Geophysical Research Abstracts
Vol. 21, EGU2019-18496, 2019
EGU General Assembly 2019

Initial planning to development of mitigation measures, ecosystem services and climate adaptation in mediterranean agricultural drylands

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This document defines the most important lines to be included in the final document that will summarize and discuss the results of the monitoring actions foreseen in the Life AMDRYC4 project.
Mediterranean rainfed agricultural systems have a relevant role as carbon sinks, improving soil quality, increasing biodiversity and providing ecosystem services. However, the circumstances are nowadays negative for these systems to work suitably, their situation being critical. The soil is degraded by the mineralization of organic matter, the loss of structure and the increase of erosion, among other causes, leading to a decrease in fertility and a loss of productivity, with the consequence of abandonment of the rural population.
The introduction of good agricultural practices, which incorporate the addition of organic matter to the soil and the restoration of natural vegetation, increase biodiversity and soil quality, slowing desertification processes and contributing to the 4 ‰ initiative. This is part of the different measures proposed for the mitigation and adaptation to climate change. The reliability and results obtained with these proposals have to be assessed and evaluated through indicators.
The work plan that is proposed, consists of 6 stages. The first step is to establish the adaptation strategy of rainfed agriculture to the CC, which involves gathering information on the current status of the EASM, defining measures to adapt the EASM, prioritizing these measures and quantifying the investments required. The second stage is the diagnosis of the current situation of the selected soils, with a sampling design, sampling and field work, obtaining parameters in the field as well as suitable analytical parameters in the laboratory. The third stage consists of obtaining base data: humidity, permeability, temperature, bulk density, infiltration, pH, electrical conductivity, assimilable metals (Fe, Mn, Zn, Cu, Pb and Cd), P and K assimilated, granulometry, calcium carbonate, N and total organic C. The fourth stage is aimed for obtaining indicators of soil quality, proposing state indicators and transformations of salinity, alkalinity, contamination, fertility, erosion and organic carbon in the soil. The fifth stage is the development of ecosystem services and mitigation indicators based on the biodiversity, desertification and organic carbon indicators of the transformative soil. Finally, from the results of the fifth stage, the adaptation to climate change indicator is obtained.
The analytical methodology to be applied to obtain all the basic data and to develop and apply the proposed indicators is included.

Acknowledgment: LIFE16 CCA/ES/000123 – LIFE AMDRYC4