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About the Volume

History, heritage and traditional knowledge systems not only act as resource banks for the next generation but additionally provide clues for evolving sustainable methodologies, customised as per the place and its people. The introductory article by Jay Thakkar covers the documentation of indigenous construction systems of Himachal Pradesh that have served as an appropriate technology for resisting earthquakes for centuries and continue to provide lessons for designs in the future.

Michel Danino relates the Ghaggar-Hakra River with the lost Sarasvati River recording a lost civilisation along with a message that we need to learn from the mistakes of past and urgently address the current overexploitation of our natural resources.

Nitin Sinha puts across the significance of alternative dispute resolution methods for heritage management, making the point that the combined effort of the legal and conservation mechanisms is essential in order to conserve our heritage. The case of Amritsar resonates the fact that there is a need to reassess what we undertake in the name of redevelopment of historic areas and that any future initiatives must be based on a holistic understanding of the social and built fabric of a place with participation of appropriate stakeholders and experts.

Increasing urbanisation and its impact on surrounding rural fabric is evident in most Indian cities, as exemplified in the case of a village on the periphery of Chandigarh, where urban culture is causing dilution of rural traditional frameworks. Another concern brought upon by this 'urban culture' is highlighted by Tamanna Sharma and Saurav Bardhan in the form of the problem of waste management in urban areas with recommendations for community participation and decentralisation as the key elements that can bring about positive, responsible and sustainable change.

Ananya Bhattacharya and Sudha Shrestha present case studies where community led initiatives have resulted in conservation of tangible and intangible heritage through training and capacity building or through revival of traditional socio-cultural organisations. Through the heritage album section, we revisit the multi-dimensional significance of the Malabar gardens of Kerala and the traditional water harvesting systems of Rajasthan. The book reviews cover interesting new publications on symbolism in Hindu mythology and traditional postal system in India. As a concluding review, Mukta Naik provides an assessment of the ambitious JNNURM Programme of the Ministry of Urban Development which draws to a close after completing its seven year tenure in 2012.

-The Editorial Team

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Compiling Records

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Details of Resistance Indigenous construction systems in Himachal Pradesh

BHARAT DAVE, JAY THAKKAR AND MANSI SHAH

ABSTRACT

A vernacular building technique called Kath-khuni construction is widely encountered in the upper hills of Himachal Pradesh. It provides an effective mechanism for buildings to resist frequent seismic tremors that rock the landscape of Himachal Pradesh. This method of construction has been practised and perfected with empirical knowledge over a long period of time. Various construction elements, materials and joinery details are used in the traditional Kath-khuni construction, resulting in a compositional richness in the making of walls, openings, and corners. Further, various sustainability and environmental responses were found to be embedded in this traditional building practice based on field research conducted in parts of Shimla and Kinnaur Districts.

INTRODUCTION

Diverse indigenous settlements and shelters are encountered throughout the Indian landscape. These range from houses in the desert of Jaisalmer to *bhungas* (mud huts) in Kutch in the West, the distinctive mountain villages in the East, to traditional courtyard houses in the South, each responding to a particular way of living, available materials and resources and peculiarities of the place. Such indigenous traditions show that the local builders possess a deep understanding of social patterns, building requirements, cultural aspirations and climatic conditions. Over time, Village settlement spread along the contour. Source: Thakkar & Morrison (2008)



Darbargadh, Sainj

such building traditions evolved the most appropriate construction techniques while achieving aesthetically satisfying results. Whereas some indigenous building traditions have changed or weakened over time in India, others have remained largely intact until recently. One such place where indigenous building traditions still survive mostly unchanged, is in the land of Gods, Himachal Pradesh in Northern India.

The state of Himachal Pradesh ranges in elevation from 450 metres to 6,500 metres above mean sea level. The region extends from the Shivalik range, which is the lesser Himalayas, to the Great Himalayas (5,000 metres to 6,000 metres) in the Northern zone. Despite its varying topography, the region displays a relative consistency and homogeneity of traditional construction and material with slight variations. In the mid and central Himalayas, a particular architecture has extensively developed which is locally known as 'Kath-khuni' or 'wood-and-stone' construction. The seclusion, remoteness and lack of navigable routes in the mountains have helped to form and foster this very unique traditional architecture over a long period of time. This type of construction can be seen in the houses, forts, darbargadhs (palatial residences), temples and granaries that are very distinctive to Himachal Pradesh. Some of the houses and temples are decades or perhaps centuries old and are still stable and solid against all types of seismic and climatic forces. These buildings incorporate particular plan shapes and structural configurations together with use of locally available building materials and details and illustrate remarkable insights of traditional construction and indigenous knowledge.

TRADITIONAL BUILDERS AND LOCAL MATERIALS

The widespread practice in the area is to construct buildings using services of traditional artisans who acquire their skills under a loosely organised system of craft apprenticeship, where the knowledge is transferred orally from master artisan to the apprentice. For the houses and granaries, local artisans from the village are employed but there are special artisans for construction of temples or other religious buildings. The construction techniques employed here have grown out of locally available materials and constraints. In many parts of this hilly landscape, people procure materials from their surroundings and build houses with the help of relatives or neighbours from within or adjoining communities. This close interdependence between people and environs has fostered an empirical understanding of construction

material and its quality, seasonal changes in temperature and humidity, need based sizes of various spaces, tools and technology, all of which are reflected in traditional building techniques.

The three types of materials extensively used in Kathkhuni construction are hard stone, soft stone and wood:

- *Hard stone:* It is obtained from the local quarries and is mostly used in building foundation and walls. Left over rubble is also collected and used in the wall filling.
- *Slate:* The metamorphic rock is heavy but lends to cutting into thin sheets that are used as slate tiles on roofs of traditional buildings of Himachal Pradesh. The slates cut into rectangular or triangular units are typically placed on roofs in rows with an overlap between them. An alternative technique is to drive nails to fasten them to the wooden roof frame underneath. The dead weight of slate tiles is enough to keep it in place. Containing high quartz content, slate reflects sunlight, is frost resistant, absorbs heat and provides moisture barrier.
- *Wood:* Sourced from the nearby forests, wood provides the other main building material. Among many other trees in this region, the most famous for building purposes is 'Deodar' or *Cedrus deodara*. One of the strongest of Indian conifers, it is extensively found in the Western and Central



Tower temple, Balag



House, Gavas



Schematic illustration shows the smallest houses are single cuboids stacked in two or three layers. The size of the house increases by placing cuboids side by side. Source: Thakkar & Morrison (2008)

Himalayan region on the mountain slopes between heights of 1,370 to 3,350 metres above the mean sea level. It is very durable and used for structural works of all kinds, such as posts, beams, floor boards, window and door frames, shutters and panelling. It is not however a suitable wood for polish or paint work since the oil in old wood especially near the knots seeps though finishes and discolours them. The popularity of deodar as timber for construction purposes is largely because it is soft wood that is easy to work with especially in the absence of high tech tools and instruments. The softness of the wood also enables beautiful relief work that is found on temple structures and palaces.

SEISMIC VULNERABILITY

Himachal Pradesh lies in an active zone of frequent seismic tremors. According to the Global Seismic Hazard Assessment Programme (GSHAP) data, the state falls in the region of high to very high seismic hazard that is zone IV and V. Historically, parts of this state have experienced seismic intensity of up to magnitude 8.0 Richter scale in Kangra in 1905. The Himalayan chain of mountains is a result of gradual upward thrust caused by grinding, sliding and occasional fission between tectonic plates. This otherwise imperceptible movement sometimes gathers enough energy to shake and pound the mountains and can cause extreme destruction including landslides



Detail of wall section depicting the different components, Shri P C Aukta House in Old Jubbal. Source: Thakkar & Morrison (2008)





Wall construction constitutes placing of two wooden beams with a gap in between filled with random rubble on alternate courses

and collapse of buildings. The indigenous building techniques, especially Kath-Khuni construction, have evolved in response to this ever present reality and incorporate materials and details in a way that effectively increase resistance of buildings to destructive seismic forces.

KATH-KHUNI CONSTRUCTION

The widespread technique of Kath-khuni, that is, 'Cator and Cribbage' construction can be found in buildings of various scales, from quite large *darbargadhs* and *kots* (forts), to intricate and majestic temples, to humble houses and even small stand alone structures like granaries in Himachal Pradesh. With its characteristic layered bands of wood and stone topped off by slate roofs, the Kath-khuni buildings are easily recognisable.

Typically the building plinths are constructed entirely of stone. Above this level, layers of stone and wood are constructed with a double skin and its internal cavity is filled with rubble. The external and internal skins of walls are held together by cross-braces. The layered construction of wood and stone and double skin is most distinctly visible at the wall corner. The cross sections of wood beams exposed at the corner explain the very name of this construction technique, *kath* (wood) and *khuni* (corner).

Construction detail of the corner of the ground floor level of a typical house with layers of wood-and-stone including protruding truncated pyramid shape corner stone. Source: Thakkar & Morrison (2008)

As the walls rise, stone courses decrease in height and wood sections gradually increase. The heavy stone base carries the lighter wooden structure at upper levels. No mortar is used between the courses and the sheer weight of dry masonry holds it down in place. Traditionally, no metal nails were used in wooden courses either; instead, strategically inserted wooden braces and joints held the structure together. This non-rigid Kath-khuni allows the building to flex with seismic waves and to effectively dissipate the destructive energy of earthquakes. Further details of Kath-khuni are elaborated upon and illustrated in subsequent sections.

HOUSES: ARCHITECTURAL ASPECTS AND CONSTRUCTION DETAILS

Building configurations

The houses, buildings and temples are constructed around simple rectangular plans that follow natural site contours. The character of a vernacular house in Himachal Pradesh is governed by a 'story unit' which is basically cuboidal. The smallest houses grow from a single cuboid that is stacked vertically in two or three layers; ground level, first level and second level. The size of houses may also increase horizontally with cuboids placed side by side and then extended upward by one or two levels.

Units and inhabitants

Each house including those buildings which are vertically stacked in two or three levels is usually shared by members of the same family. The number of inhabitants in a house may vary according to the seasons; however, it is typically around four to ten members.

Pattern of usage

The buildings usually have a single room on every floor with vertically distributed usage. The lower level is primarily used for storage and livestock. The body heat generated by animals rises up and keeps the upper floors warm. The first floor is exclusively used for living purposes. The kitchen is generally on the top floor. Additionally, the upper floors have external balconies or wooden verandas that are constructed with wooden railing running all around the building. These 'boundary' spaces act as buffers between inside and outside and the levels in the house, with varying degrees of enclosure and envelope.

Rituals related to construction

The rituals associated with house construction are less intense and elaborate than those involved in a temple construction. At the time of selection of site in case of a house, a *chela* (communicator of the village god) is consulted and *puja* (ritual) is performed by the *pujari* (priest) and many times it may involve a sacrifice of goat. Similar rituals are performed at the time of laying the foundation stone and top ridge beam.

Construction details

The houses in the region are composed of five primary components. Their associated construction details are elaborated and illustrated next.

Foundation and plinth

The construction follows a systematic and sequential process. The layout and orientation is decided by the carpenter, sometimes in consultation with the *chela* and the house profile is marked on site. This is followed by excavation of a trench 0.6 to one metre or more to lay foundations. The depth of the trench is relative to the height of the structure. It is filled with loose stone or rubble without any binder up to the ground level and then dry stone masonry is erected on top of it up to the plinth level.

Walls and fenestrations

The typical houses are between four to eight metres long and between four to five metres



Ground floor of a house under construction in Gavas shows the alternate layering of wood and stone



Corner junction of the ground floor structural wall showing Kath-khuni wood-and-stone layers



Two parallel crossbeams held in place by a double dovetailed wooden member (locally known as maanvi). The gap between the beams is filled with stone rubble that acts as insulation and gives mass to the wall



Carpenter fixing a wooden log in the wall construction at Devidhar village



Typical doorway of a house in Gavas village with multiple thick wooden frames and a small entrance door



Common corner detail of a door of a house in Gavas village



Small window opening of a house in Janog village typical of old construction

wide. The buildings may comprise between two to four storeys. The working dimensions of buildings are calculated in *haths* (length of the arm). Generally, even numbers in *haths* are employed in construction of a house whereas odd numbers in *haths* are used for temples. Thus dimensions of a house may be measured as 12 *haths* by 8 *haths*, 16 by 8 and so on. A *hath* corresponds to approximately 1.5 feet and thus typical lengths of houses may vary between four and eight metres and the widths between four and five metres. The typical floor height in such buildings is relatively low at around 2.20 to 2.50 metres. The most common type of Kath-khuni walls are constructed with alternate courses of dry stone masonry and wood without any cementing mortar. This type of wall construction involves laying two wooden wall beams longitudinally parallel to each other with a gap in between. The thickness of walls is determined by thickness of the two parallel wooden logs and the space in between, which may add up to between 50 and 60 centimetres total wall width for houses, and even more for temples. Two parallel wooden cross beams are held in place by double dovetailed wooden members known as *maanvi* inserted at intervals along wooden beams. The structure is further reinforced by wooden beams, which are attached perpendicularly to the wooden logs at the middle of the walls connecting two parallel outer walls. These beams provide the joists supporting the floorboards of each story. The perpendicular wooden members are held in place with a kadil (wooden nail). Usually no iron nails are used in the older construction. The whole wooden frame is known as *cheol*. The outer faces of the wall as well as the corner have large stone pieces. When the solid load bearing walls are built above the plinth level, the stone pieces are arranged in an alternating manner strengthening the corners with staggered joints, both diagonally and laterally imparting strength. As the wall rises up, the height of the stone layer decreases and ultimately it is only the wood frame that is stacked on another wood frame which completes the structural wall.

The walls of the interior are usually finished with mud plaster and lined with wood on account of its easy availability, good insulation and good binding properties. Exterior walls are sometimes finished in mud or usually left exposed. Generally storage areas such as cupboards may be built in peripheral walls on upper levels, which also serve as insulation against summer heat and winters. All houses and other structures generally, have a small entry and relatively small openings to reduce the inflow of cold air during winters. At the ground floor, the height of the doors follow that of the livestock (cows) but on



Cupboards fixed in peripheral wall in a house under construction in Devidhar village



Wooden balcony of a house in Devidhar village, under construction



Windows of larger sizes incorporated in new construction in house at Devidhar village



A typical two-storey house with a cantilevered balcony on top floor at Gavas village



Detail corner junction of residential balcony, Devidhar village

the upper floors this height is increased a bit such that inhabitants still need to bend down to enter a room. The doors are surrounded by strong wooden frames. Sometimes the door frame is mitred at the corner, at other times precisely crafted with innovative tensioncompression joints visible at corners of the door frames. The door panel is often made out of a solid plank held in position with two pivots on a strong wooden latch for locking the door from inside. Earlier, there were hardly any windows within the wall. Mere small openings were placed for ventilation. But in recent times open-able windows have become a commonplace in houses. Windows provided in the walls are solid plank shutters with a stone piece used as a lintel in the wall. They are either attached with side pivots or grooves for sliding horizontally. These details are improvised in the new structures wherein windows are comparatively larger.

Floors and stairs

The flooring on the ground level is of stone while the rest of the floors consist of wooden beams and planks. Wooden planks rest on wooden joists supported by beams or walls. These floor beams are shear pinned with the wall logs. Staircases, steps and ladders are incorporated as the fundamental connecting element within the house. There are three primary types of floor-to-floor stairs. These are all standard wooden staircases with railing, wooden ladder and a stepladder, that is a cross between a standard staircase and a ladder. There is an opening on the floor, which allows one person to pass through.

Projecting wooden balconies

Balconies are the most diverse and integral part of the house. They are built around the perimeter of the building either on one side or in an 'L' or 'C' shape or at times circumnavigate the entire building. For balcony projections, cantilevered beams are placed along the entire length and on the corners to provide adequate support at these points. The most interesting aspect about these cantilevers is that there are no diagonal bracings. Balconies used to be open but with the passage of time, various forms of enclosures are now being observed, from partial to entirely closed facades. These are made of a row of wooden posts used at regular intervals with planks in between. The wooden posts also support the roof structure and in many cases, these are moulded and richly carved. All vertical posts are connected through a horizontal member on top, that rests on the perpendicular members (connected with a lap joint) projecting from the wall.

Roofs

The roof shapes subtly vary in different parts of Himachal Pradesh. The houses in the Sutlej valley usually have pent and gable roofs although there also exist pure gable and pure pent roofs in the same region. The variations in roof forms reflect different ways to shed snow and rain while maintaining a buffer between internal and external environments. The pitch and geometry of roofs change as one climbs to higher altitudes in Himachal Pradesh in response to changing patterns and intensity of precipitation in these parts.



A two-storey house with a pent and gable roof finished in slate stone cut in proper rectangular shapes, Gavas village

The roof construction consists of a wooden frame, which acts as a flexible diaphragm. The roof frame is complete once the ridge beam that was earlier made out of a single tree trunk is raised to the highest level of the building. Slate shingles are then laid on top of this framework. The shingles may be fixed to the wooden frame underneath with metal nails at a single point. This allows the slates a degree of movement that helps in shedding of snow and moisture as well as adjusting to any movement during earthquakes.

Architectural characteristics and embellishments

In terms of typical building massing and structure, the lower portion of houses comprises of heavy masonry and appears rock solid. The upper floors are generally light wooden structures and appear to gently rest and float on a solid base. The projecting balconies on upper floors sometime feature rhythmic post and arch openings on the periphery and also provide ample space for motifs and carvings. Structural wooden elements are also highly carved in many instances. The ornamentation enables the local people to express their culture, whether the motifs are based on abstraction of nature, spiritual awareness or replica of patterns found in local flora and fauna. Woodcarving is integrated into the construction of the building and not added later on. Majority of the woodcarving is two-dimensional, that is planar or surface oriented. In the houses, folk motifs in carving are very popular while in temples and darbargadhs, there is a juxtaposition of classical and folk forms.

KATH-KHUNI CONSTRUCTION SYSTEM AND STRUCTURAL RESILIENCE

The indigenous buildings of Himachal Pradesh reflect a remarkable understanding of appropriate use of



Slate shingles of varied sizes laid and finished on the roof of a house in Janog village



Variation in pent-and-gable roof with a conical roof in centre which is indicative of a temple building, Kamru village

local materials and highly effective construction techniques in a harsh environment. This understanding and knowledge underpin the tradition of Kath-khuni construction system.

The composite layering of wood-and-stone in walls draws upon strengths of both the materials, with wood being under tension and stone under compression. The interlocking frames formed by the stone and wood held together without any rigid joints provides an effective mechanism for building frames that are flexible with the rocking movements of earthquakes without



House with profusely carved balustrade and arched opening, Gavas village

completely collapsing. These walls are configured to also resist the sliding or overturning during land movement. As quoted, 'Wood frames the stone that anchors the structure to gravitational forces. This results in higher damping and allows dissipation of the energy of the earthquake more quickly and evenly' (Thakkar & Morrison 2008).

Another interesting feature is the dry masonry construction, which allows the stones to undulate within a flexible wooden framework and allows energy of the earthquake forces to disperse.

The Kath-khuni system distributes mass optimally by employing a heavy base and plinth at lower levels and a lighter wooden frame construction on upper levels. The buildings also taper just a fraction as they rise which makes it harder for the buildings to topple over easily during rocking and pounding movements caused by earthquakes.

The buildings are composed of cuboidal volumes, generally sited along contour lines and avoid using irregular building profiles. The regular box shaped



Carving on the openings of a house in Chitkul

volumes are more effective and stable during sideways movement compared to other configurations such as L or C shaped buildings.

The Kath-khuni system uses single length components as far as possible, for example long deodar beams. The joints are located at the periphery of structural frame which makes use of flexible joints using dowels, wedges and metal pins. These details allow intercomponent adjustments by distributing load transfers and shear forces during earthquake tremors. Similarly, the use of dry masonry in this system allows stones to shift and resettle in response to rocking movements during tremors. The slate shingles on roofs pivoted to the wooden frame also accommodate similar shifts and movements. The doors and windows are much lesser and smaller in size. This allows even and quick load transfer and minimises the effect of movement during earthquake.

The components and their joinery details in Kathkhuni construction system thus complement each other. These allow a degree of movement without rigidly fixing each other in position. As a result, buildings constructed using this technique show greater resistance against seismic shocks compared to buildings constructed using more rigid construction techniques. During a number of earthquakes, greater proportion of indigenous Kath-khuni buildings have been recorded to withstand and survive, which suggests inherent resilience of this construction technique. Thus the Kath-Kuni construction system is one of the most effective responses against seismic forces.

FUTURE CHALLENGES

The construction practice in parts of Himachal Pradesh today appears poised at a proverbial fork in the road. The incessant onslaught of modernisation spurred by faster communication, changing urban lifestyles, advent of roads and influx of alien, cheaper materials and techniques may overrun traditional know-how and building systems. The urban sprawl and associated degradation visible in the plains is slowly but inexorably inching higher and farther into the Himalayan interiors. Further, the stringent laws on timber felling, quarrying rights, scarcity of materials and increasing cost have also deterred builders from using local materials and resulted in greater acceptance of newer building techniques that may appear cheaper and efficient in short term but are not sustainable nor appropriate in the long run. It is in such a context that there is an urgent need to analyse, understand and disseminate lessons embedded in the time-tested and proven indigenous building traditions such as the Kathkhuni construction systems of Himachal Pradesh.

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Down the Sarasvati

MICHEL DANINO

ABSTRACT

An ancient urban civilisation came to light in the early 1920s at Harappa and Mohenjo-daro in the Indus Valley. It was soon understood that those cities had thrived in the third millennium BCE, at the height of the Mesopotamian and Pharaonic Egyptian civilisations. More discoveries followed, expanding the area of India's own Bronze Age culture well beyond the Indus Valley, into Baluchistan, Afghanistan, Gujarat and all the way to the Yamuna River. By the 1980s, it became clear that hundreds of settlements were located along the Ghaggar-Hakra River of Haryana, Punjab and Rajasthan, a river which since the 19th century had been identified with the lost Vedic Sarasvati. This article briefly tells the River's story and offers to follow its course downstream, visiting Harappan sites in its basin, from Rakhigarhi in Haryana to Dholavira in the Rann of Kachchh.

INTRODUCTION

Ancient India always fascinates. But it is seldom realised that its discovery followed a process almost exactly opposite to the neat chronological order found in the textbooks: it proceeded from the newer to the older. Till the start of the 20th century, barring some poorly understood stone artefacts, the monuments of Gupta, Mauryan or Buddhist times were all that was known of ancient India. The fabulous

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A satellite view of the Sarasvati basin. Source: Baldev Sahai, ISRO

ages spoken of in the Puranas and the two Indian epics, the Mahabharata and the Ramayana, appeared to be little more than interesting flights of fancy. Indian civilisation seemingly dawned around the middle of the first millennium BCE and was thus much younger than Egypt or Mesopotamia.

Ruined sites such as Harappa on the Ravi, a tributary of the Indus; Mohenjo-daro, some 700 kilometres downstream, on the Indus or Kalibangan in northern Rajasthan, among many others, had been noticed and cursorily explored in the late 19th and early 20th centuries, but little came of it. In fact, at the first two sites, the apparently modern sizes and proportions of burned bricks convinced the surveyors that these could not be more than a few hundred years old. These turned out to be wrong by a trifling 4,000 years!

In the early 1920s, proper excavations finally began at Harappa and Mohenjo-daro. Copper and bronze tools, but none of iron, challenged the assumed recent epoch of the sites, but how ancient might those ruined cities have been? A few square steatite seals displayed a hitherto unknown script found at both locations. These showed that the two cities had belonged to the same culture. When experts from other parts of the world were consulted, a few of them pointed out that similar seals had come to light in Mesopotamian cities, which were known to have thrived in the third millennium BCE. A wave of excitement ran through archaeological circles: the 'Indus Valley civilisation', as it was called, therefore belonged to the same epoch. Since the most ancient Indian sites had been related to Buddhism, about the fifth century BCE, at one stroke India's civilisation had aged by some 2,000 years!

Initial findings were limited to the Indus Valley and Baluchistan. In 1941, the famous British explorer Marc Aurel Stein conducted an expedition in the then Bahawalpur State, today's Cholistan, a very arid region of Pakistan between the Indus valley and Rajasthan.¹ Stein was attracted to the dry bed of the Ghaggar–Hakra river, whose banks were dotted with numerous ruined settlements, including Kalibangan. The Ghaggar–Hakra² only flowed seasonally in its upper reaches, that is, in Haryana and western Punjab, but its wide bed, at times reaching some six kilometres across, testified that it had once been a perennial river. In fact, since the 19th century, for reasons that will soon be seen, it had been identified with the Vedic



Map of the main settlements of the Indus–Sarasvati civilisation during its Mature or urban phase, from 2600 to 1900 BCE. Source: Michel Danino

Sarasvati River. In a paper of 1917, Aurel Stein, a good Sanskritist to boot, had been one of the many scholars arguing in favour of this identification. Now, two and a half decades later, he perhaps wanted to test it. At any rate, he had a hunch that settlements of Harappan culture might be found east of the Indus valley. At the age of 78, crisscrossing the region on horse and camel-back, he was able to identify a few sites with a Harappan culture on the basis of its pottery types. Some of the pottery sherds, in fact, displayed 'incised characters which appear on many inscribed seals from Mohenjo-daro and Harappa'. The Ghaggar–Hakra, in Stein's opinion, was home to 'very numerous prehistoric mounds'. So the Sarasvati River, too, had nurtured this civilisation, a conclusion amply confirmed by subsequent explorations in the region. Altogether, it is now known that the Sarasvati basin was home to about 360 sites of the Mature Harappan phase, the urban phase that saw cities thrive, lasted from 2600 to 1900 BCE approximately. This amounts to almost a third of the 1,140 known urban sites. Such is the reason for a third proposed term to describe this Bronze Age culture: the Indus–Sarasvati civilisation.

Another surprise was Gujarat that turned out to shelter some 310 Harappan sites. Together with a few marginal regions, this civilisation, as we now know it, spread over nearly one million square kilometres, more than



Mature Harappan sites in the Sarasvati basin

Pharaonic Egypt and Mesopotamia combined. True, it boasts none of their pyramids and ziggurats, their glorious royal graves, colossal temples, life-size statues, opulent art or endless inscriptions. But it had other assets, of a more discreet kind: a high sense of town planning, an extensive sanitation system unknown elsewhere until the Roman Empire, an efficient civic order, a mania for standardisation³ and a mysterious class of rulers; mysterious because, unlike the Pharaohs, they were never portrayed or glorified. It is not known, who they were and neither their palaces nor their graves can be located. They appear to have ruled without a military organisation; the architecture of the Harappan cities has not yielded signs of army barracks, for instance and no effective weapons of war have been found among the bronze artefacts. Moreover, there are no depictions of warfare in Harappan art and excavations have brought to light no telltale signs of manmade destruction or conflict.

In their contacts with contemporary cultures outside the Indian subcontinent, the Harappans also preferred peaceful interaction. Through land or sea routes, they exported their famed jewellery and their timber to different civilisations of Iran, the Persian Gulf and Mesopotamia to the west and of Central Asia to the north. Intriguingly, while their artefacts, mostly semiprecious stones, seals and pottery, have been found across this huge region, what they brought back in return remains a mystery: perhaps silver or copper ore, besides perishables such as food items. So, was it a peaceful, prosperous, well-ordered society? Perhaps, to some extent; but it is important to remember that no more than 10% of the urban sites have been excavated, so the archaeological record is necessarily very incomplete. Moreover, archaeology only captures a small portion of the daily life of the Harappan ruler, priest, trader, potter, metal worker, craftsperson, municipal worker or agriculturist. Gone forever are the festivals, the ballads, art forms on cloth or wood or the challenges posed by floods and droughts. The larger part of Harappan life may forever remain a closed book to us.



Mohenjo-daro: aerial view of acropolis, with grid-aligned planning. Source: Michael Jansen

THE SARASVATI

Why in the first place, did explorers and archaeologists come to identify the Ghaggar-Hakra's dry bed with the Sarasvati of Vedic times? There are a few simple reasons for this. The chief one being that in a hymn 'in praise of rivers', the Rig-Veda (10.75) lists some 19 rivers from east to west and in the process locates the Sarasvati between the Sutlej and the Yamuna, precisely where the Ghaggar-Hakra's bed was found and there is no major riverbed in the Sutlej-Yamuna interfluves. Subsequent literature, such as the Mahabharata, describes the River as losing itself in the desert sands, which points to a gradual loss. Today, in Haryana, a seasonal stream called 'Sarsuti', a corruption of 'Sarasvati', technically a tributary of the Ghaggar, testifies to a tradition that remembers the once great river. The Ghaggar itself, which flows down from the same Shivalik Hills as do the Sarsuti and a few more streams, is today a modest seasonal river, especially as most of its waters are diverted to irrigation through a network of canals. Yet during strong monsoons, which were the case in 2010, it still manages to flow well into Punjab. There is even historical evidence that in the 19th century, it occasionally reached what is today the Indo-Pakistan border, at which point it becomes known as 'Hakra'.

These facts taken together are what had led most 19th century Indologists to accept the Ghaggar-Hakra's identification with the Vedic Sarasvati, long before the discovery of Harappan sites. Thus, when Aurel Stein published in 1942 his first brief report about his expedition, he titled it 'A Survey of Ancient Sites along the "Lost" Sarasvati River'. More recently, scientific disciplines ranging from satellite imagery to isotope dating of buried waters have added much to our understanding of the evolution of the Vedic river. Let us now pay a brief visit to a few of those 'ancient sites' in the basin of the Sarasvati.



The Ghaggar's wide dry bed near Anupgarh, as Aurel Stein must have seen it (photographed in the early 1950s). Source: ASI

RAKHIGARHI

Excavations at this site in Haryana's Hissar district started in the late 1990s and brought to light a settlement with seven mounds spread over 80 to 120 hectares, which would make it the largest Harappan site in India. Rakhigarhi is located on the right bank of the Chautang River, which has been identified with the Vedic Drishadvati, a tributary of the Sarasvati; in late Vedic literature, the land located between these two rivers was regarded as especially sacred. Indeed, says the Mahabharata, 'They that dwell in Kurukshetra which lies to the south of the Sarasvati and the north of the Drishadvati, are said to dwell in heaven.'



Plan of Kalibangan, on the Sarasvati. Source: ASI/Michel Danino

Unfortunately, issues with land ownership have complicated excavations at this promising site, making only a small part of it available to the excavators. Nevertheless, from the limited information available, the city was fortified and used drains. In the 'citadel', Amarendra Nath, who directed the excavations, reported mud-brick podiums, a series of four or five fire altars and a few more elsewhere, one of them heart shaped. A workshop with 3,000 finished and unfinished beads of various semiprecious stones testified to the Rakhigarhians' craft skills. So did the major find of a copper vessel containing rare silver bangles and a gold headband. Interestingly, no Late Harappan or posturban phase has come to light so far at Rakhigarhi, suggesting that the city was abruptly abandoned at the end of the Mature phase.

BHIRRANA

Another recently explored site, Bhirrana is located on the Ghaggar's left bank in Haryana's Fatehabad district. Excavated by the late L S Rao, it has thrown



A terracotta wheel from Rakhigarhi, with painted spokes. Source: ASI

new light on the early chronology of pre-Harappan settlements in the Sarasvati basin, since several of the radiocarbon dates for its lowest layers go back to the fifth or sixth millennium BCE, into Neolithic times. If similar dates can be confirmed at a few other sites, these could potentially rewrite the antecedents of the Indus civilisation, which had so far been located more to the west. Measuring 150 x 200 metres, this is a much smaller site than Rakhigarhi, yet it was also fortified, planned and yielded a considerable number of semiprecious stone beads, copper objects, steatite seals, and terracotta models of wheels. The last item is common at most sites⁴, but some of the models of wheels found at Bhirrana happen to have spokes clearly painted on the outer side, sometimes on the inner side too, as well as a raised hub. In a few cases, the spokes stand out in relief, making it clear that these are not mere decorations.

Since a few similar models of wheels have emerged at other sites, such as Rakhigarhi, the natural conclusion is that in this region at least, some of the Harappan carts sported spoked wheels. Because of the old dogma that the spoked wheel was brought to India by the Aryans riding horse-drawn carts sometime in the second millennium BCE, in any case after the Indus-Sarasvati civilisation had faded away, some scholars have sought to reject the evidence emerging from Bhirrana and a few more sites. However, the Aryans are quite invisible in Indian archaeology and few archaeologists today take their coming seriously. Be that as it may, the spoked-wheel carts used in the Sarasvati basin would have been drawn by bullocks, not by horses, so the controversy is actually irrelevant.

BANAWALI

A little further downstream, in the same Fatehabad district of Haryana, is found this Harappan town of about 10 hectares on the bank of an old bed of the

Ghaggar. Directing its excavation in the 1970s, R S Bisht brought to light fortifications with a six metre wide, V-shaped moat running outside. It must have acted as a protection from floods when the River was in spate. Rich traders lived at Banawali, judging from the presence of seals, hoards of jewellery and stone weights in some of the larger houses, one of which had a paved living room and a bathroom complete with a raised washbasin!



Drawing of Banawali's fire temple, with the apsidal altar in the centre. Source: ASI/Michel Danino

One remarkable structure unearthed in Banawali's acropolis is a small building shaped as a semi-ellipse. To make it amply clear that this was a conscious choice and not an accident, the building harbours an altar that conforms to a semi-elliptical or apsidal shape. As it contained a thick layer of ash, there can be little doubt that this building was a small temple dedicated to fire worship. It is interesting to note that some 2,000 years later; the first temples erected in early historical cities, whether at Atranjikhera or at Taxila, were also of apsidal shape.

KALIBANGAN

Kalibangan is located some 200 kilometres downstream from Banawali, on the left bank of the Sarasvati. In its Mature phase, the acropolis and the lower town formed two oblique parallelograms whose longer sides were oriented north-south. In the lower town, where most citizens lived, streets formed a well planned and carefully maintained grid; their widths, starting from the narrowest, were 1.8 metres, 3.6 metres, 5.4 metres and 7.2 metres, in a perfect progression. There are many more signs that Harappan planners and engineers were fond of precise proportions, no urban jungle in those protohistoric times! Terracotta floor tiles found in a house point to certain opulence, as floor tiles are not exactly the first necessity in a sedentary lifestyle. While the northern portion of the acropolis was residential in nature, in the southern was a series



Flooring tiles at Kalibangan. Source: ASI

of massive brick platforms oriented along cardinal directions. On one of them, seven oval shaped structures, five of them fairly intact, were found next to each other, sunk in the ground and with a central stele standing in each. They contained ash and charcoal, which prompted the excavators, directed by B B Lal and B K Thapar, to identify them as fire altars. More altars, circular in shape, appeared outside the fortified enclosures, to the east of the lower town.

The presence of fire altars at Rakhigarhi, Banawali and Kalibangan⁵ suggests an interesting bridge between Harappan and Vedic cultures, since fire worship is central to the latter. Sometime about 1900 BCE, Kalibangan was abandoned, as were most sites in the central Sarasvati basin. Just like Rakhigarhi, Kalibangan has no Late Harappan phase. The abandonment was therefore rapid and is likely to have been caused by a loss of water supply. As Kalibangan had neither reservoirs nor many wells, its source of water must have been the Sarasvati, which must have ceased to flow here at that point of time.

DHOLAVIRA

Excavated in the 1990s by R S Bisht, Dholavira is not part of the Sarasvati basin, but it stood just across the Rann of Kachchh from the river's estuary on the northern side. This site threw up quite a few surprises, beginning with its very location in what is today a forbidding landscape. Although the Rann was navigable in Mature Harappan times, climatic conditions were probably more or less as arid as these are today. At 47 hectares, Dholavira's fortified area was divided into three sections:

- An acropolis consisting of two adjoining fortified enclosures, the 'Bailey' and the 'Castle'. The latter's massive walls, made of mud bricks flanked by dressed stones, reached a width of 18.5 metres. Within these, three sentinel rooms were built with dressed stones. Highly polished segments of pillars, both square and circular, were found there, along with a three metre long inscription consisting of 10 signs.
- A middle town neatly crisscrossed by broad streets at right angles.
- Beyond it, the lower town with habitations in its north-eastern and eastern sectors. Between the acropolis and the middle town was a huge 'stadium' or ceremonial ground, over 283 metres long and 47.5 metres wide that must have witnessed elaborate public events.

Today, no city exists in the region. If an architect were asked to design one, I suppose he would arrange for water to be brought from mainland Gujarat through a pipeline. Instead, to be able to survive round the year, Dholaviran engineers implemented sophisticated rainwater harvesting, with a series of huge reservoirs hugging the castle's eastern and southern fortifications; some were carved out of massive rock, an engineering feat in the Bronze Age, since it required the use of



Plan of Dholavira, in the Rann of Kachchh. Source: ASI/Michel Danino

especially hardened bronze chisels. A network of underground drains brought to them every drop of rainwater, but also water diverted from two seasonal rivulets to the north and south of the city, whose flow was slowed down by a series of dams and partly deflected into the lower town. These would only carry water during the brief summer monsoon, but that was enough. Altogether, over a third of Dholavira's area, about 17 hectares, was earmarked for storage of water, in effect; the monsoon must have turned it into a kind of the lake city. Without exaggeration, Dholavirian skills in water management will long remain the envy of the modern Indian cities.

Dholavira has a post-urban phase, during which new inhabitants built rough circular dwellings without planning or sanitation. This was unlike in the central Sarasvati basin, where all sites were abandoned: with most of its waters captured by the Sutlej and Yamuna systems, the great River shrank down to a series of small streams flowing down from the Shivalik Hills. The Late Harappans found themselves forced to migrate, some of them crossing the Yamuna and the Ganges. Carrying the memory of the River Sarasvati they had revered, the inhabitants transferred it to the confluence of these two rivers.

CONCLUSION

The loss of the Sarasvati may find an echo in the predicted disappearance of the Himalayan glaciers. If this happens, the Brahmaputra and the Ganges will turn into seasonal rivers. But while the Sarasvati's disappearance was a natural cataclysm, possibly compounded by human overexploitation of natural resources, that of the Gangetic rivers will be largely man-made and may spell the end of the 3,000 year old Ganges civilisation in its mother region. The scattered Late Harappans had some time to adapt themselves to the new situation, fall back on rural settlements or create new ones, relocate themselves when necessary and continue their existence, although in a non-urban context; but how will the tens of millions dependent on the Ganges system survive, when Prayag's triveni sangam (confluence of three rivers) consists of three invisible, 'mythical' rivers?

Notes

- ¹ The Cholistan desert is technically a part of the Thar or Great Indian Desert.
- ² 'Ghaggar' is its current name in India, 'Hakra' in Cholistan.
- ³ This is visible in town planning and brick proportions, in an elaborate system of weights and in the seals.
- ⁴ These were part of miniature toy carts made to keep children amused.
- ⁵ A few more have been identified at Harappan settlements of Gujarat, such as Lothal and Vagad.

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Alternative Dispute Resolution in Heritage Management

NITIN SINHA

ABSTRACT

The judiciary mechanism of our country is progressing towards a new horizon by encouraging alternate dispute resolution methods and practices that are focussed towards bringing about a change from the adversary mode of litigation to non-adversary means, such as arbitration, conciliation, negotiation, mediation and expert appraisals. To achieve positive results in such alternative legal approaches, actions have to be strongly supported by technical reports and expert committee appraisals. Present day heritage management demands less legal litigation and more attention for the heritage resource at risk. An alternative system of developing sensible and achievable legal solutions through the combined support of conservation professionals as well as legal experts may be the answer. Such a system is currently being put into practice through the 'Charminar Pedestrainisation Project and Conservation of Lad Bazaar' at Hyderabad in Andhra Pradesh and has been presented as a case study.

HISTORIC LAD BAZAAR OF HYDERABAD

Lad Bazaar is a historic market in Hyderabad, associated with early Qutub Shahi period of 16th century to late Asaf Jahi period of 20th century. This market has been witness to trading in diamonds, semi-precious stones and

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HERITAGE COMPONENTS OF LAD BAZAAR



Users



Traditional products and services



Skills and craftsmanship



Architectural and construction

iron blades, during the Qutub Shahi period. Trading of spices, drugs, books, paper, pasteboard, cork, swords, bows, quivers, knives, cattle, horses and camels was carried out in the time of Asaf Jahi. The present market specialises in traditional merchandise related to wedding ceremonies and garments for ladies.

The name 'Lad' is believed to be adapted from Ladli Begum, Queen of Nizam VI, Mir Mahboob Ali Khan. The surroundings of this market as observed in the 1915 Survey Map sourced from the Town Planning department, Hyderabad, constituted of royal palace complexes, residences of noble-men, *khazane amra* (public offices), a Homeopathy hospital and a Unani hospital. Open spaces like the Mehboob Chowk with a clock tower delineate this area. It is a 19th century urban design intervention starting from the majestic Charminar and terminating in the public square Mehboob Chowk. The holy Mecca Masjid is one of the

Historical and associational

neighbouring heritage structures abutting Lad Bazaar. The products sold in Lad Bazaar have a strong social significance due to their association with the traditions, socio-religious practices and life-styles of the people of Hyderabad. The commercial activity has a long history of sustenance and provides employment to residents of the city and migrants from other places.

The 21st century Lad Bazaar is one of the zones protected by heritage regulations. It falls under the Charminar Precinct No. 10 that signifies the rich and valuable architectural heritage of Hyderabad. Regulations have been notified with regards to developments or any planned or unplanned interventions in this precinct to safeguard the heritage structures. Lad Bazaar is a typical case that reflects issues in urban conservation. Observation of the traffic, pollution, disarray of amenities, encroachments and insensitive redevelopments in parts of Hyderabad



Typical elevation of a shop

city, especially to the south of River Musi, does not enable location and comprehension of the historic city fabric. Today, Lad Bazaar presents complex issues of heritage management such as redevelopment, economic pressures and non-participation of local community in heritage protection. The multiplicities of agencies and statues or regulations make the process of heritage management and dispute resolution even more difficult and challenging. There is a crucial requirement for coordination of all the agencies in order to ensure the success of heritage management project.

ISSUES CONFRONTING HISTORIC LAD BAZAAR OF HYDERABAD

Shopkeepers and residents have made transformations to the structures that do not conform to heritage standards in terms of architectural style, construction and usage. Lack of any administrative will to enforce the legislations is one of the leading issues. Disputes arising out of road widening, demolitions and encroachments that have damaged the heritage properties along the inner Ring Road have entered an adversary process in court. Further, it is evident that violations of byelaws with regards to aspects such as building heights and overall construction activity were overlooked for a long time, indicating disinterest of the Government in heritage management.



View of Lad Bazaar stretch

Redevelopment related to building styles, construction materials and finishes and re-sizing of plots in an economically flourishing area like Lad Bazaar is also responsible for several disputes. On the one hand are shopkeepers and residents who are keen to make the shops more presentable, while on the other, are the government agencies whose mandate is to implement these projects. These disputes, which also take the ugly shape of a civil suit or a Public Interest Litigation (PIL), are not being addressed by the government agencies in a comprehensive manner. The primary motive should be to curb the unbalanced and non-integrated insensitive developments within heritage precincts that are knowingly or unknowingly undertaken by the local community.

The growing demands of economics add to these issues. The rapidly ascending real estate values drive the custodians or owners to pull down these heritage properties and replace them with a small volume of commercial space. There are also economic restraints leading to non-maintenance of the heritage properties. These white elephant like properties suffer a silent and slow death due to lack of timely and planned maintenance. It is seen as a clever ploy to let the structure slip away from a poorly maintained to a dilapidated state and finally crumble down. This 'unsafe structure' is then pulled down very earnestly and replaced by a monstrous non-conforming building.

Non-appointment of professionals to supervise the new developments is also a major issue. The role of a professional architect or engineer is clearly mentioned as one who supervises any construction activity on behalf of the client or owner. The problem often arises when professionals are not appointed. The scenario of insensitive development becomes more serious when lot of financial resources are invested and the parties face notices from the state agencies to comply with rules. This marks the beginning of a



Heritage components and management jurisdictions

Agencies and Management frameworks operational in Lad Bazaar											
Heritage Property	Ownership	Management Agencies	Area of Jurisdiction	Statues/ Regulations							
Charminar	Public	Central government agency: Archaeological Survey of India	100 metres of prohibitory area and 200 metres of regulated area around Charminar	Ancient Monuments and Archaeological Sites and Remains Act, 1958: Rules 1959							
Mecca Masjid	Public	State government agency: Department of Archaeology and Museums, Andhra Pradesh	100 metres of prohibitory area and 50 metres of regulated area around the Mecca Masjid	Andhra Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1960							
Shahi Jilau Khana Gate	Public	Local government agency: Greater Hyderabad Municipal	Only the Gate	Hyderabad Urban Development Authority's Regulations of 1995, 1998 & 2000 under							
Homeopathy hospital	Private	Corporation through Hyderabad Urban	Only the hospital	Andhra Pradesh Urban Areas (Development) Act, 1975. Municipal Corporation of Hyderabad Acts and Rules							
Mehboob Chowk	Public	Development Authority regulations	Only the building								
Clock Tower	Public		Only the tower								
Shops	Private/ Leased/ Rented		Only the shops								

dispute and such civil cases keep on dragging for ages while the heritage structure suffers. In the absence of a professional supervisor who is accountable, the state agencies realise that they now have to confront the parties directly. These parties are then put through the adversary process of courts. The procedural code makes the situation even more dismal, which results in growing resentment towards the heritage structures and their maintenance. For instance, the road-widening and demolition activity undertaken in 2002 has prompted a PIL (W.P no: 20387/2001) to be filed by a nongovernmental organisation requesting the High Court to rule that the whole process be authorised or supervised by the Hyderabad Heritage Conservation Committee (HHCC). This dispute has also brought about unification of majority of shopkeepers and residents and has resulted in the formation of the Lad Bazaar Shopkeepers Association.

SUBJECT MATTER AND ITS SCOPE

Heritage management envisages the management of a resource that is a product of past, continues to inspire the present and needs to be protected for future generations to appreciate and learn. Measures to safeguard this unique and irrecoverable resource need to be sensitive to the community around it as well. It is in order to protect this valuable heritage that community involvement assumes great significance. The disputes faced by the management such as growing urbanisation needs magnify the importance of immediately addressing these issues. It is to be noted that even though there is no single authority for the management of heritage precincts and buildings, disputes continue to arise from all the quarters of the society. The multiplicity of agencies and their overlapping jurisdictions also need to be addressed by the dispute resolution mechanisms.

There is a need to observe the kind of parties that may be involved in dispute resolution. On one side are the state agencies like Archaeological Survey of India (ASI), Greater Hyderabad Municipal Corporation (GHMC) and Hyderabad Urban Development Authority (HUDA), while on the other are the numerous residents, shopkeepers and people living within or around these heritage structures. Disputes can be based on issues of land possession, services, infrastructure, inhabitation and non-compliance to the regulations or municipal byelaws. One party could see this dispute as gross violation of the law and the other party could protest citing incapacity or non-understanding of the guidelines of heritage management.

The disputing parties can be individuals, a group of individuals, residents, associations of shopkeepers or the community at large. Since these civil cases keep getting extended, the parties become even more hostile to the heritage structure. The heritage structures that should be a matter of pride are now seen as causes of conflict and misery. This situation can become even more dangerous as the community eventually loses interest and tends to neglect the heritage structure in the future. Thus, the heritage property will now perish as its association with the immediate surroundings and community becomes strained.

Based on the above scenarios, it becomes imperative to address the setting up of a dispute resolution mechanism that can hasten the dispute addressal system and provide relief to the aggrieved heritage structures. The concept of living heritage that is people living in and maintaining the heritage structure is not yet within the policy of heritage protection. The approach is still monument-centric with the focus being on the structure itself and does not include the associated surroundings, people and traditions attached to it. The shift in approach from monument-centric to focussed on living heritage will create conducive atmosphere for the management and the disputing parties to address the issues and find an acceptable solution.

PREVALENT DISPUTE RESOLUTION MECHANISMS

Disputes related to heritage are matters of public domain. It is in public interest to observe that the management is well within the established norms and caters to all levels of community such as stakeholders, agencies and tourists. The dispute resolution mechanism in place today is litigative and of an adversary nature. Majority of cases or dispute resolutions are through PILs. The purpose of a PIL is 'to promote the public interest, which mandates that violation of legal or constitutional rights of a large number of persons; poor, downtrodden, ignorant, socially or economically disadvantaged should not go un-redressed'. The Apex Court has laid down following principles regarding PIL (Bakshi 2004):

- Bono fide 'public intention' by the party filling PIL.
- To uphold the basic human rights of deprived/weaker sections of the society.
- To set off the executive in discharging its constitutional and legal obligations.
- The petitioner must inspire the confidence of the Court and must be above suspicion.
- To assure social, economic and political justice.
- The High Court while entertaining PIL must indicate how the public interest is involved in the case.
- To assail the illegality of the offending action and no third party has a *locus standi* to canvass the legality or correctness of the action.
- The Courts can interfere only where legal rights are involved and in fact, legal wrong requires judicially enforceable right.
- No person has a right to waiver of the *locus standi* rule and Court should permit PIL only when it is satisfied that the carriage of proceedings is in the competent hands of a person, who is genuinely concerned with public interest and is not moved by other extraneous considerations.
- The Court should be conscious and try to ascertain the *bona fides* of the petitioner. A person should approach the Court not only with clean hands but with clean mind, clean heart and with clean objectives.

		Arbitration	The parties enter into agreement and are bounded by the <i>Arbitration and Conciliation Act</i> 1996 for settlement/dispute resolution							
SCOPE OF ADR METHODS WITHIN HERITAGE MANAGEMENT: CASE OF LAD BAZAAR		Early neutral evaluation	Both parties can get third party opinions	,	,	1	,	1		
	-	Expert Appraisal	New formula for co-existence with new regulations.	New formula for co-existence with new regulations and better-upgraded infrastructure	New formula for co-existence with new design and new use for property	New formula for co-existence with new design and new materials for shops construction	New formula for co-existence with new design and new materials for shops reconstruction			
	solution mechanism	Negotiations	Negotiations offering compensation	Negotiations offering compensation and rehabilitation in case of shifting	of premises	Negotiations offering compensation and rehabilitation in case of shifting of shops	Negotiations offering loans to maintain the shops (interiors and exteriors)	Negotiations offering loans to maintain the shops (interiors and exteriors)		
		Mediation			New construction regulations on neighbours and supervision by MCH	New maintenance regulations on shopkeepers and supervision by MCH				
	Kind of dispute re	Litigative notices and time consuming court processes	Imposing regulations through Court orders					r		
	Nature of	parties	Govt. agencies/ private owners, Residents, Shopkeepers	Govt agencies/ private owners, Residents	Govt agencies/ private owners, Residents	Govt agencies/ private shopkeeper	Govt. agencies/ private shopkeepers	Govt agencies/ private shopkeeper		
	Probable	parties involved	ASI, private parties	Department of Archaeology and Museums, private parties and slum dwellers	MCH, property owner and immediate neighbours	MCH and immediate shopkeepers	MCH and immediate shopkeepers, Lad Bazaar shopkeepers Association	МСН		
	Type of Dispute		Pertaining to 100 metres, 200 metres regulations	Pertaining to 100 metres, 50 metres regulations	Pertaining to reuse of hospital and regulating the surrounding buildings for sensitive development	Pertaining to maintenance of gate and regulating the surrounding shopkeepers for sensitive up keeping of gate	Pertaining to maintenance of original shops and regulating the neighboring shopkeepers for sensitive up keeping of shops	Pertaining to maintenance of services like roads, electricity, water supply, sewage cleaning, communications		
	Heritage	Property	1.Charminar	2.Mecca Masjid	3.Homeopathy hospital	4.Shahi Jilau Khana Gate	5.Shops of Lad Bazaar	6. Services coordination by other State agencies		

- The Courts must do justice by promotion of good social balance and refuse to interfere where it is against the social interest and public good.
- Easy access to justice should not be misused as a license to file misconceived and frivolous petitions.

Thus, while going through the facts of PIL it may be noted that there are merits and demerits of this nonlitigative dispute resolution mechanism. Even though litigative and adversary dispute resolution mechanisms have been used to settle disputes in heritage management, these consume an enormous amount of time and energy of the court and parties, all the while running the risk of further deterioration of the heritage building and non-technical actions being undertaken.

ALTERNATE DISPUTE RESOLUTION METHODS IN HERITAGE MANAGEMENT

Various mechanisms of dispute resolution such as negotiation, conciliation, mediation, expert appraisal, mini-trial, early neutral evaluation and arbitration are sought after by practitioners today. The scenario where these methods can be intrinsically used to address the issues in heritage management should be envisaged.

ARBITRATION AND CONCILIATION ACT FOR HERITAGE MANAGEMENT

Some disputes like possession of land, land partition, implementation of certain regulations are not enforceable due to various reasons and this is when the parties enter into an agreement to solve the differences through arbitration. Arbitration, compared to other methods of ADR is more formal and in a situation where the other party is liable to enter into a litigative mode, the state agency can effectively enter into arbitration. An early neutral evaluation which includes situation appraisal and various other technicalities can be taken up by an experienced neutral third party

Definitions of ADR Methods

- Negotiation is a process initiated by the parties themselves in resolving the dispute.
- Mediation is a structured negotiation process.
- Conciliation is a process similar to mediation used in agencies that administer rights granted under legislation and in tribunals or courts.
- Expert Appraisal is a process in which an independent expert investigates and gives a nonbinding opinion on the issues.
- · Mini Trial or case Presentations in which each side

as one of the supplementary options. The process of arbitration begins once both the parties have entered into an agreement to solve their dispute through arbitration. This agreement, which is in written form, binds both the parties to appoint the arbitrators for dispute resolution. In such a case, the *Arbitration and Conciliation Act 1996* would have to be followed to effectively address the dispute.

The following are the important aspects to be taken into consideration, so that the issues can be addressed through the *Arbitration and Conciliation Act 1996* (Mohan n.d.):

- The arbitration is a creation of an agreement between the two parties in a dispute and the agreement must contemplate that the decision of the arbitrator/arbitral tribunal shall be binding on the parties to the agreement.
- The jurisdiction of the arbitrator/arbitral tribunal should be either from the consent of the parties or from the order of a Court or from any statue.
- The parties shall contemplate in the agreement that the substantive rights shall be determined by the agreed arbitral tribunal or arbitrator.
- The parties must agree that the arbitrator/ arbitral tribunal shall adjudicate their dispute and the decision so given must be intended to be enforceable in law.
- The following issues are non-arbitrable:
 - Matters relating to industrial disputes
 - Issues pertaining to criminal proceedings (examples of human vandalism to the heritage structures, disfigurement, smuggling of idols and antiques)
 - Issues covered by rent control acts
 - Taxation disputes
 - Issues arising out of torts
 - Admiralty issues

On overall observation, arbitration offers a formal and binding solution and creates a better relational platform and amicable environment for the parties to co-exist and work for better heritage management.

presents a condensed version of their case to a meeting of senior executives from both parties who may then agree to a settlement.

- Early Neutral Evaluation: It is a process where a non-binding reasoned evaluation is obtained by the parties based on the merits of the case, from an experienced neutral third party.
- Arbitration is a private determination of the controversial issue by a neutral party, who can make a binding award.

Source: Sridhar (n.d.)

IS ADR THE IDEAL SOLUTION?

Arbitration can be resorted to by the parties themselves choosing their own arbitrator and can also take the assistance of institutions like International Centre for Alternate Dispute Resolution (ICADR), Indian Council of Arbitration (ICA). These institutions do not arbitrate, but administer arbitration, through their enlisted arbitrators. A central government agency like ASI, which manages about 3,500 heritage properties, can also establish a similar Arbitration Cell, as well as the Department of Archaeology and Museums, Andhra Pradesh that handles similar number of heritage properties. The ombudsman can govern this cell and thus the organisation's efficiency can be monitored. Permanent arbitral institutions, registered under the Societies Registration Act, 1860; The Companies Act, 1956 or by incorporating the Arbitration Clause through amendments in the Ancient Monuments and Archaeological Sites and Remains Act, 1958, 1959 and Andhra Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1960 can become one of the best way of addressing these disputes similar to those like Consumer Forums and Lok Adalats. The advantages of arbitration in particular with reference to heritage management are:

- The parties in dispute can choose their own judge.
- Technical experts such as conservation architects, historians, art restorers, material specialists and archaeologists can be referred for their expertise.
- Special attention to such disputes in a bigger quantum can establish a larger framework and system, ensuring the speedy resolution of future disputes.
- The monetary cost as well as the amount of time spent can be minimised, thus preventing unnecessary deterioration of the heritage property.
- In-house training within organisations like ASI, Department of Archaeology and Museums, Andhra

Pradesh and other similar institutions can lead to efficient dispute resolution.

- The disputes arising in heritage management (except in non-arbitrable matters), can be handled at whatever stage these might be since an arbitration agreement may be entered to at any stage including:
 - At the time of entering into the contract in anticipation of a dispute; for instance, restoration works being tendered by ASI to contractors and professional consultation from conservation architects.
 - When the dispute actually arises in land related disputes within the surroundings of heritage property and regulation enforcing problems.
 - When a dispute is taken to a Court of Law.
 - Even at appellate stage, the parties could prefer to settle the dispute by arbitration.

Dispute resolution mechanisms such as mediation, negotiation, mini-trials, despite having the advantages of time and cost savings, are not similar in procedural patterns to arbitration. Given the relevance of ADR methods in addressing issues related to heritage management, it is imperative to begin addressing disputes through the identified approached. The field of heritage management faces innumerable challenges such as societal development, poor management practices, unprofessional conduct, non-commitment of state and existence of hostile communities. The basic change which is needed is to discard the antidevelopment tag that is associated with heritage management. Community involvement is absolutely essential in this sphere in order to make this exercise sustainable. ADR can pave the way for the change in attitudes of the management authorities; government, non-government and professionals towards a serious and committed approach of addressing these issues and solving them once for all.

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Redevelopment and Conservation The case of Amritsar

BALVINDER SINGH

ABSTRACT

Amritsar is an important religious historic walled city located in the North West of India. The city was founded by the fourth Guru of Sikhs, Guru Ramdas in 1577AD and has seen various ups and downs through its history. The most important period, which is also known as the 'Golden period', was the period of Sikh 'Misls' and of Maharaja Ranjit Singh. In the colonial and post colonial period, the city underwent redevelopment that impacted the authenticity and integrity of parts of the built fabric. The case of Amritsar helps in understanding the effect of such initiatives and learning from mistakes of the past in order to develop positive approaches for the future.

INTRODUCTION

Amritsar, known as the city of the Golden Temple, symbolises the spiritual heritage of the people of Punjab and is the second largest metropolis of the State. It is situated about 465 kilometres to the North West of New Delhi, close to the international border with Pakistan. The

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Physical growth of Amritsar city in different periods

city grew on both sides of the Grand Trunk Road, currently National Highway 1, also known as Sher Shah Suri Road and is divided by this road and a broad gauge railway line into two parts: the walled city and the developments outside the walls. The population of the walled city was 222,259 persons in 1981 and has not registered any change in the last three decades. It has a total area of 340 hectares and has gross density of 653 person per hectare, as against 130 persons per hectare.

The history as well as the physical growth of the city can broadly be grouped into three phases for the clear distinction of style, materials, heritage: the pre Colonial period up to 1849 which includes the walled city, Gobindgarh Fort and Ram Bagh; the British period (1849-1947) during which development started mainly beyond the walled city, such as civil line areas, cantonment and the Post-Independence period during which rest of the developments took place and maximum damage is caused to the heritage of the walled city of Amritsar during this period.

THE PRE COLONIAL CITY: 1577-1849

Period of Origin (1577-1628 AD)

The city was founded by the fourth Guru of Sikhs Guru Ramdas in 1577 AD as he decided to create a central place of pilgrimage for the Sikhs. The initiation of construction of a tank and a temple within it called Harmandar Sahib turned the place into a busy resort of pilgrims and a town naturally sprang up around it. The town was named Amritsar that means 'pool of nectar'. Guru Arjan Dev, the successor of Guru Ramdas, took up the task of completing the tank and temple in 1581 and simultaneously extended the town. The location of the temple at a lower level allowed the visitors to descend a series of steps and thus pay homage to the holy shrine. Very soon the place acquired a twofold importance as a religious centre and a centre of trade.

Period of Turmoil (1628-1765 AD)

The Gurus had a vision for the development of this settlement with six basic components: the Hari Mandir, *sarovar* (water tank), typical labyrinthine streets, *chowks* (open spaces), bazaars, *mohallas* (residential clusters) and *kuchas* (small residential clusters). But, due to repeated attacks by the Mughals, the period is considered to be the dark period for this glorious city at its infancy.

Sikh Misls (1765-1802 AD)

In 1765, the city was under the rule of different sovereign states known as Sikh Misls. The various developments that took place during this period include *katras* (neighbourhoods), forts, *bungas* (rest houses), gardens, *sarovars*, *havelis* (house with a courtyard) and *akharas* (centres of learning). Due to the threat



Boundary of katras in walled city, Amritsar

of attack from the Mughals, each *katra* was fortified with mud walls and connected with other parts of the city with low arched gates so that only horse riders could enter the *katra* and fort. The Misl states was further enclosed by walls but were not connected with each other. The land within each Misl was owned by a Misldar who enjoyed complete power of ruler in the *katra* and inhabitants had to pay ground rent. Each *katra* had different *muhallas* and *kuchas* within. The *katras* and forts were inhabited by faithful traders and crafts persons, who were ready to defend the city at the time of attack.

Many other *katra*s were developed including Katra Hari Singh, Katra Desa Singh, Katra Bhag Singh, Katra Dulo and Katra Charat Singh. A tank known as Tunda Talab was constructed during this phase and the Harmandar Sahib was fortified with 84 *bungas* that got reduced to 31 in 1951 and now only one is left, namely Bunga Ramgarhia.

Maharaja Ranjit Singh (1802-49 AD)

Maharaja Ranjit Singh, known as the lion of Punjab, carved out his free and independent state by crushing different Misls and merging them into one. A massive wall of unbaked bricks, about 23 metres wide and 6.5 metres high, with a double moat was constructed by Maharaja Ranjit Singh in 1825. In addition, Ram Bagh and many other gardens were developed such as Bagh Akalian, Bagh Shamsher Singh, Bagh Attar Singh in Katra Dal Singh, Bagh Santokhsar, Bagh Ralia Ram and Bagh Ramanand, besides fields and the gardens around tanks and *akharas*, of which now only Balanand, Sangal Wala and Chitta Akhara are left that adorned the city.

The spread of the town was confined within the walls which prevented horizontal expansion. It started growing vertically, though not more than four storeys, without any regard to light, ventilation and circulation.



Depiction of an akhara as centre of learning and education in a historic wall painting

Misls and their contribution to built heritage of Amritsar							
Misl	Name of leader	Construction activity					
Ramgarhia	Sardar Jassa Singh Ramgarhia	Old fortress of Ram Rauni converted to fort Ramgarh, Katra Ramgarhia and Bunga Ramgarhia					
Bhangian	Sardar Chhajja Singh	Quilla Bhangian and Katra Bhangian					
Kanhaya	Sardar Jai Singh	Katra Kanhaya, Katra Baggian, Katra Jaimal Singh and Karmo Deori. Quilla Kanhaya					
Ahluwalia	Sardar Jassa Singh	Quila Ahluwalia and Katra Ahluwalia					
Faizalpuria or Singhpuria	Nawab Kapoor Singh Faizal Puria	Katra Bazaar Kaserian					

Finally, due to population pressures, it became more packed and the streets took the shape of narrow lanes lined with houses belonging to a particular group of people with the same profession or trade such as Pandita Wali Gali and Ghumiaran Wala Mohalla. The increasing population led to various problems like housing shortage, water shortage, overburdened conservancy services, slums and many other civic ills. The elements of built fabric from the period include the use of the typical 'Nanakshahi' brick in varying sizes, lime and *surkhi* (powdered burnt brick) mortar, ornate building crafts and urban patterns defined by streets and surprising open spaces. Different areas of walled city such as Katra Garba and Chowk Passian still depict characteristics of the pre-Colonial period.

BRITISH PERIOD: 1849-1947

This period began with the entry of the British into Punjab, following the death of Maharaja Ranjit Singh in 1849 and Amritsar was made the District Headquarter. In 1868, the Amritsar Municipal Committee was established, with the objective of looking after water supply, lighting and sanitation. Some structures were demolished and many new buildings, residential areas and streets were developed during this phase. The western part of the city wall was demolished and replaced by a new wall extending from Lahori Gate to Rambagh Gate, 15 years after the demolition in 1866-1868. The eastern part of wall was not demolished but it crumbled with the passage of time. During the same period, the moat was filled, an inner circular road was constructed and the layout of the historic Ram Bagh was superimposed with an informal garden design. The Gobindgarh Fort area also underwent many disharmonious additions in the period.

In 1852, the Clock Tower was erected in the north of the Golden Temple. This way the main entrance to



A typical narrow historic street in Amritsar with a dead end

the temple was shifted from the west to the north. The Town Hall was constructed in 1863-1864. Up to 1900 the development was mainly limited within the walled city but some areas and buildings also developed outside the walls such as Civil Lines Area, Mission Road, Albert Road, Taylor Road, Lawrence Road, Khalsa College, Alexandra School, Medical College, General Post Office, Government College for Women and the Railway Station. The built form changed with the introduction of the bungalow form and building setbacks.

POST INDEPENDENCE PERIOD: 1947-2011

The partition of the country in 1947 affected the built heritage of the city very badly, as it resulted in riots and due to which about 20% to 30% of the areas of the



Damaged areas in the walled city, Amritsar

Nature and status of redevelopment projects



walled city were burnt down as per information from the Town and Country Planning Organisation. Taking into account the above damage, a special ordinance called The Punjab Damaged Areas Ordinance 1949 was promulgated. This was followed by *The Punjab Development of Damaged Area Act 1951* that supplemented the powers of the Improvement Trusts and led to the redevelopment of many areas of the walled city. A total of 56 redevelopment projects were identified and many of these were undertaken. How much effort was made to conserve the traditional areas, is another question.

The most important project that not only destroyed the streetscape of some of the bazaars but also allowed the

four wheeled vehicular traffic to the Jallianwala Bagh and Golden Temple. It was known as 'Approach Road to Golden Temple and Jallianwala Bagh'. In the process of redevelopment, the road was widened to 18 metres. There was a proposal to demolish the narrow entry to Jallianwala Bagh and to construct a big gate though due to lack of enforcement, the narrow entry was not demolished. Widening of the road has generated chaotic traffic conditions especially from Chowk Phowara to the Golden Temple.

Another major event, as a result of which the historic areas were destroyed, was the 'Project for Redevelopment of the areas around the Golden Temple Complex' of 1988. It also became popular by the title



A building saved in the Galiara Corridor Project

'Corridor Plan'. The press termed it as 'Operation Demolition'. Under this project, many historically and architecturally important residential and commercial areas within 30 metre radius around the Golden Temple Complex were demolished.

As a result of the redevelopment projects, some traditional authentic markets vanished and the area developed as a contiguous park all around the temple in the corridors, in complete contrast to the principles of urban conservation, aptly reflected in the following quote by Prochazka (1986):

It is not a good solution to surround old monuments by modern heavy structures, or to leave them in open space, setting theme into artificial parks, because neither are typical for the hierarchy of buildings which the monuments were once intended. Therefore the only correct way at the moment is to keep the environment as near as possible to its original state, or at least to respect its original scale and possibly replace all incongruous subsequent innovations, thereby helping to undermine the original meaning of the whole ensemble.

Repeating the mistakes of the past, the construction of a bridge linking GT Road with Golden Temple was another blunder in the walled city. This destroyed the environs of the world famous Golden Temple, disturbed the streetscape and affected lives of the people living in the adjacent areas. This project has been completed without conducting any environmental impact assessment study. The public opinion surveys were also not considered. The latest addition would be the sky car linking Railway Station from Gol Bagh side to the Harmandar Sahib that may further disturb the visual integration. In this way katras and mohallas of the walled city which still depict typical way of life, values and life styles, because of the traditional town planning principles, have now come under threat. All these areas have various issues which need to be looked into and worked out strategically.

IDENTIFICATION OF ISSUES

Strategies for development need to be devised to ensure that the historic fabric does not lose its significance further. The various issues with respect to the tools for urban conservation can be identified as follows:

- Neglect of heritage and conservation in *The Punjab Regional and Town planning and Development Act 1995* (amended in 2006).
- Lack of consideration of the special character of the walled city in the Master Plan 2010-30 prepared under the above Act.



Corridor around Golden Temple Complex

- Conversion of residential to commercial land use due to the absence of land use control, causing issues such as defacement of the facade which in turn affects traditional streetscape, increasing traffic, parking problem, load on existing infrastructure, noise and air pollution.
- Lack of density control and disharmony in the height of buildings due to new high rise construction.
- Poor signage and hoardings disturbing the facades.





Above: An 1856 school building demolished to build a multistoreyed parking. Below: A structurally sound building from Maharaja Ranjit Singh period lying in a state of neglect



New structures in walled city affecting the townscape and streetscape

- Lack of byelaws and urban design guidelines
- Lack of traffic management plan with 'pedestrianisation' of specific routes and management of vehicular traffic in some areas.
- Poor organisation of informal sector of the economy and encroachments.
- Inadequate participation of the community in the process of urban renewal of historic areas and low heritage awareness.

CONCLUSION

The conservation of historic towns is supported by their cultural and aesthetic values, but stronger justification still needs to be found in their social function, as the natural meeting place of the urban community and as a diversified habitat. Such towns offer human scale, beauty, richness, subtlety and variety in the surroundings, support diverse and flexible human relationships and represent enormous capital of buildings. All of these characteristics are increasingly



Quilla Ahluwalia in need of attention

recognised as irreplaceable entities by modern man. Present day architects and town planners experience difficulty in creating an equivalent environment and this clearly highlights the exceptional qualities of historic towns further, despite the inability of coping with certain aspects of modern life. While looking into the physical growth of the historic and pious city of Amritsar, it is evident that maximum damage to the heritage of this city was caused during the period of turmoil and during the post independence period. No doubt, a very important legislation, The Punjab Regional and Town Planning and Development Act 1995 (amended in 2006) is an important landmark. Nevertheless more stringent steps are required such as to train the professional planners. There is need to evolve separate building bye-laws as well as urban design guidelines for the walled city. The city still has unique buildings and heritage areas and for their protection and preservation, the strengthening of above strategies is a vital need.

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Impact of Urbanisation on Villages of Chandigarh

SUNANDA KAPOOR

ABSTRACT

Chandigarh was planned for a finite population of half a million over 17 villages of Punjab. Subsequently, it grew beyond its planned capacity and its administration is still in the process of acquiring more agricultural land to accommodate new development proposals for the growing population. In this current scenario farmers are losing their agricultural land unwillingly to the pressures of development imposed by the administration. The urban-rural fringe of Chandigarh has been in constant debate because of the environmental and socio-economic issues related to urbanisation, with positive and negative impacts on the villages adjoining the city that undergo transformation from rural to urban. The case of village Dadumajra demonstrates this process.

INTRODUCTION

The urban-rural fringe¹ is a battlefield of environmental and socioeconomic change brought by urbanisation and this interface is the most dynamic spatial feature of any city. The new city of Chandigarh was proposed after partition, not only to serve as a capital of Punjab, but also to accommodate thousands of refugees who were uprooted from West Punjab. The site selected for the establishment of Chandigarh was

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The proposed site for the establishment of Chandigarh between Patiali ki Rao on North-west side and Sukhna Choe on South-east side



Establishment of first phase of Chandigarh over the 17 villages and five part villages



Establishment of second phase of Chandigarh

located between two *choes* (hill torrents) coming down from the Shivalik Hill. On the east flowed the Sukhna Choe and on the western side was Patiali ki Rao. The decision to build Chandigarh on the present site was taken in March 1948. The total land acquired for development of the first two phases was around 11,331 hectares in 40 villages.

The first phase of Chandigarh was established on 17 villages and part of five villages¹, due to which a total of 21,000 people residing in these were displaced. In total, 36 square kilometres of land was acquired by the



Layout of Chandigarh showing the position of villages

city administration for development of 30 sectors. It was planned for a finite population of half a million. The second phase of Chandigarh comprised of another 17 sectors, for which land was acquired to cater to a population of 350,000. Mainly two villages; Brijwani and Fathemajra were acquired, while the remaining was the agricultural land of other villages, leaving behind the built mass. Built-up area of those villages was demarked with red thread to avoid further growth of area which is called 'laldora'. The development of third phase of Chandigarh is ongoing with additional residential sectors and an IT Park.

VILLAGES IN PERIPHERY OF CHANDIGARH

There are 22 villages in the periphery of Chandigarh.³ These were initially under the Panchayat Raj but most have been fully taken over by Municipal Corporation Chandigarh after the 74th amendment in the Constitution. The villages can be categorised into two groups:

- Located on the periphery of Chandigarh, with 40% of the people still involved in agricultural and related occupation, such as Dadumajra, Hallomajra and Maloya.
- Engulfed in the city fabric, with people involved in urban activities such as Attawa, Badheri, Burail and Butrela.

All the villages primarily have a peripheral road known as *phirni*, an old *abadi* (populated) area and an extended *abadi* area, one water tank and a cremation ground.⁴ Household and public opinion surveys were undertaken for Dadumajra, a village located only six kilometres from the city centre that still has agricultural land and a rural character, to understand the impact of urbanisation on the same.

THE CASE OF DADUMAJRA

The Village Dadumajra is situated on the north-west side of Chandigarh. Initially the entire area was used for agricultural purpose and farmers used to commute from village Maloya that is under Union Territory administration, about one kilometre from Dadumajra, for farming. Later, farmers started staying here as a community in a village. Farmers kept on shifting from other places to this place as the land of Dadumajra was very fertile. Apart from the fertility, this land is also of historic and religious significance.

Religious significance

The residents of Dadumajra believe that this village belongs to Ekalavya.⁵ Ekalavya always wanted to come into disciple succession of Guru Dronacharya⁶ but Guru Dronacharya was reluctant as in this session, he was only teaching the princes: Kauravas and Pandavas. Ekalavya continued his practice in front of a statue of Guru Dronacharya and became a great archer. According to local belief, this is the place where Ekalaya gave his right thumb to Guru Dronacharya in Guru Dakshina⁷ as per the requirement of Guru ji. There are lots of stories about the heroic deeds of Eklavya that are associated with this place.



Eklavya paying obeisance to Guru Dronacharya

People of the village refer to Ekalaya as 'Daadu'. Hence, its name is derived from the words 'Daadu' and '*majra*' (small settlement). Guru Dronacharya is said to have taught the use of arms and ammunitions to the Pandavas, in this village. Pandavas used to come from Pinjore, a settlement that is few kilometres from Chandigarh, to Dadumajra, to learn from the Guru. Considering the significance of the linkage with Guru Dronacharya, two main public buildings in the village have been named after him; Guru Dronacharya Sarovar, inaugurated in 2009 and the Dronacharya Stadium. To enhance the religious importance of the village, it has been proposed to develop the ancient temple of Guru Dronacharya as a '*tirth*' (place of pilgrimage).

Physical growth

The village is around 425 years old. In 1690, The Singh Raj family from village Maloya first shifted here and a foundation stone was laid which was known as Khera. As time passed, more and more people started shifting from near and around the village as these were primarily farmers and River Patiali ki Rao supported their occupation. The total land of Dadumajra was 317 hectares (as per revenue records), which comprised of Dadumajra village, Patiali ki Rao that runs through Dadumajra, a *gurudwara* (Sikh temple), agricultural land that belonged to a number of farmers who were primarily Rajputs, Sainis and Kumhars.

Land holding pattern of the village comprised of large fields that got further fragmented as the families grew. At present, the agricultural fields have been divided into small land holdings with not more than one hectare fields. Over the period, Dadumajra has grown from a small population of 50 families to 10,000 persons. Various changes have been observed in and around



Sketch showing the initial settlement of the village as per description of the villagers



Total land under Dadumajra (50 years back). Source: Patwari of the area

Dadumajra over a period of time that can be clearly understood through various surveys.

Spatial structure and character

The village Dadumajra comprises primarily of two parts: the inner core that is the old abadi area, marked with the *laldora* and the outer core, that is, area between *phirni* and old *abadi* area or extended *abadi*. The area under the old *abadi* area is 9.71 hectares and under extended abadi is approx. 8.09 hectares. The old abadi area is dominated by residential buildings with very less community spaces. In this region, the plots have been fully covered to increase the floor area and the heights of these residences are variable. There are mixed types of houses, some occupied by labourers are in a dilapidated condition whereas some are in good condition with proper brick, concrete construction and smooth finishes. In the extended abadi area there is primarily commercial activity along the *phirni*. The residential area is concentrated between the phirni and old *abadi* area. There is a clear visual difference between the built character of the inner core and outer core of the village in terms of population density, built up mass, open spaces, building heights, street widths and types of occupation. As the village is in the process of urbanisation, the rural character of the buildings is almost lost in both the old abadi and extended abadi. Most of the houses in the village are triple storied, as people have been adding floors to the existing structure in accordance with their requirements over time. Some have added floors to divide the property among brothers taking into consideration the increasing family size, while others have done so to lease these out and earn some money as rent.

Socio-economic pattern

The Village Dadumajra is a multifunctional urban village consisting of large number of dairies, *kabari* (scrap dealer), repair, welding and grocery shops that generate secondary activities and tertiary activities. More than 80% persons are engaged in the tertiary activities. There are some industrial units in the village that manufacture grills, gates, steel frames and other household items. The population of village can be divided into three groups:

- The local land owning community.
- People who have recently purchased the property.
- Outside settlers: tenants, labourers.

The local land owning community that constitutes 30% of total population still possesses agricultural land, so a part of the income is generated through agriculture. Alongside they continue to maintain dairies, supplying





acquired by Government for development purposes so people are earning out of rental property.

In some cases property is being used for storage purposes.

In the village, only 40% original settlers are left who still have agriculture as their occupation



Property detail: rental, landlord or landlord cum ownership







Entire plot is covered and rented to labour class

Front room of the house is converted into a general store

while 60% of the population is formed by the working

milk to various adjoining sectors. The dairy business and agriculture are interdependent on each other as cow dung from cattle can be used for making manure that in turn can be used in agricultural fields. Also, they get fodder for cattle from the fields. There are many persons in the village who are earning from renting out their properties. Unlike the seniors or the older generation, the youth are involved in small scale jobs in Chandigarh, Mohali and Panchkula.

In the village, it is fairly easy to distinguish the original land owners from landless workers who have migrated from Uttar Pradesh, Bihar and Madhya Pradesh. The land owners are dominant in terms of political power class comprising of labourers or service providers.

Today, the number of cultivators and agricultural labourers has reduced to 20%, as most of the land has been acquired for development purposes. Most of these now work as construction workers. The change in the socio-economic pattern of the village has led to a series of transformations, be it in terms of the outlook of the villagers or their living conditions. Simultaneously, the urban sprawl of Chandigarh has also played a major role in the transformation of the village in a shift from the inherent rural character to an acquired urban character.

STAGES OF URBANISATION OF VILLAGE							
Stages	Economic activities	Morphological and Social system					
Stage 1 : 1950	 Village started to be influenced by urbanisation and people started searching for jobs in public offices⁸ 	 <i>Kuchcha</i> houses Unpaved streets Compact settlement Low literacy rate 					
Stage 2: 1965-70 During the development of second phase of Chandigarh	 Market orientated agriculture with cultivation of crops generating more profit Increase in secondary and tertiary jobs 	 Combination of <i>pucca</i> (permanent) and <i>kuchcha</i> houses Better transport facilities Increase in literacy rate Migration of people started from villages of Punjab 					
Stage 3: 1990 Change in land-use of village, when land of Dadumajra was acquired for the development of Sector 38, 39 and 38 West	 More people involved in secondary and tertiary jobs Small scale industries and commerce: flour mills, <i>kabaries</i>, box making, converting houses into godowns 	 In addition to the above change, social change due to contact with city through good road network 					
Stage 4: 2006 Further Change in land use of village when Municipal Corporation Chandigarh (MCC) took over the village	 Dominance of secondary and tertiary activities Emergence of distinct land-use pattern because of non-confined laws by MCC 	 Dominance of business establishments, shops etc Loss of rural character Becomes a part of urban society At present only 70.81 hectares of agricultural land is left 					

Stages of urbanisation of the village

Although the perceivable change in the character of the village has been gradual, there are still some distinct phases in which the urbanisation of the village was experienced by the inhabitants. When the village originated around 1600 AD, it was of an obvious rural character that continued till 1950. Village *abadi* was isolated from the agricultural land and agriculture was the main profession. The houses of the village were *kuchcha* (temporary), the streets were unpaved and on the whole it was a compact settlement. The literacy rate of the village was quite low.

Transformation of the Village from rural to urban

The main reason for the transformation of the village can undoubtedly be traced as the change in the socioeconomic status of people because of the abundance of jobs generated by the growth of the city of Chandigarh. However, there are other factors as well:

- *Change in land use as a result of land acquisition:* Initially, 202 hectares of agricultural land belonged to the village Dadumajra that has now been reduced to 70.81 hectares. Land had been acquired by the government for various development purposes. Once this land was acquired from the people, naturally the former owners had to change their occupation and thus change in the land use came about, transforming the character from rural to urban.
- *Education:* As per Census, the literacy rate of villages has increased to 77.2%. Government

LAND ACQUISITION DETAIL OF VILLAGE DADUMAJRA							
Date	Area acquired (in	Present use					
	hectares)						
March 29,1967	12.13	Sector 38 d					
January 10, 1969	1.48	Brick kiln					
March 5, 1969	4.81	Sector 39					
March 22, 1978	7.58	Water Supply					
September 11, 1978	2.21	Labour colony					
June 23, 1980	3.47	Potter's colony					
July 23, 1980	5.42	Potter's colony					
February 29, 1988	18.25	Garbage plant					
December 11, 1995	38.49	Chandigarh Housing					
		Board					
March 30, 1999	20.73	Veterinary hospital					
November 14, 2000	9,71	Rehabilitation colony					
March 12, 2004	4.95	Garbage plant					
October 12, 2009	3.26	Development of					
		periphery					

Source: Patwari of the area and Singh (2010)



Urban transformation as a result of urbanisation



Shrinking agricultural land of Dadumajra

schools were established in the village in 1980. As Chandigarh and Mohali were in close proximity, therefore the people also took advantage of the high educational standards available in these nearby urban centres.

- *Political:* Till 2006, Panchayati Raj was the known form of administration, but it later came under the jurisdiction of Municipal Corporation Chandigarh. The Municipal Corporation Chandigarh has played an important role in the urbanisation of the village by providing infrastructural facilities such as electricity, water supply, sanitation and roads.
- *Anganwari:* Anganwaris were opened in the village in 1995. This catalysed the empowerment of women so as to improve the economic status of the people.
- *Bank branches:* There are two branches of State Banks in the village viz. The State Cooperative Bank opened in 1980 and the State Bank of Patiala opened in 1982. These banks not only cater to the needs of people of Dadumajra, but also the adjoining sectors of Chandigarh.



Mobile tower installed on Hotel Simran located on the periphery of village

- *Vehicular accessibility:* Village Dadumajra has direct connection to other adjoining sectors and this has played a very important role in the urbanisation of this village. The *phirni* of the village is a 6.75 metres wide metalled road. Roads of the extended *abadi* are also in good condition, hence it has become easier for the villagers to commute and upgrade the lifestyle of the village community.
- *Opening of shopping complex:* The 'Rajput Complex', a cluster of shops had been opened in Dadumajra village a year back. This complex comprises of eating joints, mobile showrooms, a pathology laboratory and a computer shop.

As a result of the influence of urbanisation on the village, the rural character of Dadumajra has gradually faded or at places, has been replaced very abruptly by a more urban profile in terms of typology of construction, land use, employment, income and culture.

CONCLUSION

The force of urbanisation in Chandigarh has been a strong influence on the villages around its periphery. The city has penetrated deeply into rural areas, in some cases. The first and the most prominent dimension is the changing occupation and livelihood of the villagers.



Finished houses made out of bricks and concrete, view from extended abadi area



Plywood godown owned by a person from Sector 26, Chandigarh

Different pockets of various villages have reacted in varying degrees to the changing circumstances such as decreasing availability of agricultural land and improved access to the city, more economic activities in and around the villages. There is a need to devices certain balanced land policies which can cater to the rural-urban dichotomy in such cases.

Acknowledgement

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Notes

- ¹ The area of mixed rural and urban populations and land-uses, which begins at the point where agricultural land-uses appear near the city and extends up to the point where villages have distinct urban land uses or where some persons, at least, from village community commute to the city daily for work or other purposes (Ramachandran 1989, p. 297).
- ² Brijwari, Bhangimajra, Dalherijata and Dalheri Rajpura, Gurdaspura, Haminagar/ Banimajra, Kalibar, Kanchanpura, Kanjimajra, Kanthala, Mehlamajra, Nagla, Ramnagar, Rurki, Sainimajra and Sujadpura.
- ³ Khuda Alishar, Bhagwanpur, Khuda lahora, Khuda jassu, Sarangpur, Dhanas, Kishangarh, Maulijagran, Daria, Raipurkhalan, Makhanmajra, Raipurkhurd, Hallomajra, Behlan, Burail, Attawa, Dadumajra, Maloya, Badheri, Butrela, Palsora and Kajheri.
- ⁴ To understand the impact of urbanisation on the villages of Chandigarh, a reconnaissance survey of villages was conducted. Over the period one can notice

the change in villages in terms of type of construction, life style of villagers, status of women in the families and literacy rate of children. These changes are the outcome of urbanisation and urban sprawl that affect the social, cultural and economical status of people staying in the villages.

- ⁵ Ekalavya was a jungle-boy. Belonging to the hunters' community, he was outwardly bold. It was a time when such communities were considered socially inferior.
- ⁶ In the epic Mahabharata, Dronacharya was the royal guru to Kauravas and Pandavas
- ⁷ Gurudakshina refers to the tradition of repaying one's teacher or guru after a period of study or the completion of formal education.
- ⁸ Such as revenue offices that were established to get land details of villages so that proper compensation could be given to land owners and tenants for Chandigarh project.

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Decentralised Solid Waste Management

TAMANNA SHARMA AND SAURAV BARDHAN

ABSTRACT

Management of waste is a major challenge that cities in India are facing today, especially with rising urbanisation and changing lifestyle. Several waste management solutions for bio-degradable wastes have been talked about, developed and tried out in different parts of the country without much success. Setting up decentralised waste management systems of waste segregation, collection and disposal, including composting of biodegradable wastes by using appropriate technology could be a workable solution. The process also requires proper handling of non-biodegradable wastes for efficient recycling, thereby getting value for waste material and preventing of environmental pollution.

INTRODUCTION

The conventional approach to waste disposal, as practiced in most cities in India involves the use of dump yards, landfills and burning of dry leaves. These practices that are neither environment friendly nor sustainable as these pollute the environment, contaminate the ground water and cause health hazards. Besides, empty land close to cities for landfill is no longer easily available. Several waste management solutions for biodegradable wastes have also been talked about, developed and tried out in different parts of the country, without much success. The open pit method for disposing and composting has its own inherent problems of being unhygienic and messy, particularly in rains. Also, in an urban setting, availability of empty land and the management of open pits is extremely difficult. Likewise, vermi-composting systems have not done well in extreme weather conditions due to the sensitivity of earthworms. The challenge of waste management is bound to get more acute with increasing urbanisation and the change of lifestyles resulting from the same.

The solution may lie in the involvement of the community in managing its own waste, that is, derivation of decentralised waste management systems that involve waste segregation, collection and disposal including composting of bio-degradable wastes by using an appropriate technology. Additionally, proper handling of non-biodegradable wastes for efficient recycling should be practiced, thus getting a value for wastes and preventing environmental pollution.

APPROACH AND STEPS

GreenBandhu and Earthima Technologies have made an attempt to develop an end to end decentralised solid-waste management system with a participative approach that takes into consideration the various concerns of cleanliness, energy efficiency and user friendliness. It is based on nine important steps, namely decentralisation, source segregation, collection, composting, recycling, handling of hazardous waste, waste audit greening and sustainability. Through the project, products and service teams have been developed and the nine measures are being put in place through user sensitisation, participative processes and appropriate and user friendly technology as discussed below:

- *Decentralisation:* It involves the initiation and implementation of a community based solid waste management system with the help of service providers. Such a management system is cost effective, easy to maintain and manage, as well as sustainable and has proven to be less problematic in day to day operation and maintenance. Also, it allows the beneficiaries to closely monitor and improve the quality of the waste management process.
- Source segregation: This helps in adding value to the materials that can be composted, recycled or reused and infuses a level of responsibility among the communities towards the types and quantities of the wastes generated by them, thereby helping them to cut down or reduce their wastes. Source segregation makes the job of the waste collector a lot easier and less time consuming. It helps avoid health hazards to the rag-pickers and enables them to get an economic value from the waste materials. Special bins with two compartments, clearly labelled as biodegradable and non-biodegradable have been developed to enable easy segregation at source.
- *Collection:* Through various tests and trials, it has been found that point-to-point collection is a much better collection method than single-point collection. It prevents littering, dumping, mixing of biodegradable and non-biodegradable wastes and



Due to their location at inconvenient distances, blue and green bins lose their very purpose of segregation. One hardly walks the distance in order to put the right waste in the right bin



Working without protective gear and adequate precautions amid unsegregated dangerous waste, the kabadiwalas or scrap dealers can easily catch diseases. A considerable amount of recyclable material is also lost through mixing of waste in a centralised system

over-flowing of waste bins. Trained waste collectors have been deployed in areas covered under the project for daily collection of waste from each source. They are provided with proper tools and bins to handle different kinds of wastes.

- Composting: To enable composting at household or community level, in-vessel composting technology can be introduced instead of the traditional methods of open-pit or vermi-composting. Through such technology, biodegradable wastes such as fruit peels, left over foods, vegetable peels and cooked food can be segregated at source and converted into compost, in-situ. The product developed, being used and promoted for this is 'RoliPoli', a hygienic and eco-friendly in-vessel aerobic composting system, completely closed but well aerated to prevent flies, mosquitoes and foul smell. It has inside compartments designed on 'Archimedean Screw' principle enabling the material to move from the first compartment to the next and so on by rolling the system manually. The first lot of compost is produced after roughly 45 to 60 days. After that, compost is produced on a regular basis. Means also need to be devised to convert the horticulture or garden wastes such as leaves, hedge cuttings and flowers into manure, in order to prevent dumping and burning of these that causes air pollution. Hence 'Mulchy-Bulchy Greeny Bags' have been developed that can be kept at convenient places for the gardener or worker to manage the wastes easily. An electrical shredder 'Chipy-Chopy or Garburator' reduces the volume of bio-degradable wastes and helps in efficient compost making.
- *Recycling*: Broadly speaking, non-biodegradable 'recyclable' wastes collected routinely need to be further segregated into different categories; paper, cardboard, plastic bags, containers, metal, glass and E-waste to be sent to the identified recycling units or vendors. In project coverage area, separate bins, containers or bags with clear labels and codes are provided for storage of recyclable wastes. Soiled plastic bags and containers need to be washed with water and detergent for better recyclability. 'Nonrecyclable' wastes such as concrete and styrofoam can be used for road construction and land filling.
- *Handling of hazardous waste*: Bio-medical waste, E-waste and other hazardous wastes need to be handled separately and suitably disposed following local municipality norms and facilities.
- *Waste audit*: Initially, at the start of the implementation, the service provider will carry out an audit on type and quantity of wastes generated

in the communities and the 4R's; Reduce, Reuse, Recycle and Refuse would be put into practice. The audit will be conducted by canvassing. Relevant data can be gathered by circulating a questionnaire, followed by personal interviews, in order to develop an understanding of current practices. Findings of waste audits can be used to inform and sensitise the residents about the nature of waste, its bad effects on environment and how such wastes can be minimised through good practices. A proper waste audit will help the waste management team to provide an efficient and eco-friendly service.

- *Greening*: Greening of earth is an integral part of waste management. Compost so produced from the wastes generated can be used in the lawns and gardens by the communities; for growing plants, as well as covering dusty, unpaved areas. It is an established fact that compost helps to increase soil fertility and enhances healthy growth of roots. Its high water retention capacity reduces the need for frequent watering of plants and erosion of soil by wind or rain.
- *Sustainability*: Solid waste management is a continuous process and if not practiced regularly, it can lead to environmental and social problems. An effective waste management process is one that is sustainable. To do so one must not only integrate the various practices of disposal and treatment of wastes but also involve different stakeholders such as residents, management of group housings, technology providers for waste management.

The implementation process for decentralised solid waste management involves provision of appropriate technology and equipment, installation of the equipment, training and supervision of the waste handling and composting processes that are part of the project. Communities, in collaboration with service providers need to conduct sensitisation workshops to build awareness among the residents and housekeeping staff and motivate them to segregate the wastes at source into wet or food wastes and dry wastes such as paper, glass, plastic and metal on a daily basis. Training of stakeholders, residents and housekeeping is the key to a successful implementation of decentralised solid waste management.

BENEFITS

There are multiple benefits of implementing the various processes and technologies in a decentralised solid

Comparison of Composting Systems									
	RoliPoli Composter	Daily Dump - Terracotta	Green Earth Machine	Vermi-Composter	Open-pit Composting	Organic Waste Converter (OWC)			
In-vessel	Yes	Yes	Yes	In-vessel/Pit	No	Yes			
Horizontally placed	Yes	Vertically placed	Vertically placed	Vertically placed	Vertically placed	Vertically placed			
Front feeding	Yes	Top feeding	Top feeding	Top feeding	Top feeding	Top feeding			
Rear emptying	Yes	Top emptying	Bottom emptying	Top emptying	Top emptying	Top emptying			
Compartmentalized	Yes	No	No	No	No	No			
In-built Turning mechanism	Yes	Stirring with spatula or stick	Stirring with spatula or stick	No	Stirring with spatula or stick	Yes			
Made of	Plastic/FRP	Terracotta	Plastic	Concrete/Brick	Concrete/Brick	Metal			
Weather-proof	Yes	No	Yes	No	No	Yes			
Rodent-proof	Yes	No	Yes	No	No	Yes			
Controlled Air, Temperature and Moisture	Yes	Partially	Partially	No	No	Yes			
Type of Composting	Aerobic	Aerobic if stirred on regular basis, otherwise, anaerobic	Aerobic if stirred on regular basis, otherwise, anaerobic	Vermi-composting	Aerobic if stirred on regular basis, otherwise, anaerobic	Electrical composting			
Noatural decomposition	Yes	Yes	Yes	Worms	Yes	Electricity			
Portable	Yes	Yes	Yes	Yes if In-vessel, No if pit	No	Yes			
Durable	Yes	No, breakable	Yes	No	No	Yes			
Rear bucket for compost collection	Yes	No	No	No	No	No			
Outdoor and Indoor setup	Yes	Yes	Yes	Yes	Outdoor	Indoor			
Sizeable	Balcony to Industrial Size	Limited	Limited	Limited	Limited	Yes			
Special maintenance	No	No	No	Yes	No	Yes			
Partially Segregated Waste	Yes	Yes	Yes	No	Yes	No			
Easy to use	Yes	ок	ок	No	ок	No			
Kid-friendly	Yes	No	Yes	No	No	No			
Hygienic	Yes	Yes	Yes	Yes	No	Yes			
Space requirement	Noot much	Noot much	Noot much	Land constraint	Land constraint	Covered area			
Operation time	Low (Time to turn < Time to stir)	Medium	Low	Low	Low	High			
Operational Cost	Low	Low	Low	Medium-High	Low	High			
Volume	Medium-High	Low	Low	Medium	Medium	High			
Composting Time	45-60 days	45-60 days	45-60 days	45-60 days	4-6 months	30-45 days			
Labour	Self	Self	Self	Yes	Yes	Skilled Labour			
De-centralized	Yes	Yes	Yes	No	No	Yes if Condominium, No if Open- Community			
Cost	Low-Medium	Low	Low-Medium	Medium-High	Low-Medium	High			



RoliPoli is a hygienic, eco-friendly in-vessel aerobic composting system



Feeding of RoliPoli in progress in an individual and collective setup respectively



School students rolling the RoliPoli as a step in the composting process



Mulchy-Bulchy Greeny Bags that convert garden wastes into manure



Crushing of leaves in progress



Chipy Chopy organic waste compactor

waste management system. The multiplier effects of such an intervention can take place at various levels. Through the process the resident communities may be introduced to the different traditional and innovative methods of compost-making, the usefulness of compost in the greening efforts as well as the potential it would have in growing organic foods. The trained members could share their knowledge and understanding with their families, friends and neighbours who may in turn use the opportunity to practice some of the activities. Communities can be made aware of the implications of littering, dumping and land-filling on the environment which may result in a larger impact of the society. The induction of the process of source segregation results in environmental and economical value addition to the materials that can be recycled and reused effectively. For example, waste plastic bottles, paper and cardboard can be sold to the recyclers instead of dumping or incinerating. On the whole, the initiatives would help prevention of public nuisance and pollution, enable recycling of non-biodegradable wastes efficiently and help ease the pressure on land by moving less material

to the land-fills. Decentralised composting eliminates the transportation cost through conversion of the organic waste to compost within the premises and the process can enable communities to obtain Carbon Credits¹ through practicing conversion of organic wastes into compost.

CONCLUSION

De-centralised solid-waste management has many advantages. The localised collection and processing of wastes, avoids the transportation of wastes to far off dumping sites. It reduces the expenditure of diesel, consequent traffic congestions, air pollution and road maintenance costs. It also reduces the contamination of ground water through the seepage of leachate. The government should see the advantages of local treatment of wastes and provide facilities to communities in order to make this a widespread practice. Financial support by the municipalities to the community based de-centralised schemes will provide the right impetus to waste treatment methods.

Note

¹ Carbon Credits are units of carbon emissions that can be purchased or sold between participating members that is, countries or corporations, in order to comply with carbon emission allowance.



Sustainable Solutions







Safeguarding Intangible Cultural Heritage as Livelihood Case study of Purulia Chau

ANANYA BHATTACHARYA

ABSTRACT

'Purulia Chau', the folk dance form of Bengal was threatened, due to dwindling opportunities for its practice and performance. Training, capacity building, documentation, exposure and exchange led to rejuvenation of the dying art form. The process has motivated the community to propagate and pursue their art form in the right direction with great intensity. The Chau dancers have safeguarded the dance by making it a livelihood. They are performing with flair at national and international stages and enjoying greater respect and recognition from their communities. Festivals organised by the artists at their villages have resulted in community led ethno-tourism creating employment opportunity for not only the artists but their community as well. The initiative showcases how intangible cultural heritage can contribute to poverty alleviation and inclusive growth for indigenous communities.

INTRODUCTION

Cultural heritage manifests the experience and achievements of the ancestors passed down to the future generations. Intangible Cultural

Ananya Bhattacharya is Vice President and Director-Projects at banglanatak dot com; a social enterprise working for pro-poor growth, using culture based development approaches. She is an electrical engineer from Jadavpur University, Kolkata and a Commonwealth Scholar with Masters in Sustainable Development from Staffordshire University, UK. Ananya Bhattacharya has 22 years of global work experience. Heritage (ICH) exists intellectually in culture. It is not a physical or tangible item. Intangible heritage includes performing arts, oral traditions, songs, myths, stories, ceremonies, customs, rituals as well as various forms of traditional knowledge such as ethno-botanical knowledge. ICH provides communities with a sense of identity and continuity. It is dynamic, changing according to social norms and values as it is transmitted through generations. The World Commission on Culture and Development defines ICH as a non renewable resource because it lives in people's memory and is lost with time. As lifestyles and popular taste changes in a rapidly urbanising globalised world, many of the traditional art forms are dying. Preservation of intangible cultural heritage, which is the mainspring of human cultural diversity, is important for sustaining the innate creativity of communities. UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage, 2003, highlights this need and has succeeded in gaining international acceptance for adopting new approaches to protecting cultural heritage. In recent years there has been increasing acceptance that development strategies need to adapt to socio-cultural contexts. Many expressions of traditional culture and folk lore, especially in the fields of performing art and handicraft also contribute or have the potential to contribute to economic growth through enhancement of cultural or creative industries.

ABOUT PURULIA CHAU

Chau dance is popular among the indigenous people of Chotonagpur Plateau region. Seraikella Chau is popular in Jharkhand, Mayurbhanj Chau is popular in Odisha while Purulia Chau is popular in the western plateau regions of West Bengal. Chau dance was inscribed in the UNESCO Representative List of Intangible Cultural Heritage of Humanity in 2010. The Purulia Chau dance is a vibrant, colourful and vigorous form of dance drama emerging from martial practice. It is believed by some modern scholars that, the word Chau is derived from Sanskrit chhaya (shadow or image), while others believe it to be derived from *chhauni* or military camp. According to the eminent Chau dancer, Gambhir Singh Mura, the word 'Chau' means improvising combats against invasions. It is thus a martial art form where the artistes express the inner qualities of warriors through their gestures and movements. The dance was patronised by the royalty and landlords of the region.

The Chau dancers wear ornate and elaborate masks and dazzling costumes. The masks are made of clay and papier-mâché. There are around 200 crafts persons in Charida village of Baghmundi area who make Chau masks. A few live in Joypur and Purulia. It is said that these crafts persons were brought from Burdhaman to Purulia by the Samanta King of Bagmundi. Rhythmic



Chau performance



Chau dancer in traditional attire

drum beatings, powerful acrobatic movements and somersaults are characteristics of the Chau dance. A variety of percussion instruments like Charchari, Dhol, Dhamsa and Nagra are used as accompaniments. Shehnai and flutes are also played. The dance is believed to date back to over a century, though the specifics of its origin cannot be definitely ascertained. The contemporary dance style has evolved over a period of time. Originally, a solo dance form, called 'Ekaira Chhau' which later evolved into the Taal or Mel Dance, where 16 dancers performed in perfect harmony. Since, the 1970's Pala Chhau, the dance drama form of Chau dance gained immense popularity. Themes of traditional Chau Palas are based on tales from Ramayana, Mahabharata and the Puranas. The dance commences with the invocation of Lord Ganesh, where after the movements follow the nuances of the story. Chau dance portrays triumph of good over evil. The stories are based on the mythological tales that propagates moral and ethical values. The dance movements are categorised as danabchal (movements of the demons), debchal (movements of the Gods) and pashuchal (movements of different animals).

Movements of gods are gracious and elegant whereas movements of demons are vigorous symbolising bravery. In presentations that depict the art of hunting, movements of the hunter and the hunted as well as that of forest life are shown with élan. It is said that Gambhir Singh Mura watched the movements of tiger, dancing peacocks and crawling snakes and developed dance styles accordingly. These dance styles; Baghchaal, Mayurchaal and Harinchaal, are based on the movements of the tiger, peacock and deer respectively and portray the intimate bond between nature and the indigenous people. Chau performances are not only meant to propitiate the deities, but the deities actually appear as the dramatist personae in the performances, each performing a specific role. A Chau performance in Purulia starts typically at late night, at around 9 or 10 PM and goes on for hours, with the dance gaining momentum with progression of night. In earlier times, the performance area used to be illuminated by torches that burnt throughout the night. Over the years the dance has undergone evolutions in form, stagecraft, lighting and use of musical instruments. Chau dance is performed during the

harvesting season and as part of marriage ceremonies. It is an essential part of the popular festival of the area, 'Gajan' that celebrates the glories of Lord Shiva. It is also a celebration of onset of rain in the dry and infertile plateau region of Purulia.

HERITAGE AT RISK

The indigenous people of Purulia love to sing and dance. In Santhali, they say 'senge jujung kajigo durung (we dance when we walk and sing when we talk)'. Chau, Jhumur, Pata Naach, Bhuang Naach, Kathi Naach, Ghora Naach, Dansai, Macchani are integral to their lifestyle, rituals and festivals. Development and industrialisation has however jeopardised their lifestyle. They have lost land and rights to forest resources which used to be their main subsistence. At the dawn of the present century, the Chau groups had become moribund. Time or opportunity to practice dwindled, as the artists toiled hard as daily labourers or migrated in search of livelihood. The young had no opportunity to learn from the living treasures. The Chau productions focused more on acrobatics while the sublime dance styles emulating animals and birds were getting lost. Chau of Chikligar in Jhargram area of West Bengal is a dance tradition lost forever. The groups had a limited repertoire. The productions lacked variety. Unskilled musicians playing modern instruments created cacophony of sound. The dancers could not afford to buy the expensive ornate costumes and stylish masks. The teams were poorly paid and individual artists earned only a few rupees from the shows. Only very few teams got opportunity to perform in national or international forums.

MAKING ART A LIVELIHOOD

'Art for Life' is a flagship initiative of banglanatak dot com¹, a social enterprise working for sustainable pro-poor development using culture based approaches. The organisation uses this approach for community empowerment and social inclusion. Purulia Chau was one of the six folk art forms selected for revival and revitalisation as means of livelihood in 2005. The other art forms were social satirical drama Gambhira and Domni, Jhumur songs and dance, Baul and Fakiri music celebrating humanity and Patachitra that is scroll painting and storytelling through songs. Between 2004 and 2011, a wide range of activities like community organisation, training, capacity building, exposure, exchange, marketing and promotion, documentation, support for costumes and accessories, health insurance and building of resource centres rejuvenated the dying

art forms. There was demand for performance not only from the region but also at national and international levels. The folk artists who used to earn mostly from daily labour, started earning from their art form. Their incomes increased manifold. They enjoyed respect and recognition from their communities and their living conditions improved as they could now afford brick homes with electricity, water and sanitation. The initiative established that ICH can contribute to poverty alleviation and gender empowerment. Among the 3,200 beneficiaries of this initiative, 1,200 were the Chau dancers of Purulia. The following section presents their journey for revival of their art form.

SAFEGUARDING CHAU DANCE

As per the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage 2003:

'Safeguarding' means measures aimed at ensuring the viability of the intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage.

Community participation is the cornerstone of safeguarding ICH. Poverty was a key impediment. The artists earned through daily labour and rolling tobacco leaves and could not afford time for practice and nurture their art form. More than 60% of the Chau dancers were from marginalised groups like scheduled castes; scheduled tribes and other backward classes, living below the poverty line. The training and capacity building activities in the initial years were supported under the rural self employment generation programme of the Government of India. To enable them to participate in the training programmes by taking time off from daily labour, they were given a stipend of four hundred rupees for 15 days of training programme in a month. The living legends like Dhananjoy Mahato, Bhuvan Kumar, Nepal Mahato, Binadhar Kumar gave their time and energy in training the young dancers. They taught the forgotten steps of Baghchaal and Mayurchaal and emphasised the need for regular practice. Rigorous training for four to six months strengthened the skill base.

Safeguarding is not mere protection of the art form. Living heritage is continuously changing. Developing new ways of rendering the art form is also important for reaching out to new audience and market segments. A key risk is loss of authenticity in attempts to cater



Innovative Chau production based on Macbeth

to market demands. The strategy used was to facilitate exchange between the practitioners of folk art and contemporary art and theatre directors, musicians, composers and designers. The workshops facilitated an understanding of the dynamics of culture, place and society in different environments. The folk artists gained confidence and had improved ability to understand their own cultural context and to further innovate. Theatre directors like Prabir Guha of Alternative Living Theatre and Siddhartha Chakrabarty, a graduate of National School of Drama worked with the Gurus to innovate new productions based on the works of Tagore and Shakespeare. Chau productions traditionally run for hours. Workshops were held to train the dancers in developing productions which lasted for 15 to 45 minutes. Today the Chau dancers of Purulia present performances based on Tagore's Chitrangada, Kal Mrigaya and Bisarjan. Dakini Mongal is based on Shakespeare's Macbeth. There are short productions like Lav Kush depicting Rama's first meeting with his twin sons, Taraka Vadh or killing of Taraka, sister of Ravana by young Ram and Laxman. Some of the new plays are based on mythologies like

Chandi Mangal or local legends like Khamar Murar Amar Gatha. The dancers were trained to dance on a stage, a paradigm shift from the traditional set up of performance where the audience circles the arena. Designers worked with the mask makers to reduce cost of production. An average Chau production is quite expensive. Each member of a troupe of 15 to 20 dancers needs mask and costume. A mask costs around ₹ 1,500 and can be used only for three to four shows. A costume lasts for a season and costs around ₹ 1,200. Beads and trimmings for masks and costumes are sourced from Kolkata. Because of these factors Chau dancers are hardly able to profit from their earnings from the shows. Workshops were held with mask makers of Charida and local tailors who make the Chau costumes to devise ways of reducing cost of productions. The plastic and metallic trimmings purchased from Kolkata are expensive. The crafts persons were guided in using locally available material and making the masks lighter. The lighter masks last for at least 12 shows instead of three or four shows. All the 75 groups were provided with musical instruments, costumes and masks.



Chau mask

According to the UNESCO Universal Declaration on Cultural Diversity, 2001, 'Creation draws on the roots of cultural tradition, but flourishes in contact with other cultures.' Exchange and exposure programmes brought the dancers in contact with choreographers, theatre directors, musicians and dancers from India and Europe. The exchange programmes directly contributed to the goal of facilitating multi regional access to local culture and intercultural dialogue. The interactions created improved understanding among the participants from Europe and India on how identity and culture are socially constructed and heightened through artistic and musical practice. Spaces were created for encouraging openness and interest in others, intercultural mediation through the different practices of dance, song, art and music; appreciating otherness and togetherness as well as using and creating opportunities for observation, analysis and interpretation within a safe multi-cultural environment. Innovative multi-disciplinary workshops with Western musicians, dancers, videographers and digital media specialists helped in mutual exploration and cultural conversation within an east west context. The pulling apart of what one knows as artists, dancers

and musicians enabled people to see in new ways thus allowing all parties to communicate on platforms beyond language. The use of technology in relation to artistic practice during the workshops and ensuing performance allowed a further level of communication. Outcomes have been films, documenting the process of performance and exchange and site specific participatory concerts involving artists and musicians interacting with both place and audience. As the artists performed in international events, the process of sharing stage with international performers in their own right helped them to emerge as professionals in the true sense. The artists acknowledge that the enhanced exposure has strengthened their self esteem and motivated them to propagate and pursue their art form in the earnest.

Leading Chau dancers contributed in making an audio visual documentation on Chau dance. The documentation elaborates the dance styles, their nuances and manifests how the dance is part of the people's lifestyle. Interestingly the process of socioeconomic empowerment has also led to obliteration of caste boundaries. The dancers of various communities like Kumars, Mahatos and Kalindis who used to be contenders now learn from each other and help each other in getting shows. Today there is constant innovation and creativity in Chau. Contemporary productions are imbibing styles from other folk dances of the region like Nachni or Natua. The communities are artistic in the modernistic sense, their dance a living and thriving heritage.

BUILDING CREATIVE INDUSTRIES

'Adequately nurtured, creativity fuels culture, infuses a human-centred development and constitutes the key ingredient for job creation, innovation and trade while contributing to social inclusion, cultural diversity and environmental sustainability' (UNCTAD 2010). Art for Life initiative is not about creating star performers and alienating them from their community. The vision is to use traditional skills for socio-economic development and social inclusion of the marginalised. The UNESCO Universal Declaration of Cultural Diversity emphasises the need of strengthening capacities for establishing cultural industries that are viable and competitive at national and international level. Capacity building of the Chau dancers for transforming into cultural entrepreneurs entailed formation of community based organisations, training in business skills, development of folk art hubs centring Chau resource centres, action research for developing cultural tourism, capacity building for managing community led tourism and multi cultural exchange and exposure.

It is important to develop community based institutions for managing creative enterprise. At the onset of the project, the Chau dancers were organised into Self Help Groups (SHG). SHG is a development group formed with poor and marginalised people and is recognised by the government. The purpose is to build their functional capacity for income generating activities and ability to solve their own problems. SHG members regularly save in a common group bank account and this enables them to access loans to run micro enterprises. They also use this for internal lending. The dancers, being extremely poor, could hardly afford contributing even the meagre amount of \mathbf{E} 20 as monthly contribution to the SHG account. However, they did participate eventually, inspired by the vision of revival of their art traditions. Formation of SHGs enabled some of the groups to access credit. The money saved in the groups' accounts was used by the folk artists for internal lending and also buying costumes and musical instruments.

Key strategies used for marketing and promotion were organising festivals at the regional, national and international levels, using audio visual documentations as a tool for building awareness, sensitising media and mobilising their partnerships and developing village tourism. Within a year of extensive training programmes, the Chau groups started getting more invitations to perform in various festivities in Purulia-Ranchi area. They participated in festivals and events across India and later in UK. Festivals are an extremely effective tool for promotion as these not only develop understanding and awareness but also create a ripple effect, providing artists links to new markets and future opportunities for performances. Participation in events across the country developed capacity to cater to audience's taste, identify customers and develop and render appropriate products. The young and children take little interest in traditional art and culture with the onslaught of electronic media, external influence and lack of exposure, interest, belief in traditions and general lack of awareness. To reach out to them, folk performances were organised in schools and colleges and in youth festivals. Young college students learned Chau dance steps and won awards in inter-college youth meets. Village festivals have been organised in places like Deulghata, Chelyama and Kasipur to encourage visitors. These places are endowed with built and natural heritage. There are terracotta temples dating back to sixth and eighth centuries and old palaces of local kings. Festivals are organised in spring when the weather is mild and Purulia is resplendent with the red blooms of Palas or flame of the forest flower. Around 300 Indian and international tourists attended each year's festival in the last four years. Thousands of villagers also enjoyed the cultural programmes. The festivals have established poignant connection between the communities and the visitors. The visitors marvel at the spectacular dance and music traditions. The performers and community members have renewed pride in their culture. With a lot of visitors coming over to the villages to stay and experience folk art, the artists feel proud about it and have even taken initiatives in 'home stay' based tourism development processes. Village tourism has benefitted the larger folk artists community. Tour operators have begun to come forward to promote heritage tourism.

Sustainability of creative enterprise is ensured through collaborations, interaction and partnerships between the folk artists and a wide range of potential patrons and promoters of art and cultural enterprise. Fairs and festivals, book fairs, youth festivals are major clients. Durga Puja Festival Committees of Kolkata together with other towns of West Bengal and also cities like Bangalore, Delhi and Mumbai are patronising the Chau dancers. They are performing at ministerial functions, annual cultural programmes of corporates and banks, school and college celebrations, and adding colour to inaugural ceremonies of wide range of events like sports meets and trade fairs. There are also solo performances in various ceremonies. Choreographers and theatre directors are using Chau dance in their productions. Their martial art form and their acrobatics are being used to their highest potential and the accessories have been experimented upon with contemporary ideas. They are appearing in television serials, attending global national and international festivals, visiting educational institutions abroad and teaching Chau steps to international students.

Chau groups are now performing round the year. In 2004, they were just loosely formed dance troupes. The troupe leaders used to assemble teams when they got an invitation for performance. Average payment received for a show was ₹ 1,800-3,000 which hardly met the production costs. Nowadays, the groups earn ₹ 7,000-8,000 in the programmes held within the district, around ₹ 20,000 in Kolkata and ₹ 30,000-90,000 for performing in other states. While the artists had no income from the shows before, they are now earning an average of about ₹ 3,000 per month from their performance. Monthly income for the leading artists is about ₹ 20,000-22,000 from performances and about ₹ 9,000-10,000 from other sources of livelihood like agriculture. Opportunity to perform has increased for the artists. The renowned groups are performing at about 20 shows per month while the less renowned ones are performing at five to ten shows per month. Leading teams perform 125 to 150 shows per year. They earn seven to eight lakhs of rupees during the peak season of festivities in autumn and winter. The groups practice regularly. The youth are taking interest

in learning and pursuing the art form and new groups are being formed. In most blocks of Purulia district, when the project commenced, no one had access to electricity, now majority of the Chau dancers have electricity in their homes.

Resource centres have been built on land donated by the artists. The centres are emerging as new seats of learning, supporting, preservation, promotion and dissemination of local culture and are being used for transmission of skills and knowledge to the younger members. These are being used as library, practice and exhibition spaces.

CONCLUSION

The Chau dancers of Purulia have shown amazing creativity, courage, flexibility and perseverance as they worked to promote their traditional art form for modern audience in a world completely different from their rural home. Their case study confirms the strong interconnections between culture and development. It establishes that cultural heritage is a capital, which through appropriate support can lead to their development and alleviation of poverty. There is need for new approaches and strategies to meet the livelihood needs of growing populations within the context of sustainable development. Developing cultural industries based on intangible cultural heritage holds the promise of sustainable development. Development is equitable as indigenous communities rich in traditional heritage but lacking formal education and employable skills can benefit economically, culturally and socially. Low use of natural resource in traditional arts makes the livelihoods inherently environmentally sustainable. Development of cultural tourism offers income options to women and youth. Strategy of community participation also strengthens sustainability owing to increased social capital.

Note

¹ Details available at <www.banglanatak.com>.

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Participatory Approach for Conservation Indrayani Jatra of Kirtipur, Nepal

SUDHA SHRESTHA

ABSTRACT

Traditionally, conservation of cultural heritage in Nepal was carried out and managed by local people through community based organisations known as 'guthis' that were established to fulfil the community's needs through a participatory approach. One of the main means of conserving tangible and intangible heritage in Kathmandu Valley is through festivals. Celebration of festivals from the ancient period till date successfully demonstrates people's participation, in association with different traditional and modern community based organisations like guthis, local government and semi national government. The Indrayani Jatra of Kirtipur in the Kathmandu Valley, Nepal is an example that reflects the significance of community based traditional organisational systems in maintaining continuity of cultural heritage.

INTRODUCTION

Nepal is a country rich in cultural heritage, with the Kathmandu Valley having a World Heritage Site comprising of five monument zones and numerous spatial and non spatial components of cultural significance.

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THE GUTHI SYSTEM

In the past, conservation of cultural heritage in Nepal was carried out by the locals through participation. It was predominant in the Newar community who were indigenous inhabitants of the Kathmandu Valley, through the guthi system. Newars live as a close-knit community who have faith in God and rituals. Since time immemorial, they participate in festivals of the town and individual family occasions zealously and play a socially significant part in matters pertaining to urban development of the Kathmandu Valley. One of the main factors for this is their role in establishing guthis that are socio-cultural organisations established to fulfil people's needs and demands. These play a crucial role in the conservation of tangible and intangible heritage that contributes to overall development of the towns and cities. Traditionally the guthis have dealt with socio-cultural and religious aspects like regulation of daily rituals in the temple, organisation of festivals, conservation of temples and chaityas alongwitk, management of urban services like water supply, solid waste management, road services and bridges, maintenance of crematoriums and cremation rituals.

The cultural tradition of 'guthi' has been crucial in developing, operating and sustaining the town's infrastructure over the last 1500 years. It was the guthi and its structure that led to the overall sustenance of community services, infrastructure, cleanliness and sanitation by channelling 'individual wealth' into public endowments managed by committees. Guthi endowments were made liberally by members of the royal family and the common people over centuries creating new religious or charitable institutions and financing the existing institutions. There are many types of *guthis* in the Newari society. Different *guthis* have different functions and responsibilities like Sie Guthi for funeral ceremonies (Sharma 1994). In a single festival there might even be many *guthis* working simultaneously; some for ritual songs and music, others for arrangement of festivals and feasts. The essence of the *guthi* system is people's participation. It is the bottom up approach of planning process in practice, wherein people are placed at the top, their needs and problems being of high priority. This helps them achieve a decent and comfortable life.

In larger cities the traditional *guthi* system is fast disappearing because of the changing occupation of people from agriculture to trade and commerce and due to the dissolved functioning of the *guthis*. Conservation of cultural heritage and management of urban services has become problematic.

INTRODUCTION TO KIRTIPUR

There are several small traditional agriculture based Newar settlements within the Kathmandu Valley such as Bode, Bungamati, Chapagaon, Harishidhi, Khokana, Kirtipur, Lubhu, Sankhu, Sidhipur, Thaiba and Thimi. Of these, Chapagaon, Kirtipur, Lubhu, Sankhu and Thimi were larger market centres. Kirtipur that literally means 'the city of glory' is a fortified hill town located at a height of 1,418 metres above mean sea level. It is one of the five municipalities in the Kathmandu Valley and lies about five kilometres to the southwest of Kathmandu, the capital of Nepal.



Location Map of Kirtipur within Kathmandu valley. Source: Department of Urban Development and Building Construction (DUDBC), Government of Nepal

Established in the period of Shiva Dev III (1099-1126 AD) in the form of satellite town of Patan City, Kirtipur is one of the oldest settlements in the Valley and was previously known as Kipu or Kyapu based on



Indrayani Dyo Chhne within the town in Bagh Bhairav Complex



Temple of Goddess Indrayani or Pigan Dyo, located at the periphery of Kirtipur

a legendary tale and Gun De that means 'forest town' in Newari. It was named Kirtipur after Queen Kirti Laxmi who ruled the town and was an icon of bravery in times of war, particularly when attacked by the Gurkha King Prithvi Narayan Shah (Shokoohy 1994).

The town has 12 gates used for rituals and for entering. The periphery of the hill has 12 ponds. There are some ponds inside the towns as well. This

canvas of buildings and ponds makes the town truly spectacular. The palace complex of the town known as Lavaku, occupies the main ridge, while residential areas are located between the fortification and palace complex. In all Newari towns in Kathmandu valley, the distribution of urban spaces was decided by a rigid caste system which is still intact in Kirtipur. The pradhans and amatyas (aristocrats) live in the central Layaku and their locality is surrounded by traders and service people. Further outward is the town of jyapus (farmers), sayami (oil pressers) and tandukaars (royal palanquin bearers). On the outskirts live podes (sweepers), naava (butchers), dween (heavy labourers), gaavine (musicians) and kau (blacksmiths). The urban fabric of the town is punctuated by temple zones and open spaces. Crematoriums are located to the west on the banks of the Balkhu River and have further been subdivided according to caste. Festival and funeral routes along with their entry points are located separately.

The mother goddess plays an important role in Newar society. Thus most of the towns and villages in the Kathmandu Valley are surrounded by a symbolic enclosure of eight mother goddesses called Astamatrikas in Nepali. These Astamatrikas are also called Pith and people believe that these safeguard the towns and cities. Kirtipur, is associated with Goddess Indrayani who is one of the eight mother goddesses. The temple of Indrayani is located at the north western end of the town and is called Pith or Pigan Dyo in Newari language. The house of the Goddess known as Dyo Chhne is situated inside the town, in the Bagh Bhairav temple complex. The Dyo Chhne looks like ordinary house that has beautifully carved windows and doors with beautiful toranas (gateways). It is a two storey structure built out of burnt brick with mud mortar, with a sloping roof. Altogether 13 deities reside in the Dyo Chhne, these are Baishnavi, Barahi, Bhairav, Brahmayani, Chamunda, Dhumbaha, Ganesh, Indrayani, Kaumari, Mahalaxmi, Rudrayani, Simbaha and Shiva. The *khut* (chariot) for the Jatra of the Goddess Indrayani is kept outside the Dyo Chhne. The seven sisters of Indrayani are situated in surrounding villages; Boshi Gaun, Machhegaon, Naikap, Na Guan, Panga, Satungal and Tahakhel.

THE INDRAYANI JATRA

People have been celebrating Jatras for ages. These Jatras bind the people together as these bring different societies and castes closer and are symbols of peace, harmony, respect for elders and brotherhood among the



Indrayani Khut being brought inside the town through De Dhoka



Guthiyars and Tole members going to offer La Swan (water flower) for the Goddess Indrayani



Women dressed in traditional attire form a part of the Indrayani Jatra


The Indrayani Jatra in progress

people. Kirtipurians are very hard working people and mostly they spend their time tending to work. Majority of them are farmers, carpenters, masons and stone carvers. Indrayani Jatra is a celebration that marks the onset of harvesting season and gives the community an opportunity to rejuvenate themselves.

Since the medieval period, the Indrayani Jatra and Sat Gaun Jatra are held in the month of Marga that coincides with November-December, on the eighth to tenth day of the darker moon days on the Lunar Calendar. The festival is celebrated enthusiastically every year in Kirtipur and the seven surrounding villages that are associated with the eight goddesses. The senior most citizen of the town known as Thakali, fixes the date and the time of the festival. All people of Kirtipur accept the decision of Thakali. The people of Kirtipur celebrate the ninth day as the main Jatra with feasts and festivities.

The origin of the festival is associated with the legendary rescue of an old woman who was willing

to sacrifice her own life instead of her son's and with Godess Indrayani who saved the town of Kirtipur from a demon. In continuation of the legend, the festival is initiated every year by sending a male member, the night before the Khut Jatra from the Lakhe Pa Guthi to the west to the direction of the thick forest that was the abode of the demon. He is welcomed back on the next day with festivities and procession. To the tune of a traditional music band, prayers are offered with red powder, flower and rice, known as Sindur Jatra and a white cloth is spread on the way as a tribute for saving the people of the town.

Indrayani chariot festival is usually held on the 10th day of the lunar calendar. Members of the Palo Toles or neighbourhoods and Dapha Bhajan Guthis offer prayers to the Indrayani Goddess and remove the images of the eight mother goddesses from the Pith and place them in the chariot. They carry the Khut procession with the local people, followers, traditional musical band and dances. Khut Jatra starts from Pigan Dyo which is located outside the De Dhoka and ends at



Dapha Bhajan Guthi going to the Indrayani Pingan Dyo to welcome and bring Goddess Indrayani inside the town

the Bagh Bhairav Complex. The Khut enters the town through De Dhoka that is the gate of the God. The Khut proceeds through the upper part of the town following Jatra route. The Khut Jatra starts early in the morning and lasts till the evening.

During the Jatra, Lord Ganesh is always in front of Goddess Indrayani and the chariot stops in front of all temples, *chaityas* and other points of religious significance along the route. The Khut also stops at several nodes, open spaces and *toles* for offering Puja by Tole members. They take chariot to the Layaku Tole and stop for longer time where the head of the town 'Dware' offers Dware puja. Many people from different *toles* come to offer puja in Layaku Tole.

ROLE OF GUTHIS AND OTHER ORGANISATIONS

Presently, Jatras of Kirtipur are organised by the common effort of local people, several private festival *guthis*, *guthi sansthan* (semi government organisations), Community Based Organisations (CBOs) and the Municipality. Organisation and management of each Jatra involves a number of *guthis* and organisations.

The Khut Jatra was earlier organised by the Dware but after democracy, from 1961, this arangement was brought to an end. In the Panchayat System, the Pradhan Pancha or chief of the village played the role of Dware and the Khut was organised by Pradhan

Name of Tole or Guthi	Involvement in Jatras
Dapha Bhajan Guthi or Palo Tole	Khut Jatra
Neku Mhe Syaegu Guthi (Khala Guthi)	Neku Mhe sacrifice
Dallu Dyo Guthi (Sayami Tole)	Dallu dyo Jatra
Lakhe Pa Guthi-Khala Guthi	Lakhe Pa
Khala Guthi	Velu Jatra, Hwonkila Wanegu Jatra
Palo two Toles, Dapha Bhajan Guthi	Indrayani Chariot Jatra
Pode feast Guthi, Dyo Nani Guthi	Pode feast
Palo Tole, Dapha Bhajan Guthi	Dware Sindur Jatra
La Swan Chayegu Guthi	La Swan Chayegu
Ganesh Dyo Khat Parikrama Guthi	Ganesh Dyo Khat Parikrama
Circular Special Umbrella Guthi	Provision of circular special umbrella
Chwe Balkhu-Bare Guthi and Dathu Balkhu-De Guthi	Provision of fire Wood for fire sacrifice
Pode, Chakhun Guthi	Provision of live birds for fire sacrifice

Toles and their turn to organise Jatras		
Toles	Turn Year (in A.D.)	
Tanani and Tunjho	2005	
Dev Dhoka and Ga Chhene	2006	
Muana Tole and Mugachhe	2007	
Samal and Kutusa	2008	
Thambaha, Kwacho, Kunlachene, Chaphal	2009	
Itachhne and Kutujho	2010	

Pancha. This role was later transferred to the Mayor. While the first Mayor did organise the Jatra and played the role of Dware, this could not continue over the following years and the Jatra also deteriorated. To counteract this, people who wanted to continue the Jatra came together and decided that the Jatra would be organised turn by turn by the two *toles* each year.

Palo Tole organises and manages all Jatras around the year but other *guthis* and *toles* have been undertaking specific responsibilities over the years:

• In 2006, Ga Chhne Tole or Ga Chhne Dapha Guthi and Dev Dhoka Tole or Dev Dhoka Guthi had jointly

organised all Jatras and other festivals throughout the year. They handed over all the responsibilities to other *guthis* such as Dapha Guthis, Samal Dapha Guthi and Kutusa Dapha Guthi, for the next year. After gaining jurisdiction over all Jatras of the year, a meeting was called for two Dapha Guthis wherein the work was divided and a meeting schedule was fixed. In Dapha Guthis, the main coordinator is called Kaji who takes care of all managerial jobs. Thus two Kajis of respective *guthis* were the coordinators of the Jatra. When it came to raising funds, they collected money from their members and from all Tole members of both Toles and the Municipality.

- Jatra Byabasthapan Samittee or Jatra Management Committee was established to manage and organise Jatras. Their duties and responsibilities consist of monitoring, evaluating and suggesting methods for a better organised and systematic Jatra. Their other duty is to raise money from the Kirtipur Municipality and hand it over to the eldest citizen selected as Dware by Palo Toles.
- Management of the Khut of Lord Ganesh in Indrayani Jatra for the Khut Parikrama or chariot procession around the town is run by Ganesh Dyo Khut Management Guthi with two family members. There is no financial support from any other organisations and people. They hire four people to carry the Khut and provide them with food and salaries.
- The Dallu Dyo Jatra is also known as Jatra of light. Sayami from Kutusa Tole brings three Dallu Dyo to the Pigan Dyo in the evening on the day of Chwelabhu (the eighth day of the lunar calendar). They light the Pigan Dyo for a whole night. In the evening of the Mu Ya, the ninth day of lunar calendar, they celebrate Dallu Dyo with the procession and traditional musical band.
- La Swan that is water flower, is considered a pure flower and it is believed that if the flower is offered to Indrayani Goddess, she would be pleased with the devotee. In line with this belief, around 70 years back Lana Sigh Maharjan from Tanani Tole wished to offer La Swan to the Goddess and thus he established the La Swan Chayegu Guthi. In the beginning, the Guthi comprised of eight members, who contributed about ₹ 4,000 each, for the Guthi.

CONCLUSION

Festivals present a platform for performances, art, dance and music like artists playing an ensemble of traditional musical instruments such as Dapha, Dha, Dhime, Bansuri, Jhyali, Kartal and harmonium that are unique to Nepal. The Jatras result in timely restoration and preservation of the associated built heritage and rituals of the location specific festival also emphasise on the significance of the ecology and reinforce linkage of the town with its rural hinterland. Thus, these festivals ensure continuity, maintenance and upkeep of the socio-cultural, natural and physical landscape of the town and settlements. In the Indrayani Jatra, the youth involved in the management of Jatra is usually guided by the experienced elders, this enables a transfer of knowledge systems. The highlight of this festival is dedication, enthusiasm and participation from local people, *guthis*, *guthi sansthan*, *toles*, CBOs and the Municipality. The system of organisation of the Jatra reflects that the key to continuity of traditions and heritage is participation of the local community, especially in countries where other resources are scarce. Participatory approach befits the role to fulfil the needs and demand of people and places.

Acknowledgements

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Malabar Gardens

Renée Ridgway

INTRODUCTION

The European global expansion of the 17th century was primarily motivated by the enormous profits to be made from spices and other trade goods. During the 17th century, the Dutch captured many Portuguese held command posts such as Ahmedabad, Chinsurah, Kochi and Surat. But history has tended to overlook the presence of the Dutch Vereenigde Oost-Indische Compagnie (VOC) or Dutch East India Company and their settlements along the Coromandel and Malabar that is, eastern and western coasts of India and present day Sri Lanka. In 1663 the Dutch took Fort Cochin from the Portuguese with a military struggle and set up their own trading post within the territory that became known as Dutch Malabar, extending along the south-western coast of modern day Kerala. This is still one of the most bio-diverse regions in the world, with a tropical climate that supports an extensive variety of spice, medicinal herbs and other valuable plants.

'Le eau de Malabaricus', 2010, photo 30x 40 cm. Taken on Bazaar Road, Mattancherry

'Kaavu', 2010, photo 30 x 40 cm. Grove including ancient trees and medicinal plants taken at Itty Achudan's Kollat family house at Kadakkarapally

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Heritage Album

It was this bio-diversity that made the area so desirable to traders since ancient times. In particular, the Dutch attempted to impose a monopoly on the black pepper from the region, still known today as 'Malabar Gold'. Although spices lured European merchants to the Malabar, in these so-called colonies they encountered unfamiliar diseases and sicknesses, all the while remarking in their travel notes how healthy and thriving the local population lived and prospered. Thus, the impetus for well being and survival in a strange environment inspired their determination to procure knowledge of medicinal plants.

HORTUS MALABARICUS: GARDEN OF MALABAR

In my work as a visual artist I use the VOC and Dutch West India Company (WIC) as a conceptual paradigm in which to map specific traces of colonial encounters still visible today.

My earlier trips to India had never taken me south of Mumbai, having first come to the north for artistic projects in 1999. In 2007, I arrived on the Malabar Coast to investigate the remnants of Dutch colonial history, to obtain a cure for my own well being and to investigate more about these herbal plants. The curative properties of these plants were first introduced to me in Amsterdam by my Ayurvedic doctor from Kerala, Thomas Punnen¹. Upon my arrival in Fort Cochin I stumbled unknowingly into David Hall, then still an unmarked ruin with a leaky roof and dilapidated floor. Intrigued by its aura I entered and captured its state on video, the place itself seemed to whisper to me that it had once been an apothecary. While residing at Kashi Art Gallery in Mattancherry I met the owner Anoop Scaria and he first told me about the 'Hortus Malabaricus'.

This extraordinary book, 'Hortus Malabaricus', was printed in Amsterdam between 1678-1693 and is the earliest comprehensive work on the flora of Malabar, illustrating around 740 indigenous plants that explains their medicinal properties, with captions in four languages: Arabic,

'Cúmúdi', Volume XI, Table 29, Page 57. It is called by the Bengalese Chooli, and by the Telingas Antara-Tamara. Leaves variable in size, purplish green ...

'Hortus Indicus Malabaricus', frontispiece of the original Latin version housed at the Herbarium in Leiden, the Netherlands

Konkani, Latin and Malayalam. The former governor of Dutch Malabar Hendrik van Reede tot Drakenstein, collaborated with local physicians, botanists, translators, illustrators, engravers and clergymen to produce the 'Hortus Malabaricus'. Yet, unlike many 17th century documents, the local contributors of this knowledge, the *vaidyas* (Ayurveda physicians) Itty Achudan, Ranga Bhat, Appu Bhat and Vinayaka Pandit do not remain unnamed but instead have contributed sworn and signed statements of their collaboration!

Upon returning to the Netherlands I went to visit the Herbarium in Leiden, which housed an original Latin version of the 'Hortus Malabaricus'.² I became enchanted by its spectacular, detailed renderings of Malabar plants made from copper engravings based on original watercolours. Flowers, fruits, petals, seeds and even roots were magnificently detailed. I was surprised that this 12 volume book had remained hidden away from public perusal for so many years until 2003, when its English translation by K S Manilal was published by Kerala University. What makes this 17th century compendium so special is that it is perhaps one of the first documents archiving East-West collaboration (Manilal, Nicolson & Suresh 1988), along with its manifold functions as an illustrated botanical garden, a taxonomy of named plants, a medicinal bible, a translator's dictionary or

to some, such as myself, an object d'art. Moreover, the 'Hortus Malabaricus' is perhaps one of the few positive examples of the cultural exchange that has occurred 333 years ago on the Malabar Coast between the Dutch and the local population. Therefore the collaborative production process of the 'Hortus Malabaricus' remains unique and the knowledge contained within its pages is still significant today.

With my curiosity whetted I began researching more about the gaps that exist within such a western archival document that records and transposes traditional Indian knowledge.

I attempted to find out the motivation driving the compiler, Hendrik van Reede tot Drakenstein, to produce such a book. Together with documentary filmmaker Rick van Amersfoort, I interviewed experts and local people for their opinions, anecdotes and documents. As I continued to film, more and more conflicting stories surfaced about the content in the book; whose knowledge was it, were the medicinal workings still valid in the year 2012, were the botanical drawings accurate and what would be the contemporary use value of such a 17th century compendium?

THE WANTED LAND³

The outcome of these questions was 'The Wanted Land' an exhibition held from February 15 to 22, 2012 that reflects my fascination with the 'Hortus Malabaricus'.

'Solanum lasiocarpum', otherwise known as Indian nightshade, is a plant that produces edible fruit. Its flowers are white and its fruits are pale yellow

'The Wanted Land', opening February 18, 2012. Viewing of a copy of the Hortus Malabaricus, Latin version

Heritage Albun

'Odatha', possible remains of the cornerstone of the original 'Garden of Malabar' of Hendrik van Reede tot Drakenstein in Fort Cochin

It also fames the conceptual focal point of the works, displaying these in the exact location where historians believe the 'Hortus Malabaricus' was originally produced, the David Hall, Fort Cochin. This exhibition consisted of three video installations: 'Commodore Odatha a.k.a. Hendrik van Reede tot Drakenstein', 'A study into (un)becoming Dutch- Part I and II' and 'The Wanted Land'. Furthermore, about 150 indigenous plants were contributed by the local community that are contained within the 'Hortus Malabaricus'. A copy of the original Latin edition and the recent (Manilal 2008) Malayalam version was on view for visitors to peruse the beautiful engravings and to view the first printing of the Malayalam language.

'Commodore Odatha a.k.a. Hendrik van Reede tot Drakenstein' is a multi-channel installation that brings the spectres of Commodore Odatha into the present, raising questions about the legacy of the 'Hortus Malabaricus' in 2012. What is the contemporary value of the knowledge contained in this book, what do we really know about how and why it was produced and in particular, what were the incentives for this nobleman? In the video 'A study into (un)becoming Dutch- Part I' my Ayurvedic doctor talks about emigration,

'The Wanted Land'. Installation view with local plants from the Hortus Malabaricus along with volumes from a copy of the Latin version and Malayalam version by Kerala University

'Commodore Odatha a.k.a. Hendrik van Reede tot Drakenstein', (2010) multi-channel installation. Each track is 10 minutes. Installation view

'A Study into (un)becoming Dutch Part I'

immigration, integration and finally disintegration in regard to setting up his practice in the Netherlands whilst exposing various aspects of Dutch bureaucracy faced by immigrants and the decision to return to the country of origin. In 'A Study into (un)becoming Dutch Part II', a flat screen monitor positioned above a massage table reflects the perspective of a patient, the artist. This work addresses the treatment of migration trauma, the cure being obtained through Ayurveda massage, which uses many of the herbs and plants from the 'Hortus Malabaricus'.

'The Wanted Land' (2010) 12 minute, single-channel video. Installation view with plants

'The Wanted Land' gathers family genealogies, storytelling, and exchange of information as a re-viewing of history favouring oral traditions, participation and *vox populi* perspectives over the official written narrative of historians, social scientists, anthropologists and sociologists. This 12 minute video work examines the VOC's taking, undertakings and un-doings that still form a part of Fort Cochin's contemporary landscape.

VIRTUAL MALABAR GARDENS

At the official opening of 'The Wanted Land' on February 18, 2012, 'http://hortusmalabaricus.net' was launched. This online community platform explores the creation of the 'Hortus Malabaricus' and extends its historical (oral or archival), artistic, medicinal, botanical, linguistic and political importance. It attempts to collate all information about the 'Hortus Malabaricus' enabling diverse perspectives, visions, histories and personal research to be shared in one virtual space. Participants are invited to comment on the texts and contributions of others, as well as on the videos uploaded to the site. The website embodies a pluralistic, digital approach opening manifold perspectives on a once existent Malabar Garden.⁴

Renée Ridgway is an artist, freelance curator, writer and educator based in Amsterdam, the Netherlands. She is co-initiator and contributor to n.e.w.s. <http://northeastwestsouth.net>, a collective online platform for the analysis and development of art related activities.

Acknowledgement

 The source of images of 'Hortus Malabaricus' is The National Herbarium department of the Netherlands Centre for Biodiversity Naturalis.

Notes

- ¹ He presently manufactures Ayurvedic skin care and massage oils. These are promoted through the website <http:// rishiswellness.com>.
- ² Available at <http://botanicus.org/title/ b11939795>.
- ³ Financial support for 'The Wanted Land' provided by Netherlands Embassy New Delhi and CGH Earth; production support provided by Museum Beelden aan Zee, Mondriaan Fonds, VSB Fonds, Stroom Den Haaq.
- ⁴ For more information please see <http:// hortusmalabaricus.net> and <http:// reneeridgway.net>.

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The Ancient Ingenuity of Water Harvesting Systems

Anupam Mishra

In the arid desert state of Rajasthan, water is an invaluable resource and is respected, even revered. The average rainfall per annum in the state is a meagre 16 centimetres which is much lower than the rest of the country and the groundwater is below 100 metres and remains inaccessible to most of the population. It is therefore surprising to find that over 90% of the villages in Rajasthan have access to drinking water and even more surprising is the fact that most of this water is harnessed by traditional methods as opposed to government interventions or international engineering solutions. These methods include the construction of tankas or kunds (reservoirs) and baolis (step-wells), harvesting water through courtyards and rooftops in individual houses as well as harvesting ground water through deep wells. Water management in Rajasthan is a people centric activity and holds a great amount of social significance. Water is not treated like a commodity; rather it is upheld as a resource to be used collectively in a responsible manner. There are many examples across the Thar of local communities coming together to preserve and collect water.

and tankas, a flight of steps is provided to access the top of the structure where one may pull up the water through a simple pulley

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The *tanka* or *kund* is a harvesting system found in several districts of Rajasthan. It comprises of a catchment surface for the collection of rainwater which is then directed towards a collection tank, where filters located on the periphery clean the water before it enters the well. The lining of the catchment area and the well may be in mud or lime plaster or using other organic materials and ensures minimum loss through seepage. The *tanka* may be covered by a dome to reduce surface evaporation and contamination.

Above and below: Careful management of the tanka ensures that nothing contaminates the water before it is collected. The capacity of such a structure may be up to 100,000 litres per season which is usually adequate for a year

Heritage Album

The *baoli* is an open tank or well which may be accessed through several flights of steps which go right to the bottom of the structure. With the varying water levels, these steps may become submerged entirely during monsoon and as the water recedes, the steps enable one's access to the water below. Hundreds of such *baolis* in varying scales can be found across Rajasthan. These structures have evolved into distinct architectural expressions, with a delightful interplay of light and shadow, an oasis within the desert.

The Chand Baoli at Abaneri, is one such step-well. The baoli is accessed at the top, and one needs to climb down about 13 to 17 flights of steps in order to access the water In urban areas, such as Jaisalmer, the rooftop provides an ideal catchment surface and rainwater is collected through the pipes and fed back into the tank located inside the house

On an individual scale, water may be harvested through the roof or courtyard as catchment areas. The *haveli* or traditional courtyard house in Rajasthan is an exemplar of simple and effective water management. The courtyard surface is meticulously kept clean since it is a rainwater harvesting surface and is swept thoroughly prior to the rains to ensure the quality of water collected. The tank is located within the house and is maintained religiously throughout the year. The courtyard and tank's surfaces are plastered to protect the water from the rising temperature. A simple lid is provided for drawing out the water.

The Gadsisar Lake is not merely a water source, but serves as a space for social interaction, religious pursuits as well as for leisurely activities when the water level is high. The embankments or ghats of the lake act as large gathering spaces, while the pavilions and chhatris located within the lake are more private and scenic

Apart from the individual rainwater harvesting techniques, one may find several ingenious and aesthetic solutions in Jaisalmer to harness the monsoon in order to provide water to its residents through the year. Jaisalmer boasts of over 52 water bodies and reservoirs, amongst them, the Gadsisar Lake is the most significant. The catchment for this reservoir is over 125 square kilometres, which is remarkable for a 14th century reservoir.

The social and religious significance of water in the Thar Desert is expressed in many different forms. One such expression can be observed in the form of the decorative stone columns which are located near sources of water. The columns are a means to announce to the visitors that they are approaching a water source and that they must abide by certain unwritten norms of the Thar Desert.

The water edge of the Amar Sagar has been treated with great aesthetic sensitivity and even utilitarian functions, such as a gauge to measure water level, are designed as sculptural forms

Water management in Rajasthan is a people centric activity and holds a great amount of social significance

To summarise, the deep connection that the locals in Rajasthan have to water can be seen in a historic decorative motif known as the Sita Baoli. It represents a water body in the desert. In the centre of this pattern lies the centre of all life, surrounded by waves on the water's surface. On all four edges are steps, representing the stepwells along with trees protecting and shading the water. Fragrant flowers are represented on the corners symbolising fragrance and joy. This simple graphic encompasses the eternal bond of the people with this lifegiving resource and epitomises the approach

The Sita Baoli is traditional decorative motif which signifies a water body in the desert that has been used as a tattoo for centuries

Anupam Mishra works with the Gandhi Peace Foundation, New Delhi. He is attempting to bridge the gap between modern water management technology and India's heritage of water harvesting. He is a Gandhian, environmentalist and water conservationist. Anupam Mishra was awarded the 1996 Indira Gandhi Paryavaran Puruskar, instituted by the Ministry of Environment and Forests, Government of India. He has authored several books in the field of water conservation. to water management in Rajasthan. Where several government initiatives have been unsuccessful, these simple yet effective systems continue to provide locals with a constant supply of water. The local residents use the traditional wisdom passed on for centuries to manage their water requirements and ensure an ecologically sustainable approach to the management of this precious resource.

Acknowledgement

This series of images has been extracted from a talk delivered by Anupam Mishra named 'The Ancient Ingenuity of Water Harvesting Systems' discussing traditional methods of rain water harvesting and water management in Rajasthan, organised at the TED India 2009 Conference.

Book Reviews

De-coding the Symbolism in Hindu Mythology Series of books by Devdutt Pattanaik

NEETA DAS

In his lectures, Swami Vivekananda narrates the story of a sage Narada going to another sage Sanatkumara. Narada told him that although he had studied the Vedas, astronomy and various other subjects, yet he was not satisfied. Sanatkumara answered that these were but secondary sciences. That which made us realise Brahman was the supreme, the highest knowledge, knowing which all is known. Swami Vivekananda said that this idea is found in every religion and religion always claims to be the supreme knowledge. This knowledge is beyond time and space, where mind and senses cannot reach; the Absolute, the Infinite, the One without a second.

Based on this understanding every religion sets out its own philosophy, defining its scope and principles. This philosophy is made concrete through mythology that consists of legends of that culture in which it is embedded, making it more legible to the general people. Devdutt Pattanaik narrates these 'stories' in this series. A medical doctor by education, a mythologist by profession, he goes about describing all the characters that play a part in these, their names, their characteristics, their dress, their personalities, their relationships with each other. While he describes Krishna in '**An identity card for Krishna'**, he makes sure his reader will be able to recognise him if they met on a plane! He uses everyday language and contemporary games like dumb charades to introduce Shiva in 'Shiva plays Dumb Charades'. He effectively uses the story of Mother Saraswati to induce teachers in re-thinking the education system in 'Sarawati's Secret River'. In 'Kama and Yama' he talks about the need to balance between work and play.

All these books are written for children but in an age where reading is not in vogue, these books will be very popular as reading material for adults who feel a need to understand the Hindu mythologies as hidden behind the plots are symbols decoded and philosophies simplified. The author consciously narrates that knowledge, knowing which all gets known, because he humbly proclaims in every book: 'Within infinite truths lies the eternal truth/Who sees it all?/Varuna has but a thousand eyes/Indra a hundred/And I, only two.'

As Devdutt Patnaik moves from the children's books to his more serious works for scholars, his intentions become clearer. In '99 Thoughts on Ganesha' he says:

Ancient Hindus believed, wisdom must never be given. It has to be taken. And so, the answers are right there in front of us in the form of Ganesha, if we are willing to decode them. If we do not want to decode it, it's perfectly all right. The image of Ganesha will continue to enrich us, even without being intellectually analyzed.

Fun in Devlok: An Identity Card for Krishna Devdutt Pattanaik Published by: Penguin Group No. of Pages: 44 Published in: Manipal ISBN: 9780143331674

Fun in Devlok: Kama vs Yama Devdutt Pattanaik Published by: Penguin Group No. of Pages: 51 Published in: Manipal ISBN: 9780143331957

Fun in Devlok Saraswati's Secret River Devdutt Pattanaik Published by: Penguin Group No. of Pages: 52 Published in: Manipal ISBN: 9780143331964

Shiva Plays Dumb Charades Devdutt Pattanaik Published by: Penguin Group No. of Pages: 41 Published in: Manipal ISBN: 9780143331698

In '7 Secrets of Shiva' his subaltern intentions can be read as he tries to re-look at Indian forms with an insider's eye and tries to reinterpret 'tangible and objective' forms like the phallus which shocked the western mind, by bringing to light the 'thoughts, which are intangible and subjective' that were responsible for their creation.

Finally, in '7 Secrets of Vishnu', he painstakingly unravels the complicated reincarnation of Vishu, as Rama, Krishna and others. Tracing their life stories as they jump from one age to another, time lines connect both horizontally and vertically. The reader gets confused, but it is natural, because the subject matter has very intricately woven threads that transcend time and space. That is also the reason for this literature having been interpreted over and over again through the ages by many people. Published by Westland Ltd. from Chennai, all books are very well printed and bound. The choice of colour schemes makes these very attractive for the young reader. The books come alive with the prolific illustrations, cartoons and sketches. These books are a much needed collection and will go a long way in entertaining and educating young minds.

Neeta Das is an author and co-author of several books and articles on architectural history and conservation and has presented many papers in national and international forums. She has been awarded a Post Doctoral Fellowship by the Indian Council for Historical Research for her work on the 'Architecture of Murshidabad'.

Pigeons to Post India Post and History of Indian Postal Services by Steve Borgia

RIMA HOOJA

Pigeons to Post Steve Borgia on India Post & History of Indian Postal Services No. of Pages: 155 Book Size: 12.5'x 12.5'x 0.75 Published in: Chennai ISBN: 978-81-920629-0-7

This fascinating book is all about the Indian Postal services, as the title does emphasise. It is an admirer's tribute to '...this least documented people-centric organisation'. In an age where email, social networking sites and instant communication is the order of the day, it requires some effort to realise that longdistance communication was not always easy, or even easily achievable.

As the reader learns, '...Over a hundred and fifty years after postal services as an institution came to the Asian Continent, the Indian postal system, with 1,55,618 post offices and over 5,66,000 employees is considered the largest postal network in the world' (p. 2).

The profusely illustrated 'Pigeons to Post: History of Indian Postal Services' is divided into 52 sections that cover a plethora of topics. These include the start of a formal postal service, Britain's Penny Black, early Indian postal stamps, modes of carrying mail and Scinde Dauk, amongst others. The carrying of post during wars is also covered. Even the motif of the post-person, the 'dak wallah', 'dak babu', 'dak master' and 'dakiya' in popular psyche and Indian films is looked at.

The book contains its fair share of facts, anecdotes and photographs from archives, as it takes a reader through the past 150 years of the history of India's postal story. The British initially used the traditional *harkaras* (messengers), with their trademark *ballam* (rod tipped with a spear-head) for protection against wild beasts and robbers and bells to signal their passage, as part of a relay system of long distance message sending. In time, *palki dak* (palanquin post), *dak* bullock 'trains' and actual railways were also modes of carrying post. Borgia's book also records numerous incidents and facts about the people who were an integral part of connecting the Indian sub-continent.

The photographs and illustrations, many of them full-page, show images like the Kolkata (formerly Calcutta) and Chennai (formerly Madras) General Post Offices, the Mumbai (formerly Bombay) Telegraph Office, numerous *dak* bungalows, *palki dak* and Schinde Dawk.

⁽Pigeons to Post' is not a mere hagiography of British contribution in facilitating official, private and public communication, though. It connects the tradition of sending messages across the centuries in India; for example during the Mauryan emperor Ashoka's period, or through traditional drummers, or by the runners and horsemen of Emperor Sher Shah Sur, and Emperor Akbar, with the modern postal services.

'Pigeons to Post' is a tribute to the spirit of the incredible and dauntless post-persons or postal staff members, who have carried messages in bags, on foot, on horse-back and even camel-back, on trains and barges, on mule-trains and bullockcart 'trains', not to mention airmail. The post went through in almost all terrain and through all situations. Borgia cites the casualties suffered by post-men even when tigers, bears, dacoits and adverse weather conditions became barriers.

Steve Borgia's collection undoubtedly provides the reader or browser glimpses into the multi-facetted world of India Post, as it evolved, expanded services, morphed and took newer shapes. It crosses into the contemporary forms that India Post has today. The volume is a labour of affection and deep understanding of what India's post has been for the sub-continent and what it continues to be. As the words of a popular 1970's song went: 'dakiya dak laya', India's postpersons still do!

Rima Hooja is an archaeologist, historian and writer. She is the Director of MSID India Programme of the University of Minnesotta, USA. With Masters in History, and doctoral and postgraduate certificate in Archaeology (both from Cambridge, UK), Rima has been Associate Professor Indian Tradition and Culture, Kota Open University, Kota and Visiting Fellow, Institute of Development Studies, Jaipur. She is currently a Member of the National Monuments Authority.

Review

MUKTA NAIK

Simplistic terms like 'pass' and 'fail' cannot suffice as a judgement on a programme as complex and ambitious as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), the first roll out of which draws to a close this year. At the outset, the vision for JNNURM was one that India had never seen before on such a scale. For the first time, government policy recognised the inevitable and critical importance of urbanisation and created a scheme to give it direction and impetus. This resulted in funding to the tune of ₹ 660,000 million allocated for the express development of 65 shortlisted cities across the country.

The report card that reads like this: 546 projects approved, 126 completed, 788 infrastructure projects approved, 142 complete; is dismal, prompting many to lose faith in the government funded, centrally pushed approach to urban improvement. Other central schemes like the Sarva Shiksha Abhiyan have also failed to meet targets and states have also been unable to utilise their allocations during the mission period. Moreover, JNNURM's failure to encourage states to implement urban reforms is a serious one, as this was the crucial step forward that would have set in motion a positive chain reaction of incentive driven urban renewal. The above facts point to issues related to policy design and vision, ownership of that vision by states and in the case of JNNURM, the ability of Urban Local Bodies (ULBs) to create a vision for their own cities and implement the same.

More efficient, liveable and productive cities are essential for India's future development. Without these productive urban areas, India's GDP growth is sure to fall, as it is already beginning to do so. Social, economic, infrastructural and logistical urban inefficiencies form the backdrop to address and contextualise many problems facing the nation at this point and improving India's cities is the key to offering better opportunity and quality of life to the Indian people. All this is possible only with even more expenditure towards improving India's urban areas. The Report on Indian Infrastructure and Services by the High Powered Expert Committee (HPEC) chaired by Dr. Isher Ahluwalia pegs this need at 1.1% of the GDP in 2031-32 compared to a 0.7% of GDP in 2011-12 when the report was made. How then do we learn from the experience of JNNURM-1 in order to do things better in a possible JNNURM-2 or in other schemes to address urban issues?

THE STAGE FOR REFORMS: THE ULB

The 74th Constitutional Amendment that strengthened local government was a landmark step in India's history due to which policy initiatives like the JNNURM could

be conceptualised. However, the local self government needs far more attention in order to play its part. As per the Isher Ahluwalia report, 'India's municipal corporations, municipalities and nagar panchayats, commonly known as ULBs need to be strengthened as local self-government with clear functions, independent financial resources and autonomy to take decisions on investment and service delivery.'

ULBs low on motivation, capacity: unable to access funds

Despite the best intentions of the mission, it has been difficult for states and ULBs to access JNNURM funds. For one, not all cities are motivated to work at improvement. Political lethargy is often the reason cited, but in most cases citizens are apathetic as well and there is no real connect between citizens and government to understand the city's identity and create a vision for its future.

Urbanisation in India, though not rapid by global standards, has had a far reaching impact in a span of the past three decades and Indians have not had a chance to internalise the phenomenon. However, there has been no concerted effort on the part of governments to reach out to citizens and it has been urbanisation by accident, despite the presence of master plans, entailing building bye laws and zoning laws on paper

A case in point is the rampant self construction in informal areas of cities in India. Today, over 60% of the growth in most cities is happening in informal areas by self construction methods that yield unsafe and poorly built structures. At present, the local governments turn a blind eye to this informal development, partly due to jurisdictional issues and largely due to corruption. The majority of citizens continue to live with sub-standard infrastructure and services.

Another example is the failure of cities to recognise the informal sector as an economic driving force. These need to find practical ways to incorporate informal workers into the formal economy, or bridge the gaps so that cities can leverage this vital aspect of India's urbanism.

For several reasons, therefore, local governments have no clear vision at all for their cities. It is, therefore, difficult for them to conceptualise projects worthy of funding. Further, there is little or no capacity in terms of trained personnel within ULBs to create funding proposals. Most ULBs do not have an engineering wing, nor do they employ urban planners. Many states have pointed out that JNNURM did not provide funds for engaging consultants and experts. In general, government schemes, as a result of the legacy of a tendering and contracting system in place for over a century, do not

RELEVANT GOVERNMENT PROGRAMMES TARGETING URBAN DEVELOPMENT

Issues of urban renewal and development are closely linked to tackling poverty and related issues like livelihood and housing. Government schemes are targeting these aspects and the focus is moving to urban poverty as well. The Ministry of Housing and Urban Poverty Alleviation (MoHUPA) is responsible for the rollout and monitoring of central schemes that impact housing and poverty, while the Ministry of Urban Development looks at policy issues related to urban planning and governance.

National Livelihood Mission (NLM)

The Swarnjayanti Gram Swarojgar Yojana (SGSY), intended to provide gainful employment to the urban poor and aligned to the National Skills Development Policy, is now being revamped into a new avatar, the National Livelihood Mission (NRLM). The NRLM intends to bring each below poverty level household under Self Help Group (SHG) net, set up dedicated implementation structure at various levels, enhance capital subsidy for beneficiaries, ensure easy access to credit, strengthen people-owned organisations, upscale skills and revive placement programmes. Learning from previous experiences, there is a provision to induct dedicated professionals to implement this programme as well as integrate appropriate technology.

National Urban housing and Habitat Policy, 2007

Envisaged to close the growing gap between demand and supply of housing, with 27 million homes need in urban areas alone, 90% of these for the poor, the emphasis of the policy lies in creation of opportunities for the private sector to assemble land within the purview of master plans. It also asks state governments to prepare a 10 year perspective plan for Economically Weaker Section (EWS) and Low Income Group (LIG) housing as well as a Habitat Infrastructure Action Plan for all cities with a population of over 100,000.

JNNURM

The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched in 2005 with the mission to invest in citywide infrastructure and is soon to complete its first seven year phase.

value professional inputs adequately. Local governments have had the onerous responsibility to take on renewal and reforms without adequate capacity building and training.

To be fair, the JNNURM did in fact cater for capacity building through the Peer Experience and Reflective Learning (PEARL) initiative that conducted training of ULBs on various subjects, ranging from heritage conservation to documentation of best practices. Cities within the PEARL network are classified into Mega Cities, Industrial Mega Cities (like Faridabad, Ludhiana and Visakhapatnam), Mixed Economy Cities, Cultural or Religious Cities, Hill Cities and North Eastern Cities. There is evidence to show that PEARL was successful in enabling cities to share experiences. However, a more concerted effort at capacity building would entail offering cities funding or incentives to engage with experts and consultants as well as engage with citizens to be able to:

• Conceptualise projects appropriate for the city.

The programme offered funding from the central government to worthy projects in 65 cities across India under submission called Basic Services to the Urban Poor (BSUP). Another sub-mission named Integrated Housing and Slum Development Programme (IHSDP) extended to a larger network of cities and towns.

Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)

The scheme addresses urban development, water supply and sanitation, transport and local self-government specifically for all urban areas not covered under the JNNURM.

Rajiv Awas Yojana (RAY)

As the President of India called for a Slum Free India by 2014, the central government is now preparing to launch a new policy that aims to achieve this ambitious vision. RAY is intended to bring existing slums within the formal system and providing them access to the same level for basic amenities as the rest of the city. RAY also looks at taking corrective measures to rectify the failures of the formal system, by addressing the reasons for the creation of slums like shortage of urban land and tenure.

Mortgage guarantee fund

In alignment with RAY, the government announced the intention in the 2011-2012 budget to create a Mortgage Guarantee Fund for low-income housing. Floated jointly by the central and state governments with a corpus of `10 billion, the fund will be administered by the National Housing Bank. Once in operation, housing finance companies will be able to give home loans for up to `0.5 million to the low-income segment without third party guarantee and without fear of bad loans.

ISHUP

An Interest Subsidy Scheme for Housing the Urban Poor (ISHUP) offers a 5% interest subsidy on housing loans up to ` 100,000 to the EWS and LIG households for both home purchase and home construction.

- Plan projects in a professional manner.
- Envision the impact of the project on the city.
- Finance the project components that cannot get central funding.

A battle needed to win the war: Improved finances for ULBs

Better governance that offers better quality of services and infrastructure is the most essential element in the urban transformation Indians expect. Urbanisation is placing a huge demand on services and infrastructure and 'the task before municipalities in most developing countries is to raise adequate revenue for both capital investment and recurrent expenditure' (Shastri 2011).

Currently, municipalities have limited sources of revenue. A narrow tax base, inefficiencies in tax collection and expenditure plague most local governments. Poor governance coupled with poor state of finances means ULBs cannot access market funds either. Add to that a lack of transparency and one might think that cities in India are functioning only because of a miracle!

The Isher Ahluwalia Committee suggests that improved tax revenues plus rational user charges as the way forward. Municipalities would need to widen their tax base. In increasing tax revenues, the Goods and Services Tax (GST) that is on the anvil will provide relief. An expert in an Indian Express Q&A dated January 11, 2012 expresses that:

The share in GST will be the revenue for municipal corporations. The GST, which will come to the State and to the Centre would be allocated to the cities. Just like the central government allocates the share of revenues to the states, the states would be allocating the share of GST to the cities.

Octroi that is currently the only major source of revenue for several municipalities will be replaced by the superior GST, which is a unified and modern form of taxation. Increased financial autonomy for ULBs would also be necessary, coupled with capacity building specifically for financial planning and management. Evolving a framework of accountability is a crucial aspect here, with the involvement of community and citizen groups. This aspect has been neglected in the past and has led to situation that reflects a severe erosion trust between citizens and governments across the country. Pooled financing for small towns is also a suggestion made by the Isher Ahluwalia report.

Public private partnership (PPP), which would play a crucial role especially in the provision of municipal services, is another area that requires attention. Past experiences have been varied and currently there is a focus on adopting best practices and evolving successful modes of PPP. In general, issues of privatisation and modes to engage the private sector are challenges that need urgent attention since the massive amount of investment needed for urban renewal in India can only be possible with private sector participation.

A WIDER PERSPECTIVE TO PLAN THE FUTURE OF URBAN INDIA

The vision presented by the Isher Ahluwalia report for the next edition of JNNURM is heartening. A 20 year long mission that envisions spending up to 0.25% of GDP annually will be driven by local governments making specific programmes for development and reforms. The focus moves away from mere creation of assets to maintenance of assets as well. Renewal includes redevelopment of urban areas, including slums. Cities will be encouraged to free up urban voids that have fallen into misuse and increase density of existing areas. Coming back a full circle, the scheme support a broader view by encouraging regional and metropolitan planning and integration of aspects such as land use and transportation. Access to services for all, including poor, to recommended norms and standards in a progressive manner, are suggestions to make necessary reforms in systems for service delivery. The mission looks forward to improve governance of cities and towns by granting them a unified command under the Mayor, even as Delhi splits itself to be governed under three Mayors!

There is a better sense of scale to the proposed phase two that varies its response as per the size of the city while intending to include all cities irrespective of size and location. A regulatory framework that envisages regulation of utilities, an ombudsman for dispute resolution and a fund audit system is encouraging; as are the focus on community involvement, transparency and capacity building.

GOVERNMENT-LED URBAN RENEWAL AND REFORM: THE RIGHT WAY AHEAD?

Questions on the basic design of the scheme still remain though. Most significantly, will a future nationwide urban renewal scheme continue to be completely government funded or will it move away from the concept of complete government subsidy? What is the alternative? How does the private sector factor in? How do cities set up transparent systems and dialogue with citizens that will enable them to expand tax base and demonstrate improved services or infrastructure to increased revenues?

Can a programme like this be expanded to address other serious urban concerns like sustainability that have barely been addressed? What are the incentives for local governments to adopt more efficient, less energy intensive solutions or to use resources more responsibly?

Certainly, there are more questions than answers about the future of a nationwide programme for urban change. However, the experience of the JNNURM has taught valuable lessons about what is possible and exposed the challenges as well. Armed with these, it is possible for cities across the nation to dream of implementing much needed projects within a structured framework supported by the central government. This signifies a big positive change for a nation as large and diverse as India. It is also clear that ULBs will have to be far more focused on their citizens' needs in order to prioritise projects and far more motivated to bring about the structural reforms needed to make the change happen.

Mukta Naik is an architect, urban planner, communications' expert and blogger based in Gurgaon. She is visiting faculty at School of Planning and Architecture, New Delhi. Mukta attempts to highlight urban experiences and issues, with a view to generate awareness, debate and possibly, community action, through her daily blogs.

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Events and Conferences

■ ECO-ARCHITECTURE 2012: FOURTH INTERNATIONAL CONFERENCE ON HARMONISATION BETWEEN ARCHITECTURE AND NATURE Date: September 5-7, 2012 Location: Kos, Greece Eco-Architecture provides imaginative and expressive solutions and is characterised by the generation of highly creative designs. It has important cultural as well as architectural impacts. Eco-Architecture is by definition interdisciplinary; it requires the collaboration of engineers, planners, physicists, psychologists, sociologists, economists, and other specialists, in addition to architects. The aim of the conference is to provide a forum for discussing the many relevant aspects of Eco-Architecture. Organised by: Wessex Institute of

Technology, UK Contact person: Irene Moreno Millan Email: imoreno@wessex.ac.uk Website: <http://www.wessex.ac.uk/12conferences/eco-architecture-2012. html>

UNIVERSAL DESIGN FOR EXPLORING THE WORLD HERITAGE SITES IN INDIA: DESIGN COMPETITION Date: October 8-9, 2012 Location: Bhopal, India Last date for final submission: September 15, 2012 Contact person: Prof. Rachna Khare Organised by: School of Planning and Architecture, Bhopal, Archaeological Survey of India, New Delhi, DRONAH Foundation, Gurgaon Email: nsdcud@spabhopal.ac.in Website: <http://nsdc.spabhopal.ac.in/ HOME.aspx>

- SECOND WORLD CONFERENCE ON MAN AND NATURE (WCMANU-2012) Date: November 3-5, 2012 Location: Nagpur, India Conference on Global change: Impact on Biodiversity, Culture and technology Organised by: MANU - International Council for Man and Nature, International Society for Science and Technology, Mumbai, Sevadal Mahila Mahavidyalaya, Nagpur Contact person: Shashikant Rokade and Ashish Lambat Website: <http://www.wcmanu.com/>
- 17TH INTERNATIONAL CONFERENCE ON CULTURAL HERITAGE AND NEW TECHNOLOGIES: CHNT 17 Date: November 5-7, 2012 Location: Vienna, Austria Last date for submission: June 15, 2012 Contact person: Mag Wolfgang Börner

Organised by: Urban Archeology of Vienna in cooperation with UNESCO Email: kongrarchae@stadtarchaeologie.at Website: <http://www. stadtarchaeologie.at/>

WATER CRISIS MANAGEMENT UNDER CHANGING CLIMATE Date: November 16-17, 2012 Location: Bhubaneswar, India Impacts of climate change on global water crisis. Perspectives of water management technologies- approaches, challenges and opportunities. Application of innovative technologies to increase water productivity with quality. Organised by: Gugly Centre for Biological Research Contact person: Debahuti Acharya Website: <http://www.gugly.org/ National%20Conference%202012.htm> Soldiers, ar interdentitions init enteristic Raking 4 200 11316 15 51 50 50 7151 8 50 1438 Della Università Stati attati dell'Osticità L'atterativ JK or y o Rai Cele Katy Konstitutin 2001 (310 comment of WBA from Harvain 21 States Sound USAIN 2009, SHA HAD WORKED & COUNTRY there in Eurstadien, CARE into and Rabo Bank india-וויניט וייטא

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INCENTIVES FOR CONSERVATION: THEMBANG, ARUNACHAL PRADESH

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The homesiny al Rumbek, Ledakh

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Dronah is an interdisciplinary organisation constituted by highly motivated professionals from various fields who share a vision for a better quality of life – one that is sustainable, environmentally sensitive and draws on the contemporary without foregoing the strengths of the traditional. It is our aim to actively promote sustainable development through conservation, utilisation of traditional practices and modern technologies, knowledge sharing and mutual interaction. The organisation is focussed on conservation and development of the built heritage, environment; and art and crafts with the involvement of local community, in addition to being engaged in documentation and educational activities.