

TECHNICAL ADVISORY NOTE (TAN)

Diffusion of Value-Adding Technologies for Livelihood Enhancement: Incense Stick Rolling



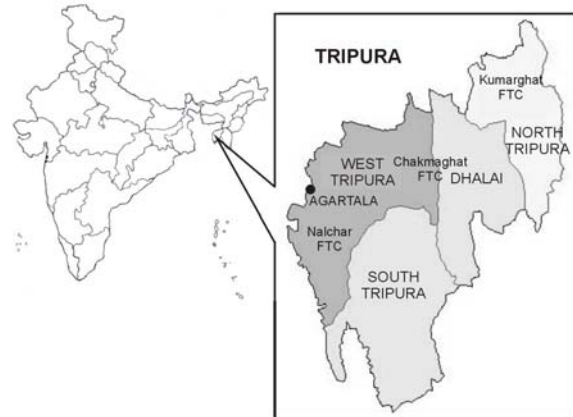
INBAR

INTERNATIONAL NETWORK FOR BAMBOO AND RATTAN

Introduction

In 2002, INBAR set up an Action Research Site (ARS) in Tripura, India to develop bamboo processing and production techniques that utilize local resources for the establishment of rural enterprise. Since 2005, the programme has focused primarily on high value-added incense stick production, training poor, marginalized rural women to hand-roll incense paste (*masala*) onto bamboo sticks to produce raw (unscented) incense sticks called *batti*.

At the local level, the Tripura Bamboo and Cane Development Centre (TRIBAC), an INBAR-established, Indian Section 25 non-profit company, implement the project. Other project partners include CIBART and Bandhan (both non-governmental organizations), NMBA, NABARD, KVIC and SIDBI (all entities under the Government of India), the Ministry of Rural Development, Government of Tripura, and Jayanti Domestic Products, Oracle Perfumery and Transtar Express Ltd. (all private sector companies).



The Context

Due to the existence of a large state-level incense stick market, INBAR introduced hand-rolling technologies into the Tripura Action Research Site. The high-volume and labour-intensive nature of incense stick production means servicing this existing market offers an ideal entry point for poverty alleviation.

The presence of a strong local market is particularly relevant in the Tripura context, as the state is highly isolated from the rest of India, with 85% of its perimeter bordered by Bangladesh. This limits Tripura's access to national markets. The problem is compounded by the state's poor transport infrastructure. A large number of people, particularly in rural, hilly areas, operate in subsistence economies, with unemployment rampant among women. According to the Centre for Monitoring Indian Economy, Tripura has an infrastructure index rating of just 63, well below the Indian national average of 100.

In India, the national incense stick market is worth over USD400 million per year. Although much of the final production and value addition takes place elsewhere in India, Tripura once used to supply about 90% of the bamboo sticks used in the sector. As producers based in Tripura have traditionally engaged solely in primary processing, they receive less than 2% of incense sticks' final retail value.

However, as incense sticks are a low-value product, which incur minimal capital investment, generating sales revenue and profits from production is feasible in Tripura. This factor is of crucial importance to Tripura, which lacks any sort of major industry, and, therefore, has minimal market buying power. Tripura also has a rural population of 82% and a poverty rate of 33%. Therefore, incense sticks are one of only a few viable, local off-farm products.

Finally, promotion of hand-rolling activities helps address one of the major root causes of poverty in Tripura, under-representation of women in the workforce. Because of traditional socio-cultural attitudes towards gender roles, especially in tribal areas, women are restricted to non-remunerative, home-based activities. Promotion of the incense stick sector tackles this problem, as women, who traditionally engage in primary processing of bamboo slivers, dominate production. In addition, production is home-based, and relies solely on traditional artisan skills and technology. Following training courses of 5-7 days, women can learn to hand-roll incense sticks. This activity greatly increases income-earning opportunities.

The Process: hand rolled incense stick production



Harvesting bark for hand rolling



Tree bark sun dried



Preparation of tree bark for hand rolling



Bamboo splitting



Non-rolled incense sticks



Hand rolling of incense sticks



Hand-rolled incense sticks



Colouring incense sticks



Colouring completed



Preparing scenting solution



Dipping for scenting



Spray scenting



Scented hand rolled sticks prepared and ready for packaging



Packaging



Final packaged incense sticks

Main Research Programme Components

- Short-term, regular training programmes for women, enabling them to participate in bamboo incense stick production activities that are higher in the value chain.
- Backward marketing linkages into the rural community for bamboo incense sticks, thus generating commercial revenue, while lowering outgoings for local households.
- Community-based incense stick enterprises, which are often run by women entrepreneurs.
- The Gandhigram Centre, a local CFC, to act as a community base for training, production and marketing.

Scope for Replication

Scaling-up: As the State market for incense sticks is worth US\$17.5 million per year, there is great potential to up-scale incense stick rolling activities in Tripura. Given the home-based nature of incense stick production and the reliance on traditional artisan techniques, many women can derive employment from this activity. Development of the local sector will also provide additional livelihood opportunities at other levels of the incense stick production chain, such as slivering, charcoal production and packaging. Therefore, with further financing and training programmes, large-scale increases in production capacity are possible. However, in order to achieve this, new systems will need to be devised to ensure rural enterprises have greater access to working capital.

Scaling out: Scaling out will be restricted to countries where use of incense sticks is a key part of the socio-cultural make-up, such as Indonesia, Sri Lanka and Thailand. The potential for introducing hand-rolling techniques to other regions of India has already been demonstrated via TRIBAC's involvement with IFAD's North Eastern Region Community Resource Management Project for Upland Areas. Under this loan project, TRIBAC provides community training for incense stick hand-rolling in Assam and Meghalaya states. For the successful introduction of hand rolling into other areas, institutional frameworks will need to be established, providing communities with training and logistical support.

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 518, TAG 774 & TAG 836.
- The project has linkages with IFAD's loan project, North Eastern Region Community Resource Management Project for Upland Areas (India).
- The project targets Tripura, with out-scaling to other bamboo-rich Indian states such as Assam, Meghalaya and Manipur.

SECTION TWO : THE PROGRAMME IMPLEMENTATION

Target Group and Outputs

Target Group: The primary target group of the project are poor-rural women from lowland Tripura, who currently earn no income, or less than US\$ 1 a day.

The main project outputs include:

- Development of effective community training courses for incense stick rolling
- Establishment of a functioning, community-based incense stick value chain

Tangible Impacts

Impacts on the human capital:

- Poor women trained in techniques for *masala* preparation and incense stick rolling.
- Creation of nearly 2,500 livelihoods, most of them for first-time earners.
- Economically empowering women as important income earners.
- Community stakeholders trained to manage ARS programme independently.



Impacts on the social capital:

- Creation of TRIBAC, a local NGO, for ARS project implementation and management
- Development of an expansive Village Extension System
- Establishment of 140 women's SHGs
- Formation of community partnerships with NGOs, government, financial Institutions and private sector companies.

Impacts on the Natural Capital:

- 27,000 seedlings/branch cuttings of different species planted in the homesteads of 1,045 families to support incense stick production along with other activities.

Intangible Impacts

- 839 women working directly for TRIBAC are now able to produce a minimum of 2-3kg of rolled batti per week, working on a part-time basis (four hours per day)
- Women rollers now earn additional monthly incomes of between US\$18.75 and 25

Constraints Faced During the Programme Implementation

Internal:

- Local bamboo resources underutilized and mismanaged
- Artisans unaware of modern processing and production techniques
- 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 incense stick sector

External:

- Deforestation of *Maclilus macrantha* (used for making Jigat, a key component of the masala paste used in incense sticks)
- Lack of bamboo resource inventory
- Limited access to credit financing mechanism for community producers

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 2003. Community stakeholders play an active role in decision-making, with external partners (CIBART and INBAR) 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.

Smallholders and farmers are directly involved in research and project implementation, as the project is managed through an expansive village extension system. Village Community Officers (VCOs) are selected from the local communities. Finally, through training programmes, many local trainees are able to graduate to *Master Trainer* status.

The establishment of a community-owned NGO, along with the promotion of a Village Extension System, enables the project to operate directly at the community level. This ensures that rural communities engage in a participatory approach, which promotes the acceptance and adoption of new technologies and processing techniques.

The Gender Dimension

Hand rolling of incense sticks is a home-based activity conducted solely by women. As this processing technique increases the value of raw bamboo slivers by 16 times, many women are now able to attain secure monthly incomes of between US\$18.75 and US\$25. In total, 839 women are now working directly for the Gandhigram Centre, producing hand-rolled sticks from their homes. In addition to providing many women with livelihoods, the high volume nature of incense stick production has also led to the strengthening of women SHGs groups. This has given more autonomy to women and resulted in the establishment of a number of women entrepreneurs. These entrepreneurs are managing clusters of women SHGs and marketing finished products to local private companies. The programme has contributed to a significant advancement in the economic and social status of women. This has also led to other qualitative impacts, such as improving women's sense of wellbeing and self-confidence.

Dissemination Pathways

Communication strategies at the village level:

- Training workshops and activities in the field
- Face to face meetings
- Artisan-to-artisan communication
- VCO extension system

Communication strategies at the national and international level:

- Regional, national and international workshops
- Product workshops and trade fairs
- Technical reports and publications

Further Research Needs

- Focus on building 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
- Scale-up incense stick production capacity up to 10,000 kg per month, thereby extending livelihood opportunities to 5,000 rural women
- Replicate research in the North Eastern Region Community Resource Management Project for Upland Areas
- Expand commercial linkages to national and international markets
- Implement policies to safeguard against the decimation of *Maclilus macrantha*, the tree required to produce *masala*
- Conduct research to increase understanding of the morphology of bamboo flowering, thereby enabling the adoption of policies to mitigate against its adverse effects on rural livelihoods
- Conduct gender-sensitive analysis of incense stick value chains and produce a social impact assessment monitoring the effect of women's increased economic status on gender relations.

ANNEX 1: DATA BOX

The Research Programme

Incense stick production: The research programme has trained rural communities to prepare incense paste (*masala*) and hand-roll raw incense sticks (*batti*). This process requires only simple tools such as grinders, sieves and a flat board for rolling. Over 3,000 women in the region have been trained in *masala* preparation (made from tree bark and charcoal powders) and rolling it onto bamboo sticks. Currently (2007), 839 of women derive employment through supplying rolled *batti* to the Gandhigram Centre. The Centre markets the product to incense sticks manufacturers. A participatory marketing approach has also been adopted, with the Gandhigram Centre selling finished sticks – perfumed incense sticks (*agarbatti*) – back to the target communities at lower prices than private brands. This has enabled households to save money, while also providing working capital for expanding production. The Gandhigram Centre now supplies three brands of scented *agarbatti* to the Tripura state market.

Charcoal production: This technology was adaptively replicated from another ARS programme in India (Tamenglong, Manipur). The technology involves using modified oil drum kilns as pyrolysers. Bamboo is burnt in the kilns under controlled conditions to produce charcoal. At present, training and production is largely restricted to the Gandhigram Centre, with charcoal powder, which forms one of the main ingredients of *masala*, being used to support *batti* rolling activities.

Costs: Taking a typical batch of 25 people, the cost of a 7-day training course would be as follows (US\$1 = INR 39):

Cost of materials	: \$ 83.40
Cost of tools & equipment	: \$192.30
Space rental	: \$179.50
Trainer's fee	: \$ 89.80
Miscellaneous expenses	: \$ 89.80
TOTAL	: \$635 (rounded off)

SECTION THREE: USEFUL INFORMATION

Keywords:

Bamboo, Tripura, TRIBAC, Gandhigram Centre, artisans, incense sticks, agarbatti, hand-rolling

Useful links:

www.inbar.int

www.inbar.int/livelihood/ldmain.htm INBAR's Livelihood Development Programme

<http://www.cibart.org/tribac.asp>

References:

A Pathway Out of Poverty: Production of bamboo incense sticks (*agarbatti*) as a livelihood option for rural women. INBAR-CIBART Documentation Centre. (Under publication)

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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
INBAR: International Network for Bamboo and Rattan
KVIC: Khadi and Village Industries Commission
NGO: Non-governmental organization
NABARD: National Bank of Agriculture and Rural Development
NMBA: National Mission on Bamboo Applications
SHG: Self-help group
SIDBI: Small Industries Development Bank of India
TRIBAC: Tripura Bamboo and Cane Development Centre
VCO: Village Community Organizer