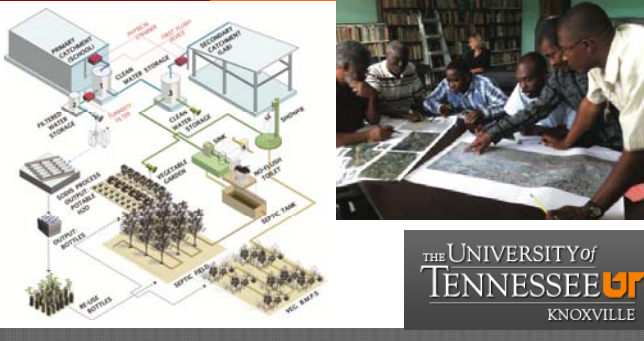


Regenerative Rainwater Harvesting in Southern Haiti

Graduate Thesis in Landscape Architecture



- *What are the emerging challenges for water resource management?*



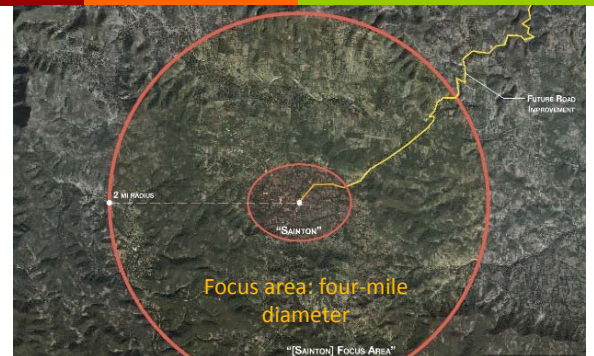
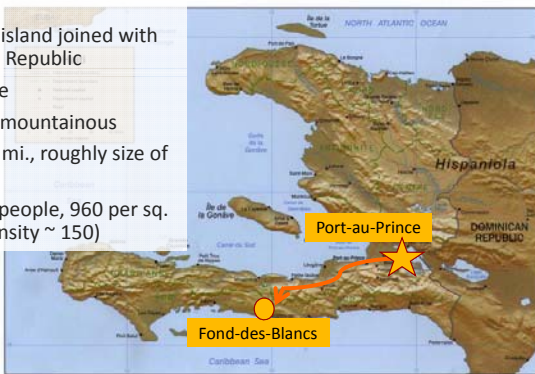
- *How do we connect short-term interests with long-term environmental goals?*



- Fond-des-Blancs, Haiti
- Historical/Political Context
- Approach & Site Assessment
- Community Values and Design Goal
- Concept Design & Development
- Suitability Studies
- Conclusions



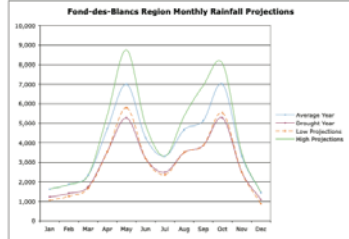
- Caribbean island joined with Dominican Republic
- 18° latitude
- Extremely mountainous
- 11,000 sq. mi., roughly size of Maryland
- 10 million people, 960 per sq. mi. (TN density ~ 150)



- Difficult to access, little development, almost no infrastructure

Fond-des-Blancs, Haiti

- 35-45 inches rain per year
- Two rainy seasons: May and October
- Dry seasons *very* dry
- Complex geology



Fond-des-Blancs, Haiti



Farming on slopes

Fond-des-Blancs, Haiti



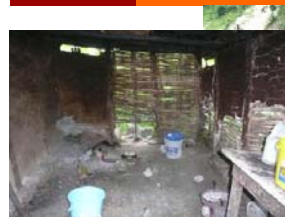
- Efforts to reforest exist, but landscape-scale change has not occurred.

Fond-des-Blancs, Haiti



- Dry riverbeds, eroded banks

Fond-des-Blancs, Haiti



Little infrastructure



- Water-borne disease is common
- Children most affected
- Major reason for high drop-out rates at school



Historical Context

Humanitarian Aid and the "Republic of NGOs"

- Poverty and political turmoil for 200 years
- Billions of dollars in humanitarian aid over past 50 years
- "Development graveyard"
- "Republic of NGOs" – never any investment in public sector
- Applies to FDB

Historical Context



Historical Context

- "Groaning bookshelf" of literature on why it isn't working/where the money is going
- One common finding is that projects don't take the social context into account
- Understanding the social context became a major goal for me
- Any environmental imperatives depended upon it



Site Assessment

- Site assessment of FDB valley 12 sq. mi. focus area
 - Elevation
 - Slope
 - Population
 - Forest cover
 - Hydrology
 - Water access
 - Roads
 - Schools & churches
 - Businesses & cultural landmarks

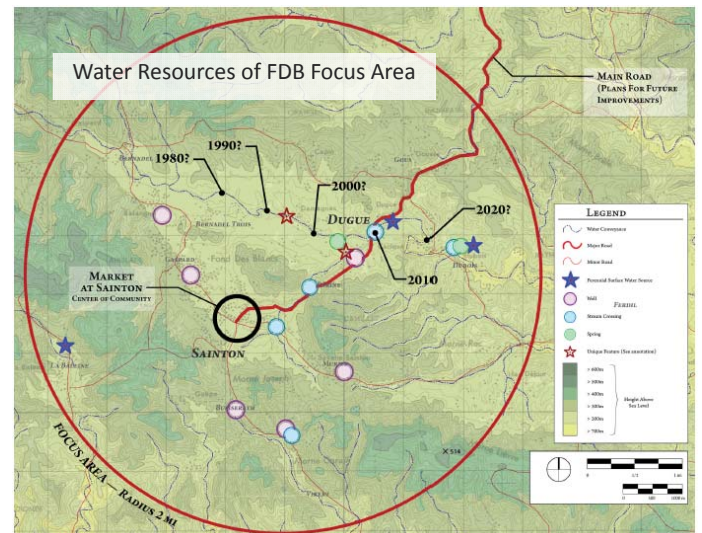


Approach

- Split effort between quantitative and qualitative data gathering



1. Site assessment of FDB valley 12 sq. mi. focus area
2. Ethnographic and participatory approach to understanding community's values



Community

- Ethnographic and participatory approach to understanding community's values
 - Meeting with community leaders
 - Interviews
 - Teenagers
 - Market
 - Hikes with locals



Community

How do people get water?



What do people care about?

Community Values



- **Schools and education are catalysts for the community.**
 - **Children's health is a critical issue.**
 - **People want better jobs. They may need training.**

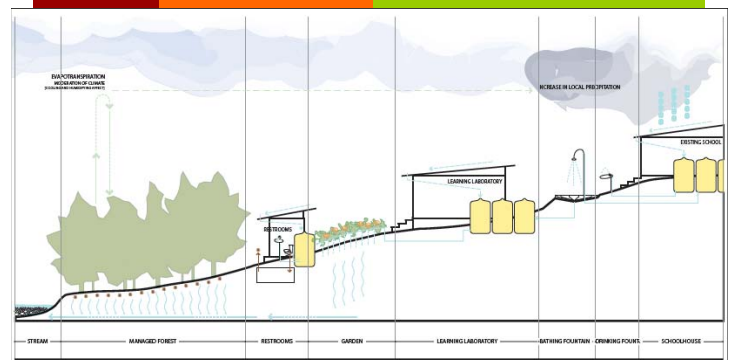
Design Goal

- **Primary Question: How do we connect short-term interests with long-term environmental goals?**
- Large-scale water resource dilemmas are often too far-off, too vague, and too difficult to quantify in order to serve as **primary motivators**.
- **Is there a way to link these long-term goals with the public's primary motivations?**

Concept Design

- **Provide more dispersed water access** → **Rainwater harvesting**
- **Improve children's health and education** → **Clean drinking and washing water**
- **Increase and diversify job opportunities** → **Create new maintenance and installation jobs**
- **Increase vegetative cover, infiltration** → **Manage stormwater, grey- and black-water; plant species for erosion control**

Concept Design



Gravity-fed rainwater harvesting concept

- Value of public sector; however, regulations may inhibit invention
- Haiti: Extreme environmental degradation — stressed populations less likely to consider long-term goals



Questions?

Thanks to UT Staff and Faculty for their advice and guidance.

Thanks to Fond-des-Blancs participants for their enthusiasm and valuable input.



MAIN CONCLUSION:

One way to connect short-term interests and long-term environmental goals is to

Identify primary motivators through an ethnographic/participatory approach

and

link them to environmental outcomes through a web of interaction.