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# Small Protohistoric Sites (Fishing Villages?) on the Saurashtra Coast, West Coast of India

A.S. Gaur<sup>1</sup> and Sundaresh<sup>1</sup>

<sup>1</sup>. CSIR-National Institute of Oceanography, Goa, India (Email: asgaur@nio.org)

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**Abstract:** During the maritime archaeological explorations a few sites of protohistoric in nature have been noticed along the Saurashtra coast. The trial excavations of a few sites namely Bet Dwarka and Bhokhira on the western Saurashtra coast yielded the remains of late Harappan phase and provide the insight into the settlement pattern of this period along the coast of Saurashtra. Majority of the sites are under cultivation thus original cultural deposition cannot be determined correctly, however, present deposit is between 20 and 75 cm. Radiocarbon and thermoluminescence dates from these sites provide a time bracket for the settlement between the 18<sup>th</sup> and the 12<sup>th</sup> century BC. Other two sites namely Kanjetar and Kaj are situated on the mid-Saurashtra coast were explored and the pottery assemblage is similar to those found at above mentioned site and also they have some close similarity with Pottery from Prabhasa Patana. Coastal exploration during the season of 2011-12 near Madhopur yielded a small settlement with similar type pottery noticed at Antroli. Majority of the sites are situated very close to the coastal area and this provides us an opportunity to analyse the reason for settlements.

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**Keywords:** Protohistoric, Harappan, Pottery, Coastal Exploration, Excavation, Saurashtra Coast, Settlement Pattern

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## Introduction

Saurashtra coast on the western margin of India has been the favourable area for human settlement since the early stone-age (Marathe 1981). A large number of sites dating back to the mid 3<sup>rd</sup> millennium BC have been discovered and a few of them, for instance, Lothal (Rao 1979), Padri (Shinde 1992), Prabhasa (Sankalia 1974), Bet Dwarka (Gaur et al. 2005) and Nageshwar (Hegde et al. 1990), Bhokhira (Gaur et al. 2006) have been excavated extensively. Archaeological discoveries indicate that maritime activities including trade and commerce were important in Gujarat since the Harappan times (Rao 1979). During the last one and half decades of archaeological investigations along the southern Saurashtra coast yielded half a dozen sites of protohistoric period and many of the historical and medieval periods. The excavations of these sites enhanced our understanding of establishment of Harappan settlement, their town planning, utilization of various resources and specialized craft in Saurashtra region.

The coastline of southern Saurashtra between Okha in the west and Khambhat in the

east is comparatively smooth with curve like arc and marked by well developed beaches. The occurrence of notched cliffs, wave-cut platforms and submerged dunes all along the shoreline are indicating Quaternary sea-level fluctuations (Merh 1987). Several small rivers and creeks punctuate the coastline which offers sheltered harbours all along the Saurashtra coast and they were effectively utilized by the ancient settlers.

The present paper deals with the archaeological findings from archaeological sites of protohistoric period investigated by the National Institute of Oceanography, Goa during the last one decade or so (fig. 1). They are Bet Dwarka (Gaur and Sundaresh 2003), Bhokhira (Gaur et al. 2006), Kindar Kheda (Gaur and Sundaresh 2005), Antroli (Gaur et al. 2012), Kanjetar and Kaj (Gaur et al. 2011). Majority of the sites have been dated with absolute dating methods like Radio carbon as well as Thermoluminisense.

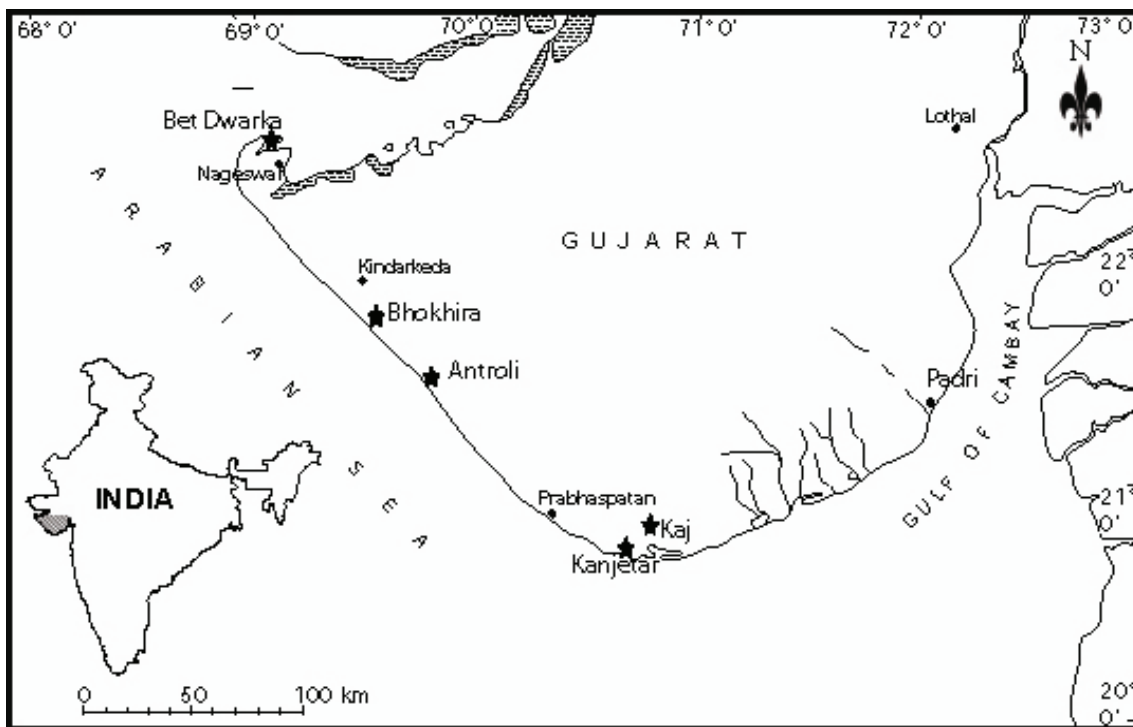


Figure 1: Map of the Saurashtra coast with excavated archaeological sites

## Bet Dwarka

The island of Bet Dwarka is situated in Okhamandal taluka of Jamnagar district of Gujarat. It is 3 km away from the mainland and the nearest port is Okha. It is 13 km long (NW-SE) and 4 km wide. The south eastern part of the island consists of high cliffs and clayey beaches, while to the northwest is a low lying area with fine sandy beaches. The vegetation includes shrubs, cactus and a few *neem* trees. Some land is cultivated. The main crops are maize and *bajra*.

The earliest excavation on the island was carried out by Hiranand Shashtri in the 1930's and dated the earliest habitation to the 3<sup>rd</sup> century BC (Rao 1987). However, onshore explorations in 1969-70 brought to light a large number of potsherds of periods ranging

from the late Harappan to the medieval period (IAR 1969-70). Extensive onshore and offshore exploration by the Marine Archaeology Centre of NIO Goa, during the last two decades yielded similar results (Rao 1987; 1988; 1990: Rao and Gaur 1992; Sundaresh and Gaur 1998).

This is the earliest habitation located in the north eastern part of the Island (near village Par) on flat and high tableland. The pottery and antiquities clearly indicate that they belong to the late Harappan phase and are very similar to other late Harappan sites of the Saurashtra region. The primary reason for their establishment may be the availability of shells, which were exploited to a great extent by the Harappans in Gujarat. Possibly, the Harappans from Nageshwar migrated to Bet Dwarka Island, which is situated just opposite on the mainland. However, excavators of Nageshwar (Hegde et al. 1990) has suggested that site belongs to the Sindhi Harappan and there is no influence of Saurashtra and Kachchh Harappans, but in Bet Dwarka island, pottery is very similar to the late Harappan sites of Saurashtra specially Rangpur IIC. A stud handle bowl, a characteristic feature of Gujarat Harappan is found here. The coarse red ware, buff ware and black ware sherds also found from Bet Dwarka. The convex sided bowls, carinated dishes, jars and miniature vessel similar to the other Saurashtra Harappan sites are found here. A few sherds of perforated jars were observed from surface exploration. A well preserved copper fish hook (fig. 2) suggests that they were fishing in deeper water and a large number of fish bones were also found from excavated site. The fishhook is very similar to other fish hooks reported from Mohenjodaro (Marshall 1973: 501), Harappa (Vats 1974: 391), Lothal (Rao 1985: 546) and Padri (Shinde and Thomas 1993). The fishhook of Bet Dwarka is measuring 7 cm in length, however, the biggest fish hook has been reported from Harappan level at Padri with a total length of 14 cm. The economy of the late Harappans in Bet Dwarka Island was based on marine resources, as there is no fertile agricultural land within the Island. The excavation has not revealed the evidence of any house planning, which may suggest that this island might have been their seasonal habitation and not a regular one. The radiocarbon<sup>14</sup> and TL dates from this site indicate a time bracket for the habitation between 1600-1400 BC.

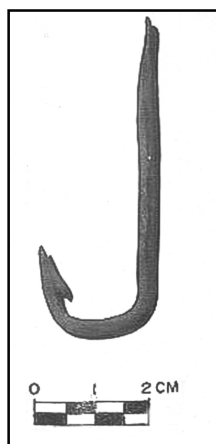


Figure 2: Protohistoric copper fishhook from Bet Dwarka

## Bhokhira

The archaeological site is located adjacent to the Porbandar creek on the western side. Presently, the site is under cultivation. Further west of the excavated site, a few small limestone cliffs are noticeable and those are indicating a higher sea level in the past. There is a well defined depression around the site towards the creek which is presently banked by a high metal road. According to a local traditional, towards the present creek there was a *Juna Dhakka* (ancient jetty), which indicates that the site was very close to jetty site in the past. Location of study area clearly favours the utilization of the creek for maritime activities around Porbandar.

Four locations were selected for excavations to assess the settlement extension and total cultural deposits. Three of them were laid in eastern side of an Ice factory while the fourth one was laid on the southwest direction of the factory. An average cultural deposit of 60 cm was traced. The habitation took place on the natural limestone bed. It slopes down to eastern side. On the natural bed two postholes were noticed having diameters of 30 cm and 20 cm and depths 25 cm and 15 cm respectively in one of the trenches. A disturbed structure was exposed on the eastern corner of the trench with a total length of 2.5 m and width 50 cm. Only one course is surviving. The structure is oriented in N-S direction, and made of small irregular lime stone blocks. A large number of pottery of the late Harappan period was noticed throughout (fig. 3). The important shapes include convex sided bowls, dish and jars. A few potshards have painting on the exterior. The shape, size and paintings are very similar to the pottery reported from Bet Dwarka (Gaur et al. 2005), Rojdi (Possehl and Raval 1989), Lothal (Rao 1985) and Kuntasi (Dhavalikar et al. 1996). The important paintings on the potshards are roundels, wavy lines, cross lines and thick bands on the rim portions. The important antiquities include 4 stone tools, 4 terracotta beads, 2 balls, 3 sling balls, one copper finger-ring and 2 terracotta artifacts.

Onshore excavations at Bhokhira, on the Saurashtra coast brought to light the oldest antiquity in Porbandar area dating back to the early 2<sup>nd</sup> millennium BC. The proximity of the settlement to the Porbandar creek indicates that the maritime activities engaged by the early inhabitants. Luminescence ages of pottery recovered from the excavation have close correspondence with archaeological assemblages and are critical for providing the time bracket for the archaeological sites. The TL and SAR-OSL ages of the two pottery pieces are 1395 BC and 1145 BC (NIO-1) and 1955 BC and 1855 BC (NIO-2), respectively. The good agreement between TL and OSL ages of pottery from Bhokhira suggest that optical dating using SAR protocol can be routinely used for precise and accurate dating of archaeological pottery. The discovery has also indicated that along with the Indus Civilization, regional cultures flourished in the coastal belt of the Saurashtra regions and were engaged in maritime activities.

## Kindar Kheda

The village Kindar Kheda is situated about 20 km northwest of the present town of Porbandar and it is approachable by road from Porbandar. Archaeological site is under

cultivation and located on the eastern side of village. On the site a Sun (Surya) temple dating back to the 9<sup>th</sup> century AD (Sompura 1968:91-92) of post Maitraka period is situated. Southern side of the site is low lying area and marked in the map.

During the exploration a stone anchor was located near the village. It is made on an irregular limestone block, which is circular to some extent. The anchor is lying on the western side of the temple near a well and it was recovered in 2002 while ploughing the field. The stone has been purred in the center and the hole is circular in shape. The hole is smooth and it is widened on the other side suggesting an extensive use of this stone anchor. The shape and size of the stone suggest this would have served as an anchor (Gaur and Sundaresh 2005). However, it is difficult to ascertain any date to this anchor, as it has not been found from stratigraphic position. Besides above anchor a few stone tools and a large quantity of pottery was noticed at the site suggesting a flourishing settlement during the Bronze Age.

An old map dating back to 1856 AD was obtained from the archive at Porbandar and was examined for the changes in morphological features. The same has been studied and the topographical features were compared with a map dating back to 1969 AD. The major changes in topography are the reduction and approach of the Porbandar and Kindari creeks up to Kindar Kheda. In the map (1856 AD) the location of Kindar Kheda is shown on the bank of creek, which is approachable by the boat from Porbandar and Kindari Creeks, and now the approaches from both sides have been completely disappeared in the present day topography. Now a shallow depression south of Kindar Kheda is noticeable, which gets flooded during monsoon.

## **Antroli**

Antroli, a small village, is situated about 10 km east of Madhavpur and about half km from the main highway (Porbandar-Bhavnagar). Further about a km east of the village an ancient temple (11<sup>th</sup>-12<sup>th</sup> AD) which has been renovated, houses a few ancient sculptures. These sculptures are of *Siva Parvati*, *Vishnu* and other deities. The plinth of the temple is originally preserved and painted with lime wash. About 200 m south of the temple an elevated land, serving as barrier between sea and land is present. The exploration yielded the remains of a protohistoric settlement (Gaur et al. 2012). The site is spread about 100 X 100 m area and major part of the site has been converted into an agricultural land. A close observation at one place indicates a maximum deposit of 1 m which also includes medieval period settlement besides protohistoric phase. The pottery (fig. 4) observed on the surface indicates that they are similar to those reported from Bet Dwarka, Bhokhira, Kaj and Kanjetar. There is also an archaeological mound of the early medieval period deposit south of the protohistoric settlement. Presently the sea coast is about 1 km and huge sand dune the area from tidal effect. The geomorphology of this area is comprises of uneven formation mainly of limestone. The surface exploration yielded a variety of shells indicating the use of marine resources available nearby the sea.

Three places were selected to dig till the remains of human habitation are found. The total cultural deposit was noticed till 1.2 m deep and then hard rock appeared. The habitation was established on the rock surface. The upper 1 meter deposit belongs to the medieval period and remaining 20 cms is of protohistoric period. The pottery of medieval period is same as of trench 1 however, pottery from the lowest level belongs to the protohistoric period and many sherds are similar to those of Sorath Harappan (Possehl and Raval 1989). Though, small quantity of pottery was collected from a limited trial excavation but importantly the assemblage belongs to protohistoric and medieval period. The protohistoric assemblage is very similar to those reported from Bet Dwarka and Bhokhira.

## Kanjetar

The site is situated about 12 km southwest of Kodinar on the coastal area. The seacoast from site is less than a km. A dry creek is noticeable on the eastern side of the village Kanjetar where another historical period site was noticed. The entire site has been converted into an agriculture land and thus the remains of habitation have significantly been destroyed.

A trench measuring 2.5 m X 5 m was laid on the southern most point of the site (which is under cultivation) to understand if anything related to maritime activity can be traced. The archaeological deposits could be found till 50 cm depth and then hard *kankar* natural deposit appeared. Two layers were observed during the excavation. Layer 1 is comprised of loose soil and light brown in colour and occasionally gravels were noticed. Layer 2 is comprised of compact soil, dark brown colour and a large number of gravels were noticed. The major findings include various type of pottery similar to the Harappan phase. Due to limited excavation area no regular structural remains could be traced and a large number of scattered stones were found during the excavation. However, while discussion with the local farmers it was noticed that a lot of stone structures were destroyed during the converging the site into agriculture land and were placed as boundary of the field.

The most interesting finds from the trench was a skeleton of a child lying just over the natural bed. The skeleton was comprised of skull and one each leg and hand bone. There was no indication of any graveyard or cemetery as noticed in other archaeological sites. There are plenty of animal bones collected during the excavation. There were also number of shells were noticed but mostly used as source of food. There were not much items of shell product except a columella of *turbinella pyrum*. A large number of pottery was collected during the excavation. Being, a single culture site only protohistoric pottery was recovered (fig. 5). The ceramics include sturdy red ware similar to the mature Harappan pottery (Rao 1985), and varieties of bowls of fine ware similar to the Sorath Harappan type (Possehl and Raval 1989: 57). The important shapes include jars, bowls, dish on stand and a goblet. Besides above a few sherds are painted with black, dark brown or chocolate colour over red, orange, dull red or white surface.

## Kaj

The village of Kaj is situated about 10 km east of Kodinar town on the Dwarka Bhavnagar highway. The ancient mound locally called as *Juna Kaj* is situated further 2-3 km east of the present village. A large water body east of the mound was noticed which serves as fresh water sanctuary where Siberian birds visit annually. The site is located very close to the creek and it is spread over 10 acre of land which has been converted in to agriculture land. However, proximity to sea suggests that the site was located on the western bank of the creek and during high tide the sea water would be reaching up to Kaj and further northern side. Only an area of 100 X 100 m is remained undisturbed and remaining area of site has been converted into agriculture land.

A trench measuring 2.5 X 5 m was laid in an undisturbed area on the eastern corner of the site. Archaeological remains were traced up to 1.5 m deep and four different layers were identified. Upper 1 m deposit belongs to medieval period and remaining 50 cm is associated with protohistoric period. Though there are remains of the historical period artifacts from the surface collection of the site but in the excavation no trace of historic period remains. Perhaps early historic period site is located on the northwest area of the present excavated site. A large quantity of medieval period pottery, primarily black ware was collected during the excavation a couple of medieval glazed sherds. The important shapes are jars, cooking vessels and lids. Though a large number of copper coins of medieval period were collected by local residents but excavation did not yield any coin.

The archaeological deposit of protohistoric period is limited to 50 cm in this trench but a large number of pottery was found during surface explorations. The pottery was comprised of typical Harappan type and important shapes include variety of bowls, carinated dish and dish-on-stand (fig. 6 and 7). A large number of pot sherds were also painted with various colours such as black over red, white over red, purple over red. The pattern of paintings includes wavy lines, dotted circles, cross lines. A large number of stud of stud-handled bowl have been found from the site. Interestingly, in one of the agriculture field a handle of amphora was collected and later a large part of the amphora which was being used as water storage for hand washing in the field was observed. With the discovery such artifacts, it is imperative to believe that Kaj was a Harappan port town and later it was an important Indo-Roman trading center on the Saurashtra coast. Morphological changes have occurred over the several centuries, which led to abandonment of the port.

## Discussions

The Saurashtra coast has a number of small sized Harappan sites and they must have played a very important role in developing Urban Centres at Lothal and Rojdi in the Saurashtra region. So far 6 coastal sites have been investigated and a clear division has been noticed between the sites situated on the west Saurashtra coast those are Bet Dwarka, Bhokhira and Antroli and sites located on the mid-Saurashtra coast and those are Kaj and Kanjetar, particularly in frequency of ceramics.



Figure 3: Protohistoric (Sorath Harappan) pottery from Bhokhira (Porbandar)



Figure 4: Protohistoric pottery from Antroli



Figure 5: Protohistoric pottery from Kanjetar



Figure 6: Protohistoric pottery from Kaj



Figure 7: Protohistoric pottery (Stud handles) from Kaj

Table 1: Absolute dates from different sites

Site	Lab Ref. No.	C <sup>14</sup> / TL Dates	Calibrated Date
BDK-VI	BS-2000	3140 $\pm$ 100 (C <sup>14</sup> )	1520-1310 BC
BDK-VI	BS-1993	3470 $\pm$ 80 (C <sup>14</sup> )	1880-1690 BC
BDK-VI	W-2876	3260 $\pm$ 470 (TL)	1920-940 BC
Bhokhira	NIO-1	3400 $\pm$ 580 (TL)	1975-815 BC
Bhokhira	NIO-2	3960 $\pm$ 360 (TL)	2345-1565 BC
Kanjatar	BS-3158	3810 $\pm$ 100 (C <sup>14</sup> )	2490-1970 BC
Kaj	BS-3151	3600 $\pm$ 120 (C <sup>14</sup> )	2290-1640 BC

At Bet Dwarka protohistoric settlement was the first habitation on the island. The pottery and antiquities clearly indicate a Harappan influence on the ceramics which has been also corroborated with radiocarbon dates (Table 1). The primary reason for the settlement may be the availability of edible marine resources like fishes and shells. There is complete absence of any type craft on the shells thus it is possible that this may be a fishing village which was largely depends on the seafood economy. This is supported by the presence of a copper fishhook besides large number shells. Radiocarbon and TL dates from the site indicate a time bracket between 1600 to 1400 BCE.

This is the second site (after Bet Dwarka) discovered just on the coastal plains, which has very little protohistoric deposit. The initial habitation took place on the bedrock

and houses had thatched roofs, which were erected on the wooden poles as evident from the postholes noticed on the surface. This is the characteristic feature of Chalcolithic culture and rarely noticed in Harappan Civilization. Pottery and antiquities are very similar to those reported from Rojdi (Possehl and Raval 1989) and termed as “Sorath Harappan”. However, present site has not revealed any significant structures such as at Rojdi. After a few years of settlement some rudimentary structures were made, which is evident from the discovery of an irregular small stone structure in trench 1. Based on the cultural deposition, it may be suggested that the habitation would have lasted just a couple of centuries or even less. Their economy would have been based on the marine resources such as shells and fishes as shell artifacts were noticed from the excavation. This settlement too falls under the category of fishing village.

The study of an ancient map indicates that topography has changed significantly between Kindar Kheda and Porbandar and Kindari Creek. Probably Kindar Kheda was approachable by boat at least up to 1856. The study of sea level fluctuation suggests that during Harappan time sea level was higher than the present (Merh, 1992). Archaeological, geographical and geological data suggest that Kindar Kheda might have been an active protohistoric and historical periods port on the Saurashtra coast.

A protohistoric settlement at Antroli, on the south western Saurashtra coast has been converted into an agriculture land. The nature of the archaeological site at Antroli indicates a short lived settlement as total deposit does not exceed 25 cm. Also investigation did not yield any structural activity thus the site does not fall under the category of urban settlement and may be a fishing hamlet on the Saurashtra coast. Pottery from Antroli is very similar to those reported from Bet Dwarka (Gaur et al. 2005) and Bhokhira (Gaur et al. 2006) and major shapes include stud handled bowl which is typical characteristic feature of Sorath Harappan. A stand part of the dish-on-stand and other pottery of protohistoric in nature was also reported from the site. Besides pottery, shells were found in large number perhaps these were used for food economy and no craft were made from these shells. No other antiquities were found from this site. Thus, these coastal habitations on the western Saurashtra coast suggest that these might have been as fishing villages with poor living conditions even presently also many coastal fishing villages lack basic amenities.

Kanjatar is a very small Harappan site and may be categorized as a village settlement and the role of the site in context with overseas trade may be debatable. The area is rich with fertile agriculture land along this coastal belt besides punctuated creeks those facilitated sheltered harbour for maritime activities. As of now evidences are growing in favour of massive exploitation of marine resources by the late phase of Harappans for their dietary habits. Except pottery, none of the Harappan elements are found including seal, weight, T.C. cake, beads etc were reported from the site which indicate that this was not an urban centre. When comparing with sites on western coast such as

Bet Dwarka (Gaur et al. 2005) and Bhokhira (Gaur, et al. 2006) the pottery of Kanjetar is very similar and frequency of stud handled bowl increases in these cases and also the frequency of painted sherds increases than those found at former sites. The pottery of Kanjetar are more closely resemble with Prabhasa ware (the type site Prabhasa is situated about 40 km west of Kodinar), a chalcolithic site contemporary of Harappan site (Sankalia 1974: 381).

Similarly, Kaj which was initially habited during the Harappan times and later during the historical and medieval period, has very interesting location. As mentioned earlier the location of site favour as safe harbour and archaeological evidence indicate that site might have served as a trading post on the mid-Saurashtra coast during the historical and medieval periods as evidenced from the discovery of amphorae and stone anchor from the site. The pottery of protohistoric period is very similar to that reported from Kanjetar.

## **Conclusions**

Majority of sites under discussion are non-urban in nature and perhaps they must have served as protohistoric fishing villages. The protohistoric remains further strengthened our view on the survival of Harappan tradition on the coastal areas of the Saurashtra coast towards the end of the 2<sup>nd</sup> millennium BC. The excavation and findings from the above sites indicate that coastal area of Gujarat remained the focal point of human activity even after the decline of the Indus Civilization. However, the size of the sites reduced significantly and drastically decline in quality of living standard. Though there is continuation in pottery tradition from Harappan to late/post Harappan but other aspects such as town planning, writing system, specialized crafts are completely absent from these sites. Thus, it indicates that due to change in living conditions the people migrated to coastal areas and might have depended on the marine resources, but they could not sustain the economic pressure and left the sites within a couple of centuries and possibly transformed in local cultures. Interestingly, two sites such as Bet Dwarka is situated near Nageshwar, a mature Harappan site and Bhokhira near Kindar Kheda, represent the late phase of the Mature Harappan. Antroli located isolated between Bhokhira on the west and Prabhasa on east. Whereas Kaj and Kanjetar on the mid-Saurashtra coast must have been important centres of maritime activities during the late phase of Harappan period.

The palaeoclimatic studies suggest that there is a sharp decline in precipitation after 4000 BP, which might have been responsible for the decline in agriculture product and forced the Harappan to move coastal areas, specially on the southern Saurashtra coast. However, there is still a serious problem for archaeologists to fill the gap nearly about 500 to 700 years. Interesting, there is one each carbon<sup>14</sup>  $2590 \pm 100$  (cal. 2789-2500 yrs BP) and thermoluminescence  $3093 \pm 367$  years BP date are early dates from a historical period site in Bet Dwarka Island. If these dates are taken into consideration, then it may be reasonably argued that habitation at Bet Dwarka continued from the protohistoric period to the historical period.

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