

7 Day training programme on
Jigs, Tools and Fixtures for
Bamboo Handicrafts
(Combined with Naturea Fibres)
at
Sitargunj
Uttarakhand
17th to 23rd September 2007

Organised and sponsored
by

UBFDB
Dehradun



Bambu Studio
IDC
IIT Bombay.





Report on

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Address for correspondence:

Prof.A.G.Rao
Industrial design Centre
IIT Bombay
Mumbai-400 076
e mail: <agrao @idc.iitb.ac.in>
tel: 022 2576 7828 (O)
022 2576 8828 (R)





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Introduction



The workshop was a result of the collaborative efforts between Bambu Studio, IDC, IITBombay and UBFDB, Dehradun as a synergic step to reach out to the skilled craftpersons of Sitargunj region, with inputs from product design and development perspective.

The week long workshop introduced the craftpersons to new designs, new tools, small machines, moulds, jigs and fixtures, treatments for borers and fungus and coloring with natural dyes etc.

The crafts groups had been visited prior to the workshop and products were designed taking into account local conditions and skills. Efforts have been made to combine fibers with bamboo.

The organizers especially Shri. Lepcha, Shri. J Durai and Ms. Gargi Pandey had been part of the planning process. Mini tool kits were given to each craftsperson attending the workshop.

A G Rao, R Sandesh





Status of the Bamboo Craft

While India is one of the largest Bamboo growing countries in the world with vast bamboo resources waiting to be tapped, Bamboo Craft sector in the country is facing a crisis. The craft needs urgent 'repositioning'. About 13 lakh craftpersons depend on bamboo for livelihood.

A bamboo craftperson who is at least ten times more skilled (to weave a basket) than a construction or industrial worker, gets half the wages today, resulting in many craftpersons abandoning the craft in favour of other jobs in cities. Often ending up doing menial urban jobs, the craftpersons lose not only their self esteem but also end up as the last members in the lineage who would be called artists or craftpersons. The craft ends with them.

Such migration to urban areas creates further problems for the cities as well. Unable to cope with the influx, cities often succumb to large unplanned and unmanageable settlements of migrant labourers, skilled craftpersons etc.

Thus, for the craftpersons to be able to continue craft as a means of livelihood, there has to be an economically sustainable craft model within which to operate. Further, such a model calls for marketing the craft produce in urban centres within the country and overseas markets as well.

With increasing global awareness towards eco-friendly, environment friendly products and processes, social cause products and those with 'fair trade' tags, bamboo craft products can be positioned to fill in this market void.

Along with the need for such craft products, the market demand for quality craft products can further push the sector towards streamlining and improving itself as a sustainable cottage/small industry.

Thus, with economically viable models with inputs in product design and development, processes and production, the craft sector stands to immensely benefit with returns back to the village, cluster based skillful traditional practitioner of craft.



IDC intervention in bamboo craft

IDC at IIT Bombay, Mumbai, has been addressing the problems faced by the bamboo craft sector since 1993, when the first national workshop and Seminar on Bamboo Craft, 'Jagruti' was held at IDC with the initiative of Prof. A G Rao. Stalwarts in Bamboo craft like late Shri Vinoo Kaley and Prof.M P Ranjan participated in the seminar and workshop along with 15 designers, 15 craftpersons and 30 design students.

The proceedings of Jagruti, titled '**Bamboo Craft Design**' published by IDC, till today acts as a frame of reference to future of bamboo craft in the Country.



In continuation of his commitment and grass root level involvement with the bamboo craft, Prof. Rao took sabbatical leave in 1997 for a year to study bamboo craft in North East.

1998 onwards saw increased activities of bamboo craft at IDC with sponsored projects from INBAR (International Network for Bamboo and Rattan) and UNDP through DC (Handicrafts) and KVIC. These projects have lead to formation **Bambu Studio** at IDC.

As an outcome of the projects undertaken at IDC, a tool kit with over 30 tools had been developed and productionised.

Four Hand operated machines were also developed and productionised. Tools and machines apart, Colouring techniques for bamboo using Natural Dyes, Smoke finish technique in the Smoke-chamber, Coil-technique, Anti-fungus treatments with alum etc, were studied, documented and brought out into manual form.

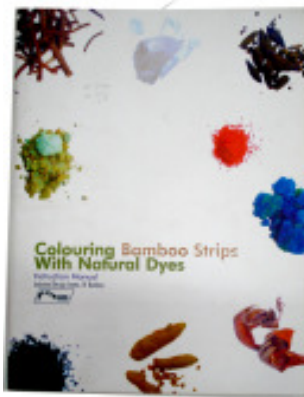




IDC has also been designing and developing market oriented and production friendly products and techniques and these have enabled IDC reposition with good success the bamboo craft in the Country.



Prof. A G Rao then mooted the concept of MCFC (Micro Common Facility Centre) to help reach out with new designs and technologies developed at Bambu Studio to the remote rural areas where electric supply is uncertain or absent. Consequently three MCFC's in the North East at Diziephe (Nagaland), Barapeta (Assam), and Nalchar (Tripura) were taken up by IDC through DC. (H).



Another four MCFC's were also taken up through KVIC with UNDP funding in collaboration NGO's like *Sampoorna Bamboo Kendra* (Melghat), *Uravu* (Wainad, Kerala), *Sahaj* (Dahod, Gujarat) and *Academy of Development Sciences* (Karjat, Maharashtra).



IDC Bambu Studio team under the leadership of Prof. A G Rao has developed workshop modules to bring a new direction to the bamboo craft. New market oriented product designs are developed and introduced in the workshops along with tools, moulds, machines and techniques required to make these products.



It has been realized that Bamboo craft needs inputs of 'Industrial Design' covering various aspects of design, development, production, product-positioning marketing and costing to name a few. Only a holistic approach starting from educational/training inputs to final marketing of products can bring sustainability to the bamboo craft.

Improvement of design and quality of craft products demands concerted efforts at many levels. One important effort would be to introduce an awareness essential to making products to required size and shape. This means learning about measurements and the use of moulds, jigs and other production tools. A relevant mention here would be *IDC-Gauge*, a tool that was introduced in the toolkit. It facilitates measurement of thickness as well as width of strips.

Craft persons will have to be introduced and trained to use new tools and techniques, use of moulds, costing, production planning, understanding measurement, drawings and specifications to compete in the local and global markets.





UBFDB *

The need to promote bamboo & fiber based livelihood options in a mission mode lead to the establishment of Uttaranchal bamboo and fiber development Board (UBFDB) in the year 2003, registered under the society's registration act 21 of 1860.

Uttaranchal Bamboo and Fiber Development Board was established under the aegis of the Govt. of Uttaranchal as part of the entrepreneurship development policy of the state. The mandate given to organization was clear, to utilize, manage and develop in a sustainable way, the existing resource base of bamboo & natural fiber in the state. Within a short span of time the states nodal agency for initiating and replicating of bamboo and fiber development activities is involved in the entire production to consumption system of bamboo and natural fiber based initiatives.

VISION

To realize the economic, social and environmental potential of bamboo and fiber utilizing present and future resources to sustainably contribute to improving ecological security and livelihood development needs of the state.





The place and its natural resources

Uttarakhand, known as Uttaranchal from 2000 to 2006, became the 27th state of the Republic of India on November 9, 2000. Uttarakhand borders Tibet to the north, Nepal to the east, and the states of Himachal Pradesh and Uttar Pradesh (of which it formed a part before 2000) in the west and south respectively. The region is traditionally referred to as Uttarakhand in Hindu scriptures and old literature, a term which derives from the Sanskrit for *Northern Country* or *Section*. In January 2007, the name of the state was officially changed from Uttaranchal, its interim name, to **Uttarakhand**

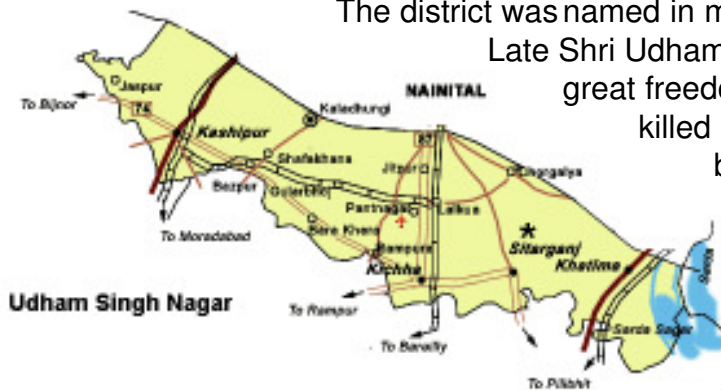


Uttarakhand

* UDHAM SINGH NAGAR

In the vicinity of the spectacular Kumaon lies the district of Udham Singh Nagar which was a part of district Nainital before it gained the identity of a separate district in October 1995.

The district was named in memory of Late Shri Udham Singh who was a great freedom fighter and who killed General Dyre after the brutal Jalianwala Bagh massacre.



Udham Singh Nagar

U S Nagar district comprises of three main sub divisions: Rudrapur, Kashipur and Khatima.

* Sitargunj is one of its seven tehsils.

excerpted from:
<http://en.wikipedia.org/wiki/Uttarakhand>
<http://gov.ua.nic.in/uttaranchaltourism/districts/udham/index.html>
 Maps: <http://en.wikipedia.org/wiki/Map:UttarakhandDistricts.png>



Bamboos of Uttarakhand

Uttaranchal has 7 species of bamboo in all that are found naturally either in the reserve forests or in the homesteads. *Dendrocalamus strictus* is found in the reserve forests and is also found outside to some extent. *Arundinaria falcata*, *A. spathiflora*, *A. falconeri*, *A. jaunsarensis*. the four ringal species are found in the reserve forest only. *Bambusa nutans* and *Dendrocalamus hamiltonii* are found in the homesteads and in or around villages only. Almost 4-5 other bamboo species like *Dendrocalamus giganteus*, *Bambusa bambos*, *Bambusa balcooa* etc. have also naturalized in the state but to a very limited extent. The bamboo outside forest area is difficult to calculate.



A local tool used for preparing bamboo products

As per available information, although bamboo is present in 1.39 lakh ha. of forest area about 60% is small bamboo species of *Arundinaria* genus. *D. strictus* is present on the rest 40% of area. A history of large amount of bamboo being supplied to whole of north India also exists. But during last 15-20 years, most of the resources have been put into development of other timber crops than on bamboo. Therefore, factors like mass flowering, forest fires and lack of cultural operations have rendered these valuable resources to degrade. The average per ha availability of bamboo in Lansdowne forest division has been calculated to 11-12 clumps. After the start of a plantation mission by UBFDB, bamboo plantations have been regularized in forest department with an average plantation of 2000 ha. per year.

Bamboo available in the vicinity of Sitargunj





Natural fibres/grasses of Uttarakhand

Bhabar Bhabar (*Eulaliolopsis binata*) is a common grass growing in abundance in the Shivalik ranges. Bhabar grows in plains. It has several uses, e.g.; in manufacture of paper, in rope making (commonly called “baan”), as packing material and for feeding to cattle. Bhabar grass is a prime non wood forest product of the region and has high economic value for few communities engaged in the extraction and processing of the natural resource and few industries. (Such as Paper)

Sisal (Rambans) World over, there are approximately 300 species of Sisal or Agave. It is a plant of the Agavaceae family. Sisal is used for manufacture of marine and industrial ropes, Decorative handicraft and utility items, reinforcement of corrugated polyester sheets, in textile industry.

Bhimal (Grewia optiva) Bhimal is a very useful tree, grown extensively in the state for its multiple uses. This is one of largely available fiber materials in mountain region, available in the forests and cultivation both. The leaves are used as fodder for animals. The local use of this material is for rope making. On the commercial run this material has not reached to a stage where it could be seen as a marketable product, which can also be seen as the state identity product line.

If yarn is developed, product lines such as home products like, mats, rugs, blinds and lamps can be developed. Material combination can also be done like bamboo, Jute and sisal blends

Industrial Hemp, (Cannabis sativa L.) Industrial Hemp has traditionally been cultivated in villages of Uttaranchal for household purpose. According to the information collected during field research conducted by UBFDB, the villagers specify that there are two types of plants which grow from the same seed; one from which seeds are collected for spices and leaves are utilized for drugs extraction whereas the other plant is used for flowers and fibres.

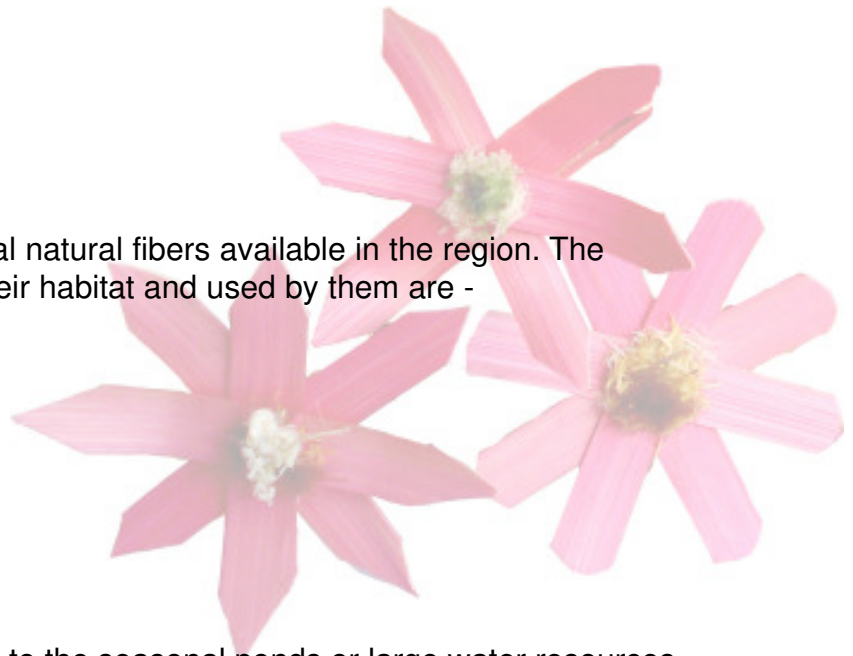
Stinging Nettle Himalayan Nettle (*Urtica dioica* L.) is largely available in the forests and in and outskirts of the villages without any utilization. People are not aware of using these hemp and nettle fibres for textile purpose, in local villages, at present these fibres are used only for rope making. Lack of awareness and no existence of the machineries and tools exclusively for these fibres have left them underdeveloped and unexplored in this region.



Tharu grasses

The Tharus use a variety of seasonal natural fibers available in the region. The materials available in and around their habitat and used by them are -

- Kans (grass)
- Munj (grass)
- Pateri (grass)
- Seenk or urai (grass)
- San (jute)
- Khajoor ka patta (palm leaves)
- Mom (wax)
- Uun (wool)



A variety of grass grows mainly next to the seasonal ponds or large water resources. The availability of this material is therefore best during and immediately after the monsoons. In other season the availability becomes difficult or the grass dries up making it difficult to work with. Munj and Kans look more or less same but Munj is softer grass to work with. In this region Kans is found more than Munj.

One of the main bottlenecks that have been observed with the craft scenario of the Tharus is the low availability of the raw material for the craft. The raw material is getting increasing difficult to collect due to non-availability of fallow land, the material is available only during the four to five months preceding the rains, and the amount of rainfall has a direct bearing on the raw material base.

Due to the seasonal nature of the basic raw material for the craft, the nature of employment generated out of craft activity also has a seasonal inclination. There is a need to promote cultivation of the grasses used for the craft within the vicinity of the clusters. This will be beneficial in reducing the time required in the procurement of the raw material. Plantation of the said grass needs to be promoted if this enterprise has to scale up its commercial operations and sustain the craft based livelihood.

Some of the products made using locally available fibres with traditional methods of basket making which give the products the unique craft identity





The workshop Inauguration



The inauguration ceremony of the workshop happened at the hands of the Block Pramukh, Shri G K Mandal (sitting centre).

Also seen are Prof. A G Rao (IITB) and Ms Gargi Pandey, Project Coordinator UBFDB.

The seven day workshop was held in the Agricultural Produce Market premises and was conducted by UBFDB under the aegis of its 3 year project 'Market Focused Enterprise Building Project for Tribal Community'. This particular all-women group of participants belonged to the 'Tharu' community.



Workshop Schedule

Training team members:

Prof. A G Rao	AGR	Gangamma	GMA
Sajeer A R	SR	Rudrapal	RP
R Sandesh	RS	Shankar Bala	SB



Day –1 17-09-07

9 to 10 am	Registration	
10 to 11 am	Inauguration	
	New scope for Bamboo Craft	- AGR
11 to 1 pm	Introduction to Toolkit Tools (Video)	- GMA, RP, SB, SR
	Machines Demo + Practice	
1 to 2 pm	Lunch Break	
2 to 3 pm	Practice Session + Groups Formation	- AGR, SH,SR
3 to 5 pm	Preparing Strips for the products as per the group requirements.	- GMA, RP, SB, SR

Day – 2 18-09-07

9 to 10 am	Treatment for Fungus + Insects Natural Dye Colouring	- AGR, SH, SR
10 to 12 pm	Katha+Haldi + Tea colour demo	- GMA, RP
12 to 1 pm	Borax, Boric Acid treatment demo	- GMA, RP
1 to 2 pm	Lunch Break	
2 to 4 pm	Combination -1, Group work	- GMA, RP, SB, SR
4 to 5 pm	Review	- AGR, SB, GMA, RP,SR

Day – 3 19-09-07

9 to 10 am	Use of Moulds, Jigs, Fixture	- AGR, SH
10 to 1 am	Combination - 1	- GMA, RP, SB, SR
1 to 2 pm	Lunch Break	
2 to 4 pm	Combination -1, Group work	- GMA, RP, SB, SR
4 to 5 pm	Review	- AGR, SB, GMA, RP, SR



Workshop Schedule



Day – 4	20-09-07	
9 to 1 pm	Combination -2	- GMA, RP, SB, SR
1 to 2 pm	Lunch Break	
2 to 4 pm	Combination- 2	- GMA, RP, SB, SR
4 to 5 pm	Review	- AGR, SB, GMA, RP, SR
Day –5	21-09-07	
9 to 10 am	Production planning, costing	- AGR, SR
10 to 1 pm	Combination – 2, finishing work	- GMA, RP, SB, SR
1 to 2 pm	Lunch Break	
2 to 4 pm	Combination - 3	- GMA, RP, SB, SR
4 to 5 pm	Review	- AGR, GMA, RP, SR
Day – 6	22-09-07	
9 to 10 am	Finishing of all products	- AGR, SR, RP, SB, GMA
10 to 1 pm	Combination -3	- GMA, RP, SB, SR
1 to 2 pm	Lunch Break	
2 to 4 pm	Combination - 3	- SR, GMA, RP, SB
4 to 5 pm	Review	- AGR, GMA, RP, SB
Day – 7	23-09-07	
9 to10 am	Tool maintenance talk + practice	- AGR, SR, RP, SB, GMA
10 to 1 pm	Finishing of all products	- AGR, SR, RP, SB, GMA
1 to 2 pm	Lunch Break	
2 to 5 pm	Review feed back	- AGR, SH, SR, GMA, RP, KS





1
Rakhee
Rana



11
Parveen
Rana



21
Sankranti
Rana



2
Rajkumari
Rana



12
Sushma
Devi



22
Binesh
Rana



3
Urmila
Rana



13
Umneshvati
Rana



23
Preeti
Rana



4
Sita
Rana



14
Amarvati
Rana



24
Prabha
Rana



5
Shree
Rana



15
Ladaithi
Devi



25
Shreemanti
Rana



6
Draupati



16
Sunita
Devi



26
Shreemanti
Vati



7
Urmila



17
Rani
Devi



27
Savatri



8
Mandakini



18
Rameshri
Devi



28
Bitravati



9
Kamlesh
Rana



19
Mithesh
Rana



29
Premvati



10
Reena
Rana



20
Lakshmi
Rana



30
Lakshmi

PARTICIPANTS PROFILE



Participants Profile



Sr.No.	Name/Address	Age	Sex	community	Education Training taken and skills	Work Experience and product
1.	Rakhee Rana Father – Pusan Singh Rana Gaurkheda P.O. Dist. Sitarganj (Uttarakhand)	28Y	F	S.T.	10th	Making Dalpa Rassi, Mat weaving
2.	Rajkumari Rana Husband – Umesh Singh Rana Gaurkheda	30Y	F	S.T.	5th	Making Dalpa Rassi, Mat weaving
3.	Urnika Rana Husband – Dan Singh Rana Gaurkheda	32Y	F	S.T.	6 th	Making Dalpa, Rassi, Mat weaving
4.	Sita Rana Husband - Ramnath singh Rana Gaurkheda	40Y	F	ST	5th	Making Dalpa, Rassi, Mat weaving
5.	Shree Rana Husband - Pratap Singh Rana Gram. Gaurkheda P.O. Sitarganj, Pin – 262405, Dist – Udham Singh Nagar(Uttarakhand) Ph. No: 9821502737	26Y	F	ST	12th	
6.	Dikajoli Husband Rajendra Singh Rana Gram. Gaurkheda P.O. Sitarganj, Pin – 262405, Dist – Udham Singh Nagar(Uttarakhand) Ph. No: 9827319995	30Y	F	ST	5th	
7.	Urnika Husband – Gbseem Singh Rana Gram. Gaurkheda P.O. Sitarganj, Pin – 262405, Dist – Udham Singh Nagar(Uttarakhand)	25Y	F	ST	5th	
8.	Mandakini Husband – Kupal Singh Rana Gram. Gaurkheda P.O. Sitarganj, Pin – 262405, Dist – Udham Singh Nagar(Uttarakhand)	24Y	F	ST	5th	
9.	Kamlesh Rana Husband – Suresh Singh Rana Gram. Gaurkheda P.O. Sitarganj, Pin – 262405, Dist – Udham Singh Nagar(Uttarakhand)	25Y	F	ST	5th	Making Dalpa, Rassi
10.	Reena Rana Husband – Om Prakash Singh Rana Gram Gaurkheda P.O Sitarganj, Dist – Udham Singh Nagar (Uttarakhand)	20Y	F	ST	10th	Stitching
11.	Parveen Rana Husband – Mahesh Singh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh Nagar (Uttarakhand)	30Y	F	ST	10th	Stitching
12.	Sushma Devi Husband Dinesh Singh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh nagar,uttarakhand	28Y	F	ST	5th	Making Dalpa
13.	Umeshvati Rana Husband Nandkishor Singh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh Nagar (Uttarakhand)	32Y	F	ST	5th	Making Dalpa, Rassi, Weaving Mat
14.	Amanvati Rana Husband Anvarsingh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh Nagar (Uttarakhand)	34Y	F	ST	6th	Making Poster, Mat sit, Dalpa Rassi, Bangal Box, make things from Jute
15.	Ladalli Devi Husband – Subhash Singh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh Nagar (Uttarakhand)	25Y	F	ST	5th	Making Poster, Mat sit, Dalpa Rassi, Bangal Box, make things from Jute



16.	Sunita Devi Husband – Suresh Singh Rana Gram. Nakulpa Patli, Bhitora, P.O. Sitarganj, Dist. UdhamSingh Nagar (Uttarakhand)	35Y	F	ST	5th	Making Poster, Mat sit, Dalpa Rassi, Bangal Box, make things from Jute
17.	Rani Devi Husband – Hanesh Singh Rana Gram Pindari, P.O. Patiya, Dist. Udham Singh nagar (Uttarakhand)	30Y	F	ST	5th	Stitching, Making Dalpa Rassi, Dasi, Mat, Agarhoni, Cassdi
18.	Rameshri Devi Gram Pindari, P.O. Patiya, Dist. Udham Singh nagar (Uttarakhand)	28Y	F	ST	5th	Stitching, Making Dalpa Rassi, Dist. Mat, Agarhoni, Cassdi
19.	Mithlesh Rana Gram Pindari, P.O. Patiya, Dist. Udham Singh nagar (Uttarakhand)	19Y	F	ST	5th	Stitching
20.	Lakshmi Rana Gram Pindari, P.O. Patiya, Dist. Udham Singh nagar (Uttarakhand)	16Y	F	ST	10th	Stitching
21.	Sankant Rana Husband – Chandar Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	23Y	F	ST	10th	Stitching, Kadai, Dalpa Rassi, Mat, weaving of Chapai
22.	Suresh Rana Father Jagdish Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	23Y	F	ST	10th	Stitching, Kadai, Dalpa Rassi, Mat, weaving of Chapai
23.	Pooja Rana Father – Shri Rameshwar Singh Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	20Y	F	ST	B.A	Kadai, Painting, Making Dalpa Rassi, weaving Mat
24.	Prabha Rana Father Indra Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar	24Y	F	ST	M.A	Stitching, Kadai, Dalpa Rassi, Mat, weaving of Chapai
25.	Surekanti Rana Husband Vasant Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	25Y	F	ST	5th	Stitching, Kadai, Dalpa Rassi, Mat, weaving of Chapai
26.	Surekanti Vati Husband - Prem Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	45Y	F	ST	5th	Making Rassi, Dalpa, Weaving Mat
27.	Savani Husband- Sukhdev Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	40Y	F	ST	5th	Making Rassi, Dalpa, Weaving Mat
28.	Bhavati Husband – Mathura Prasad Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	45Y	F	ST	5th	Making Rassi, Dalpa, Weaving Mat
29.	Purnvati Husband Rishabhpal Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singh nagar (Uttarakhand)	50Y	F	ST	5th	Making Rassi, Dalpa, Weaving Mat
30.	Sunita Husband Sanjeev Singh Rana Gram – Gaurkheda P.O. Sitarganj, Dist – Udham Singhnagar (Uttarakhand)	35Y	F	ST	5th	Making Rassi, Dalpa, Weaving Mat





Demonstration of Techniques and Processes



Presentation by Prof. A G Rao Tool kit and small tools



After the inauguration Prof. A G Rao made a visual presentation on the possibilities in bamboo craft, new products developed at IDC over the years. A documentary on the bamboo sector in the North East was also shown to the participants.

After this session, the participants were introduced to the Tool Kit and the Mini Tool Kit.


The tool kit manual was also introduced for the participants to study the usage and functions of various tools.

The features of the tools were discussed and demonstrated with respect to different operations involved in cleaning, processing and preparing bamboo for product making.





Tool kit demonstration



Now the participants were split into three groups and each given a set of tools from the tool kit to explore.

The groups found it interesting to figure out possible uses of the tools and also interacted with the instructors regarding the possibilities.

After this session the group instructors introduced the usages of the various tools and their relevance to the vocation



Tool kit demonstration



About the Tool Kit

Traditionally bamboo craftpersons are very adoptive and do most of the operations using one tool 'Dhau' or 'Katti' as it is called in various regions.

For traditional products like baskets and 'sups' the tool has been adequate. But making new products, with greater emphasis on quality and production demands new and better tools. Tools that can help perform specific tasks with ease, comfort and with excellent output quality.



It is difficult for a traditional craftperson to appreciate the need for new tool until a new product with better returns is demanded.

Measuring tools become important to make things to required dimension. Currently craftpersons use tailors tape. Some do not use even that. This approach renders the craft weak as it becomes prone to inconsistencies in form, shape and size, improper finish and other details, and above all an overall lack of standardisation



Thus the need for a tool kit which aids the craftperson in the process of making craft artifacts and also accords a sense of self esteem and professional approach to the craft.



One of the features a small tool in the tool kit offers is the he ability to measure thicknesses like 0.25, 0.5mm to 4, 5, 6,12...25mm. The *IDC gauge*. It takes the craft and the craftperson to a new platform of thought an approach.



Tool kit and small tools



Ms Gargi Pandey, Project Coordinator distributes Mini Tool Kits to each of the participants. (bottom)

The participants were then introduced to the Tool Kit Tools and Small Machines after which they started using the tools and machines.

Four small machines developed at IDC were introduced to the participants.

Following is the detailed description of some of the tools and machines:



Splitting Machine

This machine splits 4mm bamboo strips to half the thickness giving 2mm strips. The 2mm strips can be further split into 1mm strips by halving them once again. The machine is simple to operate.



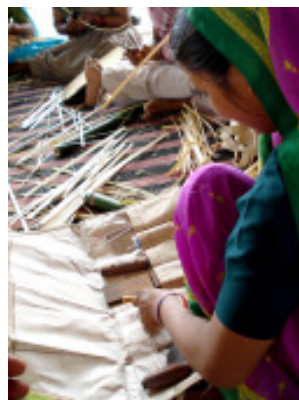
IDC Gauge

This facilitates measuring of thickness, width and diameter as well. The gauge has a combination of features which makes it most handy and thus most indispensable too.



Width Sizer

Width sizer cuts to size strips to the required width. Once the blades are adjusted and set to a particular width, strips of same width can be consistently obtained by pulling the strips between the blades. Participants used the machine extensively once they learnt the simple operation.



Tool kit and small tools



Thickness Sizer

Thickness sizer gives even thickness to the strips. This tool is very useful if precise thickness and good finish of the strips are required. Frame based products which need 1mm and 2mm thick strips of even thickness can be made easily using this machine.

A tool made of a sheet of tin, with holes drilled into it can be used get circular bamboo sticks.

IDC Sander

IDC Sander uses the step up gear mechanism to get high speed disc rotation with hand operation. It can be used to finish strips as well as end products.

