

Renewable energy and energy efficiency in bamboo value chain: A Case study from Bangladesh & Myanmar



Niche mountain enterprise: Bamboo

- Bamboo in HKH: China, India, Myanmar, Bangladesh and Nepal.
- Green gold: sustainable product, mitigation benefits, green job creation
- 5% annual growth = USD 98.3 billion industry by 2025 globally
- Two largest bamboo producers are in the Hindu-Kush Himalayan region: China followed by India.



Energy flow in the bamboo enterprise

Production



- Cutting
- stripping

Processing



Handicraft

- Transport
- cut bamboo
- Treatment
- Cutting/Stripping
- Polishing

Furniture

- Transport
- cut bamboo
- Treatment
- Cutting/Stripping
- Polishing
- Compressing

Marketing



- Transportation
- Market development
- Market linkages (ICT)



Energy flow

- **Energy mix:** No energy used.
- All activities are manually carried out



Energy flow

- **Energy mix:** biomass, kerosene, solar home system, and grid electricity
- **Energy quality**
 - ✓ Bangladesh: Reliable electricity
 - ✓ Myanmar: Load shedding
- **Total cost** in Bangladesh =15 -21USD .
Myanmar =40- 46.USD.



Energy flow

- **Energy mix:** Solar panels; Grid electricity
- **Energy quality:** reliable
- **Cost:** Bangladesh- installment options.
- Myanmar no such options.



RE contribution to resilient enterprise development



Entrepreneurial Orientation

- Anticipate and plan for change
- Product diversification
- Innovation



Market Orientation

- Productivity
- Production
- Business expansion
- New (green) enterprise development



Profitability and Local economy

- Household income
- Green jobs
- Sustainable use of natural resources
- Mitigation benefits

Case1 : How can RE contribute to resilient enterprise?

Ukar - A celebrity bamboo handicraftsman

- Products : handicraft, furniture and construction material
- Integrated electricity since last 3-4 years
- Increased profit up to 20% after using electricity.

How does profit increase?

- Quality products
- Guarantee
- Volume
- Business development

What is needed to make profit ?

- Infrastructure
- Skilled labor
- Investment
- Energy

Challenges?

- Load shedding up to 12-13 hours during summer season



Ecosystem shaping renewable energy contribution to resilient enterprise

- Lack of Policy
- Technology/RE deployment
- Infrastructure
- Finance (subsidy, grants, concessional loan) through financial intermediaries: government, financial institutions, donors, banks, commercial bank.
- Partnership among the service providers and government.
- Capability(skill building): technical and management ,no skill on green product branding

Case 2: How ecosystem shapes resilient enterprises?

Ashika furniture - bamboo enterprise in Chittagong Hill Tract.

- Products: Souvenirs, bamboo handicrafts, furniture
- Train locals to produce bamboo products
- Buy bamboo poles for 1-2 USD depending on quality

Challenges

- Technology
- Policy
- Financing
- Partnership(Lack confident to connect to the export market)
- Lack skills to operate technology
- Infrastructure

Opportunities

- Make 5-10 USD profit by selling bamboo furniture.
- Make 10-15 USD from selling souvenirs.
- Contribute to local economy
- Contribute to sustainability



Key messages

- Productive energy uses needs prioritization.
- RE Demand creation.
- Financial Institutions needs to deliver Innovative financing mechanisms for mountain enterprises .(startup cost, financial instrument: grants, concessional loan, private equity, household equity).
- Equitable Tariff pricing for both grid and distributed system.
- Business enabling environment for bamboo enterprise.

Energy use & existing technologies



Thank you