Project Team

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Shri Avinash Shinde, Shri Vinayak, Ms Neeti Gupta, Ms Khyati Nagar helped to complete the project

Ms Ritu Varuni spent a month at IDC as a consustant.



Acknowledgements

In addition to the main project several students and the staff at IDC have helped in carrying on the project.

Mr Pradhan, Mr Joshi, Mr Wankhede, Mr Navle, Mr Sawant, Mr Singh Mr George in workshop.

Mr Patkar and his team in photo, Mr Chilap, Mr Mathai, Mr Babal have helped from time to time

Several students like Anisha, Neelam have lent their helping hand.

Voluntary organization YUVA has actively associated and helped in Bamboo Link project. Other NGO's like A.D.S (Academy of Development Science) and URAVU from Kerela participated actively in the workshops.

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Bamboo Link Project Report

1.0 Introduction

Bamboo link project started with specific clear cut goals, with a modest grant from INBAR. The kind of project was new to a premier technological institute like IIT Bombay which normally deals with problems of high technology and organised big industries. Initially there were problems like accommodation for the skilled craftsman

in project hostels meant for post graduate research staff. But exceptions were made in due course. Bamboo Link though prolonged due to inevitable reasons has made a significant impact among the craft-groups, designers, NGOs, funding organisations and IITs. Several workshops with crafts-groups have changed the thinking of craft-persons.

More and more NGOs are interacting with IDC for bamboo work now. Well designed, marketable products introduced in the workshops have created confidence in craft groups and young entrepreneurs. More projects have been assigned to IDC since then. A UNDP funded project on 'Tools, Small technologies and Finishes' has been assigned to IDC by DC(H). A set of tools and a Tool kit for Bamboo developed in this project got tremondous response from craft-persons and UNDP. Bamboo Link has been a foundation for the Bamboo Lab which is taking shape at IDC. The experience gained in the project will have relevance to bamboo craft-persons all over the world

2.0Training Workshops

Initially it was planned to interact with only two specific craft-groups. Soon it was

realised that interaction with craft- groups is a long time committment, projects are inequipped to deal with. It is important to associate with NGOs who are committed to the welfare of craft-groups for longer periods.NGOs also have the advantage of supporting the craft groups in their social, legal and political struggles. As a strategy, it was decided to interact with more groups and associate with NGOs already working with craft-groups. In total 15 workshops were conducted with craft-groups belonging to Burud and Mahadev koli communities in Mumbai,Pune, Karjat and villages around. Some of the workshops were specific like 'Natural dye finishes on Bamboo' held for a day. Some were for longer period of 5 days covering variety topics like Design,marketing,costing,

finishing Society formation etc, 15 to 40 persons attended the workshops.

A gap was observed in the awareness of craft-groups in cities compared to villages. In cities like Pune and Mumbai craft-groups were very commercial in attitude. They also had social problems like high alcoholic consumption. Initially it was difficult to break the ice

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with them. Once a contact through an NGO, YUVA was made it became easier to approach. YUVA has been working with the burud community in Mumbai , organising women members in to a co-operative. The craft-groups in Mumbai have migrated from karnataka 30years before. Knowing their language 'Kannada' also helped in confidence building. Compared to this, craft-groups in villages had different problem. They could not perceive the commercial potentials of bamboo craft. Concept of making in numbers to earn

money could only sink slowly. This would also need continuous market support for the craft-groups to believe in the reality of market forces . Following **workshops** were conducted in the project

- 1.1 "Introduction to potentials of Bamboo in the new markets, concept of user- friendliness, Costing and competing in Open Markets" held at Kashele Karjat by Prof. A.G.Rao and Shri Kanwarjit Singh Nagi for one day.
- 1.2 One day workshop at Velhe by A.G.Rao, K.Nagi "Introduction to New Product possibilities in Bamboo. Concepts of User friendliness, use of Jigs and fixtures for better production"
- 1.3 One day workshop at Bhima Valley of Khed Taluka at the behest of local N.G.O, 'Gramvarani' by Kanwarjit Singh Nagi . Theme : Bamboo as a Craft Material.
- 1.4 One day follow up workshop at Bhima Valley by Kanwearjit Singh Nagi . Theme: "Correct Harvesting, Seasoning and preservation practices for Bamboo"
- 1.5 One day workshop at Velhe by K.S.Nagi. Theme: Bamboo preservative Treatment.

X 1.6 A six day workshop for Bamboo workers at Parel with Cosponsorship of YUVA dealing with following topics.

New product possibilities in Bamboo Design in Bamboo - User friendliness, Market orientation

Quality and competitiveness C osting and competitiveness

Finishes with Natural dye Training on new products

Vipasana (Meditation) seat Stool ; both in woven bamboo Need for forming a Bamboo Workers Society.









This particular workshop paved the way for a long time contact with the Parel group of craft-persons A discussion was held wth YUVA and a strategy was worked out. It was agreed to train one skilled craft-person for one day in a week at Bamboo lab IDC. Gangamma, who was skilled in the

Gangamma, who was skilled in the group was selected for further training. In addition to this one workshop in 15 days was held for the craft-group. at Parel by the IDC staff.

Two different types of products were developed to satisfy the aspirations craft-group. Gangamma continues with them training on a regular basis to consolidate the fortnightly training by IDC staff.







1.8 One day workshop was held in Kashele(Karjat) in collabortion with ADS by IDC team of Shri MSG Rajan, Prof A.G.Rao,N.Rudrapal and an IDC student Neelam.











1.9 One day workshop for Society formation was held at IDC along with a 2 day workshop for the craft-trainers. About 40 persons attended from burud community residing in Parel















The 2 day workshop for trainer was attended by 4 persons from Parel group,2persons from URAVU, an NGO from Kerala and 2persons from ADS(Academy of Development of Science) Kashele,Kajat.















1.10 Participation and workshop in a village fair Masa.

Masa is a yearly village-fair which takes place in a place called Masa near Karjat.

IDC team comprising of students, staff and Gangamma participated in Masa along with a group of craftswomen from ADS,coordinated by Peter Bakos.

One lakh people attend this fair every day. Large number of basket makers come and sell their bamboo baskets.

IDC team (includingGangamma) demonstrated the making of a bamboo stool and dyeing of bamboo with vegetable -dyes. The workshop was with open format with informal participation. The workshop created great enthusiasm in the villagers and the students of IDC.

A report by ADS joint organisers of the workshop is given in the next pages.





Report by Peter Bakos on the Masa workshop

ADS / IDC Masa Workshop 7 - 11 January

2001

Background

There are many Tribal communities bamboo working, widely spread throughout Raigad, Pune and Thane Districts. These communities rely on Bamboo production as their sole source of income throughout the dry periods of the year. (during monsoon raw material is not available and so the artisans seek outside labour.) Communities of Bamboo artisans own very little land if any and if they own land it is generally not suitable for agricultural purposes. Tribal villages of Bamboo communities may consist of as many as 70 (seventy) or so families who work in the art of Bamboo. All of these artisans only produce one type of item: bamboo baskets, they make 2(two) sizes; small and large. The small basket fetches them around 7(seven) Rupees each and around 17(seventeen) Rupees for the large basket. Artisans entirely rely on nearby

(around 25 kms) weekly markets to sell their wares. The markets are saturated with these two types of baskets and with artisans competing to sell their wares to the very limited market. (all of these communities live hand to mouth) if the baskets are not sold on market day then the family goes without income till next market day. So as to avoid this Artisans will sell their baskets at reduced rates. Bamboo artisans are very rarely educated and do not realise that if the sum of raw material is taken into account plus delivery of raw material and cost of reaching and returning to market, they are all really working for nothing.

Ie:

Cost of Bamboo Culm @ 25 -30Rupees each

Cost of Delivery of Bullock cart load (enough for three artisans for 15 days) 150 Rupees

Return fare to market @ 30 Rupees

Artisans can produce 5 small baskets and 3 large baskets from a single culm:

6 small baskets @ 7 Rupees each = 42 Rupees - 30 = 12 Rupees

3 large baskets @ 17 Rupees = 51 Rupees - 30 = 21 Rupees

Artisans produce about 10 finished large baskets in 3 days :. 50 baskets in 15 days :

150 Rupees / 50 / 3 artisans baskets = 1Rupees per basket

delivery charge.

6 small baskets @ 7 Rupees each = 42 Rupees - 30= 12 Rupees - 1 Rupees *delivery* =11 Rupees

3 large baskets @ 17 Rupees = 51 Rupees - 30 = 21 Rupees - 1 Rupees



delivery = 20 Rupees

If artisans produce $\sim \! 100$ large baskets per month / 4 market days = 25 baskets per market @ 30 Rupees

travel = 150 rupees (6.7 Rs per basket x 25) - 30 Rupees = 136.7 Rupees

136.7 Rs profit from 25 baskets = 136.7 / 25 = 6.7 Rs labour per basket ...??? = average daily wage for skilled artisan @ $3.3 \times 6.7 = 22.3$ RS

To further enhance the potential of artisans selling their baskets, they naturally dye them with 'Flame of the Forest' flowers mixed with lime which gives them an orange colour.

Workshop objective

As it is not viably possible to reach all of the artisans in their villages we had proposed to arrange a "Viable Bamboo Product and Technique Orientation and Interaction for Tribal Bamboo Artisans" workshop within a 'Mela' (Annual market festival) situation. 'Masa Mela' was chosen as the greatest number of Traditional Bamboo artisans (basket makers) attend this mela. They also produce a particular type of basket for this event; their traditional baskets are given intricate colouring using oil or water paints for which they charge a little extra. As the mela ran over a period of 5 days it was envisaged to set up a large stall which would house all the necessary equipment, raw materials and ten skilled female and male artisans trained under the Academy of Development Science (ADS) "Bamboo Training Scheme".

Outcome

A stall was constructed of Bamboo and covered in shade mesh to house the ADS artisans, raw material and equipment etc. Artisans took turns in demonstrating the Various new and innovative products designed at ADS in Conjunction with IDC. Traditional artisans were encouraged to try their hand at making the designs and were given step by step guidance by the ADS team. The stall was manned and open to the public between 10 am and 6 pm during which time traditional artisans participated in making products such as Hair clips and mobiles. The many benefits of producing these new and innovative designs was explained to the Traditional artisans of which include:

Financial implications- From a single length of Bamboo items costing Rs500 can be produced. 1000 Rs worth of stock can fit into a small bag. Dry Bamboo can be used effectively. Unfortunately the main area where the major traditional artisans had set up their stalls was not permitting permanent stalls so daily a second stall was constructed to demonstrate various new and innovative techniques to traditional artisans. This proved to be a great success as it was difficult for the traditional artisans to leave their stalls to come and participate in the



"Viable Bamboo Product and Technique Orientation and Interaction for Tribal Bamboo Artisans" workshop as they had to man their own stalls. But as this new stall was constructed daily amidst the traditional artisans stalls, it allowed for them to spend what time availed them to participate. The 10th of January is the Major market day for this festival, this was the day that was chosen for the IDC team to come and demonstrate techniques such as natural dyeing and use of jigs and new and innovative tools developed by IDC.

The IDC team consisted of 25 members and included Faculty, artisans and students. Artisans showed a keen interest in all the natural dyes and jig but were especially taken by the tool designs.

Some of the ADS team conducted a survey of the Traditional artisans to ascertain the average income, time spent on Bamboo production and situation of artisans villages. This information will be used in the future to identify appropriate Tribal villages in which to conduct 'in-situ' workshops on "introduction of new and innovative viable product designs" and even 'in-situ' training schemes.

Final note

The overall workshop fulfilled our objectives set and we feel that future such workshops can enable us to reach numerous Bamboo communities that we would otherwise find very difficult to reach and definitely assist in identifying what areas require our further effort.





Product Development

2.1 Vipasana Seat and Stool

New product development was done initially by working with craft-persons at Pune. A simple product like 'Vipasana seat' was developed using existing basket and reversing it. This can be used for Vipasana meditation by people who are not used to crossed legged sitting position. There are number of Vipasana centres in India and the basket seats could be used there. Later a concept for bamboo stool was explored. A simple well woven basket reversed could become a stool. It was important to make these items look different and not seen as baskets. Vegetable dye colours were used for the strips which were used in the baskets.







One IDC student Ravikumar Koka spent a month of his training period at Pune. A design office run by two idc alumini Ms.Rasmi Ranade and Unmesh Kulkarni gave him space to work in Pune.Being in design atmosphere where he could get some guidance helped him to come out with several designs as seen in the pictures.















out of all these trials and further simplifications a simple shape which could take the weight was arrived at. The weave used for edges to make them strong was used throughout. Pictures below show the final stools which were made by craftspersons at Parel, Mumbai.











2.2 Trial orders were placed onthe bamboo stools and Vipasana seat in Consultation with YUVAas they are easy to adopt in making. Market trials were to be initiated once the products got made to the satisfactory quality. Many Crafts groups do not have "spray facility" for a protective coating of 'Malamine' or lacquer to avoid fungus growth on the products. Efforts are being made to link craft groups with the persons having such facility. IDC workshops will do the spray finish in the meantime. Vipapasana seats were not made properly to take a market response Stools were made in different colours .The maket response has been positive.













Above:Gangamma and Ruddrapaul helping Patil while starting the chair weave.

Below: Patil and Ravikumar fitting the thermocol templates



2.3 A lounge chair in Bamboo
As a sequel to his one month
project Ravikumar Koka took
Design of a

Lounge chair as his Degree project. Extensive work on Ergonomics and weave form suitable to chair has resulted in attractive but simple lounge chair. One of the craftsman from Parel, Patil who has been making stools, made the chairs.

Two concepts were developed. In the first concept the base and the seat are integrated in the weave. Bottom of the seat shell is connected to the top of the base while weaving the chair. In the second concept seat shell is woven in bamboo and kept on a metal swiveling base.

The first concept is cheaper and good for local use.

The second concept is more suitable for urban markets as shells are stackable adding to the convenience of transportation.

Simple templates made out of thermocol were used for getting the complex curvature to convert a basket into a lounge chair. Bamboo strips coloured black using Natural dyeing process enhances the looks and brings definition to the form of the chair.

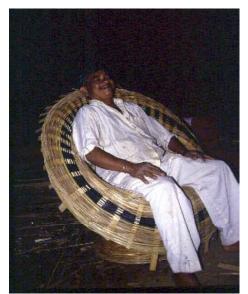






Left:Ravikumar helping in getting the shape right.

Below:Rudra paul finishing the rim.



Above:Patil sitting with satisfaction after making the chair









2.4 In addition to stools three other products, Menu card holder, writing pad and basket range to keep newspaper in Hotel rooms was developed.







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2.5A batch of students at IDC took up the design of 'Tea coasters' in Bamboo laminations. 13 new designs resulted out of this exercise. The designs had good response in the Bamboo Congress in Coasta rica" where they were exhibited. The coasters make use of low investment technology,

2.6 Colouring methods using natural dyes have been developed. In some cases like black, brown and yellow, known methods have been verified and refined.

In addition three new colours pink using Alta, reddish brown using cow- urine, light brown using 'tea leaves' have been developed based on traditional methods. Special containers to heat long strips ensure uniform and economic colouring.

2.7 An IDC student Ms. Shilpa Tikale did a special project on the use of natural dye in Bamboo laminations.



3.0 New Product Concepts

One of the aims of the project was to draw young students and practicing designers and architects into the process of bamboo craft design. Creativity workshops where designers and craft-persons interact on design is a good platform for such interactions.









3.1 A 'design workshop ' involving 20 designers and design students, 7 craft- persons, one bamboo craft product distributor, Bamboo link design and technical team

(4 persons) was held in PUNE, in collaboration with "Banuben Nanavati, college of Architecture for Women. The workshop of 2 day duration, resulted in many new product ideas

In the workshop a slide and a video presentations were made on potential and practice of bamoo craft

An 'imagery session to trigger subconscious imagery was held by prof.A.G.Rao ,who has specialised in the subject of creativity.

One day was spent in generating ideas. The ideas were presented and discussed among the group. The workshop generated lot of enthusiasm and several architectural students have been taking projects in bamboo since then.





One of the designers, *Ms Rasmi Ranade* wrote a poem after attending the workshop

Bamboo Weaves – A designers'eulogy

We're closer than you've imagined, said the warp to the weft Without you honestly, I would be bereft.

Although I'm created around a framework you know,
The structure of which helps both of us grow.
From bamboo grass tall, we're slit
And by and by together knit.
We smell so sweet, we're nature pure
We hope that our kind will swell and endure.
What shall we become, what shall we be,
Shaped by human hands, we'll wait and see.

We're wide, we're narrow, we're brown, we're rust, We're tough and soft and rugged I trust. Colour us red and black and earthy brown, Weave us together, with a beading all around. Let the hands that knit us be steady and sure, Then intricate patterns and textures they can conjure.

Up and down in two, four and six,
We're the warp and weft of bamboo, on a steady fix.
When intertwined, we're strong and can withstand weight,
As in a chair, basket, bridge or gate.
Horizontal, lateral, inclined and turning,
The hands that weave us are always learning.
Transform us into a herringbone, hexagon or twill,
Square to circular and diagonal shapes to fill.
Secure our loose ends over and around,
With cane and rattan we can certainly be bound.

Shape us into lamps with weaves close and wide Use our widths as a mathematical guide. Coasters, baskets, bags and more, Transform us into elegant products galore. Mats and wraps, trays and baubles, Products suchlike, never seen before. Belts and jewelry, straps and handles, Hats and mats and even sandals.

Don't put us to pulp, don't obliterate,
Propagate our kind, before its too late.
We grow on water, soil, sunshine and air,
Keep us rooted, so that we may never despair.
Put us to people, men, women and children,
Use us more, the bamboo and rattan brethren.
Around the earth and perhaps other constellations,
We belong to all nations, all people and environs.



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- **3.2** A bamboo craft workshop for NASA(National Association of Students Of Architecture): Prof. A.G.Rao and shri Kanwarjit Singh Nagi conducted one day bamboo craft workshop for students of Architecture in their annual festival. A craftsman ,Buddha from ADS, Kashele demonstrated craft work.
- **3.3** A two day workshop on' bamboo products-new potential was held at INS Shivaji near Lonawala. Young trainees with engineering background attended the workshop and made products .Prof.A.G.Rao and shri Kanwarjit Singh Nagi gave talks on potentials of bamboo in product design and architecture respectively.

4.0 Market study

- 4.1Market study has indicated potential for two types of bamboo products. One with fine craft work, mostly small products with good finishes and high quality. The quality and novelty have to match with current plastic products produced by big industries. Such products also have export potential if the production can be organized and assured.
- 4.2 The Second type of products is large products where bamboo weaving enjoys a structural advantage with low-cost investment for making compared to plastics. Vipasana seats and stools in Bamboo fall in to this category. These products are well suited for Maharashtra region. The new design adaptation and finishes, play an important role. Products like large 'laundry basket' with good finish have also got large demand.

Architectural products like lamps interior artifice also have large scope for bamboo products. A group of management students made a market survey with the samples of small products and photographs of big products like stools and chair.

The survey coordinated by YUVA indicated that there is a ready demand for good quality bamboo products with new designs. It is possible to produce these products by the craft group at Parel . YUVA is taking further steps to consolidate the positive market

5.0 Initiation of Bamboo Crafts Co-operative.

Efforts were made to form a Society by the craft community at Parel. Initially one day work shop at IDC was held. After that several meetings were held along with YUVA regarding the benefits of forming a Society. Unfortunately two rival groups exist in the Community and this became an obstacle in forming the society. A women's association for 'saving their earning' had been formed by YUVA earlier. A separate society for 'Bamboo activities' could help in procuring Bamboo in Bulk and storing them.

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Currently craft- persons have to pay Rs.5 to Rs.10 more for each bamboo as they are purchasing in retail market. Efforts are continuing to bring rival groups together to form a society or operate through Women's Society to enable the purchase in bulk which all the workers would benefit

6.0 Exhibitions

Products developed in the project were exhibited in several exhibitions for Feed back as well as for propagation.

Tea-Coasters designed in bamboo by IDC students were exhibited in Costa Rica during the international Congress.

Products exhibited in IDC degree show at Nehru Centre, Worli, Mumbai received a very good response from the Public.

The chairs and stools were exhibited in Swadeshi Vigyana Mela held in Delhi

YUVA exhibited the products in a NGO market support exhibition held at Mumbai.

7.0 Conclusion

Bamboo link project gave a platform to IDC to get into various aspects of promoting Bamboo craft among craft-persons, designers, govt. officials and Public alike.

As planned in the project limited., concrete goals of training craft persons through workshops as well as introducing new designs were achieved. Contacts with craft groups directly as well as through NGOs like YUVA at Mumbai and ADS at Karjat were established. But it was realised that task of changing the existing pattern of craftspersons' lives is beyond the scope of Bamboo Link project due to the long time socio-political committments it demands. A contnued collaboration with NGOs like YUVA and ADS which have such committments is the key for such longtime changes.

Meanwhile an important role for IDC, to influence young designers, craft groups, NGOs, Government. Agencies and Public to reposition the bamboo craft as a viable Future Venture has been identified. Bamboo Link has paved the way for a much bigger project at IDC on 'Tools, Small Technlogies and Finishes' for Bamboo and Rattan, funded by UNDP. Bamboo Lab(Studio) at IDC has become a nodal point for craft groups, NGOs, young designers from India and abroad. Bamboo Studio has been interacting and supporting several NGOs and craft groups in design and technology for bamboo craft.

A second phase of Bamboo Link to extend the design and tecnology supports to bamboo craft groups in other developing counties is being contemplated with support of INBAR.

