

**IntegralCarbon Development and global enforcement of GHG capture photobioreactors in agroindustrial activities.**



<b>Expedient</b>	LIFE13/EVN/ES001251	<b>Date</b>	01-JAN-2014 to 31-DEC-2016	<b>Location</b>	Madrid-Extremadura
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<b>Consortium</b>	Asociación Vitivinicola de Uclés	Keppler Ingeniería y ecogestión		Fundación General de la Univ. Valladolid	
	Universidad de Valladolid	Centro Tecnológico Nacional agroalimentario extremadura			
<b>Objective</b>	<p>The main objective of the project is to demonstrate the climate-mitigation efficiency of agro-industry activities based on GHG capture by cultivated native algae. A soil bio-improver will then be produced.</p> <p>To meet this objective, the project will develop a cultivation system of autochthonous algae harnessing waste from different agro-industries: wineries, cheese producers and cattle. The selection of the algae and cyanobacteria species will be carried out according to, their GHG storage capacity, among other considerations.</p> <p>Once the algae species are chosen, they will be cultivated in two newly developed mobile cultivation plants (photobioreactors), which will be fed with liquid waste from two wineries and a cheese producer. The final result will be algae biomass which will be applied as powder soil bio-improver in agricultural, forestry land as well as in areas in process of soil remediation.</p> <p>In short, the project aims to capture GHGs, reuse waste from two agro-industries and reduce the use of mineral and synthetic fertilisers in agriculture, forestry and soil remediation.</p>				
<b>Expected results</b>	<ul style="list-style-type: none"> <li>• Construction of versatile and mobile prototypes for waste pre-treatment cultivation of the bioreactor of algae;</li> <li>• Cultivation of 30m<sup>3</sup> of algae for use in waste pre-treatment process and capture of the equivalent of 187 tonnes of carbon a year;</li> <li>• Reduction by 40-65% per ha of the carbon footprint in agriculture through partial substitution of mineral nitrogen fertilisation;</li> <li>• Demonstration of the real economic cost of including these prototypes, to mitigate GHG in the agro-industrial sector, as an integrated management of waste and GHG emissions;</li> <li>• Demonstration of the versatility of these prototypes in agro-based industries that emit GHGs and generate waste; and</li> <li>• Demonstration of the socio-economic benefits from the new technology, particularly in terms of improving business competitiveness in the agro-industry.</li> </ul>				