CENTRE FOR INDIAN BAMBOO RESOURCE AND TECHNOLOGY

ANNUAL REPORT 2016-17
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MESSAGE FROM THE CHAIRMAN

I am pleased to present our progress during 2016-17, in developing bamboo resources to meet the needs of rural farmers to generate additional incomes while contributing to ecological security, albeit at a micro level. This year we have seen many innovations; one/two tonne onion storage units were developed and made so that supplies are restricted when bumper crops are harvested. Bamboo toilets were successfully piloted and later produced for the Tharu community who did not have access to sanitation facilities. Bamboo platforms were made for drip irrigation systems; these are cheaper that cement and concrete supports. And, last but not least, bamboo boats were designed, developed and built in the project area; they saved 1,200 people, their valuables and small livestock in a severe flood situation. This was a first in India, thus adding disaster risk reduction to our portfolio of services.

2016-17 was also a year of transition since the bamboo livelihoods business enterprise project supported by Development Support Agency of Gujarat (D-SAG), post project, was consolidated in to CIBART-Gujarat, an independent self supporting business enterprise; interventions succeeded much beyond what was envisaged. This scalable model is being replicated in north eastern districts of Uttar Pradesh.

The bamboo resource development in the northern floodplains of Uttar Pradesh project supported by Sir Dorabji Tata Trusts is progressing according to plan. During this year, baseline data has been collected, awareness meetings/trainings on plantation activities were done, and market need assessment for bamboo poles and products were completed in the project area and beyond. A demonstration plantation site, a green shade net nursery and the CIBART-Tata Trusts common facility centre has been set up and equipped. Training in making products for local applications h, plantation training, nursery training begun at this site.

CIBART is also networking into government programmes and has met CAMPA and Forest Department officials for support for bamboo plantation on wastelands and abandoned farm lands. Proposals have been submitted for artisan technology up-gradation. The UP Bioenergy Board is approached for plantation activity for biomass production within a particular geography.

While substantial work has been carried out, much more needs to be done and I am confident of the efforts of our staff on the ground, and those working in all our affiliates across India and overseas, who focus on achieving our goals of increasing the use of this natural resource to provide livelihood security and ecosystem services. I also take this opportunity to extend my thanks to all partners, donors, institutions, government agencies for their understanding that bamboo has potential to be harnessed as an industrial raw material while contributing to ecological and livelihood security of our people and our country.

Best wishes,

Dr. I V Ramanuja Rao
CIBART’s Board
CIBART currently has five directors in its board

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tr>
<td>Dr. I V Ramanuja Rao</td>
<td>Chairman</td>
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<tr>
<td>Mr. Sanjeev Vasudev</td>
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<td>Mr. Sanjeev S Karpe</td>
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<td>Dr. Md. Selim Reza</td>
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<td>Mrs. K Rathna</td>
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CIBART’s Team

**Chief Operations**
K Rathna

**Director-Corporate Affairs**
Rajeswar Kumar Jain

**Project Management**
Kalpesh Dhodia, Mahesh Kurmi, Hari Singh Rawat, Suraj Singh, Mukesh Lal, Rajendra Sadanshiv, Ankur Purohit, Rakesh Kumar, Megha Thapar

**Administration**
Ganesh Patel, Mamta Chawdhury

**Finance Operations**
Subhash Patel, Anzar Ali

**Master Craftsmen cum Trainers**
Ranbir Singh, Kalidass, Pappan Singh, Dhanveer Singh

**Artisans**

VISION
Livelihood development;
ecological security; and
economic development through
the sustainable use of bamboo
to build resilience of the poor
through technology transfer and
skill building for livelihood
security and to strengthen
resilience and adaptive capacity
of poor rural communities.
MISSION & OBJECTIVES

The main objectives of CIBART to be pursued by the company on its incorporation are

1. To identify, plan, undertake, coordinate and support strategic development activities on bamboo & cane and related industries/sector.
2. To help and coordinate activities of organizations, agencies and other bodies and institutions on the development and utilization of bamboo & cane based products.
3. To facilitate the linking of scientific, technical, management and financial expertise with local partners with relation to Bamboo, Cane and related products.
4. To provide expert resources that bridge scientific knowledge with local needs in strategic areas of research, technology transfer, policy formulation and information services for bamboo & cane and related products / industries.
5. To promote bamboo & cane based products and related technologies.
6. To provide consultancy, assistance and research support to bamboo related technology with regard to the setting up and structuring of bamboo-based industries, cultivation and development of bamboo made products.

Mission

- To work with poor rural communities towards reduction of poverty and enhance resilience by complementing/enhancing existing livelihoods with resilient alternatives, raising productivity and incomes, thereby improving quality of their lives.

- To identify, create/strengthen groups of architects/engineers/entrepreneurs working/interested in bamboo and also to collaborate with technology institutions, in India and overseas and jointly develop value added products and transfer these technologies/techniques after building capacities, skill enhancement and training to poor rural artisans so as to create/ensure sustainable livelihoods.

- To act as a catalyst to the bamboo sector by undertaking collaborative livelihood development activities in bamboo resource development and management, bamboo product design and development, project implementation, industrial development, enterprise development, community development, technology transfer, skills development, monitoring and evaluation systems and marketing.
CIBART affiliates

Konkan Bamboo and Cane Development Centre (KONBAC)
KONBAC is an independent non-profit organization which has developed into a self-sustaining institutional ecosystem and has a fully developed facility for designing, prototyping and producing premium bamboo products for Indian and international markets. It has in place mechanisms to link poor bamboo producers to larger lucrative markets and has already emerged as a model that is being emulated elsewhere in India and overseas. It has established several facilities/areas of expertise (both infrastructure based and human resource) within the organization.

Tripura Bamboo and Cane Development Centre (TRIBAC)
TRIBAC is an innovative institutional model which provides community groups in Tripura with a stake in livelihood development implementation. Since its inception in 2003, the community owned institution has created a strong local support network of community groups and development professionals that have enabled implementation of bamboo programmes in the state. The model has potential for replication, across India and other countries.

Other non-profit subsidiaries
Like KONBAC for Maharashtra and TRIBAC for Tripura, CIBART has incorporated other state-oriented not-for profit subsidiaries that will be developed in the future. These are for Arunachal, Jharkhand, and Orissa.

Partners
Uttarakhand: Uttarakhand Bamboo & Fibre Development Board
Rajasthan: Jan Chetna Sansthan which works with 67,000 families.

Companies/social enterprises
NATIVE Briquetters Private Limited: Biomass briquettes production
Nature Friendly Briquetters Private Limited: Biomass briquettes production
NATIVE Konbac Bamboo Products Private Limited: Construction projects in India and Maldives
Bamboo livelihoods project in Gujarat

The bamboo livelihoods business enterprise project supported by Development Support Agency of Gujarat (D-SAG), Tribal Development Department, Government of Gujarat for five years ended and project interventions have succeeded much beyond what was envisaged. There is a positive change in per capita income of artisans and their expenditure pattern has shifted from subsistence to quality spending. There is a visible sense of confidence in the artisans, especially women artisans: they are empowered; they do not feel socially excluded anymore.

The project and all the assets (people and infrastructure) created have been appropriated into CIBART Gujarat - a social, self supported business enterprise. All project staff are now regular employees of CIBART Gujarat; more are being taken on. Products have moved beyond just handicrafts and furniture; now bamboo is being used to make cottages, labs, even entire eco-tourism villages; a team has been formed to manufacture panel boards.

Many new technologies and products have been introduced in Gujarat and both government and private sector orders are being executed. Key persons from government departments, private institutions, architectural colleges, design institutions visited our facilities in Gujarat to learn of the enormous value bamboo brings to rural livelihoods and ecology.

Bamboo plantation

Sarvodav Parivar Trust is working in the interior part of Dharampur block, Valsad District with tribals and asked for technical support from CIBART in bamboo plantation in their project area. A team from CIBAR T Gujarat visited Manpur and had provided bamboo saplings and conducted orientation on bamboo species and plantation techniques to farmers who were willing to plant bamboo in block and borders.

Eco-tourism

Padam Dungri - Tapi

Structures were made at the eco-tourism site at Padam Dungri village, Tapi district. The structures included a tree house and gazebo.

Vaghai - Dangs

Deputy Conservator of Forests, Dang invited CIBART to develop the existing “Kilad Eco Tourism Camp Site” at Vaghai-Dangs where CIBART had earlier constructed two bamboo
cottages. Bamboo cottages were completed with bamboo walls and roofing within the timeline and CIBART submitted the design layout for the Camp site development.

**Construction**

*Construction of Bamboo Farm House at Navsari*

Construction of first Bamboo farm house was done during this year including bamboo furniture for the entire house. This 1BHK farm house has a bedroom, drawing hall, kitchen and washrooms. Bamboo and other eco friendly material were used in the 1200 sq ft. built up area.

*Bamboo Office - Vyara*

A chartered accountant contracted CIBART to furnish his office interiors completely with bamboo panels and bamboo boards. The wall panelling and furniture were also made from bamboo.
**Green House/gazebo for KGB Green School**

Structures were made for Kasturba Gandhi Green Building at Sagbara village, Narmada District. A green house and gazebo were constructed using local material available and bamboo on the school campus where students were taught about green structure making. The students also helped in the construction while learning.

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**Furniture**

**Furniture for restaurant - Mumbai**

Dining tables in innovative designs developed in Manpur Unit. A total of 50 dining tables, 130 chairs and other table accessories were supplied to OYE SARDARJI restaurant in Mumbai. CIBART artisans completed this activity in a timebound fashion within a month.
Cluster Development Activities-Gujarat:

Furniture Cluster - Tapi

The Deputy Commissioner, Tribal Development Department, Tapi sanctioned training to enhance skills of Kotwallia youth. Under this activity training was imparted to 25 persons in Chindiya Village, Vyara Block, Tapi District. The three month cluster project activities focused on training of crafts products, office utility products, domestic and market oriented products, bamboo mats, bamboo furniture designs, management and developing marketing
skills. Also it included exposure visits to CIBART’s production facilities and markets. A total of 12 craft designs and 8 furniture designs were taught to trainees and they have successfully made mats, crafts and furniture of these designs.

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**Furniture Cluster - Dangs**

The Deputy Commissioner, Tribal Development Department, Dangs financially supported training of Kotwalia youth from Dangs District. The training activity took place at Kosimda Village, Dangs District where 22 trainees were taught to make bamboo furniture and a village level intermediary has been set up at the village level.

**Training and Exposure**

*Design workshop for Pearl Academy Students*
Pearl Academy is one of the fashion designing colleges in India. It provides Fashion, Design & Business courses. As part of the curriculum of Second year Product Design, students’ study trip was planned to CIBART’s Ukai production facility for exposure to design over 5 days duration. A total of 13 students along with one Faculty member visited the facility and they were divided into three groups and each group was given one design and a craft person to assist them. At the end of the training, they developed various office utility products and developed new designs.

*Training and supply of bamboo tools and machinerv - Aga Khan Rural Support Programme (AKRSP)*

AKRSP, Netrang and the Forest Department, Surat asked CIBART to supply bamboo tools and equipment for their common facility centre (CFC) established in Visdaliya village, Surat District. CIBART supplied tools and equipment for setting up of the CFC for bamboo production. Skilled trainers from CIBART imparted training to AKRSP artisans on operation of the tools and equipment.

**Networking**

*Furniture marketing*

CIBART made a detailed presentation to the Mission Director, State Bamboo Mission in Gujarat on school desks and school furniture. Technical details and costing for a new design were also submitted to State Bamboo Mission. The Mission is coordinating with the State Education Department to create an institutional market for bamboo school furniture.
Development Commissioner (Handicrafts) Gujarat

A detailed proposal for development of the bamboo sector in South Gujarat was submitted to DC (Handicrafts), New Delhi in June 2016.

Liaison with State Bamboo Mission & Education Department for School furniture

A Presentation of School Desk and School Furniture Product was made to Mission Director, State Bamboo Mission, Gujarat with detailed costing and technical specification. New designed school furniture with suggested technical specification developed and for marketing of school furniture CIBART coordinated with the State Education Department.
Product development and market assessment of bamboo boards using Indian species

The project, supported by Navajbai Ratan Tata Trust (NRTT) established a commercially viable methodology for bamboo board manufacturing which primarily includes making strips and further manufacturing strips based panel products. Native Konbac Bamboo Products Private Limited, CIBART’s partner in this project, implemented this project and has piloted the appropriate methodology and converted the bamboo into strips and boards, board based products. Successful market testing done and bamboo board products developed have public acceptance and appreciation.

The outcomes of the project:

- Six Indian bamboo species have been shortlisted after elaborate technical consultations and lab trials conducted on four of these species at IPIRTI, Bangalore. Yield of these species were over 16 per cent and four species selected as suitable.
- Four kinds of bamboo board were produced under lab conditions under PPP mode.
- Quality issues were observed and after detailed technical consultation, solutions were found and implemented in making bamboo boards.
- Conversion of bamboo boards into products was successfully undertaken and new designs were developed.
Introducing and popularizing pre-fabricated bamboo buildings in India

This project, supported by Sir Ratan Tata Trust, implemented with CIBART’s partner, M/s Native Konbac Bamboo Products Pvt. Ltd. and Inspiration, an architecture firm. A field unit and workshop has been set up in Chandrapur, Maharashtra and prototypes of furniture and construction structures are being developed using bamboo processing machines and both power and hand tools. Prefab components have developed in both Tripura common facility centre and in Kudal unit.

In September 2016, Organo, an organic sustainable way of living rural-urban community, along with CIBART, Native Konbac, JANS and the FHD group completed building India’s largest bamboo structure which covers 10,750 square feet in Hyderabad. The span of the structure is 62 feet and it weighs 61,000 kilograms. It is located at Organo, Hyderabad and is used as a multi-purpose community room adjacent to the community’s club house.

The bamboo structure was built on site within 100 days using the hardest 40 mm and 80 mm diameter bamboo and a running length of approx. 4.9 kilometres of bamboo. This new structure is one of the magnificent structures and big, which makes it 3 times larger than the previous structure in India. This structure demonstrates how bamboo can contribute to sustainable and eco friendly living.

This project on affordable, quality, eco-friendly bamboo structures and buildings demonstrates the usefulness of construction and structural application of bamboo.
Bamboo resource development in the northern floodplains of India

This project, supported by Sir Dorabji Tata Trust (SDTT), continues to focus on sustainable livelihoods and reversing adverse ecological impacts through community owned and managed bamboo plantations and bamboo utilization.

Plantation

During this year, awareness creation and orientation on the benefits of bamboo plantation on farms and good practices on clumps management and harvesting was done. CIBART procured Bambusa tulda seeds and by June 2016, over 20,000 seedlings were made available for direct rooting. After 2.5 years, the bamboo grown will be suitable raw material for agarbatti stick making. An awareness campaign on the benefits of bamboo, between June 2016 and September 2016, resulted in 34 farmers across Basti, Shravasti, Balrampur, Bahraich, Mahrajganj and Lalitpur districts purchasing 5,824 Bambusa tulda and 485 Bambusa bamboos plants on their homesteads. In the next three months, training to farmers on bamboo planting techniques continued and 5890 Bambusa tulda, 485 bambusa bamboos and 18 Dendrocalamus longispathus was planted in model plots on 37 farmers lands.

Over 400 farmers with bamboo clumps were visited and technical guidance on maintenance of clumps, branch cuttings and harvesting was provided. Over 25 farmers raised plantations at homesteads, bunds and borders of their agriculture fields. Seven community resource persons were trained and appointed to support farmers in spacing, planting, fertilization, water supply, mulching, contouring, soil mounting, branch cutting, straightening, growth monitoring, early indication of diseases and harvesting.
During an exposure visit to Manjanpur in district Kausambi where bamboo plantation is planned on agricultural land which gets waterlogged during monsoons, a meeting was held with 20 farmers on benefits, management practices and return on income. Over 200 interested farmers were provided 15,000 rhizomes procured from Tripura for planting on their waste lands, water logged lands, agricultural land borders and at homesteads.
Model plots
Farmers agreed to develop model plots in Purena, Balirajpurwa, Teen saureti, Kotwal and Sarai Ali villages. They were given bamboo saplings and technical support was also provided during the plantation activities. 28 such model plots were developed in farmer lands. CIBART had taken a 5 bigha land in November 2016 in Maknipurwa village in Fakharpur tehsil for developing a model site with different bamboo species. The land was cleared and made ready for the plantation of different species. There were eight different bamboo species and 129 bamboo saplings planted in this site during this year.

Village Nurseries
Twelve bamboo nurseries raised in the first year with bambusa tulda seeds and over 20000 seedlings made available for transplantation in the season. All TT partners have been contacted and women farmers’ contact information provided for seedlings procurement. Women farmers encouraged in raising bamboo plants and setting up a village level/ household level nursery with bamboo saplings.

Nursery set up in model demonstration plot
About 960 square feet of land were set aside for establishing a nursery to grow plants and nurture seedlings. The nursery had a capacity of 25,000 plants. Initially 7 bamboo species were planted there. With the aim of increasing bamboo plantations in the project area, farmers were given training on developing nursery beds, mud mixing and polybag filling. Bambusa tulda seeds were procured and seeds
were sown on the soil-bed. Rhizomes of D Longipathus and Bambusa Tulda (20 plants each) were brought from Tripura and nurtured in the nursery. Also 100 Bambusa bamboos plants procured locally from Shravasti farmer were being nurtured.

Development in Nursery plot in Maknipurwa

Bamboo plants transferred into hay bags/ poly bags for rooting
Case study: A woman entrepreneur

Mrs. Krishna Singh was a women farmers who was given Bambusa tulda seedlings in 2015 to plant on her model plot. CIBART provided guidance and support for a nursery in a vacant portion of her land. She followed carefully instructions related to maintaining the soil bed and nurturing the small plants when they come out. In November 2015, she nurtured 2,000-2,400 seedlings for six more months and during the 2016 monsoon season, CIBART facilitated the sale of her healthy seedlings to SDTT partners who were local farmers. Between May 2016 and July 2016, Mrs. Singh sold most of her plants and earned about Rs. 23,000. Her income level more than doubled (she normally earns about Rs.8000-Rs.10000 annually through other crops) and she is a happy person today. She has learnt nursery activity well and is now growing other plants like tomato and chilly in her soil bed. She keeps asking for more bamboo seeds to further increase her income.

Reference material preparation

CIBART prepared reference material on bamboo plant management in Hindi to educate local farmers on better management techniques. The material covered continued care of bamboo year by year and all through the months. It covered cleaning, thinning, branch cutting, soil mounting, watering and complete care when new shoots come up.
Markets for bamboo
There small mandis where a number of artisans or bamboo dependent communities make small bamboo products mainly for agricultural purposes such as baskets for vegetables or animals and winnowing trays for cereals or household products such as baskets, fans and mats. They use locally available bamboo, use traditional skills and obsolete hand tools which has led to their products diminishing market share.

Bamboo dependent groups are considered the lower section of society with marginal economic and social conditions. They are from Maha dalit community like Dome, Mushahar etc. in UP and Bihar.

In addition, to locally available bamboo, there is an influx to Lucknow of 25,000 tons from nearby districts - Gorakpur, Faizabad, Mirzapur, Lalitpur and from states like Bihar and Assam, mainly. Farmers in north Bihar sell bamboo to local and external traders and bamboo poles reach UP through Gorakhpur, and Lucknow. This daily import may be valued at over Rs.56 lakhs (150 trucks x 750 poles x Rs 50) approximately.

Bamboo Market visit at Muzaffarnagar, Bihar Akharaghat Market
A visit to bamboo market in Bihar was done to assess the quality of bamboo poles available in the market by CIBART and it was found that fully matured (5 years old) Bamboo species of bambusa bamboos are the main commodity traded in the market. Farmers bring bamboo poles in carts to the market.

Nurseries visit
Visits to three nurseries in Hapur and Gjraula were made for procurement of quality planting material of different species of bamboo. All three nurseries have Bambusa vulgaris yellow stock and one nursery has Bambusa vulgaris green stock and Dendrocalamus strictus which are suitable for furniture items.

Bamboo plantation site visit at Merino Industries, Hapur
Marino Industries Ltd. is a timber product maker who has developed a model plot with different bamboo species on a large area of land. Intensive cultivation is practiced with
scientific management. Bamboo leaves are used in vermi composting and the fertilizer is used for bamboo plants.

The species include Bambusa Velgaris (green), Bambusa Balcoa, Bambusa hamaltoni, Dendrocalamus giganteus and Muli Bamboo. The distance between plants is 5 mt X 5 mt in this bamboo plantation farm and vermin compost processing model.

**Bamboo traders in Hapur**
Three bamboo traders were visited in the market in Garh Road, Hapur. All three procured bamboo from Jharkhand, Assam and Bihar.

**Training and exposure**

*Using bamboo for household consumption*
Bamboo poles were cut for personal usage primarily and the age of the pole was never taken into consideration, a practice which led to insects eating into poles used for house construction or walls. Farmers were given training on using mature poles for structural applications.

*Bamboo products with local applications*
CIBART’s assistant trainers Mr. Ranbir Singh and Mr. Mukesh Lal trained 11 farmers to make onion storage units and drip irrigation systems, 5 farmers to make drip irrigation systems, 17 farmers to make onion storage units and toilets and 140 farmers to make onion storage units.

Onion storage training in village Simharan purva
Bamboo boat making training cum production

Training was provided in making bamboo boats to 10 persons including four CIBART team members by Master Trainers from Hoghenakkal, Tamil Nadu. A site in Balirajpurva, a village
near Kiserganj, Bahraich was chosen. The River Ghaghara was 2 km away. Two coracle shaped boat and one long boat were made, tested in the river and the trials were successful.

**BAMBOO BOATS IN 2016 FLOODS**

Golaganj is a village in Fakharpur tehsil in Bahraich district of UP. It is located 21kms south of the district headquarters, Bahrich. On 22 July 2016, River Ghagra began overflowing its banks and Golagank, Khayampur, Dobhinipurva villages were submerged in water. As soon as CIBART team members come to know about this flood situation, two bamboo boats developed during the training programme were deployed to Golaganj. Bamboo boats were in use to rescue 1200 people who were transported to safer areas with small livestock and their valuables.
The following is a testimonial from a farmer:

“It rains heavily till June, July, August and September which leads to floods. Since 2000 onwards, floods have impacted and destroyed farmers lands and crops. The floods wash away kilometres of farmlands and villages which come in their way. People get torn between the choices of saving their various resources and belongings like farm, house, family. Wooden boats charge too much. Some people drown and the crops and farms get ruined. Then a person from CIBART went there in 2016 and witnessed the disastrous situation. Two bamboo boats were taken to the location to save the people. Bamboo boats were used to save women and children and their belongings. Villagers didn’t know what to do. They had no choice. There was so much water that government officials used to come and go back. It was a crucial situation. The water was 4-5 feet high on the roads. Many houses were destroyed. We are very tensed. CIBART bamboo boats have saved a lot of lives. If possible we would like more boats from CIBART to help us in the upcoming foods to save our lives”.

Cluster Development Activities in Uttar Pradesh

In Uttar Pradesh, there are eight clusters developed for bamboo craft training with local bamboo artisan. CIBART focuses on bamboo resource development and management, product design and development and as a component of the ongoing project, CIBART developed eight clusters and built the skills of bamboo artisans on new innovative crafts products. Since the traditional products were not getting regular orders from the people, bamboo artisans do multiple jobs to earn their livelihoods and majorly into wage labour in agriculture field. Bamboo artisans do not have own land and live in pavements under temporary shelters. The objective of developing these craft clusters was to develop the skills of the artisans and introduce new designs, new and improvised tools, which would make them earn better wages and continue the traditional bamboo crafts works.

The objective of the skills enhancement programme under the cluster activity is to generate alternate livelihood source for the local artisans by utilizing locally available natural resources, the bamboo which otherwise not used much.

The artisans were skilled on small useful products such as soup, tokris, dala etc. They make products on demand or during seasonal requirement such as Pooja or wedding ceremonies and have hand on experience on hand tools. Due to their traditional knowledge level on production of crafts, it was easy for them to learn new market integrated bamboo craft products. This skill building program helped in enhancing skills of the community members.
through practical training and making of craft products and other utility items which have market demand.

Master trainers conduct the programmes and improvised tools and raw material provided to the artisans. Conduction of practical onsite teaching and support in the form of raw material and new tools, generated interest among the artisans and community members and artisans adopted the new learning at ease. By giving value addition through technical and design intervention with necessary skills and weaving methods, the artisans / community members were able to learn and train other artisans in their home land to set in motion the process of spreading skills and knowledge having a multiplier impact over a period of time.

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<td>1</td>
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<td>Giloula, Shrawasti</td>
<td>12</td>
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<td>1</td>
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<td>Majhara Mungla, Shrawasti</td>
<td>11</td>
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**Training and tool distribution**

Bamboo artisans who sell their products were trained to make better and new products and tools - hacksaw, hammer, chaursi, chaursa, measuring tape, sand paper - pattewala and waterproof, and fevicol and polish - were provided. Bamboo user groups were formed at the village level to help them make innovative products.

**Handicrafts trainings for bamboo artisans**

Handicraft trainings were organized for bamboo artisans residing in remote villages in Bahraich and Shrawasti districts. These trainings helped them to make new and innovative products with less wastage of green bamboo to increase profit margins.

Activities like bamboo boat making gained momentum after boats demonstrated their effectiveness during the floods. Local artisans now have the skills to earn a better income.
**Furniture training for artisans:**
Furniture training was provided to six artisans by CIBART Gujarat on small furniture and product making at CIBART Tata Trusts training centre in Makhnipurwa, Behraich. Artisans were trained on bamboo treatment, measuring, sizing, external knot removing and straightening of poles. Joinery techniques were also practiced.

**Networking and outreach**
CIBART submitted three proposals to the Development Commissioner (Handicrafts), Ministry of Textiles, for technical workshops for bamboo artisans in Gorakhpur, bamboo products training for artisans in Gorakhpur and one cluster establishment for artisans in Balrampur. The necessary certifications were provided.

A presentation was made to the Member, UP Bioenergy Board of UP after which 15,000 T Oliverii were procured from Tripura for farmers in Manjanpur, Kaushambi District. UP Bioenergy Board is willing to support a bamboo nursery for farmers in Bahraich; A survey has been completed for the interested farmers for nursery and plantation of bamboo in Keiserganj block.

CIBART made presentations to the Mission Director, UP Bamboo Mission for a farmers’ exposure programme to Tripura and supporting farmers in quality bamboo saplings; a meeting with the the District Forest Officer, Faizabad on bamboo plantation, nursery raising and use of bamboo to farmers in one block in Faizabad.

The District Forest Officer in Bahraich assured support for plantation activities with private farmers and agreed to supply planting materials.

**Outreach**
CIBART UP team had participated in a week Agri Horti Tech Exhibition organized by PHD Chamber of Commerce to promote best practices in Agricultural and horticultural area, from 1st to 5th December 2016 in Lucknow. For the exhibition, CIBART made a bamboo boat for display and poster materials for the farmers to learn about the bamboo plantation, nurseries and products and also bamboo crafts and furniture put on display.
A one day exhibition was organized in October 2016 for IFAD and a long 18 feet bamboo boat was displayed. The IFAD team appreciated the design and utility of bamboo boats during the recent floods in Golaganj village, Bahraich.
Cluster Development in Himachal Pradesh

A cluster in Bagthan village, Sirmour district, Himachal Pradesh of bamboo artisans needed facilities for better product making and also training. Development Commissioner (DC - Handicrafts), Ministry of Textiles, Government of India provided the funding for CIBART to establish a common facility centre in this district, Himachal Pradesh with initial funding support by for bamboo working machines. In this centre, a number of crafts, furniture trainings were conducted since ten years. Also, for the bamboo packaging orders for Horticulture Produce Marketing & Processing Corporation Limited (HPMC), fifty artisans engaged and completed the large apple crate order in this centre. This common facility centre is serving as a resource centre for bamboo artisans from Sirmour, Bilaspur and Hamirpur districts.

In April 2016, CIBART had awarded a 15 days training project to 25 artisans in Talwara, Punjab and Master trainers from Himachal Pradesh conducted the training on bamboo crafts successfully.

During the year, District Industries Centre, Mandi awarded a project in March 2016 to conduct a baseline survey of quality of bamboo and useable varieties available in district Mandi, Himachal Pradesh and to study the skill level of bamboo artisans and needed investments for upgrade skills of local artisans to increase livelihood artisans and socio economic development. CIBART conducted the survey and diagnostic study during the first quarter. April 2016 through June 2016.

A three months’ skills enhancement training for 30 artisans on bamboo crafts also successfully completed from May 2016 to July 2016 and a concluding ceremony organized where trainees who completed the training successfully awarded certificates as “trainer-entrepreneur”.