P A D E E
SOCIAL IMPACT BOND

Preventing Deforestation
Ensuring Sustainable Livelihoods
SHRINKING FORESTS, GROWING DANGER

From 2000-2014, Thailand has lost 1.2 million hectares of forest cover
WHAT IS CAUSING DEFORESTATION?

One of the culprits to rapid deforestation in Thailand are the people who are most dependent on forests: farmers.

Unsustainable agricultural practices associated with maize production include slash and burn method, mono-cropping, and excessive use of chemical substance. Soil fertility and nutrients are depleted leading to soil erosion and land degradation.
THE IMPACT IS DETRIMENTAL

Environmental
- Soil erosions
- Water shortages, flooding, decreased water quality
- Biodiversity loss

Social
Economic marginalization of forest-dwelling communities
- Increased maize cultivation costs and vulnerability to price fluctuations
- Indebted farmers pressured to invade into forest areas to increase cultivation land
THERE IS A WIN-WIN SOLUTION

Agroforestry (Forest-Farming)
SHADE-GROWN COFFEE FARMING

- Coffee trees are planted without harming existing trees
- Native trees provide shade
- No pesticide use
- Increased income for marginalized communities
EXISTING HURDLES

Inefficient Operations...
- Mostly grown in small areas
- Unconsolidated & Unstandardized processing
- Lack of proper facilities

...Limits scale
- Unable to sell at the volume & quality level demanded by buyers
- Beans sold to middlemen at a discount (>50% below fair price)

...Making Shade-coffee farming economically unsustainable
- Farmers left with thin margins
- Abandonment or clearing of forests to shift to corn cultivation
PADEE’s INTERVENTION MODEL

PADEE will scale up shade-coffee farming by improving operation efficiency, thereby ensuring farmers enough economic benefit to sustain their forests.

01. Centralized processing / Produce in bigger volume

02. Connect with buyers / Secure markets

03. R&D, Tech. Assistance, Organic certification / Maintain premium quality

PADEE

Coffee Processing Co. (co-owned by PADEE and coops)

Domestic & International Buyers

Universities, Organic Coffee Certifiers

Farmers’ Cooperative

Farmers’ Cooperative
PADEE SIB (Social Impact Bond) : OPERATIONAL FLOW

Investor

Guarantor

Guarantee 30-50% of principle

PADEE SIB
*SPV Managed by PADEE Mgmt. Co.

Upfront Capital

Return Based on Performance

Purchase PES

Issue PES notes

Outcomes Payer
*Corporate CSR

Report outcomes

Independent Auditor

Measures outcomes

Investment & Working Capital (Forgivable Loan)

Coffee Processing Co. (co-owned by PADEE and coops)

Domestic & International Buyers

Loan Repayment

Revenue Share

Target
(Pilot Phase)

Successfully preserve 10,000ha of existing forests through shade-coffee farming

Farmers’ Cooperative

Universities, Organic Coffee Certifiers

Farmers’ Cooperative
# Pilot SIB Overview

<table>
<thead>
<tr>
<th><strong>Investment Type</strong></th>
<th>Social Impact Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size (Pilot)</strong></td>
<td>US$ 3,000,000</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>8 years</td>
</tr>
<tr>
<td><strong>IRR</strong></td>
<td>3.8–6.3% (Subject to Performance)</td>
</tr>
<tr>
<td><strong>Management Fees</strong></td>
<td>10% of profit</td>
</tr>
</tbody>
</table>
| **Target Investors**| -Investors: DFIs, PRIs, Foundations  
                      -Out come Payers: Corporations (CSR Funds) |
| **Regional Focus**  | Northern Thailand (Tak Province)    |
| **Target Impact**   | -Main Target: Preserve 10,000ha of forest land  
                      -Sub-Target: Increase in farmers’ income by 30% |
PILOT AREA:
Tak Province

Area Information

Northwestern Thailand

>900m above sea | humidity 69-75% | avg. temperature 26°C (Adequate environment to grow coffee)

Forest cover rate: 82%(2002) -> 77%(2011)

43.5% of whole population live below the poverty line

Partner coop example: Muser Coffee Coop
- Works with 100+ small shade-coffee growers
- Current processing capacity: 10t/year

1. https://knoema.com/atlas/Thailand/Tak-Province
INVESTMENT CRITERIA

PADEE's project areas and partner coops are carefully selected through rigorous due diligence.

- **Geographic Focus**
  - Northern Thailand
  - Identified as most susceptible areas to deforestation
  - Adequate climatic condition for coffee-growing

- **Production Capacity**
  - >100 tons of coffee (green beans) produced within 40km

- **Farmer Commitment**
  - Farmer votes of >80% required to participate in PADEE pilot project
  - Farmers must commit to forest preservation agreement

- **Land Rights**
  - Legal documentation on land use required
# CASH FLOWS

![Image of a circle with the text Profit USD1.86m]

### Cash Outflow

<table>
<thead>
<tr>
<th>Description</th>
<th>USD(M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PES Audit</td>
<td>1.02</td>
</tr>
<tr>
<td>Loan to Coop</td>
<td></td>
</tr>
<tr>
<td>Processing Facilities &amp; Equipment</td>
<td></td>
</tr>
<tr>
<td>Coffee plants and fertilizers, farmer training, organic coffee certification</td>
<td>5.87</td>
</tr>
<tr>
<td>Expenses</td>
<td>8.56</td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>1</td>
</tr>
<tr>
<td>Coffee Marketing</td>
<td>0.25</td>
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</table>

### Cash Inflow

<table>
<thead>
<tr>
<th>Description</th>
<th>USD(M)</th>
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</thead>
<tbody>
<tr>
<td>PES</td>
<td>6.35</td>
</tr>
<tr>
<td>Revenue Share from Coffee Sales</td>
<td>0.93</td>
</tr>
<tr>
<td>Loan Repayment from Coop</td>
<td>3.14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>USD(M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>10.42</td>
</tr>
</tbody>
</table>

### Profit

<table>
<thead>
<tr>
<th>Description</th>
<th>Worst</th>
<th>Medium</th>
<th>Best</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit</td>
<td>1.1m</td>
<td>1.86m</td>
<td>1.99m</td>
</tr>
<tr>
<td>IRR</td>
<td>3.8%</td>
<td>5.5%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
CASH FLOWS

(US 1,000)

- CF from Revenue Share of Coffee Sales
- CF from PES
- CF from Loans to Coop
- Net CF

PADEE SOCIAL IMPACT BOND

13
APPEAL TO INVESTORS
1) Multiple Revenue Streams
APPEAL TO INVESTORS
2) CSR Shifting to “Green Growth”

An increasing number of companies are implementing PES as their new CSR initiative to offset damage to the ecosystem.

01/ The private sector channeled $8.2 billion into investments that seek measurable environmental benefits, between 2014-2015\(^1\) > 62% increase from $5.1 billion (2013)

02/ Market for conservation investment expected to increase to $37.1 billion over the next five years\(^2\)

03/ Major companies adopting PES as CSR initiative
- Walt Disney: Forest conservation in Cambodia
- Marriott: Watershed conservation in China

APPEAL TO INVESTORS

3) Growing Market for Specialty Coffee

Specialty coffee market is very lucrative, with an estimated size of US$26 bil. In U.S. alone and growing steadily.

01/ Market share of Specialty Coffee in U.S. out of the $48 billion U.S. retail coffee market in 2017, 55% will be spent on specialty coffee

02/ The largest growth opportunity expected to be in Asia, led by coffee consumers in Japan, Korea and China

03/ Thai Specialty Coffee is increasingly gaining recognition in the international market

*Specialty Coffee Association of Thailand (SCATH) launched in 2013

1. Specialty Coffee Association of America
2. Euromonitor
## RISK MITIGATION

<table>
<thead>
<tr>
<th>RISK</th>
<th>Probability</th>
<th>Impact</th>
<th>Mitigation Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Partners</td>
<td></td>
<td></td>
<td>• In process of discussing long-term PES purchasing agreements with major Thai conglomerates</td>
</tr>
<tr>
<td>• Corporate PES purchasing based on voluntary basis</td>
<td></td>
<td></td>
<td>• Due diligence, performance-based compensation</td>
</tr>
<tr>
<td>• Overreliance on Coops</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Technical expertise</td>
<td></td>
<td></td>
<td>• Leverage data from existing projects</td>
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<tr>
<td>• Ability to measure and monetize PES performance</td>
<td></td>
<td></td>
<td>• Partner with organizations with expertise(e.g.Verified Carbon Standard)</td>
</tr>
<tr>
<td>3. Supply Chain</td>
<td></td>
<td></td>
<td>• Recruit coffee experts to ensure product quality, provide regular trainings to farmers</td>
</tr>
<tr>
<td>• Failure to meet quality standards due to poor techniques</td>
<td></td>
<td></td>
<td>• Use climate-based insurance</td>
</tr>
<tr>
<td>• Natural disasters limit max. yield</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Market</td>
<td></td>
<td></td>
<td>• Projection based on conservative price estimation</td>
</tr>
<tr>
<td>• Fluctuation in coffee price</td>
<td></td>
<td></td>
<td>• Diversify agroforestry crops(long-term)</td>
</tr>
<tr>
<td>• Currency risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Government</td>
<td></td>
<td></td>
<td>• Establish clear agreement over land use before project launch</td>
</tr>
<tr>
<td>• Political instability</td>
<td></td>
<td></td>
<td>• Align project with policy aims</td>
</tr>
<tr>
<td>• Volatile land policies</td>
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SCALE-UP PLAN

Phases:

**Phase 1:**
- Expand to Northern provinces in Thailand

**Phase 2:**
- Expand to neighboring countries

Locations:
- Tak Province
- Chiang Rai
- Mae Hong Son
- Myanmar, Laos, Cambodia
OUR IMPACT

Preserving 10,000ha of forestland through shade-coffee farming will:

**Environmental**
- Save long-term economic costs of USD $1.29 billion or more

**Social**
- Increase 250+ shade-coffee farmers’ household income by 30%

Additional impact indicators (IRIS)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td>Ecosystem Services Provided/Total Protected Land Area/Land Indirectly Controlled: Sustainably Managed</td>
</tr>
<tr>
<td>1) Increased forest cover and forest-related ecosystem services</td>
<td></td>
</tr>
<tr>
<td>2) Increased access to fresh water</td>
<td></td>
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<tr>
<td><strong>Socio-Economic</strong></td>
<td>Value of Commercial/Retail Infrastructure Financed/Revenue Generated at Directly Financed Enterprises/Volume Purchased from Supplier Individuals</td>
</tr>
<tr>
<td>1) Increased local economic activity</td>
<td></td>
</tr>
<tr>
<td>2) Increased income in rural households</td>
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</table>
THANKS TO OUR ADVISORS

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