

TURNAROUND STRATEGY FOR BRASS AND BELL METAL INDUSTRY IN ASSAM, INDIA

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ABSTRACT: This studies analyses some micro level issues related to sickness of brass and bell metal industry in Assam, India, and recommends rejuvenation by adopting appropriate technology, product design, and diversification, use of modern machineries & equipments and paper training to the artisans. An amalgamated and holistic approach has been suggesting for the escalation and endurance of this industry defining the role of government, societies and artisans.

KEYWORDS: Turnaround, strategy, brass and bell metal industry.

1 INTRODUCTION

The craft of the hand divulges an artistic compassion of the people and their aspiration and urge to coalesce the beauty with utility. The very early Indian scriptures and texts contained lot of references to the glory of handicraft industry. The Rigvedic literatures, being religion based depict the fact that such objects of art and crafts were directly or indirectly associated with the religious rituals and the beliefs of the people. The main types of vessels and pots used by the ancestors that are referred to in Rigveda are made of different materials. The trendiest material used for offering sacrifices and worship in religious ceremony, was wood, while clay pots were made predominantly for domestic uses. Different literature also refers to the use of metal pots by the ancestors. Leather too is mentioned as having been used for making vessels. Besides, ornaments were also made out of wood and metal. Interestingly, the scriptures also give the note of the use of gold and silver among the people of ancient age (source: Handicrafts of India and the Chandua Craft: A Historical Investigation retrieved from http://shodhganga.inflibnet.ac.in:8080/jspui/bitstream/10603/31224/9/09_chapter%202.pdf)

The craftsmen of ancient India traced his descent from Vishvakarma, Lord of many Arts, Master of a Thousand Handicrafts, Carpenter to the Gods, the Architect of their celestial Mansions, the Designer of all ornaments, the First of all craftsmen. This mythological origin provides him with a proud religious background for his hand-work and a spiritual incentive to give of his very best [9].

India has a history of rich and diverse cultural tradition. Among its diversity, the legacy of India's craft tradition always enjoys a special distinction owing to its beauty, dignity, form, style and aesthetics. Handicrafts in India are not just objects of utility or decoration. Craft is a part and parcel of the socio-economic and religious life of thousands of the craft communities spread across the country. It hardly requires an emphasis that India with her enormous variety of crafts and craftsmen withstood all kinds of social Handicrafts of India and the Chandua Craft: A Historical Investigation pressures, economic hardship as well as political vicissitude since very early days [2]. To write about Indian Handicrafts is almost like writing about the country itself [11]. It is so vast, complex and colorful and yet with a simplicity and charm, difficult to attain under comparable conditions. It is well recognized that Indian handicrafts have very ancient origin and are of high quality. They have customarily received royal and aristocratic patronage and handicrafts artisans were honored by other communities. This paper talks about brass and bell metal industries in Assam, India.

Brass and bell metal industries in Assam, India are intermingled with social and cultural heritage, geographical background and mode of living. In short, they bear a distinctive mark of the place to which the artisan belongs. Brass and bell metal have been the most commonly used metals for the Assamese artisan. Traditional utensils and fancy articles designed by these artisans are found in every Assamese household. However, these, industries have been facing gradual decline over

time which is sharply contradicting the goal of industrialization. The reason for this decline may be attributed to many factors such as scarcity of raw material (scrap brass used as raw material for re-rolling-Resulting in poor quality products), lack of marketing consortia & brand image support, poor entrepreneurial quality, lack of support for finance & working capital, non availability of suitable training, lack of infrastructural facilities, absence of networking among cluster actors, lack of support in the field of R & D, testing, design development, marketing & technology upgradation which calls for modernization of the brass & bell metal industry.

Sarthebari and Hajo are the most important centers of this industry in Assam, India. There is good demand for their products throughout the Assam State. These industries are linked to the cultural heritage of Assam since most of the products of these industries are used in marriages, rituals, different religious ceremonies and as gifts of honour.

2 BRASS AND BELL METAL INDUSTRIES IN ASSAM

Assam has its own tradition of metal manufacturing. Brass-smithy is one of the major traditional cottage industries in the State of Assam, India. Since the activities in the industry are carried on by the artisans rather than by well organized dynamic and risk taking entrepreneurs, so the brass-smithy as found in the state cannot strictly be called an industry in the modern sense. Hence, often the industry is called a craft. Bell metal industry is another customary cottage industry of Assam having known records in history from the 7th century A.D. This industry is also found to be concentrated in certain areas of the state. Historically the most renowned centers are Sarthebari in Barpeta district, Raha, Kamrup and Hojai in Nagaon district and Titabar in Jorhat district.

(source: <http://www.clustercollaboration.eu/documents/270930/0/Diagnostic+Study+Report+on+Hajo,+Assam.pdf>).

The products of bell and brass metal industries are considered as part and parcel of Assamese culture. Every family tries to maintain those articles as marks of their cultural identity. They are mostly used in religious rituals and marriage ceremonies. Bell and brass metal products are given to brides as endowments. Besides the utilitarian household items, some musical instruments and decorative items are also made from these metals.

Evidences of its metal culture can be traced from the archaeological evidences traced in the state [6]. Brass is an important cottage industry, with highest concentration in Hajo, while Sarthebari is well known for its bell metal craft [5]. The principal items of brass are the kalah (water pot), sarai (a platter or tray mounted on a base), kahi (dish), bati (bowl), lota (water pot with a long neck) and taal (cymbals used in socio- religious functions) [1] and tan, Kelah, Tub, Karahi (container with dense but small holes on its body to pass water), Ladle, Pot, Thali (dish for offering), Saki, Dhuna-dani (vessel used for burning a kind of resin)etc., are traditional domestic utensils like whereas the products of bell metal industry are dish, cup, plats, Bhoortal (big size cymbal used at the time of secrete prayer), Bota (a kind of tray for offering betel nut or offering things to god and goddess or show honour to respectable persons), Kerabi, Charia, Ghati etc. It is believed that having food in bell and brass metals utensils help the people to maintain sound health because of the presence of copper in bell and brass metal products [12].

Hajo is having more than 300 artisans families with about 2000 people completely dependent on the handicraft for their livelihood (source: <http://online.assam.gov.in/web/guest%20industries?webContentId=175223>) where as The Sarthebari cluster has 91 brass metal production units and 402 artisans involved therein (Source: *Census of India, field survey, and records of Pital Silpi Sangstha, Baniakuchi*). But it is observed that the industry is decelerating day by day.

Due to the lack of proper marketing strategy, exports of bell and brass metal articles to other states of our country are almost absent. Only some amount of products have been exported to countries like Nepal, Bhutan, China and Myanmar. On the other hand, comparatively highly finished and low-priced hand and machines made bell and brass metal articles from Moradabad, Kolkata, Punjab, Haryana, etc are gradually intruding the domestic market. Under such circumstances, artisans of bell metal industry of Raha (Nagaon District), Titabar (Jorhat District) and Dhekiajuli (Sonitpur District) had already given up this traditional craft and engaged in other business [13].

The poor economic condition compelled the artisans to produce brass metal articles under the control of mahajan (money lender) [10]. The brass metal industry of Hajo and found that the artisans engaged in this industry are producing variety of brass metal articles as such- household utensils, religious items, musical instruments, decorative items along with image of deer, elephants, horses, bullock, parrot, eagle, lion, rhinoceros, peacock, tiger etc. However, the articles produced by human drudgery are costly and less beautiful than machine made products [7].

The problems and prospects of bell metal industry of Saruksheri Block and found that the products of this industry is an integral part of the cultural heritage of Assam and directly related to economic activities of the rural peoples of Sarthebari and surrounding area [4]. Related to bell metal industry of Sarthebari area has identified the problems associated with the

industry as supply of raw materials, lack of finance, indifference attitude of government, lack of marketing information etc. along with unhygienic condition of garhsal (work shed of bell and brass metal industries)[8].

If we compare this industry with other state industry likes Moradabad in Uttar Pradesh, India. We can see the difference in Table 1.

Table 1. Comparison of Moradabad based industries and Assam based industries

| Sl.No | Process/Activity | Moradabad | Assam | Remarks |
|-------|----------------------------------|--|----------------------|--|
| 1 | Demand 1) Inland 2) Export | High | Declining | Needs product design and diversification |
| 2 | Marketing | Strong both by Government , Agency and Societies | Poor | Government may constitute somebody like UPSBC or responsibility may be given to ASIDC. |
| 3 | Availability of Raw Material | Available through MMTC. | Scarcity only scraps | State Govt. may approach MMTC for this |
| 4 | Turning | On power driven lathe | Manually | Badly requires |
| 5 | Surface finish | Very good | Poor | Needs proper quality control |
| 6 | Brazing & Soldering | Yes | Yes | Quality of Moradabad is good |
| 7 | Welding | Yes | No | Oxyacetylene gas based welding process is required |
| 8 | Electroplating | Nickel & Silver Plating | No | Required for product diversification |
| 9 | Polishing & Buffing | Electric driven polishing machine | Manually | Needs electric driven polishing machine. |
| 10 | Engraving | Excellent Work | Negligible | Engraving needs skilled hand which attracts the customer |
| 11 | Rolling Mill | Yes | No | Required near the work place |
| 12 | Time Taken to complete a job | Takes less time | Take more time | Modernization is required |
| 13 | Training of Artisans | Yes | No | Stipend paid training is required |
| 14 | Provision for Credit and finance | Yes | Negligible | IDBI, NABARD, AFC, financial institution should come forward. |

The decline of brass and bell metal industry is attributed to scarcity 'to raw' Materials, traditional and old technology, exploitation of artisans by traders' difficulty in financial assistance, competitive market and shift of demand from traditional items to value added items"

3 TURN AROUND STRATEGY FOR GROWTH AND MODERNIZATION

The success of brass and bell metal- industry is associated with forward looking strategy for modernization and growth. Modernization is a continuous effort to improve the productivity and efficiency and cut down their operating costs with a view to improve their viability and competitiveness in the market, which are discussed hereunder.

Raw Materials

Annual requirement of raw materials for brass and bell metal industries are about around six lakh kilograms and 1.3 lakh kilograms respectively (source: <http://parliamentofindia.nic.in/ls/ldeb/ls10/ses2/13121291.htm>) and average annual supply of charcoal for each kg of products $20933 \div 75224.442 = 0.278$ bag, and average demand of coke for each kg brass metal products $9616.8 \div 66512.49 = .145$ tin (1 tin coke is equivalent to approximately 10 kg. and 1 tin charcoal is approximately 5 kg) (source: http://shodhganga.inflibnet.ac.in:8080/jspui/bitstream/10603/16082/9/09_chapter%203.pdf)

Since only 15% of the total requirements are met by government supply, rests are managed by scraps. Government has to take serious view of this and may approach Metal and Mineral Trading Corporation (MMTC) to supply the raw material demand. In addition to this, government may also open depot at Hajo and Sorthebari for easy availability of raw materials.

Product Design and Diversification

So far as the products of brass and bell metal manufactured are traditional domestic utensils. All these products are now to complete with that of articles made from stainless steel, aluminum and plastic. If these traditional crafts are not only to be kept alive but also to enhance their growth and development, product design and product mix has to be changed from tradition to decorative and artistic value added items like candle stand, ashtrays, lamp shade, lamp, wire baskets, wine sets, table wares, wall plates, bowls, flower vases, planters, trays, table tops, cigar boxes, key chains, calendar book ends, animal figures, states bells, miniature sets, door handles, door knobs, door plates, door latches, locks, mobile stand, paper weight, pen and pencil stand etc. On their items engraving or sparking finish or dull finish can be also done.

Manufacturing Process

a. **Brass Metal Industry** - The existing technology in respect of this industry in Assam is very simple as well as traditional. Brass is an alloy of Copper and Zinc. Brasswares are manufactured out of the sheets of the above metal. The thin sheets are manufactured by the two non-ferrous rolling mills located in Guwahati, Assam either from the available scrap metal or from the virgin raw materials brought from outside. The artisans and the units procure their requirements directly from the mills and also from the local traders. The main tools and equipments used by the artisans in manufacturing brasswares are very simple. They are anvils (Belmuri) Chatuli, Akul hammers, chisels, files and some minor implements. The furnace is indispensable and same is the bellows made of goat skin housed under a simple shed. No electric power is involved. The major raw materials are Brass sheets, Brass circle and scrap Brass metal. The minor raw materials are burnt coal (coke), copper, zinc, borax, tin, acid etc. "Kund" is another item used by the artisans to polish the finished products. The process of production is also very simple and traditional. The brass sheets are cut into various sizes required for the size of different type of products. Generally they are cut into two or three portions. They are bottom artisans mould the portions into required shapes by beating method with the help of hammers. The adjoining parts are fastened with brazing. The articles are smoothed with the help of a file and a little shine is given by rubbing with sand. Whenever required, engraving is done with the help of hammer and chisel. However, engraving is rarely done. Flow diagram for brass metal manufacturing process is shown in figure 1.

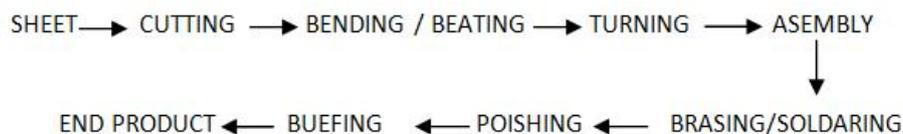


Fig. 1. Flow diagram for brass metal product process

b. **Bell Metal Industry:** - Bell Metal is an alloy of copper and tin. The technology used in this industry is also traditional and simple. No electricity is involved in the manufacturing process. The tools and equipments used are simple unsophisticated and more or less the same as in brass metal industry. However, tools like Dulari, Gasha, Saria, Piri, Khanta (An iron instrument use for polishing the bell metal products), and Pocker etc. are also used. The main raw material is Bell metal in the form of old and broken articles. The other raw materials are polishing materials, clay, jute fibre, rice bran, mustard oil, Charcoal, Borax, Zinc, shalpatra etc. Manufacturing process for bell metal is given below in fig – 2.

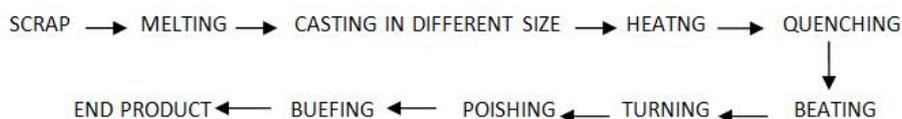


Fig. 2. Flow diagram for bell metal product process

In both the metal products all the operations are done manually and two per song are required in all most a very operation. Due to this manual process quality of the product is very low. Most of the operations can be done on power driven machines like deep drawing power press, cutting and spinning lathe, buffing and polishing machines centre lathe, deep drawing dies, spinning dies and hand tools. It is not possible for individual artisan to buy there machines, hence there facilities may be provided by Government in the form of common facility service centre.

Common Facility Service Centre

Common facility services centers (CFSC) are required at both places. Sarthebari and Hajo with modern machinery and equipments, like Metal melting furnace, Moulds, handling equipments for melting and pouring, rolling mil1s, circle Cutting machines, deep drawing power press, spinning lathe, ball press, hand Press' motorized buffing and polishing machine, welding sets, drilling machines etc, are required so that the centre can provide required services to the artisans,

CFSC may also be equipped with diesel generating set or renewal energy to avoid erratic power supply and losses. In addition to this some nullified technical personnel may be posted to CFSC to guide the artisans.

Training of Artisans

To maintain the traditional and hereditary nature of craftsmanship and diversification of product and modernization of manufacturing process, training is must to all artisans. For this some experts craftsman may be called by Industries Department for some time from Moradabad, Jaipur and other places to train artisans of Assam at CFSCs. This training should be stipend based to attract the interest of artisans without affecting their financial losses. Emphasis should be given on new technology manufacturing process, quality, product design and diversification, and productivity during the training period,

4 RECOMMENDATIONS AND CONCLUSIONS

Artisans are the back bones of brass and bell metal industry. It's, therefore important to utilize their time in best possible way. Right now only 40% of this time is affectively utilized, at the same time, numbers of artisans are declining day by day due to low earnings. Thus, it is high time to adopt appropriate technology and strategy, for modernization, diversification and growth of the industry to achieve this and not only state government but societies have to play a very vital role. State government may think in terms of instituting an organization which will look the activities of this industry, ensuring the availability of raw materials, product resign, diversification and marketing (both inland and export)

Though raw materials is one of the constraints, but by product diversification, decorative and artistic value added articles may be produced. These articles are never sold by weight as in case of utensils, but by their size depending on artistic value.

Modern machineries and equipments at CFSC and modern tools provided to artisans will increase not only productivity and quality of product but will increase the acceptability of the product in both national and international market.

Al though the cooperative societies were formed at Sarthebari and Hajo to assist the artisans save them from exploitation from traders and mill owners, such societies could touch only the tip of ice berg. These societies have to come up in a big way. These societies have to monitor the programme chalked out jointly by them and state government for the benefit of the industry and artisans. There is no doubt on extensive and adaptable skill and potentials of artisans of Sarthebari and Hajo. With the modernization and product diversification and training of artisans' brass and bell metal industry shall be a milestone for a glorious future of the handicraft in Assam. In the context of rapid changes and increasing competition, cottage industries would need improved access and better skills to utilize information for their successful adaptations.

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