Poverty Alleviation Through Bamboo High-End Products: Case Study from Kerala State, India.

By

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Intertwined with human life and welfare

Occupies 14 million ha (SFR, 2017) of forest lands in India

Mainly sympodial clump forming variety.

Next to China, India has the richest bamboo genetic resources

- Land area: 328.7 MHa
- Forest Area: 67.8 MHa
- Bamboo Area: 13.96 Mha
  - Clump Forming: 67%
  - Non Clump Forming: 33%
SPECIES DISTRIBUTION OF BAMBOO IN INDIA

136 species
(125 indigenous + 11 exotic)

Three species = 78% of the growing stock

Dendrocalamus strictus (45%).
Melocanna baccifera (20%).
Bambusa bambos (13%).
Kerala State: Case Study Area

Angamaly
Bamboos of Kerala

About 28 species of bamboo
Main species are

- *Bambusa bambos*,
- *Ochlandra travancorica*,
- *Dendrocalamus strictus*
- *Dendrocalamus stocksii*
Thin walled reed bamboos (*Ochlandra travancorica*) - used mainly for weaving by the traditional artisans. Grows extensively beside Water Bodies.
Kerala State Bamboo Corporation (KSBC)

- Head office: Angamaly near Cochi
- Main objectives - to develop & promote industries based on bamboo, reed, cane, etc.
- For Welfare & Prosperity

Main Activities

- Skill development programmes
- Promoting propagation
- Awareness workshop
- Trade fair participation etc.,
Bamboo Board Factory, Angmally

• Established in 1985, to produce BMB using Bamboo mats
• 1990 : Commercial production in single shift
• 1998: the second shift started and production doubled.
• Now Daily Production of 21,500 sq. feet (1998 Sq.meter) of Bambooply of 4 mm
• Located in Bengaluru, Karnataka, India

• Mandate: R&D, Training, Testing & Extension activities related with panels from lingo-cellulosic materials (Wood, bamboo, agro-residues, etc)
KSBC + IPIRTI for Bamboo Ply Industry

➢ IPIRTI transferred the technology to KSBC for manufacture of BMB in 1985.

➢ BMB has immense market potential for housing and furniture applications in India & outside

➢ BMB: An ISO Certified Bamboo Panel (equivalent to Marine grade plywood in strength properties)

➢ Using BMB, KSBC takes turnkey projects to build huts, eco-hubs in forests and other tourist places for aesthetics and eco-friendly characteristics.
Process of making BMB: Mat Weaving

Slivering Reeds using machines for Weaving

Weaving of mats at Mechanized Community Mat Weaving Centre
Making Boards from Mats

Now 21,500 sq feet (1998 Sq.meter) of Bambooply (4 mm) produced daily on an average
Innovative applications & uses of BMB
Application Range
Forest Department (FD)

- Forest Department (Govt. of Kerala) allows reed bamboos to KSBC free of cost

- KSBC provides reed bamboos to Community Mat Weaving Centres (CMWC) and its depots as collected through registered Reed Cutters (RC)
Reed Cutters (RC)

15000 Registered Reed Cutters
Reed cutter
Earnings

Cutting Cost for one Reed
Rs.11-00

Additional Incentives
Rs.17.5%
of total number of reeds cut

Average earning per annum
Rs. 2.7 Lakhs

(US$ 4500)
Weavers Community (WC)

Weaver Earnings

Weaving cost per Mat
Rs.166-00
Mat Size : 8.25” X 4.25”

Number of Mats weaved per day
3 Mats

Average Earning per day
Rs.500-00

Earning per annum
220 Workdays X 500
Rs.1.1 Lakh

(US$ 1830)

10000 Registered Weaver Family
Karnataka State Bamboo Corporation
KSBC
17 CMWCs
85 Main & Sub Depots
One Lakh Artisans
Reed Cutters

Earning

2.7 Lakh (US$ 4500)
per annum

Weavers

Earning

1.1 Lakh (US$ 1830)
per annum
Economic potential of BMB activities

➢ Average production of 613 mats with 17 labourers resulting in foregone benefit of Rs. 2550/-. 

➢ Aggregate predetermined benefit or the opportunity cost is Rs. 9150/-. 

➢ Average earned benefit with respect to the market price is Rs. 10065/-. 

➢ Bamboo has a great potential to generate income and employment.
## Economic potential of BMB activities

<table>
<thead>
<tr>
<th>Production stages</th>
<th>Earned benefit</th>
<th>Required labour days</th>
<th>Foregone benefit (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TAs</td>
<td>MBDs</td>
<td>TAs</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>71 poles</td>
<td>2-3 poles (30-35 slices)</td>
<td>02</td>
</tr>
<tr>
<td><strong>Processing</strong></td>
<td>20,448 slivers</td>
<td>390-396 slivers</td>
<td>42</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td>613 mats</td>
<td>40 small baskets</td>
<td>17</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>613 mats</td>
<td>40 small baskets</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Rs.10065</td>
<td>Rs.2250</td>
<td>61</td>
</tr>
</tbody>
</table>

**Primary data estimates**

TAs- Trained Artisans; MBDs- Marginalized Bamboo Dependent
Kerala Model

FD
Forest Department

RD
Reed Cutters

WC
Weavers Community

KSBC
Kerala State Bamboo Corporation

of community mat weaving
time tested
all weather
longstanding module
for rural economic upliftment
with the help of
Bamboo Value Addition Technology
CONCLUSIONS

- Rural & Tribal India grappling long time Livelihood Challenges, offers a sustainable option with bamboo processing

- An average Reed Cutter earns about Rs.2.70 Lakhs (US$ 4500) annually.

- Besides the Weavers earn about Rs.1.10 Lakh (US$ 1830) annually.

- Remunerative regular income to the Reed Cutters and Weavers ensures sustainable growth of Bamboo Industry, especially in rural Kerala.
RECOMMENDATIONS

- Kerala model of community mat weaving is a time tested, all weather and longstanding module for rural upliftment with Bamboo Value Addition Technology.

- Needs to be emulated in other States of India as well as similar parts of the Globe.