### Viable Business Options Using Bamboo

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### What is Bamboo?

- Any of a large number of erect or climbing woody grasses with hollow, jointed, rounded and often springy stems

### Remarkable Attributes

- Fast growing
- Great for erosion control and CO2 sequestration
- Extraordinary hardness - typhoons, atomic bomb, earthquake, fire, pest and diseases
- More than 1500 known uses
- Substitute for wood
- High buoyancy
- Needs no replanting
- Adaptable to many sites
- Improves yield of watersheds
- Potential source of renewable energy
- Produces more oxygen

### Desirable Features of the Culm

- Can be cut and worked into various shapes
- Can be joined with nails, screws, bolts, connectors, tying materials and adhesives
- Can be used in many forms (1) round, (2) splits, (3) sliced, (4) flattened, (5) particles, and (6) fibers
- Pleasing appearance
- Treatable with chemicals

### Philippine Bamboo Statistics

| Species | 53 erect; 17 climbing |
| Hectarage | 38K; 20 natural, 18 planted |
| Annual demand | 60 M poles |
| Annual supply | 40 M poles | Engineered bamboo: 2 |
| Main industries | furniture & handicrafts, construction and fishpens; packaging; propping |

Industry very small due to limited raw material supply!!!
Involvement of LGUs

Promotion of bamboo as planting material
- Flood and landslide prone areas
- Marginal/unproductive lands
- Along vital waterways

Industry Strengthening

- Training
- Techno-transfer
- Access to raw material supply
- Bamboo expos
- Marketing assistance

Variability in Size

Largest: D = 10"

Variations in Internode Features

<table>
<thead>
<tr>
<th>Variety</th>
<th>Kawayan tinik</th>
<th>Bayog</th>
<th>Buho</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
<td>78.2%</td>
<td>97.6%</td>
<td>66.0%</td>
<td>29.3%</td>
</tr>
</tbody>
</table>

Why Invest in Bamboo?

- Great global demand; international market value now 10 B US dollars
- Thousands of products
- Low capital investment for many products
- Profitable
- Fast growing; renewable; environment friendly
- Technologies available
- Large tracts of land available for pole production

Money Making Alternatives

- Nursery production
- Mass propagation – tissue culture
- Bamboo farming/plantation
- Primary processing
- Production of finished products

CATEGORIES
### Nursery Production

**Potential Markets**
- Private plantation developers
- LGU projects
- Homeowners & landscapers

<table>
<thead>
<tr>
<th>Type</th>
<th>PC</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>40.00</td>
<td>&gt; 60.00</td>
</tr>
<tr>
<td>Ornamental</td>
<td>80.00</td>
<td>&gt; 200.00</td>
</tr>
</tbody>
</table>

### Tissue Culture

**TOTAL PROPAGULE REQUIREMENT**

500,000 HAS x 200/HA = 100 M PROPAGULES

### Bamboo Farming/Plantation

**Potential Markets**
- Construction, furniture & handicraft sectors
- Fish pen operators
- Fruit & vegetable sector
- Charcoal producers
- Power providers

<table>
<thead>
<tr>
<th>Cost/ha</th>
<th>30K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit cost ratio (15%)</td>
<td>1.63</td>
</tr>
</tbody>
</table>

### Examples of Ornamental Bamboos

### Commercial Species - Structural

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
<th>Promising</th>
</tr>
</thead>
<tbody>
<tr>
<td>K. tinik</td>
<td>Bolo</td>
<td>Iron bamboo</td>
</tr>
<tr>
<td>Bayog</td>
<td>Kayali</td>
<td>Oldham bamboo</td>
</tr>
<tr>
<td>Buho</td>
<td>Laak</td>
<td>Solid bamboo</td>
</tr>
<tr>
<td>Giant bamboo</td>
<td>Anos</td>
<td>Ma-chiku</td>
</tr>
</tbody>
</table>

### The Big Four

**K. tinik**

**Bayog**
The Big Four ...

Beema Bamboo
- Claimed to be a hybrid
- Botanical name not revealed
- Growmore Bio-Tech, Ltd., India
- Biomass yield exceedingly high
- Planting density: 4’ x 10’ = 2470/ha
- Irrigated and heavily fertilized

Comments on Beema
FROM THE INTERNET
- Too good to be true!
- Beware, it could be a scam!

FROM YOUR SPEAKER
- Why hide identity?
- Definitely not a hybrid!!!
- Conduct field trials first!!!

Primary Products
Potential Markets
- Construction industry
- Furniture industry
- Handicraft industry
- Others

Carved Articles
Furniture
- Weaknesses
- Raw materials
- Originality
- Design
- Machinery
- Craftsmanship
- Finishing
Handicrafts

Fences

Gazebos

Charcoal

<table>
<thead>
<tr>
<th>USES</th>
<th>Forms</th>
<th>Potential markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking &amp; Heating</td>
<td>Lump or raw Briquette Activated</td>
<td></td>
</tr>
<tr>
<td>Air/water purification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detoxification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
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</tr>
</tbody>
</table>

- Hotels, restaurants, residences
- Supermarkets, warehouses
- Hospitals, drug companies
- Vehicle owners

Power Generation

Bamboo Pellets

- Biomass
- Cooking
- Heating
- Electricity
Before You Invest ...

- Feasibility study
- Business plan
  - Market
  - Raw materials
  - Competition
  - Technologies
  - Machineries
  - Skilled workers
  - Financing

How May BambooPhil Help?

- Training
- Feasibility study
- Business plan prep
- Technical services

Thank You!

Celso B. Lantican