

**Project Progress 2019**  
**Universidad Nacional Agraria, Managua, Nicaragua**  
Ulises Blandon, UNA

**Certificate Course (Output 1)**

Activities: Contents of the three blocks of the course are in preparation

**Block 1:** Traditional knowledge – Good showcases (see fact sheet below)

**Block 2:** Aspects of biodiversity

Combining biodiversity and plant resistance and their role in the functioning of agroecosystems

**Block 3:** Methodology

- Surveys for producers
- Data field sheets
- Monitoring of temperature, relative humidity and rainfall

**Traditional knowledge is integrated in curricula (Output 2)**

- Two undergraduate programs: Agronomy and Plant protection
- Master degree program in Agroecology and Sustainable Development
- Doctoral degree program in Agroecology (SOCLA-UNA)

**Research on biodiversity topics linked to study programs and project partners (Output 3)**

Following research topics linked to DiveCropS project are developed:

- Using biodiversity - beneficial ecosystem services in agricultural fragile systems: pollination, pest management, soil fertility, water quality, phytoremediation, bioremediation
- Monitoring of plant diseases and climate
- Effect of pruning and removal of diseased pods on disease dynamics

Master degree thesis: Morphological and molecular characterization of *Phytophthora palmivora* (Butler) and its temporal dynamics in cocoa under agroforestry system in La Dalia, Matagalpa

Qualification of a colleague from UNA (Alex Martín Castellon) in innovations through GIS and Remote Sensors in at Rostock University, Germany

**Network DiveCropS, knowledge transfer and information (Output 4)**

Development of joint research programs with CUJAE (Cuba)

Joint research activities with Bayamo on Conservation of germplasm

Preparation of the project workshop and excursion in 2020 (Excursion to different bio-agroforestry, Agroforestry and agrobiodiversity systems)

Academic exchange:

Alex Martín Castellon: 1 month at Rostock University, Germany (Methods of Geo-Informatics)

Ulises Blandon participated at the project workshop in Ecuador

Jael Cruz participated at the project workshop in Ecuador

Elio Macias (Uni Granma): 14 day at UNA - Conservation of germplasm and communal bean and corn seed banks (Farming Systems)

### **Miscellaneous**

The sociopolitical crisis since 2018 affected the scientific activities at UNA

The budget for UNA reduced by 1.5 Mio \$ during 2019 due to the economic crisis

## Fact sheet of the Project Region 1 in Nicaragua

Facts/ characteristics	Description
<b>General Information</b>	
Country	Nicaragua
Name of the region	Tisma, Masaya
Contact partner	
<b>Description of the site</b>	
Coordinates of center point or surrounding polygon (latitude, longitude in WGS'84)	Tisma, Masaya (12° 04' N y 86° 01' W)
Topographic information (altitude)	
Climate information	
Soil characteristics	
<b>Information on Land use</b>	
Traditional farming practises (if available)	
Cropping practise /cultivated crops/trees/cropping system	
Management (fertilizer/pesticide/tillage etc. )	
<b>Research questions/interests</b>	
current research activities	Tisma, Masaya 1) Diversity and functioning of mycorrhizal fungi in fragile agricultural systems 2) Evaluating and mitigating the pesticide use in fragile agricultural systems 3) Efficient use of groundwater in fragile agricultural systems to mitigate climate change
Interests and project ideas	
<b>Student work</b>	
participation of students in this region	
Kind of activities	
Student activities part of the curriculum? yes/no	
<b>Available data sets</b>	
<b>Comments</b>	

## Fact sheet of the Project Region 2 in Nicaragua

Facts/ characteristics	Description
<b>General Information</b>	
Country	Nicaragua
Name of the region	La Dalia
Contact partner	
<b>Description of the site</b>	
Coordinates of center point or surrounding polygon (latitude, longitude in WGS'84)	La Dalia: (13°00'54" N and 85°04'06" W)
Topographic information (altitude)	
Climate information	
Soil characteristics	
<b>Information on Land use</b>	
Traditional farming practises (if available)	
Cropping practise /cultivated crops/trees/cropping system	
Management (fertilizer/pesticide/tillage etc. )	
<b>Research questions/interests</b>	
current research activities	La Dalia tropical dry forest, Río Escalante Chacocente Wildlife Refuge
Interests and project ideas	
<b>Student work</b>	
participation of students in this region	
Kind of activities	
Student activities part of the curriculum? yes/no	
<b>Available data sets</b>	
<b>Comments</b>	