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Mediterranean Agricultural Soil Conservation under global Change: The MASCC project.

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The MASCC project (2016-2019, http://mascc-project.org) aims to address mitigation and adaptation strategies to global change by assessing current and future development of Mediterranean agricultural soil vulnerability to erosion in relation to projected land use, agricultural practices and climate change. It targets to i) assess the similarities/dissimilarities in dominant factors affecting the current Mediterranean agricultural soil vulnerability by exploring a wide range of Mediterranean contexts; ii) improve the ability to evaluate the impact of extreme events on both the current and projected agricultural soil vulnerability and the sediment delivery at catchment outlet; iii) evaluate the vulnerability and resilience of agricultural production to a combination of potential changes in a wide range of Mediterranean contexts, iv) and provide guidelines on sustainable agricultural conservation strategies adapted to each specific agro-ecosystem and taking into consideration both on- and off-site erosion effects and socio-economics issues. To achieve these objectives, the MASCC project consortium gather researchers from six Mediterranean countries (France, Morocco, Tunisia, Italy, Spain and Portugal) which monitor mid- to long-term environmental catchments and benefit from mutual knowledge created from previous projects and network. The major assets for MASCC are: i) the availability of an unrivalled database on catchment soil erosion and innovative agricultural practices comprising a wide range of Mediterranean contexts, ii) the capacity to better evaluate the impact of extreme events on soil erosion, iii) the expert knowledge of the LANDSOIL model, a catchment-scale integrated approach of the soil-landscape system that enables to simulate both the sediment fluxes at the catchment outlet and the intra-catchment soil evolving properties and iv) the multi-disciplinarity of the involved researchers with an international reputation in the fields of soil science, modelling changes in soil properties, erosion and sediment transport, agronomy and socio-economy.
Beyond the description of the MASCC project, this presentation will describe the first results on the variability of soil erosion observed in the monitored catchments and on the impact of major events on the current soil erosion delivered at catchment outlet. As a starting project, MASCC will foster the involvement of all additional participants that would like to contribute to the project.

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Keywords: Soil erosion, Agriculture, Conservation, Global change, Mediterranean area.