The Mekong Bamboo Initiative

Cambodia

Laos

Vietnam

IFC
International Finance Corporation

World Bank Group

MPDF

Oxfam
Hong Kong
Bamboo & Rural Poverty

How to solve poverty ‘at scale’?
→ sustained rural market growth ‘at scale’

How to achieve sustained rural market growth?
→ Supply chains based on production potential? (No)
→ i) Strategic analysis of market potential ie demand
→ ii) Assist best ‘pro-poor impact’ markets to tap demand

Is bamboo a candidate pro-poor market for a strategic, demand-driven approach? We tested this question via a feasibility study...
What we found out

1. **Innovation** – How the sector has emerged

2. **Opportunity** – Global bamboo market USD7 billion pa & growing

3. **Impact Potential** – Mekong 2017 – a USD1.2bn industry & 1.2 million jobs

4. **Lessons from China** – China is the lead in the sector
The Supply Chain Pilot & Feasibility Study

- Supply Chain Pilot – MPDF led. Thanh Hoa Province, Viet Nam (late 2004 to present).
- Sub-Regional Sector Feasibility Study – OHK & MPDF. China, Viet Nam, Laos, Cambodia, Global (Jan-June 2006)
The Supply Chain Pilot

Thanh Hoa Supply Chain Pilot

Farmers → Preprocessors → Flooring factory, other factories → Large European buyer
Sub-Regional Feasibility Study

Each Country
Field→Farming context/economics
National→Domestic supply chains, bamboo resources, market size, BEE, Int’l trade barriers

China
Innovations in supply chains

Global
Market sizing & demand outlook
Innovations
Innovations (1) 
China & New Bamboo Products

- China was forced to innovate with bamboo
- New products & growing market penetration

Bamboo laminated flooring and panels
Fuel Pellets
Bamboo fabrics
Bamboo Beer
Blinds
Building products
Ford concept car
Products with market share
Development & new markets
Innovations (2)
Maximise the Utility of Bamboo

3 Main Sub-Sectors:

Handicrafts
Bamboo Shoots
Industrial Processing

4 types

Raw Culms
Bulk Products
Medium Value
Premium Value

Source: Zhu 2005
The Opportunity
The Opportunity (1)
World Bamboo Markets

Size of Current
‘Global’ Markets
(USD Millions)

<table>
<thead>
<tr>
<th>Product</th>
<th>Value (USD Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chopsticks</td>
<td>390</td>
</tr>
<tr>
<td>Activated Carbon</td>
<td>1,200</td>
</tr>
<tr>
<td>Bamboo Shoots</td>
<td>1,500</td>
</tr>
<tr>
<td>Charcoal</td>
<td>3,100</td>
</tr>
<tr>
<td>Bamboo &amp; Rattan Handicrafts</td>
<td>6,000</td>
</tr>
<tr>
<td>BJC</td>
<td>6,500</td>
</tr>
<tr>
<td>Blinds</td>
<td>10,000</td>
</tr>
<tr>
<td>Wood Flooring</td>
<td>14,000</td>
</tr>
<tr>
<td>Wood Panels</td>
<td>27,000</td>
</tr>
<tr>
<td>Wood Furniture</td>
<td>57,000</td>
</tr>
</tbody>
</table>

BJC = Builders’ Joinery & carpentry

‘Global’ Markets include overall product markets into which bamboo products penetrate.

Size of Current
‘Bamboo’ Markets
(USD Millions)

<table>
<thead>
<tr>
<th>Product</th>
<th>Value (USD Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chopsticks</td>
<td>300</td>
</tr>
<tr>
<td>Activated Carbon</td>
<td>20</td>
</tr>
<tr>
<td>Bamboo Shoots</td>
<td>1,500</td>
</tr>
<tr>
<td>Charcoal</td>
<td>60</td>
</tr>
<tr>
<td>Bamboo Handicrafts</td>
<td>3,000</td>
</tr>
<tr>
<td>BJC</td>
<td>5</td>
</tr>
<tr>
<td>Blinds</td>
<td>500</td>
</tr>
<tr>
<td>Wood Flooring</td>
<td>100</td>
</tr>
<tr>
<td>Wood Panels</td>
<td>200</td>
</tr>
<tr>
<td>Wood Furniture</td>
<td>1,100</td>
</tr>
</tbody>
</table>

‘Bamboo’ Markets are bamboo components of Global markets.

World Now USD7bn pa, China ~USD6bn pa
The Opportunity (2)
Growing Bamboo Markets

World Bamboo markets in 2017 ~ USD15-20bn pa

Growth depends on:
1. Wider global growth
2. Bamboo penetration into ‘global’ markets

USD16.8bn
Other Panels
Flooring
Laminated Furniture
Traditional Furniture
Chopsticks Shoots
Blinds
Handicrafts

USD6.8bn
5% Non Traditional
95% Traditional

2017 Scenario 1: Zero Growth
2017 Scenario 2: Mid-level Growth

We prepared 4 growth scenarios. Zero, Lower, Middle, Upper
The Opportunity (3)
The Poor Accessing New Markets

<table>
<thead>
<tr>
<th>Product</th>
<th>Ease of market access</th>
<th>Profitability</th>
<th>Area of bubble</th>
</tr>
</thead>
<tbody>
<tr>
<td>BJC</td>
<td>Low</td>
<td>Low</td>
<td>300</td>
</tr>
<tr>
<td>Furniture</td>
<td>High</td>
<td>High</td>
<td>1,100</td>
</tr>
<tr>
<td>Activated Carbon</td>
<td>Low</td>
<td>Low</td>
<td>20</td>
</tr>
<tr>
<td>Charcoal</td>
<td>High</td>
<td>High</td>
<td>60</td>
</tr>
<tr>
<td>Flooring</td>
<td>Low</td>
<td>Low</td>
<td>1,200</td>
</tr>
<tr>
<td>Blinds</td>
<td>High</td>
<td>High</td>
<td>500</td>
</tr>
<tr>
<td>Bamboo Shoots</td>
<td>High</td>
<td>High</td>
<td>1,500</td>
</tr>
<tr>
<td>Handicrafts</td>
<td>High</td>
<td>High</td>
<td>3,000</td>
</tr>
<tr>
<td>Chopsticks</td>
<td>High</td>
<td>High</td>
<td>400</td>
</tr>
<tr>
<td>Flooring</td>
<td>Low</td>
<td>Low</td>
<td>100</td>
</tr>
<tr>
<td>Charcoal</td>
<td>High</td>
<td>High</td>
<td>130</td>
</tr>
<tr>
<td>Flooring</td>
<td>Low</td>
<td>Low</td>
<td>5,600</td>
</tr>
<tr>
<td>Blinds</td>
<td>High</td>
<td>High</td>
<td>1,200</td>
</tr>
<tr>
<td>Bamboo Shoots</td>
<td>High</td>
<td>High</td>
<td>1,700</td>
</tr>
<tr>
<td>Handicrafts</td>
<td>High</td>
<td>High</td>
<td>1,700</td>
</tr>
<tr>
<td>Chopsticks</td>
<td>High</td>
<td>High</td>
<td>4,200</td>
</tr>
</tbody>
</table>

Current bamboo market size: 300 USD million
Estimated bamboo market size 7-10 yrs (mid scenario): 7-10,000 USD million

Values in USD million

Area of bubble = market size
Impact Potential
'Pro-poor' measured via labour & input cost base data from businesses. Bamboo sector ~75% pro-poor.

Pro-poor financial impact per ha is total financial returns to the poor throughout the supply chain from bamboo sustainably produced from 1 ha.

Full time equivalent jobs (FTE) created on farms, factories etc throughout the supply chain from bamboo sustainably produced from 1 ha.

Impact Potential (1)
Jobs, Financial Impact by Product

- **Premium processing** (e.g., flooring, laminate furniture)
  - Flooring VN
  - Mat board VN
  - Woven mat VN
  - Chopsticks VN

- **Medium value processing** (chopsticks, panels)
  - Paper + pulp VN
  - Woven mat VN
  - Chopsticks VN

- **Low Value Processing**
  - Charcoal, briquets, China
  - Charcoal, briquets, Laos
  - Raw culms VN

Jobs per ha (Farmers Workers FTE)

Local pro-poor financial impact per ha (USD)
Impact Potential (2)
Allocating Bamboo Resource

A bamboo processing industry has a mix of products

- **Premium Value Products**: flooring, laminated furniture
- **Medium Value Products**: blinds, panels, chopsticks
- **Low Value Bulk Processing**: paper, charcoal
- **Low Value Raw Bamboo**: scaffolding, construction

Increasing pro-poor added value

Reducing bamboo quality requirement
Impact Potential (3) Depends on Industry Mix

Supply chain ‘industry mix’ scenarios for 50,000 ha

New Mix
- $20m 8,500 jobs
- 5% Medium ★
- 15% Bulk ★
- 80% Raw ★

Med Mix
- $21m 9,500 jobs
- 5% Medium ★
- 40% Bulk ★
- 55% Raw ★

Bulk Mix
- $21m 9,500 jobs
- 5% Medium ★
- 20% Med Value ★
- 20% Bulk ★
- 55% Raw ★

Raw Mix
- $20m 8,500 jobs
- 5% Medium ★
- 15% Bulk ★
- 80% Raw ★

Medium Mix
- $31m 16,500 jobs
- 5% Premium ★
- 20% Med Value ★
- 20% Bulk ★
- 55% Raw ★

New Indust Mix
- $40m 20,000 jobs
- 5% Premium ★
- 15% Med Value ★
- 30% Bulk ★
- 55% Raw ★

Jobs per ha (Farmers Workers FTE)

Local pro-poor Financial Impact per ha (USD)
Impact Potential (4) Depends on Policy & Action

Thanh Hoa, Viet Nam 2006
- New $40m
- Bulk $21m
- Med $31m
- Raw $20m

Mekong Potential next 5-10 years?
- Med $31m
- Mature, New $72m

Viet Nam, Laos Current Policy Direction?

Anji, China, 2006
- New Mix. Impact via High Bamboo cost + High Labour cost +

Local pro-poor financial impact per ha (USD)

Jobs per ha (Farmers Workers FTE)
Impact Potential (5)
Mekong - Accessible Demand

- Today Viet Nam USD250m pa, Laos USD4m pa, Cambodia USD7m pa
- Potential for Mekong 2017 is to hold between 2% & 8% of global share of each product market.
  - It would be a **USD1.2bn pa sector** (total financial output)
  - Of this **USD900m pa pro-poor** financial impact
  - Grow from 400,000 to **1.2 million jobs**
  - **Each hectare** of bamboo through the supply chain:
    - USD 2,200pa & 2.3 jobs
    - USD 1700 of this as pro-poor income pa/ha
  - Provide 50-60% of all bamboo sector jobs for **women**
  - Provide 50-60% of new jobs in **rural areas**
  - Industry suited to uplands, ethnic groups, difficult poverty
  - Create positive **environmental** effects (carbon, soil etc)
Lessons from China
Lessons from China(1)
Anji County, Zhejiang Province

Anji County, Zhejiang Province, 230 km from Shanghai & 70 km from Hangzhou

Anji, one of China’s 10 ‘bamboo homelands’
Lessons from China(2)
Anji’s bamboo led transformation

Anji’s poverty transformation likely driven by bamboo

Adapted from: Maoyi & Xiaosheng (2004)
Lessons from China (3)

Impact across income groups

Household income of farmers in Anji County

% of Average Total Household Income Derived from Bamboo

Per Capita Income Rank by Percentile 1994-95

Source: Adapted from Ruiz Pérez et al (2004)
Lessons from China (4)  
Key’s to their success

• Strong demand (Shanghai boom eg panels)  
• Gov leadership (inc local BEE)  
• Parallel development of processing industries and bamboo resources  
• Pre-requisite conditions  
• Land tenure system  
• Supportive business environment  
• Opening up of the economy

Lessons from China (5)

“Neiyou”: QC Chain of Custody System

Linked to harvest quotas
Regulated by government agency
Lessons from China (6)
Industrial Pre-Processing

Pre-processing Workshop, Anji
Lessons from China (7)
Industrial Pre-processing

For construction
For flooring, furniture
For paper, fuels
For blinds, chopsticks

Culms → Direct to Market
Value Adding
Near Source

Preprocessing → Slats
And

Sticks
Residues

Raw Culm

For paper, fuels

Bulk, Low Value Products

Premium Products
Med Value Products

For flooring, furniture
Lessons from China (8)
Current Situation: China vs Vietnam

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource base:</td>
<td>3.4m ha</td>
<td>1.4m ha.</td>
</tr>
<tr>
<td>Industry:</td>
<td>$5.45 bn</td>
<td>$0.25bn</td>
</tr>
</tbody>
</table>

Costs:
- Bamboo: $85/tonne vs $37/tonne
- Labour: $150/month vs $50/month

Laos has >1.5m ha bamboo...
Cambodia 1960 (400,000 ha), now 30,000ha
What Next?

- More supply chain work and business partnerships in Laos, Cambodia, Viet Nam
- National, provincial policy, sector promotion, business support & inter-market links
- China Mgt & Tech transfer
- Capital (~USD 200 million required)
- Research gaps, support to ‘replicators’
- Formation of Mekong Bamboo Consortium
- Take ‘Strategic Market Demand’ approach to other markets/sectors
- We are looking for collaborators
The Mekong Bamboo Initiative

Study Coord: MPDF - Ken Key, Thu Dang Hong, OHK – Tran My Hanh, John Marsh.
Study Donors: OHK & IFC-MPDF [USD250k]
Pilot Main Donors: IFC-MPDF; Other Donors: M4P (ADB Viet Nam), IKEA. [USD315k]
Main Partners & Contributors: Nigel Smith (Study Lead), INBAR, GRET, IDE, Gov of Viet Nam (IPSARD), Gov of Laos (NUOL, NAFRI), Gov of Cambodia (Min of Forestry, Lands), SNV, EDC consultants, Oxfam America, Oxfam UK, Chris Boas, Andrew McNaughton, Marije Boomsma, scores of businesses, hundreds of farmers, dozens of other helpful individuals and organisations. THANKS!
Discussion Topics?

- Feasibility study methodology
- Supply chain pilot
- Bamboo global market sizing method and Mekong potential
- Bamboo supply chains & technologies
- Determining sectoral impacts on poverty
- ‘Strategic Market Demand’ approach – application to sectors in general
- China experience
- Travelogue? Others?
- Hoping for your insights & comments