



DECLINE AND DEVOLUTION OF THE HARAPPAN CIVILIZATION: PROCESSES OF TRANSFORMATION AND CULTURAL CONTINUITY

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Abstract: The present paper seeks to examine the processes of transformation within the Harappan civilisation during its Late Harappan phase through an analysis of archaeological, scientific, and literary sources. The study draws upon archaeological reports from Harappan sites, debates surrounding the problem of decline and de-urbanisation, seminal scholarly works, and recent scientific studies, while referring to early literary traditions only in a limited contextual manner. Rather than viewing the end of Harappan urbanism as a sudden or isolated event, the paper argues that the Late Harappan phase represents a long-term process of transformation extending over several centuries, marked by changes in settlement patterns, material culture, and socio-economic organisation. Cultural and social developments are thus understood as outcomes of interacting environmental, economic, and social factors, emphasising that historical change does not occur in isolation or vacuum. By distinguishing the Late Harappan phase from later Post-Harappan cultural developments, the paper highlights the importance of de-urbanisation and regionalisation in understanding the nature of change within the Harappan tradition.

Keywords: Late Harappan; Ghaggar-Hakra; Saraswati; Post-Harappan, Rigvedic

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Literature Review

From the hundreds of Harappan sites spread over more than a million square kilometres across the north-western regions of the Indian subcontinent, scholars have long debated questions concerning the civilisation's origin and expansion, agricultural and commercial organisation, town planning, hydrological systems, and the nature of its decline or transformation. Despite

extensive research, many archaeological problems remain unresolved, and no single explanatory framework has provided definitive answers.¹

Early explanations for the decline of the Harappan civilisation were dominated by the Aryan Invasion hypothesis. According to this view, successive waves of Aryans entered north-western India during the second millennium BCE and either destroyed Harappan cities or allowed them to fall into ruin.² The Rigvedic references to *pur* (fortified settlements) and *purandra* (Indra as destroyer of forts) were interpreted as evidence of violent conflict, while skeletal remains from the lower town of Mohenjo-daro were taken to indicate massacres of indigenous populations. The Cemetery H culture at Harappa was similarly interpreted as evidence for the superposition of an intrusive culture over the Harappan tradition, suggesting cultural discontinuity.³ Subsequent scholarship subjected these interpretations to critical re-evaluation. It was pointed out that the term *arya* in Vedic literature carries cultural rather than racial or anthropological connotations. Revised Mesopotamian chronologies placed the decline of major Harappan cities well within the sixteenth century BCE, thereby weakening the invasion model. Additional arguments were advanced on the basis of alleged horse remains within the Indus Valley and the absence of references to pictographic script or advanced civic life in the Rigveda, suggesting that the Harappan cities could not be directly equated with Rigvedic *pur*.⁴ Detailed reassessment of skeletal remains further demonstrated that, although a few cases might represent violent death, the majority reflected poorly organised burials rather than evidence of large-scale warfare, and no uniform destruction layer was found for the latest occupation levels at Mohenjo-daro.⁵

From the mid-twentieth century onwards, environmental and hydrographic explanations gained prominence. Sahni suggested that catastrophic floods caused by the formation and collapse of glacial lakes in the Himalayan region may have played a significant role in destabilising Harappan settlements.⁶ Building upon this perspective, Yash Pal demonstrated that the distribution of Harappan sites closely followed ancient river courses, particularly during the second and third millennia BCE, when regions such as Rajasthan were considerably more fertile due to the presence of the Ghaggar–Hakra (Saraswati) system.⁷ Tectonic activity leading to the diversion of major rivers such as the Yamuna and Sutlej was argued to have drastically reduced both surface and subsurface water availability, adversely affecting vegetation and agriculture

over time.⁸ Mughal further emphasised the decisive role of hydrographic changes in shaping Harappan settlement patterns, particularly in the Cholistan region.⁹

By the early second millennium BCE, archaeological evidence increasingly pointed towards a process of de-urbanisation rather than abrupt collapse. Major urban centres were abandoned or lost their functionality, large-scale water-management systems disappeared, and the technological sophistication characteristic of the Mature Harappan phase declined.¹⁰ At the same time, a growing body of evidence supported the idea of cultural continuity from the Mature Harappan phase into the Late Harappan phase. Chakrabarti argued that hydrographic changes in the Saraswati–Drishadvati system played a crucial role in reshaping settlement patterns, leading to regionalisation rather than cultural rupture.¹¹ Biological and genetic studies further challenged invasions interpretations. Kennedy found no evidence for the presence of an intrusive “Aryan race,” instead identifying broad bio-cultural continuities across time and space.¹² Recent large-scale genetic studies likewise indicate long-term population continuity in the subcontinent, with modern South Asian populations retaining significant genetic components traceable to Harappan-era groups.¹³

Some scholars even emphasised cultural connections between the Harappan and Vedic traditions. Lal argued that the disparity between the two cultures has often been exaggerated and that neither chronological nor geographical factors necessarily preclude an early presence of Vedic groups in the subcontinent.¹⁴ Pandey similarly highlighted the centrality of river systems extending from the Yamuna in the east to the Kubha in the west, with the Saraswati occupying a pivotal position, in support of indigenous origins for Rigvedic populations.¹⁵ Archaeological evidence for continuity is particularly visible in the post-urban cultural developments of Gujarat and the Ganga–Yamuna Doab. In Gujarat, the Late Harappan phase witnessed degeneration during the early second millennium BCE, followed by the emergence of a modified Harappan tradition, notably the Lustrous Red Ware phase.¹⁶ Sites such as Bet Dwarka provide important insights into transitional processes, while many contemporaneous settlements display pastoral characteristics centred on cattle breeding and grazing.¹⁷

In the eastern Punjab, Haryana, and the Ganga–Yamuna Doab, several Late Harappan sites have been shown to overlap with Ochre Coloured Pottery and

Painted Grey Ware horizons, suggesting cultural linkages rather than sharp discontinuities.¹⁸ The chronology of Painted Grey Ware has also been pushed back to the early second millennium BCE and is sometimes interpreted as an advanced development of simpler grey wares known from Mature Harappan contexts.¹⁹ Further evidence includes the eastward expansion of Ochre Coloured Pottery from the Ghaggar region into western Uttar Pradesh²⁰ and the import of copper objects by Ochre Coloured Pottery communities from Harappan sources, indicating sustained interaction networks.²¹

Despite extensive research over several decades, the question of Harappan decline and subsequent cultural developments remains contested, largely due to the fragmented and isolated nature of earlier studies. The present paper seeks to integrate hydrographic changes in the Saraswati–Drishadvati system with broader ecological and climatic factors to understand the transformation of the Mature Harappan phase into the Late Harappan phase, while emphasising long-term cultural continuities and interaction between north-western Chalcolithic–Bronze Age traditions and the Iron Age Painted Grey Ware and Black-and-Red Ware cultures of the Gangetic Doab.

Introduction

The Harappan civilisation was one of the largest and most complex urban civilisations of the ancient world. Evolving out of several regional Neolithic cultures dating back to the seventh millennium BCE, it developed a highly sophisticated system of urban planning, civic organisation, and material uniformity across a vast area of the north-western Indian subcontinent.²² By the early second millennium BCE, however, the urban character of the Harappan civilisation gradually diminished, leading to the abandonment or transformation of many major centres. The nature and causes of this change have long remained a subject of scholarly debate among historians and archaeologists.²³

For much of the early twentieth century, the decline of the Harappan civilisation was explained through the hypothesis of a foreign invasion, popularly referred to as the ‘Aryan Invasion’, which was believed to have resulted in the destruction of Harappan cities and the establishment of external rule in the subcontinent.²⁴ Over the past several decades, however, extensive archaeological research has significantly altered this understanding. Excavations and reassessments of material evidence have failed to produce

convincing indications of large-scale invasion, massacre, or a sudden influx of foreign populations during the Late Harappan phase.²⁵ Instead, recent studies increasingly point towards a complex interplay of human, environmental, ecological, and geological factors that operated over both short and long time spans.²⁶ Archaeological and scientific evidence suggests that seismic activity, changes in river courses, climatic fluctuations, and ecological stress played a substantial role in reshaping Harappan settlement patterns and economic organisation.²⁷ Rather than a sudden collapse, the end of Harappan urbanism appears to have been a prolonged process marked by de-urbanisation and structural transformation.²⁸ Such changes did not occur in isolation or vacuum, but were embedded within broader environmental and socio-economic contexts that influenced the adaptive responses of Harappan communities. During this phase of transformation, populations associated with the Harappan tradition gradually shifted towards western and southern regions, carrying with them several cultural traits and technological practices. Consequently, the Late Harappan phase reflects not a complete rupture from the past, but a period of continuity alongside change. It is also essential to distinguish clearly between the Late Harappan phase, which represents an internal transformation within the Harappan cultural framework, and later Post-Harappan developments that emerged beyond the urban tradition.²⁹

This paper seeks to move beyond invasion- and migration-centred explanations and instead examine the transformation of the Harappan civilisation through an integrated analysis of archaeological, environmental, and scientific evidence. By focusing on the Late Harappan phase, it aims to understand the processes that reshaped Harappan society and to highlight long-term cultural continuities within the north-western Indian subcontinent.³⁰

1. Different perspectives on transformation from Mature to Late Harappan

1.1. Aryan Invasion/Migration theory and its reconsideration

Early attempts to explain the end of Harappan urbanism relied heavily on the hypothesis of a foreign invasion. Ramprasad Chanda was among the earliest scholars to advance this view soon after the discovery of Harappa and Mohenjo-daro. He argued that the Harappans were essentially non-Vedic and that the builders of the Indus civilisation were distinct from later Aryan groups.³¹ References in the Rigveda to the movement of tribes such as the

Yadus and Turvasas, their conflicts with the Bharatas, and the destruction of *purs* by Indra were interpreted as reflecting clashes between incoming Aryans and urban Harappan populations.³² Groups such as the Panis were portrayed as non-sacrificial, town-dwelling merchants who stood in opposition to Vedic ritual norms. Within this framework, the Aryans, considered materially less urban, were believed to have destroyed Harappan cities or allowed them to decay.

This interpretation gained further strength through Gordon Childe, who viewed the perceived discontinuity between Harappan material culture and later Vedic traditions as evidence for a major social rupture.³³ However, Chanda himself later modified his position by proposing not invasion but limited immigration, arguing that a small group of Aryan priests and ritual specialists may have been assimilated into Harappan society, contributing to the formation of a composite religious tradition.³⁴ This shift marked an early move away from violent invasion models toward explanations involving cultural interaction.

The invasion hypothesis was most influentially articulated by R.E.M. Wheeler, who interpreted Cemetery H as an intrusive culture and read the unusual skeletal remains from Mohenjo-daro as evidence of massacre.³⁵ These interpretations were subsequently challenged by George F. Dales, who demonstrated that archaeological evidence does not support large-scale armed conquest.³⁶ Dales argued that most skeletal remains represented irregular burial practices rather than mass slaughter and emphasised the absence of a clear destruction horizon. He instead pointed to natural factors such as repeated flooding of the Indus and changes along the Arabian Sea coast that may have increased salinity and undermined urban sustainability, resulting in gradual population dispersal.³⁷

An alternative but influential perspective was introduced by B.B. Lal, who argued for indigenous Aryanism on the basis of archaeological and literary correlations. He suggested that there was no fundamental cultural disparity between Harappan and Vedic traditions and that Rigvedic terminology relating to forts, ships, and administrative structures reflected an urban context comparable to Harappan society.³⁸ Lal further proposed that environmental changes during the early second millennium BCE, including climatic instability and the shifting of the Ghaggar-Hakra system, initiated a gradual process of de-urbanisation that resulted in the emergence of Late Harappan regional

cultures such as Rangpur in Gujarat, Jhukar in Sindh, and Cemetery H in Punjab.³⁹ While Lal also cited evidence for horse remains from sites such as Surkotada, Lothal, and Kalibangan, the interpretation of these finds remains debated and requires careful contextualisation.

Bio-anthropological research added a crucial corrective to invasion-based explanations. Kenneth A.R. Kennedy's skeletal studies demonstrated the absence of major bio-genetic discontinuities between the third and second millennia BCE, indicating long-term biological continuity across South Asia.⁴⁰ These findings, reinforced by later genetic studies, significantly weakened the invasion hypothesis and shifted scholarly focus toward internal processes of transformation.⁴¹ Today, the Aryan Invasion Model survives largely as a historiographical marker, while scholars continue to debate how Indo-Aryans may have migrated or whether indigenous Aryanism offers a better explanation. This shift reflects how interpretations have evolved with the expansion of archaeological and scientific data.

This reconsideration of invasion and migration based explanations raises an important question. If the transformation of Harappan society was not driven by external conquest or migration, what internal and environmental processes reshaped the civilisation during the Late Harappan phase?

1.2. Environmental and geo-morphic processes

From the mid twentieth century onwards, scholars increasingly turned to environmental and geomorphic explanations to understand the transformation of Harappan urbanism. Factors such as silting of river plains, tectonic movements, shifting river courses, declining rainfall, and broader ecological degradation were explored as long-term pressures acting upon Harappan settlement systems.⁴² Since Harappan communities were closely tied to alluvial landscapes and riverine ecologies, the changing hydrographic history of the region emerged as a central theme in debates on de-urbanisation and regionalisation.

Several early studies emphasised the destructive role of floods. E.J.H. Mackay and S.R. Rao linked flooding to the decline of sites such as Chanhudaro and Lothal.⁴³ M.R. Sahní proposed that earthquakes triggered catastrophic floods by uplifting land and damming the Indus near Budh Takkar around the beginning of the second millennium BCE, leading to widespread submergence, including at Mohenjo-daro.⁴⁴ These interpretations were critically reassessed by

H.T. Lambrick, who questioned Sahni's geological and stratigraphic evidence, thereby demonstrating the complexity of interpreting environmental data.⁴⁵

Other scholars such as Aurel Stein, John Marshall, and Stuart Piggott connected Harappan decline with increasing aridity.⁴⁶ This argument was strengthened by Gurdip Singh's palynological studies of pollen samples from Sambhar, Didwana, and Pushkar, which indicated a decline in rainfall between approximately 1800 and 1500 BCE.⁴⁷ V.N. Misra, however, re-evaluated this evidence and argued that Harappan populations were simultaneously expanding into regions of Gujarat, Punjab, Haryana, and the Upper Ganga-Yamuna Doab that experienced comparable aridity, suggesting that rainfall reduction alone cannot explain the transformation.⁴⁸ Walter A. Fairervis added a socio-ecological perspective, proposing that deforestation and land degradation produced a mismatch between population demands and the carrying capacity of the land, leading to long-term economic stress and settlement shifts.⁴⁹

Despite differing emphases, these environmental explanations converge on two consistent patterns. First, there was a broad eastward and southward shift in settlement focus toward Gujarat and the Ganga-Yamuna Doab. Second, Harappan traditions continued within post-urban regional cultures even as mature urbanism declined.⁵⁰ These observations invite closer examination of river systems, particularly the Ghaggar-Hakra, and their role in shaping Harappan settlement history.

1.3. *The lost Saraswati and consequences of change in river course*

The question of river-course change gained renewed momentum through the application of remote sensing techniques. LANDSAT imagery from 1972 to 1977 revealed extensive palaeochannels between the Indus and Ganges systems, providing scientific support for earlier proposals that the Ghaggar-Hakra once carried a larger and more sustained flow.⁵¹ C.F. Oldham had earlier suggested that the Ghaggar-Hakra represented the dried course of the Rigvedic Saraswati, a view later supported by Aurel Stein through his analysis of the *nadistuti suktam*, which places the Saraswati between the Yamuna and the Sutlej.⁵² Ralph T.H. Griffith's translation of these hymns was frequently cited in this interpretive tradition, though such correlations must be treated with caution.

Remote sensing studies identified several geomorphological features supporting the hypothesis of river diversion. These included the sharp

westward bend of the Sutlej, suggestive of river capture, and the anomalous widening of the Ghaggar valley south of Patiala, which is difficult to explain without the presence of a major former tributary.⁵³ Yash Pal and his colleagues mapped additional palaeochannels, including those corresponding to the present Saraswati and Chautang systems, and documented bifurcations near Anupgarh.⁵⁴ Together, these observations suggested that both the Sutlej and a palaeo-Yamuna once contributed significant water to the Ghaggar system before tectonic movements redirected them toward the Indus and Ganga respectively.

Robert Raikes explained such river vagrancy through neotectonic activity and echelon faulting, arguing that structural controls could produce substantial changes in drainage patterns over time.⁵⁵ M. Rafique Mughal integrated these geomorphic insights with archaeological data from Cholistan, where the density of Harappan sites was among the highest in the civilisation. He argued that the Ghaggar-Hakra was perennial during the fourth millennium BCE, supporting the development of Hakra ware culture, which later evolved into Early and Mature Harappan phases.⁵⁶ Cholistan emerged as a major craft and industrial zone, with large centres such as Ganeriwala reaching over eighty hectares.

Archaeological evidence indicates that a major hydrological shift around c.2100 BCE reduced water supply to the Ghaggar-Hakra, producing significant socio-economic consequences.⁵⁷ These changes are reflected in the reduction of large industrial sites, increased reliance on temporary and seasonal settlements, and a marked decrease in site size during the Late Harappan phase. Although the four-tiered settlement hierarchy persisted, it did so on a reduced scale. The decline of the Cholistan domain would have disrupted regional economies and trade networks linking Sindh and adjacent regions.⁵⁸ These processes may have been further intensified by a broader climatic episode, including a prolonged monsoon weakening between c.2200 and c.1900 BCE that affected regions from the eastern Mediterranean to East Asia.⁵⁹ However, certain scholars also point out that even in earlier periods there was a gradual drying of the Saraswati River. Even if we take this into account, it cannot be denied that the largest number of Harappan sites were clustered around the former Saraswati or Ghaggar-Hakra river system.

Taken together, this body of evidence indicates that by the end of the third millennium BCE, the Indus-Saraswati civilisation was undergoing sustained

de-urbanisation driven by multiple interacting factors. River-course changes, climatic stress, ecological degradation, and socio-economic reorganisation operated together over long periods. Rather than a single catastrophic event, the transformation from Mature to Late Harappan represents a complex historical process in which environmental and human factors were deeply intertwined. This leads to a final and crucial question. Should the end of Harappan urbanism be understood as a sudden collapse, or as a prolonged and adaptive transformation extending across several centuries?

2. Transformation: From a urban civilisation to a phase of devolution and continuities

The abandonment of major Harappan cities during the early second millennium BCE is a well-established archaeological observation. Evidence for abandonment or severe depopulation has been recorded at important sites such as Mohenjo-daro, Harappa, Surkotada, Kalibangan, Dholavira, Lothal, Kot Diji, Balakot, and Nausharo.⁶⁰ As urban institutions weakened, the characteristic features of Mature Harappan urbanism gradually gave way to agrarianism, localisation, and regional adaptation.⁶¹ This transformation was accompanied by a significant redistribution of population across north-western India and Pakistan.⁶²

While settled farmers and urban populations were withdrawing from the Sindh, Kulli, and Cholistan domains, there was a marked increase in the number of settlements in Gujarat, Punjab, Haryana, and the north-western part of Uttar Pradesh, particularly the Upper Ganga-Yamuna Doab.⁶³ In Gujarat, Harappan occupation remained relatively stable, and certain traits of urbanism survived as late as 1500 to 1300 BCE at sites such as Rojadi, Rangpur, and Bet Dwarka.⁶⁴ These observations indicate that the disappearance of urban features did not result in a complete cultural break. Instead, there was a demonstrable continuity from the Mature Harappan phase into a later phase of transformation.⁶⁵

This continuity was first articulated by N.G. Majumdar, who, on the basis of ceramic sequences, argued for a stratigraphically identifiable Late Harappan phase.⁶⁶ In Sindh, this post-urban cultural expression was identified as the Jhukar culture, while in the Cholistan and Punjab region it was recognised as Cemetery H culture.⁶⁷ The Jhukar culture was understood as a pottery style emerging in association with the continuing Mature Harappan tradition without any sudden rupture.⁶⁸ At the same time, changes in material culture were evident. Square

and rectangular seals were gradually replaced by circular seals, cubical stone weights and stylised female figurines became rare, and pictographic script was largely confined to pottery sherds rather than formal seals.⁶⁹

In contrast, the Cemetery H culture retained elements of Harappan tradition in a reduced form. Burnt bricks, drainage features, and a four-tiered settlement hierarchy persisted, though in a diminished and simplified manner.⁷⁰ Ceramic traditions also showed faint continuity with earlier Harappan forms, but these too disappeared by the end of the second millennium BCE.⁷¹ These developments suggest that continuity existed alongside degeneration, rather than a complete cultural replacement.⁷²

The argument for continuity was further strengthened by discoveries across western India. Excavations by S.R. Rao in Gujarat established an unbroken occupational sequence from the Mature Harappan phase through the Late Harappan and into the Lustrous Red Ware phase, dated approximately between c.2000 and c.1000 BCE.⁷³ In this region, degeneration of urban features was followed by a brief revival of selected material traits.⁷⁴ East of the Ghaggar, in the zone between the Ghaggar and the Yamuna, numerous sites such as Mitathal in Haryana, Bara in Punjab, and Hulas in Uttar Pradesh were identified as Late Harappan.⁷⁵ In these regions, post-urban cultures such as Ochre Coloured Pottery and Painted Grey Ware overlapped with Late Harappan assemblages and carried forward several cultural traits into the emerging Iron Age traditions of the Ganga-Yamuna system.⁷⁶

Evidence for Late Harappan continuity is not restricted to north-western India alone. Excavations at Daimabad in Maharashtra, including the discovery of bronze animal figures such as the bull, indicate the survival of Harappan metallurgical traditions well beyond the urban phase.⁷⁷ Despite regional variation, Late Harappan communities occupied a distinct and identifiable position in the archaeological sequences of Sindh, east Punjab, Gujarat, Rajasthan, Haryana, western Uttar Pradesh, and parts of the Deccan.⁷⁸ The processes of degeneration and transformation are therefore best understood through regional case studies, particularly Gujarat and the Upper Ganga-Yamuna Doab, which emerged as major centres of Late Harappan dynamism.⁷⁹

2.1. Gujarat: Degeneration and evolution of 'Modified Harappans'

In Gujarat, S.R. Rao was the first to identify Late Harappan levels at Lothal, particularly Phase V.⁸⁰ This phase is characterised by significant changes in

material culture, including ceramic modifications, the construction of jerry-built houses using mud and reeds, reduced use of copper, and the replacement of long blades with shorter jasper and chalcedony tools.⁸¹ Jasper and carnelian beads were gradually replaced by biconical terracotta beads.⁸² A notable administrative and ideological change during this phase is reflected in the use of rectangular seals bearing pictographic script but lacking animal motifs, indicating a shift in sealing practices and symbolic representation.⁸³ Late Harappan phases were also identified at Rojadi, Rangpur, and Bet Dwarka.⁸⁴ In Gujarat, the Late Harappan phase has been broadly divided into two stages, namely the Pre-Lustrous Red Ware and the Lustrous Red Ware phases.⁸⁵ At Rangpur, Period IIA represents a late phase of Mature Harappan occupation dated between 2000 and 1500 BCE.⁸⁶ During this phase, most major Harappan ceramic types, tools, weapons, and ornaments continued in use. These included perforated jars, dish-on-stand forms, projected-rim dishes, thick storage jars, bulbous jars, and jar stands. Painted pottery, cubical stone weights, and steatite and gold beads further attest to continuity.⁸⁷

By around 1500 BCE, however, clear signs of degeneration are visible. Construction materials became poorer, drainage systems and bathing structures disappeared, and steatite ornaments, cylindrical beads, and cubical stone weights fell out of use.⁸⁸ This phase of decline lasted for several centuries. Floods around 1500 BCE destroyed settlements such as Koth and Lothal and affected parts of the Rangpur mound.⁸⁹ In the aftermath, several smaller settlements emerged around Rangpur, likely formed by populations displaced from flood-affected areas.⁹⁰ Toward the end of the second millennium BCE, a revival of certain earlier traditions can be observed. S.R. Rao described this phase as that of the “modified Harappans.”⁹¹ The pottery of this period is characterised by Lustrous Red Ware with geometric and linear designs, along with occasional naturalistic motifs such as fishnets and leaves. Terracotta animal figurines became common, and biconical terracotta and agate beads reappeared. Lithic assemblages consisted mainly of small jasper flakes fashioned into scrapers, suggesting deliberate efforts by local communities to improve material conditions.⁹²

Important evidence for Late Harappan continuity also comes from Bet Dwarka. Excavations conducted by the Marine Archaeology Unit of the National Institute of Oceanography revealed an underwater city with fort walls, bastions, and a jetty constructed of massive dressed stones along both

banks of the submerged Gomati channel.⁹³ Stone anchors, Lustrous Red Ware, Black-and-Red Ware, shell bangles, copper moulds, and a Late Harappan inscribed votive jar were recovered from the site.⁹⁴ The inscription is particularly significant because of its transitional character between earlier pictographic signs and later phonetic Brahmi. Although written from left to right like early Brahmi, it retains features of Late Harappan script.⁹⁵ Though contended, S.R. Rao interpreted the inscription as reading '*mahhakacha-shah-pa*', meaning 'Sea Lord'.⁹⁶ Heavy three-holed anchors dated to the fourteenth or thirteenth century BCE further attest to the presence of a protohistoric harbour.⁹⁷

Another notable feature of Late Harappan Gujarat is the presence of small, seasonal pastoral settlements. Sites such as Kanewal, Sai Timbo, Oriyo Timbo, and Nesadi reveal circular wattle-and-daub houses with rammed floors, carnelian and faience beads, terracotta spindle whorls, net sinkers, and Lustrous Red Ware bearing graffiti of pictographic script.⁹⁸ These remains indicate continuity of cultural practices even in the absence of urban features and highlight the growing importance of pastoralism in Late Harappan Gujarat.⁹⁹

2.2. Western Uttar Pradesh: Proliferation of post-urban cultures in the Upper Ganga-Yamuna Doab

In western Uttar Pradesh, sites such as Alamgirpur, Mandi, Bahadarabad, Bargaon, and Hulas represent an eastern extension of the Harappan cultural zone from Punjab and Haryana.¹⁰⁰ At these sites, continuity of Harappan ceramic traditions is evident in forms such as dish-on-stand, goblets with painted bases, cylindrical jars, beakers, and perforated jars, many of which retain Harappan motifs including peacocks and geometric designs.¹⁰¹ The material assemblages from these sites include terracotta animal figurines, truncated bicone beads, copper bangles, chisels, spiral rings, wires, needles, fish hooks, bone points, querns, pestles, faience beads and bangles, and gold beads, particularly at Mandi.¹⁰² At Hulas, the discovery of a large mud platform oriented north-east to south-west suggests the continuation of certain Mature Harappan architectural traditions.¹⁰³ Circular mud and reed houses, copper objects, and an extensive crop repertoire including rice, barley, dwarf wheat, bread wheat, club wheat, and oats indicate a stable and diversified agricultural economy.¹⁰⁴

A significant feature of this region is the overlap between Late Harappan assemblages and later post Harappan cultural traditions such as Ochre Coloured Pottery and Painted Grey Ware.¹⁰⁵ Sites like Bahadarabad, Ambakheri, and

Bargaon demonstrate this cultural interface.¹⁰⁶ Recent studies by B.R. Mani and Vinay Kumar Gupta have pushed the origins of Painted Grey Ware back to around early 2nd Millennium BCE, based on the presence of plain grey ware at sites such as Mohenjo-daro, Kunal, and Harappa.¹⁰⁷ Although PGW communities were indigenous to the Braj region, their material culture represents an advancement over earlier Black Slipped Ware and Plain Grey Ware traditions, which might indicate continuity from Bronze Age cultural foundations.¹⁰⁸

Further evidence of interaction and continuity comes from the discovery of potsherds bearing Harappan script in western Uttar Pradesh, suggesting shared communication practices between the Indus and Upper Ganga regions between 2500 and 2000 BCE.¹⁰⁹ The material culture of the Ochre Coloured Pottery zone shows strong internal uniformity, with copper objects distributed widely across northern India.¹¹⁰ Copper was sourced from regions including the Himalayas, Rajasthan, central India, and eastern India, and hoards such as those discovered at Hari Nagar in Bijnor attest to the circulation of finished Harappan copper artefacts.¹¹¹ The Bara-OCP cultural complex spread eastward from the Ghaggar valley into the western Ganga valley during the early second millennium BCE, facilitating the integration of Neolithic-Chalcolithic populations into more complex social formations.¹¹² Painted Grey Ware emerged in the Ghaggar and Upper Ganga valleys during the late second millennium BCE, while Black-and-Red Ware and Black Slipped Ware traditions expanded from the eastern Ganga region westwards. As Painted Grey Ware distribution widened during the early first millennium BCE, interactions between PGW and BRW or BSW communities intensified.¹¹³ Although social organisation during this period is poorly documented archaeologically, it is likely that these regional traditions became increasingly integrated across the Ganga valley.¹¹⁴ As Dilip K. Chakrabarti has observed, the co-occurrence of Painted Grey Ware with Late Harappan assemblages at sites such as Bhagwanpura, Dadheri, Nagar, and Katpalon, as well as the roots of Ochre Coloured Pottery in Late Harappan contexts at Ambakheri and Bargaon, demonstrate that Harappan culture did not end abruptly but merged into the broader archaeological sequence of the Gangetic plain.¹¹⁵

Conclusion

The archaeological record indicates that the end of Mature Harappan urbanism was accompanied by a significant redistribution of settlements and

populations. Harappan communities appear to have shifted away from the core urban zones of the Indus and Ghaggar-Hakra domains toward Gujarat and the Indian Punjab-Haryana region, including the Upper Ganga-Yamuna Doab, with further movement and cultural influence extending toward Malwa and Maharashtra.¹¹⁶ However, this dispersal did not mean that Harappan urbanism simply expanded into inner India in its earlier form. Instead, the Late Harappan phase is marked by the weakening of large, centrally organised urban institutions and the proliferation of smaller settlements with more localised and diverse agrarian economies.¹¹⁷ In regions such as Gujarat and Cholistan, certain urban traits appear to have lingered at sites like Rojadi, Bet Dwarka, and Kudwala, but the broader pattern is one of de-urbanisation and regional adaptation.¹¹⁸

The contraction of urban systems was accompanied by a reduction in the scale and intensity of trade networks. External contacts appear to have continued to some extent, as suggested by Indus seals found in Kassite contexts at Nippur and Failaka and by evidence from Bet Dwarka, including a seal with a whorl motif.¹¹⁹ Yet the overall impression is that both internal and external exchange became less centralised and less intensive during the Late Harappan period.¹²⁰ In such a context, the decline of long-distance trade likely reflects the weakening of well-organised administrative and economic structures that previously depended upon one or more major urban centres.¹²¹ These developments were linked, to a considerable extent, with hydrographic changes in the Saraswati system, including river-course modifications and accelerated drying processes, although no single factor can fully account for the transformation.¹²²

The Late Harappan transformation is most visible in urban and administrative domains, while aspects of rural life continued with comparatively less disruption, particularly in regions that lay at a distance from earlier ideological and administrative cores, such as the Eastern and Sorath domains.¹²³ In north India, explorations in Punjab, Haryana, and the Upper Ganga-Yamuna Doab demonstrate that post-urban communities continued to occupy the region for a long duration, with overlapping cultural horizons that connect Bronze Age ceramic traditions to later developments such as Ochre Coloured Pottery and Painted Grey Ware.¹²⁴ This overlap contributes to a long cultural sequence that extends from the Mature Harappan phase through Late Harappan horizons into the Early Iron Age.¹²⁵ In Gujarat, continuity is

also visible, though in a modified form, where ceramic traditions appear to have passed through stages of degeneration followed by the evolution of new forms, including the emergence of Lustrous Red Ware.¹²⁶ At the same time, many distinctive urban crafts and administrative technologies weakened or disappeared. Writing, stamp seals, several characteristic terracotta forms, amulets, and other typical expressions of Mature Harappan material culture either ended or survived only in transformed or attenuated forms.¹²⁷ Painted pottery styles and several emblematic motifs also changed substantially.¹²⁸ In the Sorath and Eastern domains, certain traditions appear to have persisted in reduced forms, consistent with the broader Late Harappan pattern of continuity alongside change.¹²⁹ In this sense, the Late Harappan phase does not represent a complete cultural break, but a reorganisation of Harappan life under new ecological and economic conditions. Cultural change did not occur in isolation or vacuum, but through the interaction of environmental shifts, economic restructuring, and social adaptation.¹³⁰

There is also evidence for long-term continuities in subsistence strategies, settlement choices, and daily practices, including farming, pastoralism, and house construction, which reflect deep adaptive traditions that extend across earlier phases.¹³¹ Some symbolic and ritual elements that later become prominent in historical India have been argued to have early roots in the Harappan world, although such links must be drawn cautiously.¹³² The Proto-Siva seal is frequently cited in discussions of yogic motifs.¹³³ Other examples commonly discussed include the fire altar at Kalibangan, nature and fertility symbolism in seals and figurines, swastika motifs, and terracotta figures in yogic postures.¹³⁴ These parallels can at best be treated as indicators of possible continuities in symbolic vocabulary rather than direct one-to-one identifications.¹³⁵

Older explanations once attributed the end of Harappan urbanism to an Aryan factor. Today, this view survives mainly as a historiographical reference point, as archaeological and scientific research has moved the discussion toward long-term internal transformation and regionalisation rather than sudden conquest.¹³⁶ The crucial question, therefore, is not whether Harappan society ended abruptly, but how its Late phase reorganised social life, material culture, and regional interaction networks, and where the limits of continuity should be placed.¹³⁷

Despite clear indications of continuity, major challenges remain for Indian archaeology, particularly in establishing precise relationships

between Harappan and later cultural horizons and in clarifying the nature of any connections with early textual traditions.¹³⁸ These questions cannot be resolved without further research and, most critically, the decipherment of the Harappan script.¹³⁹ On the basis of present archaeological evidence, however, it is reasonable to argue that cultural development in the Indian subcontinent shows long-term continuity across millennia, and that the Late Harappan phase represents a significant transformation within this continuum rather than a sharp departure or civilisational break.¹⁴⁰

Notes

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3. Wheeler, 1947, *Harappa* 1946, 58–66.
4. Pusalker, 1950, *Relation of Harappan Culture with the ṛgveda*, 21–24.
5. Dales, 1964, *Mythical Massacre at Mohenjo-daro*, 36–40.
6. Sahni, 1956, *Bio-geological Evidence*, 1–6.
7. Yash Pal et al., 1981, *Remote Sensing of the Lost Sarasvati*, passim.
8. Misra, 1984, *Climate and Indus Civilization*, 461–466.
9. Mughal, 1992, *River Changes in Cholistan*, passim.
10. Possehl, 1997, *Transformation of the Indus Civilization*, 425–440.
11. Chakrabarti, 1995, *Late Harappans*, 129–135.
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13. Shinde et al., 2019, *Ancient Harappan Genome*, 729–735.
14. Lal, 1997, *Time to Rethink*, 63–70.
15. Pandey, 1949, *Nadi-stuti Hymn*, 93–96.
16. Rao, 1962–63, *Excavation at Rangpur*, 13–19.
17. Bhan, n.d., *Late Harappan Settlements of Western India*, 219–234.
18. Dikshit, n.d., *Decline of Harappan Civilization*, 139–159.
19. Gupta and Mani, 2017, *Painted Grey Ware Culture*, 370–379.
20. Uesugi, 2018, *Iron Age in South Asia Abstracts*, 6–7.
21. Kumar, 2022, *Archaeological Gazetteer of Aligarh and Hathras*, 100–105.
22. Possehl, 1997, *Transformation of the Indus Civilization*, 1–20.
23. Lahiri, 2000, *Decline and Fall of the Indus Civilization*, 9–15.
24. Chanda, 1929, *Indus Valley in the Vedic Period*, 30–45.
25. Dales, 1964, *Mythical Massacre at Mohenjo-daro*, 36–43.

26. Chakrabarti, 1995, Late Harappans, 129–134.
27. Misra, 1984, Climate and Indus Civilization, 461–466.
28. Possehl, 1997, Transformation of the Indus Civilization, 425–440.
29. Lal, 1997, Time to Rethink, 70–78.
30. Chakrabarti, 1995, Late Harappans, 140–142.
31. Chanda, 1929, Indus Valley in the Vedic Period, 15–28.
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37. Ibid., 41–43.
38. Lal, 1997, Time to Rethink, 62–70.
39. Ibid., 71–78.
40. Kennedy, 1995, Have Aryans Been Identified, 44–66.
41. Shinde et al., 2019, Ancient Harappan Genome, 729–735.
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43. Mackay, 1931, Further Excavations at Mohenjo-daro, 210–215.
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56. Mughal, 1992, Consequences of River Changes, 5–12.
57. Possehl, 1997, Transformation of the Indus Civilization, 435–440.
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62. Chakrabarti, 1995, Late Harappans, 132–134.
63. Ibid., 134–136.
64. Rao, 1962–63, Excavation at Rangpur, 13–19; Rao, 1987, Marine Archaeological Explorations Off Dwarka, 22–30.
65. Chakrabarti, 1995, Late Harappans, 136–138.
66. Ibid., 129–131.
67. Wheeler, 1947, Harappa 1946, 58–130.
68. Chakrabarti, 1995, Late Harappans, 129–132.
69. Ibid., 132–134.
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72. Possehl, 1997, Transformation of the Indus Civilization, 433–440.
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100. Kumar, 2022, *Archaeological Gazetteer of Aligarh and Hathras*, 100–105.
101. *Ibid.*, 100–105.
102. *Ibid.*, 100–105.
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120. *Ibid.*, 445–450.
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