricultural Soils in Spain: mapping the problems that threaten them, and the ecosystem services they provide.

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Spain, with 16,902,421 hectares under cultivation, ranks fourth in agricultural production in Europe and tenth worldwide. The weight of the agricultural sector represents 9.2% of the total GDP of the Spanish economy, and it is the sixth economy that contributes the most employment to the European agri-food sector. Knowing the risks associated with the use of agricultural soils, as well as the services that these soils provide to the ecosystem, is of great importance to address problems associated with their management. In the context of the SERENA project (Soil ecosystem services and soil threats modelling and mapping), funded by the European Joint Program on Soil (EJP-Soil), we present, on the one hand, functional indicators expressed in the form of maps of the bundles that are generated between individual soil threats:

- Agricultural Soils / Soil Compaction
- Agricultural Soils / Soil Erosion Rates
- Agricultural Soils / Soil Drought.

Or combined soil threats:

- Agricultural Soil Compaction / Agricultural Soil Erosion Rates

As well as the bundles among the services that agricultural soils provide to the ecosystem, such as:

- Primary production/ Organic carbon content in the soil
- Agricultural Soils / Water retention capacity
- Agricultural Soils / Important areas for the conservation of birds and biodiversity.

These indicators can be useful in the formulation of public policies, in decision-making by end-users, and in the dissemination and transfer of knowledge by social media.