

Project Profile: Local Bell Metal Craft Units in Uttarakhand

1. Introduction

Uttarakhand, with its deep-rooted cultural traditions and rich artisanal heritage, has long nurtured the craft of bell metal work. Bell metal, an alloy of copper and tin, is extensively used to create ritual items like puja bells, gongs, lamps, hanging chimes, and temple utensils, which are essential components of religious and daily spiritual practices in the state. This craft has been traditionally passed down through generations of artisans, especially in the Garhwal and Kumaon regions. However, due to lack of organized markets and migration, the craft has declined in recent years.

The establishment of Local Bell Metal Craft Units seeks to revive this legacy by organizing decentralized craft production centers, equipping them with basic tools, branding the products around Uttarakhand's temple culture, and ensuring direct market linkages. These units will function not only as income-generating hubs but also as centers for skill preservation and youth engagement. The focus will be on integrating traditional techniques with modern design sensibilities to appeal to both domestic and global markets.

These units will also serve as community knowledge hubs, offering training, apprenticeships, and collaboration spaces for artisans. Women and youth from rural areas will be upskilled to engage in value-added roles such as polishing, finishing, packaging, and online selling. The initiative aims to transform bell metal craft from an informal, scattered livelihood into a structured micro-enterprise cluster aligned with tourism, e-commerce, and the cultural economy of the state.

2. Industry Overview

The bell metal industry in India is centuries old and rooted in spiritual and domestic utility. Across states like Odisha, Assam, and Tamil Nadu, bell metal products are key to temple rituals, home worship, and folk traditions. Uttarakhand's potential in this sector remains largely untapped, even though the state has hundreds of temples, annual fairs, and a growing wellness



tourism sector that can support the consumption and gifting of bell metal items. Currently, much of the supply is sourced from outside the state or through middlemen, with limited local branding.

India's handicraft export sector is valued at over USD 3.5 billion annually, with metal crafts contributing a significant share. However, Uttarakhand contributes minimally to this export pool. With increasing global demand for artisanal and ethical crafts, there is an opportunity to reposition local bell metal items as Himalayan ritual objects or wellness decor pieces. Domestically, urban consumers are also showing a revived interest in spiritual decor, artisanal dining ware, and handmade gifts—offering further scope for scaling.

The central government's focus on "Vocal for Local," ODOP (One District One Product), and the promotion of heritage crafts under the DUY and PM Vishwakarma schemes makes this an opportune time to invest in bell metal craft units. Moreover, the convergence with temple tourism, eco-tourism, and heritage trails in Uttarakhand can ensure sustained demand if well-positioned in religious markets and local souvenir circuits.

3. Products and Application

The bell metal craft units will produce a wide range of products catering to spiritual, aesthetic, and utilitarian markets. Key items include temple bells, hand-held pooja ghantis, hanging wind chimes, diya stands, incense holders, ritual thalis, kalash, and conch stands. These are especially used in household worship, temple rituals, and religious ceremonies. Their utility spans across daily pooja routines, festive rituals like Diwali and Navratri, and gifting during weddings and sacred events.

Apart from religious use, bell metal products also serve decorative and acoustic functions. Wind chimes, door bells, and wall hangings made from bell metal are gaining popularity among urban customers for their rustic charm and calming sound. With some design innovation, the product range can expand into souvenir keychains, nameplates, designer candle holders, and even Himalayan-themed handicraft lines that appeal to yoga centers, spas, and cultural retreats across India and abroad.



The units can also manufacture customized items with temple logos, local deity motifs, or names engraved on bells, targeting pilgrim tourists who seek to take back spiritual mementos. These items, when well packaged, can also be offered as corporate gifts during religious events, temple inaugurations, or state-sponsored fairs. Thus, the products not only preserve cultural traditions but also integrate with new-age gifting, spiritual tourism, and eco-conscious home decor markets.

4. Desired Qualification

The operation of a bell metal craft unit does not require high formal educational qualifications. The essential prerequisite is basic manual dexterity, artistic inclination, and a willingness to learn metalworking skills. Individuals with primary education (Class 8–10) can comfortably manage the production processes after receiving short-term training. Prior experience in working with tools, casting, or craft techniques is helpful but not mandatory.

Entrepreneurs or SHG leaders who intend to run the unit should preferably have completed higher secondary education (Class 12) and possess basic literacy in Hindi and arithmetic. This will help them manage procurement, inventory, pricing, customer orders, and vendor negotiations. Those with diplomas in metalwork, design, or fine arts may further enhance the creative aspect of the product range.

Skill development programs offered by the Handicrafts and Handlooms Export Corporation (HHEC), Ministry of Skill Development (under PM Vishwakarma), or regional ITIs can equip candidates with foundational training in metalworking, casting, and polishing. Orientation in safety practices, quality standards, and packaging is also essential for long-term sustainability.

5. Business Outlook and Trend

The outlook for bell metal craft units is increasingly promising in the context of spiritual revivalism, wellness lifestyles, and consumer preference for artisanal, handmade products. With over 2 crore religious tourists visiting Uttarakhand annually, there is a consistent demand for temple-linked artifacts. Additionally, the growth of boutique resorts, yoga centers, and spiritual learning spaces across India offers new avenues for craft products with Himalayan spiritual branding.



E-commerce platforms like Amazon Karigar, Flipkart Samarth, and Gaatha have opened access to national and international markets for rural artisans. Bell metal products, due to their cultural uniqueness and acoustic properties, are particularly popular in the USA, Germany, and Japan among yoga studios and spiritual gift shops. This export potential remains underexploited by Uttarakhand's artisans and can be tapped through proper design and market readiness.

Future trends also point toward demand for eco-friendly, sustainable decor and lifestyle items. Bell metal, being durable, recyclable, and aesthetically rich, fits this narrative perfectly. The increasing number of state craft fairs, international expos, and online handicraft platforms ensures that with the right product design and storytelling, the bell metal craft sector can evolve from a traditional livelihood into a creative and profitable microenterprise category.

6. Market Potential and Market Issues

The market potential for bell metal products in Uttarakhand is multifaceted. Firstly, the pilgrimage and temple tourism sector ensures a steady and localized customer base for ritual items such as bells, diyas, and conch holders. Each year, millions of visitors come to Badrinath, Kedarnath, Gangotri, Yamunotri, and Haridwar, creating strong retail demand. Secondly, the craft also finds buyers among local households, especially during festivals like Diwali, Makar Sankranti, and Navratri when people buy new pooja items.

On a larger scale, bell metal craft can be marketed through craft melas, rural haats, temple fairs, and heritage markets in urban centers like Dehradun and Delhi. With appropriate branding, the products can be pitched to boutiques, interior designers, wellness retreats, and yoga centers that seek unique decor and sound-based healing accessories. The global appeal of Indian spiritualism and handicrafts offers another layer of opportunity, especially through online channels and curated export outlets.

Despite this potential, the sector faces several challenges. Traditional artisans often lack modern tools, face irregular access to raw material, and operate in isolation without branding or design support. The informal nature of production leads to inconsistency in quality and poor packaging, which limits upscale market access. Furthermore, younger generations often migrate due to lack of viable income in the craft. Addressing these issues through structured units, training, market linkages, and branding is essential for unlocking the full market scope.



7. Raw Material and Infrastructure

The main raw materials for bell metal crafts include copper, tin, zinc (for alloys), wax (for mold casting), charcoal, polishing compounds, and protective coatings. These metals are procured in rod or sheet form and melted, cast, shaped, and polished into finished products. Additional inputs include wooden molds, iron anvils, hand tools (chisels, hammers, files), and packaging materials like cloth bags, boxes, and tags. All raw materials are available from local hardware suppliers or can be sourced through metal wholesalers from Haridwar or Delhi.

A basic unit requires around 500–700 sq. ft. of workspace that includes a melting and casting section, mold-making area, finishing section, and a storage cum packaging zone. Safety measures such as proper ventilation, fire extinguishers, and protective gear are essential. Lighting, workbenches, and dust-proof racks are also necessary for smooth operations. Water supply and electricity with a backup inverter will ensure uninterrupted functioning.

For shared or cluster units, a small showroom or front-end display section can be set up to showcase ready products and offer live demos during tourist visits. Some units may choose to outsource casting to local blacksmiths and focus on finishing, polishing, and packaging. Modular infrastructure allows for scaling the unit as demand increases.

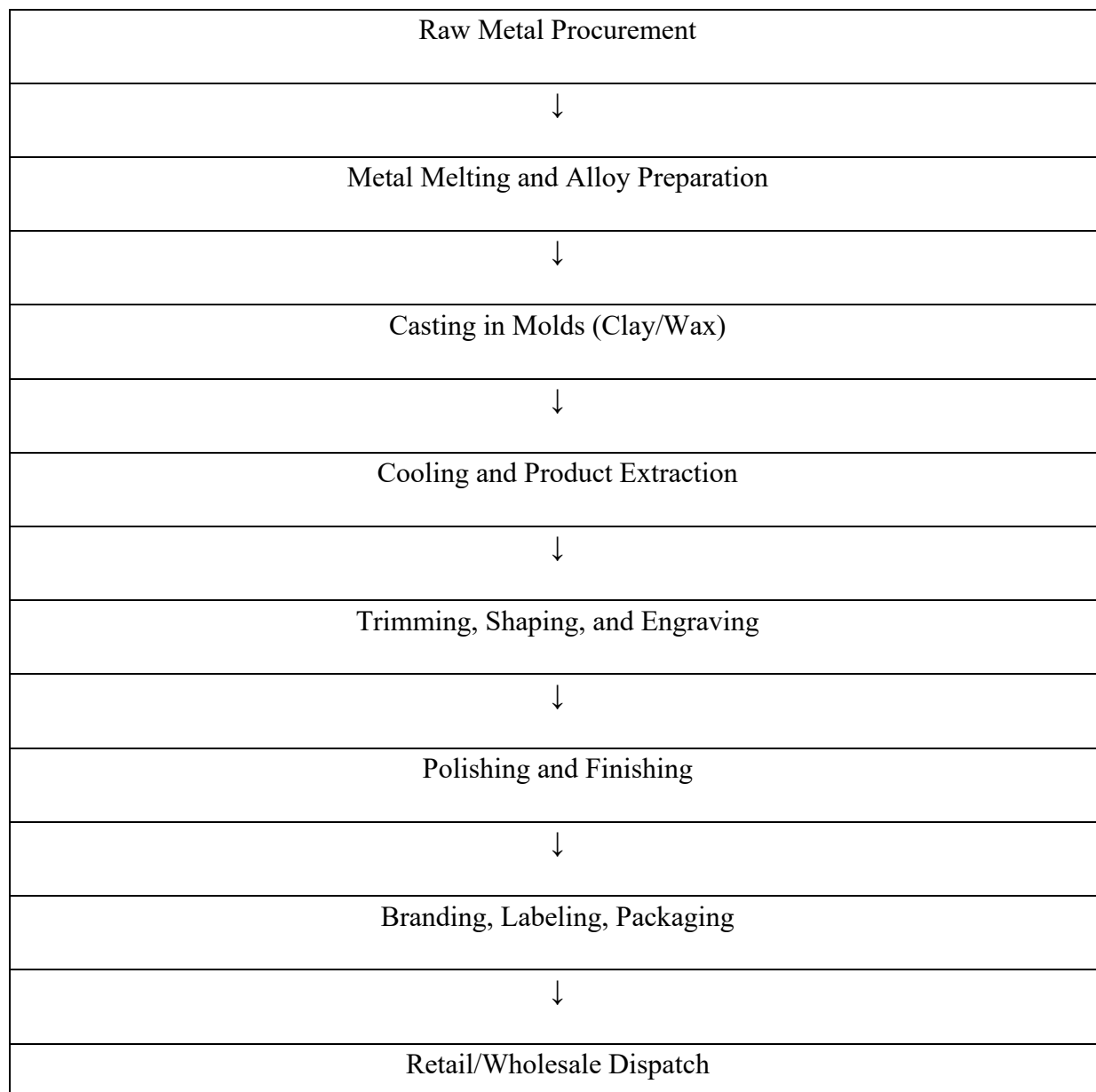
8. Operational Flow (with Flow Chart)

The bell metal craft production follows a semi-mechanized, artisanal process. It begins with the procurement of copper and tin rods, which are alloyed and melted using furnaces. The molten metal is poured into pre-prepared molds (clay or wax-based) to form desired shapes. Once cooled, the cast products are removed, trimmed, and shaped using hand tools. Artisans then engrave patterns or inscriptions based on the item type.

This is followed by polishing and coating to prevent oxidation and enhance shine. Products are cleaned, sorted by category, quality checked, and transferred to packaging. Labeling and branding elements are added before the items are stored or sent to retail or online customers. Regular coordination is needed between metal suppliers, artisans, packaging units, and marketing platforms.



Flow Chart: Bell Metal Craft Unit Workflow



9. Target Beneficiaries

The bell metal craft unit will directly benefit traditional metal artisans, youth, women-led SHGs, and rural entrepreneurs interested in heritage-based livelihoods. In Uttarakhand, many such artisans exist in regions like Pithoragarh, Chamoli, Rudraprayag, and Almora, but due to lack of recognition and market access, their skills are underutilized. These individuals will be engaged not just as workers but also as co-creators and stakeholders in the unit.



Young men and women from economically weaker sections, especially dropouts from remote areas, can be trained in mold preparation, finishing, polishing, packaging, and marketing. As the craft involves multiple steps, it allows different skill levels to be involved—some in tool-based work, others in value addition like design or e-commerce packaging. Over time, these individuals can also form part of artisan producer companies or cooperatives for larger scale impact.

Indirectly, local metal suppliers, packaging vendors, and transport workers will also benefit from the venture. Temple authorities, pooja store owners, and souvenir shops can access custom-designed bells and ritual items, thereby promoting local sourcing. The unit also contributes to local cultural preservation and heritage tourism by reintroducing traditional craftsmanship into mainstream commerce.

10. Suitable Locations

Bell metal units are best located in rural or semi-urban clusters that are already known for metal craftsmanship or have historical association with temples. Suitable districts include Pithoragarh (Askot region), Almora (Jageshwar valley), Chamoli (Joshimath area), Rudraprayag, and parts of Tehri and Uttarkashi. These regions offer both skilled labor and spiritual tourism, allowing the units to serve both production and direct-to-consumer roles.

Proximity to pilgrimage routes—like Kedarnath, Badrinath, or Jageshwar—adds value for units aiming at retail or demonstration-based selling. A combination of rural production centers and urban display/retail counters (e.g., Dehradun, Rishikesh) allows market diversification. Government clusters under schemes like ODOP or Vishwakarma can be leveraged for space, power subsidy, or raw material linkage.

In terms of physical requirements, the unit should be established on non-residential land with access to basic infrastructure, preferably within village development clusters or near ITIs that offer training support. If located in eco-tourism zones, the units may also attract visitors and educational tourists, opening up another income channel.



11. Manpower Requirement

The basic unit will require 5–7 people for smooth functioning. A Master Artisan (₹18,000/month) will oversee the metal melting, mold management, and quality control. Two Junior Artisans (₹10,000/month each) will assist in casting, shaping, and polishing work. One Packaging & Finishing Assistant (₹8,000/month) will handle polishing, labeling, and box preparation. A Store and Inventory Manager (₹10,000/month) will track raw material use, finished stock, and dispatches.

Additionally, one Marketing & Sales Assistant (₹12,000/month) will be responsible for digital presence, retail coordination, and bulk order follow-ups. If the unit participates in melas or fairs, one driver-cum-logistics assistant may be added during seasonal campaigns. All employees must receive orientation in safety, hygiene, and basic craft quality control.

Training for 30–45 days can be facilitated via government-run MSME Tool Rooms or under the PM Vishwakarma Yojana. Special modules in branding, customer handling, and display aesthetics can be arranged in collaboration with design institutes or NGOs supporting rural craft enterprises.

12. Implementation Schedule

The implementation of a local bell metal craft unit can be accomplished in a phased manner over a 6 to 8-month period. During the first two months, detailed planning, raw material supplier identification, artisan outreach, and space finalization are undertaken. This phase also includes consultation with master craftsmen and exploring government scheme eligibility for funding, training, and setup support.

In months three to five, infrastructure work is carried out—setting up the furnace, casting tools, polishing stations, and safety systems. Simultaneously, the recruitment and training of artisans and assistants begin. Initial samples are prepared and refined in consultation with design experts or mentors. Branding, logo, and packaging material are also developed during this period. Orders for equipment like molds, hammers, and polishers are placed, and initial inventory is procured.



From month six onward, trial production begins, followed by a soft launch at local fairs or temple souvenir shops. The unit then starts taking orders from nearby pooja stores, temples, and online platforms. By month eight, operations are expected to stabilize with routine artisan cycles, order flow, and digital cataloging in place. Feedback loops from customers and retailers help adjust product designs, pricing, and quality standards.

Table: Implementation Timeline

Month	Activities
1–2	Planning, vendor identification, training tie-ups, space scouting
3–4	Setup of furnace, tools, artisan onboarding, trial mold preparation
5	Inventory procurement, sample development, branding, and packaging setup
6–7	Pilot production, quality control systems, participation in fairs
8	Soft launch, online presence initiation, bulk order negotiations

13. Estimated Project Cost

The initial estimated cost for setting up a single bell metal craft unit ranges from ₹9 to ₹11 lakhs, including infrastructure, machinery, raw materials, and working capital. Fixed assets such as furnace setup, mold sets, and finishing tools constitute about ₹4.5–₹5 lakhs. Working capital for raw material, packaging, labor wages, and marketing makes up the remaining ₹4.5–₹6 lakhs.

Cost may vary depending on whether the unit is built from scratch or uses shared cluster facilities (provided under ODOP, DUY, or Vishwakarma schemes). Costs for branding and digital onboarding, while optional, are recommended to reach high-value markets and may be



₹50,000–₹70,000. Units operating from temple towns may require additional space rental, raising cost slightly.

Table: Estimated Project Cost

Component	Cost Range (₹)
Furnace, tools, molds	2,50,000 – 3,00,000
Polishing and finishing setup	1,00,000 – 1,50,000
Safety equipment and ventilation	50,000 – 80,000
Raw materials (first batch)	1,50,000 – 2,00,000
Wages (first 4 months)	2,00,000 – 2,50,000
Branding, packaging, marketing	50,000 – 70,000
Misc. contingency	50,000
Total Estimated Cost	₹9,00,000 – ₹11,00,000

14. Means of Finance

The financing can be structured through a combination of entrepreneur equity (20–25%), institutional loans (under PMEGP or MUDRA), and government grants or subsidies. Schemes like ODOP, PM Vishwakarma, and DUY offer one-time capital assistance, tool kits, and interest subvention on working capital. The promoter's contribution can be mobilized through savings, local SHG loans, or community funding.

Support can be sought from District Industries Centres (DICs) and Ministry of MSME for credit-linked capital subsidy schemes. Women-led units or SHG clusters may access interest-free working capital under NRLM (National Rural Livelihood Mission). Cooperative banks or artisan cooperatives may also provide in-kind support like tools or raw materials.



In some temple towns, local religious boards or trusts may offer space or seed capital in exchange for custom-designed bells or ritual accessories. Digital fundraising or crowd-support campaigns may also be piloted for branding or retail kiosk setup. Regular working capital needs post-launch can be met through a combination of cash flow and short-term artisan advances

15. Revenue Streams

The bell metal craft unit generates income primarily through the sale of ritual products, temple decor items, and craft-based souvenirs. High-frequency items like pooja bells, incense holders, and diyas priced between ₹100–₹500 provide consistent turnover. Larger items like hanging bells, multi-bell arches, and customized engraved conch stands priced between ₹800–₹2500 cater to temple orders and spiritual tourism. Institutional orders from ashrams, dharamshalas, and temples can bring in bulk revenue monthly.

Secondary revenue streams include selling to pooja stores, participating in regional craft fairs, and onboarding to online platforms like Amazon Karigar, Flipkart Samarth, and cultural marketplaces. Products can also be sold through partnership counters at wellness retreats, resorts, yoga centers, and NRIs looking for heritage gifting items. Customized items for donations or return gifts during religious ceremonies are another niche revenue opportunity.

A monthly turnover of ₹1.2–₹2.2 lakhs is achievable by the end of the first operational year with consistent production and diversified sales channels. Seasonal demand peaks during Navratri, Diwali, Shravan, and temple festivals provide high-margin months that further improve annual returns.



Table: Revenue Streams

Product Type	Price Range (₹)	Monthly Volume	Monthly Revenue (₹)
Pooja Bells & Diyas	100–500	500–800	75,000 – 1,20,000
Temple Decor (large items)	800–2500	50–100	50,000 – 80,000
Custom Orders (Engraved)	500–2000	20–30	15,000 – 30,000
Online/Digital Orders	150–1000	40–60	8,000 – 15,000
Estimated Total	—	—	1,50,000 – 2,25,000

16. Profitability Streams

The profitability of the bell metal craft unit is driven by its high value-add potential and relatively low input costs, especially for hand-crafted products. Profit margins range from 30% to 60% depending on product complexity, packaging, and direct-to-customer sales. Standard bells and diyas sold at ₹200–₹400 have 35–45% profit after deducting metal, labor, and packaging costs. Items sold directly at fairs or online carry higher margins due to absence of middlemen.

Institutional and customized orders—particularly those with branding, engraving, or bulk delivery—offer 50–65% margin due to value perception. Digital sales via artisan platforms or WhatsApp catalogs also yield higher profit-per-unit with minimal recurring cost. Seasonal months offer surpluses that cover lean periods, ensuring steady cash flow. If branding and design innovation are maintained, product prices can be raised over time to increase returns.

By end of the second year, with minimal debt and sustained demand, the unit can generate net monthly profits of ₹40,000–₹70,000. Profits can be reinvested in mold diversification, digital marketing, or export onboarding, gradually evolving the unit into a recognized heritage craft enterprise.



17. Break-Even Analysis

The unit's break-even point is achievable within 16–20 months under standard operating conditions. With total investment estimated at ₹10 lakhs and expected average monthly profits of ₹40,000 from month 10 onward, fixed cost recovery becomes feasible in less than two years. If temple collaborations or subsidized space is available, breakeven may be reached faster.

Break-even is accelerated by focusing on direct sales and reducing wastage during metal casting. Efficient raw material use, smart packaging reuse, and digital marketing help increase sales without proportionate increase in costs. Participation in state-supported fairs also ensures zero marketing cost during peak seasons.

Table: Break-Even Snapshot

Parameter	Estimate
Initial Investment	₹10,00,000
Average Monthly Revenue	₹1,75,000
Average Monthly Net Profit	₹40,000 – ₹60,000
Break-Even Period	16–20 months

18. Marketing Strategies

The success of bell metal craft units depends significantly on effective marketing strategies that combine cultural relevance, aesthetic appeal, and storytelling. Locally, visibility can be achieved through participation in spiritual fairs, regional haats, tourism events, and temple festivals. The unit should have aesthetically appealing stalls, live demonstrations of bell casting or polishing, and offer small “sound souvenirs” to attract pilgrims and tourists. Packaging with deity motifs, Uttarakhand cultural patterns, or QR code-linked stories enhances appeal.

Retail tie-ups with pooja stores, ashrams, resorts, and handicraft showrooms allow continuous sales. Bulk orders can be sourced by reaching out to temple management bodies for rituals or



religious donations. WhatsApp catalog distribution, supported by photos and short videos, allows artisan-to-consumer contact. Eco-friendly packaging and heritage branding can be promoted on social media pages or websites, especially for NRIs or spiritual customers globally.

Online platforms like Amazon Karigar, Flipkart Samarth, Etsy (for exports), and Gaatha or Okhai (Indian crafts) must be onboarded early. Using buyer reviews, behind-the-scenes artisan videos, and festival-centric promotions can build brand identity. Participation in district and national handicraft exhibitions under the Ministry of Textiles or TRIFED will provide institutional exposure and bulk buyer access.

19. Machinery Required and Vendor Details in Uttarakhand

Though bell metal craft is primarily artisanal, some machinery and tools are needed for consistency, safety, and quality finishing. These include melting furnace (electric or charcoal), molds, metal ladles, polishing wheels, engraving tools, weighing scale, hand drills, grinding tools, and packaging equipment. Tools are usually sourced from local vendors in Haridwar, Rudrapur, or Haldwani.

Table: Machinery and Vendor Details

Equipment	Specification	Cost Estimate (₹)	Vendor Name	Location
Melting Furnace	Electric, 10–15 kg capacity	₹45,000 – ₹60,000	Everest Furnace Works	Haridwar
Brass & Bell Metal Molds	Clay & wax composite	₹10,000 – ₹15,000	Lok Handicraft Supplies	Dehradun
Polishing Machine	Table-top, 0.5HP motor	₹12,000 – ₹18,000	Gaurav Metal Tools	Rudrapur
Weighing Scale	Digital, 0.01g precision	₹2,000 – ₹3,000	Precision Tools & Traders	Haldwani



Equipment	Specification	Cost Estimate (₹)	Vendor Name	Location
Packaging Toolkit	Label printer, sealer	₹6,000 – ₹9,000	Usha Packaging Equipments	Roorkee

20. Environmental Benefits

Bell metal craft is inherently sustainable due to its non-mechanized, low-carbon production. Unlike plastic souvenirs, bell metal items are biodegradable, recyclable, and long-lasting. The melting and casting processes, especially when done with charcoal or solar-powered furnaces, use less energy than industrial manufacturing. Additionally, by reviving local scrap reuse (copper, brass, etc.), the unit helps reduce environmental metal waste.

Units avoid using chemical coatings, relying instead on natural polishing and beeswax-based finishes. Packaging made from recycled paper, cloth, or jute furthers the eco-friendly brand image. Because many products serve lifelong functions—such as ritual bells or temple items—waste from the production is minimal. Moreover, the unit encourages a slow consumption model—where people buy fewer, durable, and meaningful objects.

The initiative promotes heritage conservation, prevents skill erosion, and reduces migration by offering dignified local employment. Supporting such crafts contributes to preserving ecological and cultural harmony in the Himalayan region.

21. Future Opportunities

Bell metal craft has the potential to evolve from a heritage livelihood into a rural innovation enterprise. As the brand matures, new opportunities include exporting Himalayan pooja kits, launching sound therapy kits using tuned bells, and collaborating with interior designers and architects to provide temple decor installations. Mobile souvenir vans and e-commerce subscriptions can further expand reach.



With design intervention, craft museums or experiential tourism units can be set up, where tourists participate in making their own bells. Government can recognize these clusters as rural cultural zones under the Heritage Tourism Mission. Units can also co-brand with temples (e.g., “Jageshwar Jyoti Bells”) to offer official temple souvenirs.

In the long term, a producer company model may be formed to consolidate artisans, offer shared services, attract institutional buyers, and bid for export orders. Collaboration with design schools and CSR-funded heritage programs can turn these units into global cultural export centers from Uttarakhand.

Disclaimer

Only a few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not imply any recommendation.

