Climate Change and Adoption of Climate Change Adaptive Technologies

BASIS/I4 Technical Committee Meeting, September 12-13 2013

Climate Resilience and Index Insurance for small farmers in the Dominican Republic

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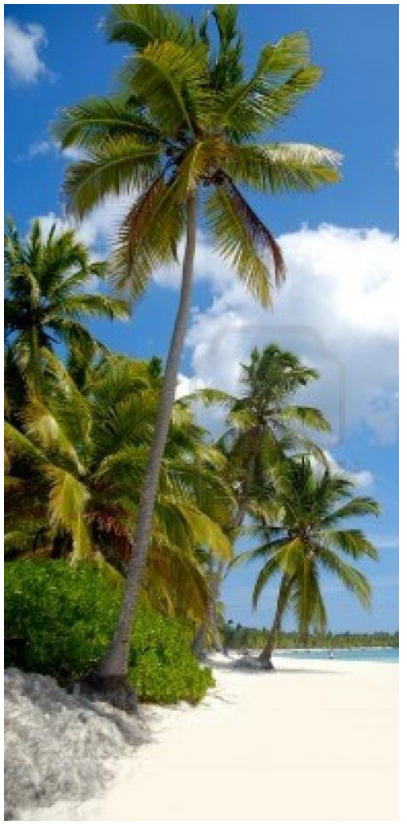


USAID
UNITED STATES AGENCY INTERNATIONAL DEVELOPMENT

Index Insurance 4 Innovation Initiative

The Dominican Republic

Climate in the DR (1)

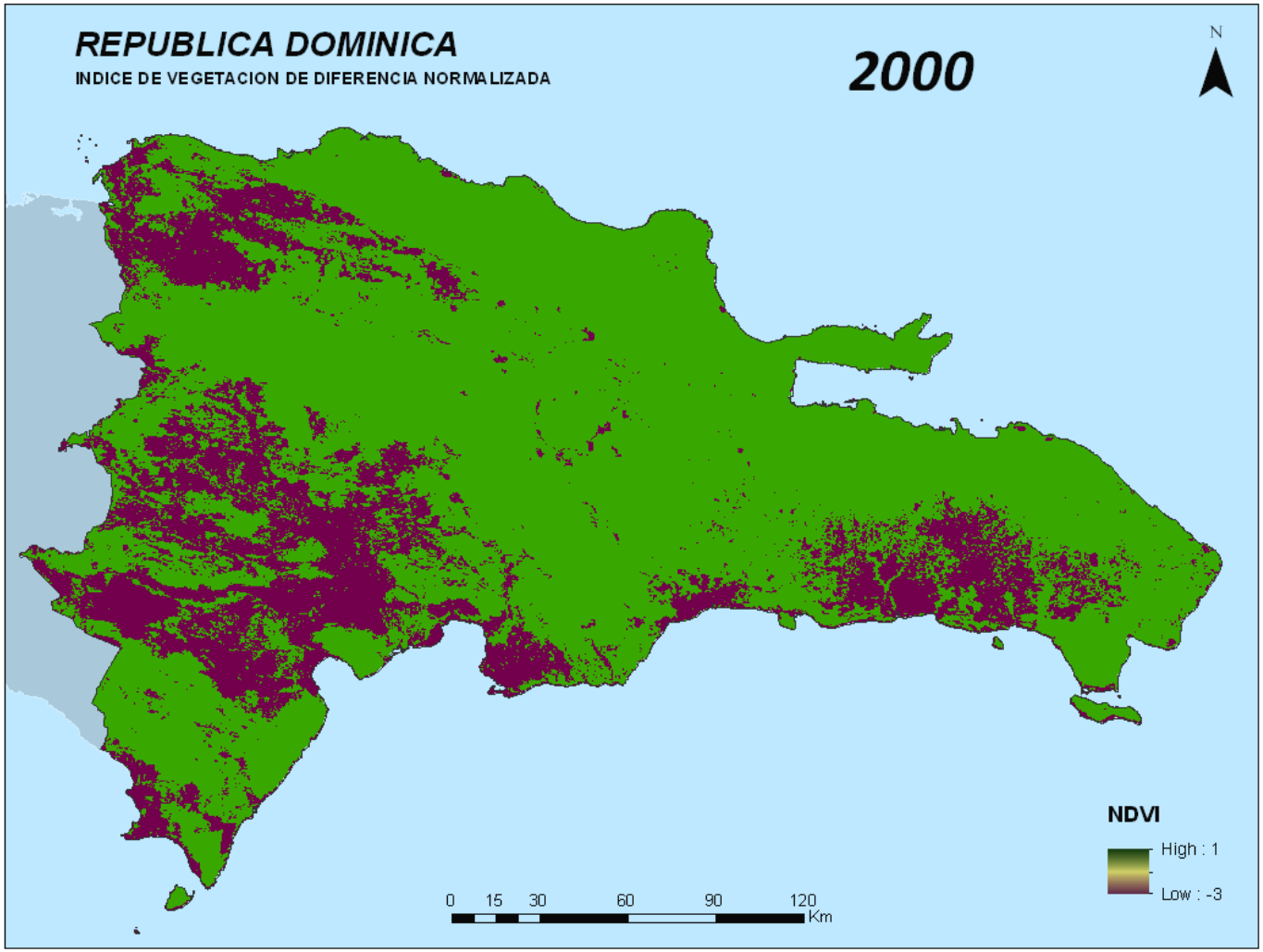
- Tropical weather
  - Dry season: December - April
  - Rainy season: May - November
  - Hurricanes season peak: August - September

- Main climate risks
  - Drought during the dry season
  - Floods/storms/hurricanes during the rainy season

- What could Climate Change mean in the DR?
  - Longer and more severe droughts during the dry season
  - More frequent and more severe Hurricanes/storms/floods during the rainy season

Climate in the DR (2)

Drought risk (NDVI index)



Climate in the DR (3)

Wind risk

The USAID – CRII program (1)

Overview (1)

- Two commodities: Banana and dairy
  - Risks for Banana: Strong winds + wind related disease (Sigatoka) + flood + drought
  - Risks for dairy: Drought

- Associations in the Northwest region:
  - Dairy: FEDEGANO (Federación de Ganaderos del Noroeste) is made of 42 associations (2,200 producers).
  - Banana: 37 associations and banana plantations with a total of 1,427 producers

- Existing insurance contracts (50% subsidy):
  - Banana: Multiple-peril crop insurance. Lenders prefer to use mortgage or disability/death insurance.
  - Dairy: covers death of animals due to atmospheric phenomena , (electric shock or victims of starvation), and cattle theft

The USAID – CRII program (2)
Overview (2)

- Intervention program
  - Develop Access to climate and weather information (*training & new weather stations)*
  - Implement "climate smart" agricultural practices (*training & shared investment program*)
  - Increase access to risk transfer mechanisms (*training & Index Insurance*)
  - Increase access to credit for small producers *(training & link index insurance to credit)*

We develop an Impact Evaluation plan for the last 3 components of the project

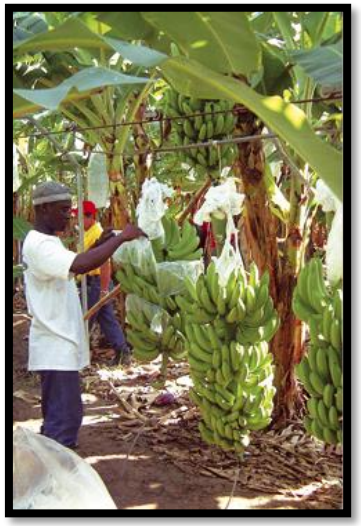
The USAID – CRII program (2)

The shared-investment program

Objective: Use demonstration effects to make other famers adopt climate smart technologies.

- 5 to 10 investment projects will be implemented to promote climate change resilient technologies.

- These investments are cost-shared (50%-50%) with groups of farmers (often in-kind on the farmer side).



- What technologies?
  - Dairy: Silos (stock fodder), water tanks, motor pumps, improved pastures, new breeds
  - Banana: wind walls, land cover, Intercropping, irrigation

Not one single technology. It is the groups of farmers (with support from their associations) who will define their needs.

The USAID – CRII program (3)

The index insurance program

- Drought insurance for dairy farmers. Based on SPI (Standardized Precipitation Index).
  - Index based on the probability of recording a given amount of precipitation,
  - Computed for several time scales, ranging from one month to 24 months, to capture both short-term and long-term drought.

- Wind insurance for banana farmers. Protect farmers against strong winds that make banana bunches fall and destroy trees.

The Impact Evaluation Plan

		Technology adoption program	
		Close to demonstration plots	***Far from demonstration plots***
Index insurance program	***Incentivized to buy Interlinked index/credit***	**Group 6** Interlinked index/credit + Technology adoption program	**Group 5** Interlinked index/credit
	Incentivized to buy Standalone Index insurance	**Group 4** Index insurance + Technology adoption program	**Group 3** Index insurance alone
	Not incentivized to buy Index Insurance	**Group 2** Technology adoption program alone	**Group 1** No treatment

Nice characteristics of this project

- New credit supply will soon flood the market for both commodities
  - $7,000,000 for dairy farmers from the DR government
  - DR Government + European Union funds for banana.

- High frequency production types:
  - Milk is collected daily (or even twice a day) and brought to a collection center. Farmers receive a ticket that they change for money once every two weeks at their bank.
  - Harvest bananas every week. Dominican republic is the first exporter of organic banana in the world.

- High quality/high frequency production data available from milk collection centers and banana associations.

- All-in-one project: Technology + credit + insurance