

**Thematic Actions****Coordinating Universities for the Proposal: UCM and UPM**

Title of Action	Development of an Integrated Agricultural Systems Consortium: Sustainability, Environmental Services and Risk Management		
Participating partners	UPM, UCM, INIA, CIEMAT	Other participants	MARM, CEDEX, ENESA, AGROMUTUA, AGROSEGURO
Personnel involved (indicate institution)	UCM (Geology) UPM-CONSORCIO AGRISOST, AgSystems Group, COAPA Group, CSIM Group, MGP Group CIEMAT INIA		
Start date	1-1-2010	End date	
Cluster	Agri-food and Health	Other clusters	Global Change and New Energies
Areas of action	Research / Teaching Improvement and EHEA Deployment / Knowledge Transfer / Local and Regional Interactions		
Location	ETSIA-UPM		
Infrastructures involved	<ul style="list-style-type: none"> - Laboratories: <ul style="list-style-type: none"> Ecotoxicity of Atmospheric Pollution (200 m²)- CIEMAT Conservation Systems (100 m²) INIA Agricultural Systems (50 m²)- AgSystems Group – ETSIA Computing and Simulation Laboratory (80 m²)- AgSystems-ETSIA Agricultural Chemistry (200 m²) COAPA Group - ETSIA Soil Quality (300 m²)- CSIM Group - ETSIA Plant Breeding (150 m²)-MGV Group - ETSIA Plant Anatomy (50 m²) Water Quality (100 m²) Near Infrared Reflectance (NIR) Technology for Fruit and Vegetable Analysis (50 m²) General Laboratory (200 m²) Field experiments in associated farms used by: GECA-CIEMAT, COSVE-INIA, AgSystems-UPM, CSIM-UPM y COAPA-UPM - CEIGRAM (500 m²) - Experimental Plots (La Moncloa, Madrid): 7 ha. - Animal production barns (300 m²). - Agricultural equipment machinery; storage facilities (1,000 m²) - Geodynamics Department of the Faculty of Geology (UCM) 		
Keywords	Environmental Management; Risk; Agroecosystems; Greenhouse gases, C Sequestration		



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<p>Objectives:</p> <ol style="list-style-type: none"> 1. Agricultural Research and consultancy: techniques to maximise productivity, improving water and nutrient use efficiency, reduction of GHG emissions and increase of C sequestration by agricultural systems. 2. Introduce new agricultural insurance products for the Spanish and global (FAO) production systems, including environmental and drought insurances. 3. Analyse and propose instruments for environmental and risk management, and climate change impact assessment in agriculture for cropping systems, animal production and ecosystems. 	
<p>Description of the action:</p> <p>UPM, through the ETSI Agricultural research groups (AgSystems, COAPA, CASAM, MGP) together with the CEIGRAM will identify environmental impacts related to the management of agricultural systems, in current and future climates, and present mitigation and adaptation strategies. An integrated approach is essential to the design of sustainable systems. Collaboration between the UPM and research groups from CIEMAT and INIA will enhance research into the analysis of conservation agriculture and agro-forestry systems.</p> <p>Economic implications of new insurance products will be evaluated with collaboration of the Spanish Office of Climate Change and the MCCL CEI-Moncloa; their use will be proposed to ENESA. AGROSEGURO will ensure these new insurance lines are adopted in Spain, and they will be further presented to other countries by ENESA, which is responsible for transferring these new environmental insurance products to governments of other countries that may potentially be interested in implementing new types of environmental insurance.</p>	
<p>Key Planned results:</p> <p>Publications and Internationalisation:</p> <p>115 SCI publications in 5 years.</p> <p>Continued participation in current European projects and new collaborations.</p> <p>Teaching:</p> <p>Postgraduate programme: Agro-environmental Technologies for Sustainable Agriculture.</p>	
<p>Rationale for the action:</p> <ul style="list-style-type: none"> • Deeper knowledge of key sustainability aspects of agricultural systems from a global and multidisciplinary perspective • Develop technologies and techniques that maintain productivity while minimising impacts. • Impact of climate change on economic activities and its environmental repercussions. 	
<p>International aspects:</p> <ol style="list-style-type: none"> 1. The characteristics of Mediterranean agro-ecosystems and the high vulnerability of natural resources (water, soils) mean that the techniques developed in this project may be exported to other countries in semiarid areas. Work will be sought with other consortia. 2. The Iberian Peninsula is especially sensitive to climate change because of its geographical location, and has become an area of interest for contrasting climate and impact models. 	
<p>Planned impact:</p> <ul style="list-style-type: none"> • Development of sustainability indicators for agriculture. • Development of tools for agricultural and environmental risk management to attain a productive and sustainable agriculture. • Development of mitigation and adaptation strategies of agro-ecosystems to climate change. • New concepts and products based on long standing Spanish experience in agricultural insurance (over 30 years). 	