

Haiti, agroforestry, and the earthquake

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Outline of the presentation

- Trees and earthquakes
- Haitian agroforestry
- Results 25 years later
- Trees in the reconstruction
- Issues to discuss

Earthquakes and trees: Logical questions

- Does deforestation affect the likelihood of an earthquake?
- Does deforestation affect the consequences of an earthquake?
- Can tree planting activities be a useful part of a post-earthquake reconstruction?
- Is the distinction between “native species” and “exotic species” relative to Haiti at the moment?

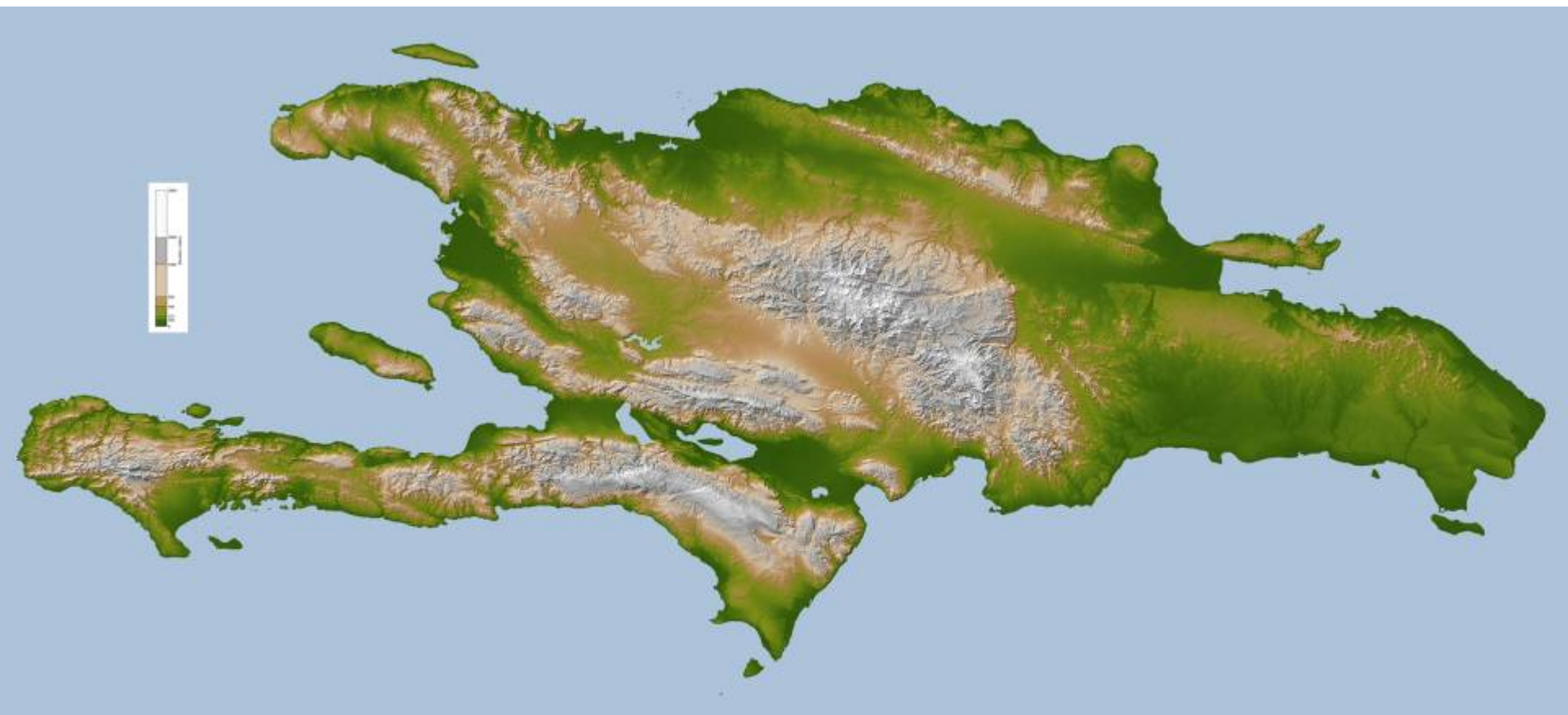
Human factors that exacerbate earthquake consequences

- General level of wealth
- Population density
- House construction
- Deforestation
- Cultural resilience factors
- Institutional response capacity

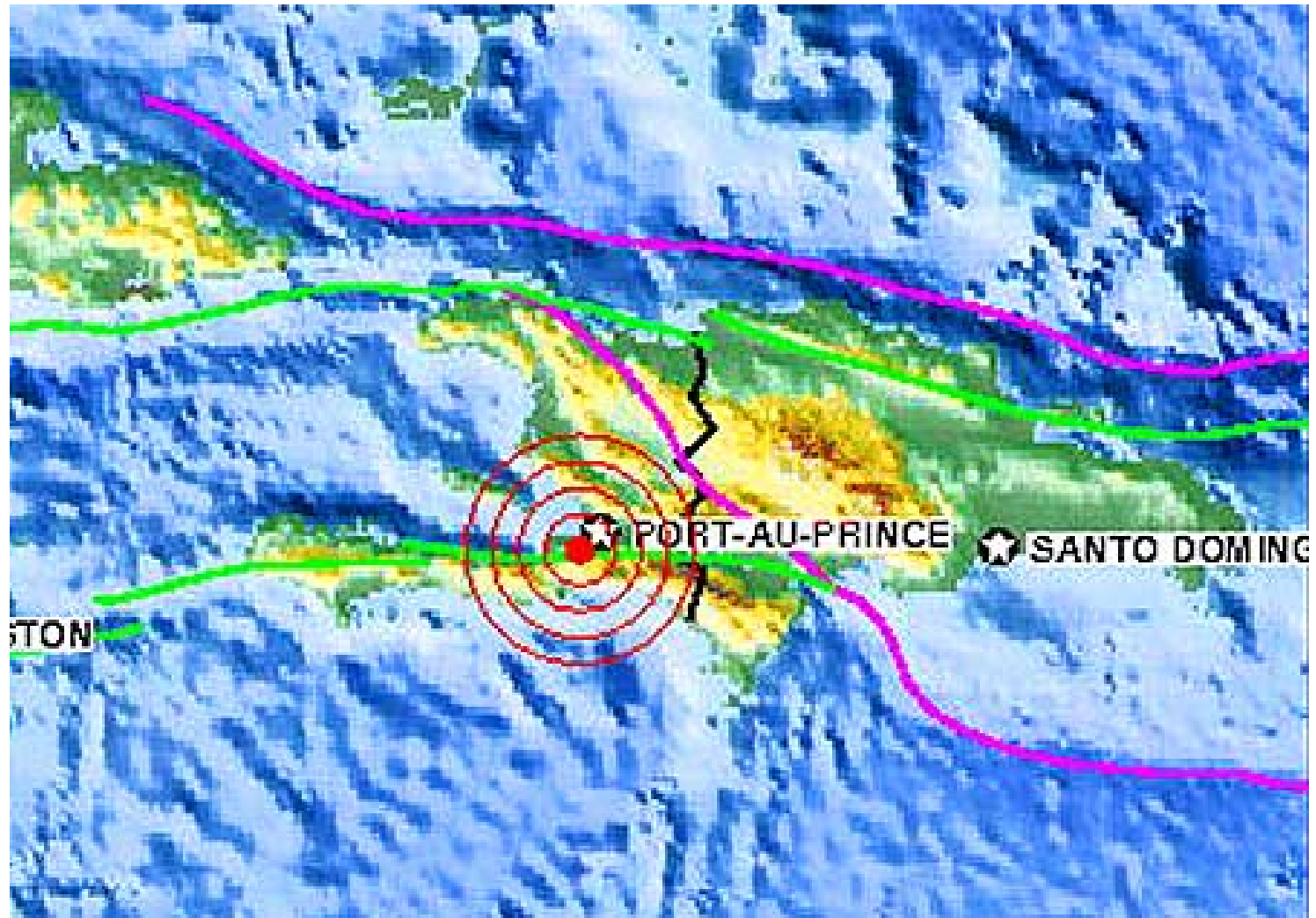
The Haitian government in history:

The predatory State

- The post-revolutionary government: former slaves.
- 19th century: String of military dictators.
- Taxation without service delivery.
- The role of the armed “chef”
- The self-financed Makout
- The government as an employment agency.
- The new source of private wealth: “foreign aid”.



Seismic faults



The Haitian Dominican Border



DR – foreground
Haiti – background



The militarization of forest protection



Core anthropological hypothesis

- Observation: Domestication, not conservation, triggered the Neolithic transition.
- There was a readiness in Haiti for an evolutionary shift from the extraction of wood to domestication and harvesting of wood

The project:

Technological platform

- Species selection: Fast growing hardwoods
- Tree deployment: Agroforestry, not reforestation
- Nursery production:
 - High quality professionally produced seedlings.
 - Technology of the rootrainer.

Seedlings in the root trainer



Tree Production and Distribution



Plastic sack nursery



Roottrainer nursery



Planting on farm

Project strategy

- Benefit flow system: Full tree ownership and harvest rights.
- Outreach system: Farmer to farmer
- Fund management system: NGO networks.

Evolution of species selection

Scientific name	Creole name	Year 5	Year 9
Cassia Siamea	kasya	21%	30%
Azadirachta Indica	nim	16%	9%
Colubrina arborescens	bwa kapab	7%	21%
Eucalyptus camaldulensis	kaliptis	12%	18%
Leucaena leucocephala	delen blan	12%	1%
Catalpa longissima	chenn	19%	17%
Casuarina equisetifolia	pich pen	11%	4%
		100%	100%

The behavior of peasant tree planters

- Tree tenure was more important than land tenure status
- 2/3 of farmers continued to cultivate annual crops on sites where they planted trees
- Charcoal for sale was 80% of wood harvested and 31% of the revenue; construction wood for home use was 15% of the wood and 60% of its monetary value
- The most significant wood harvest occurred 8 to 11 years after planting
- Source: Smucker, Bannister, and Timyan.

Follow up visit July 2009

- Andrew Tarter, anthropology graduate student
- Visited Fond des Blancs: charcoal “growing” town, nearly 30 years after first trees were planted
- Verdant landscape: mostly “rak bwa”. Secondary pioneer regrowth
- Charcoal trees planted near home. Pressure taken off the natural secondary forest.

Wooded landscape



Natural woodlots and swidden plots



Natural secondary growth, not domesticated woodlots

- Planting of wood for boards and charcoal was done in proximity to houses
- This took pressure off natural woodlots. They are allowed to grow.
- These are known to be nature's trees, but people do not know their names.

Two favored domesticated wood species

- *Azadirachta Indica* (Neem, mahogany family Meliaceae)
 - Medicinal uses in Indian place of origin
 - Repels insects
 - Tooth cleaning by chewing
 - Construction wood
 - Coppices
- *Cedrela odorata* (“Spanish Cedar”, also Meliaceae)
 - Termite resistant
 - Rot resistant
 - Lightweight
 - Good for outdoor construction

Agroforestry configurations

- Planting near homes:
 - More protection against livestock
 - Protection against thieves
- Intercropping with food crops
- Little planting of woodlots

Woodlots and corn plots



Young neem trees planted with corn



Agroforestry configuration: Project trees with corn



Agroforestry configuration: Neem, crops, and a goat



Cedar volunteer seeds to be planted in bags



Cedar volunteer seedlings



Neem trees coppicing



Farmer and cedar trees: Ready to cut into planks



Charcoal kiln



Charcoal bags awaiting the truck



Charcoal truck: demon turned angel



Project planks for sale in the market



Ecological services ?

- Partial landscape restoration
- Plot soil retention.
- General smallholder principles:
 - Economic incentives are the driving factors
 - Ecological payoffs are secondary side effects

Denuded Haitian landscape



Woodlot in project community



Black earth retained by project trees



Trees in Post-Earthquake Haiti

- Immediate post-earthquake life-saving needs:
 - Search and rescue
 - Emergency medical care
- Post-earthquake food, clothing, shelter.
- Reconstruction of Port-au-Prince?
- Restoration of income flows.
- Ecological restoration?
- Flight: emigration to the U.S. and the Dominican Republic

Income flows and ecological restoration

- Clarification of goals: landscape restoration or income generation?
- Income generation is the high priority at the moment.

Potential sabotage factors in project conceptualization and design

- Conceptual factors
 - The tree as an ecological rather than economic element
 - Didactic cognitive deficit models of tree promotion
- Institutional factors
 - Predatory governments
 - Predatory NGOs
 - Business-as-usual international funders

Acknowledgements

The photos in this presentation were made by Andrew Tarter during his fieldwork in Haiti in the summer of 2009. The

The tabular data on species selection is from the doctoral dissertation of forester Michael Bannister