

“Artisanal craft pottery in South Asia (and Ethiopia) and the potential for expanding markets locally and globally”

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ABSTRACT

Artisanal “craft” pottery in South Asia (and Ethiopia) and the potential for expanding markets locally and globally

It is now a well-known fact that much artisanal craft pottery has been in decline over many years in the world and local markets. It is argued that this is because of the growth of industrial and manufacturing sectors that produce more quantity in less time, with fewer employees and minimal skills.

While this may be true, there has been an emerging demand in the past decade for artisanal craft involving local techniques and knowledge in markets worldwide. This can be attributed to the shifting attitudes of a higher number of consumers for local, handmade and quality craft products with increased social and environmental awareness, as well as changing economic markets demanding better quality goods that larger conventional pottery manufacturers simply cannot produce. The vast amount of undiscovered craft tradition in the Indian-sub continent offers insights into re-launching the declining artisanal craft form into these markets through careful research and evaluation. The potential benefits for this to the local and global economies and societies as a whole could by far exceed the challenges.

To that end, the aims of this research study are twofold. One, it aims to investigate, and intends to understand, present attitudes towards artisanal craft pottery from the perspective of the craft potters' communities. It draws from technical and field experience in Sri Lanka (2003 – 2013) and Ethiopia (2010 – 2013) and special focus is given to project experience in Kutch, India (2009 – 2013). And two, it investigates the scope for re-designing traditional craft pottery through creating new opportunities globally as well as within the emerging markets in the host countries.

To carry out this research I have drawn upon the richness of my own professional work in India, Sri Lanka and Ethiopia over the last 10 years, using them as case studies. In each case, I propose to analyse the local modes of production and suggest improvements in production processes to reinvigorate the products for world markets. Various research methods were used including surveys, fieldwork, analysis, and personal exploration, among others.

The study concludes with recommendations on design and manufacturing strategies to create a sound model for artisanal craft in the global and local markets. These include

1. Mobilising Funding
2. Locating Potteries: Pre-identification of region and pottery
3. Understanding the Social Structure of Potteries; family, social status, potential for change
4. Networking on the Ground
5. Consistency in Source, Supply and Preparation of Material
6. Overcoming Technical Challenges of working with Local Materials
7. Understanding Local Skills and Recognising Local Knowledge
8. Designer as marketer
9. Complexities of export as compared to local market/ issues of scale production
10. Evolution of (skills and) project

With the above in mind, I have used the following research methods.

- Brief survey of the rich history of artisanal pottery in the Indian sub-continent through studying museum collections and past and present projects.
- Intensive fieldwork to understand the cultural and socio economic contexts and perceptions in each locality that affect the craft, material preparation, and production and consumption.
- An analysis of the quality of artisanal craft products and their design, to discover the scope of the global and local economic markets. This method also involved gauging reactions from buyers and retailers of such products.
- A personal and practical exploration of existing ceramic techniques with the aim to develop functional products using these existing processes and/or developing new ceramic processes.
- And, finally, development of a guideline of 11 points for future research and design built on the lessons learned from experience in artisanal craft pottery in India, Sri Lanka and Ethiopia.

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INTRODUCTION

Over the past 10 years I have been working with artisanal potters in Sri Lanka, India and Ethiopia. In recent times craft potters have faced difficulties due to industrially manufactured, cheaper products becoming more popular than their handmade wares. This has slowly elbowed out local, ancient skills of production and I have found this in all three of the countries I visited. Locally practiced, traditional art forms of pottery making represent a history of a peoples' culture, their past and their roots. These forms and techniques are valuable for contemporary pottery making as they open up new horizons for exploration, adaptation and evolution of the craft itself, as well as renew an appreciation for the declining local traditions. Utilising local knowledge to produce suitable products opens up a worldwide market for pottery that is profitable to the local artisan; to the consumer and to the designer, both intellectually and economically. Contemporary production practices are now dominated by 'big production' logos under large companies and non-governmental organizations. In contrast, I realised that working on the ground in local communities, alongside the artisan as an equal partner, has the potential benefits of producing and selling locally handmade craft products whilst also telling the story of individual potters.

My objective in each project has been to intensely research and understand indigenous craft practices, and to look for ways to develop and market local products, either for the locality itself or for international export.

Being able to compare the three projects has given me a wider perspective which has informed the research questions, issues and approach, to provide a fuller picture than if I had focused solely on one project. I believe that my personal perspective as a designer and an entrepreneur has also enabled me to create an alternative model for others in the field, which would not otherwise have been considered. This research describes my experiences working in each country and illustrates the differences I experienced with each project and proposes some evaluations, conclusions and recommendations.

Various approaches were used to research this paper. I used desk-based methods; studying literature reviews, carrying out archival research visiting museums (museums in the UK, Addis Ababa, Delhi and Colombo). I also spent time in the field with the potters; documenting their work, social structures, and the local market. In Kutch this led to co-curating an exhibition for the British Ceramics Biennial in Stoke-on-Trent in 2009. I conducted a survey of the range of pottery production, its history and its culture, focusing on both the

Kutch community and India as a whole. From my experiences in India and Sri Lanka I designed and conducted tests and then evaluated the outcomes whilst working in Ethiopia. The field research, I carried out in each of the countries, which formed part of my professional career, coupled with my own practice in designing and making pots, informed the premise for the entire methodology of the research. I applied my initial professional findings to projects in Sri Lanka and Ethiopia where I addressed issues and problems as they arose. The aim throughout has been to investigate production, material, design and market aspects of craft ceramics, and examine strengths and weaknesses and find solutions where necessary.

Summary of Field - Projects

1. Sri Lanka project, 2003 – 2013

The Sri Lanka project was carried out in association with Ashram International Charity based in the United Kingdom (UK) working towards the empowerment of women. It focused on craft revival with artisanal potters in collaboration with a modern ceramic factory. Here the potters concentrate on producing items that are for export using existing making methods, such as throwing on the wheel or beating. The factory's skills compliment this process through glazing, firing to a higher temperature (that the potters cannot achieve) in some product ranges, packaging, and shipping the products to Europe. Moreover, the project works on the principles of fair trade where the potters get paid 30% more for their work than they would selling locally. Over the years this project has had a positive impact on the revival of craft, the empowerment of women potters, their lifestyle, and on health and safety at the pottery. One of the ranges made by the potters for the retailer Jamie at Home, called *Matti* won the House Beautiful Gold Award for Best Tableware range in 2011.

2. Royal College of Art/Kutch, India project, 2007 – 2013

This project aimed to investigate and resolve whether quality products for a wider market can be manufactured in an artisanal pottery environment using existing making and firing methods. To produce quality products means ensuring there are no short cuts in the use of consistent material or the firing and execution of design (for example explosions on the surfaces of pots, bleeding of decorating slips etc.) It involved a survey of the craft in the region, looking at both home and export markets and how to resolve some of the issues that are clearly leading to the slow elimination of pottery skills that have been practised for centuries.

3. Ethiopia Project, 2010 – 2013

This project focused on the revival of craft pottery production for the existing local market and combining it with small-scale interventions such as imported firing methods and improved preparation methods. I worked with an NGO and a potter to develop a range of utilitarian objects for the local market. Given that a small amount of funding was available and the problem of electricity power failures was minimal, it was considered practical to import a kiln from the UK and devise the production of a small range for the local market. This project is ongoing.

Timeline of Research Projects

	2003-2006			2007			2008			2009			2010			2011			2012			2013			
	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	Jan	May	Sep	
	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	Apr	Aug	Dec	
Sri Lanka	Regular visits to Colombo			Visit to Colombo			Visit to Colombo			Visit to Colombo			Visit to Colombo			Visit to Colombo				2 visits to Colombo					
India				MPhil Research began									First and only visit to Kutch												
Ethiopia														First visit to Mekelle and Addis Ababa							Second visit to Mekelle and Addis Ababa				

Research Areas

The research in Sri Lanka, India and Ethiopia focuses on specific areas that help frame and provide for an extensive understanding of a particular project context, which is different in each country. While these may be applicable in other fields of work, the ten areas presented here capture the essence of doing on-the-ground field research in artisanal craft pottery. I have developed this list as a result of different approaches and they are discussed in detail, as they are relevant to each of the three research projects. The ten areas were generated by the results, (successes and failures of) trials and tests undertaken in the projects. The summary below captures the essence of the discussion in each project.

1. Mobilising Funding

Adequate financing for artisanal crafts is not always easily accessible. There are however, existing structures for accessing financing, for example; governments; Non Government Organisations and Corporate Social Responsibility and philanthropic foundations. There are different types of financing such as donations, research grants, fellowships, loans, individual awards or more technical specialised support i.e. professional charity or in kind support. Funding enables the project access to the potters, travel expenses, payment of potters, testing of materials, time spent on admin etc. While these funding mechanisms, types and needs exist, ultimately it is the on-the-ground application of the projects that results in building a viable venture.

2. Locating Potteries: Pre-identification of region and pottery.

It is critical to set selection criteria for locating projects. Having defined criteria helps in implementing the research design while minimizing additional risks and costs to the research. Geography, infrastructure, sociopolitical context, and pottery clusters are all crucial considerations. The infrastructure of the host country must be considered, as well as access to the pottery and materials if they are to be imported. Pottery clusters are mainly found where material can be sourced easily. Uncontrollable factors can sometimes affect where it is possible to work, for example the Sri Lanka project was initially meant to take place in Pakistan, but due to the dangerous political situation it was not possible. The after effects of the Tsunami imposed challenges on people left alive to find livelihoods in Sri Lanka. Travelling to Kutch in India presented some problems because I was born on the wrong side of the border (Pakistan), which caused delays in acquiring the visa and access to potters. In Mekelle, Ethiopia's war with Eritrea had left a disastrous track of disease and destruction to the infrastructure. The majority of the population was female.

3. Understanding the Social Structure of Potteries; family, social status, potential for change

Understanding the social structures in place in pottery communities is imperative to the value of any field research. In particular, the importance of familial and social status as well as the culture of the pottery, local religion, gender, and caste. The skill of a designer as a practitioner affects the perception of the pottery community as well as the dynamic of the project. In my experience it is easier to be accepted by the pottery community as a practising potter as compared to an institutional professional representing a government, an NGO, or other such agencies. This is because it breaks down hierarchical stereotypes, enables mutual respect as a fellow maker and

enables an environment for trust and respect. In particular, the role of gender of a designer and/or practitioner becomes highly sensitive in certain project contexts. For example, in largely female led pottery communities like Ethiopia it is easier for a female practitioner to work, whereas as in largely male dominated communities like India it is much harder to be accepted.

4. Networking on the Ground

Networking on the ground requires careful mediation and facilitation between the potter/s, the designer, the NGO (if involved) and the larger pottery community. Lack of exchange and access to information and technology can disengage the potter from valuable information about the project. Equally, lack of respect for local knowledge and understanding of cultural sensitivities creates barriers for a designer. Proper facilitation between the two can ensure an efficient production process, resolve internal problems, and mediate conflicts. Moreover, engaging the broader pottery community, including NGOs and other such agencies working in the area, allows for a smooth working environment.

5. Consistency in Source, Supply and Preparation of Material

The mutual respect and trust between a designer and potter is of utmost importance for consistency in source, supply and preparation of material. The designer may not always have the in depth knowledge of where the material comes from, who supplies it and the preparation process. In most cases, he/she is dependent on the potter for this knowledge who may feel vulnerable about releasing valuable information underpinning their commercial viability. In other cases, the designer has more flexibility in accessing information on the sourcing and supplying of material. In short, engagement and involvement of the potter is without a doubt necessary for reliability in sourcing and supply of materials.

6. Overcoming Technical Challenges of Working with Local Materials

Working with local materials presents several challenges that may require technical expertise to overcome. The role of the designer becomes critical in investigating alternatives to such challenges. For instance, a deeper understanding of the preparation process of the clay, which is so labour intensive, makes the production efficient, less time consuming and labour effective. It is up to the designer to explore his/her own expertise, rely on tests in workshops/labs and/or professional charity, and other similar resources.

7. Understanding Local Skills and Recognising Local Knowledge

It is vital to gain an understanding of the potter's skills, tools, materials, shapes and methods. In most scenarios this knowledge has been passed on from generation to generation. The designer works with the pottery communities in their space; not the other way round. Understanding the relationship of the potters with their materials and tools and the limits and possibilities of materials and techniques determines the quality of the final product. Value and respect for local techniques allows the designer to recognise the skill in tradition and practice, one that designer may not have familiarity with.

8. Designer as marketer

An adaptable designer can cater to more diverse markets gaining a much larger economic base for his/her products. The role of the designer extends to gaining a comprehensive understanding of the local or international economic markets. Markets and trends evolve, and it is necessary to keep up with this pace of change. Understanding the overall context of the local production market, and the final sales market, local, national or international, is essential. Similarly, communicating alternative design and economically beneficial ideas to the potters and the eventual client and/or market, is crucial. For example, the story of exporting to Europe from Sri Lanka became a large part of the marketing process. It engaged buyers in the process of the project, and increased the value of the artisan products and their overall lifestyle. Similarly, in some instances I found sales of products in the home markets greatly benefit from engaging local buyers and connecting them with the stories of the local potters and their skills. The impact of such processes is undoubtedly meaningful and beneficial to the lives of artisans.

9. Complexities of export as compared to local market/ issues of scale production

Like most export products, pottery items produced for an export market are regulated at higher standards than a local market. While such standards may be similar, they vary from country to country. In particular, export pottery products are inspected for glaze safety, lead release, oven/microwave/dishwasher safety, reliable packing etc. The lead times for shipping and planning manufacturing at the pace of the potters time is an important consideration. As compared to this production, the demands of the local markets are less demanding, where slight variations and changes in colour and sizes are acceptable and there is no extensive packing and shipping involved.

10. Evolution of (skills and) project

Projects in artisanal production in the past have been successful but if they are dependent on trends, the success can be transitional. When the trend is over, so ends the work and the communities are left to struggle and compete on their own. A longer-term project provides hope for communities, which is a very strong motivator and affects the dynamic of the community and can change its outlook. An approach that is focused on the evolution of local skills encourages work to continue in the long term. Trends in western markets are powerful, even more so now as most retailers have two new concepts a year; it is a quick moving business. Craft processes are quicker in adapting to changes; they do not have the high development costs found in larger factories where moulds etc. are used hence making them more flexible. It is possible to keep up with trends whilst developing innovative products, which use existing or introduced skills to evolve the craft. Teaching the pottery community skills such as identifying gaps in the market and creating design possibilities that have not been explored before, is something that needs nurturing and time to develop. The evolution of skill is further discussed in each of the projects.

SECTION 1

Sri Lanka



Map of Sri Lanka¹



Biyagama Pottery 2003

In 2003 I started a project in Sri Lanka that later became the basis of study for my MA. The project questioned whether artisanal production has a place in our market today. If so, how can it be organised for export to western markets where there was a place for such products. It was a simple idea and I had an 'idealistic' approach - to work with village roadside potters, making tableware of my design, glazing them at a factory and shipping to the UK. This started my interest in researching the socio economic, technical, skill based and historic aspects of craft production.

¹ Central Intelligence Agency. [Online] Map available from: <https://www.cia.gov/library/publications/the-world-factbook/geos/ce.html> [Accessed 15

There are still potters in Sri Lanka who make beautiful ware for the dwindling local market; the skills passed on through generations are slowly being lost due to the arrival of industrially available plastic and other imports, as is the case in many developing countries.

At the time (2003) 'fair trade' projects were gaining in popularity in the West. My experience as a practicing designer led me to believe that the western consumer was curious and was beginning to have an appetite for items that reminded them of faraway places they had visited, or terracottas that looked and felt different from those available in Europe.

I worked closely with 4 potteries (Biyagama, Rukmale, Anuradha Ceramics and Udawalawe) in different parts of Southern Sri Lanka, but mainly in Colombo, as well as a modern factory, Midaya, creating relationships with the potters whose language I did not speak. We connected through clay. The fact that I was a practitioner worked to my advantage in connecting with the potters and the ceramic factories.

The main issues that I encountered in Sri Lanka were:

Funding

My Sri Lanka project was in association with the design group Queensbury Hunt and initially funded by Hoare's Bank, through the charity Ashram International, who work with destitute women in South Asia. Hoare's bank had just started their philanthropy venture and were looking to fund a project with empowerment through crafts. As time went on and results were positive, the project benefitted from further funding from Habitat, '*Jamie at Home*' and the agents Aspen International. The outcome from the start was purely commercial, i.e. to export to the western market, and especially to Habitat who were then patrons and the final retailer for the initial ranges.

Clay body

In this project, the aim was to work with the artisanal potters using materials and glaze that would prove suitable for the final product to be exported and used at the table. We needed a clay body that could be thrown easily, fired midtemperature (as the factory we worked with midtemperature shuttle kilns and glaze), didn't warp, could be glazed without problem and was preferably a deep terracotta colour.

I encountered three major problems with the local clay body:

- a. Firing terracotta to a higher temperature, as the Midaya factory did not have facilities to fire mid range (their kiln fired to 1200°C) that caused bloating of the terracotta.
- b. Inconsistency of the local clay body, causing making problems such as cracking, bloating and the varying iron content in the clay changed the colour of glazes.
- c. The amount of gases released when fired resulted in pin holing and crawling of the glazes.

After extensive efforts to resolve the problem with the clay, the clay around the region was unsuitable for glazing. I had spent almost 4 years trying to produce a stable local Sri Lankan terracotta that could be glazed, a number of clay experts provided 'charitable' professional assistance like Jonathan Noake of Potclays, Midaya ceramics, David Queensberry. The commercial demands of the project made it impossible to do the shipment in the time, so it was decided to import clay from Thailand. This was a stable clay body which could be thrown and glazed perfectly. It is not to say that the Sri Lankan terracotta is unusable for glazing. However, the cost of research and development of a new terracotta body in Sri Lanka was higher than importing the clay from Thailand at that time. In 2013 Midaya factory developed a local terracotta body.

Understanding the social structure where potters are the second lowest caste in Sri Lanka, and how the potters work, around their families

In Sri Lanka terracotta is seen as the poor man's clay, in that it is used mostly for cooking or plant pots and not for the table. There is also a caste system, potters being in the second lowest caste and therefore very low down the social scale. A personal incident brought this home to me when in 2005 I spontaneously hugged the 'master' potter when we were working on a new shape, there was a shocked reaction in the room. Potters in Sri Lanka are the second lowest caste after leather workers, I was later told by Practical Action Asia. The project aimed to work with the potters in their potteries, working around their domestic chores and not transporting them to the factory. Each pottery I worked with had distinctly different structures and ways of working. For example, Biyagama was a pottery initiative run by the Sri Lankan government who employed a pottery manager (not a potter). The manager decided how much work each potter did and potters were paid per item, and caused tensions and issues. In contrast, Rukamale pottery, was run by an all-female family of potters and used traditional Sri Lankan methods to create pots for cooking purposes, and sold locally for minimal money.

Understanding the production and making methods

Throwing a pot on the wheel is the most common method of production in all the potteries I worked with. Potters in Sri Lanka use very basic materials to make tools, mostly from recycled materials. A cotton string is used as a cutting wire, a sponge or soft cloth to smooth the surface after turning, and a thin stick or needle as a cutting tool for rims and sticks to measure width and heights of pots. Tools included a bent piece of steel, a soft, plastic purpose-made kidney tool to smooth the clay surface and old soft plastic bags, shells or polished stones for burnishing. Potters also use beating mostly for making pots with rounded bottoms used for cooking.



Matilda and Leela, in their workshop 2005

Firing methods were simple, most potters fire in wood firing kilns with the temperature varying between 600°C – 900°C depending on where the pots were placed in the kiln. Hence for the purposes of this project the pots were fired in the more reliable environment of a factory kiln.



Kilns and firing at Biyagama 2006

The importance of a reliable, knowledgeable and good communicator/facilitator on the ground

In Sri Lanka I learnt how essential it is to have a facilitator on the ground that local potters trust. At Biyagama, the government appointed manager would give one potter more work than another and mismanage production, causing delays and tensions between the potters. This affected the atmosphere and overall production. I met with two Ministers of Trade and Industry, in the hope that there will be easier access to the pottery and clay. There was no outcome to this except local media attention.

Through the factory Midaya, I was able to find a studio potter who was working with craft potters in and around Colombo. Ajith Perera introduced me to the pottery villages of Rukmale and Udawalawe. In Rukmale and Udawalawe. Ajith's knowledge in ceramics and relationship with the potters was invaluable for the project. He is well respected by the potters and working with him I gained more insight into their daily lives and practice, which prior to this was only a basic understanding.

Learning about sourcing materials and firing technologies.

Clay is a naturally occurring material and there are bound to be geographical variations, which can lead to design constraints. At Biyagama, clay was sourced from two or three locations on the Keluni River and was not consistent in its properties; for example, due to the amount of iron oxide, colour variations were common.

At Biyagama, Rukmale and Udawalawe potters use wood and husks for firing. The cost of this can be high so firing only takes place once the kiln is full.

However, sometimes these issues worked to advantage. In Rukamale, I used the coarse local clays for the production of a potato pot and bread plate because this openbodied clay is suitable for cooking on the naked flame. Qualities of the clay worked to the advantage of the design.

Adaptability as a designer and a marketer

As a designer I had to prove adaptable and also take on the role of marketer. After discussions with tabletop buyers, I felt there was a gap in the UK market for a new look terracotta. Importantly, it was the story of the project that was unique, and key to the marketing of this product. Two major retailers sent their buyers out to Sri Lanka with me to cover the story and see for themselves how the project works and how it affects the lives of the potters in a positive way. These visits were important in the marketing of the product, it is one thing is to look at the pictures and products; and a completely different dynamic seeing the potters at work and visiting their workshops etc.



Items made at Biyagama 2004



Cinnamon Club 2012



JME 2010



Oven to table. David Mellor 2012

Complexities of export

From the start, the Sri Lanka project was aimed at an international market, specifically Europe. Hence there were some important issues to be addressed. In terms of health and safety, the outside of the first range designed was unglazed, and so an optimum temperature to make the body vitrify had to be achieved. This was to avoid the unglazed surface staining. Dishwasher, oven and microwave safety, as well as lead and cadmium release tests were conducted. These were undertaken by the factory I partnered with and also by individual retailers in the UK.

Packaging and shipping was an obvious issue and the use of the modern factory provided shipping expertise.

Each potter was given a shape to make and stamp with their name. The leather-hard turned pots were carefully shipped to the factory in custom made plastic crates. They were then dried in the dryer, fired, glazed and re-fired, then packed and shipped to the UK.

Licensing and copyright agreements also had to be made. All designs and the colours and glazes developed with the factory remained the copyright of the designer. The designer agreed to license the retailer to market the product. If the retailer stops marketing the product the license relapses to the designer, and the product can be marketed by another retailer. The products were also not available for the local market i.e. as seconds or damaged pieces.

Finally, quality control, consistency and scale of production had to be considered. A production manager was hired, who would visit the pottery each week to inspect quality. At the factory after the biscuit firing, products were checked for cracking and damage before glazing and a final check was performed after glazing for any other damage.

What was unique about the Sri Lanka project was the combination of artisanal production with a modern factory. It was an eye-opening and challenging experience. I learnt from my mistakes and some successes. The Sri Lanka work led to many questions that were still unanswered and I decided to undertake research at the RCA in 2007 to see if it would be possible to set up guidelines for future designers to work from, so that the problems that I encountered could be understood and resolved with greater ease, and could make way for further research.

SECTION 2

CHAPTER 1. India and then Kutch

Survey of pottery production in India with a focus on Kutch

Introduction



Map of India ²



Potter in Kutch

India has a rich history of pottery dating back to the Indus Valley Civilization almost 3000 years ago. Sculptural use of clay flourished during the Gupta period 280 -550 CE, during the colourful reign of the Moghuls, who around the 12th C brought with them artisans from

²Maps of India [Online] available from: <http://www.mapsofindia.com>. [Accessed on 20 October 2013]

Persia and introduced to India the art of glazed ceramics. These were used to decorate their buildings in ornate glazed tiles, decorative bowls with rich Persian patterns as well as using influences from China during that period. There were no radical innovations in the field as in Persia and

China but there was a constant supply of pottery being made in response to patronage by local regional kingdoms. In the 18th century at the time of British Raj the East India Company set up bone china factories in Calcutta for the consumption of the British in India.

Pottery in India is as rich and diverse as its cultures. It includes a range of objects ranging from utilitarian, votive, decorative, and religious to playful toys. Hindu potters have a place in society belonging to a specific cast – the *Kumbhars* or *Prajapati* which means ‘Lord of the people’³. Potters are further divided into groups depending on the kind of pottery they make and the labour they provide. For example potters who make votive terracottas have a slightly higher status known as the *Murtikars*, they also ‘refer to themselves as *Nagvamshi Thakurs*’.⁴ Muslim potters are known as *Kashigars*, meaning master potters specialising in glaze painting.

Potters are found everywhere in India and historically have had an important place in society, as mentioned above not only making everyday functional ware but items for festivals, births, deaths, weddings and large terracottas for votive purposes. Therefore the skills are incredibly versatile. Qualities of clay also vary across the subcontinent.

From this experience potters have an intuitive knowledge of their materials’.

Pottery in India, like most crafts in the Indian subcontinent, has been passed down through history. Sadly the transference of skill has slowed down, due to increasing industrialisation, lack of patronage and the caste system that affects craft. Younger potters would rather work in factories, or menial jobs in construction to get away from the stigma attached to craft. Of craftspeople potters are the second lowest caste, the lowest being leather workers.

In early 2009, I established a connection with the British Ceramics Biennial in Stoke 2009, who were preparing a project with a group of potters in the villages of Khavda, Lodai, and city of Bhuj in Kutch, India.

³ SRUTI Report. 1995. *India's Artisans: A status Report*. SRUTI Society for Rural, Urban and Tribal Initiative. India. P.135

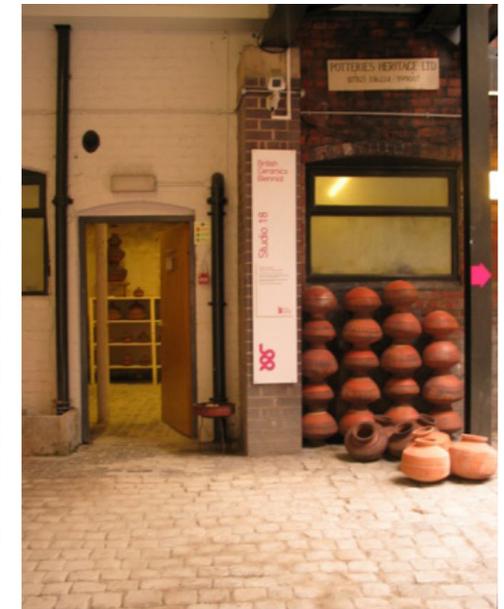
⁴ Krishnan, S. 1989. *Traditional Potters: Entitlements and Enablement's of Artisans*. New Delhi P. 33

Kutch is a region in the state of Gujarat. This is an area known for its rich craft traditions that are closely intertwined with its culture. I had investigated this area during my early research through Perryman's, *Traditional Pottery in India*, Ranjans *Handmade in India* 2008, and early research showed that ancient techniques of making pottery were still in use.

BCB funded my travel to India. My trip included visits to Bhuj and Ahmadabad. I worked with Khamir, a local NGO founded in 2001 after the earthquake based in Bhuj which has been working to revive and develop creative crafts in the Kutch region, ranging from textiles to pottery. Khamir has recently built a modern craft resource centre in Bhuj, which aims to promote and preserve local crafts, by giving the craftsmen a place to work and share their skill. They are currently working with block printing, weaving and tie-and-dye. For Khamir pottery is a new venture, one they are keen to develop.



Pots packed in Bhuj



Pots arrive at the Gladstone Museum in Stoke

My trip included visits to the pottery villages, looking at the infrastructure of production, socio economic issues and assessing materials, skills, production, firing, pricing, current markets and transportation. I also supervised the successful packaging of the 400 terracotta pots (cooking pots, storage pots, water pots and shallow dishes) that they had specially commissioned from 4 potter families of Kutch. These

items were to be transported from Bhuj to the port of Mundra (in Kutch, Gujarat) and then shipped to Liverpool, a huge task that no one local had ever undertaken before. (These items are no longer produced in huge numbers for the local market.)

The fact that I was born in Pakistan was very problematic for entry into India. When I finally got a visa, I could only visit 3 cities – three districts to be precise. I was unable to travel out of Bhuj, the main city of Kutch, even 13 miles west to Lodai and 45 miles to Khavda. I was restricted to staying in Bhuj. The potters of Lodai and Khavda kindly came to see me in Bhuj. I was able to spend time and interview all the potters. I was also able to work with, and document, the work of Abdurrahman, one of the leading potters of Kutch – luckily he was in Bhuj. I was fortunate to go to Umarkot in Sind, Pakistan, in the Thar Desert 70 miles west of Khavda and study pottery and firing processes there. These are the same community of potters divided by a border.

The British Ceramics Biennial was a great opportunity for me, to identify a region – Kutch, where I was able to undertake field research, make sound contacts with an NGO and most importantly to get to know and work with potters. As a result of this collaboration I was able to co-curate the Earthen Vessels show at the British Ceramics Biennial 09, and write an essay for the catalogue.

The successful shipment of 400 terracotta pots in a 40ft container from Mundra to Liverpool offers possibilities and a new dynamic for export. It is important to note that losses were minimal; just 2%. The packaging and shipping costs were however higher than the costs of the pottery bought directly from the potters.

Brief Survey of Ceramic production in India

Through my desk-based research prior to my visit to Kutch, I looked at craft ceramic production in India today. I then decided to divide the subjects into these areas for further research.

1. Village or Rural Potters
2. Kashigars
3. Studio Potters

Village/Rural Potters

Jane Perryman in her 2001 *'Traditional Pottery in India'* both suggest there are a million potters in India. Shantha Krishnan in her book *'Traditional Potters: Entitlements and Enablements of Artisans'* found '700 in Bindapur, Delhi'⁵ in 1999 and '9,083 in the Delhi region'⁶ in 1989. This emphasizes the importance of the survival of this artisan sector.

Kumbhars are potters who make everyday ware such as tea cups, cooking vessels, storage jars and other utilitarian items. Their wares are unglazed and low fired. Pottery is handmade - wheel thrown, moulded, coiled, beaten, or a combination of these processes. Labour is divided between men and women, and sometimes children.

The *Kumbhar* caste is found all over India; almost every village will have a potters' community or settlement. For example, in Delhi the Prajapati colony, Bindapur is where potters from Haryana and Rajasthan and neighbouring villages from Delhi settled after the government of India decided to clear the slums, and gave these potters areas where they could work.

⁵ Gibson, J. 1999. *The Potters of Bindapur*, Ceramic Review 178. P. 37

⁶ Shantha, K. 1989. *Traditional Potters: Entitlements and Enablement's of Artisans*. New Delhi. Indus Publishing Company.



V&A Archive, Indian subcontinent, Circa 1883

These potters are both Hindu and Muslim. In Bombay the majority of the potters are Muslims living in the slums. Their wares are meant to be disposed of after one use. This makes them recyclable and in the past has meant there has been a constant need for production. Pottery in India is closely connected with the cuisine of her people as well as religious use. This means that most of the items have a function, whether utilitarian or votive.

Clay and clay preparation

The source of clay depends on where in India the potters are based. Earthenware seems to be the most commonly used clay, fired at low temperature (between 600°C – 950°C). The particle size and qualities of the clay vary geographically, for example, the clay in the Kingra Valley in the North being more alluvial than the clay used around the Mumbai area.

For communities that dwell in or near the city, clay comes from the nearest source such as fields or riverbeds.

Generally clay is transported in trucks or in bullock carts, thrown in a pit dug in the ground, where water is poured over the dry clay. This is explained later in Chapter 2.

Processes, making methods and technology

1. Wheel throwing

- Stick wheel (most common) There are two kinds of stick wheels:
 1. Solid Wheel: Two-part wheel, with a large solid wheel which rotates on a pivot that 'turns on a simple stone bearing'⁷. It is 'spun by a stick put in a notch on the wheels edge and, acting as a fly-wheel, retains its momentum long enough for the potter to throw half a pot'⁸.
 2. Spokes wheel: More like a 'bullock-cart wheel'⁹. 'The wheel head rotates on a pivot with the aid of a shaped stone. The pivot is made of a pointed wooden peg which is buried in the ground for stability. The wheel itself is a central wooden disc to which four wooden spokes are fixed. The rim of the wheel (with a diameter of about four feet) is made of bamboo tied in a circular form and covered with a binding mixture of plastic clay and human hair clippings'¹⁰.

The wheel is spun 'by placing a stout stick between two spokes vigorously until enough momentum is built'¹¹. Potters in Bombay can throw up to '4 kg of clay'¹² on this kind of wheel.
- Kick wheel and pit wheels. The wheel is sunken below ground level, the potter sits above and kicks a larger wheel in the ground that rotates the wheel head.

⁷ Hubley, J and P. *Pottery Making in India*. Ceramic Review. Number 62. 1980. Pg. 31

⁸ Hubley, J and P. *Pottery Making in India*. Ceramic Review. Number 62. 1980. Pg. 31

⁹ Myers, E. *An Indian Potting Tradition*. Ceramic Review Number 133. 1992. Pg. 37

¹⁰ Myers, E. *An Indian Potting Tradition*. Ceramic Review Number 133. 1992. Pg. 37

¹¹ Thorpe, J. *Bombay Potters*. Journal of Australian Ceramics. Vol 33 Part 4. 1993. Pg. 74 and 75.

¹² Thorpe, J. *Bombay Potters*. Journal of Australian Ceramics. Vol 33 Part 4. 1993. Pg. 75

- Electronic, wheels basic (Delhi region) and Tan wheels. Found in Bengal, these are simplified versions of an electric wheel, like the desktop wheel, here the potters squat to throw.
- Kerala Wheel, 'where a potter throws the ware and the woman turns the wheel sitting in front of him. These are only found in Kerala and are used to make special pots for cooking fish'¹³.



Stick wheels. Ceramic Review, 1999



Perryman, 2000



Electric Wheel – Delhi



Kerala Wheel. Mirmira, 1973

2. Fired Clay Moulds

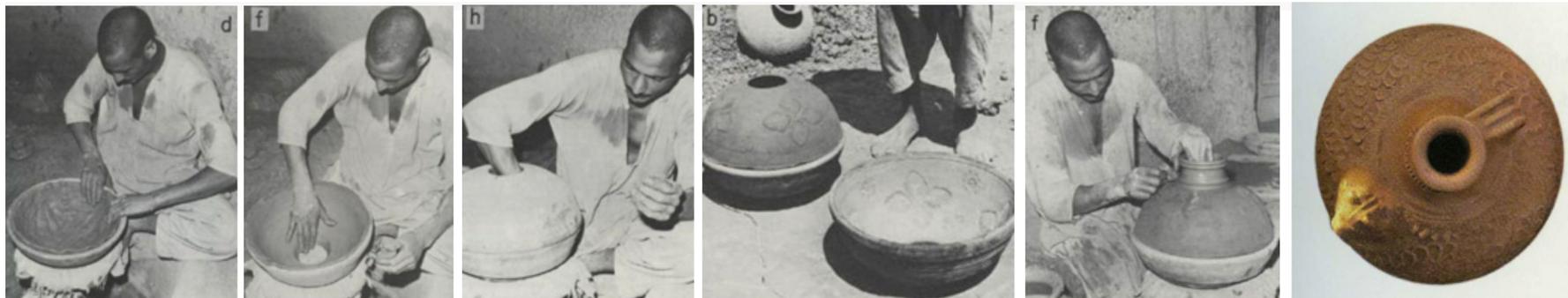
The use of fired clay moulds is similar to press moulding in a plaster mould, where plastic clay is pressed into a mould. Here instead of plaster, fired clay relief decorated moulds are used. Two separate moulds are used to make one pot. Powdered clay is dusted over the mould then clay is added in the form of small slabs. When leather-hard, two clay parts in moulds are then joined in the centre soft coil. In the area of the cast where there was a hole in the mould, a neck and base are thrown on as additions.

'Delhi potters can make up to 50 pots a day'.¹⁴

¹³ S.K.Mismira, 1973, *Indian Pottery*, First Edition, B.J. Driver, tri Publishers Bombay. Pg. 49

¹⁴ Perryman, Jane. 2000. *Traditional Pottery of India*. Delhi. A C & Black. London, Pg. 57

This kind of work is found in the North India Delhi region but not in the South or other parts of India where fired clay moulds are used just for the formation of shape, and also as surface design.



Fired clay mould. Rye, 1976

Ranjan, 2008

3. Coiling

Vessels are formed by building up coils on a stone disc that is manually rotated as coils build up. Using this technique the potters in India not only make utilitarian items but toys, musical instruments and larger votive items like figurines, goddesses, animal forms for example horses, camels, elephants etc. Manipur black pottery Longpi is well known.¹⁵

4. Beating

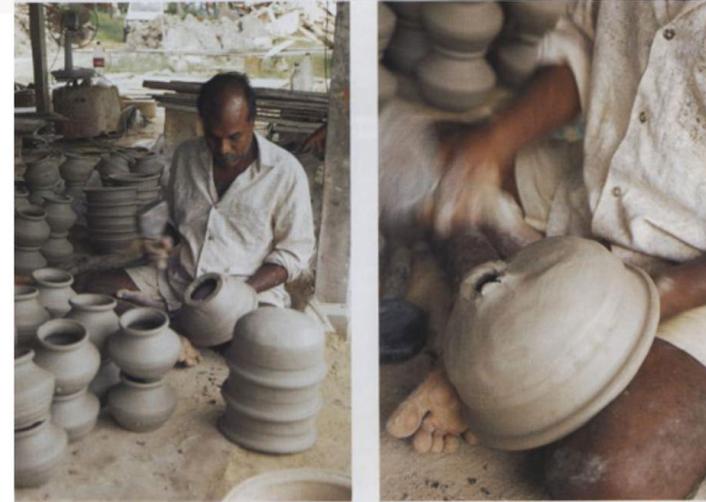
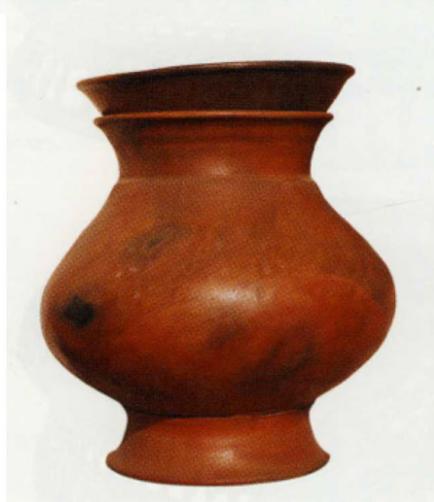
Items are formed by beating a lump of clay with a wet wooden paddle and supported inside with a polished stone (disc or ball shaped tool). This technique is discussed in detail in the following chapter

A combination of wheel throwing and beating is used in the case of *Matkas* or *Gharas* (water pots).

¹⁵ Balasubramaniam, Chitra. Longpi – *Black Pottery from Manipur*. Ceramics Technical. No.27. 2008. Page 22



Coiling. Ranjan, 2008



Potter beating thrown *matkas*. Ceramic Review, 2001

Surface decoration

1. Relief

Designs are incised in the clay at the leather hard stage. In South India coils of clay are used to add decoration and in some places steel tools are used to incise a repetitive pattern.

2. Slip work

Colours used are white, brown to iron red. '*Barni* red iron based slip, and *Doulack* white powder, possibly ball clay'¹⁶. These slips are feathered, applied with a simple brush (cotton attached to the end of a stick) in various designs or the pot is simply dipped in the slip. Slips are mixed to a fairly thin (single cream) consistency. They are sometimes burnished with a pebble after application.

¹⁶ Bowkett, S. 2002. *Sandra Bowkett's passage to India*. Journal of Australian Ceramics. 41(3). Pg. 43



Coils added for surface decoration.
Ranjan 2008



Toothed metal tool used for decoration.



Slip decoration. Gibson 1999



Perryman 2000

3. Sgraffito

Items in the V&A Museum in London show the use of sgraffito technique, which is scratched decoration through decorating slip, but I have not seen this myself in the field.

Firing Technology

Firing methods vary from region to region. The most common is pit firing. A hollow dug in the ground is then lined with wood, twigs or animal droppings. Larger pots are placed upside down at the bottom, then layered and filled with smaller items. The top of the kiln is covered with wood and shards of broken clay pots. 'Such a kiln would probably reach no more than 800°C but the partial burial in the ground and the mud thatch insulation would ensure a more even temperature than the crude African brushwood kiln'¹⁷. Because of the manner in which they are fired in a hollow pit with wood and cow dung, 'the pots are burnt in places by the flashes of resinous wood fire and this produces beautiful black and sienna swirls'¹⁸

Many different fuels are used - sawdust, wood, husks, twigs, dried cakes of cow dung and in some cases rubbish like old shoes, furniture, and paper is also used.

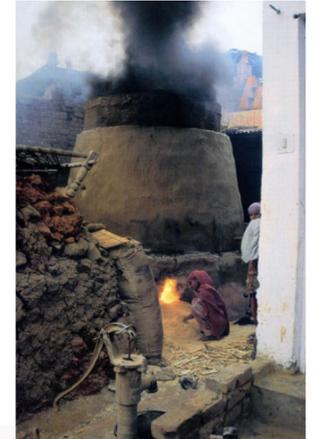
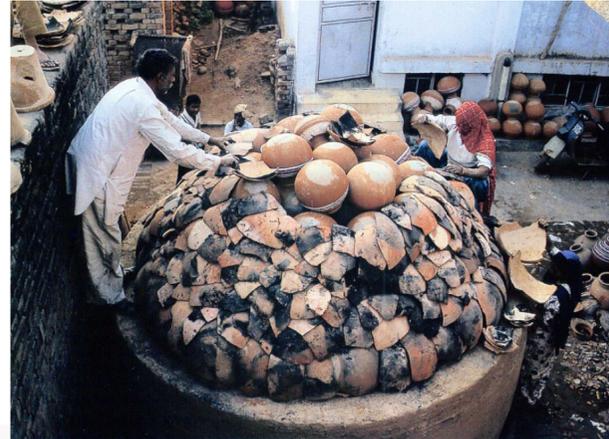
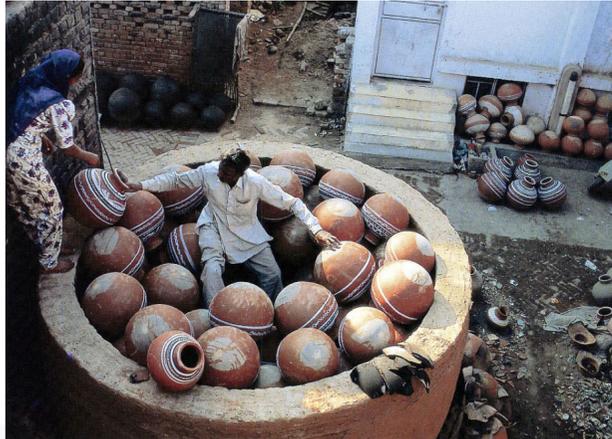
¹⁷ Hubley, J and P. *Pottery Making in India*. Ceramic Review. Number 62. 1980. Pg. 31

¹⁸ Swartz, A and Jones, S. *Making Music with Clay*. Manimasmaran Singh, *Potter and Conservationist*. Ceramic Review. Number 144. 1993. Pg.38

Potters in India manage to fire 'thousands of pots at a time'¹⁹ using this technique of firing. The temperature varies between 600°C – 950°C and losses are low: 2% – 5%



Firing a brick kiln. Ranjan, 2008



Perryman, 2000

Circular brick kilns are also used. Jane Gibson (1999) describes one of the kilns in the workshop of a Bindapur potter 'a circular fired clay kiln incorporated into the structure of the yard. These were about six feet across and about eight high with an upper chamber where pots were stacked and covered with a clay and straw lid. Sawdust and sometimes dung were burned in a lower chamber. The kilns were fired at night; once the fire was started the heat was increased by throwing loose sawdust into the chamber so it was ignited'²⁰. In Bihar potters use saggars in the pit firing kiln to achieve a black colour²¹.

¹⁹ Perryman, J. *A Research Journey in India*. Ceramics Technical. No10. 2000. Pg.73

²⁰ Gibson, J. *The Potters of Bindapur*. Ceramic Review. Number 178. July/August 1999. Pg. 37

²¹ Hedge, K.T.M. *The Painted Greyware of India*. 'Antiquity' a quarterly review of archaeology, Volume 49. September 1975. Pg. 187



Pit Firing. Perryman, 2000

Transportation

Fired items are transported by hand or bullock carts or sometimes trucks, most of the losses occur in transportation.



Ranjan, 2008

Perryman, 2000

Marketing

Potters mostly sell pots from their home or are commissioned to make ware for local rituals. Some potters sell by hawking, to a wholesaler or for restaurant use, and sometimes through exhibitions organised by the local governments.

Urban Potters *Kashigars* (Glazed ware)



Glazed vessels from Delhi. V&A archive, Blythe House Store. Circa 1883

Potters who are trained traditionally or have a special skill, for example glazed ware, are also known as *Kashigars*. *Kashigari* is a Persian word meaning the 'art of painting on ceramics', Kashan being the city in Persia famous for ceramics. *Kashigars* came to India from Persia during the 12th C and settled in Jaipur in Rajasthan, Khurja in Uttar Pradesh (in present day India) and Hala, Nasarpur (now in Sind Pakistan) and Multan (now in Punjab, Pakistan). Their craft flourished due to the patronage of emperors and the local rulers of states at the time, with the construction of mosques, tombs, and buildings all highly decorated with geometric, organic, floral, animal and calligraphic styles. The need for utilitarian glazed pottery grew with demand for glazed tea bowls (influence from Central Asia), vases with elaborate patterns derived from nature, and Persian, Central Asian and local art traditions. 'In the 16th and 17th C Chinese potters were

brought to India for the production of blue and white ware which is referred to as Chinaware'²². 'Most of the kashigars were Muslim as Hindu potters did not want to learn the craft from men who ate beef'.²³

Later their craft suffered due to lack of demand, secrecy of glaze recipes and firing methods that were forgotten, as well as the use of cheaper materials.

Technologies not native to a particular region, like the use of plaster moulds, sophisticated kilns and readymade pigments have other impacts²⁴.

There are, however, still 'over 150 potters working in Jaipur in blue pottery'²⁵. Their work can be seen in tourist shops and it is exhibited internationally. But the situation has now changed due to the work of Kirpal Singh, a prominent *Kashigar* in Jaipur.



Present blue pottery. Ranjan, 2008



Glazed *Kulfi* pot, commonly found in Indian Restaurants and shops around the UK. Ranjan, 2008

²² Gill, B. 2002. *Jaipur Blues*. Ceramics Monthly pp.82

²³ SHRUTI Report. *India's Artisans: A status Report*. 1995 pg.135.

²⁴ Traditionally the potters ground cobalt for blue, and other plant extracts for different colours.

²⁵ Neera Jain International. [Online] Available from: www.neerjaininternational.com/blue-pottery [Accessed 29 November 2007]

Blue Pottery Jaipur²⁶ - Kirpal Singhs Workshop

Blue pottery was started by Kirpal Singh, a painter, in the early 1960's/70's as a craft revival initiative under the patronage of the All India Handicrafts Board, in a traditional workshop.

Clay

The material used to make the pottery is not clay, but is 'a mixture of 90% quartz, 5% ground glass and 5% tree gum'²⁷ or '50% glass, 25% borax and 25% bicarbonate of soda through a 200 mesh sieve and flour for suspension'.^{28 29} Due to the composition of the body the shrinkage is very low, the objects are light and have a glassy feel. Raw materials such as quartz for glazes are mined locally. Other materials include natural glass, Fuller's earth, red lead or *Multani Mutti* and natural gum.

Making methods

The clay cannot be thrown in one piece as it has low plasticity, and so it is moulded and thrown, and the pieces combined afterwards. 'The shapes are turned in wood. Moulds are made in plaster'³⁰. Clay is shaped in a ball and beaten into shape. It is then pressed gently into moulds. Ash is then filled into the cast which is then turned upside down when 'cardboard (or leatherhard) hard'³¹

The moulds are horizontal not vertical. 'This is to resist the cracking if they were joined vertically. When the clay is leather hard the rim of the shape is sanded upside down on sand paper. Two identical pieces are joined together by scoring and wetting the clay. The neck and base are thrown and added onto the cast pieces.

²⁶ Information found from the following articles

- Jasleen Dhamija. [Online] Available from: http://www.4to40.com/discoverindia/index.asp?article=discoverindia_pottery [Accessed 27 February 2009]
- Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22 &23
- Gill, B. *Jaipur Blues*. Ceramics Monthly February 2002. Pg.82 & 83
- Jumar, Dr Pramod. *Renaissance de Potterie Bleu de Jaipur*. January/February 1986. No 26

²⁷ Allen, D. Ceramic Review 170 March/April 1998 Pg.22

²⁸ It is a frit body similar to the one used in Persia around the 12th Century

²⁹ Jumar, Dr Pramod. *Renaissance de Potterie Bleu de Jaipur*. January/February 1986. No 26

³⁰ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22

³¹ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22

The piece is sanded once again and *asthar* white engobe applied to it. The pattern is finally painted, starting with an outline and the colour filled in.

Surface decoration and materials

'Oxides are ground from rock with traditional stone grinders, grinding the rock on a wet bat. They keep grinding until the oxide slip is fine and smooth. The finer the slip the better the application onto the surface of the ware and the final result.

The designs that show influence of Persia and some of miniature paintings are traced onto the item. Painting starts from the outline to filling in a range of colours using a range of squirrel hair brushes.³²

In the decoration of some of the blue pottery from Jaipur, religious influences are seen with the representation of Brahma and Shiva, alongside patterns that are floral, organic and oriental in nature. 'Traditionally the colours used were ultramarine blue, light blue and green³³ and turquoise. The range of colours now available are: Dark blue from cobalt, turquoise – copper oxide, green – chromium, yellow – antimony oxide, black – manganese oxide, brown – iron, dark brown – iron and chrome and pink – gold oxide. Colours are ground and prepared by the potters.

The potters mix gum Arabic with the pigment so that it sticks better.³⁴ Interestingly Dr Pramod, author of *Renaissance de la Poterie Bleue de Jaipur*, says that the craft is '*Indianised*'³⁵ as the potters have changed the recipes and designs according to the needs of the markets.

'Making the glaze is also a lengthy process. Broken glass bottles are ground by rotating between two large stone discs and adding glass a little at a time. 'The ground glass is mixed with red lead and borax and fired to 820C in a small wood fired kiln, where it melts into a bucket of water. The crystals are ground again, added with water and gum³⁶ & ³⁷.

³² Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22

³³ Jumar, Dr Pramod. *Renaissance de la Poterie Bleue de Jaipur*. January/February 1986. No 26

³⁴ Jumar, Dr Pramod. *Renaissance de la Poterie Bleue de Jaipur*. January/February 1986. No 26

³⁵ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22

³⁶ Jumar, Dr Pramod. *Renaissance de la Poterie Bleue de Jaipur*. January/February 1986. No 26

³⁷ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.23

³⁷ Blue Pottery. MeFeedia. Video showing the making of Blue Pottery at Kirpal Singh's pottery in Jaipur. [Online] Available from: <http://www.mefedia.com/entry/3172254> [Accessed 28 September 2009]

Firing

The kilns are made from brick, clay and rice husks. The potter usually gets into the kilns and pots are passed to him by fellow potters outside. They are stacked on shelves. Kilns are wood-fired reaching a maximum temperature of 850°C. 'Ten bung holes surround the dome and are opened and closed for even firing'³⁸. This is to 're-oxidize the kiln's atmosphere to ensure a crisp white firing'. 'The success rate is 75%'³⁹

Markets

These items are usually made for export to the UK, Scandinavia, Japan, Germany, and the Middle East. Daniel Allan in his article for 'Ceramic Review' in 1998 mentions that 'Habitat and Conran shoppers would recognize them'.⁴⁰

³⁸ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.22

³⁹ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.23

⁴⁰ Allen, D. *Notes from Blue Pottery*. Ceramic Review 170 March/April 1998 Pg.23

Studio Pottery

In 1922 Gurcharan Singh introduced studio pottery in India. He was trained as a potter in Japan and worked alongside Bernard Leach, Shoji Hamada, Kanjiro Kawai and Kenchiki Tomimoto.

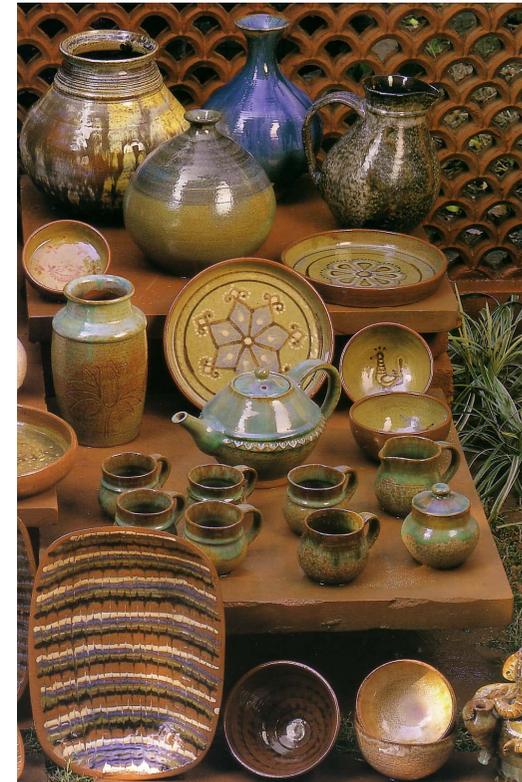
On his return to India he started the Delhi Blue Pottery which is now run by his son Manimasmaran Singh and his wife Mary Singh (from St Ives, UK). At Delhi Blue the potter not only made his own work but also worked alongside master Kashigars of the time, who were also given space in his workshop. They produced jalis, or perforated screens for local buildings, as well as introducing stoneware to India.



Jalis using blue glaze



Stoneware Tableware by Sardar Gurcharan Singh (Lal, 1998)



Mary Singh – Delhi Blue Pottery (Lal, 1998)

In the early 1970's American architect Ray Meekar and his wife Deborah Meekar moved to Pondicherry in India and started the 'Golden Bridge Pottery'. In recent years Auroville in Pondicherry, Tamil Nadu, Southern India has become famous for pottery of this kind. Potteries include 'Golden Bridge', 'Wind Glaze' run by Puneet Brar, 'Mandala Pottery' run by Adil Writer, and 'Forest Pottery' by Ange Peter.



Current pottery from Auroville, Tamil Nadu. Ranjan, 2008



Leaves of India Collection Puneet Brar, WindGlaze Pottery Auroville, Pondicherry⁴²



Ange Peter, Forest Pottery, Auroville, Pondicherry⁴¹

Key areas for studio potters are Delhi, North India and Pondicherry in Tamil Nadu, Southern India. Most of these are potters are not native to the region as in the case of Pondicherry. These potteries produce their own artisanal pottery and also work with local traditional potters to make their designs for the tourist and local retail industry. They have trained local potters in a particular technique so there seems to be a cross cultural exchange. They have introduced stoneware to India, have sound knowledge of high firing gas kilns, and make their stoneware bodies from local materials.

⁴¹ Forest Pottery. [Online] Available from: http://www.forest-pottery.com/functional_pottery/pages/5.htm [Accessed 29 September 2009]

⁴² Wind Glaze Pottery. [Online] Available from: <http://www.windglaze.com/tableware.html> [Accessed 29 September 2009]

Shops that stock their wares include 'Shoppers Stop', a department store similar to Debenhams, House of Fraser etc. and 'Fab India', a famous Indian tourist chain with 200 stores in India and some in the Middle East and soon to open in the UK. As seen in the pictures above the work looks very different to native Indian pottery.

CHAPTER 2.

Present Craft Pottery of Kutch



Fragment of Large Deep Vessel, circa 2500 B.C.E.⁴³

Kutch, a region in the state of Gujarat, is home to a number of communities, castes and faiths which have coexisted for centuries. It is an area surrounded by land, desert and sea. Religious communities in Kutch include Muslim, Hindu and Jain. The caste system is strong in the region. Most potters who make utilitarian ware are Muslim. Hindu potters are *Murtikars*, making votive terracotta figurines. Kutch does not offer many possibilities in terms of economic development, therefore many leave for Mumbai to find work. Handicrafts are an evolved part of the culture and everyday life, expressing the lifestyle and beliefs of the communities that live in Kutch.

⁴³ Wikimedia Commons. Red pottery with red and black slip-painted decoration, (12.5 x15.5 cm) Brooklyn Museum [Online]. Available from: http://commons.wikimedia.org/wiki/File:Red_pottery,_IVC.jpg [Accessed 28th July 2013]

Pottery has been practised here for thousands of years. 'In 1968 it was discovered that Khavda in Dholavira, an archaeological site in the northern tip of Kutch, is one of the fifth largest sites of the Indus Valley Civilisation (approx. 2500–1700 BCE)⁴⁴ after Moen-jo-Daro and Harappa'. Present pottery in Kutch bears a resemblance to the terracotta ware of the Indus valley civilisation. Patterns and shapes express the rituals and customs of particular communities.

The crafts of Kutch therefore encompass a distinct and firm creative expression, not only of each community, but collectively. In 2001, Bhuj, the main city was hit by an earthquake. Thousands of people were killed, houses destroyed, and psychological, social, economic effects were profound.

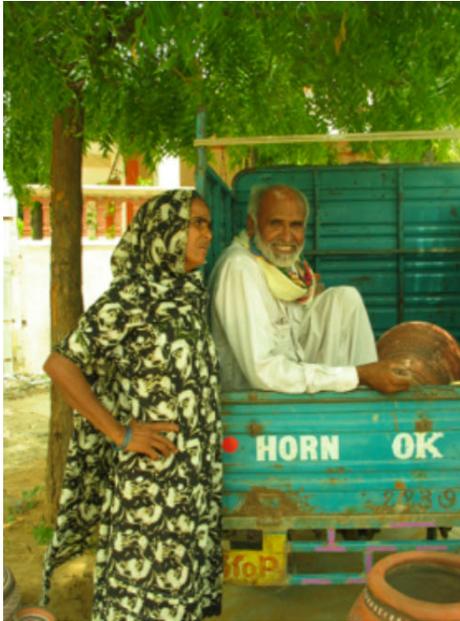
Kutch Potters

The towns of Khavda, Lodai and Bhuj are the main sites for pottery production. Increasingly earthenware vessels such as the water pot and cooking pots are being elbowed out by steel and brass alternatives. This is not just due to durability, their light weight or that they are readily available in mass quantities. Like the rest of the "new urban India" these mass-produced, long-lasting and shiny items symbolise financial stature in the rural areas. Previously brass and copper were materials of the affluent but now steel seems to have replaced their status.

The romantic pictures seen in the not-so-distant past of rural Indian kitchens and homes stacked with ornately decorated and stylised clay pots, of all sorts – for water, grains, flour etc are now seen side-by-side with steel and aluminum vessels. Even the potters don't use terracotta items in their houses as much. This juxtaposition of old and new demonstrates changing times for the potters.

As in most parts of the world, craft potters in Kutch have suffered a decline in the demand for everyday pottery ware. This is not only due to the availability of durable steel and aluminium pots but there is a problem with the quality of clay in and around the region which is saline. This produces technical problems that cannot be easily resolved and the potters' children now want to work in the cities. There is no glory in pottery.

⁴⁴ Encyclopaedia Britannica. [Online] Available from: <http://www.britannica.com/EBchecked/topic/286837/Indus-civilization> [Accessed 28 July 2013]



Mohammad Hussein and wife Hoor Bai of Lodai



Abdurrahman Khumbhar, Bhuj



L-R: Amina Bhen, Hassan Umer Khumbhar, Ibrahim, Ahmad Kassam Khumbhar, Srimati Sara Bhen and Rahima Bhen

Abdurrahman, a well-known potter in Bhuj, explained to me that when he was a boy in the 1960's, he wanted to be a potter like his father, one of the most famous potters of Kutch, called Bhuddha Chacha. He was attracted to the idea of working in one's own workshop and for oneself, creating pots for the needs of the village and city. Terracotta pottery was never a glorified or glamorous art-form like jewellery, textiles, or even glazed ceramics in neighbouring Rajasthan. It was there to provide the communities with day-to-day items, to cook, to store, to celebrate, for play. The buyer was the villager who would come to the potter and ask for a *matla* water pot, or a *taplo*, a pot for cooking vegetables. Potters make coiled toys for the children who would come to visit their workshops especially in the festive seasons like Diwali.

Now these playful, ceremonial items seem to be vanishing. The young are unaware of these simple gestures and don't wish to know of the traditions. They want to progress like the rest of the new industrial India. The bigger question is: should the age-old skills be kept alive? How to make the consumer understand the importance of craft?

Potters earned a reasonable living with orders from the villages and their skill was respected. Sons of potters do not want to do this kind of work as there is less money and the work is labourious, and the wholesaler does not pay them a fair price so they have other jobs like van-driving which pays the same wages as a potter , but with less physical work involved.

I had a chance to get to know pottery families from three places in Kutch. Srimati Sara Bhen (Srimati is a national award, like a knighthood), Ahmad Kassam Khumbhar, their son Abdul and his wife Rahima Bhen in Khavda; Amina Bhen, Hassan Umer Khumbhar (whose son works in construction in Dubai) and Mohammad Hussein and Hoor Bhen (whose Saleh Mohammad drives a Tempo/Van) in Lodai. I had the opportunity to work with Abdurrahman Khumbhar in Bhuj.

The workshop

The potters workshop is at home. The preparation and firing is done outside in an open area. There are dedicated areas for clay preparation, storage of clay and fired pieces. The firing compound is also used as the outdoor cow and chicken 'open shed'.

Throwing and beating have a designated area next to the living rooms and kitchen, which is a roofed area, open on three sides.



Abdurrahmans workshop/home in Bhuj.



Rahima Bhen decorating at her workshop/home in Khavda

Materials and Preparation

Materials are sourced locally and prepared by the potters themselves. The preparation methods, like techniques are passed down from generation to generation. The Materials used are:

Clay (*matti*) – buff and red terracotta locally dug

Slips (*Geru*) – red, black and white (naturally occurring in the region)

Fuel for firing: Cow dung, wood, rubber, household rubbish, leaves, husks.

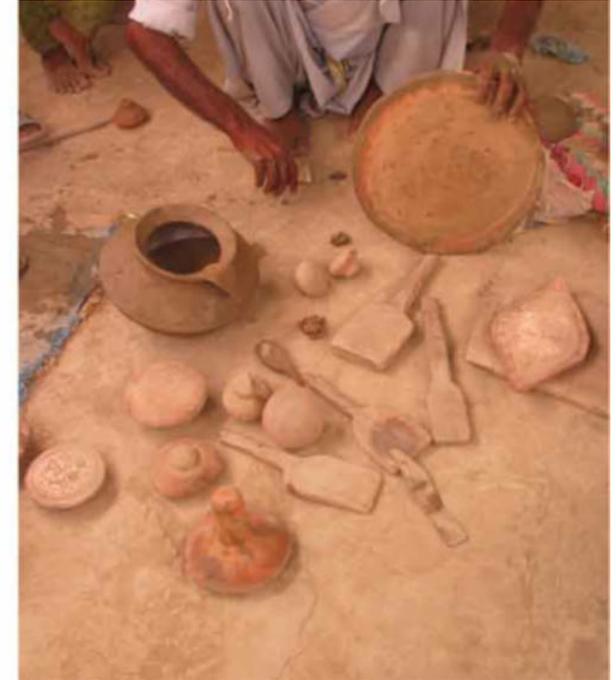
Tools – brushes made out of palm, Khavak tree, cotton string, rotating tool for decorating on the wheel, wooden paddle and stone anvils, needle, wood ash (to stop the pot sticking to the anvil and paddle) for beating and modelling

Clay comes from the desert or nearby ponds and lakes in the Rann of Kutch (marshland) around Khavda. It usually dug or collected during the dry seasons. The clay contains lime, and is therefore saline. In most instances the potter digs it himself and transports on a donkey cart. Clay doesn't cost anything; just transportation. When dug it is usually in a sticky state.

The clay is low-firing buff earthenware, and is very plastic therefore it can be thrown, or beaten to create very thin walled pots.



Tools for throwing –
sponge, metal strip, wooden kidney and decorating roulette tool



Tools for beating and moulding -
Stone anvils and wooden paddles various sizes
fired clay bats, strip of leather, shard of broken clay for
decoration

Preparation

As in most of India, in Bhuj, clay is always prepared by women. In fact women (wife or daughter-in-law) do most or all the labour-intensive work in pottery communities in Kutch. It is a tedious back breaking process.

The most common way of preparing clay in Bhuj is described below.

Method used in Bhuj

The sticky lumps of clay are first dried in the sun for two days. When they are hard, they are crushed to a smaller size with a long wooden stick (approx. 92 cm long and about 12 cm in diameter) in a dedicated, cemented area in the potter's workshop. When beating the dry rocks of clay the woman is standing leaning forwards with the back bent. Usually a few kilos of clay is crushed at a time. The dry clay is passed through a coarse sieve, which removes some of the small rocks and organic matter such as leaves and twigs,

A small mountain of the sieved dry clay is placed on the cemented floor, with a hollow in the centre. Water is poured onto it and the clay is mixed (similar to making bread). Clay is wedged, (kneaded), to a sticky consistency, made into 2 – 4 kg lumps and presented to the potter. The potter wedges the clay again to his satisfaction. The whole process takes up to a day.

Preparation of the *Geru*, Decorating Slips

Three basic colours of slips are used - red, white and black (some black is bought from Mamora, in Khavda, Rs 400 (£3.98) for 20kg). They are brought in rock form, are soaked in water for a day, ground in a pestle and mortar for a day and then sieved. Total preparation time is two to three days.



Slip in naturally occurring rock form, slip - ready to use



Brushes made from palm trees, for applying slip decoration.

Making methods

There are five main making methods, throwing, beating, coiling, the use of clay moulds and sand moulds practiced in Kutch.

1. Wheel throwing

Chak is the name of a potter's wheel in Kutchi, Urdu and Hindi. There are two kinds of *chaks* used in Kutch, the wooden (donkey) cart wheel (or Spokes type⁴⁵) and the stone wheel.

Spokes type wheels are most common. They are light weight, in Kutch usually used to make smaller items like *diyas* (oil lamps).

⁴⁵ S.K.Mismira, 1973. *Indian Pottery*. First Edition, B.J. Driver, tri Publishers Bombay. Pg. 47

More established and experienced potters use stone wheels or cement wheels. The heavier stone wheels are less common, partly because they require more skill in handling; they have been passed down through generations of the same family. Abdurrahman's wheel is over 100 years old, 81 cm in diameter, 15 cm thick. He can throw items up to 89 cm in diameter.



Abdurrahman throwing



A lump of clay is thrown on the wheel, usually off the hump, making multiple pots from one lump of clay. Simple tools are used; throwing takes a few seconds depending on the shapes. Thrown items include *diyas* (oil lamps), small bowls, and small cups.

Some items to be thrown and then beaten are thrown as far as the shoulder of the pot and left quite thick and unfinished at the start of the belly of the pot, which is then beaten, see below.

Thrown pots are placed on a long wooden bench and turned and decorated when harder. Very little water is used during throwing.

2. Beating

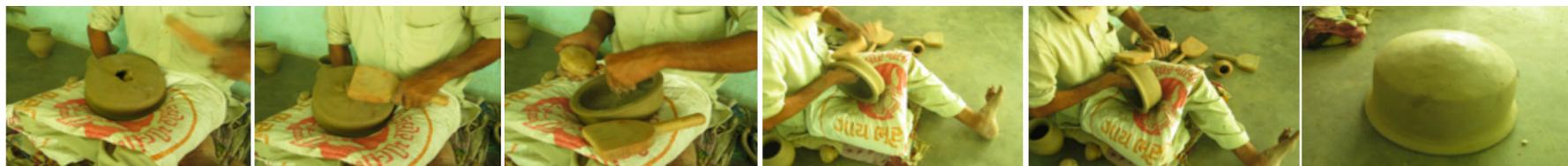
Beating after throwing is a technique used extensively by the potters of South Asia, some parts of Africa and South East Asia.

A process that makes clay uniformly strong and light, it requires immense skill and dexterity. It is also a forgiving process where the clay, even if it cracks during beating, can be compressed/beaten to give strength. When an even thickness of wall and shape is achieved, the

pot is further stretched by placing a smooth stone at the rim, trapping the air inside and knocked till it stretches into shape. According to Philip Plant, (ex-Production Director of Wedgwood and Spode, who also worked at Ceram Research for many years) beating is a process which 'improves the strength and importantly the thermal shock resistance of the pots. The reason for this is the orientation of the clay platelets, which will laminate neatly on top of each other, rather than a random configuration'⁴⁶.

The technique for making a *Kunna*, cooking pot, which has been thrown up to the shoulder, is as follows:

Two kinds of tools are needed in this process depending on the shape required, a wooden paddle or *phaglo* and a stone anvil/support called *kunehra*, along with a lot of wood ash.



Abdurrehman beating a *kunna* pot

The potter sits on the floor and places the pot to be beaten on his thighs. The pot is sprinkled with wood ash. The stone anvil is placed inside and beating starts by the potter pushing the clay down around the shoulder of the pot with the wooden paddle, constantly turning the pot around as he beats. Slowly working down till the walls are even but still thick, the pot is given shape by further beating until the required (in these illustrations a cooking pot) shape and wall thickness is achieved. When the pot is finished it is kept upside down to dry. It is banded on the wheel with slip and then decorated by hand.

3. Moulds

- **Unfired clay moulds**

Unfired clay moulds are used to make flat dishes, for eating, cooking bread, and ceremonial purposes. Recently bird feeds are also made using unfired moulds. Sara Bhen of Khavda is the master craftsperson of this technique, and the process was described by her to me.

⁴⁶ Queensberry, David. (David@queensberryhunt.com) 04 June 2010. Re: Sri Lankan Potters. Email message to M Hunt, (martin@queensberryhunt.com) and M Anjum (mahamanjum@aol.com)



Unfired clay moulds in Khavda. Pictures by Barney Hare-Duke March 2009

First she makes a low, slightly concave mould clay, of the required diameter she requires. The walls are not defined in the mould; it is only for the base. The mould is dried in the sun for a few days till it is hard. It is called a *Kharab*. She starts building the dish with a ball of clay which is made into a slab and keeps adding more clay till the base is flat, then with a thick coil; she builds the walls of the desired thickness. For *tavda*, which are used for cooking *roti*, flat bread, and *Kundo* a shallow dish for flowers, one side of the wall is pulled into a handle with a hole in the centre. When dry, the dish is taken off the mould and decorated with slips and traditional designs. The largest dishes she has made have been 91 cm diameter.

- **Sand Moulds**

Sand moulds were used 70 miles west of Khavda on the Pakistan side of the Thar Desert in the village of Umerkot. This is the same community of potters and farmers as their neighbours in Kutch but divided by the border.



Sand Moulds made by Umer Khumbhar, Umarkot, Sind, Pakistan

Sand moulds are used for making flat dishes for cooking bread. A slab of clay is rolled on a fired bat. The clay is not sticky at this stage. Walls are built the same way as in the unfired mould above. The slab is sponged with water, till it is soft enough to be shaped. Just outside the shaded palm tree workshop is the desert; a shallow hole is gently prepared by hand in the sand, depending on the depth

required, although not more than 12 cm deep. The slabbed dish is taken off the bat and dropped in the sand. It takes the shape of the hollowed 'sand mould'. When dry, usually a few minutes, excess sand is brushed off and it is decorated with slip.

- **Press Moulding**

This process was described to me by Mohammad Hussein in Khavda as I was unable to visit, and I have not seen other potters use this method. Mohammad Hussein made a two-piece plaster mould of a large storage pot he had made. Large slabs of soft clay are pressed into each mould, each side of the slabs scored and wetted and the two pieces stuck together. Thick coils of clay are used to reinforce the join on the inside of the cast. When the cast is released, he beats out any deformation of shape.

He uses this method to make larger storage pots.



Mohammad Hussein and Hoor Bhai using plaster moulds. Lodai. Picture by Khamir June 2009

5. Coiling

Coiling is used for storage pots and toys only. A slab of clay on a fired bat is built up in height with thick coils.

Storage pots can be as high as 1 metre. They are usually unfired and kept for storing grain, rice and flour indoors. In some parts of Kutch, the pot is coiled higher as the grain amount increases. Some coiled pots are decorated with slip and coil decoration.

Shapes

Traditionally there is a variety of shape. Some of these were highlighted in the BCB Earthen Vessels show in October – December 2009 in Stoke-on-Trent UK.

Shapes, patterns and colours are associated with local food, rituals, birth/death, weddings and toys. They reflect specific communities and their customs.

In order to better understand the various shapes of pots and their functions I have categorised pots found in the Khavda, Lodai and Bhuj region, past and present, I have used my field research as well as collections of pots at Khamir, some books and museum collections in the UK.



Badak - round water pot (can be up to 5 lit)
Image from Handmade in India



Tuss – shallow dish for mixing flour
V&A archive IS-235-1883



Tavda or Tavdi- shallow dish for making roti/flat bread
Approx. dia 22 - 30 cm



Sanak - large dish
Approx.. dia 91 cm



Tabak – shallow plate for eating
Approx. dia. 23 cm



Burni – bowl
Made by Khavda potters for Potters in Peril.
Wheel thrown, decorated and clear glazed fired to 1200C



Shakiyo – shallow bowl with handles used to display flowers



Kundo – shallow flower bowl



Diya – oil lamp in various shapes



Kunni – vessel for cooking rice/kitchri
approx. h. 25 - 28 cm



Manghia – vessel for making lassi/ buttermilk/chaas
approx. h. 25 - 30 cm



Tavra - vessel for cooking vegetables
approx. h. 22 - 25cm



Kunna or Kunnu vessel for cooking meat
approx. h. 25 cm



Matla - water pots
far left is a pot called Tuna, indigenous to Kutch.
varying heights



Bhabhuri - long necked pot for water (V&A archive number IS-1570-1883 TRAY 5)
approx. h. 30 cm



Large Matla or matlo with thrown stands. These vary in size and are used to store grain.
They are thrown and beaten.



Poothi – Press moulded large storage vessels for grain, sometimes unfired with slip decoration.



Chori - wedding pot used to welcome the groom (used to wash his hands and feet)



Top: Garshi - spouted pot
Bottom: Jharee - necked pot used at weddings to welcome the groom



Chillum-chee – pot used for washing hands at wedding ceremonies.
Not common in Kutch anymore. V&A no number



Kulhani - small pot used for auspicious days like weddings, burials, construction of a house. Four of these are placed in the foundation of each corner of the site before construction



Galla – money box



Vase with detailed rim painted in acrylic



Posari - large pots used at wedding rituals



Bird feeders. Usually hung from the branch of a tree filled with grain or sometimes water. Press moulded
Approx. dia. 20 – 22 cm



Clay dolls
Bhuj 2009



Large storage vessel. Bhuj
Approx. h. 45 - 50 cm



Contemporary items (2009)
Brightly decorated bird nests and matlo
Bhuj



Perforated small pot
For decorative use
Bhuj



Clay lanterns
Bhuj



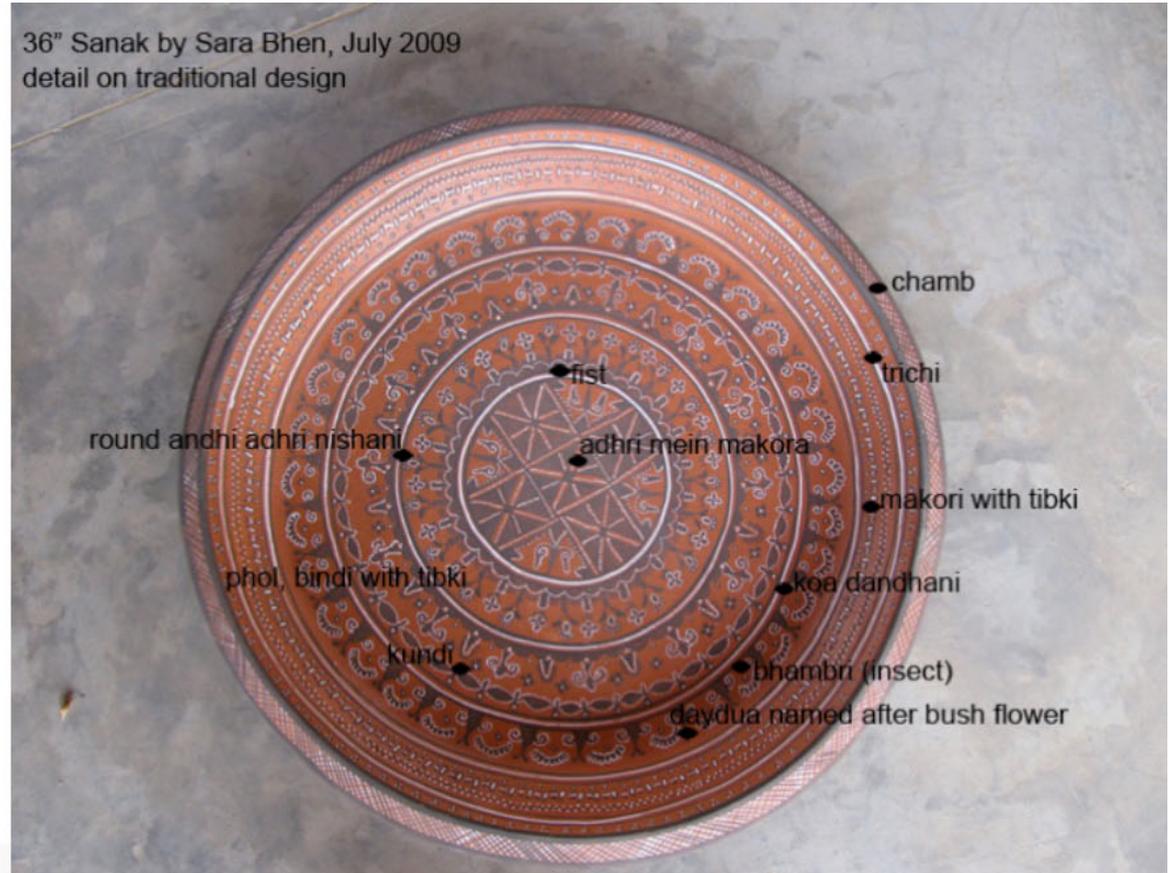
Camel – hollow, wheel thrown and constructed.
Other animal forms such as turtles, cows, elephants, snakes, crocodiles etc. are available and made in the same way.

Patterns

It is difficult for the potters to pin down the origin of patterns. It is clear that they reflect local flora and fauna, music and ritual. For example; *seeri* – steps, *dholki* – drums. Patterns have been used for centuries, passed down through generations.



Sara Bhen decorating a Sanak, Local names for designs. Picture courtesy of Sara Bhen



36" Sanak by Sara Bhen, July 2009
detail on traditional design

Courtesy Sara Bhen, Khavda. Kutch

Patterns are painted with slips. As mentioned earlier the basic colours used are red, black and white. In this region, brushes are made out of the spine of palm tree leaves. The wood is finely cut vertically at the tip, dipped in water then crushed on a stone slab which makes soft bristles. Such brushes can be made to any width and length. I have seen that there are similarities between the shapes and patterns still

used in Kutch and the examples of pottery from Sind at the V&A Museum Archive at the Blythe House Store, London, much of which however is untitled.

Firing

1. Pit Firing

Pit firing is used widely in Kutch. This example is however from Umarkot, in Sind Pakistan, 70 miles west of Khavda, but is similar to pit firing in Kutch.

A triangular pit is dug in the ground around 6 m in length and 6 m at the widest end. The depth of the pit is around 1.2 m. They usually fire 100 – 200 pots at a time but, depending on the amount of pots, the pit can be smaller. Cow dung, goat droppings, leaves, twigs, rubber shoes and other unwanted rubbish are used as fuel.



Firing in Umarkot, Pakistan

The first layer is around 60 cm of sundried goat dung, which is small in size, (about the size of a grape) as this burns slower and longer. The larger water pots are placed, upside down on the dung. In between these are placed smaller items like lids and pots and plates, making sure that there no air is trapped inside the pots during firing. This is then packed with more goat dung and a deep dense layer of dried leaves and twigs on top. The kiln is covered with shards of fired pottery. It can also be sealed with a mixture of earth and water. Damaged pots are placed near the fire box, so that they can take the initial heat/thermal shock.

The first stage of the firing is 'smoking' - a slow heat which will warm the pieces gradually and reduce the risk of breakages⁴⁷

⁴⁷ Myers, E. 1992. *A Potting Tradition*. Ceramic Review 133 Pg.132

The fire is lit, using wood, and rubber and other rubbish. It takes about 2- 3 days to fire this type of kiln. Maximum temperature would probably vary between 600°C – 900°C. The pots close to the fire can be overfired and melted.

All the potters in Kutch and Umarmkot when asked what is the maximum temperature, said “God takes the temperature to our needs”.

2. Brick kilns

These kilns are also used, though not as common as pit firing. During my visit I didn't see them in action. The kilns I saw in Kutch are smaller in size than to the ones in Sri Lanka. (These have been discussed in Chapter 1.)



Brick kiln in Bhuj, India



Brick kiln at Biyagama, Sri Lanka

The Market

Pots are sold in the local market in Bhuj. Where as the main pots were cooking pots and water pots, now they market moneyboxes or vases in different sizes. There is a small market for hobby craft (school girls painting pots in acrylics) that sells well.



Potters stall in Bhuj market, July 2009



Cookware shop in Bhuj market, July 2009

Potters hardly make cooking pots anymore unless they are commissioned. There is however still a small need for water pots. The most popular water pots are made in Southern Kutch called *Tuna* pots made made from river clay, buff in colour, with red slip banding.

CHAPTER 3

Studio Practice and Production

After investigations and assessment of my fieldwork I undertook an examination of the Kutch clay and made proposals of how to answer or overcome a number of problems.

Material Testing

Clay

Lodai clay was acquired in the 'greenware' (unfired) state. 90 cm tall, unbeaten pots were thrown in Lodai and brought to London for the British Ceramics Biannual 09 show. These clay pots were broken into small to medium sized pieces, soaked in water and wedged, following the potters method. The mixture was coarse with a small percentage of sand, small rocks and organic matter.

The same clay was mixed with water and passed through 60, 80, 100 and 120 mesh sieves. Removal of the grit etc. resulted in a smooth creamy textured clay.

Clay is the key material and its properties and behaviour are fundamental to the future of a ceramics project. Conducting simple tests which can be performed in the workshop or in the field will help understand the characteristics of the clay body, and this will then define the kind of products that can be developed.

The aim here was to find out as much as possible about the clay and explore ways of using it to advantage.

The clay was evaluated in two ways – first, as the potters prepare it, and second, as problems occurred by finding solutions - for example sieving the organic matter or larger particles out of the clay.

In the shipment there was a limited amount of Lodai clay available, but enough to run the above tests on it. The tests proved highly useful.

The necessary tests include plasticity, organic matter, optimum temperature of firing, shrinkage, the requirement of grog addition, porosity, colour, texture and thermal expansion.

Tests on the Local Clay

Plasticity

Plasticity is the unique feature of clay that gives it the quality to stretch, and then to maintain its shape without cracking. It also adds strength to the body in the greenware state. There are many factors that make a clay body plastic. The clays may be similar to ball clay or bentonite. Particle size, weathering, ageing and the amount of non-plastic material such as shale or salt all affect the clay body.

Identifying how plastic the clay body is signifies its usage, for example if it will be strong enough to throw on the wheel, as well as the size and shape of the products that can be made.

Throwing is a good way of finding out how plastic a clay body is. In throwing, the clay is stretched and lubricated with water. The test is whether it can hold its shape without becoming too weak and collapsing.

When throwing the basic Lodai clay on the wheel, it resulted in severe cracking at the rim (rim thickness 4 -5 mm) hence making it unsuitable for throwing thin walled pieces. When the wall thickness was increased, i.e. 15 - 30 mm, similar to the way the Lodai potters throw, the cracking was less severe. It is worth noting that the potters throw the pots thick and then beat them into shape. Beating the clay consolidates and stretches it and also adds strength to the pot.

Another factor that comes to light is that if the clay is used as the potters presently prepare it, the clay contains organic matter, sand and larger sized fragments of shale. This along with its salinity decreases its plasticity and also affects its texture, making it coarse.

In the light of the above a clay was made and passed through 100 mesh and 120 mesh sieves. The result was a smoother, plastic clay with a creamy velvety texture, suitable for throwing smaller thin walled pieces. Kutch potters dry sieve the clay passing it through a wide metal sieve; they do not sieve wet clay. The finest clays are generally the most plastic.

Another way to test plasticity is by bending a rolled-out coil of clay in a U shape. If this can be done without cracking, it proves the clay is adequately plastic.

Though the clay may not be plastic enough for throwing, it is strong enough to handbuild and make slabs. Slabs of clay were rolled out in this way with the minimum use of water, and cracking was minimal.

Shrinkage

The more water in a clay body, the more the clay shrinks. The amount of grog (ground up fired clay) in the clay body and its grain size in the clay body, affect shrinkage. It is important to work out the shrinkage of the clay as this determines the final dimensions of the pots, from wet to dry, and then to the fired stage. Shrinkage calculated in the table below is from plastic clay to fired stage.

Shrinkage tests were performed as described in Fraser's 2005 *Ceramic Faults and Their Remedies*.⁴⁸

Porosity/Water absorption

'Porosity is the ability of a fired ceramic to absorb water by capillary action'. As the firing temperature increases (600°C onwards) the clay body begins to sinter, the fluxes begin to fuse, 'causing the firing shrinkage to begin and porosity to decrease'⁴⁹. Porosity determines the use of the pots, especially in Kutch where the kilns do not reach very high temperatures. Porosity firings and tests show that Lodai clay has porosity of around 12.7% at 850°C and around 3% at 1150°C.

However, high porosity should not be seen as a negative feature. 'The porosity acts as insulation making the porous body slow to warm up and slow to cool down'⁵⁰. Thus it has advantages making pots suitable for storage (dry grain), water (cooling through evaporation) and in some instances having excellent thermal shock resistance.

⁴⁸ Fraser, H. 2005. *Ceramic Faults and Their Remedies*. Second Edition. A&C Black, London 2005. Pg 166.

⁴⁹ Fraser, H. 2005. *Ceramic Faults and Their Remedies*. Second Edition. A&C Black, London 2005. Pg 25.

⁵⁰ Hamer, Frank and Janet. 1997. *The Potters Dictionary of Materials and Techniques*. 4th Edition, A C &

The water absorption test was performed using the test described in Rhodes' 2000 *Clay and Glazes for the Potter*⁵¹. The tests for porosity in ceramic technology books are usually for 'water absorption but they suffice as a simple test for porosity'⁵².

Thermal Shock resistance and Thermal Expansion

'Thermal shock resistance' is the ability of materials to withstand sudden changes in temperature. It is particularly important in cooking pots, where the ceramic material is exposed to sudden changes in temperature, i.e. on an open flame, or in the oven where one side of the pot heats (and expands) faster than the other. It is this sudden expansion and contraction of the body that leads to stress in the pot, resulting in cracking.

'It is generally known that an open porous body is a better insulator (cook pot material) than a dense ceramic body'⁵³ The Indian clay cooking pots such as the Kunna, Tavro, Kunni (used for cooking meats and vegetables), Kunda (vessel for boiling milk) and Tavdo (used for making flat roti) are all exposed to the open flame. They are thermal shock resistant; the porous body of the material is able to withstand sudden changes in temperature.

'A standard British test for cooking wares is to heat the pot to 180°C and then to immerse it in water at room temperature approx 19°C or so'⁵⁴. I conducted this test, along with exposing and heating various pots I had made on an open flame, and then immersing them in water at room temperature. Results confirmed that the Lodai clay is adequately thermal shock resistant.

Pouring boiling water in the cooking pot was also tested, resulting in no cracking.

One of the other reasons why the Kutch pottery, like other handmade beaten pottery in South Asia and Africa has good thermal shock resistance is because 'the free silica in the body cannot, at the low firing temperature, form cristobalite. The pots are also extremely

Black, London. Pg 337

⁵¹ Rhodes, D. Ed. 2000. *Clay and Glazes for the Potter*. Krause Publications, Iola, WI, USA Pg 331

⁵² Fraser, H. 2005. *Ceramic Faults and Their Remedies*. Second Edition. A&C Black, London. Pg 168.

⁵³ Hamer, Frank and Janet. 1997. *The Potters Dictionary of Materials and Techniques*. 4th Edition, A C & Black, London. Pg 337

⁵⁴ Fraser, H. *Ceramic Faults and Their Remedies*. Second Edition. A&C Black, London 2005. Pg 84.

porous. The Ceram Research people say that 'sub-critical' cracks develop in this type of pottery. The cracks do not spread in the way that they would in a more vitrified body. This, and the low thermal expansion, is the reason why they have such remarkable resistance to thermal shock. The subcritical cracks form a microscopic structure, move slightly and accommodate sudden heat shock⁵⁵. They are not continuous cracks that would cause the pot to fail. Due to sub-critical cracks the pot will eventually crack. Life expectancy of a cooking pot is '2 -3 years'⁵⁶.

Ceramic bodies with low thermal expansion are more resistant to thermal shock. 'Low thermal expansion in the range of 0 to 3×10^{-6} is of particular interest from the point of view of thermal shock⁵⁷. The Thermal Expansion tests conducted at Potclays in March 2010 on Lodai clay showed the thermal expansion between 0 – 0.302% at 500°C. (This test cannot be conducted in a pottery workshop or in the field, only in a laboratory.)

⁵⁵Queensberry, D. (11 October 2012). Email Pottery Thermal Shock. Email to: Mahamanjum@aol

⁵⁶Hoor Bhai, Lodai. In conversation with Maham Anjum August 2009

⁵⁷Fraser, H. *Ceramic Faults and Their Remedies*. Second Edition. A&C Black, London 2005. Pg 81.

Table 1. Thermal Expansion Test Run 1

THERMAL EXPANSION RESULTS

SAMPLE IDENTIFICATION	Kutch Clay Run 1
TEST PIECE LENGTH	0.889
CORRECTION FACTOR	0.053
DATE	24th February 2010
% EXPANSION	TEMPERATURE °C
0	30
0.01	40
0.015	60
0.026	80
0.033	100
0.043	120
0.055	140
0.071	160
0.085	180
0.099	200
0.115	220
0.133	240
0.147	260
0.156	280
0.167	300
0.177	320
0.188	340
0.199	360
0.21	380
0.228	400
0.244	420
0.262	440
0.276	460
0.29	480
0.297	500
	600
	700

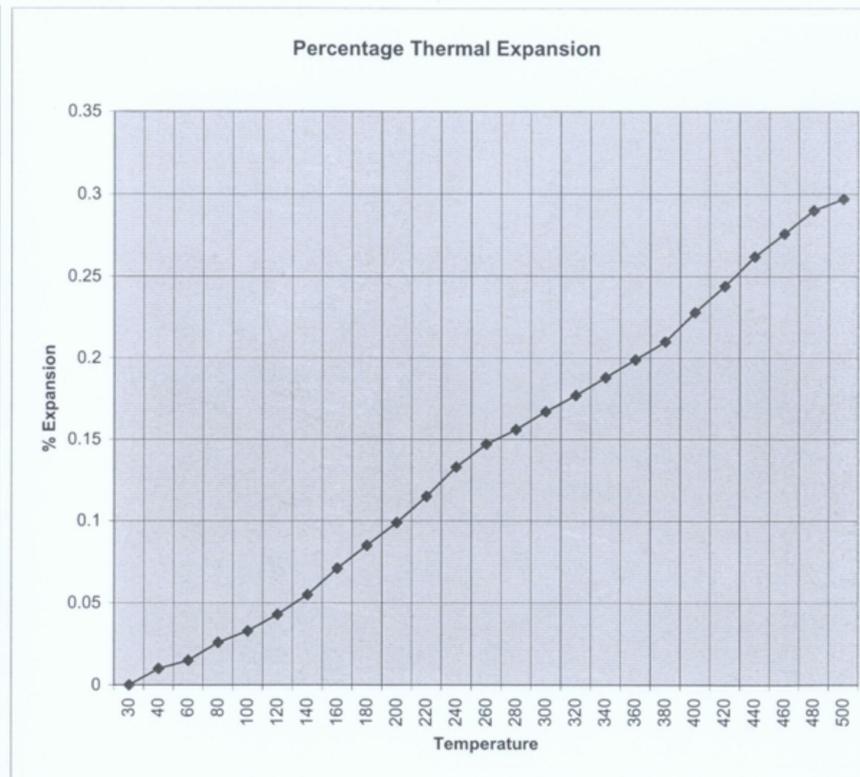


Table 2. Thermal Expansion Test Run 2

THERMAL EXPANSION RESULTS

SAMPLE IDENTIFICATION	Kutch Clay Run 2
TEST PIECE LENGTH	0.889
CORRECTION FACTOR	0.053
DATE	26th February 2010
% EXPANSION	TEMPERATURE °C
0	30
0.01	40
0.015	60
0.027	80
0.035	100
0.043	120
0.057	140
0.071	160
0.085	180
0.099	200
0.115	220
0.133	240
0.147	260
0.156	280
0.167	300
0.177	320
0.188	340
0.199	360
0.21	380
0.228	400
0.244	420
0.262	440
0.276	460
0.29	480
0.302	500
	600
	700

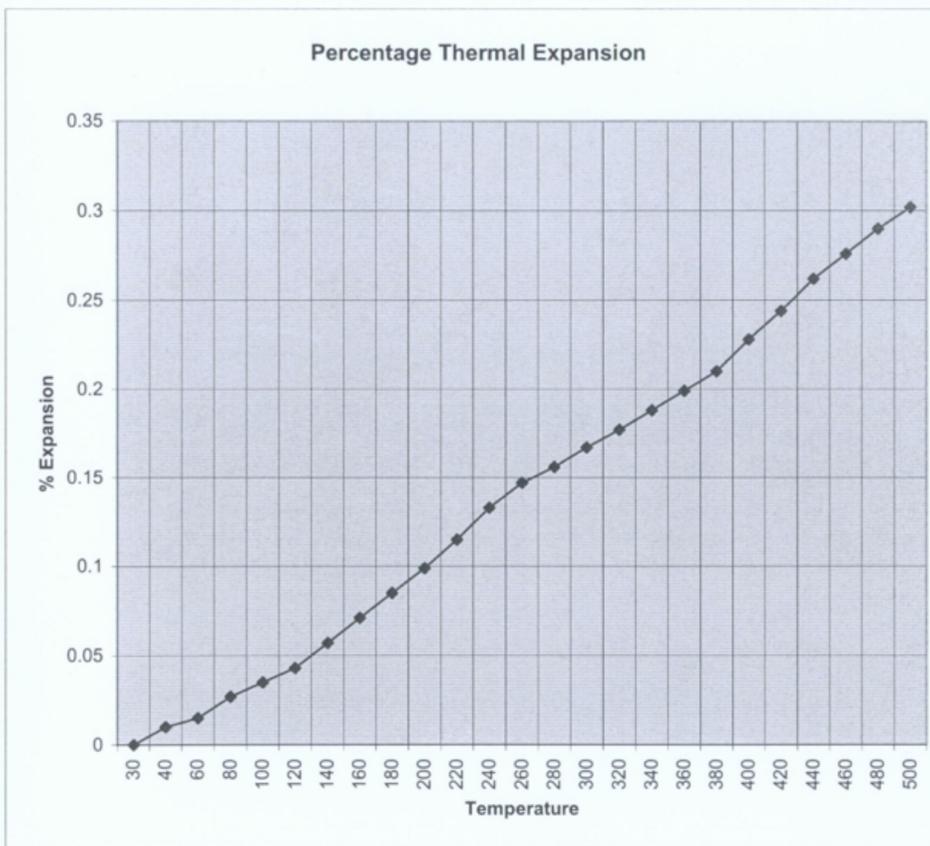
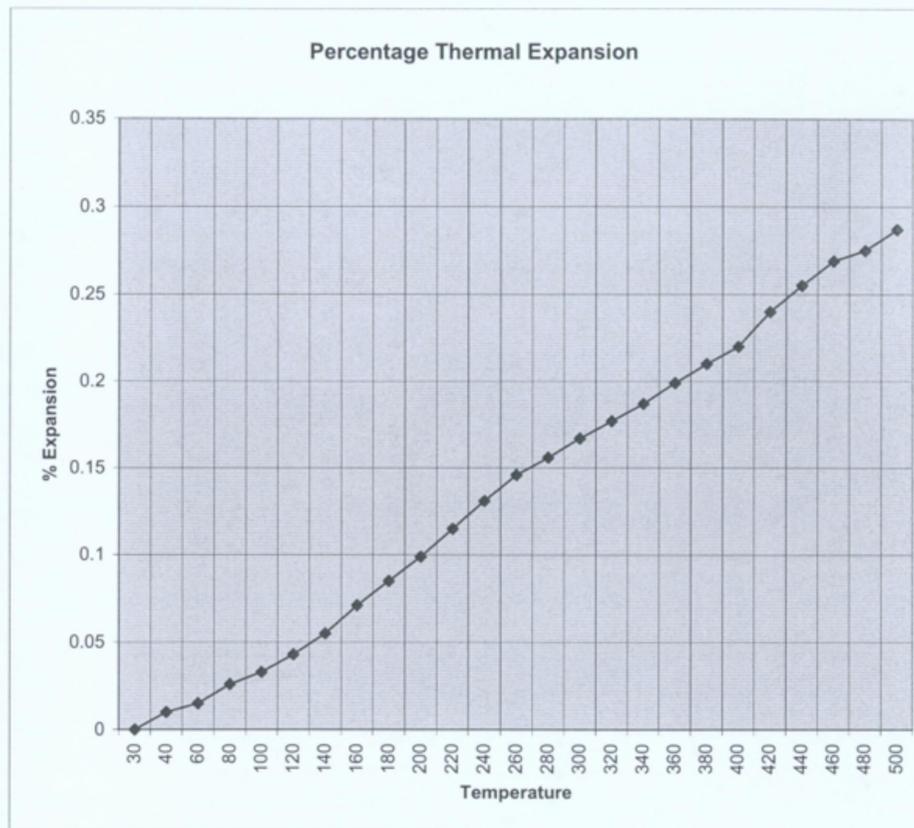


Table 3. Thermal Expansion Test Run 3

THERMAL EXPANSION RESULTS

SAMPLE IDENTIFICATION	Kutch Clay Run 3
TEST PIECE LENGTH	0.889
CORRECTION FACTOR	0.053
DATE	1st March 2010
% EXPANSION	TEMPERATURE °C
0	30
0.01	40
0.015	60
0.026	80
0.033	100
0.043	120
0.055	140
0.071	160
0.085	180
0.099	200
0.115	220
0.131	240
0.146	260
0.156	280
0.167	300
0.177	320
0.187	340
0.199	360
0.21	380
0.22	400
0.24	420
0.255	440
0.269	460
0.275	480
0.287	500
	600
	700



Salinity in Lodai Clay

Salinity in the clay is a problem that the potters complain about, 'Excessive amounts of salt will have an effect on the workability of the clay dependent upon the nature of the salt'¹. This could be one of the reasons it is short (cracking easily) when throwing. John Beeston of Potclays suggests washing the clay will remove some salts, however 'the best option would be to convert the clay to slurry, then remove the water by filtration rather than by evaporation. The filtration could be achieved by wrapping the slurry in a suitable fabric (nylon or similar) and then applying pressure to squeeze out the water'¹. Unfortunately there was a limited amount of material available to test this aspect and I did not observe any effects of salinity in the body during the tests undertaken in London.

Optimum firing temperature or Firing range

'Clays start to vitrify at about 800°C'⁵⁸ when different particles in the clay start to fuse or sinter together and the body starts to lose its porous nature; porosity continues to decline as the temperature rises.

My field research and documentation on this subject, (see chapter 2) and the way pots are fired in Lodai show that the maximum temperature achieved is about 850C⁵⁹, the body being very porous at this stage.

Tests were carried out to find out the optimum firing temperature of the Lodai Clay. See table below.

1. Lodai Clay A (clay prepared by potters) and Lodai sieved clay were fired between 800°C – 1200°C.
2. The firing range shows us that the optimum firing temperature of the clay to without distortion is 1150C. The colour also changes with the temperature.

⁵⁸ Hamer, Frank and Janet 1997. *The Potters Dictionary of Materials and Techniques*. 4th Edition, A C & Black, London. Pg 133

⁵⁹The temperature 850°C is an estimation as documented in books. Jane Perryman's *Pottery in India and Traditional Indian Pottery*.

Table 4. Firing range

Temperature	Detail of effect after firing
850C	porous and soft/chalky
900C	Porous and soft
950C	Porous and soft
1000C	Porous
1050C	Less porous
1100C	Vitrified/Hard
1150C	Warped
1200C	Melted (stuck to the kiln shelf)

Table 5.

Table with firing, colour, porosity and shrinkage results of Lodai Clay passed through 100 and 120 mesh

Mesh	Firing temperature	Colour	Porosity	Shrinkage
100 m	850C	Soft orange		
120 m		Soft orange		
100 m	900C	Orange	12.93%	6.6%
120 m		Orange	12.73%	6.6%
100 m	950C	Orange		
120 m		Orange		
100 m	1000C	Orange	9.71%	6.6%
120 m		Orange	9.48%	8.3%
100 m	1050C	Medium Orange	7.0%	8.3%
120 m		Medium Orange	6.37%	10%
100 m	1100C	Deep orange	5.90%	11.6%
120 m		Deep orange	5.70%	11.6%
100 m	1117C	Deep orange	5.76%	11.6%
120 m		Deep orange	5.67%	13.3%
100 m	1150C	Deep orange-red	3.71%	13.3%
120 m		Deep orange-red	3%	15%
100 m	1200C			
120 m				

Percentage of Organic Matter, Grog and Texture

On examination of the clay from greenware pots from Kutch, the texture of the clay was found to be coarse. The Lodai clay contains 1.53% of organic combustible matter like leaves, twigs, animal droppings etc. and 6.75% of grit, small rocks that do not dissolve after soaking it in water.

Passing the clay through 100 mesh and 120 mesh sieves results in a more plastic clay with a creamy velvety texture, suitable for throwing. This preparation method is not used by the potters at present. The negative side of sieving is that it reveals limitations when making pots with thick walls, which are to be beaten, as it makes the body less open and dense.

I mixed 1kg of Lodai clay with 2.5 lit of water (mixed to a milky consistency). This was passed through 60 – 120 mesh and I measured the matter that was left in the sieves. It was then fired to 850C, and the percentage of grit and combustible material was measured.

Table 6. % of matter

Mesh	Matter left in the sieve	After firing to 850°C	% after firing	Combustible matter	% combustible matter
60	75.0g	60.5g	6.05%	14.58g	1.45%
80	1.4g	1.2g	0.12%	0.2g	0.02%
100	3.4g	3.0g	0.3%	0.4g	0.04%
120	3.0g	2.8g	0.28%	0.2g	0.02%
RESULT	82.8g	67.5g	6.75%	15.3g	1.53%

Preparation of clay for testing at RCA

The tests performed on the Lodai Clay familiarised me with its working and handling characteristics and potential sustainability for an extended project with the Kutch potters. The purpose was to make clay for design trials. With a basic understanding of the Lodai clay and in an effort to push ahead with the project, I made up a batch of clay that could simulate some of its handling qualities, such as texture and plasticity. This clay was not however made to represent all of the qualities of the Lodai clay, such as its shrinkage, colour and porosity.

In the UK there are a variety of terracotta clays available from heavily grogged to smooth. The batch of clay was made using the closest (most economical) terracotta I could find that was like the Lodai clay, which was the grogged terracotta from Valentines⁶⁰. (Other clays explored were smooth Valentine's terracotta and Potclays terracotta 1137 and 1131). Valentine grogged clay was used in the production of the moulds.

In an attempt to match the Lodai clay, additions of sawdust and wood shavings (combustible matter 1.53%) and 30's – 80's mesh grog were added to a slurry of Valentine's clay. Since the clay was mixed in a dough mixer, the grog and sawdust were broken down further and the wood shavings and sawdust absorbed water, and the clay slowly began to turn 'short' i.e. less plastic, difficult to wedge. I therefore tried adding a further 4% of grog and wood shavings to the mixture to get the consistency of the clay closer to that of the Lodai Clay. A further addition of 4% of Valentines clay was then added to make up for the loss of plasticity in the dough mixture. This was done by estimation, as it is difficult to measure this in a calculated way. This approach was not scientific; it was done on the basis of measuring materials but also physically and manually comparing the 'feel' of this mix to the Lodai clay.

The making up of this simulated clay was a time-consuming process and the eventual clay body did not completely mimic the Lodai clay, but as it was satisfactory and a close match in the time available, the decision was made to use it in testing for design trials.

In retrospect additions of ball clay could have been added, and that is still a possibility to be explored in the Lodai clay (to make it more plastic). Any terracotta could be made to imitate the Lodai clay, with additions of combustible and grogged material.

⁶⁰ Valentines is a clay manufacturer in the UK, I used their smooth terracotta and grogged terracotta for testing

Comparative Analysis of Valentines and Lodai Clay

Table 7.

Terracotta Clays	Shrinkage %		Porosity %		Thermal Expansion at 500C	Texture 1 (smooth) - 10 (coarse)	Fired colour	Firing range C	Coarse material <i>E.g. Grit/ Combustible</i>
	850 - 1150C		850 -1150C						
Valentines Standard Red 1	11.5	15	12.3	10.5	0.319%	5	Light - Dark Red	1080 - 1160	Grit – 1.34% Combustible Material – 0.4%
Lodai Clay Bhuj, India	11.5	15	9.71	3.71	0.287 %	7-8	Orange- Dark Orange/ Red	850 - 1150	Grit - 6.75% Combustible Material – 1.53%

CHAPTER 4

Design brief and production methods

In this research project design was dependent on the techniques, properties of clay and decorative features used in the local community alongside the trends for the use of low-fired pottery in wider contemporary international and local markets. Judging from what was learnt through documentation and working with the potters, adaptation and slight modifications of the existing methods can be implemented and applied for time-effective, less laborious production.

A crucial factor in this kind of project is that, if the revival of skills that are dying out is intended, it is important to remember that if there is no local demand, and if appropriate items are to be designed for other markets, there has to be a careful evolution of these skills. Respect must be given however to the well-established traditions.

The production of homewares incorporating handmade techniques not only develops new ways of manufacture but also the ethical aspect of sustaining indigenous practices. These crafts interest retailers in the Western markets immensely. At present, in retail, there is a strong trend towards responsible design, with the idea of using handmade items, not only because they are hand-crafted, but also because they are sustaining small communities of artisans. 'The cook has been connected with the potters for centuries'⁶¹. Pottery has been used for cooking since the *Jomon* pottery made in Japan 16,000 years ago⁶² (the earliest known pottery). Furthermore, 'slow cooking' is synonymous with handcrafted cookware and is a trend that is evolving in western markets.

Examples seen in the market now include the Jamie Oliver potato pot co-designed by me for the *Jamie at Home* collection, Autumn Winter 11/Spring Summer 12; Raymond Blanc's unglazed earthenware bowls for his traditional French cherry pudding⁶³(in his restaurant), and food writer Paula Wolfert writing on new ways of Clay Pot cooking. Brands like RoyalVKB⁶⁴ with their slow-cookers made with

⁶¹ LornaSassAtLarge. (March 2010) Paula Wolfert's *Clay Pot Cooking* (part 1 and 2)http://www.youtube.com/watch?v=HJfo_vXG7ys. Accessed 20 April 2011

⁶² *A History of the World in 100 Objects*, 2010. BBC Radio 4. Friday 29th January 2010 09.45 hrs

⁶³ Raymond Blanc *Kitchen Secrets*. 2011. BBC, BBC2. 04 April 2011. 20.00hrs

⁶⁴ RoyalVKB Netherlands Brochure at Maison & Objet, Paris, September 2010

unglazed terracotta as well as porcelain, and water bottles, are all indications of the strong trend towards the usage of low-fired ceramics in the kitchen.

In the past Henry Watson Pottery in the UK designed mushroom pots that kept the pots in good condition. These were unglazed terracotta pots with two to three holes for air circulation, designed to be kept in the fridge. These pots can work for keeping a variety of vegetables in the fridge or a cool place⁶⁵.



RoyalVKB card/brochure September 2010
Maison & Objet. 2010. Leaflet/card RoyalVKB



Jamie Oliver Potato Pot. Tested on a gas hob.
designed by Maham Anjum and Queensberry Hunt 2010/11

WGSN, an international trend forecasting company, identified the work I presented in the RCA work-in-progress 2010 show as a future trend⁶⁶. Conversations I have had with senior buyers, designers and trend forecasting companies like WGSN provide evidence that there is a place in the market for objects that are designed conscientiously for our specific markets, at the same time as being objects that fit in

⁶⁵ I tested this in my fridge and those of friends and buyers in 2011/2012

⁶⁶ WGSN.2010. Homebuildlife, Blog Student and Graduate: Rukmale by Maham Anjum. <http://wgsn-hbl.blogspot.com/2010/12/hbl-student-and-graduate-rukmale-by.html> 02 January 2010

well and do not interfere with functionality. Retailers are particularly interested in the 'look and function of items that are unique and have a story'⁶⁷ – this includes the process used, the use of the objects and how it affects the lives of people and finally the 'qualities' that can be manufactured.

Beautifully handcrafted objects have a decorative purpose in the home. Mufti, an interiors shop in Fulham Road, London is one of a few interior design shops that have expressed interest. But, the volume and quantities they requested were too small (less than 150 pieces⁶⁸ as compared to larger volumes/thousands for many high street retailers). With small quantities the cost of shipping becomes unrealistic. We know from the British Ceramics Biennial 2009 exhibition that the cost of shipping is far greater than the cost of the items. For example, as described above for the British Ceramics Biennial 2009 exhibition 400 highly decorated, traditional terracotta pots were ordered. The average cost of a pot was £3.50 (the potter was paid approximately $\frac{2}{3}$ of this price i.e. £2.32) the average shipping cost of each item was £6.18⁶⁹. It took one family of potters (2 potters) in Khadva 3 months to make 119 elaborately decorated water pots. This was the first time pottery had been shipped out of Kutch. In order for the project to make economic export sense, when a sustainable market has been identified there needs to be either: a) well-organized production, larger quantities, less elaborate ware, or b) highly decorative specialised traditional products that have a high value. Both options need competent packing. Comparison might be made with the Rukmale⁷⁰ range of products, made by Sri Lankan women potters for the *Jamie at Home* collection. In this case 5 potters made just under 8,000⁷¹ pots in 3 months. These are examples of the positive commercial development of these skills.

Some Western consumers are concerned about issues of sustainability and have the luxury of being creative in the kitchen. So keeping the retail situation in mind, as well as the properties of our material, i.e. low fired Lodai terracotta there are two ways of looking at the opportunities:

⁶⁷ Bates, A. Buyer at JME. In conversation December 2010

⁶⁸ Mufti, M. In conversation with Maham Anjum July 2010.

⁶⁹ Pankaj. (Khamirtrade@gmail.com), (06 August 2009) Fwd: TOP PRIORITY ADDRESS FOR INVOICE Commercial Custom Invoice. Email to: Maham Anjum (maham.anjum@network.rca.ac.uk)

⁷⁰ Rukmale is a small village 100 miles East of Colombo in Sri Lanka. We work with a community of potters there who have produced the Rukmale range of pottery and the Potato Pot for Jamie Oliver.

⁷¹ 3,450 set of 4 bowls, 2,500 medium bowls and 2,000 large bowls

A: Design briefs that address different kinds of cookware. Perhaps a range of terracotta for specialised cooking and baking, such as flat plates for flat breads and baking pizzas in the oven and dry grilling on the gas hob.

B: Storage items: Earthenware storage pots to store grain have been used for thousands of years. The porous unglazed material is particularly suitable for storing garlic, potatoes, lentils, rice, dry spices and even pasta. The cooling and dry quality of dampened terracotta makes it suitable for storing vegetables and herbs, mushrooms, chillies, radishes and berries.

Proposals on improvement of making processes

1. 'Old Fashioned' jiggering flat dishes

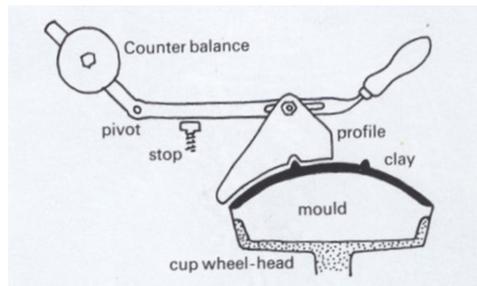
In the ceramics industry, Jigger-Jolleying has been used since the 18th Century. Jiggering is a process in which the shape (usually flat items such as plates) is formed by spreading clay over a plaster mould which is rotated. 'The outside of the shape is formed by a plastic profile tool which is fastened to a pivoted arm'⁷². Jolleying on the other hand is a process used for making deeper shapes such as mugs or bowls. In jolleying the plaster mould is used to form the outside of the pot, with a plastic profile to shape the inside.

This method can also be applied to making shallow flat dishes, made in the open-bodied Lodai clay (suitable for dry grilling vegetables or flat breads). In addition to this, since we know that this clay has low thermal expansion, suitable for use in the oven (dish for pizzas, chips etc). The maximum diameter of the *tavdos* is between 20 – 30 cm. This is a reasonably reliable way to making flat dishes considering the Lodai clay is short, (i.e. not plastic).

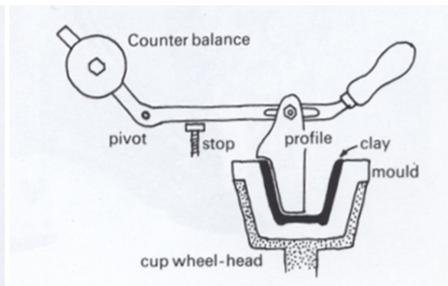
Throwing plates on the wheel can create problems of warping, humping and cracking, hence it is not the ideal technique. The above method in the *Tavdo* illustrations, used by Bhuj potters, is effective to make flat shallow dishes, but it is important to note that their ware, although beautiful in its own right, can sometimes appear pocked with surface eruptions due to impurities or lime in the body. One of the

⁷² Hamer, Frank and Janet. 1997. *The Potters Dictionary of Materials and Techniques*. 4th Edition, A C & Black, London. Pg 185

reasons is that the mould, is made from very coarse clay, with little attention given to its finish. With some fine-tuning and care this method can be used to create a refined artisanal product appropriate for the 'new Indian' or European consumer.



Jiggering



Jolleying

Both diagrams taken from *The Potters Dictionary of Materials and Techniques*⁷³



25 cm Tavdo. Bhuj 2009 and 32 cm Kundo. Bhuj. BCB 09 Earthen Vessels

The shallow convex moulds were thrown on the wheel using a smooth clay (in this case smooth terracotta since I did not have enough Lodai clay available, but we do know that smoothness and plasticity can be achieved in the Lodai clay). The mould should be thrown quite thick for strength and durability. It is advisable that the edges are at 45° angle to ensure that the trimming of the excess clay is easy and uniform. These moulds were dried slowly and fired to a porous 850°C.

In the example below, a 45 cm diameter slab in soft clay is evenly rolled (using Lodai clay or the simulated clay) and pressed onto the mould by rotating on the wheel (ensuring even thickness). Excess clay from the edges is then trimmed and sponged. An extruded clay coil can be added to form a low wall. Since the clay mould is porous, it takes only 20 minutes for the dish to release from the mould.



Flat slab press-moulded onto fired clay mould and then trimmed, coil of clay added at the rim and wall pulled

⁷³ Hamer, Frank and Janet. 1997. *The Potters Dictionary of Materials and Techniques*. 4th Edition, A C & Black, London. Pg 185

Both coarse and smooth clays can be used in this process. This method gives an easy production of shallow forms. Furthermore, it allows the making of dishes of varying diameters. It is especially useful in making flat items such as lids, which can be very challenging to throw perfectly in large quantities. This method has been tested in Rukmale village in Sri Lanka to make lids for cooking pots efficiently.



Fired dishes tested on the flame to make flat breads



2. Hump Moulds or 'old fashioned Jolleying'

Hump moulds are not used in Kutch, although a similar technique - pressing clay onto a fired clay mould is used in some regions of neighbouring Pakistan for making water pots with relief decoration.

Hump moulds are suitable for making large symmetrical deep items speedily. This process is the opposite of the old-fashioned jolley method, as the pots are made upside down.

To make a mould a thick concave shape is thrown on the wheel, its height defining the inside depth of the bowl (in this case inside depth of the bowl is 7 cm), carefully turning the edge of the mould to a 45° angle at 20 mm. This helps when slicing off the excess clay from the rim. The mould must be dried slowly.

An even thickness slab of soft clay is rolled out and gently pressed over the convex mould. It helps if the mould is rotated slowly on a wheel as this enables the easy smoothing of the surface. Excess clay is trimmed off at the edges.

Impressed relief designs in the form of plaster or fired clay stamps can be applied on the mould, or on the outside surface of the pressed pot. A turned foot can be added.



Press moulded bowl with stamped relief



Fired clay hump mould with inscribed decoration and plate off mould

3. Press-moulding - Relief – tall jars

The use of press moulding in Kutch is evident in the making of *Poothi* (large storage jars for grain). As documented in Chapter 2, Mohammed Hussain and Hoor Bhai of Khavda use plaster moulds, press clay into the two-piece mould and then join the two pieces to form a large (2ft) storage vessel.



Fired terracotta 2 piece moulds with relief design
Karachi Khumbar Village.



Terracotta water pot. Karachi 2000

My documented field research in Karachi in 2000 confirms work published by The Smithsonian Institute *Contribution to Anthropology series – Traditional Pottery Techniques of Pakistan, Field, and Laboratory Studies*⁷⁴, that press moulding is used to make *matkas*, water pots with relief decoration, in southern and northern areas of neighbouring Pakistan. Moulds are made out of clay and then fired.

I tested a similar technique in London using 2 piece low-fired clay moulds that were thrown on the wheel. The only difference being that the potters in Kutch and Pakistan use soft clay to press into the mould. In the case of the Lodai clay, when it is pressed in deeper moulds it cracks from the edges. This problem was successfully resolved by pressing thick slurry into the clay moulds instead. Three or four layers of slurry were added into the mould. The edges were then scored and the two pieces joined together whilst still in the moulds. When the cast was leather hard, the moulds were removed and the joint smoothed and the top fettled.

Unlike plastic clay, pressing slurry is advantageous because it perfectly reproduces all the relief detail in the mould.

This process extends the form techniques to the manufacture of generous taller and wider bulbous shapes. There is no added turning to do (something the potters are reluctant to do).



Fired clay moulds⁷⁵, centred on the wheel, clay applied in slurry state till the required wall thickness is achieved, walls scoured and cast joined together. Two storage jar shapes

⁷⁴ Rye, Owen and Evans, Clifford. 1976. *Traditional Pottery Techniques of Pakistan, Field, and Laboratory Studies*. Smithsonian Contributions to Anthropology, Number 21. Smithsonian Institution Press, City of Washington.

⁷⁵ I used a white clay to make the moulds as I was out of terracotta.

Decoration

I discovered from my field research that the main applied decorative features used in Kutch are painted surface patterns. These patterns are closely associated with specific tribes and their customs (see Chapter 2). The decorators of the pottery are very sensitive to their application. Most of the patterns have been handed down from generation to generation. Evidence indicates that some patterns resonate with decorations used by Kutch potters before 1853. Collections of pottery samples from Sindh and Thar Desert start from this date. During my visit to Kutch, I had discussions with the potters on their patterns and shape. I showed them pictures of pottery from the V&A. They were very pleased to see these examples and recognized the patterns by name, and shapes by function. Some of these shapes were no longer used in Kutch after the Partition of India and Pakistan.



Sanak. V&A circa 1853



Discussion with Kutch Potters on the Sindh and Thar Pottery collection at V&A



Sanak decorated by Sara Bhen. 2009

The main decorative medium is coloured slip (liquid clay). This is pigmented with naturally occurring oxides found near the source of clay. The slips though are coarse and need to be ground in a pestle and mortar. Slips are banded in varying thickness of line with the patterns filled in between the bands are applied using handmade brushes.

Surface patterns on Kutch pottery are complex. For the purposes of my research, here I have tried to investigate other ways of surface treatment that are not directly related to the traditional surface designs. I wanted to investigate a surface quality that was pleasing to the eye as sometimes the pottery can be rough to touch.

The clays from Kutch present us with a small range of earthy colours, ranging from buff to red to black. At the time of writing Summer 2013, these colours seem to be right on trend in the West. A few colours have been tried in the workshop.

Terra Sigillata

Terra Sigillata is very fine-particled clay slip, which gives a silky, burnished, almost impervious surface quality. I introduced it as part of the project as the potters in Kutch do not have glazing facilities which make the body non porous. Terra Sigillata is a good alternative when the firing range is limited to low temperatures. It was developed in the eastern Mediterranean in the 1st Century BC and was used extensively on Greek and Roman pottery.



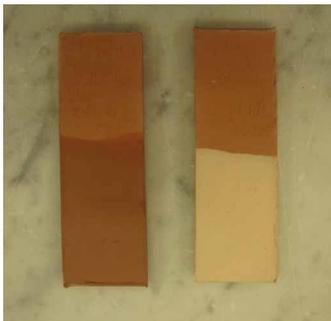
Roman Terra Sigillata Crater. 20BC-20
Both items collection of the British Museum, London⁷⁶

⁷⁶The British Museum [Online], Available from:
http://www.britishmuseum.org/system_pages/beta_collection_introduction/beta_collection_object_details.aspx

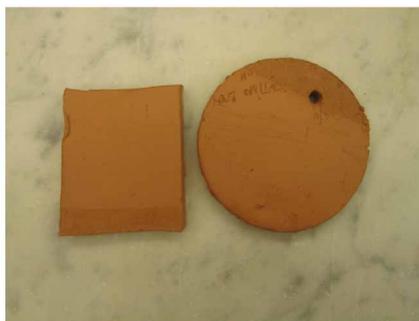
The modern method for making terra sigillata is by deflocculating the clay slip with a small addition of sodium silicate. The recipe used was - 6.5 litres of water, 17 – 18gms of sodium silicate and 3 kg of dry clay. This is mixed thoroughly with the clay and water in suspension, (a swirly skin develops at the top due to the sodium silicate)

The mixture is left to rest without any agitation for about 20 – 24 hours, allowing the heavier clay particles to settle to the bottom, and the fine slip from above, is then decanted using a rubber tube. The specific gravity should measure between 1.1 and 1.2 (skimmed milk consistency). It must not be too thick as thicker slip will peel off. This can be used on leatherhard to bone dry clay. After the application, a gentle rub with a soft plastic bag polishes the surface to a silky-smooth sheen. Potters in Sri Lanka also use this method.

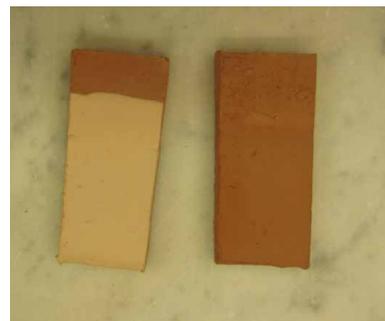
Additions of oxides, e.g. 2% iron oxide from Lodai, ground in a pestle and mortar, gives a deep red colour. The firing temperature of these slips was between 800C – 1050C. The lower the firing temperature the better the sheen of the slip.



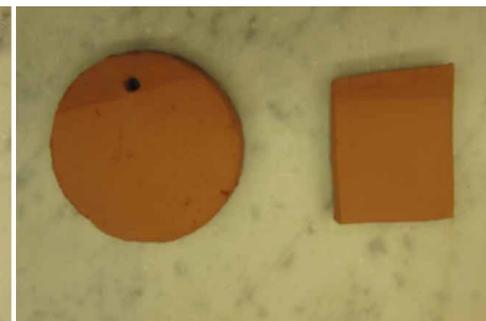
Lodai terracotta terrasisgillata and Lodai white terrasisgillata on Lodai body fired to 830C



Valentines terrasisgillata on valentine's body and Imitation body fired to 830C



Lodai white terrasisgillata and Lodai terracotta Terrasisgillata on Lodai body fired to 1030C



Valentines terrasisgillata on valentine's body and Imitation body fired to 1030C

Burnishing with oil

Another treatment for a mellifluous surface as researched in Mekelle Ethiopia is to use a mix of water and oil to burnish the body when dry. Ethiopian potters that I am working with in Mekelle use this on most items with great success though this is a time-consuming process.

Relief

Even though India has a vast wealth of stone and terracotta relief sculpture there has been no relief design decoration seen on the pottery of Lodai, Bhuj of Kutch.



Storage jars with relief decoration

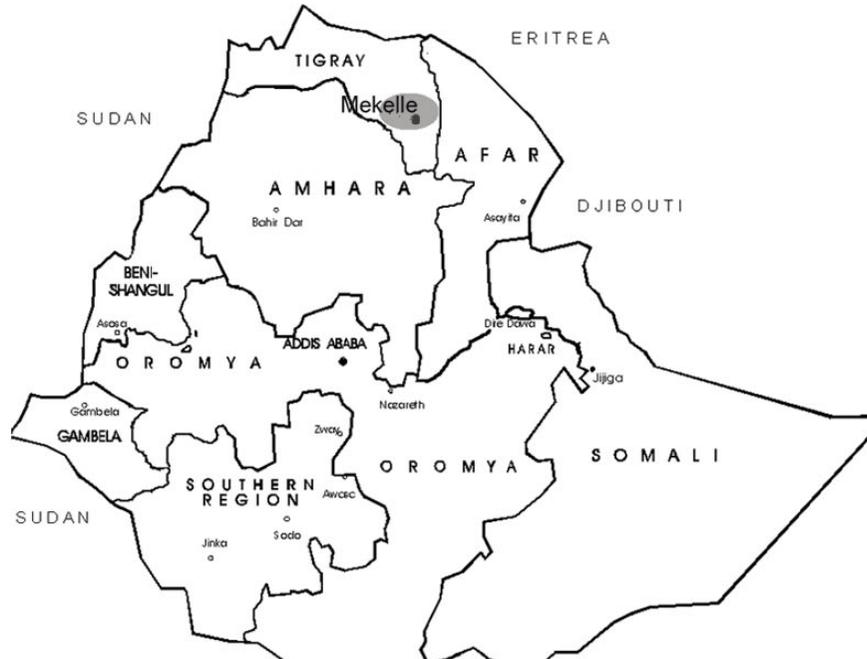
There is however an abundance of pattern design both in slip decoration, and in the elaborate textiles of the region.

One of the recent uses of pattern on artisanal pottery was by the product designer Tord Boontje for Artenica, pottery made in Colombia, where leaves were pressed into the clay as low relief decoration.

I undertook some experiments in the use of high relief on the storage pots. The moulds for the pots were thrown on the wheel, a plaster design was pressed in negative, and the mould low fired. The result was an impression of the pattern on the cast. These were not successful. The results seemed to lack clarity and integrity compared to the standard patterns of Kutch. This exploration needs more work and investigation, as it is a method that has been used in the region and could provide surface-added decoration details.

SECTION 3

Ethiopia



Map of Mekelle⁷⁷



Khumises Workshop and home in Romanat Tigray

In 2010 I was hired as a consultant by the Stars Foundation UK, an international organisation working with children and education. I was approached by Mums for Mums⁷⁸, an NGO in Ethiopia, who had won a substantial amount of funding from the Stars Foundation Impact awards in London in 2009. They had heard about my work in Sri Lanka and were looking to develop utilitarian ceramics in the north of Ethiopia for the local market. They had been working with destitute women in the town of Mekelle, in Tigray, for 10 years and one of their

⁷⁷ University of Pennsylvania. African Studies Center. [online] available from: <http://www.africa.upenn.edu/Hornet/strp0198.html> [Accessed 29 November 2013]

⁷⁸ Mums for Mums Mekelle Ethiopia [online] available from: <http://www.mumsformums.com> [Accessed 30 November 2013]

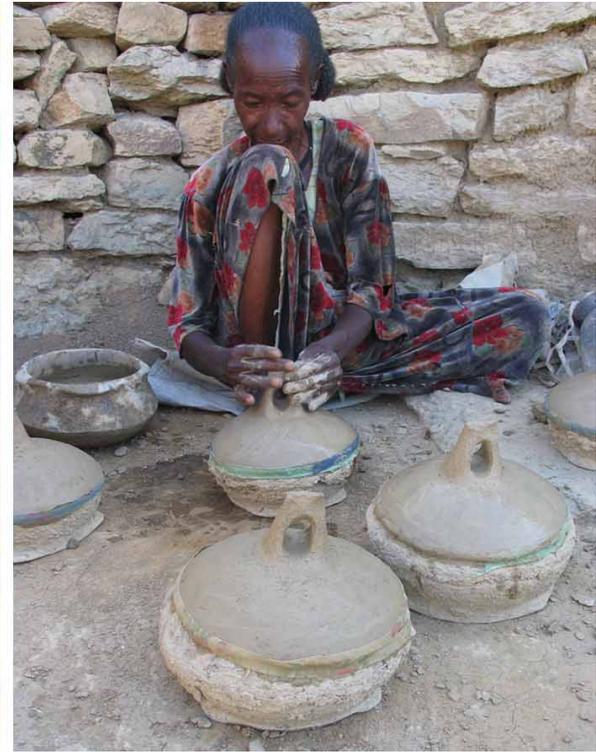
aims was to equip the women with skills so that they could make their own living. They wanted to develop a pottery programme at their skill training center, working with and training local potters, and then transferring these skills to the women at Mums for Mums.

My role was to undertake development of the pottery and the studio. The project had a simple aim and came to be called, 'we do not want coffee cups from China, we want to make them ourselves'. This was to provide an alternative to the third grade coffee cups imported from China. For Ethiopians, the art of preparing and drinking their high quality coffee is a ceremony (quite the opposite of the coffee culture in the UK, where the emphasis is often on speed and convenience). There was a need for quality, locally made products.

Working in Ethiopia seemed to be an opportunity for me to test my findings from the work I had done in Sri Lanka and India. Before I travelled I did a survey of pottery production in the country. Mums for Mums were my network on the ground and they sent me information, sometimes of varying quality, via emails.

This was a well-funded project from the beginning, which was an important and positive aspect. I visited the country twice and my first visit was extended due to the ash cloud from the Eyjafjallajokull volcano eruption in Iceland, which grounded flights across large parts of the world. This was enormously useful as I used the time to do as much research as I could into the potteries around Addis Ababa.

This project focused on the revival of craft pottery production for the existing local market and combining that with small-scale intervention such as imported firing methods and improving preparation methods. Mums for Mums bought a 4 ft³ kiln from Potclays, a UK kiln manufacturers, so that the pots could be fired to vitrification, as glaze technology was not available in the north and the time that I had during my visits was not enough time to resolve the technology of glazes. From my prior research, and while I was there, I found no evidence of glaze being used locally.



Range of plastic utilitarian items in the local market and some pots for cooking

Understanding social aspects

Unlike Sri Lanka and India, Ethiopia is less developed in terms of infrastructure, transportation and availability of materials. Due to language barriers I found communication of information difficult. I understood processes and structures mostly through observation, and drawing on my own experience as a potter. Communicating through making was easier.



Khumises workshop in Romanat. Khumise preparing clay and making a coffee pot.

Khumises tools

Throughout the project I observed two potters and worked closely with one, 24 year old Khumise, who works to support a family of eight. Her pottery is just outside Mekelle, in an arid area called Romanat. Khumise undertakes all of the work herself, including sourcing and preparing the clay. The clay is local, sourced nearby and consists of ball clay from one site and shale type material from another. It is collected and prepared in small batches since help with transportation is unavailable, unlike the manpower or donkey carts used in Sri Lanka and India. Khumise makes and fires everything in small batches and sells her ware in the local market every Friday.

To her, someone trying to understand her skills was something she had not encountered before. She was initially wary of me. Offering to help Khumise with the wedging of clay was the beginning of our companionship, breaking barriers and developing mutual trust as makers. I showed her pictures of my work; I also did a slide presentation to the staff at Mums for Mums showing the places and people I had worked with in India and Sri Lanka. During my visits we exchanged ideas, shared preparation methods, and making methods which led to a range of technical advances and a range of utilitarian items.



Khumise firing pots 20 at a time in a pit outside her workshop.

The brief agreed with Mums for Mums Pottery in 2012 was that I would set up the initiative of a fully functioning pottery with limited funding, using local knowledge along with some improvised methods of preparing clay, making, and firing using an imported kiln. Clay and slip was prepared by a group of young men, around 100kg at a time, and making was divided between men and women, Khumise being the master potter. Firing was supervised and done by the potters in the electric kiln. The ware was to be sold at Mums for Mums to foreign and local visitors, at hotel shops, and some of the products were made specifically for restaurants in the town.

Clay Preparation

I tested the clay along the lines of the methods stated in Chapter 3, even though at the time I had not formally written out the academic research.

The supply of clay in Mekelle is sporadic and inconsistent. Clay is hard to find and when it is, potters understandably do not want to disclose the sites. Clay needs to be dug from 2 or 3 different sources. Khumise mixes three kinds of clay from the arid area near her house, an area that is rapidly industrialising with many cement and wood factories.

After my first visit in 2010, I fired these clays in London, to optimum temperatures and noted the colours and qualities achieved. All the materials and results were successful, proving that washing the clay and then sieving was effective. This process results in a more stable clay body for the purpose of making cups and jugs as we were aiming to do.

However, when I was in Mekelle in 2012 setting up the pottery, the same results were not achieved. The clay broke down after firing; some clays were buff and some terracotta, and there were small lime explosions on the surface.



Clay with lime explosions on the surface making it brittle



The main reason for this was the difficulty in sourcing clay. The clay that was being sourced by Mums for Mums was from the potters/or locals and was not clay, but shale and earth, which disintegrated after firing. This was not the same quality that was sent to me in London. In my experience, as long as the potter involved with a project knows that he or she will have work with an external organisation i.e. a potter/designer or an NGO, there will be less problems with supply. But if the potter is invited to a project for a short time and knows there is no long term prospect of work, the supply of material will dramatically change. In this case we knew that clay could be sourced from

potters in the North and the problem is now resolved as the centre buys clays from a region called Adwa. The clay is prepared as suggested and fires to 1100°C.

Making methods and design

It is important to note here that Khumise only makes coffee pots and had never made anything else before. The project required the development of products for the local market, including the growing tourist market, and a small order of ashtrays from a local restaurant. The resulting items that were designed with Khumise were a 1 litre water jug, which is an extension of the technique used in making coffee pots, tea lights, shallow bowls, coffee cups and the ashtrays.



Khumise demonstrating the making of a coffee pot

The quintessential Ethiopian coffee pot is made with a combination of hand-building and press moulding. Most other hand built items such as bowls and cooking pots are also made in this manner. The pot begins with an 8cm ball of clay, which is not too wet. Dry clay is sprinkled on the ground; the ball is made into a round slab, and then wrapped around a round mould, which becomes the fired hollow bottom piece of coffee pot. The rest of the pot is built with small (5cm) coils and small slabs. Khumise works with immense skill and dexterity. She pulls a handle with a coil, making sure that the joints are fused. Around the neck she carefully executes a pattern with coils and her needle tool. It takes her about 45 minutes to 1 hour to make each pot.

To give a comparison we extended the process of making the coffee pot to create a 1 litre water jug form. The base remained the same, using the fired clay broken base of an old coffee pot, and instead of the neck being slender, it opened from the shoulder into a wider spout for pouring.

As the project developed with the potters and people involved with the project, i.e. the NGO employees, we developed bowls for serving and eating, as well as a water jug.



Khumise demonstrating the making of a jug.

With sensitive instruction and using Khumise's expert knowledge in hand building, bowls and plates were then introduced. These were also an extension of the old fired clay/coffee pot base. Clay slabs were rolled and then moulded on to the form to create bowls for local food like *shirno*, and individual dining plates. These could replace the plastic and cheap Chinese plates that were being used.



Jug and bowl with terrasilatta.

Coffee cups drying

Mums for Mums back stamp

The items did not need to be glazed as the overall wash of terra sigillata was adequate to seal the surface, making it impervious and suitable for food use.

Production for the local market

The Ethiopia project was aimed at the local market in Mekelle and so the requirements were different to that of export. Several points emerged from the project:

1. As the items did not need to be glazed this eliminated the issues of testing glazes. The use of fine slip – terra sigillata fired to 1080°C – 1100°C was appropriate and effective. This did not stain the body excessively and coffee and food stains were easy to wash off.
2. The variation in the colour of clays was acceptable.
3. The handmade quality was appreciated.
4. The items did not require rigorous packing requirements as they were transported from the pottery to local shops and restaurants.
5. Production times and delivery dates can be a little flexible. Potters can work at times that suit them as long as there is some supervision on production.
6. In terms of quality control and replacement – if a piece is uneven or broken the consumer has an option to go directly to the potter and get another one.
7. It is very difficult, close to impossible, to have strict copyright laws in this instance, because the sale and use of the range of items is confined to a small area. From personal experience in Sri Lanka and Pakistan, I have noticed that if one potter is making items that sell well at market, other potters begin to copy the design. Having said that, it is important to make a note in the contract with the organisation that the copyright of designs belongs to the designer and that the designer is licensing the organisation to market them.

In Ethiopia I was able to use my knowledge from Sri Lanka and India to help this project run more smoothly. This was especially true in terms of the clay body as I was able to use my methods developed in India to prepare and test the clay in London. Potters like Khumise realise the importance of adaptability if they are to survive making pots. Mekelle is a small but growing city, both in terms of population

and financial growth; people have buying power but the items available are limited. The potters now have a fully functioning pottery and there is demand in the market for newer items. Making the water jug and bowls have has opened new possibilities to Mums for Mums and one that I hope in time will continue to grow creatively. In future more potters like Khumise will be able to benefit from this as long as the pottery initiative is supported locally.

EVALUATION AND CONCLUSIONS

EVALUATING RESEARCH

Over the course of my research, I have read about various projects that have worked with artisanal craftspeople. They vary from private projects by companies, to government led initiatives and those run by NGOs. Many of these projects have been successful and some have had questionable ethical research practices. To evaluate my own research, I look at three specific projects, the government-led Ethiopian Tourist Trading Enterprise, Potters in Peril Non-Profit in association with Khamir NGO in Kutch, India, and private-led Design with a Conscience for Artecnicca, USA and Columbia. All three projects have been relatively successful in their work and achieved impressive results, but they differ from the approach I chose to take with my research. While it is not practical to describe these projects in great detail certain features can be discussed in relation to the work I did.

1. Ethiopian Tourist Trading Enterprise (ETTE)

The Ethiopian Tourist Trading Enterprise (ETTE) ceramics venture was set up by the Japanese International Cooperation Agency (JICA) in the early 1970's and was led by the government of Ethiopia. They trained local potters in Addis Ababa and supplied them with designs of ware and machinery for preparing clay and electric kilns for firing. Much like the Biyagama pottery in Sri Lanka, this initiative was set up to help local potters work in a ceramic workshop with clay mixing facilities and electric wheels. It should be noted that wheel throwing is indigenous to Sri Lanka, and not to Ethiopia.

The clay is imported from the UK, Germany and Japan. Potters make the ware, mostly items like large cappuccino cups, mugs, serving dishes, vases, incense burners, figurines, candle stands, plates, wine goblets, bowls and the famous Ethiopian *shirno* pots. All the items are made from a dark stoneware type body, fired to mid ranging temperatures of 1150C with heavy glazes in colours such as black, clear, textured grey and white and blue. The potters are introduced to wheel throwing, slip casting and press moulding. The items made are heavy and unrefined replicas of Japanese stonewares. The product is sold in ETTE shops in five star hotels like the Hilton in Addis Ababa and craft shops in areas such as Magananya and Konso around Addis Ababa. Potters are more like factory workers than potters, making wares they would not normally make and getting paid on a per day basis.

2. Potters in Peril Trust USA and Kutch, India

Potters in Peril Trust is a non-profit organisation led by potter Paulomi Abhyankar, who divides her time between India and America. It was set up after the 2001 earthquake in Bhuj. Bhuj and surrounding areas were devastated by the earthquake, which affected the crafts and livelihood of the local artisan potter community. They are an organisation that aims to work with the potters to promote their crafts and find markets for their work. Some of the funds raised for Potters in Peril are through exhibition sales of works by ceramic artists around the world.

Their approach was to keep the local wheel thrown techniques alive but to use materials that could be fired high and sealed with a glaze. They worked with master potters producing works for craft fairs in India. The clay used was a buff coloured stoneware and a clear glaze. Most of the raw materials were sourced from Delhi. The intricate and indigenous surface patterns were incorporated with the design of the bowls using dark coloured decorating slips. A formulated clay body was supplied to the potters, they threw the ware on the wheel and the women decorated the bowls with slip using traditional patterns. The pots were fired in gas kilns set up at Khamir, where the NGO staff was trained to fire the kilns. When I spoke to the potters they felt somewhat invaded by Potters in Peril. Firstly because they were not fully trained in formulating the clay body or glazes, and secondly because they were made to use surface designs in a minimalist manner, which they were not used to doing. Patterns as mentioned in Section 2 are passed down through generations and hold sacred significant meaning to the potters and local tribes. A few years into the project the potters made a decent income until there was a disagreement with Potters in Peril and the kiln provided was removed and the clay sources cut off. The project came to a halt and the potters had to go back to their old methods of working.

3. Design with a Conscience – Artecnic

Artecnic is a high-end design company based in California. They set up Design with a Conscience in 2002, a programme that works with artisan communities in the developing world and helps create opportunities for artisanal crafts. They combine artisan production work with world-renowned designers around the world. Importantly, their aim is to work with high ethical standards where products are manufactured with 'humanitarian and environmentally sensitive principles'.

In 2009 product designer Tord Boontje designed a range of flameproof cookware called 'witches kitchen' with Columbian potters. This range of lidded casseroles and a saucepan could be used directly on the flame and was safe to use in the microwave and oven. The range incorporated impressed leaf decorations from areas surrounding the pottery. This low-fired ceramic range was burnished and fired in reduction, giving a shiny black surface.



ETTE Craft Shop display. 2010
2009



Kutch Potters with their Potters in Peril bowls. 2009



Tord Boontje's Witches Kitchen for Artenica.

Image from the Artenica Website 29 April 2009
[www.http://shopping.netsuite.com/s.nl/c.553144/it.A/id.1226/f](http://shopping.netsuite.com/s.nl/c.553144/it.A/id.1226/f)

In all three of the projects I have been involved with, the aim has been to be much more hands-on. I evaluate my work based on the ten research areas presented earlier and elaborated in each project section.

1. Mobilising Funding

The funding available for my projects was very low compared to other projects in similar fields, which can sometimes be in the range of thousands of dollars. The Sri Lanka project was funded by the Golden Bottle Trust of Hoares Bank UK, who donated for travel expenses over the course of 9 years. In Ethiopia, the project was funded by an award for Mums for Mums by Stars Foundation UK who support NGOs working with families and children. In India there was no funding as my visit was part of a project for the British Ceramics Biennial.

Alongside this I was lucky to have professional charity from Queensberry Hunt, Potclays and Ceram Research, which kept high costs of testing down.

2. Locating Potteries

The Sri Lanka Project came about because a project could not be undertaken in Pakistan due to the political situation. In India, I carried out an investigation of the types of pottery production in the country using a desk based approach and an opportunity presented itself in 2009 where I was approached by the British Ceramics Biennial to co-curate and exhibition on Kutch Pottery and undertake the task of overseeing packing and shipping 400 traditional handmade terracotta pots from Kutch to Stoke-on-Trent. The Ethiopia Project was an opportunity where I could apply the results of my work in India and Sri Lanka. In all these projects most of 'locating potteries' came from being able to network, make and use connections I had within the host country with factories, NGO's and in the UK.

3. Understanding the Social Structure of Potteries

It was imperative in my practice to understand the local modes of production as thoroughly as possible. This was to give me insight into their markets, costs of materials and firing. I did not want to change the way the potters work or introduce new techniques that were completely alien to them. I found with the projects previously undertaken in Kutch and Addis Ababa that the potters had to almost abandon what they were making and had to adopt new skills. My criticism of such approaches is that the potters are left to feel alone and reliant on the project facilitator rather than take control and extend the skills they already have. For example, when potters are using a new clay body they do not make and know nothing about, they become like factory workers rather than artisans. In Sri Lanka, the potters were briefly supplied terracotta from the factory but as soon as the project started to generate income I introduced ranges like the potato pot and bread plate where they could use their own clays and prepare the clay themselves. This made them less dependent on the factory. In Ethiopia existing materials and technologies are being used except the introduction of a kiln that the potters are learning to use. The Design for Conscience project works well as it is not changing how the potters work and takes advantage of their existing environment, for example, introducing the impressing of local foliage on the ware.

4. Networking on the Ground

I was not able to be in the field all the time and establishing a sound network on the ground was key to the success of the projects. A facilitator who can send and receive information, whether it is logistical, practical or investigative, is very useful. This is something I realised quite early on, especially as I could not contact the potters directly. If there was sufficient funding available someone could have been hired on a permanent basis. In Ethiopia and India having the NGO on the ground has been very useful. For example, in Sri Lanka during production of the ranges for Jamie Oliver At Home, professional jealousy and internal pottery politics became a serious issue. It was the facilitator on the ground who suggested specific tasks were allocated equally to potters, from clay preparation to making and packing, and this helped to overcome these issues.

5. Consistency in Source, Supply and Preparation of Material

In my view, the engagement and involvement of the potters when sourcing materials is extremely important. It is their material and they know it well. Where there were technical challenges in the materials I was able to assist by contacting ceramic specialists or resolving the problem in my workshop. There were, however, instances when the potters had to be reliant on other sources of clay. For example, in The Sri Lanka Project terracotta was supplied to the potters, because their clay was unsuitable for glazing. After many trials and tests the local clay still presented problems, and so the factory made clay was incorporated. This in time was resolved and the potters were able to use their own body. In India and Ethiopia, the potters have more knowledge of their clay than I did. I just introduced effective and simpler ways of preparing the clays and a low firing terrasingillata (slip) to seal the surface of the pots making it impervious, suitable for food and drink. Introducing potters to a new clay body that they do not formulate or collect makes them reliant on the facilitator and they act as mere producers without much of their own involvement and dialogue.

6. Overcoming Technical Challenges of Working with Local Materials

As discussed before there are technical challenges with local materials that the designer may not be familiar with, but there are ways to study these and overcome these as explained in Section 2, Chapter 3. One of the examples is the preparation of the clay in all three countries I have worked with, discouraging dry sieving and labourious clay rock breaking, instead soaking the clay in water and sieving it

as a slurry. Depending on the kind of product required this decreases the unwanted organic matter that causes explosions on the surface of pots during firing, making it look unrefined. Inhalation of dry clay dust is not healthy for potters.

In India and Sri Lanka, to overcome the problem of uneven lids, I introduced a simple method of using a fired clay mould to produce a uniform lid every time. This method already existed in India but the potters used old and slightly crude unfired clay moulds that had a smaller life span in terms of use. In two of the projects, the solution was simply to tell them what to make by supplying them with more efficient materials.

7. Understanding Local Skills and Recognising Local Knowledge

Potters have excellent knowledge of their materials. They may take shortcuts, which is mostly due to lack of patronage but when given the chance, like any artisan, will use their best clays and slips to achieve results. I spent many days understanding the skills of the potters, how and why their markets were in decline, and how I would be able to assist them. It was clear to me that the products to be developed must respect the integrity of the skills used in the pottery community and reflect their sensibilities rather than introduce completely new shapes and ways of working as happened at the ETTE in Ethiopia. At ETTE the potters were given shapes to make, and completely new methods of production. Potters are not trained how to formulate glazes or clay bodies nor educated on the ingredients they are using. One of the reasons the Design for Conscience project is successful is because it shows respect to existing skills and works around them.

8. Designer as the Marketer

It is an easy solution to give potters clays and glazes and shapes to make, and to select patterns to apply on the pots. It is more challenging and time consuming to work with existing skills and implement ways in which one can identify the gaps in the markets and use skills that exist. At ETTE and Potters in Peril they were successful in marketing the products at local craft fairs and shops. This is a avenue that could not followed in Ethiopia due to lack of funding but there are ways to work around these that I have not yet developed. As the project develops this may be a route to take. For now, the project currently aims to supply to local tourist shops and restaurants.

It is extremely important for the designer/marketer to have transparency and clarity that everyone involved in the project will benefit from. I personally know of projects facilitated by governments where the potters get an even smaller amount than they would if they were selling directly to the customer. Whether the products are being sold at craft fairs or shops run by the government, the orders need to be

consistent. With the sudden pause of the Potters in Peril project, the potters were left to deal with issues arising from technical difficulties sourcing stoneware and high firing.

The importance of conveying the message to the end consumer greatly helps the marketing of the products. In Sri Lanka every pot that is made by the potters is signed, hence the consumer knows they are buying a handmade, one off piece and with additional information on where it comes from and how it is made.

The pots made for the Terracotta Design Project in Sri Lanka were for export where potters got 30% more than they would have for the local markets. Once the project was successful I was able to target high-value restaurants for specialised pieces, which enabled almost 50% increase in the prices for the potters. Tord Boontjes products retailed at Artenica at \$360 (approximately £214) in 2009 and the terracotta pots for £30 for a similar size piece. The Sri Lanka Project sold over 10,000 pieces in the first year of production, this being a realisable order for the potters. In recent years I have learnt that for specific exclusive design projects The Sri Lanka Project can also benefit from the Artenica approach; targeting the high-end market.

9. Complexities of Export

The Sri Lanka Project encouraged potters to work from their homes and around their household chores, for example working in their back yard workshops after the children had gone to school. There was plenty of lead-time in production and shipping, ensuring that the potters had enough time to make the ware without being overworked. There was of course rigorous testing to be done for export markets as explained earlier. The Sri Lanka project aimed at the middle end of the market, for example Habitat Stores UK, Jamie at Home, unlike Artenica which aimed at the top end of the market. It also used terracotta body which was glazed and fired to 1050C as compared to the low firing Columbian Artenica cooking pots, which were more fragile like the pots from Kutch. In Kutch the cost of packing and shipping the pots was more than double of the actual cost of the pots.

In Ethiopia production times are more flexible and shipping costs have been minimal.

10. Evolution of (skills and) project

The role of a designer is not to change the fundamental way craftspeople work, it is to slowly and sensitively understand their methods and explore ways to incorporate them, filling the gaps found in the markets be it local or for export. These have ranged from hand thrown

bowls with coloured glazes to beaten unglazed potato pots and bowls using slip decoration. In Ethiopia the technique to make a coffee pot was incorporated, by exaggerating the spout and neck to create a jug. If projects are to survive in their field there has to be respect for traditional crafts and an innovative approach to every design. Most potters I have worked with have been extremely sensitive and skillful artisans. If they are to be given materials and glazes but do not know how to replicate them they simply become machines not artisans. In Boontjes' design the introduction of the impressed leaf extends its surface treatment from the burnishing used traditionally. This introduction of impressed relief is something the potters may be able to use in future enabling them to learn new techniques not just adopting the ideas of the designers. In Sri Lanka where the market was export, it is to an extent the responsibility of the designer to come up with concepts and ranges that the potters can produce and the future to find solutions where the potters are able to gain knowledge of the changing local markets and have confidence to introduce newer objects.

ARTISAN PERSPECTIVES AND EXPECTATIONS

Local artisans have their anxieties and hopes throughout the journey of any project – prior, during and post. This is also true for my research. Below are the main apprehensions and expectations of the artisans that I encountered through my experience working in Sri Lanka, India and Ethiopia.

Artisans' Perspective prior to the Project

When I first started to work with the potters they were surprised why someone would be interested in what they do. As they learned more about the project, they saw opportunities to make some money every time they demonstrated a technique. Once we built a rapport and since I am a potter too, they were very keen to see my work; for example, my throwing techniques differ to theirs. There was an element of fear as to why a foreign lady was there, is she here to learn our skills and take over our dwindling and limited market? The four main areas of concern can be summarised as:

- *Why someone wants to investigate or shows interest in their work*
- *Financial empowerment*
- *Sharing knowledge*
- *Curiosity and fear - Is she going to take business away from us*

Artisans' Perspectives During the Project

As potters became more aware and involved in the project they also became more serious about the project. When the potters became aware of the end markets and viability of the projects, they understood the prospect of financial gain. There were times when things would slow down. Hope is a very strong motivator. There were dialogues and suggestions when things went wrong, for instance, cracking or bloating. Furthermore, the potters in Biaygama, Sri Lanka were very keen to learn about glazing and I often invited them to the ceramic factory during my visits. The four main areas of concern can be summarised as

- *Financial empowerment*
- *Sharing knowledge*
- *Hope and a keenness to learn*
- *Active participation*

Artisans' Perspectives Post the Project

There is undoubtedly pride in crafts when the project has been well received by an outside audience. This is true across all the pottery communities that I have worked with, the confidence and respect in their skills that makes them realise that their craft is worthy of recognition. Potters have looked at ways to better their conditions, creating small-scale items and sharing them with me. They are thinking of expanding their skills along with finding other ways to generate income such as sewing clothes for local schools etc. The five main areas of concern can be summarised as:

- *Pride*
- *Appreciation for their work*
- *Further development – how to better themselves*
- *Confidence and respect for their crafts*
- *More projects and a keenness to do better, lesser faults in products. Care and attention to detail*

ON-GOING LEGACY OF THE PROJECTS

Several factors relate to the on-going legacy of my research projects. These factors impact the nature and process of development of current and future work in the countries I worked in. These include the following:

1. An empowered identity

Pride in the recognition on part of the artisan as a human and artisan, dignity in their own existence is what I consider to be the most important issue. They also feel empowered because they are able to consider multiple possibilities of earning a livelihood. For example, with the money from the UK orders potters Kanti and her mother-in-law in Rukmale, Sri Lanka have bought a sewing machine to sew clothes for local schools and invested in a small piece of land where they harvest pineapple and other seasonal fruit.

2. Potters take pride in their work

In Sri Lanka and Ehtiopia, people from the local areas, aid workers, students and tourists come to visit the potteries to see the potters work and admire their skills. There is sense of pride in their craft that boosts their self-esteem and self-worth.

3. Attempt to do newer, more creative work

Potters feel inspired to approach their work more creatively rather than just what they have been making all their lives. All the potters I have worked with and whose work has been marketed now come up with new suggestions and ideas. They may not always work but a flourishing market is making them re-think and re-look at the skills they have.

4. Increased student involvement and local research areas

In Sri Lanka, art and design students from local colleges have shadowed me. There has been an expansion of student interest of various study areas. In 2012 I invited a professor from the department of Sociology at Mekelle University, Ethiopia, who brought some of his students to the pottery to meet the potters and understand their craft and social structure. I have invited the Soil Sciences department at Mekelle University to come and visit when I am there in July 2014 with the aim to help with sourcing materials.

5. Opportunities for networking

Opening local potters up to a world of networks that they can connect with has greatly increased their potential for future collaboration. Potters in Sri Lanka have been in contact with owners, employees and technicians at ceramic factories Midaya and Royal Fernwood in Colombo. Over the years they have been exposed to various local and international buyers of retailers, philanthropists, designers, clay experts and local media over the years. Some of these interactions may not be long lasting but they might have never had this exposure. Their networking is no longer limited to mere spectators or middlemen.

6. Enhance educational opportunities

Potters in Rukmale, Sri Lanka and Khumise in Mekelle both are keen for their children and siblings to get a good education, and in some cases higher education. Children of potters in Rukmale are starting to attend university. Kanti's daughter told me she wants to help her mother in the business side of making pots. No one in Kanti's family has been to university in the past. Some of younger generation of potters at Udawalawe and Biyagama, Sri Lanka show interest and work at the potteries.

FUTURE RESEARCH

Five areas of work can be considered for future research based on my experience in and with the projects. These five areas can be summarised as:

1. A deeper investigation into various sources of clay.

The designer/potter working with the artisan may not know how to source clays (my knowledge was basic in digging clays). There are geographical differences in the qualities and locations of clays. This may prove difficult regionally but perhaps a study on two or three different landscapes or terrains could be useful. It could be helpful in the long run to not only rely on potters for clay but to identify areas where different kinds of clays can be found.

2. Resolving gaps in firing technologies.

A comprehensive study in the field of firing technology will greatly help projects such as Kutch where there are no alternatives to existing basic firing methods. It is not always possible to invest in gas or electric kilns. It could be worthwhile to explore whether stable firing methods can be developed using local materials such as cow dung, organic matters etc. for consistent firing results, and furthermore, investigating concerns about the efficient and ecological use of fuel. Some potters in Karachi use old rubber shoes and plastics as fuel to fire kilns.

3. Exploring alternatives for innovative cost effective exporting of low-fired ceramics.

There needs to be further investigation into alternative packing of low fired ceramics in areas with minimal access to packing materials. In today's innovative and low cost design field there is little reason to argue that a local potter in Afghanistan for example should not be able to export to markets locally or internationally even if he/she doesn't have the modern foam and wooden crates available to him like the potters in Kutch.

4. Future research into artisanal pottery.

Future research in local communities like Kutch and Mekelle should be considerate of traditional skills and practices native to the project community. For instance I have been asked about the introduction of glazing in Mekelle, where glazing is not indigenous to the practice of pottery making. A classic example of its time is Michael Cardew's approach to the introduction of stoneware in Nigeria, where his over ambitious approach to make pottery that resembles pottery from St Ives at the time, bore no resonance with the local indigenous craft production of low-fired ceramics. Cardew's intervention reminds us that designers and practitioners need to better understand and acknowledge the existing project context rather than imposing unsuitable new practices.

5. Continuing cross-cultural and comparative research on artisanal crafts people in conflict areas.

While my research has been broad and locally deep, it is limited in the number of communities it could study. Future research along the same lines could cover more areas and communities across the world with additional support in terms of financing, technical and professional capacity. For example potters in new Karachi, who fled from the Northern areas of Pakistan, are immigrating to areas more stable and conducive to pottery making.

Although in the face of mass-produced cheaper objects available in markets around the world, artisanal craft production may appear to be dying, but with careful thought and a thorough and authentic involvement with craftspeople an exciting future of diverse opportunities for crafts communities, new and useful products which are economically viable and culturally desirable could be a well-balanced way forward.

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AUTHORS DECLARATION

During the period of registered study in which this thesis was prepared the author has not been registered for any other academic award or qualification.

The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.

Signature _____

Date _____

APPENDICES

Glossary of terms

Asthar – Another word for decorating slip/engobe used in Jaipur Delhi Blue

Badak - Round water pot (can be up to 5 lit)

Barni – Naturally occurring slips used for decorating terracotta.

Beating – Process of beating clay with a stone anvil and wooden paddle

Burni – Bowl

Chak - potter's wheel

Chapattis/ Rotis – flat bread

Diya - Oil lamps

Doulack - White powder possibly ball clay

Dukandars – Shop keeper

Gallo or Galla - Money box usually oval shaped. It has to be broken when full to get the money out.

Garshi - Spouted pot

Geru – Decorating slip

Ghara - Water pot

Grog – Ground up fired clay

Gumla - Planters

Haath - Hand

Indianised – Of Indian influence

Jharee - Necked pot (for weddings welcoming groom)

Jigger – Making a shape using plaster mould to shape inside and plastic template to form the outside.

Jolleying – Making a shape using plastic template to form the inside and plaster mould to form the outside.

Karhai - Cooking pots with round base

Kashigar - Persian word meaning master potter who decorates pottery

Kashigari - The art of under glaze painting on pottery. Persian word.

Khullar - Tea cups

Khumbhar - Potter

Kulfi – South Asian Ice cream

Kulhani - Small pot for weddings

Kunda – Vessel for boiling milk

Kunehra - Stone anvil/support

Kunna or Kunnu- Pot for cooking meat

Kunni – Pot for making Rice/kitchri

Manghia – Pot for making lassi/buttermilk

Martaban - Storage jars

Matka - Water pot, storage pot, with small neck and rounded base. It sits in the ground.

Multani Mutti – Fine grained clay that comes from the Multan region in Pakistan

Murtikars – Potters who make votive terracotta

Parat - Yogurt pots

Patri - Sidewalk

Phaglo - Wooden paddle used for beating a pot

Pheri- Hawking or rounds when selling ware

Pooja - Worship

Poothi - Storage vessels for grain

Posari - Large pots for weddings

Prajapati – Another name for the pottery caste, meaning ‘Lord of the people’

Sanak - Large ceremonial dish 91 cm

Shakiyo – Shallow bowl with handles probably for flowers

Short Clay – The opposite of plastic, poor in workability.

Shirno pot– small low-fired pot for making an Ethiopian chickpea flour dish in Ethiopia

Shri - Indian National award for professionals who make a contribution in their fields.

Slip – Liquid clay. Also a mixture of clay and other materials e.g. oxides and water used for decorating.

Slurry – Mixture of clay and water

Tabak - Plate for eating 23 cm

Taplo - Pot for cooking vegetables

Tavda - Shallow dish for making roti – traditional Indian flat bread

Tavra- Vessel for cooking vegetables

Terra sigillata – Fine impervious slip made using the finest particles of clay

Thuti - Sweetmeat dishes or plates for rice pudding

Tuss – Shallow dish for mixing flour

Wedging – Kneading

Method 2. Used in Khavda and Lodai (Method 1 is described on Chapter 2 Pages 49 and 50)

The early stages of preparation of the clay are similar to those in Bhuj. When the sieved clay is due to be broken down, it is soaked with water in a 2-3 feet deep rectangular pit made in the ground, in slip form, lined with plastic for a day or two. The slip is dried and wedged on a jute/hessian mat stretched on the ground for an hour and packed in plastic till ready for use.



Clay is soaked in shallow pits for a couple of days and wedged on the cemented area

Health and safety

I have described in the earlier chapter how the clay is prepared by the Kutch potters. No attention is paid to health and safety.

It is very important to make the artisans aware of health and safety issues.

1. Preparation of the dry clay - Clay is dry sieved. Clay should be mixed with water and then sieved. I understand the lack of water in the area but most potters have a hand pump near their workshop areas
2. Bad posture - When breaking the clay rocks with a long heavy stick the posture of the potters is physically harmful. Clay can be stored and mixed with water in pits made in the ground of the workshop.
3. Salinity of the clay – The area of Kutch is noted for high salt content. Due to the limited amount of Lodai clay available I am unable to comment of this. Washing the clay in water and sieving it through a fine mesh might solve this problem. (potters complain about this)



Dry sieving clay
Abdurrahman's workshop, Bhuj, India



Breaking chunks of clay to sieve.

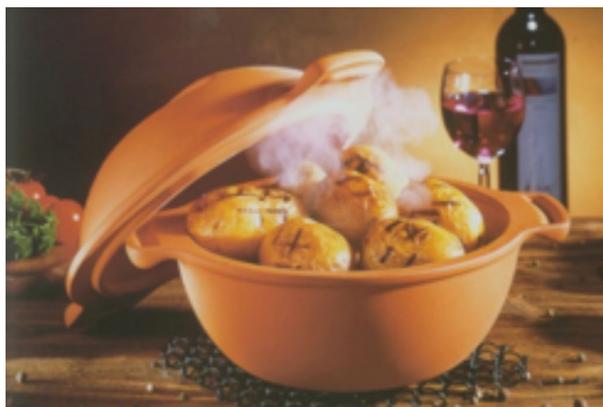
Beating

It is important to mention that the Potato pot – original idea by David Queensberry - has been an important item to check the feasibility of the above processes. This item was designed for the 'Jamie Oliver Home' collection launched in Autumn/Winter 2011.

The potato pot was originally used in Europe to bake potatoes with a smoky taste. They were produced mainly in France and Germany.



Potato Pot from Thomas Rosenthal,
Germany 1978
Slipcast Stoneware
Photograph by Queensberry, D. 2011. London
Collection: Rosenthal Archive. Selb, Germany



Potato Pot from Romertopf, Germany
image from Romertopf brochure 2009



Potato Pot, Collection of Alison Britton,
French late 20th C (circa 1980's)
Slipcast Stoneware. Part one of two
Photograph by Anjum, M. January 2010
Collection of Alison Britton, London, UK

This was an ideal item on which to test the feasibility of the beating method, although in Sri Lanka, using low-fired terracotta which has very good thermal shock resistance. The clay used was the clay that the Rukmale potters use for their cooking pots (similar to the clay that the potters in India dig from the ground).



Potter beating a cooking pot into shape, Rukmale, Sri Lanka
Rukmale, Sri Lanka



Abdurrahman Khumbhar beating a pot into shape. Bhuj, India
Abdurrahman Kumbhars workshop, Bhuj, India

The pot is thrown up to the shoulder and the lower part is then beaten into shape using the stone anvil and paddle.
The lid, being a shallow item, the jollying method that I have been using for the shallow items was tested. It proves to be an effective method for the production of flat items.



Potato Pot – made by Maham Anjum tested on the gas hob.



Potato Pot Sample made by the Rukmale potters

Matter test in Valentines Terracotta (for comparison with the Lodai clay)

500g of Valentines Red clay + 2 lit of water (mixed to a milky consistency)

Passed through 60 – 120 mesh and measured the matter that was left in the sieves

It was then fired to 850°C % of grit and combustible material was measured

Table 8.

Mesh	Matter left in the sieve	After firing to 850°C	% after firing	Combustible matter	% combustible matter
60	Nil	Nil	Nil	Nil	Nil
80	3.5g	2.4g	0.48%	1.1g	0.22%
100	3.2g	2.8g	0.56%	0.4g	0.08%
120	2.0g	1.5g	0.3%	0.5g	0.1%
RESULT	8.7g	6.7g	1.34%	2.0g	0.4%

NOTES from Section2 Chapter 1 on clay – How clay is prepared in other parts of India

It is soaked for a few hours. Barefooted children or women (women mostly prepare the clay) jump in, trample it with their feet until it is of the right consistency and ready to use by a potter. It is then placed on the ground near the potters' wheel is placed and ready for use by the khumbhar. There are local variations in the preparation of the clay. For example in some communities like Bhadrawati Pottery Village in Maharashtra 'the coarser particles and organic matter is separated from the crude clay'⁷⁹. After being soaked the heavier particles are allowed to settle and the finer clay is poured into another pit in the ground, dried in the sun, wedged and ready for use.

In Andretta, in the Kangra Valley, in the foothills of the Himalayas clay comes from the natural deposits in the valley; it is already of high quality, fine particle and almost alluvial. It is used for making local matkas.

⁷⁹ Myers, E.1992. *An Indian Potting Tradition*. Ceramic Review 133, Pg.38

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