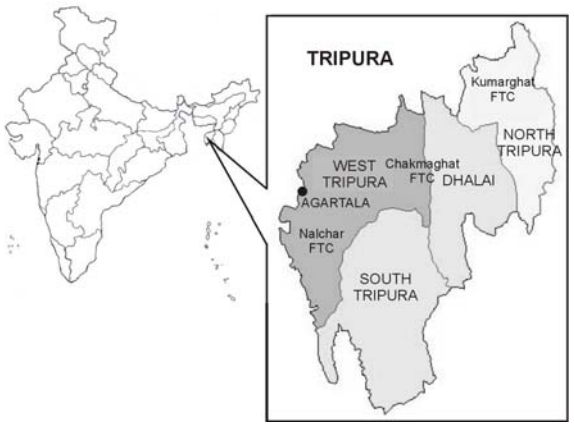
TECHNICAL ADVISORY NOTE (TAN)

Accessing High-Value Markets for Livelihood Enhancement: Coiled Bamboo Products

INBAR
INTERNATIONAL NETWORK FOR BAMBOO AND RATTAN

INTRODUCTION

In Tripura, an ARS programme established by INBAR in 2002 has successfully developed technology for coiled bamboo handicrafts that enables rural artisans to engage in high value-added production. The technology uses simple hand tools, processing machines and jigs to produce unique handicraft pieces with aesthetically pleasing finishes.



At the local level, the Tripura Bamboo and Cane Development Centre (TRIBAC), an INBAR-established, Indian Section 25 non-profit company, implement the project. TRIBAC receives further support from CIBART, INBAR's national partner in India. In addition, coil product development has been promoted by NABARD, as well as the Indian Institute of Technology, Mumbai.

The Context

The development of coiled bamboo handicrafts aims to target the Tripura bamboo handicrafts market, which is renowned throughout India. This sector is very large and provides livelihood opportunities to over 20,000 artisans. However, in recent years, the local handicraft market has become saturated due to a number of factors. By promoting coiled bamboo handicrafts, it is hoped that rural artisans will be able to diversify their product range, providing them with the ability to target high-end urban markets.

In view of the generally high levels of poverty in Tripura, there is urgent need to expand local artisans product ranges. At present, local markets for bamboo handicraft products are shrinking, as there is minimal demand for bamboo handicrafts, besides those that are used for utilitarian purposes. As local communities have little disposable income, artisans fetch very low prices for the handicrafts that they sell. This is forcing many artisans to vacate the sector and migrate to urban centres to find new livelihood opportunities.

Rural artisans in Tripura are currently unable to access both local and regional urban markets due to the State's isolated geographical position (85% of Tripura's perimeter is bordered by Bangladesh) and poor transportation infrastructure. Handicraft goods from Tripura are unable to compete with low-cost equivalents from other regions, because of the high transportation costs incurred when bringing goods to markets. As handicrafts from Tripura are unable to compete in low-end markets, it is crucial that technologies and designs are developed to enable the State's artisans to target growing niche markets.

In the past, this has proved impossible due to a lack of institutional and government support for the sector. Artisans in Tripura have no experience of dealing with urban markets and, therefore, lack technical knowledge and skills. As artisans in Tripura traditionally have targeted local markets, their product designs are also unsophisticated. Creating a strong institutional framework for technology diffusion is therefore vital.

The Process: turn coil production

Round table jig for coiling bamboo slivers

Fixing the sliver with nails

Coiling bamboo sliver

Continued coiling

Continued coiling

Preparing to fix the second bamboo sliver

Attaching the second sliver with glue

Finished coiled product

Main Research Programme Components

- Successful development of bamboo coiling technology and prototyping products.
- Training CSO trainers and artisans from the rural community
- Equipping the Gandhigram Centre, a local CFC, with coiled bamboo production technology, thereby enabling rural artisans to engage in commercial production.
- Creating marketing links to trade fairs and expositions.

Scope for Replication

Scaling-up: Given that 20,000 artisans in Tripura currently derive income from the production of bamboo handicrafts (see picture overleaf), there is great potential to expand the application of coiled bamboo production technology. This approach offers many advantages over traditional artisan methods, as coiled bamboo handicrafts are made using standardized jigs and moulds. This ensures that the products meet the quality standards set by high-end markets. In addition, the technology produces elegant, aesthetically pleasing handicraft finishes, which appeal to niche markets. This large market demand has been highlighted by strong sales performances at various trade fairs and expositions in India and Nepal. These factors help artisans earn incomes that are substantially higher than the State average. This higher income-

earning potential, coupled with sizeable market demand, should encourage a number of artisans to undertake training and adopt the technology. However, rural artisans will require institutional support to organize and implement training programmes. In many instances, additional Common Facility Centres (CFC) may be needed to provide artisans with access to vital machinery, such as width sizers, sanders and spray guns.

Scaling out: Diffusion of coiled bamboo handicraft technology will be restricted mainly to areas where strong local tradition of bamboo artisanship as well as large local markets for bamboo handicrafts exist. At present, these conditions are met mainly in Asian countries, such as Nepal, China and the Philippines. However, in order for the technology to be adaptively replicated, marketing research and new product designs may be required.

SECTION ONE: THE INSTITUTIONAL CONTEXT

- The project is one of several INBAR ARS programmes developed by the INBAR Livelihood and Economic Development Programme (LEDP), under IFAD grants TAG 774.

SECTION TWO : THE PROGRAMME IMPLEMENTATION

Target Group and Outputs

Target Group: The primary target groups are local artisans, who are unable to earn gainful employment from the handicraft sector, and local unemployed youths.

The main project outputs include:

- Development and prototyping of Coiled bamboo production technology successfully completed by IIT Mumbai.
- Development of effective community training courses for turn-coil production

Tangible Impacts

Impacts on the human capital

- Twenty-three youths trained in coiled bamboo handicraft production
- Five community-based Master Trainers provided with training to administer further capacity building to local youths and artisans

Impacts on the social capital

- Formation of community partnerships between TRIBAC and IIT Mumbai

- Equipping of the Gandhigram Centre with bamboo coiling technology
- Creating links to public and private trade fairs

Impacts on the natural capital

- A total of 27,000 seedlings/branch cuttings of different species planted in the homesteads of 1,045 families to support bamboo production activities.

Intangible Impacts

- Five rural artisans working at the Gandhigram Centre, a CFC linked to the Tripura ARS programme, are now deriving sustainable incomes of around Rs 2,500 per month (approximately US$63) producing coiled bamboo handicrafts (picture right)

Constraints Faced During the Programme Implementation

Internal:

- Artisans' production capacities are poor, as they lack access to new technology and training.
- Inadequate linkages between community producers and commercial markets.
- Rural communities unable to access market information or conduct market research.
- No community infrastructure in place to support growth of the handicrafts sector.

External:

- Local perceptions toward bamboo trades are often unfavourable; bamboo is seen as a 'poor man's timber'.
- Poor transport network makes accessing regional and national markets very difficult.
- Limited access to credit financing mechanism for community producers.

The Gender Dimension

To date, all of the 23 people trained in turn-coil technology have been men. However, women have derived employment from producing primary processed bamboo slivers. The lack of women involved in the sector is mainly due to socio-cultural reasons. Women are heavily involved in many home-based bamboo industries, such as incense stick production, because home-based industries compliment traditional gender roles. These roles are strongly entrenched in the project region, especially in ADC areas, thereby making it harder to incorporate women into factory-type activities. In the future, as TRIBAC's home-based activities are up-scaled, women's social and economic status will be enhanced considerably, thus providing more opportunities for women to engage in non-traditional livelihood roles.

Accessibility

Owing to TRIBAC's linkages with CIBART and INBAR, technical and research outputs from the programme are available for replication at both the national and international level. In India, institutional linkages are established through CIBART, which manages four Indian ARS programmes (Tripura, Tamenglong, Himachal and Konkan). Internationally, action research from Tripura can be adaptively replicated across INBAR's network of 34 countries. Research outputs are available at low or no cost to individuals and community groups operating in INBAR member countries.

Institutional Sustainability and Degree of Farmers' Involvement in the Research Programme

The programme is run by TRIBAC, a majority community-owned NGO, which was established by INBAR in 2002. Community stakeholders (master trainers and artisans) play an active role in decision-making, with external partners (NABARD, IIT Mumbai, INBAR and CIBART) providing technical and logistical support. Community ownership of TRIBAC ensures that the organization remains directly rooted to the local area, thus ensuring continuity and sustainability.

The Gandhigram Centre, a CFC that is run by TRIBAC, provides rural artisans with access to bamboo coiling technology. Five TRIBAC Master Trainers, who received instruction in Mumbai from IIT, oversee community training and production. The Gandhigram Centre also provides rural communities with access to trade fairs and marketing information. Finally, artisans from the community are encouraged to produce new designs based on market feedback.

Dissemination Pathways

Communication strategies at the village level:

- Gandhigram Centre-based training courses led by master trainers
- Face to face meetings
- Artisan-to-artisan communication

Communication strategies at the national and international level:

- Product workshops and trade fairs
- Technical reports and publications

Further Research Needs

- Encourage Private-CSO Partnerships to enable rural communities to access working credit funds, such as bank loans. This will enable community enterprises to meet growing working capital needs, based on their positive cash flow and annual growth.
- Expand training programmes to more local youths.
- If possible, replicate research in IFAD's North Eastern Region Community Resource Management Project for Upland Areas.
- Conduct marketing research to identify emerging markets and produce an overall marketing strategy.
- Host a design clinic to develop further product lines using coiled bamboo production technology.

ANNEX 1: DATA BOX

The Research Programme

The research programme helps rural communities to develop technologies and processing techniques for local bamboo resources, thereby generating enhanced livelihood nd income-earning opportunities. At the local level, the programme is implemented by TRIBAC, a majority community-owned NGO. TRIBAC focuses on developing bamboo products and business models for community enterprise. The Gandhigram Centre, a CFC established through a grant from the Development Commissioner (Handicrafts), operates as the programme's base for community training, production and marketing. Participatory approaches are consolidated through a village extension system, where members of the community act as local trainers and policy implementers.

Coiled Bamboo Handicraft Production: Bamboo coiling technology was developed through a rural entrepreneurship development programme supported by the National Bank for Agricultural and Rural Development (NABARD). The initial technology concept was designed by Professor A.G. Rao at IIT, Mumbai. Coiled bamboo products are made by placing pre-processed bamboo slivers, which are treated in boiling salt water, on a jig. The slivers are attached to the jig using a hammer and nails. The sliver is then coiled by turning the jig. Further slivers are added, as needed, to the body using glue for fastening. Once coiling is completed, the coiled slivers are placed in a mould and shaped into the handicraft product. Finished products are then sanded and spray-finished to increase their aesthetic value. This technology can be used in rural areas at low costs. The use of processed bamboo, jigs and moulds ensures that products are of high quality and uniform dimensions.

Costs: Taking a typical batch of 15 people, the cost of a 15-day training course would be as follows (US$1 = INR 50):

Cost of materials	: $ 310
Cost of tools & equipment	: $ 1275
Space rental	: $ 150
Trainer's fee	: $ 1000
Miscellaneous expenses	: $ 100
TOTAL	: $ 2835

SECTION THREE: USEFUL INFORMATION

Keywords:

Bamboo, Tripura, TRIBAC, Gandhigram Centre, artisans, coiled products, jigs, mould

Useful links:

www.inbar.int
www.inbar.int/livelihood/ldmain.htm INBAR's Livelihood Development Programme
http://www.cibart.org/tribac.asp

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Acronyms:

ARS : Action Research Site
CFC : Common Facility Centre
CIBART : Centre for Indian Bamboo Resource and Technology
CSO : Civil society organization
IFAD : International Fund for Agricultural Development
IIT : Indian Institute of Technology
INBAR : International Network for Bamboo and Rattan
NGO : Non-governmental organization
NABARD : National Bank of Agriculture and Rural Development
SHG : Self-help group
TRIBAC : Tripura Bamboo and Cane Development Centre