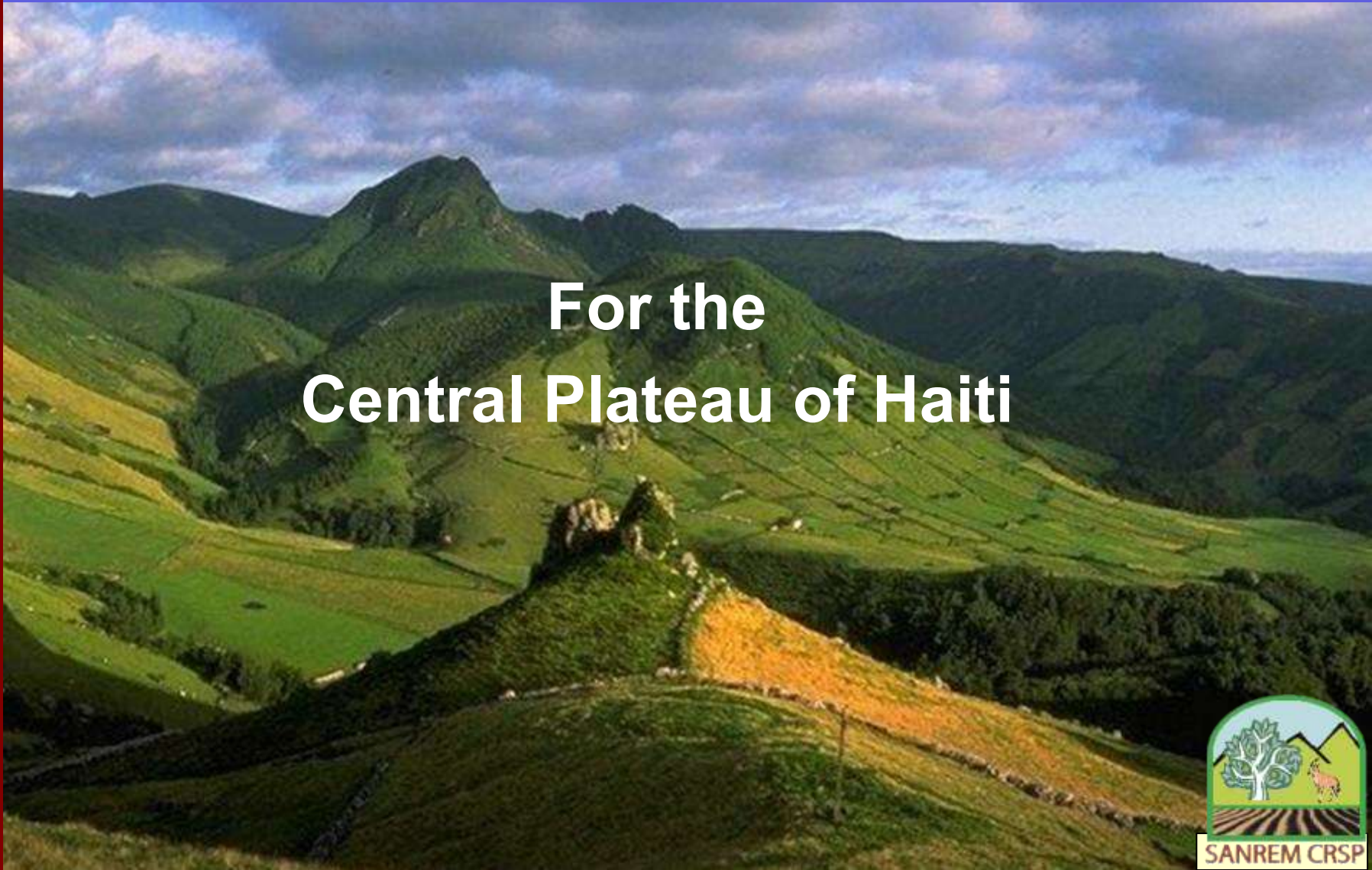




CAPS in the Central Plateau of Haiti

A Conservation Agriculture Production System Program

For the Central Plateau of Haiti

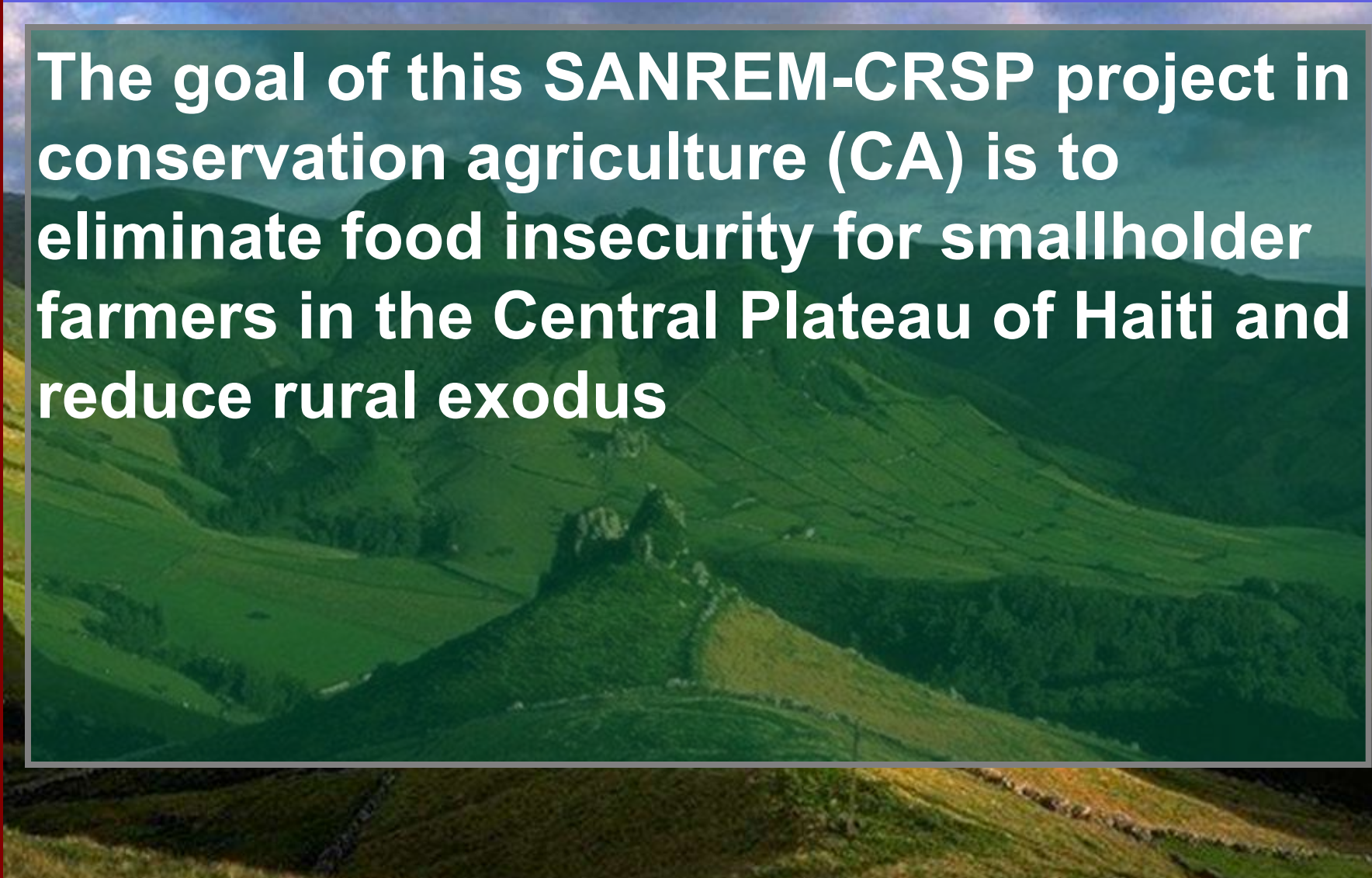


SANREM CRSP



Goal

The goal of this SANREM-CRSP project in conservation agriculture (CA) is to eliminate food insecurity for smallholder farmers in the Central Plateau of Haiti and reduce rural exodus



Objectives

- 1. Assess the adaptability of existing agricultural production and livelihood systems for transformation into CAPS.**
- 2. Increase agricultural production through development of CAPS.**
- 3. Increase the capacity of smallholders to adapt and improve CAPS.**

Overall Approach

- **These objectives will be achieved through implementing a full scientist and farmer managed program at three learning centers:**
 - **Corporant**
 - **Boucan Carré (Lachateau)**
 - **Maïssade**
- **Central to this effort will be the collaborative implementation of ‘best bet’ options focused on improving water productivity, soil quality/fertility, soil organic matter (SOM), and developing higher productivity rotations.**

Partners

- **Ministry of Agriculture**
- **FAMV-State University of Haiti**
- **Zanmi Agrikòl**
- **Caritas Diocésaine de Hinche**

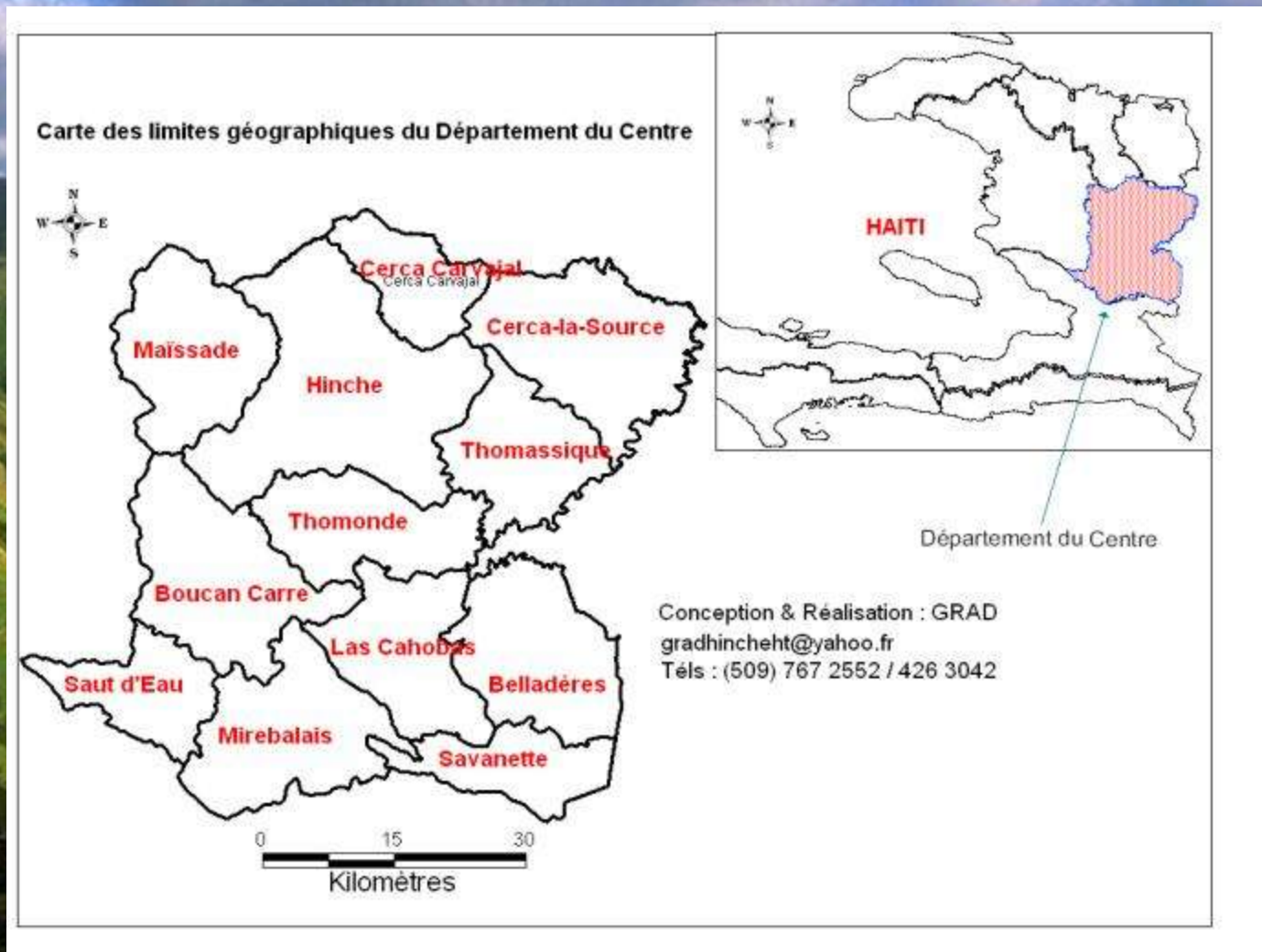


CAPS in the Central Plateau of Haiti

Ayiti

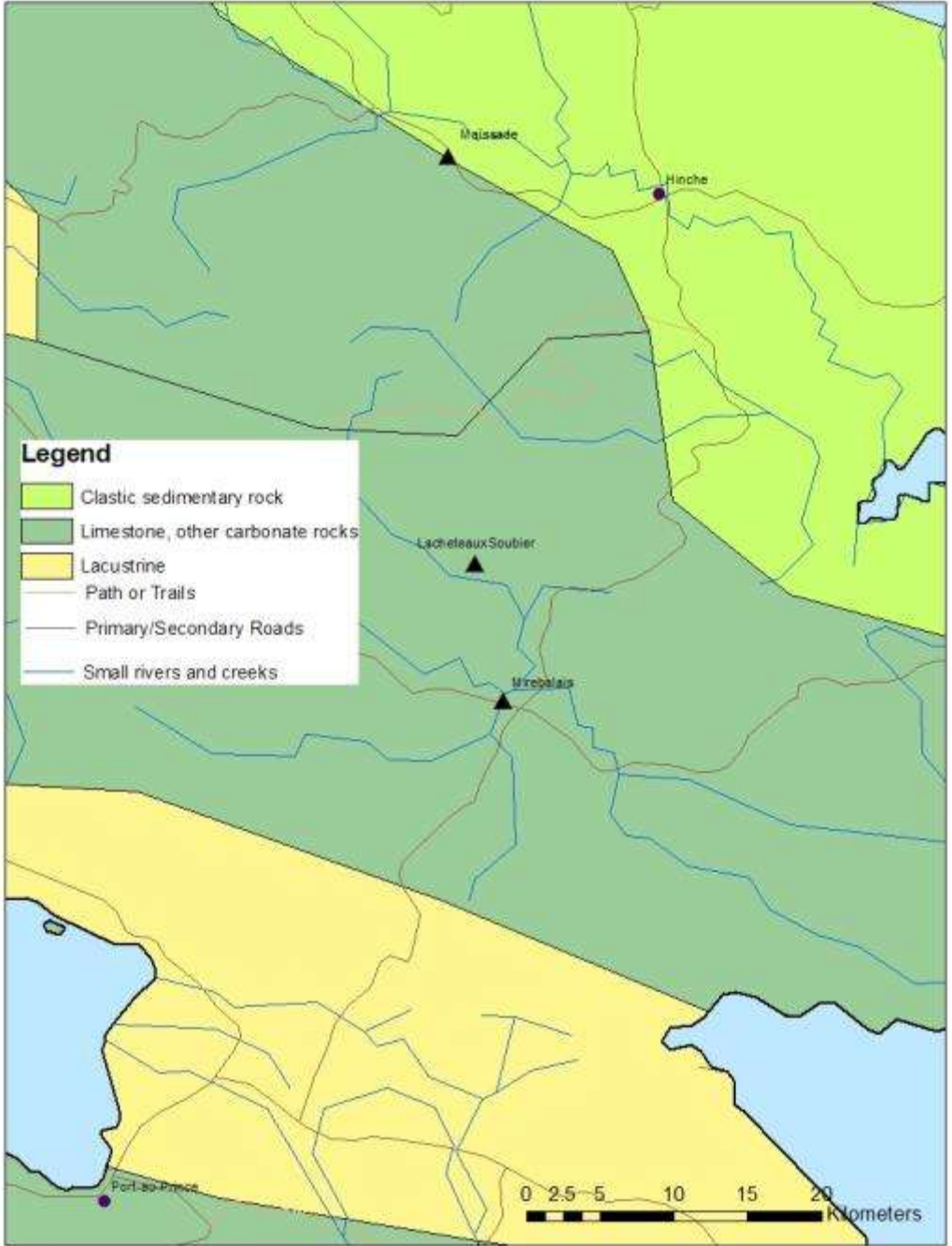
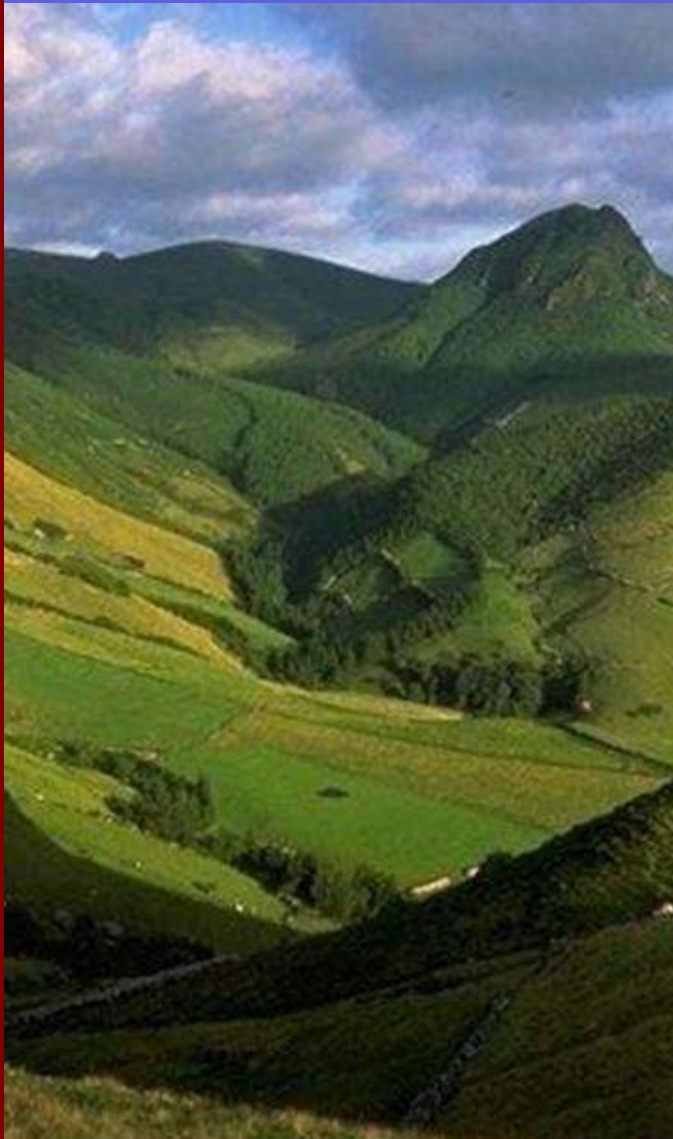


Locations

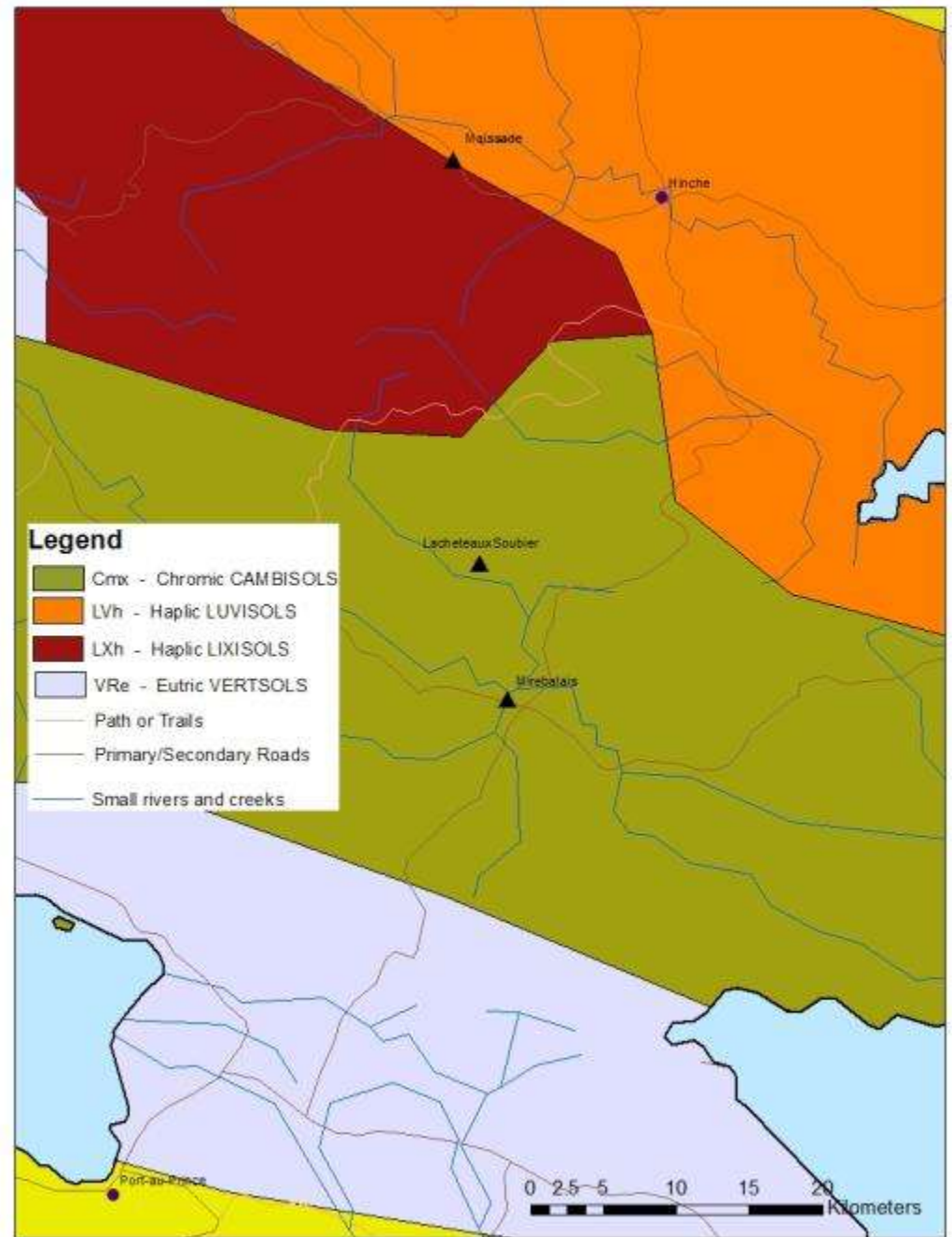
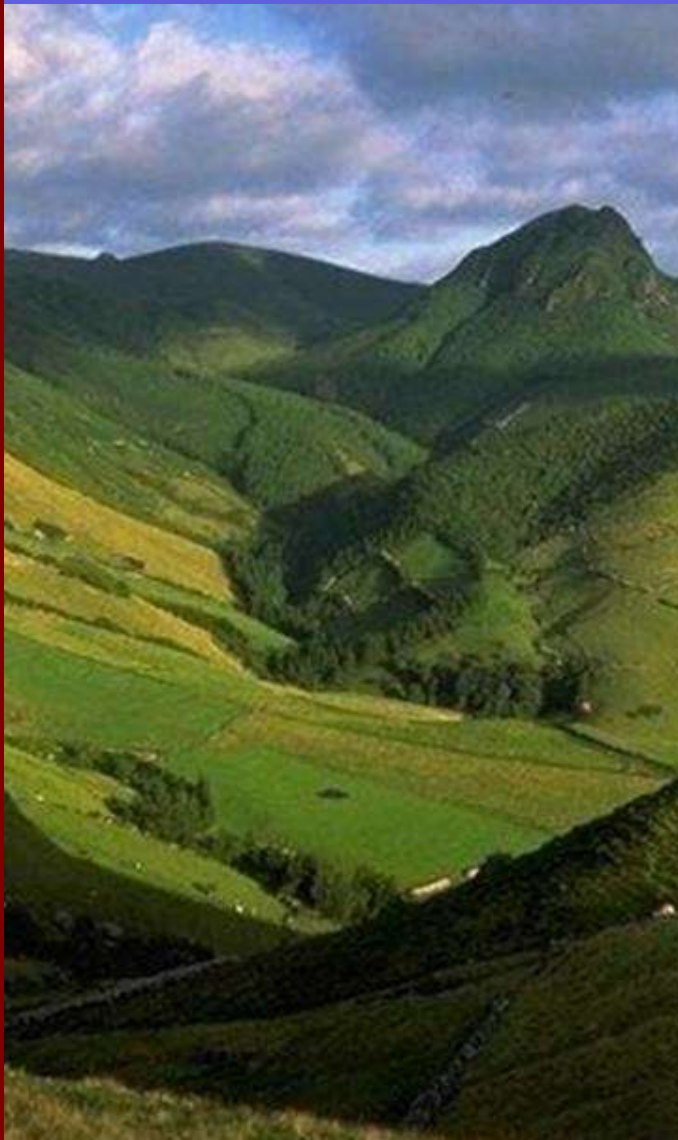




Rock



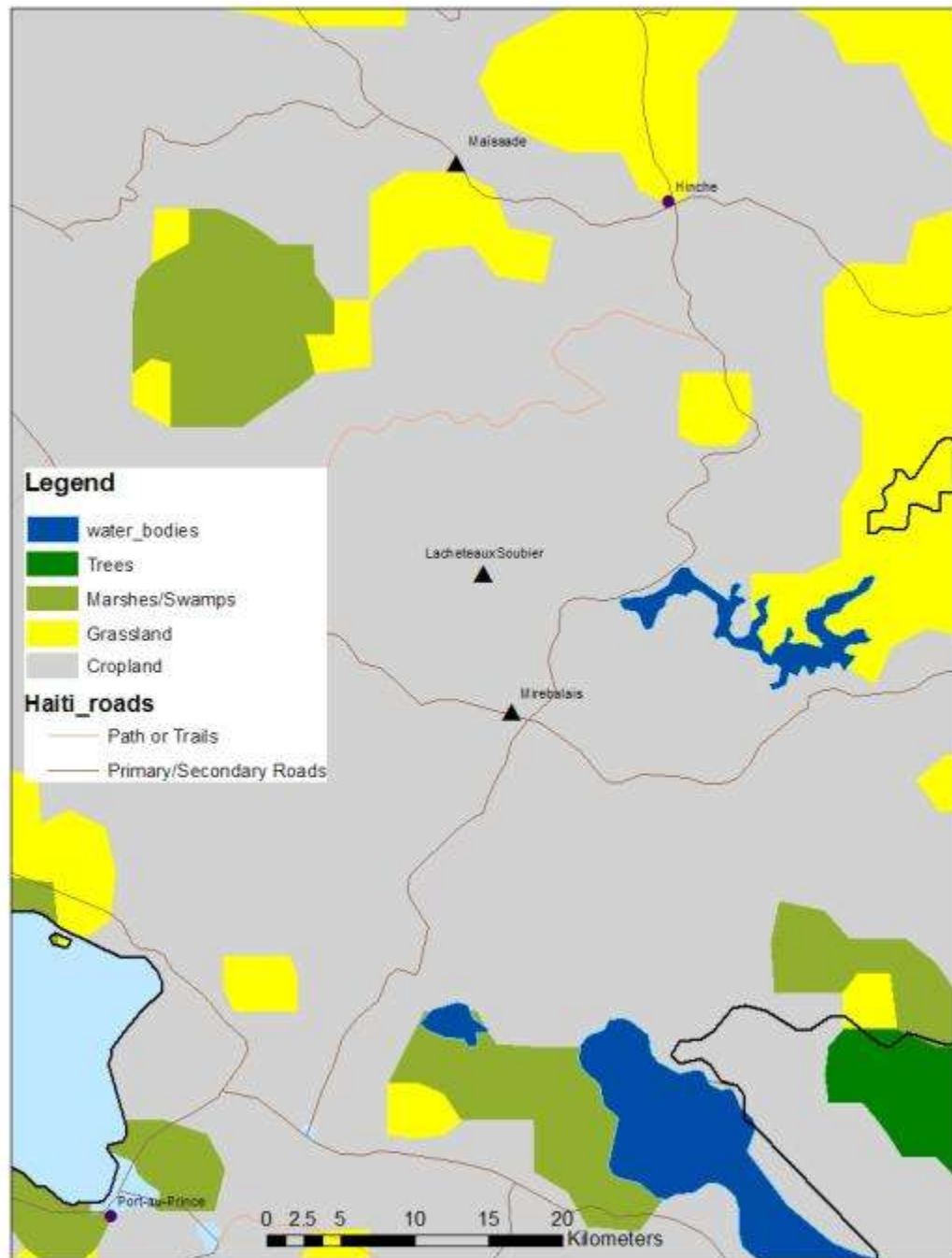
Soils



Sites

- **Corporant**
 - Alluvial soils, lower slopes, 160 m
- **Boucan Carré**
 - Colluvial soils. 240 m
- **Maïssade**
 - Residual, Colluvial over sedimentary 360 m
- **Crops**
 - Maize, Rice, Sorghum, Beans, Pidgeon Pea, Sweet Potato, Peanut, Sugar Cane, Banana

Land Cover





Corporant





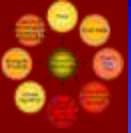
CAPS in the Central Plateau of Haiti





Lachateau





Maïssade





CAPS in the Central Plateau of Haiti





CAPS in the Central Plateau of Haiti



Crop Calendar - Maïssade

Culture/mois	J	F	M	A	M	J	J	A	S	O	N	D
Mais				■	■	■	■	■				
Sorgho	■	■			■	■	■	■	■	■	■	■
Haricot	■	■	■						■	■	■	■
Pois inconnu				■	■	■	■	■				
Arachide				■	■	■	■	■	■	■	■	
Pois congo				■	■	■	■	■	■	■	■	■
Patate douce								■	■	■	■	
Manioc												

Crops are usually inter-planted



CAPS in the Central Plateau of Haiti



Approach

Objective 1

Assess the adaptability of existing agricultural production and livelihood systems for transformation into CAPS.

- **Baseline surveys Time 0 (now Year 2),**
- **Follow up**

Two Types of Survey Methods

- **Formal - Household and Non-Farm Stakeholder Surveys**
- **Informal - Including Participatory Rural Appraisal (PRA) and Focus Groups**
 - Will ID pathways for sharing production system information
 - Focus groups and interviews will show clusters of actors for surveying

Household Survey Questionnaire

- **Type and History**
- **Information that Will be Collected**
- **Adapting and pretesting the instrument**



Survey Timeline



Process for Analysis and Application of Household Data

- Collect data on decisions that are made over seasons for one year
- Use the data to estimate a model explaining how household farmers make their decisions
- Use the results of the estimation to identify drivers of decisions
- Use the results to understand how farmers adapt to shocks in climate, information, markets

Process for Analysis and Application of Household Data - 2

- Identify policy instruments that can target drivers to induce farmers to adopt CAPS and other beneficial practices.
- Use results to estimate welfare effects of CAPS adoption on Smallholders



Approach

Objective 2

Increase agricultural production through development of CAPS.

- CAPS Trials
- Maize Canopy Reduction & Legume Interseeding
- Breakout Trials
 - Planting Pattern/Density
 - Weeding
- Farmer selected treatments on farm

CAPS Trials

1. Control (existing practice) - repeated annually with variable fallow periods

2. CAPS – No fertilizer

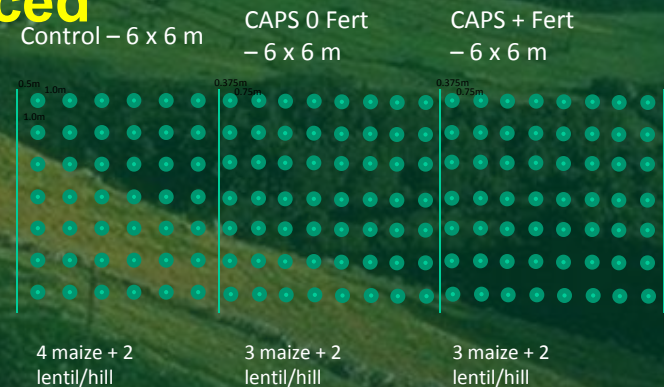
1. Planting density
2. Tillage
3. Planting method
4. Cultivation
5. Cover crop

Increase
Decrease
Precise
Reduced via cover
Introduced



3. CAPS – With fertilizer

RCBD with 4 replications



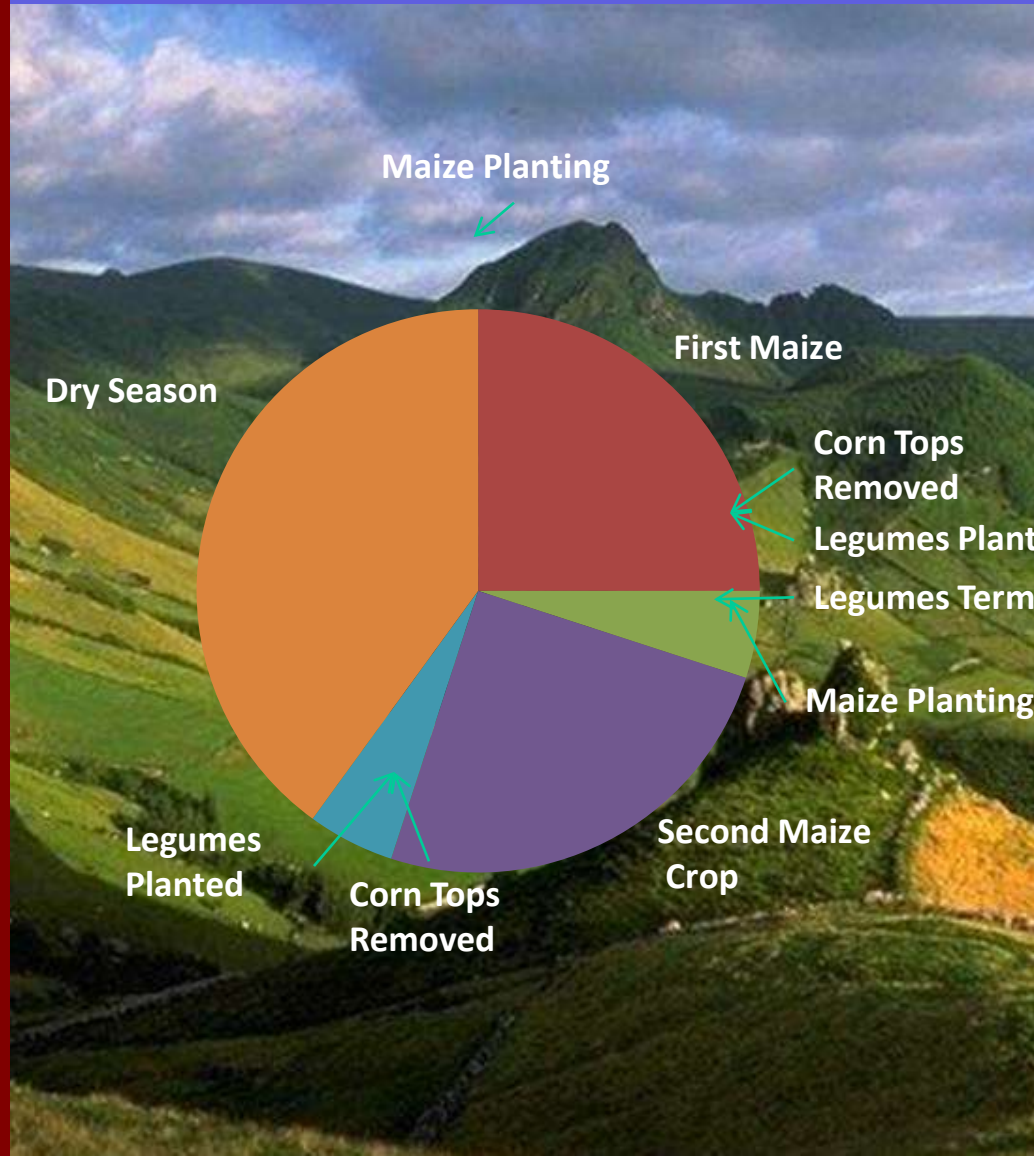
CAPS Trials

- Crop seed germination
- % ground cover at 15, 30, 60, and 90 days after seeding
- Total aboveground biomass (by component) at crop physiological maturity
- Grain yield
- Grain quality (visual inspection of all seeds with ratings for imperfections, molds, etc)
- Grain protein
- Weed and pest populations
- All IPM actions

- Removal of biomass for forage and by grazing (if any)
- Labor by gender (all production and harvesting work)
- Soil physical and chemical parameters at 0-5, 5-15 cm, and 15-30 cm – baseline and annually at end of growing season.
- Soil amendments, type/formulation, dates, method, rates
- Organic matter additions: type, dates, method, rates



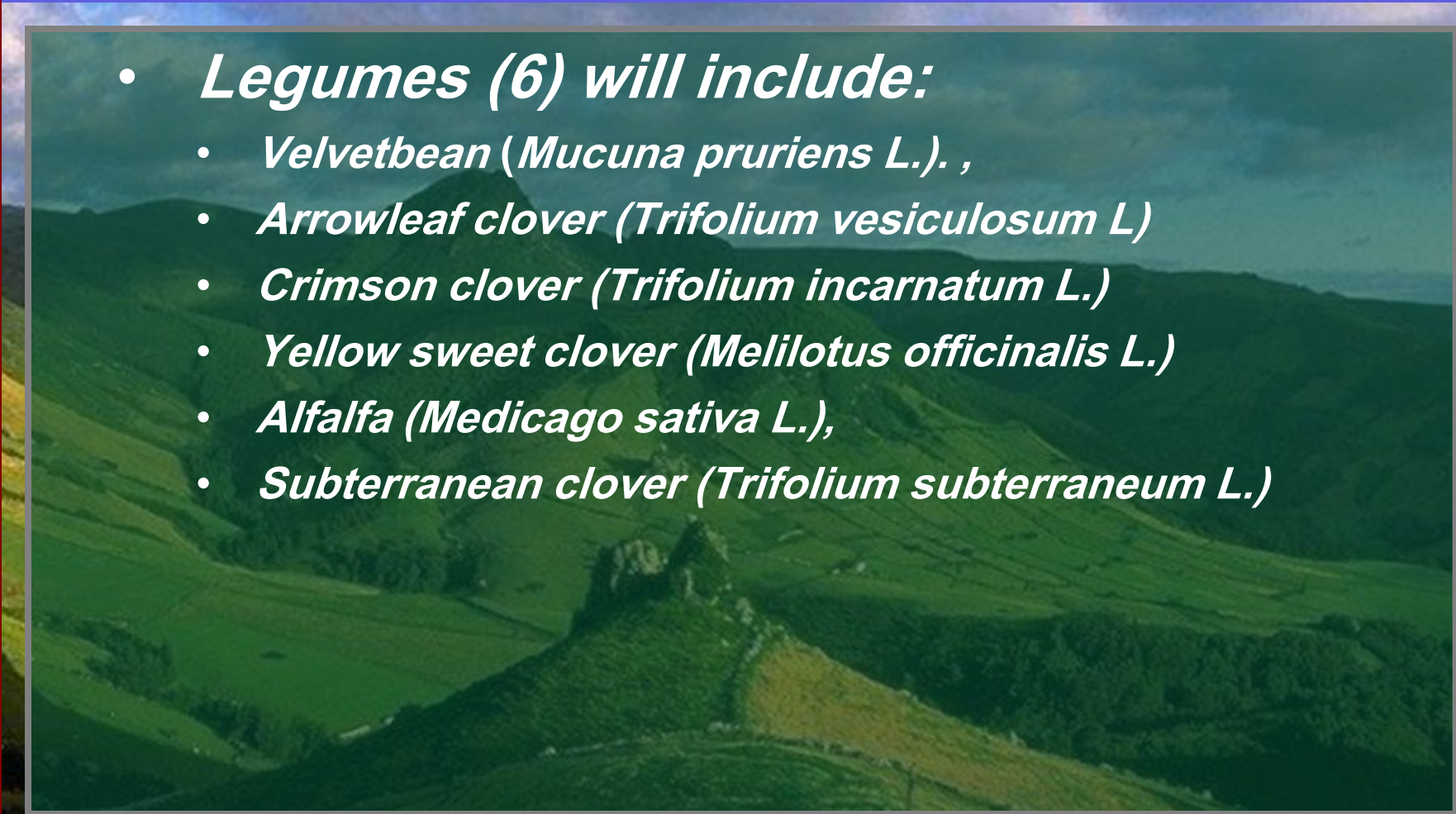
Maize Canopy Reduction and Legume Interseeding Study





Cover Crops

- *Legumes (6) will include:*
 - *Velvetbean (*Mucuna pruriens* L.). ,*
 - *Arrowleaf clover (*Trifolium vesiculosum* L)*
 - *Crimson clover (*Trifolium incarnatum* L.)*
 - *Yellow sweet clover (*Melilotus officinalis* L.)*
 - *Alfalfa (*Medicago sativa* L.),*
 - *Subterranean clover (*Trifolium subterraneum* L.)*





Approach

Objective 3

Increase the capacity of smallholders to adapt and improve CAPS.

- **Researcher managed farms**
- **Farmer field school**
- **Farmer managed on-farm trials**

What are the Necessary Factors?

- Centers of research?
- Farmers participation?
- Farmer training?
- Involvement of institutions in the region?
- Various policy interventions?
- Research focused on marginal lands?

Researcher Managed Farms are Critical

- A collaborative effort with the MoA, Zanmi Agrikol, Caritas, FAMV, and others
- Foundation of a model for testing a private/NGO system for national agricultural outreach/extension
- Each farmer is a focal point for CAPS innovation and outreach.

Innovation Teams and Researcher Managed Farms

- Innovation teams consisting of representatives from local farmer associations.
- Will include men and women in addition to probable early adopters and influential skeptics
- Will participate
- Regular dialog and reflection as a group

A Farmer Field School for the Central Plateau

- Innovation teams provide the foundation for a Farmer Field School
- Three systems will be compared on-site
- 15-20 initial plots
- Regular support from local agronomists
- Expansion during the last two years of the project

Challenges

- Little experience with CAPS in-country
- Agronomic Research Capacity
- Competition for residues – animals
- Weed management
- All crops must yield consumable products
- Seed Quality, Quantity
- Nutrient limitations
- Water, rainfall distribution