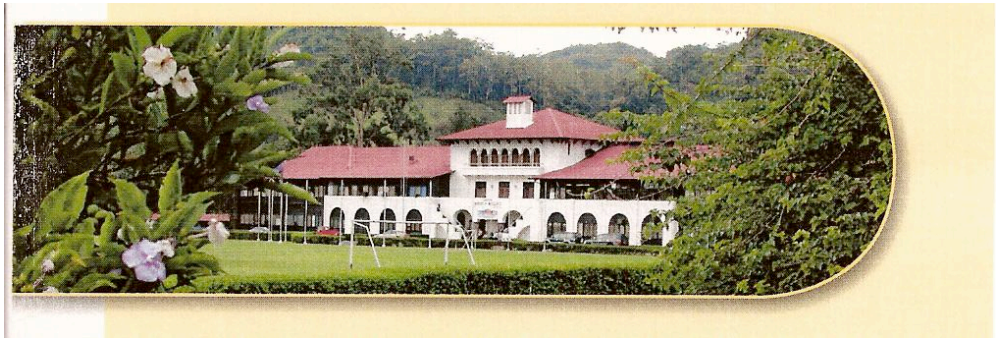
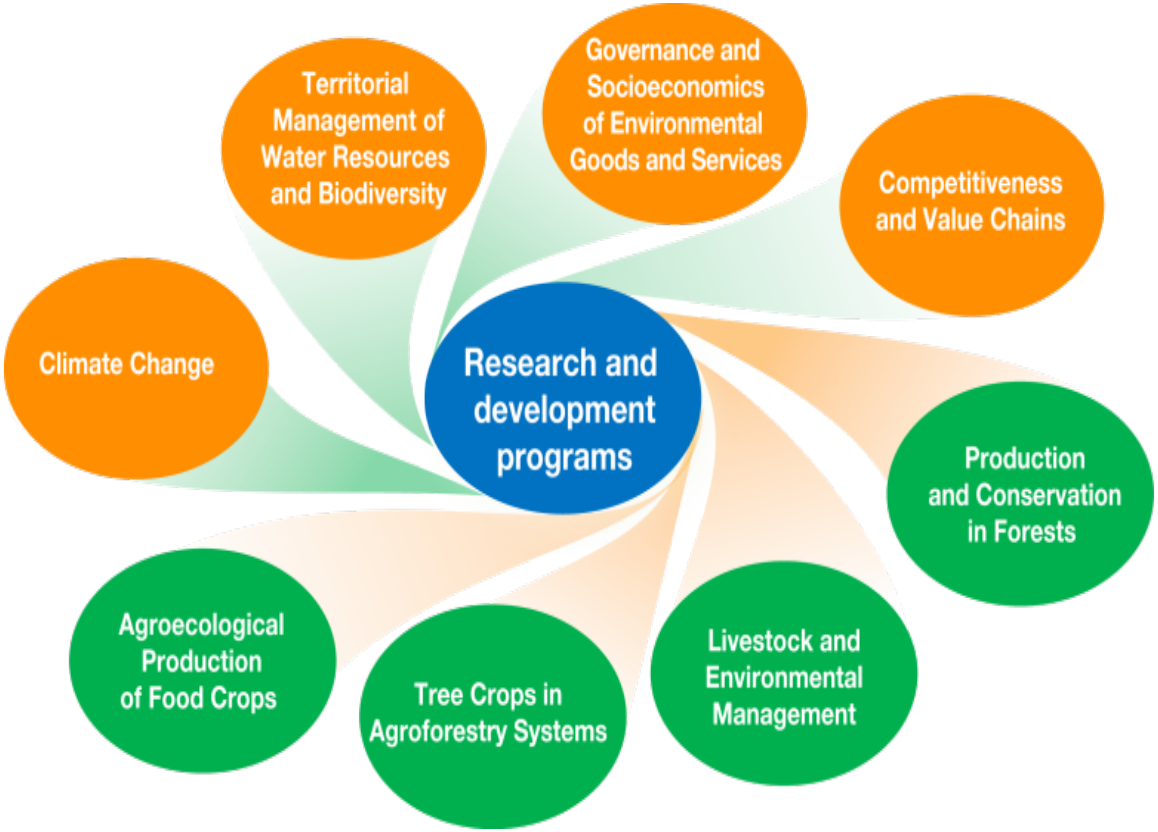
Climate Change at CATIE: Overview of research results and future perspectives

Milagro Saborio-Rodriguez
CATIE and
PhD candidate, Penn State University
milagro.saborio@psu.edu



What is CATIE (Tropical Agricultural Research and Higher Education Center)?

CATIE is a center that conducts activities of research, education and extension in agriculture, mostly in Central America



Outline

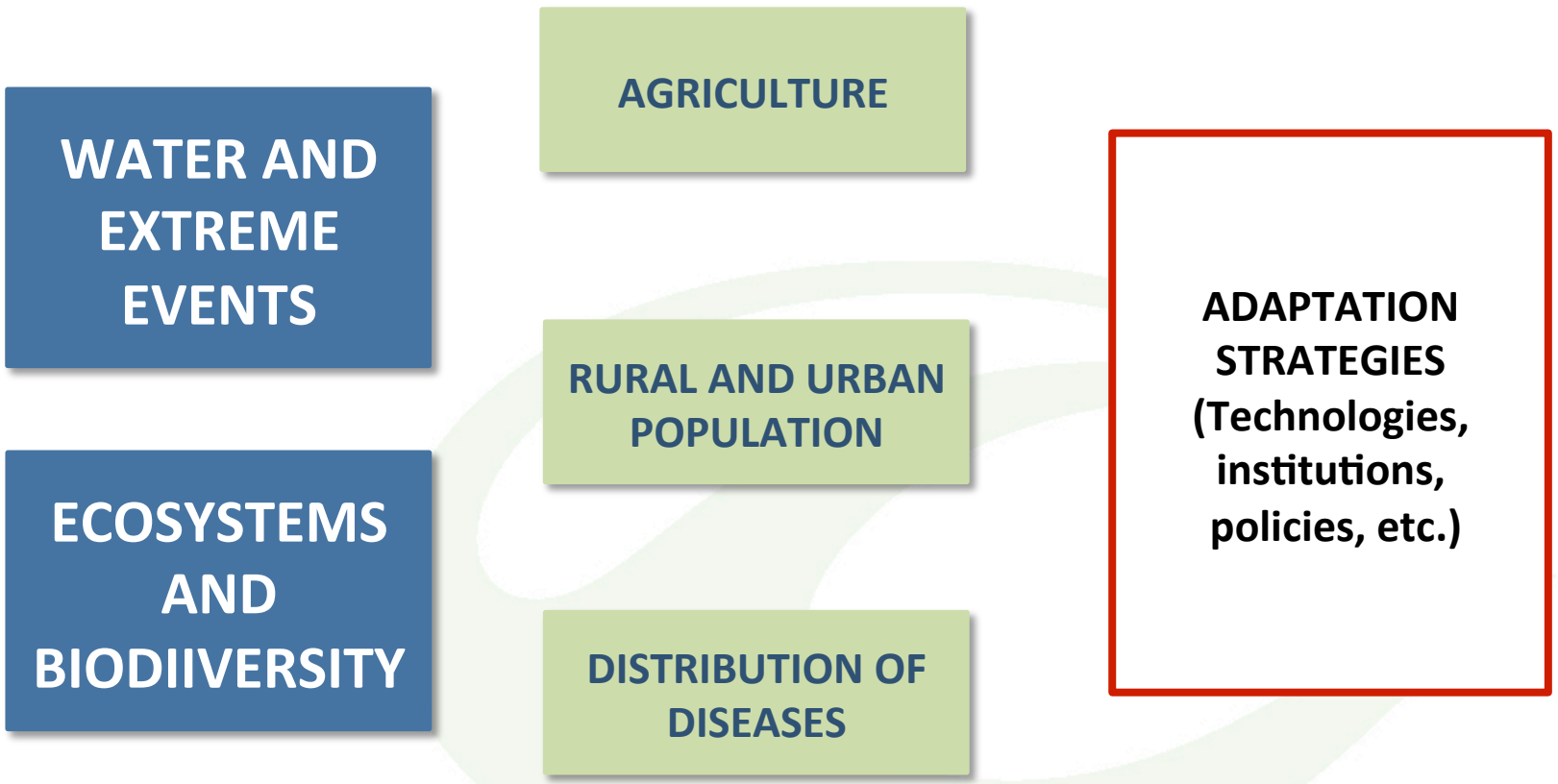
1. Climate Change (CC) in Central America
2. Overview of research related to **adaptation** to CC
3. Future perspectives

CC in Central America (1)

Climate Change implies:

- temperature rises (not homogeneous)
- number of days without precipitation increases
- intensity of precipitation rises, but total precipitation decreases
- probability of extreme events is greater.

CC in Central America (2)



Research in CATIE (1)

1. Tropical Forests Climate Change Adaptation project (TroFCCA), CATIE and CIFOR.
   - optimal zones for commercial forest, for CC scenarios
   - Environmental Payments for forest as a tool for adaptation to CC
2. Mitigation and Adaptation in Ibero-America forests
   - identify CC impact on ecosystems
   - guidelines for forest management
   - research capacities at National Ag. Research Institutes (INIAS) are strengthened

Research in CATIE (2)

Farmers´adaptation to CC:

1. Field experiment with coffee producers in Costa Rica (Alpizar et al, 2009)
   - Experiment targets adaptation decisions, with a design that accounts for risk, unknown risk, and coordination
   - Outcomes: (1) farmers are risk averse; (2) adaptation is more frequent if risk is unkown; (3) when coordination save costs, farmers coordinate; (4) communication facilitates coordination.

Research in CATIE (3)

Farmers´adaptation to CC:

2. Determinants of adaptation among farmers in Nicaragua (Espinosa, 2009)
   - Probit /Logit estimation reveals adoption of good practice depends on: education (+), tenure (+), perception rain (+), and knowledge about erosion (+)

3. Resilience and climate knowledge among cattle ranchers in Costa Rica (Campos, 2010)
   - Subjective perception about climate change is accurate
   - Intermediate ranchs more resilient to recent drought

CATIE
Solutions for environment and development
Soluciones para el ambiente y desarrollo

Ongoing research in CATIE (1)

Water and CC in Latin America: building a research agenda with policy makers.

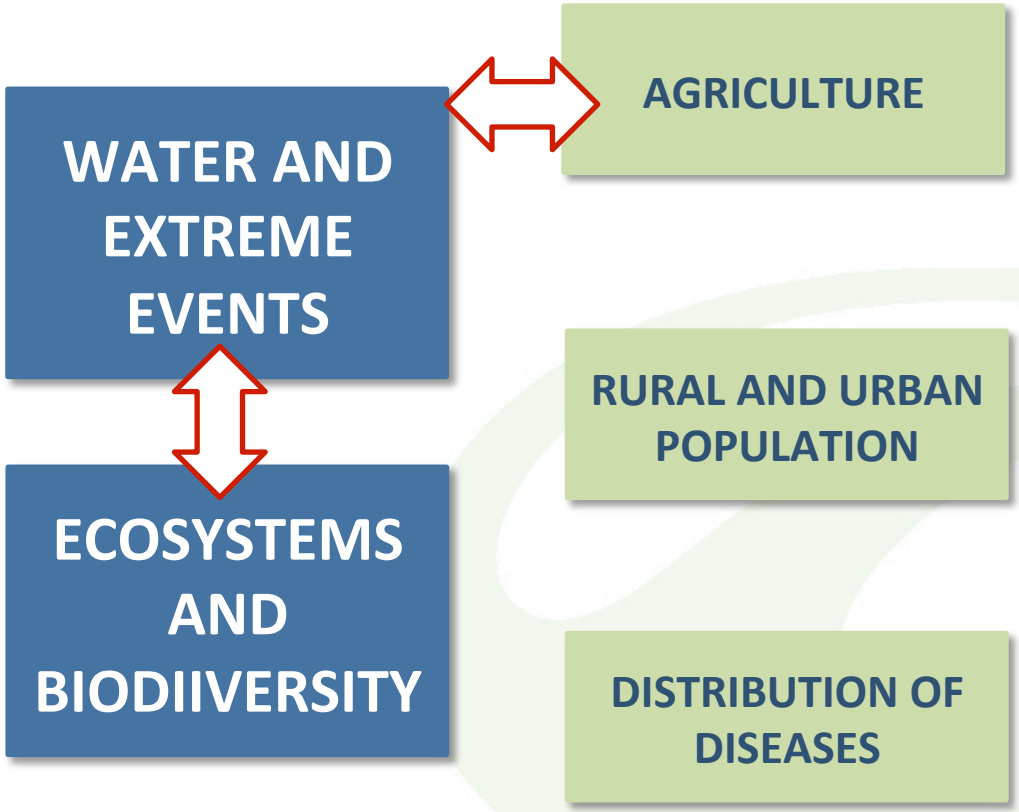
- Define a research agenda on extreme events and adaptation strategies
- Develop a methodological approaches to successfully address the agenda
- Fund research proposals in countries in LA

LACEEP
Latin American and Caribbean
Enviromental Economics Program

Ongoing research in CATIE (2)

Measuring the effects of flood risk on migration flows: An application for Costa Rica

- Estimate the impact of floods on migration rates (county data)
- Identify vulnerable areas to migration movements
- Predict local migration flows under different CC scenarios



Research focus:

- Adaptation strategies and policies
- Impact on rural livelihoods
- Risk, productivity change and socioeconomic resilience in agriculture

Future perspectives

1. Three reseach issues of interest:
   - Food security
   - Water access
   - Health risks

2. Modeling capacities need to be improved with respect to:
   - Spatial resolution
   - Links to socioeconomic decisions

References

- Alpizar, Francisco, Fredrik Carlsson, and Maria Naranjo (2009), "The Effect of Risk, Ambiguity, and Coordination on Farmers' Adaptation to Climate Change: A Framed Field Experiment", EfD Discussion Paper 09-18, Environment for Development Initiative and Resources for the Future, Washington DC, September 2009.
- Espinosa, T. (2009). *Diagnóstico analítico de la toma de decisiones de pequeños productores agrícolas en un contexto de riesgo y vulnerabilidad al cambio climático en la cuenca de Apanás, Nicaragua.* Turrialba: Centro Agronómico Tropical de Investigación y Enseñanza.
- Espinosa, T. (2009). *Diagnóstico analítico de la toma de decisiones de pequeños productores agrícolas en un contexto de riesgo y vulnerabilidad al cambio climático en la cuenca de Apanás, Nicaragua.* Turrialba: Centro Agronómico Tropical de Investigación y Enseñanza.