

New evidence on Maritime Archaeology around Mul Dwarka (Kodinar), Gujarat Coast, India

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Abstract

Marine archaeological explorations have been carried out in and around Mul Dwarka (Kodinar) on the Saurashtra coast. The oldest remains are comparable with Harappan phase at Kanjetar and Kaj, both sites are situated close to the respective creeks which makes them potential sites for ancient ports or overseas trade centers. A few amphorae sherds have been found at Kaj, that suggest the site had trade contact with Roman world around the Christian era. A number of stone anchors have been found from Mul Dwarka, Chhara and Kanjetar, which are similar to those reported from Dwarka, Bet Dwarka, Miyani, Visawada and Somnath. A medieval period site at Chhara is under destruction as it is directly expose to the open sea. This site has potential for understanding the sea level changes during the medieval period on the Saurashtra coast.

Keywords: Marine Archaeology, stone anchors, amphorae, historical period, medieval period.

Introduction

Saurashtra coast has been focal point of maritime activities since the Harappan times. The coast has been punctuated with several creeks and tidal rivers those provide sheltered harbour. A few coastal sites namely Lothal (Rao, 1979), Ghogha (Gaur and Bhatt, 2008), Padri (Shinde, 1992), Hathab (Pramanik, 2004) Somnath (Sankalia, 1974), Porbandar (Gaur et al., 2004), Kindar Kheda (Gaur et al 2005a), Dwarka (Ansari and Mate, 1966, Rao, 1990, Gaur et al. 2008), Bet Dwarka (Gaur et al 2005b) and Nageshwar (Hegde et al., 1990) have been excavated extensively and the remains of maritime activities have been documented. The time bracket for these sites varies from the Harappan phase to the medieval period. Archaeological records from the Persian Gulf countries indicate that during the Harappan period traders from the Saurashtra coast plied their boats as far as Oman, UAE and Bahrain (Ratnagar, 2004). During the historical period Roman traded extensively as large amount of evidence have been recorded from the Saurashtra coast. In the medieval period Saurashtra coast witnessed hectic maritime activities which is testified with discovery of a large number of stone anchors from several sites indicate the existence of a number of ports and anchoring points along the Saurashtra coast.

The present paper deals with the archaeological remains in and around Kodinar discovered during the marine archaeological explorations. The important sites include Mul Dwarka, Kaj, Kanjetar and Chhara (Figure 1). The brief description of each site and their archaeological relevance are discussed below.

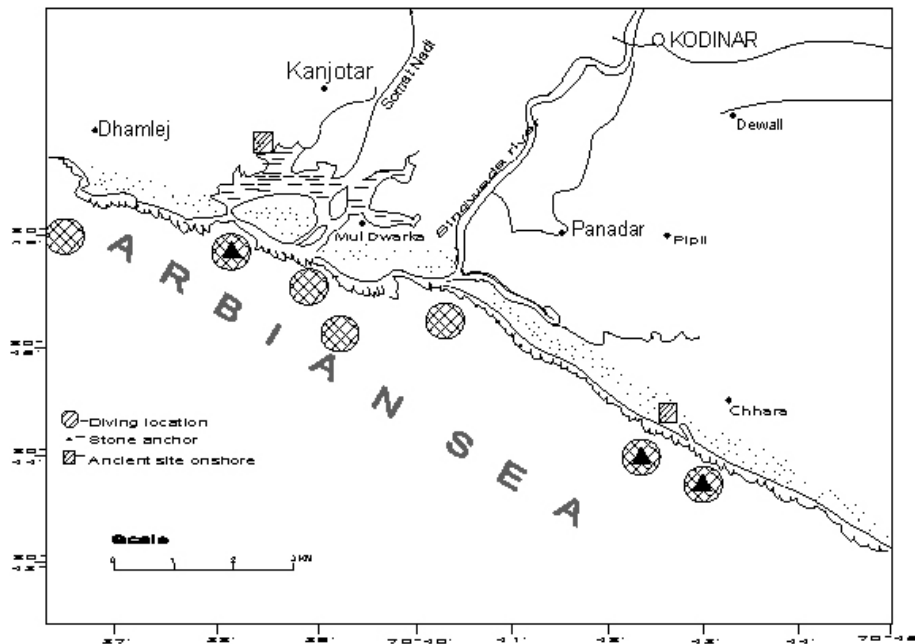


Figure 1. Map showing the location coastal offshore sites of Marine Archaeological explorations

Mul Dwarka

A small coastal village known as Mul Dwarka near Kodinar in the district of Junagad is one of the claimant of the original Dwarka of Mahabharata. The proximity with Junagadh hills on the north and sea on the south the town has been associated with Dwarka (Sankalia, 1966). An ancient temple is situated on a raised land close to the sea. The temple is in dilapidated condition and is not under worship. The shrine is dated to the post 10th century AD (Sampura, 1968). A circular structure of about 4 m in height constructed with similar type of dressed limestone blocks (Figure 2) as of the temple is situated close to ancient temple. Locally this structure is called as *Diva Dandi* (lighthouse). If this structure has served as lighthouse then this may be the oldest remains of lighthouse on the Saurashtra coast. Local fishermen informed that a few anchors similar to those of Indo-Arabia type were present but now they have either buried under new port or other private buildings, which cannot be noticed. An ancient well was noticed which is still used for drinking water source near the jetty.



Figure 2. Mul Dwarka: Ancient Lighthouse on the coast.

The exploration in inter tidal zone yielded a composite stone anchor (Figure 3). The anchor gets exposed during low tide. It is made of sedimentary rock. The anchor has an upper circular hole and lower two holes are square. The upper portion is semicircular and edges are sharp. The thickness of anchor gradually increases from 12 cm at upper end to 20 cm at lower end. The anchor is similar to those reported from Dwarka (Gaur et al., 2008) and Bet Dwarka (Gaur et al., 2005b) and dated between the historical and the medieval periods.

The offshore exploration in Mul Dwarka region revealed uneven rocky and sandy patches as major observation of seabed topography. The exploration revealed a few stones possibly used as anchors for small boats but they are not similar to those anchor found from inter tidal zone of Mul Dwarka and other places on the Saurashtra coast. There is possibility that ancient anchoring point might have been vanished during the construction of new jetty.



Figure 3. Mul Dwarka: Composite stone anchor from Inter tidal zone.

Mul Dwarka, the third site, which has been considered as Dwarka of Mahabharata period has been surveyed extensively for any submerged archaeological remains. The remains of ancient port of Mul Dwarka have been destroyed due to the construction of cement jetty. However, discovery of a composite stone anchor and report on some grapnel type anchors from Mul Dwarka suggest that this was also an active port town during the historical and medieval periods. An ancient lighthouse may be dated to the 12th-15th century AD may be another indication of active maritime activities in this region. A tidal river, which has been blocked due to a sand bar (may be due to the construction of cement jetty) flows western side of Mul Dwarka village. Archaeological findings from Mul Dwarka suggest that this was a historical period settlement and was very active port during the medieval period.

The underwater investigations in and around Mul Dwarka (Kodinar) have been of significant in respect of understanding the archaeology of this region. Now the data of underwater explorations from all the three Dwarka on the Saurashtra coast are available and the most common aspects of them is the present of similar type of stone anchors, therefore, the tradition of Dwarka at these places might have been existed at a same time (in the Early Medieval Period). Another common aspect of these sites is the

presence of Harappan and late Harappan settlement within close proximity, for example, Nageshwar and Bet Dwarka near Okhamandal Dwarka, Kindar Kheda near Mul Dwarka (Visawada) and Kanjetar and Kaj near Mul Dwarka (Kodinar). All the three Dwarka have ancient temples dated to the 10th -12th century AD. Nonetheless, these sites were ancient busy ports and perhaps temples were served as coastal marker point for navigator and also they worship before embarking on the long voyage.



Figure 4. Kaj: Lower portion of amphora, the remnant of Indo-Roman trade.

Kaj

Kaj is situated about 10 km east of Kodinar town on Dwarka and Bhavnagar highway. The ancient mound 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. However, proximity to sea (Figure 4) suggest that once this was an extended creek and during high tide sea water extended up to Kaj and further northern side. This has been reported earlier as a Late Harappan settlement (IAR, 1957-58:19).

The major part of the site is under cultivation and spread over a several hectares area. However an area of approximately 500 m X 500 m is fully preserved. The surface observation suggests a few house complexes. A large number of pottery spread all over the area. The collection during the explorations yielded a large number of pottery of Harappan period including bowls.

Interestingly, in one of the agriculture fields a handle of an amphora was collected and a lower part of an amphora (which was found during digging of a well in the field), which served as water storage for washing hand (Figure 5) in the field before we brought to NIO. Other stone artifact worth to mention here is a ring stone type anchor (Figure 6), which was noticed just before entering to the site. This is about 50 cm in height and diameter of the same dimension with a hole through in the middle. This is very similar to those reported from Dwarka and Somnath (Gaur, et al., 2004). With the discovery of 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 last several centuries, which led to abandonment of the port.



Figure 5. Kaj: Ring stone anchor lying on the outskirts of ancient site at Kaj.

Onshore explorations at Kaj reconfirmed the existence of a Harappan settlement, which was situated on the bank of a creek joining the sea near Div Island. However, the creek has been blocked by an artificial bund and now rainwater accumulates in the creek, which serves as sanctuary for migrant birds. During the explorations a large number of pottery of Harappan and historical period was recovered and among them two large parts of amphorae were also collected which suggest that Kaj might have served as a historical period port on the mid Saurashtra-Kathiyawad coast where boats of foreign origin have visited and must have been a halting station between Bet Dwarka (Gaur et al 2005b & 2006) and Hathab (Pramanik, 2004). Topographical features of the region indicate that in the past ancient site of Kaj might have been approached through the sea route.



Figure 6. Kaj: Ancient site of Harappan and the Historical period is located close to the creek.

Chhara

Ancient site of Chhara is situated about 6 km south east of Kodinar on the seacoast and about 1 km from the present village. A temple dedicated to Shiva known as Somadev is situated over the mound and the cremation ground is located on the mound. The site is being damaged regularly by sea waves as they directly hit the site. A large number of pottery and bricks are scattered all over the area (Figure 7). The sizes of bricks and pottery suggest that site belong to the historical period. The archaeological site of Chhara has been reported as Red Polished Ware of the historical period (IAR, 1957-58).

The underwater exploration off Chhara was carried undertaken opposite to the ancient mound, which is located just on the coast. The seabed topography is comprised of rocky and uneven surface with water depth varies between 4 to 7 m. Two stone anchors were found from this area. The brief description of each is as follows.



Figure 7. Chhara: A large number of rolled potsherds are spread in a large area exposed due to wave action.

1. Broken composite type anchor with a square hole was found lying trapped between the rocks. The anchor is made of limestone. It has a smooth surface and edges are blunt.
2. Small rectangular shaped composite anchor was found in a channel. It has a circular upper hole and a square hole at lower side. It is made of porous limestone. It has a rough surface and blunt edges.

Onshore explorations at Chhara revealed a site exposed to the open sea, which is being regularly destroyed by the wave actions. The pottery from the surface collection suggests an early medieval settlement. Onshore excavation of the site may reveal data related to maritime activities and sea level changes of the historical period, similar to that reported from Bet Dwarka (Gaur, et al, 2007).

Kanjetar

There are two mounds in the coastal village of Kanjetar. 1. Situated on the eastern side of village where a temple dedicated to Mahakali is situated. The exploration brought an early historic settlement. An ancient rock cut step well (Figure 8) was also noticed near this settlement which may be contemporary the site. While surface exploration a terracotta wheel of toy cart with projection for hub was also noticed. Other mound (of Harappan phase) of Kanjetar is situated about 2 km west of the village. Entire mound is under cultivation. A large number of pottery has been collected confirming as bronze age settlement. Local residents of the area revealed that in the course of digging for the foundation of houses a large number of pottery and structures were encountered. In archaeological literature Kanjetar has been mentioned as a Harappan port on the mid Saurashtra coast (Ratnagar, 2004). The possibility of being a port is existed as the site might have been approached through sea route via a tidal river. Perhaps a small-scale excavation at the site may reveal some evidence related to the port.



Figure 8. A Rock-cut step well close to a Historical period site at Kanjetar.

A tidal river flows on the eastern side of the village Kanjetar and at present it is blocked by a sand bar. The seabed off the river mouth is comprised of sandy and rocky patches and very similar to that found at Dwarka, Miyani and Visawada. The exploration revealed an Indo-Arabia type stone anchor from a water depth of 4 m. This is a broken and only its upper portion was traced. It has an upper circular hole. The anchor is made out of limestone. The anchor is very similar to those reported from other sites on the Saurashtra coast (Gaur et al. 2005c).

Dhamlej

Underwater exploration has been undertaken at water depth of 5 to 6 m off Dhamlej Bandar. The seabed in this area is comprised of smooth rock formation and at places circular pits. Perhaps these must have been formed due to some natural phenomena. No other archaeological artifacts were found from the site.

Conclusion

The Kodinar region is rich in archaeological remains as two Harappan period sites are located at Kanjetar and Kaj respectively. Similarly, historical period remains have been traced at Kaj and Mul Dwarka. The discovery of amphorae sherds from Kaj indicate that another settlement with Roman trade was situated between Bet Dwarka and Hathab as these two sites have been mentioned in the Periplus of the Erythrean Sea. Perhaps this lost the importance as a port during the medieval period when Veraval, Mul Dwarka and Div emerged as leading trade centers. Another site of late historical and early medieval period at Chhara has interesting location and part of it submerges during the highest high tide.

The evidence suggest that coast has gone under change during early medieval period may be due to sea level changes. Marine archaeological investigations in and around of Mul Dwarka region has yielded the remains stone anchors at Chhara, Kanjetar and Mul Dwarka, which indicate that during the historical and the medieval period these were active maritime trade centers. It will worth to mention the discovery of a medieval period lighthouse on the shore of Mul Dwarka.

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References

Ansari, Z.D. and M.S. Mate 1966. *Excavations at Dwarka* (1963). Pune: Post Graduate Research Institute, Deccan College.

Gaur, A.S. Sundaresh and A.D. Odedra 2004. New light on the maritime archaeology of Porbandar, Saurashtra coast, Gujarat *Man and Environment* 29(1):103-107.

Gaur, A.S. and Sundaresh 2005a. A Late Harappan port at Kindar Kheda, *Man and Environment* 30(2):44-48

Gaur, A.S., Sundaresh and K.H. Vora 2005b. *Archaeology of Bet Dwarka Island: An Excavation Report*. New Delhi: Aryan Books International.

Gaur, A.S., Sundaresh and Sila Tripathi 2005c. Maritime History of Saurashtra-Kathiyawad coast: Study based on the marine archaeological investigations, *Royal Asiatic Society of Bangladesh* 50:159-195

Gaur, A.S., Sundaresh and Sila Tripathi 2006. Evidence for Indo-Roman trade from Bet Dwarka waters, West Coast of India, *International Journal of Nautical Archaeology* 35(1):117-127

Gaur, A.S., K.H. Vora and Sundaresh 2007. Shoreline changes during last 2000 years on the Saurashtra coast of India: Study based on archaeological evidences, *Current Science* 92(1):103-110

Gaur, A.S. Sundaresh and K.H. Vora 2008. *Underwater Archaeology of Dwarka and Somnath (1997-2002)*. New Delhi: Aryan Books International.

Gaur, A.S. and Bhatt, B.K. 2008. Marine Archaeological Explorations on western

coast of the Gulf of Khambhat. *Man and Environment*. 33(2):99-104

Hegde, K.T.M., K.K. Bhan, V.H. Sonawane, K. Krishnan, and D.R. Shah 1990. *Excavation at Nageswar-Gujarat*. Baroda: M.S. University.

IAR-Indian Archaeology-A Review, 1957-58. Archaeological Survey of India, New Delhi.

Pramanik, S. 2004. Hathab: An Early Historic Port on the Gulf of Khambhat, *Journal of Indian Ocean Archaeology* 1:133-140.

Rao, S.R. 1979. *Lothal – A Harappan Port Town Part-1*. New Delhi: Archaeological Survey of India.

Rao, S.R. 1990. Excavation of the legendary city of Dvaraka in the Arabian Sea, *Journal of Marine Archaeology* 1:59-98.

Ratnagar, S. 2004. *Trading Encounters: From the Euphrates to the Indus in the Bronza Age*. New Delhi: Oxford University Press.

Sampura, K.F. 1968. *The structural Temples of Gujarat (Up to 1600 A.D.)*. Ahemdabad: Gujarat University.

Sankalia, H.D. 1974. *Prehistory and Protohistory of India and Pakistan*. Pune: Post Graduate Research Institute, Deccan College,

Shinde, V. 1992. Padri and the Indus Civilization, *South Asian Studies* 8:55-66.

Sundaresh and A.S. Gaur 1998. Archaeology of Bet Dwarka, *Man and Environment* 23(2):77-86