Chapter 8

Conclusion
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In conclusion, some of the accomplishments of this research work have been briefly highlighted as well as the future directions that this study might take are discussed.

The present research work is the first detailed study of the Sorath Harappan that encompasses all the possible facets of the material culture on a comparative basis with that of the Classical Harappan. The overall nature of the Sorath Harappan settlement at Jaidak has been well elucidated through the present study. The general similarities and marked differences between the characteristics defining the Sorath Harappan and the Classical Harappan sites distributed in Gujarat have been pointed out in detail. The present study has brought forth the individuality of the Sorath Harappan sites as revealed by several features peculiar to it and thus stands out as the manifestation of the Harappan cultural ethos in Saurashtra.

The noteworthy features of the Sorath Harappan that are identified here include the distinctiveness of its architecture, a mixed economy of agriculture dominated by the cultivation of millets and pastoralism, and also participation in an internal exchange network with that of the Classical Harappan sites. Besides, other aspects of the general lifestyle of the people have been discerned from the nature of the artifact and pottery assemblage. Another aspect that was taken up in the present study is the catchment analysis of Jaidak within a radius of 20km. This survey has significantly contributed to an understanding of the nature of the Sorath Harappan settlement at Jaidak and its interactive zones spread across the northern and central parts of Saurashtra.
Jaidak is one of the largest Sorath Harappan settlements in Saurashtra in terms of its size and spread. It exhibits the Classical Harappan standard bipartite plan with a citadel and a lower town and is roughly rectangular in shape. Other Sorath Harappan sites however do not demonstrate similar plan and layout. This feature makes Jaidak significant and indicates perhaps a closer interaction with the Classical Harappans. However other features of the architectural constructions at all the Sorath Harappan settlements are analogous. The material used for construction is preferably stone. This fact may be understood in the background that stone was abundantly available from the Deccan trap dykes exposed in many regions, specially the river beds in Saurashtra. Thus the cost of quarrying and transportation of the raw material to the sites was minimal. But the fact that the Sorath Harappans were lacking the engineering skills of the Classical Harappans becomes apparent from the style of building. The stones were not hewn to give a defined shape, instead were used as amorphous blocks in the construction. The Classical Harappans on the other hand, preferred mud bricks of standardized ratio for their construction. In the later phases, although stone came to be used at these sites, they were carefully dressed into slabs and hence the finish and perfection of construction was maintained.

The Sorath Harappan sites are surrounded by perimeter walls about 3m thick. The fortification walls at the Classical Harappan sites on the other hand are massive in thickness. The thicknesses of the walls of the structures inside the fortification however do not show any difference at both categories of the Harappan sites. The difference was perhaps due to the purpose for which the fortification wall was constructed. The Classical Harappan settlements in Kachchh had been the ‘administrative-trade-cum-political outposts’ which provided a ‘corridor’ to Saurashtra (Soundrarajan 1984) and hence were strongly fortified for the reason of the fear of external invasion. The Sorath Harappan settlements were mostly residential settlements and their location on the banks or meanders of rivers provided natural protection in case of external attack, which however was not feared. In addition to this the fortification wall provided protection against trespassing of both humans and animals as well as from flood in the adjoining rivers.
The presence of polygonal and/or curvilinear structures is yet another interesting and unique feature of architecture at the Sorath Harappan sites. Such structures are not noticed at the Classical Harappan sites in the Mature Phase but appear in the late phase. These have been interpreted as structural adaptation for keeping household herds as at Rojdi (Possehl and Raval 1989) which was of significance to the Sorath Harappans since herding formed a part of their economy. At Kuntasi (Dhavalikar et. al 1996) the structure has been described as a shrine complex. At the Classical Harappan sites, instead the preference to monumental constructions like the granary, the great bath, etc. may be observed. The lacuna in the engineering skills of the Sorath Harappans may be further noticed in plan and layout of structures inside the fortification. The houses or streets were not laid following the grid plan as observed at the Classical Harappan sites. Instead they appear to have been constructed in clusters although an open courtyard perhaps for social congregations is found at Kuntasi and Jaidak. Structures related to storage and regulating the water supply, such as wells, tanks, etc. are absent at Sorath Harappan sites, while the water management system was given immense importance at the Classical Harappan sites. The cultivation of the draught resistant millets by the Sorath Harappans together with the nearness of the sites to the perennial and semi-perennial rivers and streams did not give rise to the need to construct tanks or wells for storage of water. Whereas the Classical Harappan sites in Gujarat are mostly located in Kachchh, where there is perpetual scarcity of water, hence facilities for its storage were important to be maintained.

Another area that draws attention is the difference in subsistence activities of the Classical Harappans and the Sorath Harappans. Most of the Harappan sites depended on farming and stock raising that included pastoralism, although economic production of craft items was also carried out actively at some of the larger sites. Agricultural practices of the Sorath Harappans, however involved the cultivation of kharif or summer crops, i.e. mainly millets, which were most suitable for the semi-arid and therefore uncertain climatic conditions of Saurashtra. Moreover these crops were less labour-intensive and provided excellent fodder for the herds. Contrastingly, the Classical Harappans particularly in the ‘core’ region of the Civilization in Sindh and Punjab, were engaged in
the cultivation of *rabi* or winter crops like wheat and barley which were monsoon dependent and required more tending.

However in Gujarat, it appears, the millets had a wide and prominent presence in the Harappan sites, both in Saurashtra and Kachchh. Gujarat, throughout the era of the Mature Harappan survived on small millets while the little wheat and barley reported from the Harappan sites in these areas may have been imports (Fuller and Madella 2002). Wheat and barley are absent in almost all the Sorath Harappan sites except at Kuntasi. The food base thus from the nutritionally low millets was supplemented by domesticated fauna as well as hunting and fishing. The larger millets, *Pennisetum typhoides* (Pearl millet or *bajra*) and *Sorghum bicolor* (large millet or *jowar*), were introduced in somewhat later stage, around 2000 - 1900 BCE (Weber 1998; Reddy 2003). These and the *Setaria sp.* (Italian/foxtail millet) have been stated to be of African origin which was adopted in the cultivation in Gujarat. But according to the current evidence it is plausible that the inhabitants of Gujarat began to utilize and domesticate particularly the *Pancium* and *Setaria* species that were available as wild components in the native flora (Fuller and Madella 2002).

Studies on botanical remains from the Harappan sites of Kuntasi, Lothal and Rangpur have shown the presence of a wide spectrum of plants that included wheat, barley, and rice in addition to several types of millets. This is indicative of a probable double-cropping pattern being practiced in Gujarat which allowed to sustain productivity across time and contributed to the long-term survival of the community in the region even during the Post-Urban Harappan phase. The cropping pattern of the Sorath Harappans is not only significant from the point of view of difference in the crops production, but also reflected perhaps in their food habits and eventually in the vessels used by them. Thus variations in the pattern of agricultural practices affect the lifestyle of the population in many ways which are reflected in the material culture.
The Sorath Harappan material inventory has been described by Possehl (Possehl and Raval 1989; Possehl 1992) as simple and devoid of the 'type-fossils' of the Classical Harappan. The Sorath Harappan assemblage as revealed at Jaidak is generally devoid of the typical Classical Harappan objects, except in the pottery where the presence of bulbous column of the dish-on-stand, dishes with nail-headed rims and perforated jars, all evidently from the early levels of occupation. A few examples of Classical Harappan objects reported from the sites of Rojdi and Kuntasi point toward the interaction between the Sorath Harappan and the Classical Harappans during the Mature/Urban Phase at these sites and also reflect the influence of the latter. Pottery from the Sorath Harappan sites is made in both fine and coarse wares. The fine wares are mostly treated with slip and perhaps due to proper firing and the composition of the slip the vessels have a shiny surface and are painted in simple geometric designs. The coarse wares are also well-made and many a times found surface treated with wash and/or decorated with incised designs. The coarse wares in the Classical Harappan ceramic assemblage is altogether rare and similar surface treatment is not seen. In the shapes the convex-sided bowl is the key-marker of the Sorath Harappan contemporary to the Mature/Urban Phase, while the Post-Urban phase is marked by the introduction of straight-sided followed by the concave-sided bowls. Other noticeable forms of pottery of the Harappan sites in Saurashtra are the stud-handed bowls, where the length of the handle increases towards the Post-Urban phase. At Jaidak in the late phase double ridged studs are encountered, which appears to be a peculiar feature of this site. Besides, lamps with incurved rims and a pinched lip also make their appearance in the later phase.

Jaidak and other Sorath Harappan settlements are not large craft producers and whatever minimal objects were made at the site, were perhaps for the use of the residents. Their material inventory do not show the use of a wide range of raw materials as found at the Classical Harappan sites, but the significance lies in the certain objects that are peculiar to the Harappan sites in Saurashtra. Among the lithics, Rohri chert is conspicuous by its absence, while other semi-precious stones like agate, moss agate, chalcedony, jasper, carnelian, quartz, and other varieties of chert were widely used and mostly locally available. Copper objects include a type of peculiar double spiraled ring,
reported from Kuntasi and Jaidak that could be worn on the finger. Spiral copper objects are rare in the entire Harappan context and the double spiral ring is only reported from the Classical Harappan site of Lothal. Although the types of shell objects recovered from the site are quite common to the ones found in the Classical Harappan sites, such as bangles and beads, they are far few in number. However, no shell bangles showed the chevron decoration and a few collumella and pieces of *T. pyrum* and *C. ramosus*, may suggest secondary use and production of shell objects. The site has also yielded two enigmatic bobbin-shaped objects made out of the collumella and has no parallels at any other Harappan sites.

The entire gamut of artifacts is dominated by the terracotta objects at the Sorath Harappan sites, although their variety is limited. The terracotta ear-studs are a peculiar feature of the Harappan sites of Saurashtra. Besides, other objects include beads in varying sizes and numerous pottery discs. These discs were fashioned out of potsherds and are of various sizes and with or without perforation. The samples with perforation at the centre were probably used as spindle whorls and those with no perforation could have been play objects like hopstoch. Several examples at Jaidak of such discs and rectangular or square shaped sherds have been found with multiple perforations. At Jaidak the stages of producing these discs is quite discernable and hence it may be pointed out that making of the pottery discs was perhaps an important craft activity being carried out at the site. Terracotta animal figurines are quite common at the Classical Harappan sites, while at the Sorath Harappan sites only one or two figurines are reported which represent the bull specifically. Mother goddess figurines are conspicuous by their absence at both categories of Harappan sites in Gujarat.

The survey undertaken within a radius of 20km from Jaidak for the present study not only revealed the location and nature of subsistence resources but also the raw material resources for the objects found at Jaidak. The survey covered fifteen sites reported in the region out of which ten sites are found to be occupied by the Harappans.
Some of the sites continue up to the Medieval periods, these were not dealt with as they exceed the scope of the present study.

Most of the sites show multiple-phase occupation beginning in the Rangpur IIB period followed by the Rangpur IIC phase and even to the Medieval period, whereas a few others indicate only a later period occupation comparable to the Rangpur IIC period. Most of the sites are in a poor state of preservation and have been partly destroyed by either human activities or natural calamities. Therefore no structural remains were found at the sites. However the substantial quantity of pottery, lithics, and other artifacts collected during the survey, on analysis have revealed the comparable period of cultural affiliation. The location of most of the sites are along the banks of the Aji and Demi rivers and their tributaries. A few are located next to ponds and tanks. Thus it is evident that nearness to potable water source besides other factors has been an important criterion for the location of settlements. The fact that these sites are located on the fertile cultivable lands indicates that agriculture was the basic subsistence. The population at these sites also practiced pastoralism along with agriculture is apparently proved from the location of the pastoral grounds in close proximity to the sites. The present day scenario is quite similar to the Harappan times since pastoral communities -the Bharwards and Rabaris – are an integral part of almost all the villages in this area. The present day cropping pattern in the area is one of double-cropping, a combination of kharif and rabi crops cultivated seasonally. Therefore it cannot be easily dismissed altogether that the Harappans in Gujarat, or Saurashtra for that matter, had practiced the same.

The survey revealed that the adjoining areas of the site of Jaidak are sufficiently rich in providing the site with most of its basic needs. Firstly, the trap rocks exposed in the beds of the Aji river is the source of the building raw material used at the site for construction. Secondly, clay for pottery and terracotta objects was also available from the banks of the Aji. A noteworthy fact here is that these resources are exploited even during the present times. Thirdly, semi-precious stones like chalcedony and quartz are found exposed in the sections of the small streams flowing from the Aji in the adjoining areas of
the site. Besides other semi-precious stones like agate and moss agate, have their resources in the trap rock outcrops at several places near the villages of Khijadiya, Latipar, Jivapar, Badanpur, Khakhra, Veratia, etc. Jasper however has its source near the Khokhari village. These resource areas in the villages are located mainly within a distance of 20km from the site of Jaidak and therefore the Harappans did not have much trouble in acquiring these raw materials. Moreover, the river also provided with the freshwater turtles, fishes, and molluscs, evidence of which, although far and few between, are represented in the faunal assemblage.

Other raw materials for making copper and shell objects however were not within the 20km range of the people at Jaidak. But these resources were within an accessible range of the numerous satellite settlements spread all over the region. It is evident from the survey that Jaidak is the only big urban centre in the area. The corpus of the material inventory from this site revealed that it played a significant role in the procurement and supply of raw materials to other Harappan craft production centers like Bagasra and Lothal in Saurashtra. The presence of numerous chipped nodules and flakes of which were exclusively used for bead production such as variegated jasper, amazonite etc. testifies to the above statement. Moreover there is no substantial evidence of bead making at Jaidak, out of any such raw material.

The Deccan trap and the gravel conglomerate exposed in various parts of the Jamnagar and Rajkot districts are the source for prized items of trade of the Harappans like variegated Jasper, besides other semi-precious stones. The lithic raw materials perhaps underwent a process of initial sorting and chipping, which is evident from the presence of chipped nodules and flakes at the site. Besides some of the copper ore resources are also located in these districts. The copper ore resources located in the Deccan Trap area of the Jamnagar, Bulsar (or Valsad) and Rajkot districts (Raghunandan et. al. 1981). Shell could also be obtained from the Gulf of Kachchh which was only about 30km upstream by river from Jaidak. Since Jaidak is the only Urban centre in the Jamnagar district and one of the largest fortified Harappan settlement, it is likely that this
site was a major unit for gathering various raw materials accessible to it and transported them further to the Classical Harappan craft producing sites and in exchange they obtained finished copper and shell ornaments and carnelian beads.

This widespread system involving the procurement process, initial processing and subsequent distribution could not have been carried out by the population of Jaidak alone. The resources zones are spread all over the Jamnagar and Rajkot districts and hence the numerous small settlements located around Jaidak in all probability procured and provided the site with all the required materials. Thus the entire process involved a network of interactive coordination by the satellite settlements at one end and with the Classical Harappan production centres on the other, managed by the administrative body at Jaidak in the center. The site of Rojdi in the Rajkot district also perhaps played a similar role, while Kuntasi located on the northern borders of Saurashtra has been described as a port and garrison depot by its excavators (Dhavalikar et. al 1996). These two sites also actively participated in the exchange network and their interaction with and the influence of the Classical Harappans is indicated by the presence of a few examples of the ‘type-fossils’ of the latter. This exchange system therefore was an important medium of interaction between the Classical Harappan and the Sorath Harappan sites and provided the avenues through which ideas, goods, and people moved.

At Jaidak there is little evidence for major craft activities, except for the production of pottery and to some extent copper working, yet it may be pointed out that the Sorath Harappans were well acquainted with the use of Classical Harappan objects that they obtained in exchange of the raw materials. However the internal trade/exchange system coupled with agricultural production provided a sound and stable economy to Jaidak and this continued throughout the Mature/Urban Phase when the Classical Harappan sites were also buzzing with activity. In the Post-Urban phase with the decline of the Classical Harappan sites, where large-scale craft production almost came to a halt, the internal trade/exchange system with the Sorath Harappan sites also received a setback. This is reflected in the decadent stage of architectural construction, shifting of
the population and eventual occupation of only a portion of the entire settlement. At Jaidak however the entire site continued to be occupied since the pottery belonging to Rangpur Period IIC was found distributed all over the mound. This is significant because it indicates that there was no large scale movement of the population out of Jaidak during the Post-Urban phase. Moreover this points out that Jaidak had a strong agricultural base supported by pastoralism and hunting and fishing which was enough to support a larger population. The craft activities also continued to exist and it is interesting to note that the number of artifacts increased in the later phase and no change in the quality of the products is apparently noticeable. The pottery assemblage also displays no significant change. The satellite settlements perhaps continued their supply of raw materials from the otherwise remote resources and thus this interdependence and interaction continued in the Post-Urban phase. The raw materials procured, were now produced and used only at the site and perhaps a greater amount and better quality of the materials were at the disposal of the inhabitants of the larger Sorath Harappan settlements.

The shifting and movement of population out of the larger Sorath Harappan settlements had began in the Post-Urban phase with the gradual decline in the economy setting in. This had resulted in a slight increase in the number of settlements during this phase, which were primarily ephemeral in nature, for e.g. Orio Timbo in Saurashtra. The final culmination of this process in observed after 1700 B. C. when a general trend was noticed in the shifting of subsistence from farming to pastoralism by the people. The groups of herders with their herds moved from one place to another in search of new pastures and water sources for their survival. It is in this background that the number of pastoral encampments received a proliferation all over Gujarat during the Post Harappan period. These pastoral groups seasonally occupied parts of the arid locale of Gujarat that provided nutritious grasslands rich in various minerals and salts, water, besides providing excellent breeding ground for their animals.

The enterprising Harappans thus selected suitable environmental niches with accessibility to natural resources which was largely responsible for their growth,
expansion and long survival. Every region, it seems, have been occupied by the Harappans for a specific purpose, for procuring raw materials, availability of suitable agricultural land or excellent pastures for their animal folks. The Harappans in spite of occupying favorable locations could not have survived in isolation. Therefore an interaction with local indigenous inhabitants had to be maintained for survival. This is the reason as to why distinct cultures living in either close or distant geographical proximity interacts with each other and gets influenced by each other in due course of time.

**Future Scope of Research**

The inferences drawn through the present study are mainly based on the archaeological remains from the recently excavated site of Jaidak and the environmental data from its surrounding regions in the Jamnagar and Rajkot districts. The comparative analysis is done with the material published in the excavation reports. The data set presented here has its own limitations and there always remains a scope of its expansion with new facts emerging from future research in this region as well as other parts of Saurashtra.

The concept of Sorath Harappan put forward by Possehl (Possehl and Raval 1989; Possehl 1992) has been dealt with detail here and several new facets of this ‘regional manifestation’ of the Harappan Civilization in Gujarat have been highlighted. One aspect that requires further probe is the agricultural practices of these people. Millet cultivation has been the focus of their agricultural activities, but the millets found in the earliest levels are of very small variety with little nutritional value. And the larger millets appear only in the later levels of occupation. The query regarding the role of the small millets as the staple food in the diet of the Sorath Harappans remains unresolved. Moreover clouds of mystery still shroud over the introduction and adoption of the African larger millets into Gujarat in the Harappan context. These issues once resolved in the light of fresh data will complete the picture of Sorath Harappan subsistence.