Design Inputs into Craft Areas: Implications for Rural Development and Employment Generation

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Abstract

Craft should be understood in terms of its deep significance as an expression of creativity and as an employment generator. In Japan, bamboo craft has reached high standards and has been given the stiltus of art A fresh approach to craft in developing countries is necessary to recognize craft as an an form, an industrial activity and a means to develop creativity in general education. Design has evolved from craft. Design inputs can make bamboo craft a sustained source of viable employment generation in rural areas. Action programs like 'Inter Designs' and 'Exhibition on Wheels', in addition to conventional research, are required to rejuvenate bamboo craft in the rural areas of developing countries.

Introduction

Crafts have a deep significance to our lives. Traditional craft stands as an example of human creativity expressed over generations. Industrial design has evolved from craft as a consequence of the mechanization of production processes. Crafts lost their crucial place in the lives of people, with the all-pervading industrial culture dominating the scene. Craft creations became objects to be seen in museums. However, folk crafts continued to survive in the developing countries, despite poverty and exploitation. Crafts will have to be economically viable, if they are to continue to play a meaningful role in our lives. Taking bamboo craft as an example, let us see how design can play its part in rejuvenating crafts.

Use of bamboo and bamboo craft are practised in countries like China, India and Korea from ancient times. Early evidence of bamboo weaving in

China can be seen in a museum exhibit of early times. But today, we look at Japan for excellence in bamboo craft. The high quality of a Japanese bamboo basket, for example, has many things to say. But what is its relationship to the poor and unemployed in the developing countries,who have abandoned their craft in their search for making a living? For many people, appropriate employment means better nutrition, better health and hopes for the future. Only such hopes can make school education and family planning meaningful to them. Lack of employment in rural areas and the consequent exodus to metropolitan centres are serious problems that the developing countries with large populations face. Capital-intensive industrialization has accentuated this problem. Unlimited exploitation of natural resources in industries has led to ecological imbalance and environmental degradation. In this complex scenario, bamboo as rapid growing resource and bamboo craft as a rural-based occupation offer a ray of hope. In the craft sector, one tonne of bamboo can provide 100.300 workdays for craft workers. Taking an average of 150 workdays per tonne, the raw material required to provide work for one bamboo craftsperson for one year will be two tonnes. This means, two million tonnes of bamboo can create one million jobs.

Taking India as an example, the current potential for bamboo production is 4.5 million tonnes per year, which can be increased to 11 million tonnes (Adkoli 1994). Allotment of 20% of bamboo harvested for one million jobs seems to be an attractive proposition if economically viable job opportunities can be provided to craftspersons in rural areas.

Let us look at the current scene. Bamboo craft has been practised as a folk tradition to make objects of daily use in many developing countries. Althoughlarge number of families, includingwomenandchildren, depend on bamboo craft, the earnings have been low. In Sri Lanka, a bambooworker gets an income of Rs 5 000 (US$l 18) per year. In India, it would be around Rs 20 to 30 (little less than US$l) per day for a semi-skilled craft worker. In Thailand, it is 20 to 60 Baht (US$l-2) per day. Employment in bamboo craft in rural areas tends to be seasonal, confined to non-agricultural seasons. Another reason for low payments for crafts has been the castes they belong to. In Sri Lanka and most parts of India, bamboo craftspersons belong to castes of low social status. But in places like north-eastern India where high skills exist, a bamboo craft worker who has moved to urban centres can command a salary of Rs 5 000(US$l18)permonth(i.e.US$3.5perday). Continuous employment with a salary of Rs 1 500 to 2 000 (i.e. US$50-70)

per month in bamboo craft would make it an attractive vocation for a villager. Such possibilities need to be explored.

Understanding Craft as a Profession

Historically, craft has been skilled work to create objects of utility. Over the years, high ornamentation has become the hallmark of cnft work patronized by the elite and the rich. In contrast, folk crafts which catered to the needs of the rural population have remained simple. The creativity of folk crafts excelled in harmonious social settings. The result was an expression of simplicity and elegance. The creativity of the craftsperson reflected in the high level of product aesthetics. Every part of the product was functional, wastage was minimal and the appearance elegant. An earthen pot and a bamboo basket are good examples. With the advent of industrialization three things happened.

1. Industrial design emerged as a substitute to craft, to take care of aesthetics suitable for mass production and mass marketing;
2. Crafts appreciated by the rich and the elite acquired a status similar to 'art'; and
3. In certain parts of the world, less influenced by industrialization, crafts continued in their traditional forms.

In most of the bamboo-growing developing countries, bamboo craft continued as a folk craft. But in Japan, it took many strides that are worth taking a detailed look.

Bamboo craft in Japan

In Japan, bamboo has been widely used for making utility articles such as baskets, tableware, utensils for tea ceremony and other ceremonies, weapons, armour, and for fencing (Keneko 1985). Chinese-style baskets, which came along with Buddhist monks, became popular. Fine weaves of Chinese baskets slowly replaced rough weaves. Japanese craft workers soon started innovating new designs after adopting the Chinese styles. Bamboo baskets called *hanabako* and *kara,* used for carrying and cleansing flowers, excelled in number of designs during the Tempyo period. A total of 565 variety of baskets that originated at this time exist even today. But bamboo craft took a new shape with craftspersons like Rokansai Iizuka and others. They give it the status of art. A 1969 flower basket with fishnet weaving, the *sankai* by Azuma Chikuensai, is a good example. There are 70 different weaves with names like pine needles, turtle shell or ajiro, a

fish net, etc. Various basket forms and weaves of Japan reveal the creative potentials in bamboo craft. Japanese crafted baskets are like art-pieces and, of course, very expensive today. Today, Japan imports bamboo craft products like baskets as the cost of local products, which are of high quality, is three times to that made in countries like China and Taiwan.

An Approach to Bamboo Craft in Developing Countries

We need to take a fresh approach to bamboo craft in developing countries to ensure it a status, in addition to generating employment in rural areas. It is essential to recognize bamboo craft as an art, an industrial activity, and an input in general education at appropriate levels. Integrating craft education as a stream in design at various levels is vital in this endeavour.

Bamboo Craft as Art

Though it may look like a luxury for developing countries, bamboo craft needs to be recognized as an art to sustain the creativity needed to keep the craft alive. In Japan, bamboo craft as art, for example, has set the standards of aesthetics for flower baskets. New experiments in forms, finishes and details are undertaken to create new types and varieties. They percolate to local craftspersons who adopt them. In effect, art like research will be a source of new ideas for bamboo craft.

Bamboo Craft as Industrial Activity

To achieve a higher level of commerce arid the consequent employment generation in production and trade, bamboo craft should be recognized as an industrial activity. Bamboo industries should have no inhibition to employ machinery, whenever it is advantageous. Crafted parts can be judiciously mixed with machined parts in bamboo and other materials. Long-term economic viability, and competitiveness vis-a-vis *mass* produced products made in materials like plastics, can only be achieved by seeing bamboo craft as an industrial activity.

Bamboo Craft in Education

Potentials of craft learning in education are yet to be recognized. Specialists in the development of creativity are concerned about the neglect of right-side brain learning. It is now known that the right side of the brain deals with emotional, aesthetic and intuitive thinking, whereas the left side deals with language, and logical and analytical thinking. Craft can become

an important mode ofdeveloping right-side brain abilities. Tatsumo (1990) attributes much of japanese success in creating miniature modern electronic gadgetry to the training given to every Japanese child in Origami paper craft. Art, craft and design need to be revitalized in school education as they form the base for creativity in science and technology later. Bamboo craft offers an excellent scope for such an introduction in rural and urban schools in developing countries. This would give a spurt to employment opportunities for craft teachers as well.

Education and Training in Bamboo Craft

Bamboo craft was learnt traditionally in families. Now it is also taught through goyernment schemes. In India, for example, there are 35 centres which train persons in villages for six months. Trainees are given a stipend of Rs 280 (US$9) per month. However, the craft trainers themselves do not have scope to update their training. Craft training is not offered parallel to technical training. It is important to integrate craft training at various levels. Bamboo craft should be seen as a part of design for training purposes. Course contents at various levels need to be worked out. This would also provide craftspersons to acquire the necessary qualifications to become craft teachers and trainers in schools and colleges. There is need to develop educational materials in the form of books, videos, kits and exhibits to facilitate education of bamboo craft at all levels.

Design Problems Facing Bamboo Craft

Many practical problems affect bamboo craft, and these are discussed below and some possible solutions suggested.

Current mind-set

The prevailing mind-set of bamboo craft is that of a “thing belonging to the past”. General knowledge of an educated person about bamboo craft is negligible. Most people do not know even the difference between bamboo and rattan (cane). Many see it as a poor man’s occupation, irrelevant to modern life. Even designers and architects are unaware of potentials of bamboo craft. Bamboo craftspersons in villages also do not see a future in the craft for his children to pursue the profession. There is an urgent need to change this mind-set.

One such effort was Jagruti(awakening)-a bamboo craft design workshop held at the Industrial Design Ccntre (IDC) of the Indian Institute of

Technology (IIT), Bombay, for a week, in May 1993. Altogether, 15 professional designers, 15 craftspersons and 40 design students participated. Several experts presented papers related to bamboo craft and on products which can be made with bamboo. Half of the time was devoted to 'inter-design', where craftspersons and designers came together and brought out several product concepts in bamboo. Results-which were in the form of sketches, models and prototypes - have been documented in a publication entitled Bamboo Craft Design. Jagruti succeeded in generating tremendous enthusiasm in craftspersons and designers which led to implementation of a few new designs.

Research and development related to bambooraft

Published research specific to bamboo craft is meager. A study and documentation on bamboo craft of north-eastern India (Ranjan et al. 1986) by National Institute of Design, Ahmedabad, India, is significant. The International Network for Bamboo and Rattan (INBAR) has sponsored a study on indigenous tools and processes for bamboo and rattan. Engineers of Forest Research Institute Malaysia (FRIM) have designed a tool to make thin strips (0.2 mm) of bamboo. Some more problems which need research attention are: evaluations of raw material suitability, finishes, tooling, technologies and product designs. Dissemination of available information across the countries has been poor. Research in these areas may include documentation and evaluation in addition to new proposals.

Raw material suitability

Easy identification of bamboo which is suitable for craft work is a problem. Bringing out a manual on the types of bamboo suitable for craft work, with information on local names and test procedure to evaluate the suitability, would be of high value.

Finishes

Comprehensive documentation of finishes available and how to apply them, along with evaluation procedures for aspects like cost and durability, is required. Variety of colours and finishes available need to be made known, akin to colour charts of paint manufacturers.

Tools

Documentation of tools, along with evaluations and information on availability, will be useful. New tools to obtain finished edges, rims, legs

and handles are needed. Tools which can achieve higher productivity and better quality have attraction for the craftspersons.

Technologies

Small-scale technologies available across the countries for bamboo finishes, jointing and processing need documentation. New technologies need to be developed for bamboo bending, laminating and polishing.

Product design

Research is needed to develop new product designs. In a project completed at IDC, IIT Bombay, several product concepts were generated under seven product categories:

. Gifts and souvenirs;
. Stationery items;
. Kitchen and household items;
. Lamps;
. Furniture;
. Carry items/containers; and
. Packages.

Strategic research is required to evaluate the areas in which bamboo crafted products can become competitive. Evaluation procedures and methods to link design strategies need to be evolved. An integrated approach – including market needs, product design and technology to apply the new design-would be important in terms of transfer and absorption by craftspersons. Industrial Arts Institute at Beppu, Japan, has evolved a methodology by which craftspersons, designers and scientists work together to evolve new products.

Marketing and professional design inputs

In rural areas, where folk crafts are practised, bamboo products fetch low prices. With the advent of plastic, many bamboo products have lost rural markets. However, increased awareness and fascination for the unusual have developed markets for bamboo crafted products in urban centres. There is also a growing demand in developed countries for quality bamboo products. Biodegradability of goods has acquired great importance in developed countries and bamboo has an edge in this regard over plastic products. To enter into competitive markets, professional industrial design inputs into bamboo craft are required. At present, bamboo craft and indus-

trial design stand segregated. It is important to create facilities where professional designers work together with bamboo craftspersons. Two case studies are discussed below.

Adi Crafts

Adi Crafts is a small-scale industrial unit started by an architect and an industrial designer trained at IDC. Adi Crafts employs 30 workers many of them skilled craftspersons. The unit, based in the suburbs of Nagpur, manufactures bamboo lamps which are sold all over India. The designs were evolved by industrial designers and craftspersons. Many industrial concepts like segregating components for manufacture, using jigs and fixtures have helped to achieve high standards. The craftspersons are paid Rs 2 000 per month. Many local women are employed. Wages are linked to the number of pieces they produce. Since the designer is also the owner, the design service is in-built.

Sign Design

Sign Design is a design office at Pune (India) started by two young industrial designers trained at IDC. They came in touch with craftspersons from their home town of Sangli during "Jagruti". They developed a bamboo tray and a few other products working with the craftspersons. Sign Design markets trays in Pune and Bombay. They give contract work to the craftspersons. This tray is currently included in the training at IDC where craftspersons are trained.

Market-based design strategies

Crafts have inherent attributes, like personal touch, which are exclusive. In course of time, it may acquire the qualities of mass-produced products. It is important to evolve design strategies to make use of the strengths of crafts process. Some strategies are articulated here.

Multiple design

Craft process, by its very nature, can offer wide variety, thus giving exclusiveness. There is a market demand for such exclusive products, especially in gift items and personal ware. A wide variety of designs with similar base structure could satisfy such market demand. India has such a tradition in textiles (saris). An attempt made at IDC led to a wide range of designs of paper knives in bamboo. Initial generation of such multiple

designs can provoke the imagination of bamboo craftspersons to come out with innovations of their own.

Add-on design

In this strategy, bamboo crafted items can be added to existing mass-produced items to produce culture-friendly designs, such as casings for thermos flasks, thermal wares, ice-buckets, etc. Bamboo spoons can be added to Teflon-coated frying pans. Woven bamboo cover for a mosquito repellent can make it aesthetically more attractive.

Technology-based new products

Bamboo woven mats can be moulded into different shapes. Resin impregnation can give a smooth finish. Patterns in the weaves can be changed to give a variety of designs.

Moulded bamboo mats specifically woven to suit a shape can have a market advantage, unlike bamboo boards which get compared with ply-wood. Products like chair seats and backs, trief cases, helmets, magazine racks, etc. will be most suitable to exploit this strategy.

Recommendations

Although conventional research is needed in bamboo craft, communication and dissemination of available information at various levels require greater attention. In view of this, the following action plans are suggested.

Inter-design in bamboo

In inter-design, a concept supported by International Council of Societies of Industrial Design (ICSID), designers from different countries get together and solve design problems in specific areas by suggesting new designs, renderings and models. Results are published and circulated widely.An inter-design involving industrial designers, craftsmen and other experts over two-week periods can be held. Usually host countries take care of stay and hospitality of participants, while designers bear travel expenses themselves. INBAR could initiate such inter-design with possible cooperation of UNIDO.

Mobile exhibition or exhibition on wheels

The bamboo craftspersons at village level remain unexposed to the developments elsewhere in spite of many workshops and seminars. A bamboo craft product exhibition can go to rural places where the craftspersons work and workshops can be held involving local designers.

Similar exhibition on wheels are successfully used for science education by the Nehru Science Centre at Bombay.

Creation of a marketing agency for bamboo crafts

Marketing is most important to the financially hard pressed bamboo craftspersons. An international marketing agency, hired on a commercial basis, can become a powerful conduit to usher design quality in bamboo craft. Though there are government run marketing agencies in countries like India, they are largely ineffective. Only marketing agencies in private or joint sectors can ensure novelty and quality in craft work. Some companies like 'Body-shop' have a policy to promote craft items from developing countries.

Design exposure programs for craft trainers

Craft trainers are crucial in promoting change. Exclusive design exposure programs for them for two to six months can trigger their enthusiasm.

Schemes for designer-craft worker interaction

Schemes to support professional designers working for a craft group need to be evolved. In some countries, 50% of the industrial designer's fee is borne by government to ensure good design. Similar schemes for bamboo crafted product can enthuse new designers.

Educational material

Educational material-in the form of videos, booksandkits-on bamboo craft need to be developed at various levels. These can cover various design issues for the use of craftspersons. Educational kits for school children to learn bamboo craft need to be designed. Such kit can also be used for others to pursue bamboo craft as a hobby. Large number of housewives in urban areas, for example, pursue hobbies. Training in craft, and kits to learn craft, can increase employment opportunities for craft workers.

Studies of craft

Research on the pedagogy of craft needs special attention. Comparative studies of craft training in different countries could provide valuable information to evolve new methods of training.

References

Adkoli, N.S. 1994. Bamboo in the Indian pulp industry. *In* Bamboo in Asia and the Pacific. Proceedings of the 4th International Bamboo Workshop. Chiangmai. Thailand,

27-30 November 1991. lnternational Development Research Centre, Ottawa, Canada; Forestry Research Support Programme for Asia and the Pacific, Bangkok, Thailand. pp. 250-254.

Keneko, K. 1985. The history of bamboo craft up to pre-modern rimes. In Crafts Gallery catalogue. The National Museum of Modern Art, Tokyo,Japan. pp. 15-18.

Ranjan, M.P.; lyer, N.; Pandya, G. 1986. Bamboo and cane crafts of North-East India. Development Commissioner of Handicrafts, New Delhi, India.

Tatsumo, S.M. 1990. Created in Japan: from imitators to world class innovators. Harper and Row, New York, USA. pp. 55-59.

Further reading

Boban, V. 1994. Design methodology inJapan. In Rao, A.G.; Koli, M ed., Bamboo craft design. Industrial Design Centre, Indian Institute of Technology, Bombay, India. pp. 51-54.

Ikko. T. ed. 1984. Japan Design the four seasons in design. Libro Port Co. Ltd., Tokyo, Japan. pp. 45-125

Momyama,M. 1985.The bamboo craft of modern Japan.The Crafts Gallery catalogue. The National Museum of Modem Art, Tokyo, Japan. pp. 19-24.

Rao, A.G. 1994. An approach of bamboo craft. In Rao, A.G. and Koli, M. ed., Bamboo craft design. Industrial Design Centre, Indian Institute of Technology, Bombay, India. pp. 101-112.

Swarnamali, P.A.; Vivekanandan, K. 1994. The bamboo resources in Sri Lanka. In Bamboo in Asia and the Pacific. Proceedings of the 4th International Bamboo Workshop, Chiangmai, Thailand, 27-30 November 1991. International Development Research Centre, Ottawa, Canada; Forestry Research Support Programme for Asia and the Pacific, Bangkok, Thailand. pp. 37-40.

Thammincha,S. 1990 Some aspects of bamboo production and marketing.In Ramanuja Rao, 1.V.; Gnanaharan, R.; Sastry. C.B., ed., Bamboos: current research. Proceedings of the International Bamboo Workshop, Cochin, India, 14-18 November 1988. Kerala Forest Research Institute, Kerala, India; International Development Research Centre, Ottawa, Canada. pp. 320.327.