

## Table of Contents

1.0 Background .....	2
1.1 Drivers for Demand in Furniture Sector.....	2
1.2 Opportunity for Bamboo Pole Furniture .....	3
1.3 Structure of Industry .....	3
1.4 Supply Chain Mechanism – Elements in Supply Chain .....	4
1.5 Furniture Industry in Tripura – employment, volume & turnover.....	5
1.6 Basis of current volume, turnover and employment numbers .....	9
1.7 Opportunities.....	10
1.8 Opportunity Assessment.....	12
1.9 Market Potential .....	16
1.10 Implementation Target .....	18
Implementation Strategy .....	19
Locations that may be developed as strategic clusters .....	19

## 1.0 Background

The Indian furniture industry has woken up to interesting times and is coming of age. The last ten years have seen changes in the shop windows of furniture retailers with imported furniture flooding the markets and spoiling the Indian consumer for choice.

With GDP showing a healthy growth, the growth of the furniture industry is closely following it. India's economy is today \$700 billion strong registering a growth rate of 8.5 per cent in 2003-04. GDP grew by 7.4 per cent in the first quarter and 6.6 per cent in the second quarter of the current year, compared with 5.3 per cent and 8.6 per cent in the corresponding quarters of 2003-04.

With the growth in the economy demand is following for new houses and offices and lifestyle products such as furniture. An analysis of demand drivers for the furniture sector is presented below.

### 1.1 Drivers for Demand in Furniture Sector

#### Urbanisation

Urbanisation has been proceeding at a rapid pace the world over especially in lesser-urbanised countries and is expected to accelerate in the future. It has been projected that 600 million people will be added to world's urban areas in the next decade, that is about two-thirds of expected total population increase during the period.

In India, growth of urban population during the past decade indicates a higher growth rate for metro cities. Although rate of urbanisation in India has been quite moderate during this century due to low level of urbanisation and a large population base there has been a rapid growth of urban population and it has been doubling itself every 20 years. In 1947 our population was close to 330 million with urban population forming about 14% of total population at that time. This proportion roughly stands at 33% today. By the turn of the century as many people will live in India's urban areas as was the total population at the time of Independence half a century ago.

With economic liberalisation and expected higher economic growth, rate of urbanisation in India in coming decades is likely to increase. By 2021 it is expected that India will have 70 cities that are Million plus as also 500 large towns (0.1 million) and 4,430 medium and small towns (< 0.1 million population), with a total of approximately 550 Million people living in urban areas. This will put an unprecedented demand for growth of urban areas since by 2025, India's urban population is expected to reach the 50 per cent mark.

#### More Population Growth in Metros

It is interesting to note that population growth is more in cities that are big. About one-third of Urban India (71 million) lives in metropolitan cities (million plus). Out of the total increase in country's urban population of 58 million between 1981 and 1991, 44 million were added to Class I cities alone. 28 million persons were added in metropolitan cities.

#### Growth in Personal Disposable Incomes

The IT and Enabled Services industries are the primary driver of demand for residential space in metro cities like Bangalore and Hyderabad and to a lesser extent in New Delhi and Mumbai. A majority of this demand is generated by a large number of IT professionals moving into India from abroad too.

#### Availability of Housing Finance

The easy availability of housing finance has provided a boost to demand for outright purchase of housing. This demand is likely to remain on its upward trend

in the urban areas as long as interest rates on housing finance continue to remain low.

## **1.2 Opportunity for Bamboo Pole Furniture**

The multifaceted opportunity in the furniture industry has accommodated in its wake a vast variety of furniture types – from imported to traditional, to the opulent and ostentatious depending on individual taste and preferences. Tripura with its vast bamboo resources and availability of skilled manpower in handling bamboo and making articles and furniture out of the same is well placed to explore the opportunity for the products that can be manufactured to consumer tastes. The target segment and fit for its furniture products needs to be identified and presented with a value proposition that is attractive and sustainable. An assessment of total market size and different segments within this market has been undertaken to identify the most attractive proposition for bamboo pole furniture which can be made in Tripura.

## **1.3 Structure of Industry**

The furniture industry in India is vast with each geographical region has its own typical style of furniture making. Urban India with its newly designed flats and smaller homes has given rise to a newer furniture designs that is more compact and straight as compared to the carving and elaborate furniture designs that were popular few years ago. This can also be attributed to European styling that they are being increasingly being exposed to.

The range of indigenous furniture available in India includes both ready made and contract system furniture, with an increased concentration in office and kitchen furniture. In the area of decorative residential furniture, India has a heritage of exquisite handcrafted furniture, made out of teak, rosewood and walnut wood, emerging from strong colonial roots.

### **1.3.1 Size of the Furniture Industry**

The total size of the Indian furniture industry is estimated by industry experts to be worth approximately Rs 350 billion, with an estimated 85% of this falling into the unorganized sector. The share of wooden furniture market is estimated at Rs 600 million.

### **1.3.2 Growth of the Industry**

According to an article in the Strategist in March 2006 by KSA Technopak, a research agency, a World Bank Study shows the organised furniture industry is expected to grow by 20 per cent a year and India, Russia and Brazil are likely to witness a boom.

The current value of imported furniture is estimated to be around Rs 8 billion crore and annual growth rate in this sector is around 12%. Globalisation has seen imported furniture make serious inroads into the Indian markets. Realising its tremendous market potential while making most of new "import friendly" government policy, international giants too are trying to gain a foothold into Indian markets.

In furniture imports, India ranked first from 1-1-04 to 15-7-05 importing 17 per cent of the total imports in furniture worldwide. A total number of 10,476 importers were involved in importing furniture into India during this period and this boom is evident when you visit furniture showrooms in metros such as Mumbai and Delhi.

The growth in imports in various categories of furniture from 2002-03 to 2003-04 is as below:

PRODUCT	2002 – 2003	GROWTH	2003 – 2004
Office Metal	INR 167 mn.	66%	INR 260 mn.
Wooden Office	INR 323 mn.	79%	INR 563 mn.
Wooden Kitchen	INR 66 mn.	93%	INR 89 mn.
Wooden Residential	INR 56 mn.	40%	INR 140 mn.

Source: Directorate General of Commercial Intelligence and Statistics, Government of India.

The current imports are mainly from Italy, Germany, Spain, China, Korea, Malaysia, Indonesia, Philippines and Japan meeting needs of the middle to upper segment of the market. The Indian government continues to reduce tariff rates from a peak rate of 300 percent in 1991 down to 36 - 40 percent on stated value of goods, in March 05.

### 1.3.3 Organised vs. Unorganised

The furniture industry in India is largely unorganised with only 20 per cent products forming part of the organised sector.

### 1.4 Supply Chain Mechanism – Elements in Supply Chain

Supply chains in the furniture industry are short with not much value addition being carried out at stages involved. Currently in India, Indian manufacturers use a three-tier selling and distribution structure, this is: distributor, wholesaler and retailer. Margins at each stage are 25-30%, ie. from distributor to wholesaler and wholesaler to retailer. As indicated earlier, there is no value addition taking place as the furniture moves from manufacturer to retailer.

However, the organised retail boom in the country has led to new retailing formats making their appearance in the furniture market too.

#### 1.4.1 The Organised Retailing Boom

Retail sales for all types of products – food, apparel, home furnishing, accessories, etc, amounted to about Rs. 7,400 billion in 2002, expanding at an average annual rate of 7% during 1999-2002. With the upturn in economic growth during 2003, retail sales are also expected to grow at a higher pace of nearly 10% p.a.

Sales through supermarkets and department stores are small compared to overall retail sales. However, their sales grew much more rapidly (about 30% per year during the review period). As a result their sales almost tripled during this period. This high acceleration in sales through modern retail formats is expected to continue during next few years with the rapid growth in numbers of such outlets building up in response to higher earnings, consumer demand and resultant business potential.

#### 1.4.2 Home furniture and household goods retailers

The home furniture and household goods retailing sector in India is dominated by small retailers currently but there are furniture chains being set up by leading retailers targeting 40-60 stores in the next 2 years. Home Stop, @ Home, Style Spa are leading furnishing and furniture chains that have already set up retail stores in large formats in leading cities. This is a growing trend which presents an opportunity for new furniture styles to be showcased and appeal to the new consumer. However at the current point of time imported furniture are making their presence felt in most outlets big and small in the larger metro cities.

Style Spa Marketing Manager K. A. Parameswaran said, "We certainly want to take advantage of the boom in the domestic market. We already have 60

showrooms all over the country, including metros, but this year will add 25 more showrooms in places like Chandigarh, Ludhiana, Jammu, Dehradun, Faridabad, Lucknow, Kanpur, and many more."

#### **1.4.3 Future Growth in Organised Retail**

Inevitably, modernisation of Indian retail sector will be reflected in rapid growth in sales through supermarkets, department stores and hypermarkets. This is because of the growing preference of the affluent and upper middle class for shopping at these types of retail stores given the conveniences they offer such as shopping ambience, variety and a single-point source for purchase. Hence, sales from these large format stores are predicted to expand at growth rates ranging from 24% to 49% per year during 2003-2008.

#### **1.4.4 The New Consumer for Furniture in Urban India**

Low to mid level segment is where maximum demand is being generated. This is the segment with overall budget under Rs. 35 lakh and configuration requirement of 1 or 2 bedrooms. The market is being driven by the end-user.

Locally made imitations of IKEA pieces are ubiquitous in homes of professionals in India's rapidly modernising big cities. Educated and westernized, many of them prefer IKEA's minimalist Scandinavian style to homespun Indian handiwork or the clunky British colonial pieces they grew up with.

"It's the need to break away from the traditional," says Gita Rana, owner of a high-end home accessory company in Bangalore. "IKEA furniture represents modern design. It's easy to maintain ... has the look, and lightness. You can move it around."

Getting furniture made from scratch is nothing new in India where labour is cheap and mass-produced products offer low quality. Changing aesthetic tastes though reflect changes in lifestyles of middle-class Indians over the past decade. International companies opening offices and call centres in India combined with astronomical growth in the information-technology industry have created a lucrative urban job market for a tech-savvy generation.

Instead of living at home with parents until marriage, many young Indians are moving into their own apartments, postponing marriage, and even cohabiting. Real estate is booming and city living is getting more expensive, so many find themselves squeezed into tight quarters with a need for modern, space-saving furniture.

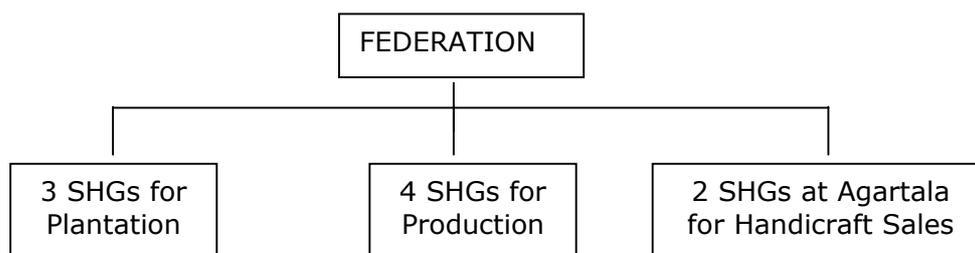
### **1.5 Furniture Industry in Tripura – employment, volume & turnover**

Furniture Industry in Tripura is largely cane based though bamboo based manufacturing is picking up. There are around 20-22 cane furniture manufacturing units scattered across North and South Tripura. Bamboo based pole furniture is being currently manufactured only in 4 units in Tripura and looking to the progress made by them the sector offers promise. The ability of local manufacturers to adapt designs and processes carried out by NID in few pilot locations needs to be commended. Local manufacturers thus offer promise to adapt and produce once designs and processes have been exposed to them.

#### **1.5.1 Working Pattern within Furniture Industry**

BENU, KATLAMARA

The CFC at Katlamara (North Tripura) is a federated structure having 9 SHG groups. Each SHG has 11 members with a President and a Vice President. However, all profit and losses of the CFC are borne by the head of the CFC.



The federation have three governing body members: President, Vice President & Secretary.

Though the SHGs are active since 2001, the production under this CFC commenced in 2004. During the last 14 months the total turnover has been to the tune of Rs 5 lakh. The CFC is getting orders mostly from M/s East India Material Cane Company Ltd.(Calcutta), Shasar Export(Kolkata), Industry Craft Ltd., and Fab India (Delhi). However looking to the buyer profile and the turnover figures it points to an understanding yet to be developed on needs of market and ample scope to improve sales once such needs are incorporated as design features.

### Production of Bamboo Furniture

**Products manufactured:** Chairs, Sofa Sets are main products.

**Species Used:** The bamboo species used is Kanakaich (*Bambusa affinis*) which is locally available. The CFC head has his own Kanakaich bamboo plantation in 12 acres of land. The average height of each used Kanakaich bamboo is around 15-18 ft in length having a solid form of 2-3 cm diameter. All the bamboo used in the CFC is provided by the Society Head from his land.

### Production Capacity

Particulars	Time basis	Nos. per Month.	Price to trader (per pc.)
Chairs with bent bamboo slats	1 Month (24 Days)	80-100	1000/-
General with round pole	"	150	650/-
Sofa Set (Single Seat)	"	25	1200/-
Sofa Set (Double Seat)	"	25	1800-2000/-

### RATI RANJAN BHOWMICK, AGARTALA

Rati Ranjan Bhowmick is one of the biggest bamboo product manufacturers of Tripura whose annual turnover is around 1.5 cr with a profit margin of 3% as stated by him. Most production is meant for export to US & European countries. He states he has around 380 workers and 66 looms and while space and looms can be seen worker numbers need to be yet established. He has machines used for bamboo craft, obtained earlier through a DCH funded program.

His products are blinds, blind related products, bamboo root carving handicrafts. Sculptures made out of bamboo root cost between Rs.30/- to Rs.16,000/-. He has now made a foray into the furniture market for which he has recently got an offer to export Bamboo Aram Chairs to be made out of *Kanakaich* bamboo though he is not a regular furniture producer. The order is for around 800 chairs costing around \$40 each. As per him, though he is getting good orders overseas buyers but is unable to fulfil due to capital shortage. He is also making beach mats made out of blinds costing around Rs700/- sold mostly in Goa.

### DHAR INDUSTRIES

Mr.Kanak Kanti Dhar is the owner of M/s Dhar Industries located at Dharamnagar and deals in Cane Furniture. His main products include Sofa Set, TV Stand, Book Self, Single Chair, Jhula, etc. There are 25 employees, out of which 2 are

managers, 8 are regular artisans & rest are helpers. 60% of his production goes to PURBASHA, 10% is sold in the local market & the rest 30% sold nationally including exports. His total annual turnover is around 10-15 lakh. During the course of discussions with him, they indicated problems due to shortage of capital and low credit availability.

#### KEDAR DHAR INDUSTRIES

M/s Kedar Dhar Industries is owned by Mr.Kallor Dhar and deals in Cane Furniture. His product range is similar to the above unit and in fact both were one entity till a few years ago. The cost of each product depends upon designs which vary from Rs.250/- to Rs.16,000/- & upwards for certain items. Costs are reflective of time involved in their creation as also the design complexity. For example it takes 1 day to make a simple table while it takes 25 days to make a certain type Sofa Set which is priced at around more than Rs.16,000/-. There are 15 workers locally called *Mistries* & 14 helpers. For cane they depend upon the local market with supplies coming from Manipur. Each cane of 8ft length & 2cm diameter costs around Rs 8-9/pc.

60% of production of his unit goes to PURBASHA, 10% is sold in the local market & the rest 30% sold nationally or exported. The total annual turnover is around Rs 12 lakh. As indicated by the other unit problems in this business are shortage of capital and low credit limit.

#### BIJAYA BAMBOO & CANE INDUSTRY (KARAMCHARA)-SHG

Bijaya Bamboo & Cane Industry (North Tripura) is a SHG constituting 13 members mainly manufacturing traditional handicrafts. Initially they got a grant of Rs.25,000/- from DRDA, of which Rs.17,500/- has already been paid back. Each member of the SHG is saving Rs. 50/- per month in the SHG account. They have received training from CBTC in handicraft manufacture. There are another 4 similar kinds of SHGs around the village.

Besides above handicrafts now they are trying to make knock down pole furniture from Rupai bamboo (*Dendrocalamus longispathus*) that is whitish in colour.

#### MODERN HANDICRAFTS - MANUFACTURER OF HANDICRAFTS



Modern Handicrafts (South Tripura) is run by Mr. Manoj Dev Nath having 10 permanent & 20 contract workers. Other than traditional handicrafts they have now started to make pole furniture, utility handicrafts like dustbin, laundry basket, flower basket, lamp shed, laminated trays etc.

As per their calculations, 20 workers working 8 hrs a day could produce 150 simple single pole furniture chairs in one month. The cost of production of each chair will be between Rs.400/- to Rs.500/-. This is a new foray for this unit that otherwise was focused on handicrafts manufacture.

#### MABARANJAN SHG (CANE)

Mabaranjan is a SHG in South Tripura near Maharaniipur block. Mr.Bijoy is the president of the SHG & it has 10 members. They have received a loan of Rs.10,000/- through DRDA for SHG development from Maharani Gramin Bank. Since last 3 months each member of the group is saving Rs.60/- per month in their SHG account.

#### Products Manufactured

Sofa Set, Muda, Jhula, Lamp Set, Chairs, etc. are being manufactured. They are depending on local market for supply of cane which are brought from Manipur.



Each 8 ft cane costs around Rs.22-25/-. Most orders to the tune of 75% are from traders (local & outside). Though there is a volume of orders from traders they give them 15% lower rates than PURBASHA. In case of PURBASHA the trading takes place through the cluster. Material used is cane with each 8 ft cane costing around Rs.22-25/-. 2 persons working 7-8 hrs a day take 5 days to make a 5 seater sofa set. Each standard sofa set costs around Rs.2500/- having a labour cost of Rs. 800/- and material cost of Rs. 600-700/-. Selling price of products manufactured are indicated below:

Products	Selling Price In Rs.
Sofa Set	2500/-
Lamp Set	400-500/-
Jhula	1100-1200/-
Muda	250/-
<b>Production of Sofa set</b>	
2 persons working 7-8hrs a day it will take 5days to make 5 Sofa set. Each standard sofa set costs around Rs.2500/-	
<b>Cost Involved in 1 Sofa set</b>	
Cost of labour	Rs.800/-
Material Cost	Rs. 600-700/-

#### SANGHADIP SAMITI, Dharamnagar

The NGO has established in the year of 1979. The NGO has more than 120 active members which includes President: Mr.Kripa Mohadaya, Secretary: Uttam Chaudhry & 13 executives. The salaries of President, Secretary & Executive Members varies from Rs.1500/- to Rs.9000/-.

Income generation, housing, handicraft, social works are the main activity of the NGO. For housing they have provide 10 people a loan amount of Rs.35,000/- @15% interest for a period of 10 years through RGVN. In income generation they have provided a loan amount of Rs. 5,000/- to 23 peoples, which is used for small grocery shop, tailoring, rickshaw, etc. More than 113 groups are under this NGO. Each group has a member of 10-15. Most of the groups are involved in Cane & Bamboo handicrafts, Jute, Tailoring, Local Fast Food, Fishery, Piggery, etc business. Each member of the group save a particular amount per month in the group account, which varies from Rs.30/- to Rs.200/-. In fishery & piggery business the saving is more. On an average most of the group have a sum of Rs.70,000/- in their account.

The NGO also provides training in bamboo handicrafts & has an instructor for this, who is on the payroll of DCH. The NGO participates actively in most of the industry & handicraft fair all over India, which helps them to understand the market demand. Now their handicrafts include different kinds of utility products. Their main products are: Computer Table, Table Lamp, Fruit Basket for home, Corner Rack, Water Carrier, Dust Bin, Flower Flash, Magazine Desk, Telephone Stand, etc.

#### SOCIETY FOR CREATIVE CRAFTS-NGO

Society for Creative Crafts is a NGO close to Agartala run by 4 members. They are manufacturing furniture made from bamboo. They have 6 permanent workers drawing an average wage of Rs. 3000/- per month. They are getting orders from

both outside & Agartala market with supplies also made to Rashtrapati Bhavan in New Delhi. Recently they have supplied all types of furniture to two hotels in Agartala (Executive Inn, Rajdhani). Sofa Set, Chairs, Small Tables are the main products.

Each standard Sofa set costs around Rs.2400/-, while a single chair costs around Rs.700/-.

As per the management, 6 workers working 7-8 hrs a day can make 51 single chairs in 25 days. As each worker does every single work involved to make a chair, there is low productivity. Till now the production system has not yet evolved in to an assembled form though orders are being procured from Delhi, Mumbai, and Calcutta.

They mainly use the *Kanakaich* bamboo for furniture, for which they are depending on the Agartala market. They also have initiated bamboo plantation around their location mainly covering *Kanakaich*, *Dolu*, *Muli*, and *Mritinga*.

### **1.6 Basis of current volume, turnover and employment numbers**

As can be seen from the working of units described above, each furniture manufacturing unit has a turnover of approximately Rs 10-15 lakhs annually. The bamboo furniture manufacturing units have been set up only recently and have a turnover of not more than Rs 2.5 lakhs per unit. From the discussions with cane furniture manufacturing units visited in Tripura particularly Dhar industries it emerged that there were 18-20 such units in Tripura. As far as pole furniture manufacturing units are concerned, we visited 5 units – BENU, Bhowmik, Society for Creative Crafts, Sanghadip and Bijaya Bamboo.

As shown in the case studies above, the total number of persons employed in the furniture units are around 30-40 (inclusive of permanent workers, contract workers and helpers) and in the bamboo pole furniture making units 6-7 persons are employed.

<b>Type of furniture</b>	<b>Number of units</b>	<b>Avg. Annual Turnover (Rs)</b>
Cane	20*	10 lakhs
Bamboo	4	2.5 lakhs

The total turnover of 20 cane units is Rs 2 crore annually while that of a bamboo furniture units is Rs 10 lakh. Looking to market demand the following could emerge as the proposed scale of the sub-sector:

<b>Type of furniture</b>	<b>Number employees/unit</b>	<b>Total People Engaged</b>
Cane	30-40 *	600-800
Bamboo	6-7	25-30

It can be estimated that 1000 families approximately are engaged in the production of furniture.

### 1.6.1 Strengths and Weaknesses (SWOT)

<p style="text-align: center;"><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Availability of local skills for making furniture</li> <li>• Raw material also available though not in abundant quantity</li> </ul>	<p style="text-align: center;"><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Direct exposure to markets is limited</li> <li>• Industry more of daily wage and piece driven than scale driven</li> <li>• Size of units currently operational very small.</li> <li>• Lack of entrepreneurial talent to drive local industry</li> </ul>
<p style="text-align: center;"><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Bamboo furniture industry being in a nascent stage, new designs can be introduced and local talent can be trained for working on new designs.</li> <li>• The new generation consumer and retail formats may provide a good visibility platform for bamboo furniture.</li> </ul>	<p style="text-align: center;"><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Industry would require scaled up production to meet requirements of large retail formats. However, since it is used to a daily wage system, transition may not be easy.</li> <li>• Bamboo is not perceived to be different from cane by the lay consumer. Cane furniture has a "cheap" or "exotic" association with it depending on the price range. Bamboo would need to break away from cane and create a market of its own.</li> </ul>

Though local talent is available for making furniture, they are largely supplying to State owned Purbasha. Nearly 60% of sales of units are currently to Purbasha directly as mentioned by Dhar Industries during our visit. The direct exposure to markets is limited at present. However, since the bamboo furniture industry is at a nascent stage currently, there exists an opportunity to mould it as per market needs though design intervention and market linkages will be required to make them competitive and help build volumes.

### 1.7 Opportunities

The growth in the furniture market being experienced currently can be attributed to the new generation of home makers who are setting up independent homes before marriage and prefer good looking but light furniture that may/may not be durable. The average Indian also is moving towards the non traditional look that is being offered by imported furniture. Opportunities for bamboo pole furniture were checked out in leading furniture markets of Bangalore (to understand opportunity offered by the IT sector growth spurring new homes) and Mumbai and with organised retail formats – soft furnishing and furniture chains in Mumbai and Bangalore. The report on these market visits is given below:

#### 1.7.1 The Mumbai Furniture Market

The prime market for furniture business in suburban Mumbai is located at SV Road in the northern suburbs of Mumbai. There are very large format brand stores like Tangent and The Living Room, as also other larger stores retailing readymade furniture and smaller stores which sell their own readymade furniture and furniture from other sources – Indian as well as imported. Besides these, another category of furniture visible was roadside cane furniture sold by artisans.

Type of store	Products stocked
Large format branded store: Tangent, Living Room	Imported furniture – snazzy looking, shiny and bright likely to cater to the needs of the nouveau riche - made from fusion of rubber wood and steel, particle board and MDF. Lots of variety was visible and it was evident that container loads of such furniture was being imported from Malaysia and China. This huge store in particular did not even stock a single piece of Indian furniture.
Larger stores selling readymade furniture as seen at SV road, Goregaon	Imported furniture with latest designs from Malaysia and Indian carved furniture from Saharanpur and Bhopal, targeted at the more look and price conscious less durability conscious upper middle class. These were made of rubber wood, MDF, particle board, mixed with glass and steel. The designs of products in such stores did not seem innovative as compared to expectations of the young set and as was noticed in the above store.
Smaller furniture shops, as seen at SV road, Goregaon	Imported furniture of designs that are 4-6 months older as compared to the larger stores made out of Rubberwood, MDF and Particle board and Custom made furniture from Teak and Sal were noticed in these outlets. Though customers are aware that rubber wood and particle board furniture is not durable they still prefer it as they are more keen to satisfy their immediate affordability needs and are not taking a long term durability approach that may take them to another location altogether.
Roadside cane furniture	Malabar cane procured from Goa are used to make typical furniture like sofa sets and chairs that is bought by the lower and middle class populace. Cane has a down market image being considered as a cheap option. Designs too are conventional and not trendy to appeal to upper tastes.

While visiting these stores in Mumbai it became evident that bamboo pole furniture would not match with the trendy look sported by imported furniture and as preferred by young consumers unless it is combined with other materials such as steel or glass. Bamboo carries a hangover of cane which is considered to be cheap and not long lasting.

Cane furniture manufacturers when probed if they would be interested to work on assembled bamboo pole furniture indicated negative inclination on account of (i) not having the skills to work on bamboo, and (ii) Cane furniture caters to lower middle class, and hence would not be advisable for bamboo pole furniture to be sold along with this category as they perceived it as something superior. They indicated that if they were trained and an entirely new retailing option was worked out, they may be willing and it may do well.

On the basis of market visit to Mumbai for bamboo pole furniture to gain a foothold in the current retail furniture market in Mumbai it will be the larger furniture stores (not superstores like Tangent, Living Room, etc.) which can be targeted as these are stores that dictate trends in the market place. Just as these larger furniture stores are now selling Bhopal and Saharanpur furniture which they procure through a furniture distributor, similarly furniture distributors for pole furniture can be appointed on a city basis. It is through acceptance in these

second tier showrooms that a market growth can be fuelled for large and mini metros. They can be convinced to stock the bamboo pole furniture as it might be able to provide them with just the much needed differentiation viz-a-viz their competitors and also add to variety which the consumer seeks all the time.

### 1.7.2 The Bangalore Furniture Market

Visits were made to furniture stores on Central Street and Infantry Road and larger stores like Lifestyle.

According to furniture store owners the trend is towards good looking furniture but it has to be utilitarian. The target segment is the middle class consumer. Customers like to get furniture suiting their own design and colour. Some customers ask for only imported furniture and irrespective of the quality, though retailers refuse to provide guaranty for imported furniture they still prefer to buy the same. This applies to the young set and especially people those who are in transferable jobs. They perceive this furniture as being easy to shift from place to place thus preferring it, something they can use and dispose when movement is called for.

Materials used range from teakwood, rosewood, rubber wood, wrought iron furniture and ordinary local wood furniture (jungle wood) such as *Accasia*.

Items that are fast moving in the Bangalore market are:

Sofa set (3+2) seater	Rs. 12,500-24,250
Dining table six chairs	Rs. 15,000-50,000
Double cots	Rs. 3,500-15,000
TV stands	Rs 2,500-21,275
Dressing tables	Rs 3,450-12,500
Coffee tables	Rs. 2,500-10,000
Computer furniture	Rs. 1,500-8,000
Single glass side table	Rs 450-1,500

Opportunity for bamboo pole furniture can emerge in the regular furniture market of Bangalore through a targeted selection of products and stores. The strategy would again be to target the larger stores willing to start with a new line through a distributor who knows the market.

The strategy should also include convincing larger stores to stock few products on a consignment basis made with the value proposition being "Bamboo Pole furniture is a break from the typical fare, it is longer lasting and yet sporting a trendy international look not a typical Indian look or a monotonous International look which is found across the entire market place in Bangalore."

### Opportunity Assessment

Bamboo Pole Furniture being a new concept would find it difficult to find acceptance in regular furniture markets. Market awareness needs to be generated through effective concept selling. Visibility through high profile stores catering to masses and classes is required along with education about bamboo the material. Even for this approach however, the look of the furniture has to be changed to match contemporary look of glass and steel being preferred in new Indian homes.

This opportunity was checked out with soft furnishings and furniture retail chains like HomeStop and @Home.

### 1.8.1 HomeStop -The Soft Furnishings Chain of Shoppers Stop

Shoppers' Stop recently launched its first home concept store HomeStop at Bangalore, with a focus on soft furnishings. In addition, a slew of HomeStop stores that will be separate from the existing Shoppers' Stop will be launched by early 2006 in metros and cities like Pune, Hyderabad and Jaipur.

A meeting with the Head Merchandiser of HomeStop was done at Mumbai. According to him, HomeStop was being positioned as a one stop lifestyle solution. In HomeStop the look and feel as seen was contemporary. Bamboo products in their present look would not fit into the category, moreover HomeStop was not just into furniture but meeting a variety of home needs.

A visit to the newly opened Home Stop in Bangalore also confirmed a limited range of furniture in the store. Opportunity for retailing bamboo pole furniture through Home Stop apparently does not seem feasible.

### **1.8.2 @Home – A chain of furniture stores by Nilkamal Plastics**

The Nilkamal Group, India's leading manufacturer of moulded furniture and material handling crates having a turnover in excess of US\$ 100 million and is also the world's largest manufacturer of moulded furniture. The group has a wide array of moulded products in both the furniture as well as crates segment. The furniture product range comprises chairs, dining tables, coffee tables, trolleys, shoe racks, multipurpose racks, baby chairs, stools, etc, to mention a few.

With the moulded furniture market having remained stagnant since the past couple of years, Nilkamal Plastics thinks that the only way to grow the category is by making a foray into the value addition sector. The company, which had launched moulded plastic sofa sets some time back, is now in the process of launching moulded plastic office furniture under the brand name, Novella, as well as storage cabinets and wrought iron look alike rocking chairs for the home segment.

The company also has its exclusive stores, Nilkamal Home Ideas, in as many as 20 SEC B&C towns, and is planning to set up 15 more stores in the next six months. Recently, Nilkamal also ventured into large format retail with the launch of its home solutions store “@Home”, which has been positioned as an aspirational mid-market brand. The store offers furniture, home furnishings and accessories. They have positioned themselves as home-makers and not a furniture store. The company has set up stores in Pune, Mumbai, and Ahmedabad, and is planning to set up 27 @Home stores in the next three years, for which it is planning an investment of Rs 40 crore.

Though most of the products available at these stores are currently imported, in the coming months the company would be looking at tie-ups with international furniture and home furnishing brands that would be exclusively marketed through the @Home stores.

Also in the pipeline are setting up of full-fledged kitchen and office solutions within the @Home stores in the next couple of years under the brand names @Kitchen and @Office respectively.

The research team met up with the Merchandising Department of @Home in Mumbai. They were interested in knowing more about the bamboo pole furniture and would be inclined to consider its inclusion in their stores as a matter of variety. It was indicated however that the furniture must have a contemporary look. Since the positioning of @Home is for the middle and lower middle socio economic segment – SEC B and C, the product may be appealing as one of the many varieties being offered. However, the price has to be on par with offerings of rubber wood and particle board it was stated.

They were inclined to have a detailed presentation about the bamboo pole furniture products with their sourcing team.

A visit at the newly opened @Home store at Kandivali, a growing suburb in Mumbai revealed a range of affordable furniture range. All products were imported, tasteful and aggressively priced to attract the middle class. A dining table set of four chairs and a table made from rubber wood was costing as low as

Rs 5,000. Regular markets have dining sets priced upwards of Rs 12,000. This is how the market seems to be growing – by creating a demand to fulfil an aspiration. The new generation of young homes spurred by the growth in IT, retail and biotechnology sectors needs this kind of an affordable price range to start their homes.

### 1.8.3 Markets in Non metros

The strategy for metros as it emerges from the description above is to target the large furniture stores and the organised furniture chains like @Home. An untapped market also exists in non metros that are rapidly getting urbanised. We can consider the cities with million plus population to be a potential target for the offering of bamboo pole furniture products.

Urban Agglomeration	State/ Union territory*	District	Total Population (in lakhs)
Greater Mumbai	Maharashtra	Thane, Mumbai ( Suburban) & Mumbai	164
Kolkata	West Bengal	Nadia, North Twenty Four Parganas, Hugli, Haora, Kolkata and South Twenty Four Parganas	132
Delhi	Delhi *	All 9 districts of Delhi	128
Chennai	Tamil Nadu	Thiruvallur, Chennai and Kancheepuram	64
Bangalore	Karnataka	Bangalore	57
Hyderabad	Andhra Pradesh	Medak, Hyderabad and Rangareddi	55
Ahmedabad	Gujarat	Gandhinagar and Ahmadabad	45
Pune	Maharashtra	Pune	38
Surat	Gujarat	Surat	28
Kanpur	Uttar Pradesh	Kanpur Nagar	27
Jaipur	Rajasthan	Jaipur	23
Lucknow	Uttar Pradesh	Lucknow	23
Nagpur	Maharashtra	Nagpur	21
Patna	Bihar	Patna	17
Indore	Madhya Pradesh	Indore	16
Vadodara	Gujarat	Vadodara	15
Bhopal	Madhya Pradesh	Bhopal	15
Coimbatore	Tamil Nadu	Coimbatore	14
Ludhiana	Punjab	Ludhiana	14
Kochi	Kerala	Ernakulam	14
Visakhapatnam	Andhra Pradesh	Visakhapatnam	13
Agra	Uttar Pradesh	Agra	13
Varanasi	Uttar Pradesh	Varanasi	12
Madurai	Tamil Nadu	Madurai	12
Meerut	Uttar Pradesh	Meerut	12
Nashik	Maharashtra	Nashik	12
Jabalpur	Madhya Pradesh	Jabalpur	11
Jamshedpur	Jharkhand	Pashchimi Singhbhum and Purbi Singhbhum	11
Asansol	West Bengal	Barddhaman	11
Dhanbad	Jharkhand	Dhanbad	11
Faridabad	Haryana	Faridabad	11
Allahabad	Uttar Pradesh	Allahabad	10

Amritsar	Punjab	Amritsar	10
Vijayawada	Andhra Pradesh	Krishna and Guntur	10
Rajkot	Gujarat	Rajkot	10

Figures based on Census 2001

In smaller non metros the influence of imported furniture designs may not have penetrated as deeply into the psyche of the consumer as in the case of larger metros where supply can be seen creating its own demand. The taste of smaller city consumers would tend to be more ethnic and Indian. Also they are likely to have a higher consideration for durability and not be of the "Use and Throw" variety which younger generation in metros follow. Bamboo pole furniture with its ethnic yet trendy look and durability offered v/s wood and other material furniture might just be successful in opening up a new set of consumers in smaller cities – who are currently buying plastic moulded, wrought iron, or local wood furniture.

The strategy followed would again be similar to that of larger cities – appointing local distributors on a state level who can supply to multiple cities within a state. Apart from distributors, the penetration into non metros can also take place through the organised furniture chains as they expand into smaller cities in the next 3 years as indicated below.

Organised retail chain	Current No. of Stores	Planned in next 3 years
@Home	3	27
Hypercity Retail	1	15-20
Home Stop	1	5-8
Bombay Stores	3	20
Pantaloon Retail	20	13
<b>Total</b>	<b>28</b>	<b>70</b>

#### 1.8.4 Product Suited for Current Market

A range of products comprising fast selling items should be made available to give the consumer a variety to choose from and provide required confidence about the product to distributors and retailers. It is suggested that furniture for the drawing and dining room and the children's room be targeted. The middle class homes influenced by media explosion in their drawing rooms are emulating the lifestyle depicted in the soaps – they take pride in new looking drawing rooms and also having separate children's cots is a matter of pride for them. A computer is another acquisition which the middle class homes are investing in.

Items for drawing room and children's room and the prices for a middle class home for the same are described in the table below.

#### Items

<b>Drawing Room Set</b>	<b>Current Price Range (Rs)</b>	<b>Price Suggested For Bamboo Pole Furniture (Rs.)</b>
Sofa Set	10,000-25,000	10,000
Dining Table Set	5,000-20,000	5,000-10,000
TV table	2,500-10,000	2,000-4,000
<b>Total set</b>	<b>17,500-55,000</b>	<b>17,000-24,000</b>
<b>Children Room Set</b>	<b>Current Price Range (Rs)</b>	<b>Price Suggested For Bamboo Pole Furniture (Rs.)</b>
Children's Cots	3,500-10,000	3,000-6,000
Computer Table	1,500-5,000	1,000-3,000
<b>Total set</b>	<b>5,000-15,000</b>	<b>4,000-9,000</b>

The bamboo pole furniture would need to be priced aggressively as against the current range of furniture available in the market to begin with. Alternatively, the product items described above as different designs at different price points covering an entire range can be introduced for creating a good visibility impact and also variety. It may open the market for aspiring middle income and lower middle income groups in a similar way as moulded furniture did 20 years ago.

This furniture would also score high on durability aspect compared to rubber wood and also have different look – since after a point of time all imported furniture sported almost the same monotonous look. In case of the metro market, once the desire of imported goods is satiated bamboo furniture would find higher acceptance given its aspects of durability.

In order to make a pitch for the product with the distributors in different cities and furniture chains such as @Home however the following will need to be positioned:

- An ongoing involvement of designers who maintain a close touch with the market to not only be involved with designing products but developing them in an optimised manner.
- Different designs of drawing room set and children’s room sets would have to be created to provide variety.
- Training of workers involved with manufacturing to translate designs into finished furniture.
- Improved business systems to be followed for order placement, contracts, delivery and execution and the body who would be responsible for the same.
- Warehousing and inventory systems will need to be planned and provided for.

### **1.9 Market Potential**

Bamboo Pole furniture being a new concept, demand is likely to pick up only in a phased manner. The product will have to be sold through distributors and a chain of stores catering to markets in metros and second and third tier cities covering 35 cities in India that can be covered in a phased manner.

Products described under drawing room sets and children’s room sets can be sold either as sets or on single piece basis as the demand may be, eg. Drawing room set can be sold as all 3 items together – sofa set, dining table set and TV table or bought separately by 3 different customers. For the sake of estimation however, they have been considered as a single set. The average price has been assumed higher for the top 10 cities, medium for the middle 10 cities and the lowest in the range for the 15 small cities. – probably sofa sets would not find a much market in the small cities but a TV tables would – more TV tables might be sold rather than sofa sets or dining table sets.

The table below depicts the market potential for the products for three years across 35 cities. A conservative estimate for the number of large furniture stores which are to be targeted per year has been assumed for each type of city.

Urban Agglomeration	State	Total Population (in lakhs)	Number of stores			Products Sold as Separate Items or sets		Average Price/set (Rs)		Revenue expected (Rs lakhs)			
			Year 1	Year 2	Year 3	Drawing room items per store/year (nos)	Childrens room items/store/year (nos)	Drawing room items (average price/set)	Childrens room items (average price/set)	Year 1	Year 2	Year 3	Total at end of 3 years (Rs)
Mumbai	Mah.	164	10	20	30	10	8	15000	5000	19	38	57	114
Kolkata	WB	132	10	20	30	10	8	15000	5000	19	38	57	114
Delhi	Delhi *	128	10	20	30	10	8	15000	5000	19	38	57	114
Chennai	Tam.	64	10	15	20	10	8	15000	5000	19	28.5	38	85.5
Bangalore	Kan	57	10	15	20	10	8	15000	5000	19	28.5	38	85.5
Hyderabad	AP	55	10	15	20	10	8	15000	5000	19	28.5	38	85.5
Ahmedabad	Guj.	45	10	15	20	10	8	15000	5000	19	28.5	38	85.5
Pune	Mah.	38	10	15	20	10	8	15000	5000	19	28.5	38	85.5
Surat	Guj.	28	5	10	15	10	8	15000	5000	9.5	19	28.5	57
Kanpur	UP	27	5	10	15	10	8	15000	5000	9.5	19	28.5	57
Jaipur	Raj	23		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Lucknow	UP	23		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Nagpur	MP	21		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Patna	Bih.	17		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Indore	MP	16		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Vadodara	Guj.	15		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Bhopal	MP	15		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Coimbatore	Tam.	14		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Ludhiana	Pun.	14		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Kochi	Kerala	14		5	10	6	3	10000	4000	0	3.6	7.2	10.8
Visakh'patnam	AP	13			10		2	5000	3000	0	0	0.6	0.6
Agra	UP	13			10		2	5000	3000	0	0	0.6	0.6
Varanasi	UP	12			10		2	5000	3000	0	0	0.6	0.6
Madurai	Tan	12			10		2	5000	3000	0	0	0.6	0.6
Meerut	UP	12			10		2	5000	3000	0	0	0.6	0.6
Nashik	Mah.	12			10		2	5000	3000	0	0	0.6	0.6
Jabalpur	MP	11			10		2	5000	3000	0	0	0.6	0.6
Jamshedpur	Jhar.	11			10		2	5000	3000	0	0	0.6	0.6
Asansol	WB	11			10		2	5000	3000	0	0	0.6	0.6
Dhanbad	Jhar	11			10		2	5000	3000	0	0	0.6	0.6
Faridabad	Har.	11			10		2	5000	3000	0	0	0.6	0.6
Allahabad	UP	10			10		2	5000	3000	0	0	0.6	0.6
Amritsar	Pun.	10			10		2	5000	3000	0	0	0.6	0.6
Vijayawada	AP	10			10		2	5000	3000	0	0	0.6	0.6
Rajkot	Guj	10			10		2	5000	3000	0	0	0.6	0.6

As seen from the above table in Year 1 itself, targeting top 10 cities through 90 stores could yield a turnover of Rs 171 lakhs. For Year 2 targeting 205 stores in 20 cities a turnover of Rs 330 lakhs can be expected while for Year 3 targeting 470 stores a turnover of Rs 499lakhs can be expected in 3 years.

Year	Number of cities	Number of stores targeted	Turnover expected (Rs lakhs)
1	10	90	171
2	20	205	330
3	35	470	499

### 1.10 Implementation Target

Current Value of Bamboo Pole Furniture	Rs 10 lakhs/year
Targeted value at end of 3 years	Rs 1000 lakhs for 3 years
Assuming a marketing cost of 60% (Retailer and Distributor margin) the turnover for Tripura can be	Rs 625 lakhs for 3 years

#### INVESTMENT REQUIRED

The number of drawing room sets and children room sets to be produced are already available in table given below. Consolidating the figures for the different cities in the 3 year period we have:

Year	Drawing room items per store/year (nos)	Childrens room items/store/year (nos)
1	100	80
2	160	110
3	440	140

The estimate is worked on the basis of 25 days x 6 workers working 7-8 hrs a day can make 51 single chairs. The cost of production of each chair will be between Rs. 400/- to Rs. 500/-.

At current levels, 6 workers produce approximately 50 chairs per month which is equivalent to 8 sets of four chairs and table (6 x 8=48; taking 2 chairs as equal to one table). In a year taking 300 working days they can produce 100 sets. 10 such units with a production capacity of 100 sets per year can be set up to meet the market potential for bamboo pole furniture. Though direct employment would not go up substantially indirect employment in other sectors like bamboo collection, sorting, grading, transportation and other sales and marketing related activities would increase through a multiplier effect.

## Implementation Strategy

The previous sections have clearly depicted the size of the furniture market in India and the potential that can be addressed. To take advantage of this growth opportunity the trade is taking advantage of importing furniture and very many organisations are establishing presence in India. As of date, the market share of furniture from Tripura, particularly that of bamboo furniture is miniscule. But by building special characteristics, and improving on aspects of design, look and feel, it can be placed in this large market effectively mainly for a section of the price sensitive middle class market segment. Given its special characteristics as a furniture material it could create a niche market for itself.

Since currently there isn't much bamboo based furniture products available it has never been tested in a larger market. Even comparison to cane, its closest contender cannot be done judiciously given the entirely different set of properties and price point. However the market needs to see what bamboo furniture is about. Whatever is available is mainly catering in a casual un-organised manner for which buyers have shown reasonable acceptance. This can be attributed to the fact that whoever is producing quality bamboo furniture in Tripura is experiencing good demand. The best examples would be Bhowmik in Agartala and BENU in Katlamara Village in West Tripura Dist. However in turnover terms, levels are still low that speaks more for weakness in ability to produce rather than market demand.

A unit can achieve an annual target of Rs.10 million easily taking an SME approach in a specific cluster. Unlike other bamboo products in Tripura the furniture sector really does not have any mature cluster activity and is largely managed as a small business in certain localities not doing justice to its potential.

### Locations that may be developed as strategic clusters

Katlamara village in West Tripura could be a good location for development of a bamboo based furniture cluster for several reasons:

- 1) Raw material availability:
  - a. *Kanakaich* species, the most suitable variety for bamboo based furniture is noticed to be concentrated here.
  - b. Plantation of this variety of bamboo in the village is very common and is even grown on private lands with private initiative.
  - c. The presence of existing SHGs and the given understanding of managing such plantations can be taken advantage of.
- 2) Existing market connectivity:
  - a. Katlamara is well connected to Agartala for onward connection to Kolkata, Guwahati and Silchar markets. In fact BENU is not only selling furniture using this advantage but is also able to maintain close links to adopting design from such existing market connections established.
  - b. It is also not too far from Comilla and Dhaka in Bangladesh in cultural as well as geographical terms. In the event of opening up of the trade with Bangladesh the cluster may be able to exploit opportunities in Bangladesh market as well.
- 3) Availability of skill
  - a. The special property of *Kanakaich* Bamboo is well known to people of Katlamara for last five decades since they have been making various products like umbrella stick, javelin, fishing poles, pole vault poles, etc. These products have been sent to different parts of India and abroad from Katlamara.

- b. Three businesses present in this village (including the Roy family that runs BENU) are involved in bamboo-based business. The total existing turnover of various bamboo-based products taking into consideration turnover of all three families is around Rs. 5 Million. Nearly 75 families are associated with this Business in Katlamara for roles as plantation worker, processing of bamboo and production of this bamboo based products. Although the furniture is the latest addition to products made possible by *Kanakaich* bamboo, the workers have picked up skills very well.
- 4) Presence of CFC
  - a. The already established CFC with its existing and upcoming facilities can be used as a platform for manufacturing modern design furniture products harnessing local skills. Operations need to be looked at from a utilisation and optimisation perspective to improve returns on investments made.
- 5) Higher Economic Return
  - a. The furniture activity actually adds more value to bamboo sold than as poles and this is an incentive for local manufacturers to pursue this trade.

### **Cluster development strategy**

A demand-based growth is the best way of developing this cluster. Already BENU through its example at a small scale is showing the path of growth but there isn't sufficient demand for such furniture to scale up its business to the next stage. Organised modern marketing is one of the main weaknesses for development of business in this cluster.

Since the product has not seen much demand that has kept away smaller cluster players from investing further to develop the product line. Moreover there is lack of support as well as of capital for nurturing entrepreneurs. The level of entrepreneurship noticed at BENU has been the result of efforts by an Agartala based NGO and the Development Commissioner (Handicrafts). Building awareness and fostering entrepreneurship thus would become a major expectation from the institutional mechanism to grow the sector.

Assistance in design, augmenting CFC facilities, and involving other business houses will further help develop the cluster into a bamboo based furniture producing zone.

### **The Intervention Strategy**

- 1) Policy Level: Considering the special nature of *Kanakaich* bamboo based furniture, Govt. of Tripura must encourage its plantation in the area by the Forest Department. Good quality seedlings should also be made available for private planters.
- 2) Financial support: An interface of a local financial institution with entrepreneurs is essential for making capital available to businesses. The present micro-credit approach of making credit available through SHGs is not the correct approach of developing the cluster since it would fall short of needs as it is insufficient to address growth needs for developing a larger market. While money can be encouraged to be saved through the SHG system, it should find tactical utilisation with larger needs of business emerging from commercial credit.
- 3) Linkages need to be created to the market with design expertise inbuilt as a part of buyer responsibility to the extent possible. While this would be an ideal situation as far as lending stability to long term supply arrangements

is concerned ongoing efforts should be pursued to raise the bar of skill and ability by involving design institutions and private designers.

- 4) A marketing arrangement should be negotiated with Purbasha to allow usage of prime showroom space to sell products such as these and utilisation opportunities increased within the government system as well.
- 5) Once various units have come up, a road show may be planned inviting various potential buyers
- 6) Managing common business facilities and fulfilling local expectations in that regard will help towards development of cluster. Bringing together common interests will also provide collective bargaining power to the cluster members.
- 7) Capacity Building Efforts:
  - a. Constant interaction with buyers and understanding their needs should be taken up through a suitable platform such as workshops and one-to-one communication. This needs to be achieved at both levels, design and business management
  - b. Training for master craftsman at external locations and regular training towards skill upgradation for workers at Tripura is essential. Master craftsman need to be exposed to contemporary design and to tastes of modern customers. Among other things they need to develop the ability to mix materials with bamboo to achieve unique products.
  - c. Training related to plantation needs to be given along with quality planting material for better productivity to interested landowners.

Training of improved processing of bamboos to make material durable and give it different finishes needs to be achieved.