



## **Developing mechanisms for estimating carbon footprint in farming systems**

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Sustainable land management is critical to avoid land degradation and to reclaim degraded land for its productive use and for reaping the benefits of crucial ecosystem services and protecting biodiversity. It also helps in mitigating and adapting to climate change. Land and its various uses are affected severely by climate change too (flooding, droughts, etc.). Existing tools and technologies for efficient land management need to be adapted and their application expanded. A large number of human livelihoods and ecosystems can benefit from these tools and techniques since these yield multiple benefits. Disseminating and scaling up the implementation of sustainable land management approaches will, however, need to be backed up by mobilizing strong political will and financial resources. The challenge is to provide an integral decision support tool that can establish relationships between soil carbon content, climate change and land use and management aspects that allow stakeholders to detect, cope with and intervene into land system change in a sustainable way. In order to achieve this goal an agro-ecological meta-model called CarboLAND will be calibrated in several plots located in Andalusia region, Southern Spain, under different scenarios of climate and agricultural use and management. The output will be the CLIMALAND e-platform, which will also include protocols in order to support stakeholders for an integrated ecosystem approach, taking into account biodiversity, hydrological and soil capability, socio-economic aspects, and regional and environmental policies. This tool will be made available at the European context for a regional level, providing user-friendly interfaces and a scientifically-technical platform for the assessment of sustainable land use and management.