
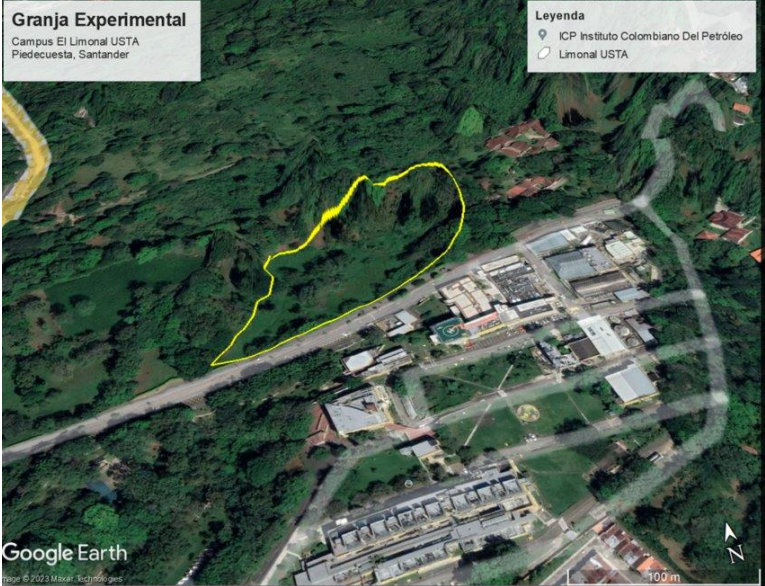


5.16 Santo Tomás University of Bucaramanga

<p>Partners</p>	
<p>Main objective</p>	<p>Generation and execution of programs, projects, initiatives of research, development, innovation, appropriation of science, technology and innovation, entrepreneurship, training and technical assistance on issues of interest to the parties, which allow leveraging the technological development of the region.</p>
<p>Specific objectives</p>	<ol style="list-style-type: none"> 1. Develop research, technology and innovation projects in renewable energies, agribusiness and ecosystem services: water, biodiversity, food security. 2. Develop training programs for the advancement and management of science and technology in topics of common interest to the parties. 3. Develop, apply and adapt national or foreign technologies that promote, promote, improve and support the decarbonization goals of the ECOPETROL Business Group, through the establishment of the agroforestry model baseline as a strategy for the capture of carbon in soil and biomass. 4. Promote, promote, execute or document carbon sequestration projects in soil, root biomass, aerial biomass, for agroforestry and agrosilvopastoral systems. 5. Formulate, design and conceptualize renewable energy generation opportunities using existing resources such as photovoltaics, hydropower and biodigesters
<p>Scopes</p>	<ol style="list-style-type: none"> 1. Formulation of a protocol for quantification and monitoring of carbon in cocoa agroforestry systems as a contribution to the Greenhouse Gas mitigation strategy in the department of Santander and areas of interest of Ecopetrol, based on the baseline established in AC1. 2. Strengthening of technical skills in cocoa producers for sustainability through training of a cohort of extensionists – pilot program for Santander – for cocoa production in sustainable agroforestry systems. 3. Generation of innovation strategies of peasant economy models through the addition of value in the transformation of cocoa. 4. Development of integrated production alternatives to Cocoa Agroforestry Systems, and the maintenance of ecosystem services other than carbon sequestration. 5. Field evaluation of carbonaceous materials from the O&G industry as soil conditioners that optimize crop development and carbon sequestration in cocoa agroforestry models.

	<p>6. Development of a pilot renewable energy system and low emissions (hydrokinetic energy) that validates its potential as a strategy for the mitigation of climate change replicable in productive systems of mountainside areas, based on the design of the model carried out in AC1.</p>
<p>Geographical location</p>	<p>El Limonal Experimental Farm. USTA Campus- El Limonal Piedecuesta, Santander</p> 
<p>Ecosystems on which actions are developed</p>	<p>Cocoa Agroforestry Systems (SAF)</p>
<p>Social participation scenarios</p>	<p>Training to cocoa communities in the area of influence of Ecopetrol-ICP through extension course, where best practices in cocoa crops will be socialized for the benefit of green bonds for CO2 capture and bioeconomy practices for the use of agro-industrial waste.</p>
<p>Main results</p>	<ol style="list-style-type: none"> 1. Development of strategies for monitoring and calculating carbon in SAF cocoa 2. Development of a bank of ideas for the benefit of Cacao. 3. Establishment of experimental ecosystem services of SAF cocoa in greenhouse and clonal crops of species adaptable to Piedecuesta soils. 4. Study of soil conditioners through the use of carbonaceous materials generated in the refining industry, identifying the best formulations for the growth of timber species. 5. Generation of a prototype of a hydrogenerator with a capacity of 25KV developed locally and adapted to the conditions of the cocoa farms.