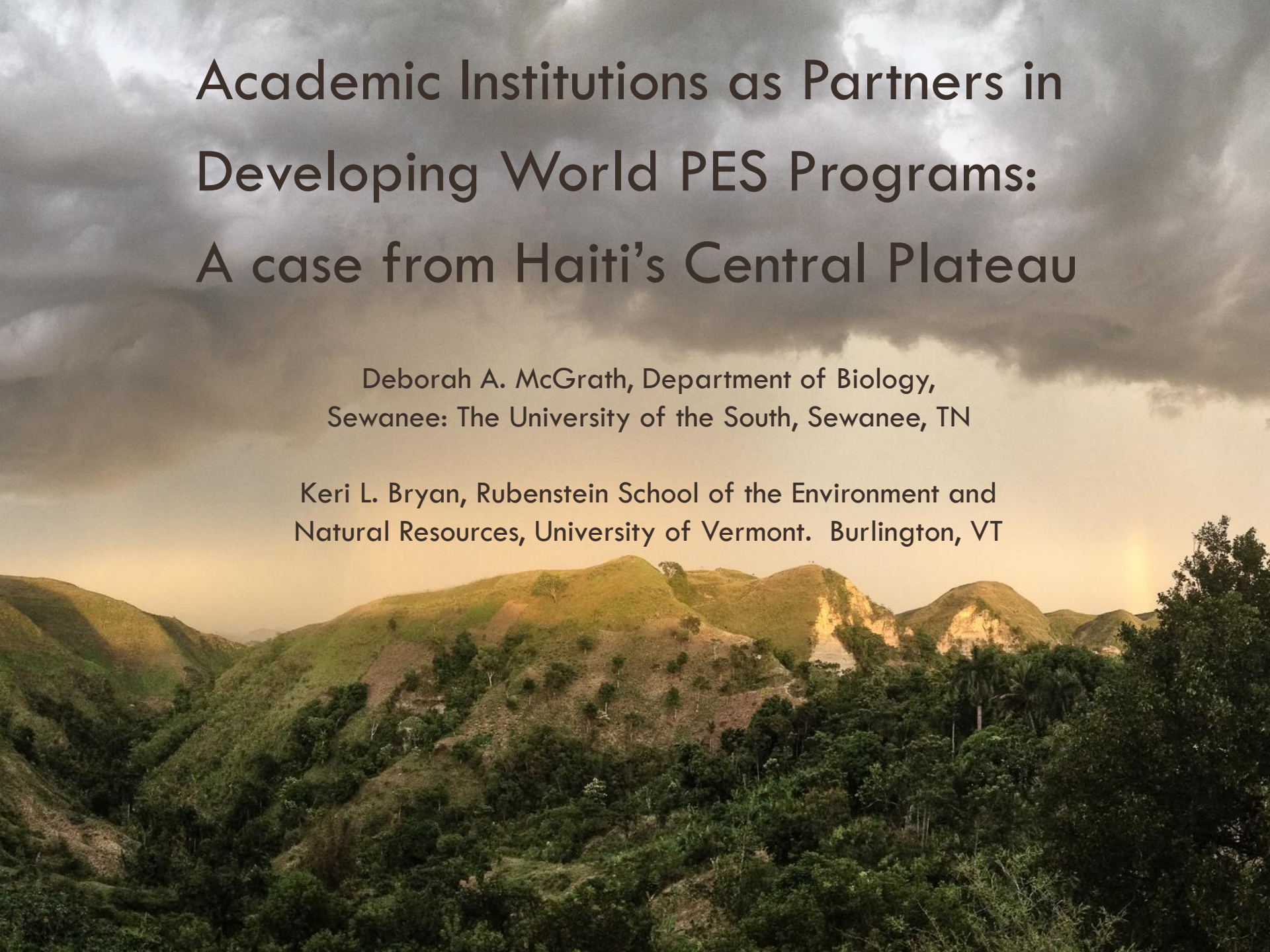
Academic Institutions as Partners in Developing World PES Programs: A case from Haiti's Central Plateau

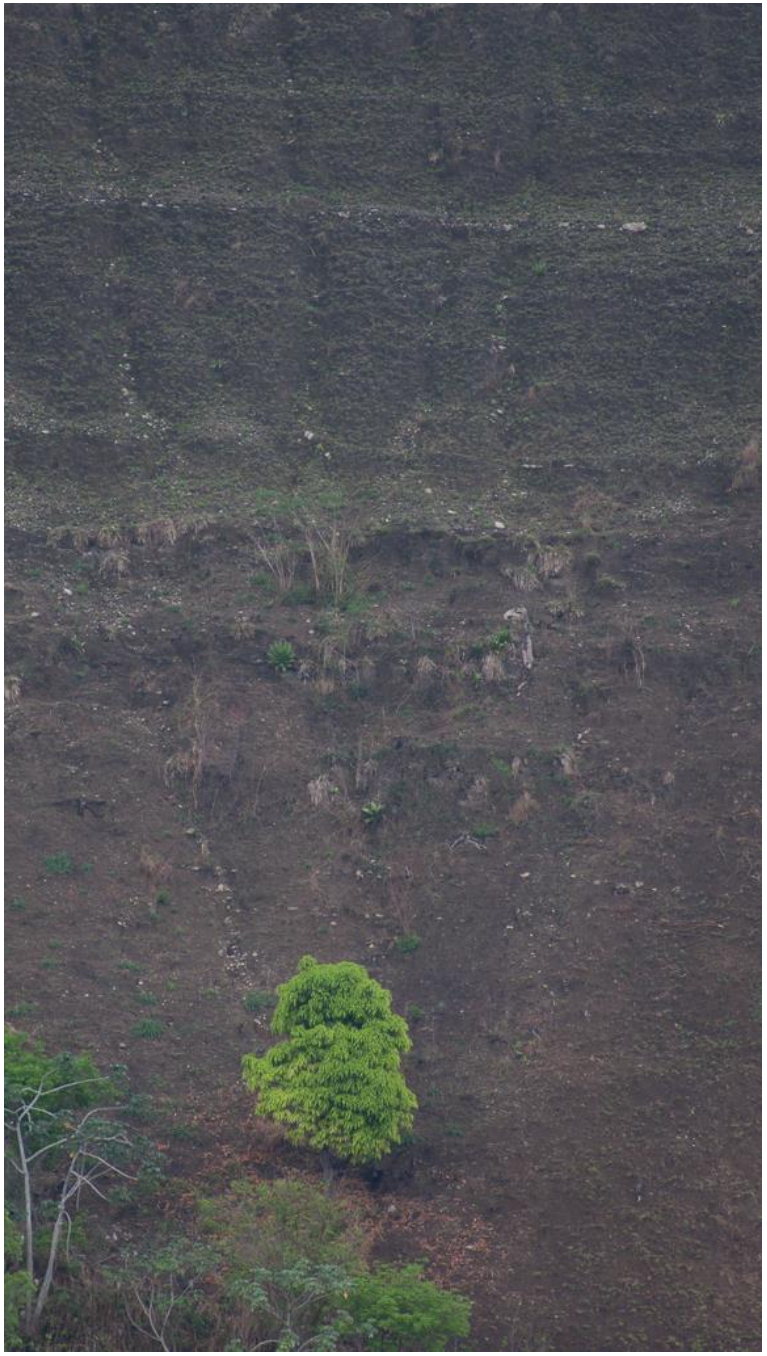
Deborah A. McGrath, Department of Biology,
Sewanee: The University of the South, Sewanee, TN

Keri L. Bryan, Rubenstein School of the Environment and Natural Resources, University of Vermont. Burlington, VT



Border between Haiti and the Dominican Republic (NASA photo)

Despite decades of reforestation efforts, severe environmental degradation has perpetuated low agricultural productivity, poor health, and extreme poverty in Haiti



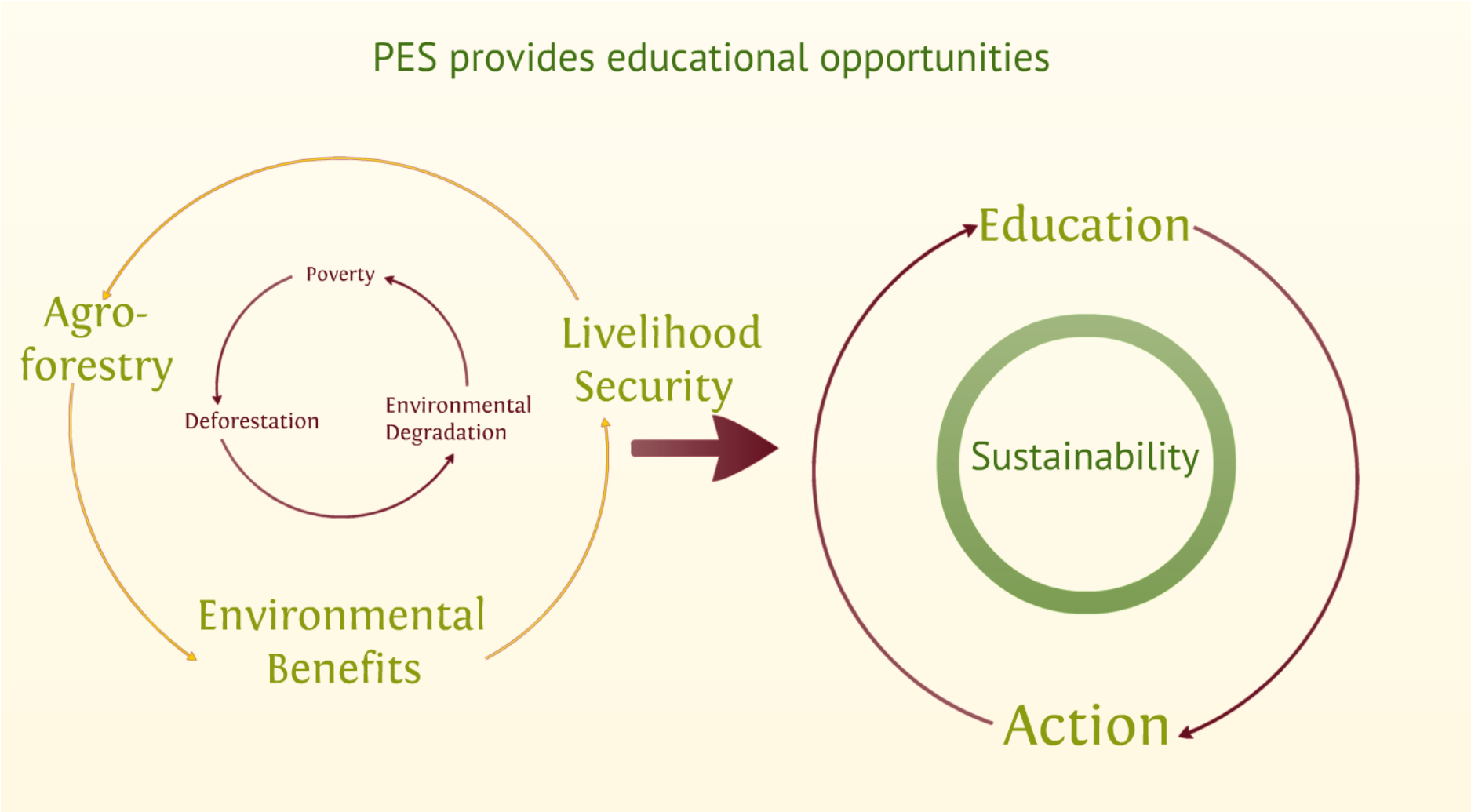
Payment for Ecosystem Services (PES)

- Voluntary transactions in which land owners are paid for management practices that are expected to result in continued or improved environmental service provision

Charcoal sells for $50 per sack

Trees protecting water source

Education is part of the PES bundle of services



Zanmi Kafe (Partners in Coffee)

- Collaborative partnership between Haitian farmers, a Haitian NGO and a small liberal arts college that:
  - Promotes the adoption of more sustainable resilient agroecosystems by incentivizing tree planting with payments for environmental services (PES)
  - Aims to improve livelihoods in Haiti's Central Plateau
  - Studies PES as a mechanism to promote ecological restoration and poverty alleviation in the poorest of countries

Why PES in Haiti?

- Payments for carbon sequestration and biodiversity conservation can remove barriers to tree planting and maintenance
- PES can augment farmer incomes during agroforest establishment, when trees are less productive and most vulnerable to competing land uses
- As trees yield coffee and other products, agroforests will provide farmers with sources of income
- Environmental service provision can be highly additional

With agroecosystem success, farmer adoption spreads

Cultivating Collaboration

Partnering with others to make a sustainable project

The Sewanee-Haiti Institute, formed in 2012, consists of faculty, staff, and dedicated students of Sewanee: the University of the South.

Zanmi Agrikol (ZA, *Partners in Agriculture*) is a non-profit organization based out of Mirebalais, Haiti that helps farmers adopt more sustainable agricultural practices and supports a vocational school. It is a sub-group of Zanmi Lasante (*Partners in Health*), the NGO formed by Dr. Paul Farmer.

In 2008, ZA and the Sewanee-Haiti Institute partnered together to form Zanmi Kafe *(Partners in Coffee)*, an initiative to educate villages and provide the necessary materials to plant coffee. Over 40 Haitian families are part of the program.

Since March 2013, Zanmi Kafe has planted a 15,000 trees nursery of coffee and multipurpose shade trees.

Payment for Ecosystem Services (PES)

Ecosystem services are natural processes that provide benefits to humans. We are dependent on these processes, however most of these services do not have to be paid for and are undervalued and underprovided. PES, a market mechanism, combats this by valuing these natural benefits.

PES provides funds to farmers to keep trees in the ground. The sale of carbon offsets will offer an incentive to plant and maintain trees and the ecosystem services they provide.

Sewanee-Haiti Institute

Coffee + Multipurpose Trees

Coffee used to be a major export for Haiti and was grown all over the Central Plateau. Farmers in this area have previous experience growing coffee and welcome the efforts and guidance Zanmi Kafe provides. One day, they hope to grow coffee in substantial quantities that will add income to their households.

Coffee requires cooler temperatures found at higher elevations, like the Central Plateau. To buffer this agricultural system against a multitude of environmental disruptions, a diversity of multipurpose trees are planted amongst the coffee.

Multipurpose trees provide shade required for healthy productive coffee agroforests. Fruit produced by these trees provides families with additional food and income. Paying farmers to sequester carbon further incentivize tree maintenance while the saplings are still growing.

This diverse agroforestry system has many benefits:

- Soil conservation
- Watershed protection
- Resilience to environmental or economical change
- **LIVELIHOOD SECURITY**

Sewanee-Haiti Institute

At Sewanee, we have a Student Green Fee, a part of your tuition that goes to green energy initiatives purchased through the Physical Plant Services. Never heard of this Fee? Because we do not know what the Fee is supporting, we are unaware of how it is helping the environment. But now, there's a way to use it in meaningful and useful way….

If you check 'YES' below, funds from this fee will be transferred to offset the carbon emissions from your (unreachbody -abroad/athletic) trip air travel! In Haiti, there's a reforestation project called Zanmi Kafe (Farmers In Coffee) that was started by Haitian farmers in collaboration with Sewanee students. One goal of this project is to pay farmers (using your Student Green Fee, if you agree) to maintain coffee and other productive trees on their land. These trees sequester carbon, offsetting your carbon emissions! The trees also improve soil, protect water quality and provide useful products for Haitian families, enhancing their quality of life.

Do you want to offset your carbon dioxide emissions for this trip? We hope you do!

Name: _____

Yes ☐

No ☐

Students opt to have their green fee used to offset travel-based carbon emissions by supporting Haitian agroforesters

And raise funds for Zanmi Kafe

Why liberal arts colleges make good partners:

- Environmental sustainability, social justice, community engagement, and problem-based learning are major concerns on college campuses
  - American College and University Presidents' Climate Commitment (ACUPCC) has 684 signatories

- PES partnership provides highly sought after opportunities for student outreach, education and research in a cross cultural setting

What does a college partnership bring?

- Guaranteed buyer (with conditionality)
- Buyer sets price
- Support for start up and recurrent costs
- Frequent, consistent and less costly monitoring
- New lines of study and initiatives
- Cross cultural education for all parties
- Trusting long term relationship (proxy for certification)
- Energy and motivation

First nursery completed in Bois Jolie, March 2013 (16,000 seedlings).

Research interns conduct monitoring and studies

- Household survey
  - socioeconomic data
- Planting area survey
  - site characteristics
  - existing trees
  - initial carbon stores
- Biodiversity indicators
  - ants, birds, butterflies
- Tree planting verification
  - survival, seedling health

Seedling with rust

Healthy coffee seedling

Collecting multipurpose seedlings – PES helps ensure that agroecosystems are diverse (not coffee monocultures)

Benefits to date of Zanmi Kafe PES program

- 16,000 trees planted and verified on 42 farms
- Three additional villages have joined
- Comprehensive baseline data – rigorous science
- Reduced monitoring costs bring down recurrent costs
- Hands-on environmental problem solving experience for Haitian and Sewanee students
- Research opportunities for Haitian and Sewanee students
- Strong long term relationships – guaranteed buyer
- New initiatives: Zanmi Foto

Zanmi Foto: Photographs initiate discussion about community priorities

Why our PES partnership makes a difference

- Payments encourages tree maintenance
- Higher payments to farmers
- Rigorous sustained monitoring
- Leverage to control leakage and perverse incentives
- Emphasis on environmental services
- Reframes the narrative:
  - Education is a service that we pay for

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Sewanee Green Fee

Zanmi Kafe as a PES program

- Coffee-based agroforestry system initiated as a pilot reforestation project in 2013 with NGO Zanmi Agrikol
- Uses PES to offset the opportunity cost of tree planting
- Targeted environmental services are carbon sequestration and biodiversity conservation
- Additional bundled services include poverty alleviation and educational benefits
- User funded by a green fee paid by students of Sewanee: The University of the South

The Zamni Kafe-Sewanee Partnership

- Led by NGO Zanmi Agrikol (Partners in Agriculture)
- Voluntary farmer participation (65 farmers in 2 villages)
- Students and farmers collaborate on nursery establishment, trainings, monitoring
- Research interns and faculty conduct baseline surveys, studies and monitoring
- Student green fee is used to support nurseries, trainings, payments to farmers
- Conditionality: farmers will receive their first payment if tree survival > 80% one year after planting

Effectiveness of Zanmi Kafe as a PES program

- Environmental service generation
  - Enrollment – program has expanded to new villlages
  - Compliance – well monitored yearly
  - Additionality – extremely high
  - Link between land use and environmental service – well established
  - Permanence and perverse incentives – carbon payments discourage coffee monocultures
- Cost of environmental service provision
  - Start up is minimal (nursery construction)
  - Recurrent costs (reduced by transferring monitoring costs)

Seedling distribution May-June 2014