



LABRANDO UNA HISTORIA
SEMBRANDO
Y GOSECHANDO HACEMOS
CAMINO AL ANDAR

Projecto DiveCropS: Diversifying Cropping Systems - Traditional knowledge and Innovative approaches
Diversificación de sistemas de cultivos – Conocimientos tradicionales y enfoques innovadores

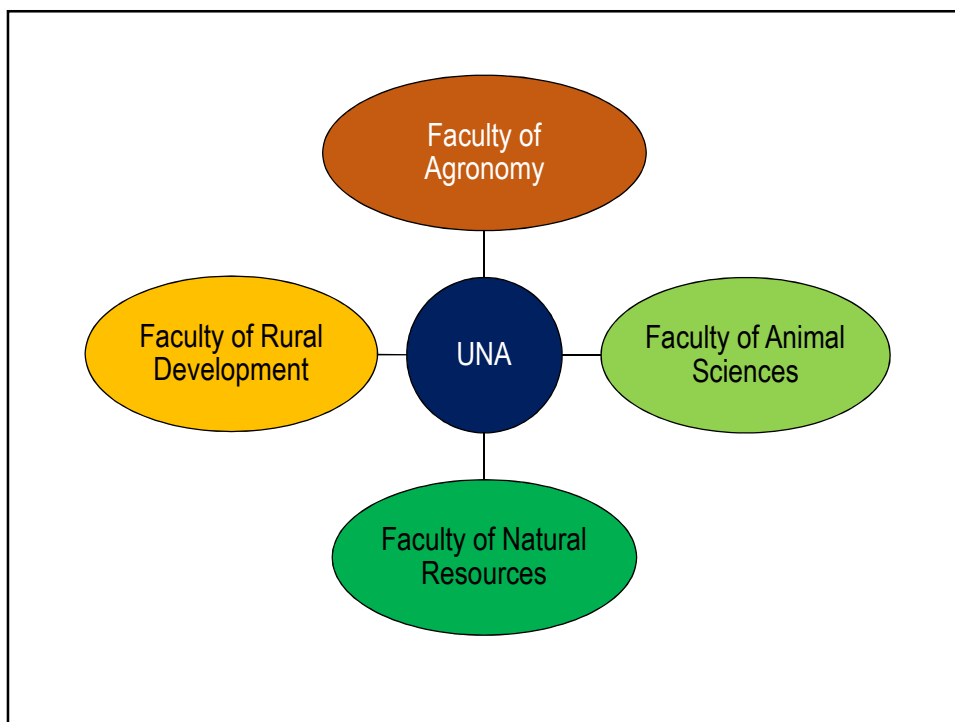
Report on the Project progress during the first year

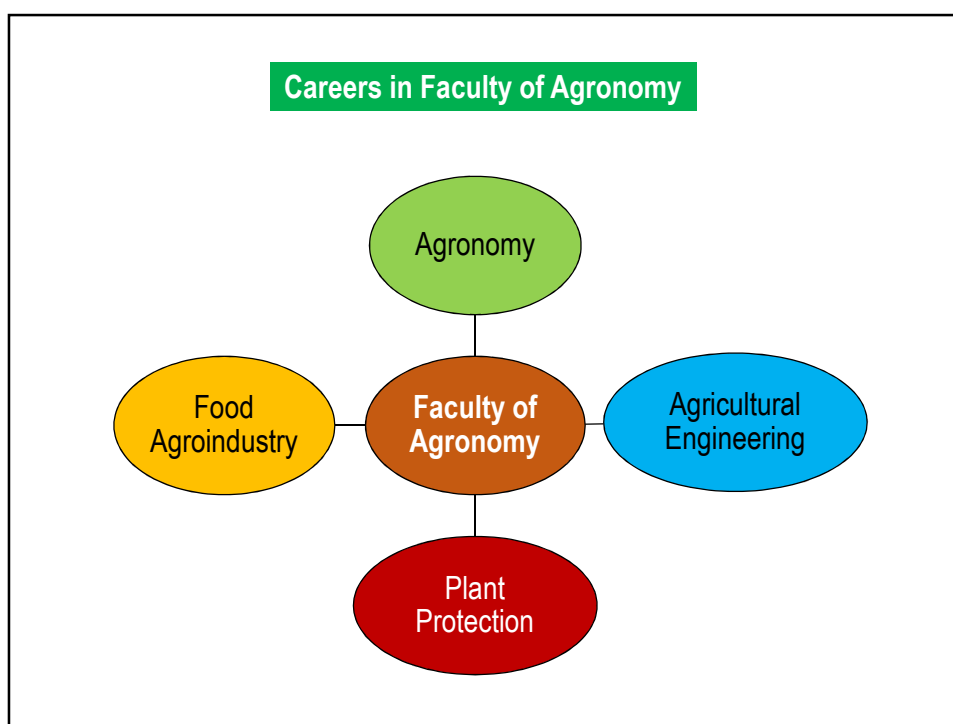
Dr. Jorge Ulises Blandón Díaz

November 8th, 2019









RESULTS

Deliverables	Activities
Certificate course (Output 1)	Development of contents to different themes in the field of agrobiodiversity (Block 2)
	Development of a methodological part (Block 3)

The topics of agrobiodiversity are included in:

- Two undergraduate careers: agronomy and plant protection
- Master degree program in Agroecology and Sustainable Development
- Doctoral degree program in Agroecology (SOCLA-UNA)

RESULTS

Deliverables	Activities
Certificate course (Output 1)	Development of contents to different themes in the field of agrobiodiversity (Block 2)
	Development of a methodological part (Block 3)

Methodology used:

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

RESULTS

Deliverables	Activities
Traditional knowledge is integrated in curricula (Output 2)	Project Region
	La Dalia: 13°00'54" N and 85°04'06" W
	Tisma: 12° 04' N and 86° 01' W

Master degree thesis

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

RESULTS

Deliverables	Activities
Research on biodiversity topics linked to study programs (Output 3)	Until now, no joint work has been done with the project partners
	A teacher from UNA traveled to Germany to train in the subject of innovations through GIS and Remote Sensors - Google Earth Engine

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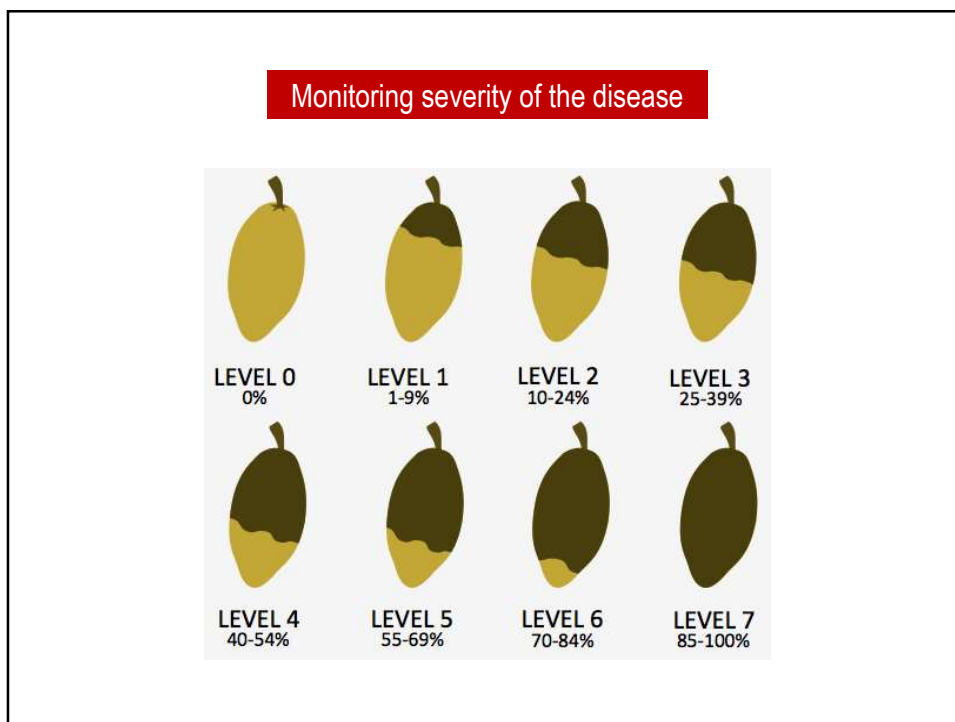
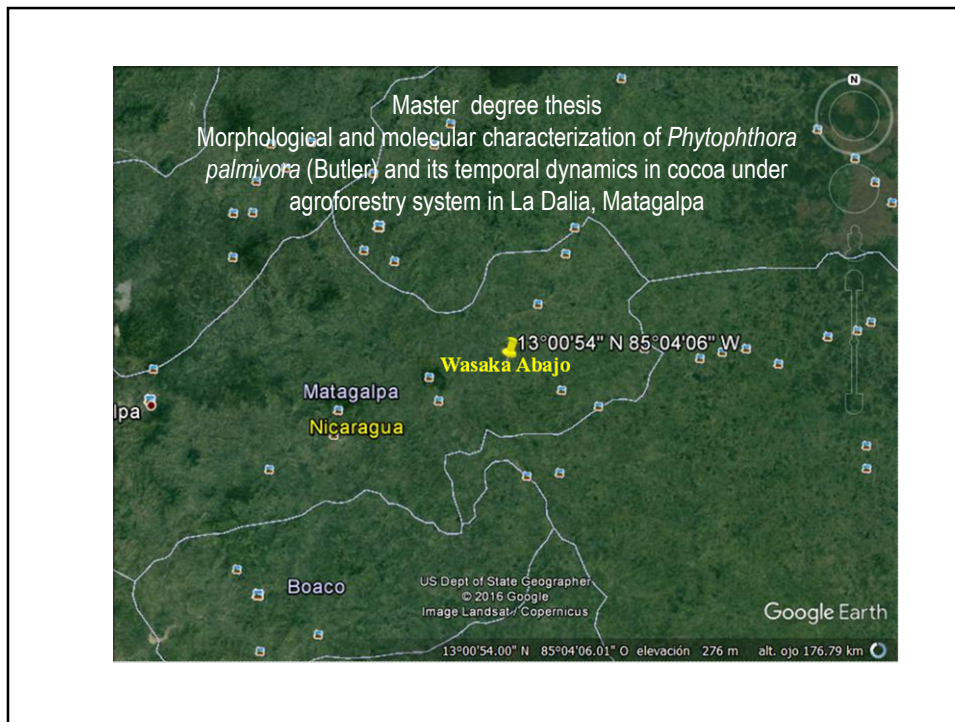
- Fertilization with biol
- Management of coffee rust with antagonistic fungi
- Agroecological evaluation
- State of agroecosystems
- Effect of moon phases in agroecosystems
- Establishment of agroforestry systems

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- Establishment and management of an analog forest
- Resilience of coffee production systems
- Diversity of flora in forest and coffee agroforestry systems

RESULTS

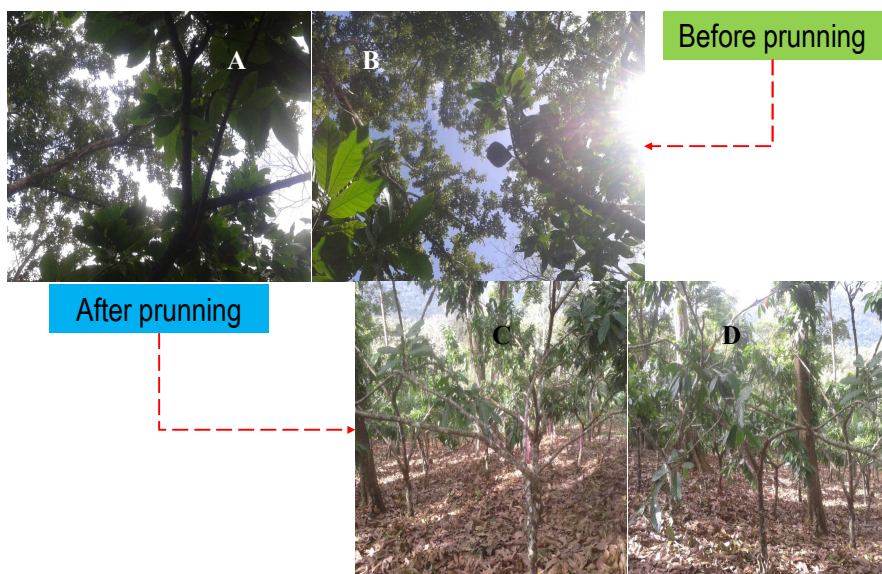
Deliverables	Activities
Network DiveCropS, knowledge transfer and Information (Output 4)	Participation in the Workshop in Ecuador: Jael Cruz and Ulises Blandón
	Excursion to different bio-agroforestry, agroforestry and agrobiodiversity systems

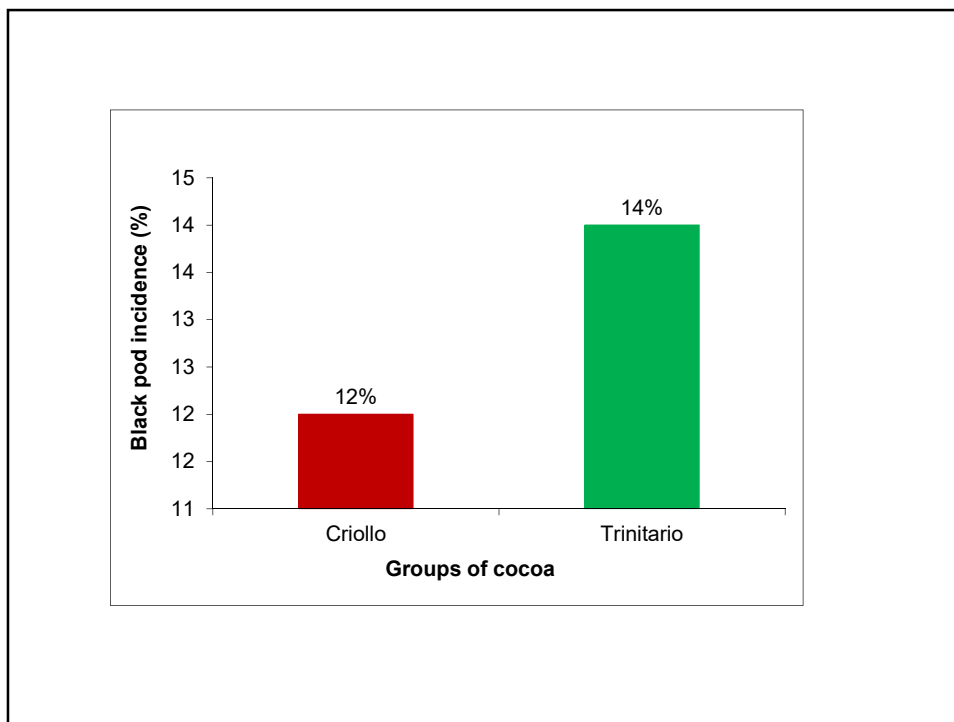


Monitoring of climatic variables



Effect of pruning and removal of diseased pods on disease dynamics





Trees associated with cocoa crop

Common name	Latin name	Family
Elequeme	<i>Erythrina fusca</i>	Fabaceae
Coyote	<i>Platymiscium pinnatum</i>	Fabaceae
Guaba verde	<i>Inga edulis</i>	Mimosaceae
Laurel	<i>Cordia alliodora</i>	Boraginaceae
Guayabo blanco	<i>Eugenia uruguayensis</i>	Myrtaceae
Leche sapo	<i>Sapium macrocarpum</i>	Euphorbiaceae
Guácimo colorado	<i>Luehea seemanii</i>	Malvaceae
Palo de hule	<i>Castilla elastica</i>	Moraceae
Ojoche blanco	<i>Brosimum alicastrum</i>	Moraceae
Guacamayo	<i>Triplaris americana</i>	Polygonaceae
Níspero de montaña	<i>Mespilus germanica</i>	Rosaceae
Zapotillo	<i>Couepia polyandra</i>	Chrysobalanaceae
Roble de montaña	<i>Tabebuia rosea</i>	Bignoniaceae
Almendo de montaña	<i>Dipteryx panamensis</i>	Fabaceae
Banano	<i>Musa paradisiaca</i>	Musaceae
Mora	<i>Maclura tinctoria</i>	Moraceae

Trees associated with cocoa crop

Uses	AFS-Trinitario	AFS-Criollo
Musa spp	15	25
Timber species	14	72
Legumes	85	20
Firewood species	2	7
Cocoa	692	702

Some limitations during the first Project year

- The sociopolitical crisis experienced during the 2018 product of a failed coup.
- The UNA receives a state budget, which was reduced by 1.5 million dollars during 2019 due to the economic crisis that resulted from the failed coup.

PERSPECTIVES

- 1) Diversity and functioning of mycorrhizal fungi in fragile agricultural systems.
- 2) Evaluation the performance of bean cultivars (*Phaseolus vulgaris* L.) for its tolerance to drought.
- 3) Effect of arbuscular mycorrhizae on the vegetative development of *Citrus limon* rootstocks.

PERSPECTIVES

SECOND JOINT WORKSHOP

“Biodiversity in agricultural and forestry systems of Ecuador:
experiences for sustainability”

Nicaragua 2020

