

CHAPTER 2

HARAPPA IN CONTEXT

CHAPTER INTRODUCTION: THE GREATER INDUS REGION

The Indus Civilization, at its greatest extent during the latter half of the third millennium BC (Figure 2.1), is variously estimated to have covered an area of northwestern South Asia ranging from 680,000 (Kenoyer 1991a: 352) to 1,000,000 square kilometers (Jansen 2002: 105). Many Indus settlements are located in geographic regions well beyond the river valley that is its namesake. This prompted Rafique Mughal to propose (1970) the term *Greater Indus Valley* as a way to refer to the broader region that the civilization encompassed. The purpose of this chapter is to situate the focal point of this study – the site of Harappa, into the geographic, geologic and ancient temporal-cultural contexts of the Greater Indus* region (for brevity and consistency I hereafter drop **Valley* from the term).

GEOGRAPHIC CONTEXT

Harappa is located at N 30° 37' 31", E 72° 51' 52" in District Sahiwal, Punjab Province, Pakistan. From that geographic vantage point in the center of the Punjab Plain near the Ravi River, the site was well placed in terms of access to resource zones both within and immediately surrounding the plain. It is also well situated in terms of other Indus settlements and large urban centers where rock and mineral resources from more distant areas could probably be indirectly obtained. In this section, I provide a brief and general overview of the major geographic features and regions of the Greater Indus region (Figure 2.1)

and the principal routes through which residents of Harappa may have interacted with Indus peoples or other cultures living across this broad area. Much greater detail on pertinent features and regions are provided in upcoming sections and chapters.

The Kirana Hills – a series of rocky outcrops 120 km north-northwest of Harappa, are the first and only features in the general vicinity of the site that rise above the flat expanse of the Punjab Plain. On the plain's western margin, 220 km from Harappa, the north-to-south running Sulaiman Mountains begin and from there numerous passes lead up into the highlands of northern Balochistan and from there to Afghanistan and the Helmand Basin. Moving northward, the next closest major features are the Gomal Plain, which is essentially a trans-Indus River extension of the upper Indus Basin alluvial plains and the Salt Range. From there low passes lead north into the Bannu Basin and Potwar Plateau. The most direct routes to the distant Indus Civilization outpost of Shortughai, located in far northern Afghanistan, would have passed through these regions. Continuing clockwise, Harappans would have needed only to follow the rivers of the Punjab northeast as they passed through Jammu, Kashmir and into the western Himalaya in order to access the rich resources of those regions. Lying east of Harappa are the Indus settlements of the eastern Punjab and Haryana plains including the large urban center of Rakhigarhi, which might have provided indirect access to the resources of the northern Aravalli Mountains as well as the central Himalaya. To the south-southwest of Harappa, the Indus city of Ganweriwala and other related sites along the now dry Ghaggar-Hakra River system are points where interaction with ancient desert nomads



Figure 2.1 Map showing approximate extent (dashed line) of the Indus Civilization, its five main cities and the major regions and features of the Greater Indus region.

in the Cholistan region (Mughal 1994b) who might have had access to the resources of western Rajasthan. The Ghaggar-Hakra and the parallel-running Indus River would have been the main southward routes from Cholistan and the Punjab toward the Sindh region and Mohenjo-daro, the largest Indus city.

Raw materials from the Rohri Hills, the Kirthar Range, Sindh Kohistan and southern Balochistan may have passed northward to Harappa along these same riverine routes. From northern Sindh, it would have been possible to follow the Bolan River through the Kachi Plain and into the highlands of

central Balochistan. Finally, from southern Sindh, a Harappan trader may have traveled westward to Indus settlements and outposts in the Makran region or continued south to Gujarat and the Indus city of Dholavira.

GEOLOGIC CONTEXT

In relation to the geology of the Greater Indus region (Figure 2.2), Harappa simply could not be more optimally located for provenience studies of its rock and mineral artifacts. The region is dominated by an immense (approximately 1200 km long by 600 km wide at its greatest extents) bowl-like depression, called the *Indus Valley Basin* (or simply Indus Basin), which is filled with alluvial sediments. Harappa is located upon the upper portion of this basin (“upper Indus Basin”) and, with the exception alluvial clays and sands, there are no rock or mineral resources whatsoever to be had within a minimum distance of 120 km of the site. This situation is a boon rather than a hindrance to provenience studies. There is no need to attempt to determine what stone or metal resources found at the site are local and what are not because none of them are. All lithic artifacts at Harappa had to have come from one of the many, highly varied (another big positive in terms of provenience studies) geologic formations within or surrounding the alluvial plain (itself a geologic formation) of the Indus Basin. Here, I collectively refer to those non-alluvial formations as the “highlands,” although some are merely very low hills or outcrops that barely rise above the plains. In this section, the general geology of the Greater Indus region is discussed in terms of its alluvial plains and highlands.

In this section and at various points throughout this book, I refer to geologic formations using terms that designate their relative chronological age (geologic Eras, Periods and Epochs). In certain instances, I also provide absolute dates. For those

times that I do not, a geologic timescale (Appendix 2.1) has been provided for reference.

THE ALLUVIAL PLAINS

The physical character of the Indus Basin alluvial plain is a product of the many rivers and streams that flow through it, as well as various tectonic and aeolian processes (Beg 1993; Flam 1993b). Throughout the Pleistocene and Holocene epochs, its major watercourses have migrated to new locations, been captured by other rivers or have disappeared entirely (Oldham 1887; Roonwal 1968; Thussu 1999). The rivers on the maps used throughout this book are based on what their courses *may* have looked like around 2000 BC (Wilhelmy 1969). It is still not clear as to whether or not the now dry Ghaggar-Hakra-Nara system ever flowed to the sea (Flam 1993b; Possehl 1998a) so its possible course through the Sindh region is marked as a dashed line on those maps. The actions of the Indus and other rivers flowing through the basin have resulted in the formation of a variety of alluvial features including floodplains, terraces, meander scars, oxbow lakes and tablelands (see Belcher and Belcher 2000, Pendall and Amundson 1990 and Schuldenrein 2002 for detailed geoarchaeological accounts of these features). The high areas between major rivers are known as *doabs* or *bar uplands* and rise as much as 15 meters above the flood plains (Bender 1995c: 300). Although the climate of the Indus Basin plains is generally arid, its fertile alluvial soils combined with winter rains and summer monsoons create the potential for abundant harvests (Weber 2003: 176).

Harappa lies in the center of the broadest portion of the upper Indus Basin alluvial plain, an area known as the *Punjab*. The name “Punjab” literally means the “land of the five rivers” – *panj* (five) *ab* (waters). Traditionally, this refers to the region watered by the Jhelum, Chenab, Ravi, Beas and Sutlej rivers. Physically (and, during various periods, politically) the Punjab has been defined as inclusive of most or

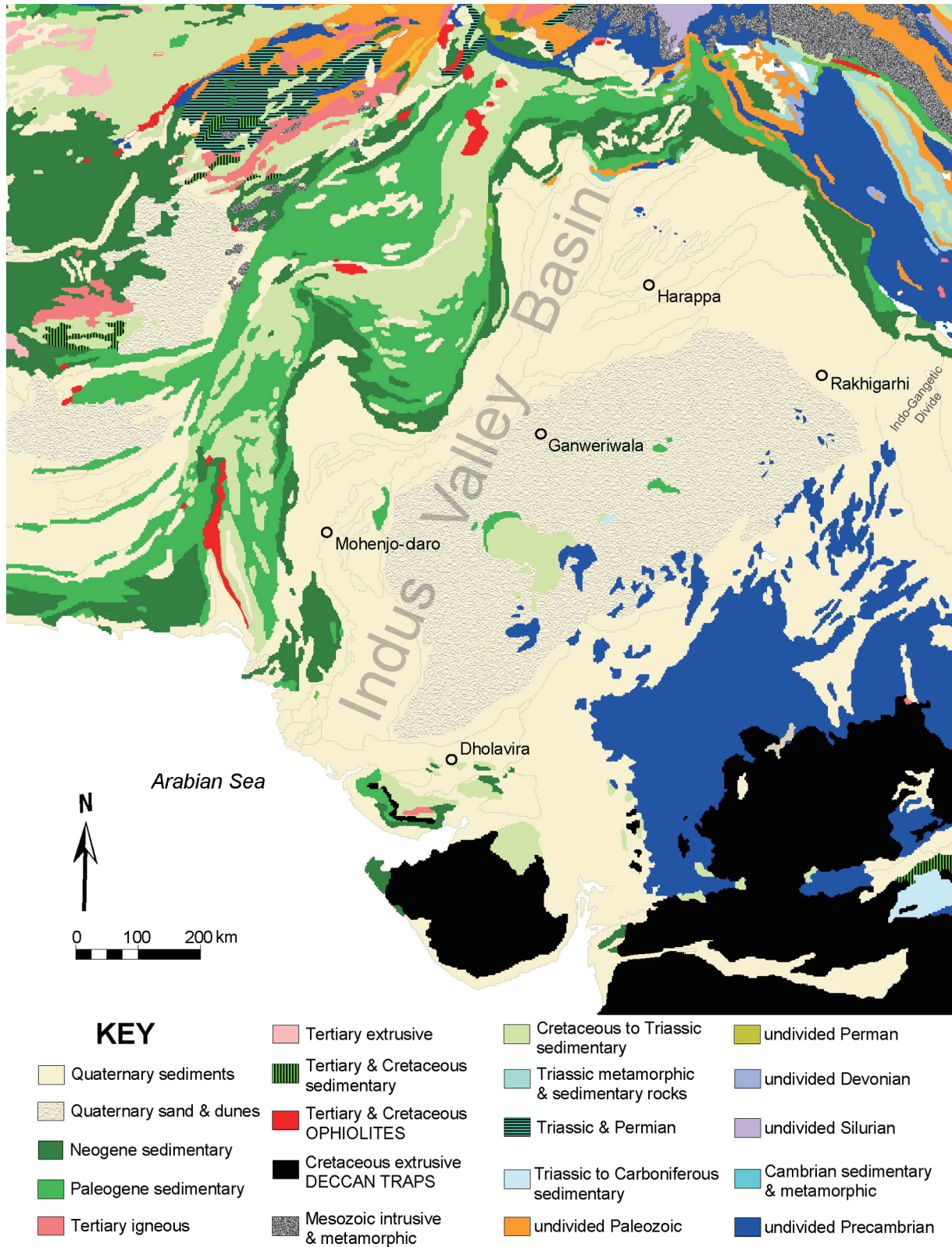


Figure 2.2 General geologic map of the Greater Indus region (adapted and simplified from Wandrey and Law 1998 - USGS Open-File Report 97-470C).

all of the alluvial lands comprising the upper portion of the Indus Basin (Figure 2.2) – from the Sulaiman Range in the west to the Indo-Gangetic divide in the east and from the Salt Range and Himalayas in the

north to Sindh and the deserts of Rajasthan in the south (Government of Great Britain - India Office 1908: 245-46). The designation “Punjab Plain” as used in this study refers to this larger region.

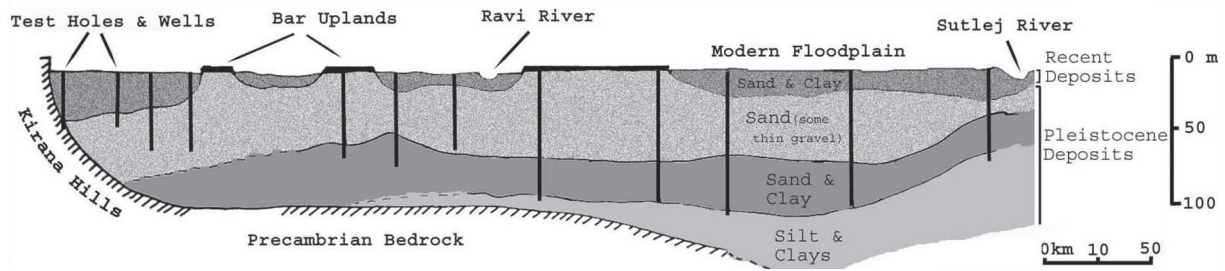


Figure 2.3 Cross section of the Punjab Plain looking northeast from Harappa (after Kazmi 1995c: Fig. 3.14 C).

The physical landscape of the plain clearly influenced settlement patterns in the Punjab and elsewhere. Proto-historic sites discovered in the Punjab tend to be located on or near the edges of the doabs (Schuldenrein *et al.* 2004: 779). Such settings would presumably have provided early agriculturalists access to the fertile and well-watered lands of the flood plains while generally keeping their villages above the normal annual flood levels. These locations would have also been situated along important riverine transportation and communication routes.

In terms of the present study, it is of utmost importance to note that the alluvium of the Punjab Plain has been accumulating since at least the early Pleistocene and it is, therefore, extremely deep (Kazmi and Jan 1997: 267). Cross-sections based on tube well logs (Figure 2.3) indicate that, in some places, depths of 100 m or more (in places much more) exist before Precambrian bedrock is reached. With the exception of sporadic and deeply buried thin beds of gravel (*ibid.*), pedogenic carbonate nodules or kankar (Amundson and Pendall 1991: 18) and subsurface formations of gypsum in the deserts of Rajasthan and Cholistan (Joshi 2000; Ahmad 1969: 92), the alluvial strata of the upper Indus Basin is composed solely of sand, silt, clay and loess for no less than 120 km surrounding Harappa. Every rock and mineral object recovered at the site, from the tiniest pebble to the largest quern, had to have been purposefully transported there by some human agent(s). Therefore, all stone or metal artifacts can potentially provide information about the interaction networks that

linked Harappa to various rock and mineral sources in the outcrops, hills and mountains (highlands) within and surrounding the Indus Basin.

THE HIGHLANDS

The highly varied nature of rock and mineral assemblage at Harappa (Chapter 4) is a reflection, at least in part, of the diverse geologic sources that residents of the site had access to in the highlands of the Greater Indus region (Figure 2.2). The Indian subcontinent's collision with the Asian Plate beginning approximately 55 million years ago (Powell 1979: 16) is the ultimate source of this diversity. Enormous beds of sedimentary detrital rock (sandstone and shale), carbonates (limestone and dolomite) and sulfide evaporates (gypsum and anhydrite) developed in the shallow Tethys Sea that existed prior to and during the convergence of the two continental plates (Bender 1995a: 11–13). As the Indian Plate subducted beneath Asia, these beds were folded, raised and exposed in massive sequences along the northern and western margins of the Indus Basin (Farah *et al.* 1984: 161–163). Another product of this subduction was the development of volcanic island arcs and their associated rocks (basalt, rhyolite, andesite, etc.), which eventually were emplaced between the sutured continental margins (Shams 1995a: 131–133). Similarly, large fragments of oceanic crust (*ophiolites* – composed of ultramafic rocks and containing radiolarian cherts) were obducted onto the continental crust (Asrarullah and Abbas 1979). Pressure and stress from the collision altered existing

geologic formations in myriad ways and brought to the surface highly metamorphosed rock from as deep as the earth's mantle (Shams 1995a). East of the Indus Basin, one of the oldest portions of the earth's crust, the Indian basement complex, rose in the form of the Aravalli Mountains. Rich deposits of base metals and metamorphic minerals can be found across the length of that range (Wadia 1975: 94–95). Finally, a wide variety of agate, carnelian and other microcrystalline silicate geodes eroded from the basalts of the Deccan Traps that extend into the Gujarat region southeast of the Indus Valley (Merh 1995: 166–167).

Several scholars have argued that ancient Indus Tradition peoples likely acquired certain varieties of rocks and minerals from the beds of rivers flowing from the mountain ranges surrounding of the Indus Basin, thus making it unnecessary for them to have traveled to in situ geologic formation containing of those materials (Inizan and Lechevallier 1990: 51–52; Kenoyer 1998: 35; Khan *et al.* 1988: 102). And for certain materials this is indeed, to some extent, true. However, it would be a mistake to think of riverbeds or the alluvial fans at the base of mountain ranges as cornucopias containing all of the types of stone found in the formations that they drain. River-borne sediments undergo rapid fining through abrasion, chipping, splitting, cracking and chemical weathering as they are moved downstream (Werrity 1992). Tough rocks such as granite, limestone and sandstone have slower attrition rates than softer materials that are easily fractured (*ibid.*: 343). A resident of Harappa seeking a sandstone grindingstone would have needed only to travel to one of the massive alluvial fans at the base of the Sulaiman Range to get a suitable cobble rather than into the mountains themselves. However, to obtain a material like chert, which easily becomes chipped and fractured as it is carried downstream, or steatite, which quickly disintegrates, it was probably necessary to travel to the actual source or, at least, very close to it. Although further studies are needed, preliminary observations (Appendix

2.2) of the movement of red radiolarian jasper down the Tochi River from sources in North Waziristan indicate that this material becomes highly fractured and rare at the point the river nears prehistoric sites on the Bannu Basin plain, such as Lewan (Allchin and Allchin 1993). Similar examinations were made of drainages in central Balochistan, confirming Inizan and Lechevallier's observations (1990: 52) that good quality chert in Bolan River near Mehrghar is actually quite scarce. It is certainly possible that slope gradient and river discharge may have changed since prehistoric times, thus altering and/or obscuring the composition of drainages that once contained good quality material. However, it is much more likely that then, as now, someone needed to travel directly to source deposits in order to obtain most of the varieties of rocks and minerals found at Harappa.

TEMPORAL-CULTURAL CONTEXTS

Jim Shaffer noted (1982: 192) that “with the exception of turquoise and lapis lazuli” all raw materials used to make the objects found at Indus Civilization sites occur “*within* the distribution area of the Harappan culture in the Greater Indus Valley” [*italics added*]. This is true, more or less, for most types of stone or metal used at Harappa during the urban phase and is demonstrated on a material-by-material basis in the next chapter. However, many of those artifacts were deposited when people dwelling at the site were not members of an urbanized society as extensive as the Indus (Harappan) Civilization. Both prior to and following the urban phase (Period 3) at Harappa, there were numerous varieties of raw material for which all potential sources would be considered “external” (*a la* Gupta 1984; Kenoyer 1991a: 358–61) to the larger regional society/culture that the site's residents belonged to during those periods of time. In order to evaluate diachronic change in the extent of the inter-regional interaction

networks that Harappans participated in, it is necessary to 1) provide a temporal framework (one broader than the site's chronology, which was outlined in Chapter 1) with which to examine those networks in an extra-regional context and 2) to situate Harappa (its residents and rock and mineral assemblage) in relation to its regional and extra-regional cultural contexts.

TRADITIONS, ERAS AND PHASES

In this book, I will be following the chronological framework for ancient South Asia that Jim Shaffer (1992) adapted from a system originally developed by Willey and Phillips (1958) for New World archaeology. Underlying this framework are the concepts of *traditions*, *eras* and *phases*.

A "tradition" is a "persistent configuration of technologies and cultural systems within a context of temporal and geographic continuity" (Shaffer 1992: 442). Although an often highly diverse range of human adaptations existing over long spans of time may be encompassed within a tradition, they are all broadly related and collectively distinct from those of groups belonging to other traditions. Along with the *Indus (Valley) Tradition*, which may be thought of as the milieu of cultural/technological adaptations in the Greater Indus region within which urbanized civilization eventually emerged and existed, Shaffer defined (ibid.) the *Balochistan* and *Helmand* traditions to encompass concurrent but distinct cultural developments in those two regions west of the Indus Valley. Using Shaffer's framework, Kenoyer (1991a, *in press* b) has further defined several other traditions contemporaneous to that of the Greater Indus region: the Ganga-Vindhya Tradition (Ganges Basin and Vindhya region), the Malwa-Rajasthan Tradition (Aravalli Range region and Malwa Plateau) and the Bactria-Margiana Tradition (southern Central Asia).

Traditions are sub-divided into *eras* and *phases* (Shaffer 1992). Figure 2.4 is table showing those for

the Indus Tradition. "Eras" are descriptive units in which cultural "phases" (below) are grouped based on their general attributes (such as basic subsistence economy) and differing degrees of interaction/integration. They are non-evolutionary and do not have set temporal or geographic boundaries. Several may exist concurrently in a tradition (e.g., Indus Tradition Foraging era groups co-existed with Regionalization era communities up until the Integration era) or even be absent entirely (some traditions, for instance, do not experience Integration and Localization eras). Eras are made up of "phases," which are defined on the basis of a set of distinctive material culture traits (frequently this is a diagnostic assemblage of ceramics) present in a specific place and time. They are of short duration as compared to traditions and eras but may encompass a geographic area ranging from that of a single site to an entire culture tradition. Site specific chronologies, such as that for Harappa (Figure 2.4 third column), intersect with certain phases and may cut across multiple eras and even traditions.

ANCIENT SETTLEMENTS OF THE UPPER INDUS BASIN

Our understanding of the ancient "cultural landscapes" (Sauer 1925) in which Indus Civilization cities developed and existed has grown tremendously since the original excavations of Harappa and Mohenjo-daro. Possehl provides a comprehensive account of the many expeditions and surveys that have been conducted in the Indus Valley and the regions surrounding it in his 1999 book *Indus Age: The Beginnings*. In this section, I focus primarily on the discovery of ancient sites in the upper Indus Basin region (Figure 2.5). These settlements constituted Harappa's cultural hinterland and provided the links across the vast alluvial plain of the Punjab to rock and mineral source areas in the highlands.

At that time it was originally excavated, Harappa was one of only three Indus Civilization settlements

Figure 2.4 Eras and phases of the Indus Tradition

(modified from Belcher 1998; Kenoyer 1991a and in press b; Shaffer 1992)

Eras "Text" (Shaffer 1992: 442)	Phases	Harappa see Figure 1.6 for dates
Foraging Era ca. 10,000 to 2000 BC	Mesolithic and Microlithic	
Early Food Producing Era ca. 7000 to 5000 BC "Economy based on food production and the absence of ceramics"	Mehrgarh Phase	
Regionalization Era ca. 5000 to 2600 BC "Distinct artifact styles, essentially, ceramics, which cluster in time and space and interaction networks which link dispersed groups"	Early Harappan Phases Hakra Phase SKT/Tochi-Gomal Phases Balakot Phase Ravi Phase Kot Diji Phase Sothi-Siswal Phase Amri Phase	Ravi Phase – Period 1 Kot Diji Phase – Period 2
Integration Era ca. 2600 to 1900 BC "Pronounced homogeneity in material culture distributed over a large area reflecting an intense level of interaction"	Harappan Phase Indus Civilization Late-Kot Diji Kulli Sorath	Harappa Phase – Period 3A Harappa Phase – Period 3B Harappa Phase – Period 3C
Localization Era ca. 1900 to 1300 BC "Comparable to regionalization except that there is a more generalized similarity in artifact styles, indicating continued, but altered, presence of interaction networks"	Late Harappan Phases Punjab (Cemetery H) Jhukar Rangpur	Harappa/Late Harappa Transitional Phase – Period 4 Cemetery H Phase – Period 5

known to exist in the entire upper Indus Basin region, the others being a small mound called Chak Purbane Syal 27 km away and another called Kotla Nihang Khan 350 km away on the eastern edge of the Punjab Plain (Vats 1940: Chapter XIX). Eventually, however, many more prehistoric sites (not all of them of them Indus Civilization settlements) were discovered through reconnaissance and survey. The bulk of these were found along the drainage of the now dry Ghaggar-Hakra River (Stein 1942; Mughal 1997). Many were also identified on the plains of the eastern Punjab and Haryana (Bhan and Shaffer

1978; Joshi and Bala 1993). In Pakistan, clusters of sites were found along the margins of the upper Indus Basin on the Gomal Plain (Dani 1971), Bannu Basin (Khan *et al.* 1988) and Potwar Plateau (Halim 1972). Yet during that time few sites, with the notable exception of Jalilpur (Mughal 1974b) and Vainiwal (Mughal 1972b), were found in the western Punjab in the general vicinity of Harappa. For decades the site seemed to "exist in a near vacuum" (Fentress 1982: 254). The apparent absence of Indus Civilization settlements between Harappa and the Salt Range led Possehl (1984) to hypothesize that the region at that

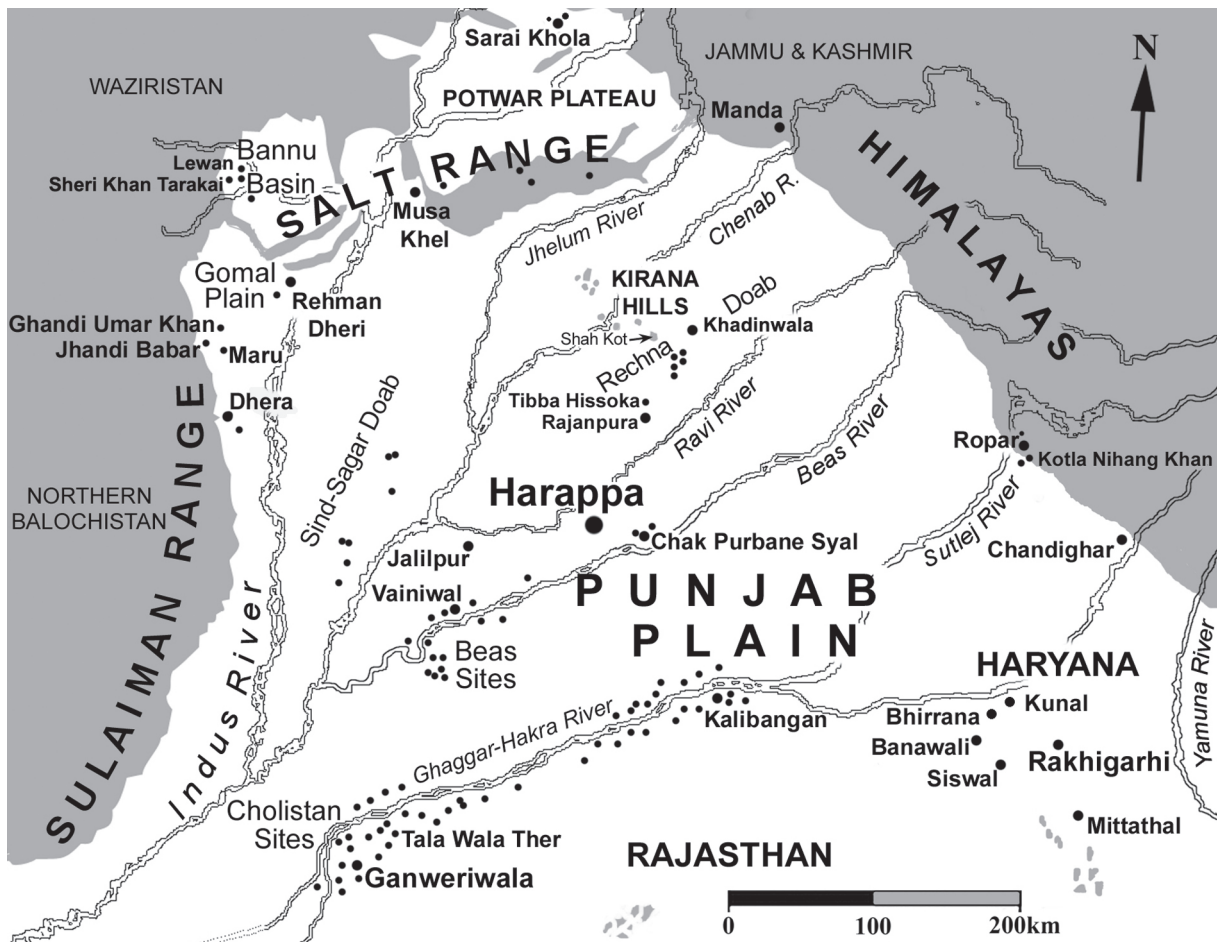


Figure 2.5 Select Regionalization and Integration Era sites of the Upper Indus Basin

time may have largely been the domain of ancient pastoralists who had little impact archaeologically upon the landscape. Even as late as the 1990s it seemed to some scholars unlikely that a significant number of sites would ever be discovered on the plains of the western Punjab region (Chakrabarti 1995: 36).

Fortunately, the preliminary results of recent surveys directed by the Department of Archaeology and Museums, Government of Pakistan (Mughal *et al.* 1996) and others have begun to fill gaps in our knowledge regarding the prehistoric cultural landscape of the western Punjab Plain. Around 40 sites, ranging in age from the early to mid-fourth to the mid-second millennium BC, have been located in the area between the Sutlej and Indus rivers. Eighteen were discovered south along the old bed of the Beas River (Wright *et al.* 2002; Schuldenrein *et al.* 2004). Nine were found in the doab (called the Rechna

doab or Sandal Bar) between the Ravi and Chenab rivers (Dar 1983, Qasim 2002; Dogar *in press*). Seven were located around 125 km west of Harappa in the southern Sind-Sagar (Indus-Jhelum) doab (Mughal *et al.* 1996: 111-12). Several others have recently been identified in the Salt Range (Dar 2002) and, although not plains settlements, have helped to bridge what once was a significant cultural void between prehistoric settlements in the Punjab and the distant group of Early Harappan sites clustered around Sarai Khola on the northern Potwar Plateau (Halim 1972). These discoveries in a region once thought to be largely devoid of settlements are a good indication that there may be “many more sites in the Punjab waiting to be documented” (Mughal 1990a: 184).

The northern part of the Punjab Plain (from the Salt Range to the Chenab River) is one area that still awaits survey. At the end of the 19th century the archaeological remains of this region were described

in the *Gazetteer of the Shahpur District*:

In the Bár tract between the valleys of the Chenáb and Jhelum rivers there are some 270 mounds of earth mixed with loose bricks and fragments of pottery which mark the sites of former towns and villages. It is unlikely that those sites were inhabited at any one time. More probably they were built upon when the rivers flowed in one or other of the old channels still existing in the Bár (Wilson 1897: 30-31).

The above description is, in a way, reminiscent of the Cholistan desert region on the southern fringe of the upper Indus Basin. There, hundreds of prehistoric sites belonging to various phases are located along the numerous dry river beds marking where the Ghaggar-Hakra flowed at different points in time as it migrated across its former floodplain (Mughal 1997). If the density of prehistoric sites in the western Punjab appears low when compared to that of a well-surveyed arid region like Cholistan, then it could be due, at least in part, to factors other than pronounced differences in settlement intensity. Agriculture is one of the greatest destroyers of archaeological sites the world over and the extensive irrigation system built during the British period turned the semi-arid bar uplands into highly productive farmland. Across the Punjab the destruction of mounds for fields and/or fertilizer is quite common (*personal observation*). It was also noted in the Shahpur Gazetteer that saltpetre was “manufactured in considerable quantities from the numerous mounds in the cis-Jhelum tract which mark the sites of former villages” (Wilson 1897: 18). The shifting rivers of the Punjab have no doubt obliterated the remains of ancient settlements just as they have done to populated towns and villages in fairly recent times (Punjab Government 1898: 6-7). Other sites, especially low mounds and surface scatters of the kind that are easily observable in arid Cholistan, have likely been obscured by the deposition of 4000-plus years

worth of alluvial sediments. Still others probably lay beneath the modern villages, towns and cities of this heavily populated region. Although all of this does not prove that the plains surrounding Harappa were as densely settled during the late prehistoric period settled as Cholistan evidently was, it does provide good reason to suspect they were probably not as sparsely populated as they might now appear to have been.

Our knowledge of the ancient settlement patterns of the Punjab is fragmentary and, because of the nature of the region, is likely to remain so. Nonetheless, the results of recent surveys have begun to provide a somewhat clearer picture of the region’s cultural landscape during the late prehistoric period. Urbanization is a regional-scale phenomenon and cities cannot develop in isolation. The identification of contemporaneous settlements on the doabs surrounding Harappa demonstrates that it was far from being isolated.

THE TRANSFORMING CULTURAL LANDSCAPES OF THE INDUS TRADITION

The cultural landscape of the Greater Indus region underwent several dramatic transformations during the fourth through second millennia BC (the period covered by Harappa’s prehistoric/protohistoric chronological sequence). In this section, I review the various phases of the Regionalization, Integration and Localization eras of the Indus Tradition (Figure 2.6) along with pertinent concurrent phases in other traditions. The purpose of this review is two-fold. The first is to supply basic information (approximate age, geographic extent and important cultural associations) for cultural phases that are referred to repeatedly throughout this book. The other is to provide cultural contexts/associations for the various rock and mineral artifacts that are the subjects of this study as well as for their potential geologic sources. Provenience studies reveal that, during certain phases, some varieties of stone used by residents of

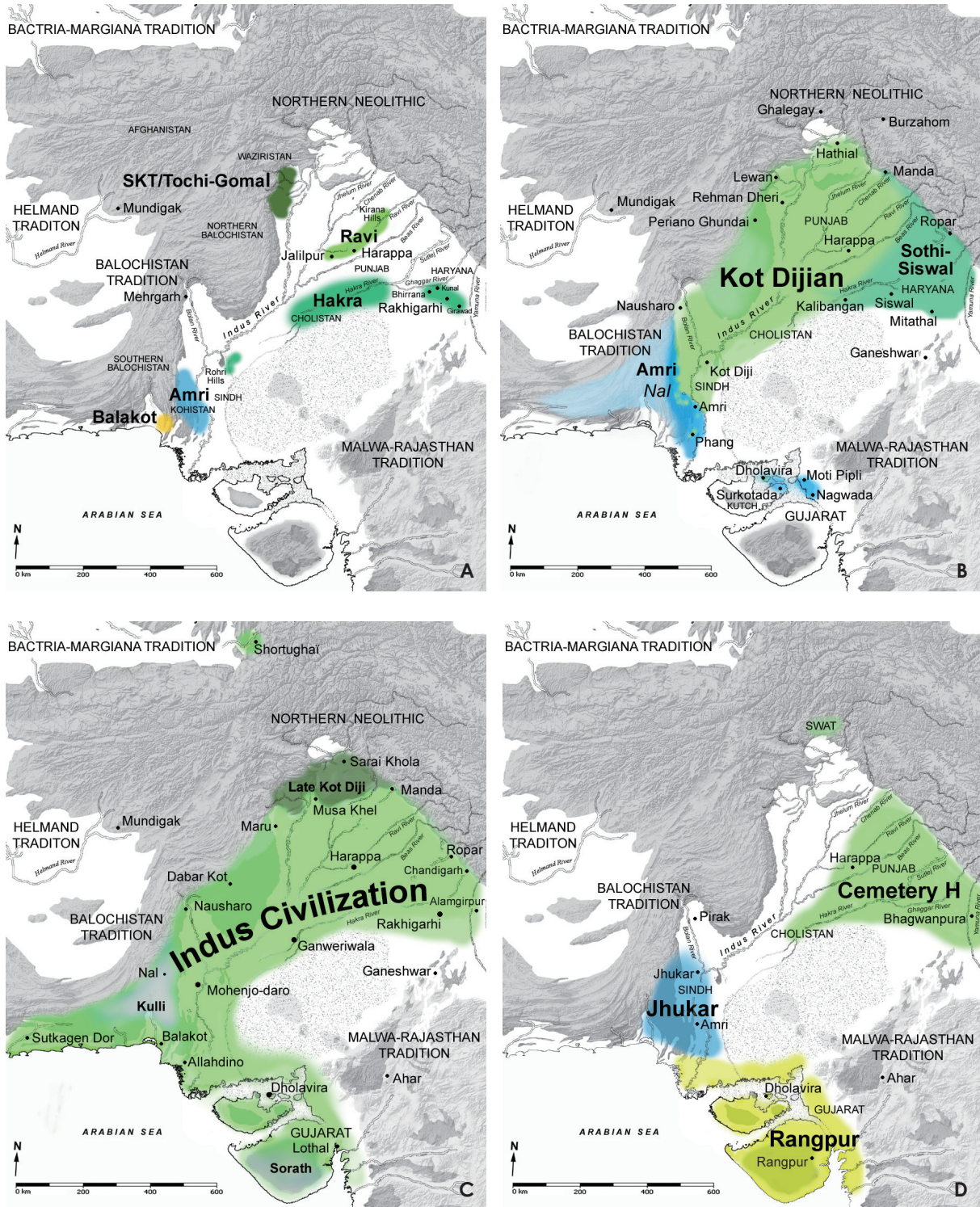


Figure 2.6 Indus Tradition cultures of the Regionalization, Integration and Localization Eras
[A] Regionalization Era – Ravi Phase (Harappa) (ca. mid 4th to mid 3rd millennium BC). **[B]** Late Regionalization - Kot Diji Phase (Harappa) (2800 to 2600 BC). **[C]** Integration Era – Harappa Phase Indus Civilization (2600 to 1900 BC). **[D]** Localization Era – Late Harappa (Harappa).

Harappa came from sources within the geographic area encompassed by settlements of the cultural phase to which they belonged. In such instances, the acquisition networks for those particular materials are

considered *internal*. For other phases, certain stone resources were derived from locations outside of the area where sites of that phase are currently known to lie. Those acquisition networks are considered

external and some form of interaction with the cultural group dwelling in the source region (if one has been identified) is implied.

Regionalization era (Early Harappan Period)

Period 1 (ca. 3300 to 2800 BC) and Period 2 (2800 to 2600 BC) at Harappa are defined by Indus Tradition Regionalization Era phases. Below, I discuss these along with the other Indus Tradition phases that existed during those periods. First, however, I must further discuss a term that is now widely used describe these phases and the time period.

The central thesis of Prof. Rafique Mughal's 1970 dissertation was that the early third millennium BC cultural phases of the Greater Indus region, which were at that time represented by excavated assemblages at Amri, Kot Diji, Harappa and Kalibangan and by surface collections from several other sites, shared with one another important attributes that, in a few centuries, would become distinctive features of the Indus (Harappan) Civilization. Synthesizing all of the data then available, Mughal argued that these phases, although regionally distinct, were direct historical antecedents to that civilization and collectively characterized them as being essentially *Early Harappan* in nature. Walter Fairservis (1975: 221) came to a similar conclusion around this time and proposed the same term. Based on newer excavation, survey and radiocarbon data, Mughal later (1990a) revised the definition to encompass phases in certain regions where they were previously not known and developments extending as far back as the mid-fourth millennium BC. "Early Harappan" is now widely (though not universally) used to denote those broadly related Indus Tradition Regionalization Era phases that existed during the millennium or so prior to the emergence of the Indus Civilization. It is used in that sense here.

- ca. 3300 to 2800 BC

The founders and early residents of Harappa

belonged to the *Ravi* culture (Kenoyer and Meadow 2000), which was one of the several regionally distinct Indus Tradition societies now recognized to have existed in the Greater Indus region during fourth to early third millennium BC (Figure 2.6 A; see also Figure 2.5 for site and region names). Archaeological remains representing this phase are, at present, only known at sites along the mid to lower reaches of the Ravi River drainage. Besides Harappa, two small Ravi settlements – Rajanpur and nearby Tibba Hissoka, lie approximately 80 km to the northeast of the site in the Ravi-Chenab (Rechna) doab (Dogar *in press*), near what appears to be one of the Ravi River's former watercourses. In addition, Kenoyer and Meadow feel (2000: 58-59) that the earliest levels (Period I) at Jalilpur (Mughal 1974), which lies approximately 70 km to the west-southwest of Harappa, probably represent a Ravi culture occupation at that site. The southernmost outcrop of the Kirana Hills at Shah Kot (noted with an arrow on Figure 2.5), which lies around 40 km north of Tibba Hissoka (the northernmost Ravi site), is the closest source of stone to any of the currently known Ravi Phase settlements.

Jalilpur Period I had earlier been designated a *Hakra* culture occupation (Mughal 1990b) and was seen to have close affinities to the nearly 100 sites of that phase identified in Cholistan – a region around 200 km to its south-southwest (Mughal 1997). The differing interpretations of early Jalilpur levels are not surprising or necessarily irreconcilable. Ravi Phase Harappans exhibited many similarities with their *Hakra* contemporaries living along the then active Ghaggar-Hakra river system, especially with regard to their lithic (to be discussed) and ceramic assemblages (Kenoyer and Meadow 2000). This, in all likelihood, indicates that there was a great deal of interaction between peoples of the two regions. In addition to permanent agricultural villages (some up to 26 ha in area), numerous short-term camps with microlithic tool technologies have been discovered in Cholistan, which suggest that pastoral activities were a significant

component of Hakra culture lifeways (ibid.). Such activities were likely one of the principle avenues through which long-distance interaction with peoples in distant regions took place. Some of this interaction was directed southward, as evidenced by the cluster of Hakra sites identified 300 km southwest of Cholistan near the Rohri Hills of northern Sindh (Mallah 2000, 2008; Shaikh *et al.* 2002). Ceramics described as “Hakra wares” have also been reported to the east of Cholistan in the earliest levels at Bhirrana (Rao 2006), Kunal (Khatri and Acharya 1995) Rakhigarhi (Nath 2001) and Girawad (Shinde *et al.* 2008) in Haryana. As studies of those wares continue, it is possible that they may be found to actually represent a regionally distinct phase with important parallels to the Hakra culture, much like the Ravi Phase at Harappa.

On the western margin of the upper Indus Basin, settlements belonging to the *Sheri Khan Tarakai* (abbreviated SKT on figures 3.4 and 3.6 A) phase and the subsequent *Tochi-Gomal* phase are found in an area extending from the Gomal Plain into the Bannu Basin (Khan *et al.* 2000, 2002b). Farid Khan and the other members Bannu Archaeological Project believe that the strongest cultural affinities, at least for the earlier phase, lie west of the region with sites in Afghanistan and southern Central Asia (Khan *et al.* 1991b: 170). However, important material culture analogies between the fourth and early third millennium BC peoples of the Bannu-Gomal region and those represented by Ravi Phase levels at Harappa in the Punjab have been noted by excavators working in both areas (Kenoyer and Meadow 2000: 63; Khan *et al.* 2002a: 87). This is a significant association in terms of this study because unlike Hakra Phase sites, most of which are clustered in a region almost entirely devoid of rock and mineral resources, the Sheri Khan Tarakai and Tochi-Gomal phase cultures were situated directly adjacent to the resource-rich highlands of the western Salt Range, Waziristan and northern Balochistan as well as along the natural

routes through those regions into Afghanistan and, ultimately, Iran and Central Asia.

Far to the south, two other regionally distinct Indus Tradition cultures also emerged at this time. Several dozen sites of the *Amri* Phase are found across an area that extends from the highlands of Sindh Kohistan and the Kirthar Piedmont to a short distance out onto the plains of the lower Indus Basin (Casal 1964; Flam 1981). Slightly farther to the southwest in the Las Bela region of southern Balochistan, Period A levels (end of fourth millennium to around 2700 BC – Franke-Vogt 1997) at the site of Balakot constitute all that is presently known of the *Balakot* Phase (Shaffer 1992). George Dales’ studies of the “Balakotian” ceramic assemblage (1974: 11) indicated that varying degrees of interaction existed with both Nal culture (a Balochistan Tradition phase) groups to the north and Amrian peoples to the northeast. Although ceramic parallels that would indicate a similar degree of interaction with the Regionalization Era cultures of the upper Indus Basin are not evident at Balakot, marine shell artifacts (usually bangle fragments) are found at Hakra, Ravi and Sheri Khan Tarakai phase sites (Kenoyer and Meadow 2000: 64; Khan *et al.* 1991a: 59; Mughal 1997: 68). Although this does not specifically link those cultures with the Amri and Balakot phases, it does demonstrate that long-distance trade networks extending from the upper Indus Basin to the Arabian Sea coast were in place by this time.

- 2800 to 2600 BC

The cultural landscape of the Greater Indus region at around 2800 BC remained a mosaic of distinctive regional societies. Those belonging to the Indus Tradition at this time were the *Kot Diji*, *Amri* and *Sothi-Siswal* phases (Figure 2.6 B). In parts of the Greater Indus region where survey coverage and site preservation are good (Cholistan and southwestern Sindh), it has become evident that three or four-tiered settlement hierarchies already existed during

this period (Mughal 1990a: 192). Excavations at Harappa (Meadow and Kenoyer 2001), Kalibangan (Bala 2003; Joshi 2003), Dholavira (Bisht 1991), Rehman Dheri (Durrani 1988; Durrani *et al.* 1995b), Kunal (Khatri and Acharya 1995) and other sites with Early Harappan occupations have brought to light features such as massive platforms and fortification walls, the first cubical stone weights and stamp seals and post-firing graffiti on pottery and other types of evidence relating to the development of the Indus writing system (note that not every Early Harappan site, including most listed above, possesses all of these attributes). Many scholars are increasingly of the opinion an “early,” “proto” or “incipient” form of urbanism had emerged in parts of the Greater Indus region by this period (Allchin and Allchin 1997: 205; Durrani *et al.* 1995b; Flam 1981: 183; Meadow and Kenoyer 2001: 23; Mughal 1990a). Although not everyone is convinced that such designations are justified (for views to the contrary see Chakrabarti 1998: 46-47 and Possehl 1986: 95-96; 1990), it is at least clear that many of the technologies and innovations that are among Kenoyer’s (1991a) necessary preconditions for the development of urbanized society (Figure 1.2) were, in some areas, already in place.

The most extensive cultural phase of this period was that of the Kot Diji culture, so named after the small site in northern Sindh near the Rohri Hills where it was first defined (Khan 1965). Period 2 levels at Harappa are entirely “Kot Diji” in character. The scale of cultural integration represented by sites of this phase is enormous (Mughal 1992a). A distance of almost exactly 1,000 km exists between the northernmost known Kot Diji settlement (*Hathial* – Khan 1983) and the southernmost one (*Phang* – Harvey and Flam 1993). Within that area, sites of this phase are found throughout Sindh (Flam 1981; Mallah 2000), Cholistan (Mughal 1997), northern Balochistan (Fairservis 1975; Mughal 1974a), the Gomal Plain (Durrani 1984), Bannu

Basin (Allchin *et al.* 1986), the western Punjab Plain (Mughal *et al.* 1996); the Salt Range (Dar 2002) and to the northern edge of the Potwar Plateau (Halim 1972). Importantly for this study, numerous rock and mineral sources were now situated within the geographic area encompassed by settlements of the cultural phase to which residents of Harappa belonged. In addition, there is strong evidence that Kot Dijians were interacting with peoples of other traditions and phases living in potential source regions external to that area, such as the “Northern Neolithic” cultures inhabiting the mountain valleys of the northern Subcontinent at this time (Possehl 1999: 542-553; Stacul 1992, 1994). Ceramics of “indubitable” Kot Diji character were discovered in the Neolithic levels of Burzahom in the Kashmir Valley along with agate and steatite beads that are almost certainly trade items from the Indus region (there are no local analogues for such beads but they are common at Harappa and other Indus sites) (Pande 2000: 392; Saar 1992). Such ceramics have also been recovered in third millennium BC levels at Ghalegay and several other sites in the mountain valley of Swat, NWFP (Stacul 1987). At the opposite end of the Greater Indus region, Kot Diji sites are found in close proximity (in some cases less than 10 km) to those of the Amri Phase (Flam 1981). Kot Diji ceramics at many Amrian sites provide evidence for both the contemporaneity of the two cultural phases and a high degree of interaction between them (Possehl 2002a: 117).

The Early Harappans that lived on the plains of the eastern Punjab and Haryana at this time have been defined as belonging to the *Sothi-Siswal* phase (Possehl 1999: 685). If one compares Sothi-Siswal and Kot Diji ceramic assemblages across the regions where they found, a gradual “continuum of variation” in forms and stylistic traits is evident between them rather than a sharp boundary (Possehl 2002a: 123). This likely indicates that “strong lines of communication” existed between the peoples of these

two phases (ibid.: 124). Sothi-Siswal Phase Early Harappans living at sites adjacent to the Himalayan foothills like Manda (Joshi and Bala 1982), Ropar (Sharma 1982) and Chandigarh (Shaffer 1981: 87) would have had excellent access to the rock and mineral resources of that region. Those at Mitathal (Bhan 1969) and other settlements in southern Haryana were best positioned to acquire copper and other resources found in the northern Aravalli Range. Doing so would have brought them into contact with Rajasthan-Mawal Tradition peoples (Ganeshwar-Jodhpura Phase), like those now known to have been dwelling at Ganeshwar since about 3000 BC (Agrawala and Kumar 1982; Rizvi 2007).

The Amri phase continued in southwestern Sindh at this time. Ceramic parallels suggest that Amrians had close ties with peoples of the *Nal* Phase of southern Balochistan. Shaffer (1992) defines the *Nal* culture as a separate phase in the Balochistan Tradition while Possehl (following Fairservis 1975) treats the Amri and *Nal* phases as two aspects of a single Early Harappan cultural phenomenon (*Amri-Nal*), which was “bound together by the seasonal movement of agropastoralists and other itinerants” between the southern Balochistan highlands and the plains of lower Sindh (Possehl 2002a: 115-118). Although I continue to follow Shaffer’s framework here, I have graded the blue shaded areas on Figure 2.6 B to reflect the approximate sphere of interaction between peoples of the two phases (light blue for the western area where *Nal* sites are predominantly located and a darker blue for the eastern region where Amrian sites tend to be found). As I noted earlier, there was also a Kot Dijian presence in southwestern Sindh at this time. Rock and mineral resources from locations within the interaction sphere of the Amri and *Nal* peoples could have entered the extensive Kot Dijian interaction networks at this point and then been transported through them to consumers at Harappa.

Finally, there is evidence suggesting that Early Harappan peoples may have begun to settle in

northern Gujarat at this time and/or were interacting with indigenous non-Early Harappan peoples of that region to a significant degree (Possehl 1999: 603-612). In Kutch, ceramics with both Amrian and Kot Dijian cultural affinities are present in the earliest occupational levels (Stage I and Stage II) at Dholavira; a site which was a settlement that would subsequently become one of the five major Indus cities (Bisht unpublished 1993 report cited in Ajithprasad 2002). Early Harappan ceramics (both Amrian and Kot Dijian-like) have also been found in eastern Kutch at Surkotada (Possehl 1997b) and on the North Gujarat Plain at Nagwada (Hegde *et al.* 1988, 1990) and Moti Pipli (Majumdar and Sonawane 1997). Prominent among the many rock and mineral resources of this region that Early Harappans may have wished to acquire are ornament-quality microcrystalline silicates and amazonite.

Integration era – 2600 to 1900 BC

By the mid-third millennium BC the regional cultures of the Early Harappan Period had largely coalesced into the urbanized society known as the Indus Civilization. In Shaffer’s framework (1992) this is the *Harappan Phase* of the Indus Tradition. It represents an approximately seven century-long era during which peoples living in distant and ecologically diverse regions of northwestern South Asia (Figure 2.6 C, see also figures 3.1 & 3.5) were culturally, economically, and, perhaps to varying degrees, politically *integrated*. A system of well-developed, intensive and sustained inter-regional interaction networks made this possible. Archaeologically, the result was a large number of sites with remarkably similar material culture remains spread across an immense geographic area. Marking the approximate western extent of the main or “core area” (Mughal 1990a) of Harappan Phase settlements are Dabar Kot in northern Balochistan (Stein 1929), Nausharo at the foot of the Bolan Pass (Jarrige 2000) and Sutkagen-Dor on the Markan coast near the modern boarder

with Iran (Dales 1962). Lothal in Gujarat (Rao 1979a, 1985) is one of the southernmost sites of this phase and the earliest levels at Alamgirpur in Uttar Pradesh (IAR 1958-59) indicate that Indus Civilization peoples were living as far eastward as the Gangetic Basin. Harappan Phase occupations are found along the northern margin of the upper Indus Basin at Chandigarh (Shaffer 1981: 87), Ropar (Sharma 1982), Manda (Joshi and Bala 1982), Musa Khel (Dani 1971) and at several sites in the Gomol Valley such as Maru (Khan *et al.* 2000). Importantly for this study, geologic sources for nearly all of the rock and mineral varieties used by residents of Harappa during this time (Period 3 at the site) occurred within (internal to) or very close to the Indus Civilization's core area.

Without the benefit of written records it is difficult to determine the degree to which the Indus Civilization was politically integrated. By 2600 BC, large urban centers had emerged at Ganweriwala in Cholistan (Mughal 1997), Rakhigarhi in Haryana (Nath 1998), Dholavira in northern Gujarat (Bisht 1991), Mohenjo-daro in Sindh (Marshall 1931b) and, of course, Harappa in the Punjab. Kenoyer (1997a) feels that these cities were regional loci of political and economic power and probably represent independent polities not unlike "city-states." Ratnagar (1991: 169), on the other hand, argues that many factors, including the widespread use of standardized "infrastructural elements" (bricks, chert and metal tools, carts, etc.), points to "political unification under one state." Over the course of the Indus Civilization's 700 year existence it is quite likely that the scale of political integration fluctuated (Kenoyer 1994b). Perhaps both scenarios were true at different times. Presently, however, it is not possible to state if such fluctuations actually occurred, much less when. In this study, I am only able to say whether or not a specific rock or mineral acquisition network appears to have been external or internal to the Harappan *cultural* "core area."

A pronounced degree of cultural integration

during the Harappan Phase of the Indus Tradition is evident from the widespread use of very specific material items and symbols that reflect a common and deeply-held ideology (Miller 1985). However, older notions that sites of this phase exhibit a "uniformity" (Piggott 1950: 140), "monotonous regularity" (*ibid.*: 136) and "astonishing sameness" (Wheeler 1950: 29) over the enormous area where they occur have given way to research showing that important regional variations did exist, most notably in terms of ceramics styles and subsistence regimes (Possehl 1992b). Based on these variations as well as settlement patterns and geography, Possehl (1992b, 2002a) has defined different Harappan "domains" within the Indus Civilization – e.g. Sindhi Harappan, Bahawalpur Harappan, East Punjab Harappan, etc. Even though this is a tempting way to conceptualize and organize cultural variability over this huge area, I am going to resist using Possehl's "domains" here because I feel that doing so would suggest the existence of political, social and perhaps even ethnic divisions that have not yet been satisfactorily demonstrated. Although it is plain that, culturally, the Indus Civilization was an internally differentiated society rather than a monolithic one, for the purposes of this study the groups of people making it up are collectively considered "Harappan."

Precisely where Harappan culture ended and non-Harappan began is not always clear cut, however. "Harappan" status has been given to some regional groups for which that designation, although not baseless, is arguable. For instance, during the latter half of the third millennium BC southern Balochistan appears to have been occupied by both Indus peoples and the locally distinct *Kulli* culture (Franke-Vogt *et al.* 2000). *Kulli* peoples did use some ceramics and iconographic elements that were Harappan in character. Possehl considers them to have been a highland variant of the Indus Civilization (Possehl 1986: 61) – i.e. "Kulli Harappan" (Possehl 1992b). Similarly, a large portion of the Saurashtra

Peninsula of Gujarat was occupied by peoples that Possehl calls “Sorath Harappans” (Possehl 1992a). They too possessed many elements of Harappan material culture but they also lacked some important ones such as stamp seals. It is quite plain that there were strong connections between the Indus Valley and areas like the southern Balochistan highlands and Saurashtra at this time. Whether or not the peoples in the latter two regions represented highly distinctive variants of the Indus Civilization or were local groups who had absorbed certain cultural elements from their Harappan neighbors remains to be determined, however. Therefore, on the Figure 2.6 C, the green-shaded area marking the extent of the Indus Civilization is faded out in the Kulli and Sorath culture areas so as to reflect where the “vener” (a word I borrow from Dr. Richard Meadow) of Harappan culture is thinner.

Immediately north of the Indus Civilization, in the Bannu Basin, Gomal Plain and Potwar Plateau areas, there is evidence that the Kot Dijian phase continued concurrently with the Harappan Phase. Contemporaneity between the two phases is indicated by both radiocarbon dates and finds of items with clear Harappan affinities at otherwise wholly Kot Dijian-type sites in those areas (Allchin 1984; Dani 1971; Thomas and Allchin 1986; Xu 1990). Interaction with “Late” Kot Dijian Phase peoples would have afforded Harappans indirect access to the rich rock and mineral resources of the northern Pakistan highlands.

There is abundant evidence demonstrating that Harappan interaction networks extended well outside of the Greater Indus region during the Integration Era (Tosi 1993). The site of Shortughai in northern Afghanistan (discussed on pp. 10 & 26) provides some of the clearest such evidence. The fact that Harappans journeyed to (and presumably from) that distant settlement opens the possibility that rock and mineral resources occurring along the many routes through northern Pakistan and Afghanistan were accessible

at this time. Toward the west, Harappan seals and beads have been found at a number of sites across the Iranian Plateau (Dales 1976; Heskell 1984; Lawler 2007; Tosi 1979). Seals and other items at Altyn Depe in Turkmenistan indicate that some interaction between Harappans and local Bactria-Margiana Tradition peoples took place within southern Central Asia (Hiebert 1995; Masson 1981). Beginning around the end of the third millennium BC, Bactria-Margiana Tradition (BMAC phase) peoples were themselves making inroads into northwestern South Asia (Hiebert and Lamberg-Karlovsky 1992; Jarrige 1991a; Meadow 2002; Parpola 2005).

At the southern end of the Harappan world, there is ample evidence on both sides of the Arabian Sea for the existence of seaborne trade between the Indus Civilization and the ancient cultures of northeast Arabia (Chakrabarti 1998; Cleuziou 1992; Cleuziou and Tosi 1994; Edens 1993; Possehl 1997a; Rao 1979b; Ray 2003). Farther to the west, textual records suggest that Harappan merchants and craftsmen were living in Mesopotamia at this time (Parpola *et al.* 1977; Vidale 2004) and that numerous goods were being imported into that region from “Meluhha” – the Sumerian name for the Indus region (Asthana 1976; Chakrabarti 1990; Kenoyer 2008; Possehl 1996; Ratnagar 2004). What was traded to “Meluhha” in return is unclear as items of obvious foreign origin (Mesopotamian or otherwise) are extremely rare at Indus Civilization sites (Possehl 2002c). It might have been perishable goods that are now archaeologically “invisible” (Crawford 1973) or raw materials that were subsequently transformed by Harappan consumers. Ratnagar (2004: 199) has argued that silver was a Mesopotamian import while Kenoyer and Miller (1999) feel that the copper resources of Oman were the impetus for trade with that region.

Localization era – 1900 BC to <1300 BC

Around 1900 BC, the Indus Civilization began to undergo a significant transformation as many

of its cities, along with the interaction networks that supported urbanized society in northwestern South Asia, were either abandoned or dramatically reduced in scale. Within a century or so three localized phases (Figure 2.6 D) had emerged in the previously integrated region – *Rangpur* in Gujarat, Jhukar in Sindh and Cemetery H in the upper Indus Basin and western Gangetic Basin (Mughal 1992b). Although the peoples of these phases retained many cultural features that justify the use of the term “Late Harappan” to describe them, they had abandoned others (the Indus script, weights, stamp seals) that were hallmarks of the Indus Civilization. The particulars of the general “deurbanization” seen during the Late Harappan period and the reasons behind it are not yet fully understood but research in recent decades has made it clear that the outcome of the transformation was not the same in all parts of the Greater Indus region (Possehl 1997c; Sonawane 2002). In Sindh and Cholistan there was a precipitous decrease in settlement density while in Gujarat, the eastern Punjab, Haryana and western Gangetic Basin there were many more sites than in the previous phase. Evidence from Cemetery H (Period 5) levels at Harappa indicate that activity

and innovation continued in the western Punjab at this time despite the apparent cessation of long-distance interaction networks with Sindh and Gujarat (Kenoyer 2005b). Finds of Cemetery H ceramics in the Swat Valley (Stacul 1985) show that interaction between the Indus plains and the mountainous north continued.

CHAPTER CONCLUSION

Harappa’s geographic position in center of the Punjab Plain was optimal from the standpoint of its being centrally located. Geologically, however, this was a resource-poor area. The site’s residents had to import all stone from sources located no less than 120 km away. Access to those sources shifted as the cultural landscape that they were a part of transformed over time. It was within these contexts that the artifacts making up Harappa’s rock and mineral assemblage were acquired, used and discarded. In the next chapter, I review the research strategies and methods used to identify the sources of those artifacts.