



A DIAGNOSTIC STUDY OF POTTERY CLUSTER IN BORIARAB, YAVATMAL, MAHARASHTRA

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ABSTRACT

This study explores current practices and the processes followed by the craftsmen of Pottery cluster in Boriarab, Yavatmal Maharashtra. The study suggests that through analysis of the Pottery Cluster's need, the socio-business relation can be better explored. It further suggests a common facility model for the craftsmen to explore their ideas and perform their business better.

The study makes a case for the importance of Strategic Intervention with a focus on Design Approach in the Pottery Cluster as a key both to design better products and create awareness about the craft in the market. The assessment highlights the key issues such as traditional methods, traditional tools, lack of awareness about the changing lifestyle of people, etc. It suggests that a common facility blueprint can enhance the cluster potential w.r.t. new products, brand value to boost the clusters holistic growth and its market reachability.

The study concludes with recommendations of remedial solutions with a focus on detailed analysis of competitive forces, action plan for Soft interventions and Common Facility Centre containing the program for Capacity Building, Technology up-gradation, Market Development, Networking etc. & need of Common Facility Center for improving Global competitiveness.

Keyword: Pottery, Design Approach, Common Facility Centre

INTRODUCTION

Utilizing the clay and water in order to give definite shapes for different purposes can be identified as the oldest craft known to human culture. The evidences of this pottery making can be traced from the Neolithic Era with the involvement of various types of traditional knowledge. After the discovery of pottery there was a series of revolutionary changes found to occur at various period of time. The changes were found in terms of the technique of production and also in the art forms. Pottery is the most sensual of all arts. In India, we have had a great tradition of pottery making. In fact, being an agricultural country, pots for storage of water and grains were in demand. The real beginning of Indian pottery began with the Indus Valley Civilization and the art of shaping and baking clay articles as pottery, earthenware and porcelain has continued through the ages. There is proof of pottery making, both handmade and wheel-made, from all over India. In the Harappaan civilization potter's place was quite an important one in society. In some particular communities in India this traditional knowledge is inherited from generation to generation though their traditional occupation. Generally they are called Kumhars in most of the parts of India. For example in the whole of Western, Central, Northern and Eastern India the potters are known as Kumhar or Kumbhar. Etymologically, all these names have been derived from the original Sanskrit word Kumbhakara, the 'pot maker.'

Defining Pottery?

Pottery is Ceramic material of which the major types are porcelain, stoneware and earthenware. It sometimes also refers to the manufacturer of pottery. Simply, it may also be known as objects (Potterywares) of fired clay.

Pottery Cluster overview of Boriarab, Yavatmal

The pottery cluster of Boriarab manufactures Ranjan, Math, Murti, Gamla, Dia, Panti, Chulha, etc. Most of the artisans are 40 to 50 and above. However, in maximum number of units the younger generations are also involved in the same craft. The units are owned and run by both the male and female members of the family. The present unit owners are not educated beyond primary level. The craftsmen learn on the job from their seniors and do not undergo any formal training. The artisans continue to make products with traditional designs. There is negligible design innovation. Tools used for the process is mainly hand tools. There is no use of machines and technology. The craftsmen either rely on their own resources and built up capital or access unorganized sources of fund. Senior family members in a family run the units and all the units belong to the micro segment. The scale of business is small and processes are traditional and unstructured in nature. The orders are received mostly on the basis of personal rapport. The main form of promotion is Word of Mouth. There has been recent development of receiving orders by participation in trade shows but the contribution of such business is minuscule. No exports of potterywares have been recorded till date.

Challenges faced by the Craftsmen of Pottery Cluster, Boriarab, Yavatmal

This unit is manufacturing pottery articles using regular traditional method from near about 100 years. Because of lack of well-trained workers and old technology they are not getting enough profit. Also various financial institutes are not ready to provide financial assistance to these craftsmen. If modern technology is provided to those craftsmen then their financial growth will increase as well as their financial need will be fulfilled automatically.

Objective of the Diagnostic Study of the Pottery Cluster, Boriarab, Yavatmal

- To study and maps all the business processes of the cluster units viz. Manufacturing processes, technology, Infrastructure, ergonomics and environment factors, marketing, quality control, testing, purchase, outsourcing, etc. with respect to current products to find out its strengths, weaknesses, threats and opportunities (SWOT), problems and impediments.
- To suggest strategic initiatives and a well-drawn action plan for enhancing competitiveness of the units of the cluster and to position the cluster on a self-sustaining trajectory of growth.
- The Study provides a detailed need analysis with respect to each intervention area viz. Product Innovation, Product Diversification, Packaging, Branding & Marketing, and Technology up gradation, Institutional Capacity Building and Quality improvement.
- To study and analyze manpower recruitment, availability of skilled labour, training, skill up-gradation and employment opportunities.
- The study the potential components of common facilities for value addition in the pottery products and highlights the need for setting up of CFC in the cluster region.

METHODOLOGY OF THE STUDY

- Interviews and discussions with craftsmen
- Business Process observation
- Analysis of findings

The Report is based on the information & data generated from sample Cluster units through Field Survey, interaction with Industrial Association, Institutes & Officials from local District Industries Center.

Pottery Cluster Profile and Product Making

The whole process of traditional pottery making of Kumbhar community has been divided

into three headings:

1. Raw materials used in pottery making
2. Techniques used for pottery making.
3. Final product and marketization.

Important handtools used in Pottery

- Chaak (the wheel on which the clay is formed into desired form)
- Laathi (wooden stick to spin the wheel)
- Digging tool (spades and shovels to dig out soil)
- Tapla (small wooden bat to shape and smoothen the pot surface)
- Soot (a long cotton thread to separate the formed pot from the wheel)

Pottery making steps

While discussing about the technical aspect of manufacturing the pottery, the whole process may be divided into four stages viz., preparation of clay, shaping, surface treatment and firing. Only certain soil types (clay) are used exclusively for pottery making because of its obvious advantages. Therefore selection of suitable clay for pottery making is very much important as far as the longevity and fine finishing of the pottery is concerned. The knowledge of clay selection depends mainly on the age-old experience of the potter and he can easily identify its suitability just by observing its colour and texture. Clay is generally dug from pond/near by riverbank. After the preliminary search digging the particular area vertically up to one meter has performed a general test. If everything satisfies the criteria they continue to dig vertically without disturbing the nearby areas. Soil testing and digging of the same also come under traditional knowledge of the potter. They bring the dig out soil to their home with the help of bullock cart or trailer attached to a tractor or even on small truck. This type of transportation facilitates them to bring large quantity of soil. The soil collected is stored in a large open space. The belief is that the quality of clay gets improved if it is exposed to sun, wind and water. The methods of processing of clay differ largely from region to region according to the nature of soil, but there are certain standardized steps, which are adopted by all the potters. Firstly the clay is filtered of any impurities. The clay is filtered with a challni (filter). Here most of the impurities are removed. After that, the potters put it into water, which is stored either into a pit or in a large urn. The clay is moistened in water for a day. By this process the entire impurities are removed and the clay turned into fine quality clay. The fine clay is mixed with equal proportion of water and spread over a square shaped pit area. Dried horse manure and white clay, ash from the local furnace is added to the products to give consistency, better the cooling effect of the content and weight of the product. Saw dust is used as tempering material to the clay. If the temper is not mixed properly then it loses its pliability and the pot will crack. Tempering gives strength to the pot.

Shaping of Pottery: Shaping of the pottery among the Craftsmen is either wheel made or a combination of wheel and handmade. Earlier handmade pottery was also prevalent among them. The handmade methods include the use of pattering, dabber and mould techniques. After the final kneading, a heap of clay is prepared either in the form of a cylinder or of a ball. The size may vary according to the type of pot they want to make. The potter generally takes out separate clay lump for each pots but sometimes more than one pot can be prepared from a single lump of clay. The potter rotates the wheel with the stick (lathi) in a clockwise direction. When the wheel receives its maximum speed, the clay is placed at the center of the wheel. The potter uses his fingers and gives the clay definite shapes by manipulating it. At last the finished pot is removed from the wheel with the help of thread (soot). The entire process of forming a definite shape on the wheel takes only four to five minutes. Keeping it

in ashes for overnight then dries the newly prepared pots.

Firing technique: Baking of pottery is a very laborious job. It includes a series of stages. A potter should be highly experienced and the process needs a very careful observation. Improper heat may lead to an unbaked (kaccha) pottery and sometimes-excessive heat may lead to cracking of the pottery. The potters of Bori use an open firing technique. Woods, bushes, straws and husks are used as raw materials. The pots are baked on a flat ground. After preparing the firing ground, it is covered up with dry bushes and woods. Piling is the technique to prepare the firing bed. In the firing ground, about 100 to 200 pots can be arranged during piling. The fire channels are made with broken pieces of pots on the top of the piled pots. These fire channels are made to release the excess heat and fire during baking process. Particular gap is also maintained at regular intervals with the help of broken pots to release the excess heat. The gaps are filled up with dry straws and potsherds. Then the entire dome structure is covered up with the broken pieces of pots and then packed with dry husks. In this way the entire firing ground is sealed. Then the firing ground is ignited and the firing stick is placed at the center of the baking bed. It takes four to five hours to bake all the pots and half hour for cooling down.

Surface Finishing and Paintings: Both geometric as well as naturalistic paintings can be observed in the pottery. They are generally executed with white and black colours on red surface. The Craftsmen of Bori are highly skilled with drawing colourful patterns on the Pottery surface. The designs on the surface depend on the requests by the dealers or the customers of the cluster products. Different designs on the surface are made for different occasions such as Marriage, Festivals, Event decorations, etc.



Above: An example of animal form manufactured at the Pottery cluster, Boriarab, Yavatlam

During the time of festivals like Ganesh Chaturthi, Dusheera and Diwali they also get special order for making the Gods and Goddesses idols and Toys. Prices of the idol are also determined according to the demand and the size of the idol. Lamps are also prepared and sold during the Diwali festival.

The issues and concerns identified in the pottery cluster, Boriarab, Yavatmal

- Traditional methods of design development are being used since ancient time.
- Traditional hand tools are used for processing raw material, making the cluster products
- Lack of awareness about significance of products/sculptures cannot gain demand in foreign countries as well as country up market.
- Due to poor & backwardness there is no organized & focused commercial activities are carried out of group of units at Cluster.
- Non availability of Testing facilities to carry out analysis of raw material & intern

identification of suitable raw material and additives.

- Lack of advanced tools in various process activities.
- Lack of R&D at every intermediate stage of value chain.
- Lack of awareness & facilities of premium /export quality products.
- No appropriate marketing efforts & use of marketing mediums/ avenues for enhancing market for products
- Lack of facilities to manufacture value added products restrict exploitation as third party processors, no direct linkages to target customers or Market.

Gaps analysis in the pottery cluster, Boriarab, Yavatmal

The gaps identified in the cluster during the study are as below:

- In preliminary phase of identification the raw material with appropriate consistency and quality has greater importance for value added products, which cannot be done by conventional ways or methods, & there is scope for proper testing equipments.
- Initial raw material processing is very crucial. It can be done with use of automated machine systematically. Now using hand tools, which is time consuming, & required hard work are doing the work. Hence there is potential for automation.
- Pottery requires high skill & accuracy. Currently using conventional tools, which cannot achieve the accuracy, depth, finishing of product, is doing this process. For value addition of products it is necessary to employ advance tools.
- Currently every individual unit does perform this activity outside their house on open space it is necessary to have working shed to carry out activities in proper working space.
- There is need of CFC for performing the various task which are critical & time consuming, with advanced tools at CFC the time & quality can be improved for value addition of products, hence scope for common polishing unit in CFC, which is beyond the capacity of individual unit
- Not assured/adequate quantity restricts scope for further processing in value chain, which in turn restricts direct business & exports possibilities.
- Uniform set of standards needs thorough analysis of process so as to improve on quality of value added products
- Due to lack of awareness of value added products & marketing avenues as well as no direct linkage with market the status of this activity is not reached to significant level commercially.
- Capacity building of individual enterprises in order to create facilities for R&D, testing is out of scope due to high investment, hence common facility Centre would consist infrastructure related to R&D & testing.
- The scope for collective mark in respect of value added products would generate revenue, which in turn will help to sustain common facility centre & recognition.
- Cluster actors stroke beneficiaries required to witness & undergo, soft intervention phase so as to get along with trust building amongst cluster actors & in order to gain/acquire necessary inputs with respect to capacity building, technology up gradation, marketing development assistance & strengthening associations
- To address the issues & concerns, creation of state of art CFC consisting common Raw Material storage, Raw Material Processing, Testing of Raw Material, Pottery and processing related to diversified products, Finishing, Packaging, Display Centre, Marketing facility, Training, etc.



SWOT ANALYSIS

Strengths

- Raw material is available at low cost.
- Low investment required in infrastructure.
- It is a symbol of Craft Heritage.
- Traditional motifs: Traditional motifs the most important element of this craft, which adds the value to this craft.
- Eco-friendly nature of the product.
- Craftsmen are efficient and skilled in basic products due to experience.
- Non-communal craft, community such as Rajput, Prajaapt, Natt, Kumhar and Muslims are involved in this trade.

Weaknesses

- Regular degradation in the quality of design and painting at production level.
- Lack of Branding. No investment in developing an identity.
- Advanced Technology, Equipment, Design, Quality Control and Marketing guidance are unheard of.
- Completion of orders is not done on time due to laborious and time taking process.
- Fragileness of products creates difficulty in transportation.
- Lack of infrastructure for storage of raw material, non-fired finished products and fired products.
- No testing lab for research and technical suggestion.
- No design inputs.
- Lack of market information thus unaware of consumer's changing tastes & preferences.
- No costing idea about the product. Craftsmen do not follow appropriate process of costing.
- Lack of Unity among the cluster members.
- Lack of formal organized structure and problem of working capital.
- Lack of expertise in documentation and professional enterprise management
- Due to inadequate exposure, product diversification is minimal. There is an urgent requirement of new design interventions in Body composition, tools and machines.

Opportunities

- Eco-friendly nature of the craft can be used to leverage the marketing of the product.
- Scope of blending Pottery with other crafts. More scope of employment by involving other crafts in pottery.
- Growth in the home accessories industry leading to increased scope of new and innovative products.
- Increased sales opportunities from e-commerce customers.
- More scope in handicraft export market.
- Provision of loan and profitable policies for small units.
- The ability to increase the profit margin as variable costs are decreased due to operating efficiencies
- Vocational training of making small utility products like Jewellery and lifestyle accessories products could be helpful to provide employment during monsoon.

Threats

- Unhealthy competition with Pottery from other places. Similar looking products are available in market.

- Competition from utility products made from more durable materials.
- Young generation not interested in taking this craft as their profession and leaving work due to poor wages, laborious work and inconsistent source of income.
- Craftsmen are migrating to other regular jobs in nearby cities.

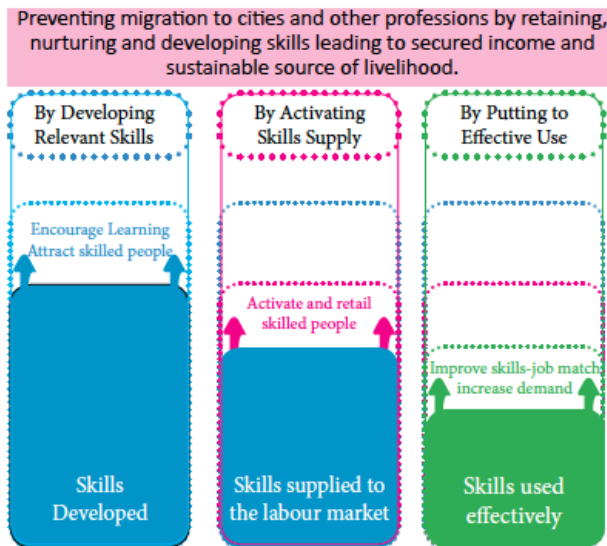
SUGGESTIVE STRATEGIC INITIATIVES: EACH KEY FACTOR OF STRATEGY DEVELOPMENT HAS BEEN ELABORATED BELOW

A. Vision of the cluster: The Winning Concept

Increase the competitiveness of the cluster by integrated use of design and technology to design products aimed at meeting the needs of the market based on digital economy and globalization for encouraging economic growth and upward social mobility.

B. Creating “Longevity” for the craft: Building capacities by training on design, prototyping, marketing, market research and entrepreneurship.

1. Promoting social mobility:



2. Skills up-gradation

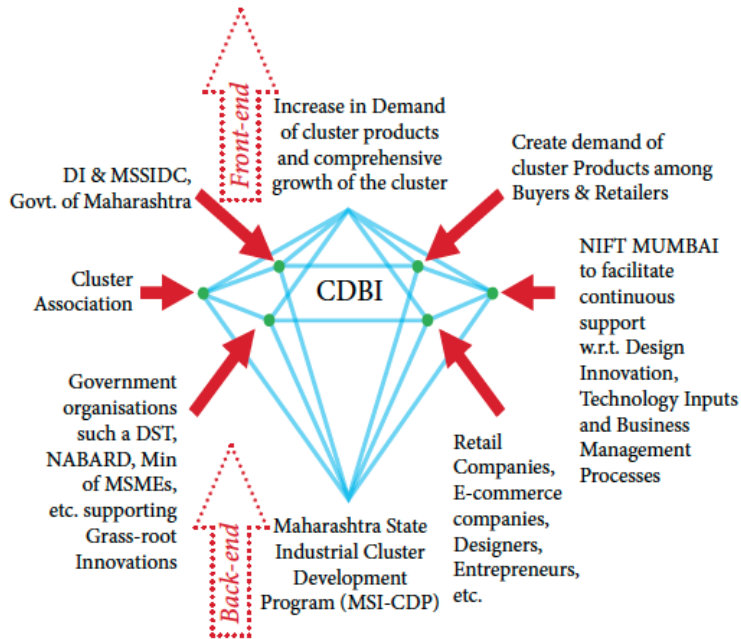
Skill deficits are common among underperforming clusters and range from scarce technical competence, low levels of education of the workforce and poor business management capacities. These hamper the capacity of the cluster to learn, innovate and upgrade. Therefore, it is important to work on improving the skill base of the cluster, facilitates contact building with external sources of expertise and knowledge, and help the artisans in:

- a) Developing skills which are in demand in terms of relevance and quality &
- b) Sustaining a dynamic development process

3. Trust and governance building

Trust is a precondition for the development of collective activities in that it decreases the risk associated with the achievement of common business goals. A sound governance system allows the cluster actors to identify shared objectives, agree on a common strategy for their achievement, articulate collective actions and solve related problems, monitor outcomes and ensure their sustainability over time.

4. Training on soft skills and professional business management.
5. Setting up of Library: physical reference material as well as e-resource
6. Setting up of an Cluster Design & Business Incubator (CDBI) in the CFC to experiment and design innovative products and run a pilot business for the new designed products.



Model: Progressive Cluster Design and Business Incubator (CDBI) 'Diamond' Model for the cluster

C. Scalability and Expandability: Product Diversification/ Forward Linkages in Domestic and International Markets

1. Setting up of a Market research and Design development wing will provide the required R&D support for developing new products catering to the changing tastes and preferences of the market.
2. Various initiatives for developing forward linkages - Development of enterprise networks and business linkages are as under:
 - i) Creating a Brand
 - ii) IPR protection
 - iii) Packaging
 - iv) Craft Tourism
 - v) Corporate Tie-ups: Garnering support of retail firms
 - vi) Visit to fairs and exhibitions (national and international)
 - vii) Creation of a catalogue for marketing products
 - viii) E-commerce and Website development

D. Consistency: Streamlining the Back-end Technology/Finance/Operations

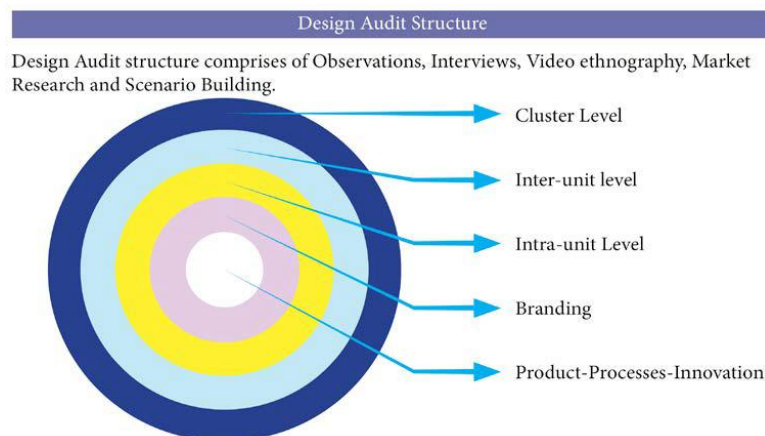
- i) Technology - particularly linked to timely market information.
- ii) Value adding techniques and modern machinery in processing leading to improved production practices using upgraded inputs and techniques for better quality control of the products.

- iii) Environmentally sustainable practices which can act as the USP of the product.
- iv) Establishing tie-ups with secured and consistent sources of funds like banks etc.
- v) Creation of a raw material bank.
- vi) Creation of a legal cell, which aids the artisans in paperwork.
- vii) Creation of a warehouse for finished products.
- viii) Creation of ergonomic workspaces.
- ix) Setting up of quality control labs.
- x) A compilation of frequently asked questions (FAQ) will assist the artisans in every relevant sphere.

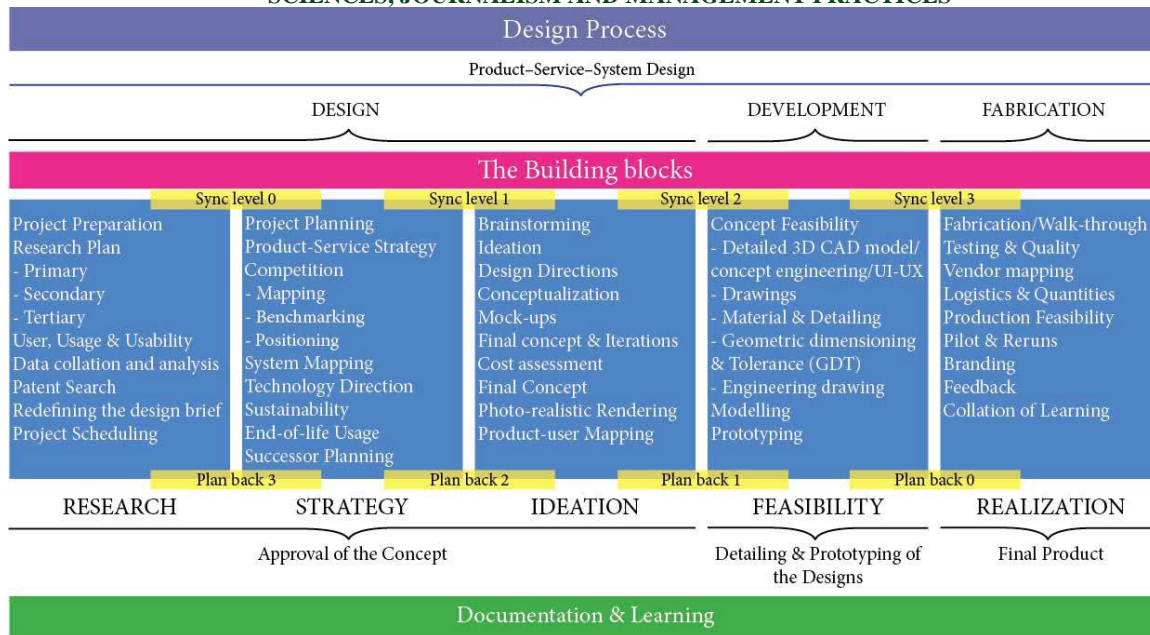
The setting up of a Common Facility Centre (CFC) with the infrastructure support as enlisted above can assist the artisans in building a sustainable model of livelihood while preserving the craft heritage.

E. Product Design Approach

1. The Design Audit Approach: Design Audit is a tool that identifies Design improvement areas within the cluster ecosystem to facilitate strategizing for a holistic growth of the cluster. Design Audit helps the cluster gain competitive advantage through identification of design opportunity areas to facilitate design and management in developing holistic business strategy for its progress.



2. The Design Process Approach: Design Process for a Product, Service or the entire System is a culmination of major expert areas i.e. Design, Development and Fabrication /Manufacturing with a holistic vision and consideration of every element, which forms the entire system/ecosystem. These areas are further defined as Building Blocks of the Design Process of the entire process and are defined as Research, Strategy, Ideation, Feasibility and the Realization of the Idea in a form of a tangible Product, Service or both. The Design Process of the Product-Service-System Design is also suggested below:



F. Safety and environmental responsibility intervention

The intervention must define how the craft cluster/products should behave towards the customers, the suppliers, the wider community, the employees and the environment.

Quality: The craft needs to be put under strict quality standards and regular quality checks should be maintained which will lead to trust building among the customers.

Safety: The pottery products should be manufactured in accordance with all national and International Safety Standards for use.

Surface Finishing: As a natural material, the products should be safely in the home or open environment or when it comes in contact with people using the product.

Warning: The cluster association or the individual units in the cluster should be legally obliged to attach warning notices to all its craft products.

Sustainability: Consumer health & safety, climate and energy, soil erosion, deforestation, disposal and end of use, packaging, craftsmen welfare, recycling information must be a part of the entire manufacturing and delivery process, which helps the cluster, sustain the craft in future.

G. Technology Up-gradation in the Pottery Cluster

New developments in machinery and technology can be put to function and new designs and products with better finishes can be rolled out in shorter time spans. Using the horizon technologies, new designs can be induced into the market so that revamping the entire image of the craft according to the changing needs of the consumer and also keeping the ethnicity of the craft intact.

Technology required in future for building competency and improving efficiency in the cluster –Some hand tools and machines

Safety Equipments

- Enclosed footwear, e.g. shoes or boots;
- Appropriate clothing e.g. vinyl aprons and dust masks for dry mixing glazes, suede aprons, gauntlets and gloves for raku and smoke firings



- Eye protection equipment such as safety glasses and visors;
- Gloves

Plaster room

- Lathe
- Blungers
- Mixing slip
- Casting slip
- Dremel drill
- Chisels
- Press moulds
- Open slip cast moulds
- Closed slip cast moulds
- Cottling
- Mixing plaster
- Health and safety
- Personal protective clothing
- Extraction unit
- Band saw
- Drying cabinets in corridor

Glaze lab

- Materials
- Triple beam scales
- Hand blenders
- Safety data sheets
- Personal protective clothing
- Extraction unit

Main studio

- Slab roller
- Small extruder
- Large extruder
- Hand extruder
- Hand spray
- Airbrush
- Laminator
- Heat guns
- Wax pot
- Drill driver
- Electric drill
- Angle grinder
- Wetvac cleaner
- Vacuum cleaner with hepa filter
- Cutting mats
- Throwing wheels
- Hand tools
- Health and safety
- Personal protective clothing
- Ball mill



- Floor scrubber

Electric kiln room

- Yellow kiln
- Drying cabinet
- Top loaders
- Test kilns
- Silver top loader
- Front loader
- Packing of kilns
- Props, saggars, stilts and cones
- Firing schedules and recording of same
- Kiln bookings

Raku kiln area

- Gas bottles
- Top hat kiln
- Recording of firing
- Smoking area and bins
- Extraction unit

Gas kiln shed

- Gas bottles
- Natural gas
- Compressed air
- Rohde front loading natural gas kiln
- Rohde top loading test kiln
- Laser front loading kiln
- Saggars
- Burn out firings
- Reduction firings

FUME EXTRACTION UNIT and SPRAY BOOTH

- Extraction unit
- Spray booth

Corner studio

- Hand tools
- Throwing wheels
- Extruder
- Heat gun

Media room

- IMacs
- Cameras
- Printer
- Projector
- Dvd player

- Card reader

Annexe storeroom

- Materials and grogs
- College collection
- Mobile Extraction Unit

Dry store

- Materials
- Personal protective clothing
- Health and safety
- Mobile Extraction Unit

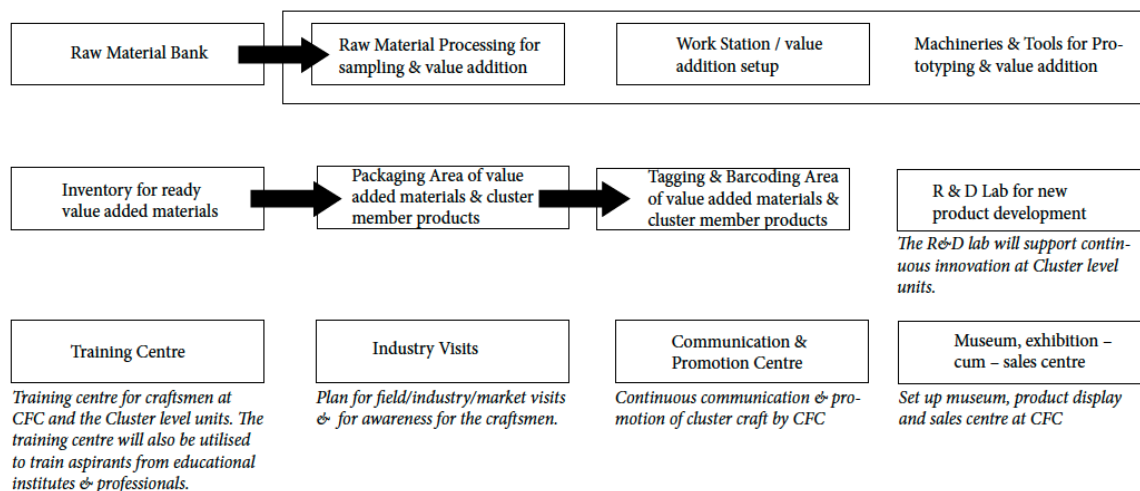
The workshops in the CFC will help the Craftsmen get expertise in the following and/or related areas:

- Plaster
- Hand-building
- Decoration
- Throwing
- Glaze
- Firing

COMMON FACILITY CENTRE PLAN

The CFC will play an important role in offering value added services to the cluster units. The centre will support the design and development process starting with raw material procurement for the cluster units at reasonable from market for the units. All the other processes such as value addition at different stages of design and development of products will get support from CFC with better and advanced machines, R&D labs, testing labs, etc. The CFC will work sync with the cluster units to provide continuous support in packaging, branding, marketing and communication as well. The CFC will also help the clusters in sales services to local, national and international customers.

CFC Flow



Benefits of CFC

Sr. No.	Issues/Concern	Condition	
		Present	After Cluster Intervention
1	Raw Material	Irregular supply leads to quality issues and higher raw material cost	Raw material bank to ensure consistent quality
2	Product Design	Traditional Product with Traditional finish	Innovative product designs with modern designs, Surface finishes, Colours, etc.
3	Product Range	Limited Design Range due to lack of exposure & design inputs	Diversified product lines by inputs from expert designers & researchers as per consumer tastes
4	Production	Low levels of production due to obsolete Painting process, Framing techniques & reliance on hand tools	High production levels by the usage of modern machinery and hand tools
5	Marketing	Poor marketing support leads to low awareness levels regarding promotion & sales	Professional marketing support will lead to greater acceptance & wider sales network
6	Finance	Limited financial support prohibits the growth of the cluster	Organized source of finance
7	Workspace	Unhygienic and ergonomically poor workspaces	Scientific workspaces leading to better working environment & lesser health hazards
8	Storage	Poor storage capacity	Enhanced storage capacity

CONCLUSION

The Pottery Cluster of Boriarab Yavatmal needs support at various levels such as development of infrastructure, capacity building, training, market linkages etc. for addressing both financial and nonfinancial gaps in the existing value chain. The future roadmap for the cluster should focus on promoting the heritage value of the craft, brand building and community partnership and skill up-gradation to match the expectations of the national and international markets. Design Intervention to respond to the market needs and understanding of trends will increase their access to market knowledge. The government, industry and academia can partner to develop the cluster and make it sustainable. Linking welfare, education, health and developmental needs to the entire Programmed is also crucial. Setting up of a Common Facility Centre will initiate a continuous and dynamic process through establishment of systems and institutions.

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