

Ancient coastal transportation system along the Western Saurashtra coast: evidence from Navibandar

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A recent maritime archaeological exploration around Navibandar yielded evidence of ferry/jetty points. These points were well connected with the stone-paved roads. Interestingly, the roads have evidence of the use of bullock carts. Navibandar is situated on the eastern bank of the River Bhadar which joins the Arabian Sea about half a kilometre west of the village. The evidence recorded suggests that Navibandar played an auxiliary role to Porbandar port in maritime activities during the medieval period.

Keywords: Ancient coastal transportation, jetties, maritime exploration, roads.

THE recent coastal archaeological studies along the Saurashtra coast revealed the rich tradition of maritime practices and the remains of such traditions are reported from several places¹. The locations of ancient sites connected with the evidence on maritime traditions are closely associated with the present port towns on the Saurashtra coast. The historical period port at Hathab² and medieval port at Ghogha³ are still active and fishermen are using these ports regularly. A Harappan site at Padri⁴ is situated near Sultanpur, which is a small port used by fishermen. Harappan sites at Kanjetar and Kaj⁵ are closely situated near the present port at Mul Dwarka, whereas the Chalcolithic site at Prabhas Patan is situated near Veraval port.

Navibandar is about 35 km east of Porbandar on the coastal highway. Bhadar is a major river of western Saurashtra that flows into the Arabian Sea, about half a kilometre west of Navibandar Lighthouse. The river has a wide estuarine area which served as a safe harbour; however, due to regular formation of sand bar at the mouth of the river use of the harbour is limited to the small-boat fishermen only, and it could not be developed as a major harbour in the past. The coastline consists of sand dunes and vegetation around the habitation. Navibandar is still a fishing port. It was a part of the Porbandar Princely State and an important transit centre-cum-check post before independence. Presently, Navibandar village comprises of a fortified village along the Saurashtra coast. Majority of residents are 'Kharwa' (Hindu fishing community) and they informed us that Navibandar was a major port of the region in the past.

The earlier explorations have yielded the remains of ancient harbours and jetties at Dwarka and Somnath⁶, Bet Dwarka⁷, Miyani and Visawada⁸, Mul Dwarka⁹, Hathab¹⁰ and Ghogha³. The present article deals with the findings from the recent maritime archaeological exploration undertaken around Navibandar (Figure 1). The evidence on the coastal transport system provides a clue to the means of transport during the medieval period along the western Saurashtra coast. In the vicinity of Navibandar a few protohistoric sites have been recorded at Bokhira (Porbandar) and Kindar Kheda on the west and Antroli on the east, whereas a large number of historical and medieval-period sites have been reported with evidence of the maritime traditions¹¹.

Coastal exploration

An extensive exploration was undertaken around Navibandar and several remains were observed, including jetty with paved road, cannons and an anchor. A brief description of the findings is provided below.

Jetties

The River Bhadar was crossed using a ferry service at Navibandar prior to the construction of the bridge around the early decades of the 20th century. The remains of these points were observed on both sides of the river. Majority of the remains have been buried under the present jetty at Navibandar; however, on the other side of the river the remains of the jetty and road are intact. The passenger jetty with steps was constructed using large dressed stone blocks (Figure 2). Presently, the steps have been destroyed. There is another jetty probably used

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to unload cargoes, located further down the river mouth area. Though presently the area is covered with a dense growth of babool trees, a closer look reveals the remains of the jetty.

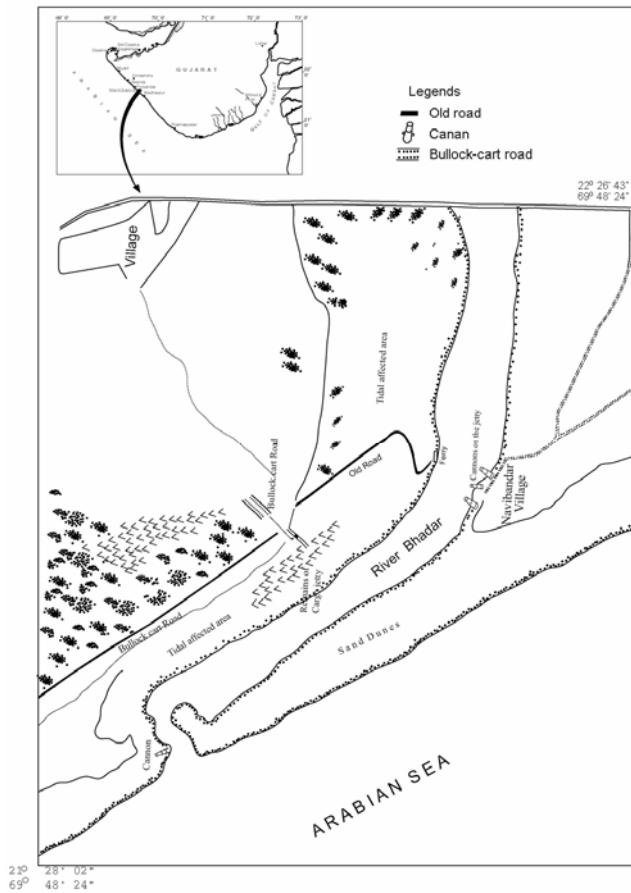


Figure 1. Map showing the location of the archaeological remains at Navibandar, Saurashtra coast.



Figure 2. Remains of a passenger jetty point on the western bank of River Bhadar at Navibandar.

Roads

A well-planned 4 m wide road, constructed with well-dressed stone was noticed on the western side of the jetty (Figure 3). It runs a little over a kilometre. Due to the estuary region, the height of the road was raised at a few places by filling the area with stone blocks. On both sides of the road a 30 cm high wall was observed at a few places, perhaps to mark the road during high tide where it might be getting flooded.

Another road running from the cargo jetty was observed further down the river. This is also 4 m wide and has been constructed with locally available dressed stone. Unlike the earlier road this is plain without any wall on the side. The most interesting feature of the road are the bullock-cart marks (Figure 4). The length of this road is about 150 m. It is made over a shallow channel of the estuary. This road was mainly used for transporting goods from the boat to the market by bullock carts and vice versa. In addition, bullock-cart marks were noticed on the rocky surface for a long distance up to the coast,



Figure 3. Remains of a road on the western bank of the estuary of River Bhadar at Navibandar.



Figure 4. Road with bullock-cart marks on the western side of the river Bhadar at Navibandar.

indicating that the bullock carts played a major role in coastal transportation system till the early decades of the 20th century.

Stone anchors

A composite-type anchor was noticed in a lane of Navibandar village within the fort. It is half buried adjacent to a house along the narrow lane (Figure 5). The upper half with a circular hole is noticeable. It is made of locally available limestone. A heap of stone anchors, presently used by the fishermen of Navibandar (Figure 6) was also noticed in a corner outside a house. They are irregular in shape with a crude hole for holding the rope.

Iron cannons

Along the Saurashtra coast, iron cannons have been used extensively for maritime purpose, specially mooring for the boats. Similarly, at Navibandar, four cannons have



Figure 5. Composite-stone anchor partially buried in a lane at Navibandar village.



Figure 6. Stone anchors presently under use by the local fishermen at Navibandar.

been used as bollard on the jetty by the local fishermen. These cannons are half buried in the jetty (Figure 7). Another cannon was found vertically erected at the river mouth. The purpose of the same is unknown. These cannons are heavily corroded and symbols or inscription could not be traced. However, based on the history of Navibandar fort these cannons may be dated to the 17th century AD and were perhaps used for defence purpose.

Offshore exploration

In view the above findings, an offshore archaeological exploration was undertaken off Navibandar. The seabed is comprised of sandy with occasional rocky patches. The exploration was concentrated between 7 and 12 m water depth. However, no archaeological artefacts were reported during the explorations.

Discussion

The Saurashtra coast has been a focal point of maritime activities since the Bronze Age¹² and continues till date. Maritime archaeological explorations all along the coast yielded ample evidence to suggest active maritime activities along the coast¹³. Navibandar has been an important maritime centre since the medieval period. According to the local information, there was a memorial stone with a boat motif but it was taken by a historian from Porbandar and presently its location is unknown (see Note 1). The oral tradition reveals that the fort was constructed by Jethwa Queen Rajamata Kalabai during the early 17th century for the protection of overseas traders and in the process generated a lot of revenue for the state (see Note 2). The maritime archaeological explorations around Navibandar have provided evidence on the coastal transport system that existed during the late medieval period. Evidence indicates that in the estuarine areas



Figure 7. Iron cannons are being reused as bollard on the jetty at Navibandar.

crossing of the river was a major challenge as the width of the river mouth is greater than the upstream region and also the area is affected by the tidal system. Thus the approach road to the ferry/jetty point was constructed using stones. The bullock-cart marks on the road and on rocky surface suggest that this was the major means of transport along the areas of the Saurashtra coast. A study of an old map suggests that the ferry point and road existed prior to 1948.

The stone anchor observed in Navibandar is similar to those reported from the closest underwater sites at Visawada and Miyani⁸, and Somnath waters⁶ on the Saurashtra coast. Thus, it indicates that Navibandar served as a port prior to the construction of the fort and the tradition continues even today though the anchors have a crude shape. Perhaps Arab boats did not visit this port, as no evidence has come to light regarding the Indo-Arab type of anchor. Thus this port has not played a major role in the Indo-Arab trading system, which is a major feature of the Saurashtra coast during the medieval period³. Porbandar on the west and Mangrol on the east were major ports during the early medieval period.

The reuse of iron cannons has been in practice for a long time along the Indian coast for maritime purposes, particularly as a bollard on the jetty. Four cannons partially buried in the jetty are presently used as bollard. With the introduction of new defence technology, the best use for these cannons was as bollard on the jetties. Similar evidences can be found at Porbandar, Veraval, Bet Dwarka and Mangrol ports.

Conclusion

It has been a well-established fact that in the past India had a systematic transport system from the 3rd millennium BC. Though an elaborate description in the literature and art on the means of transport during the historical period has been recorded, archaeological evidences are limited. Thus this study around Navibandar provides evidence on the coastal transport system prevailing during the late medieval period. The boats were used for ferrying people and cargo from one bank to another of the estuaries, and on the land bullock carts were extensively used to transport cargo. This study has also revealed information about the road construction technology that existed during the medieval period. The discovery of stone anchor is a testimony of the active maritime tradition in the region. The iron cannons have been extensively reused for maritime purposes, specially as bollard on the jetty all along the Saurashtra coast.

Notes

1. Kalubhai Natabhai Chauhan alias Badal, a resident of Navibandar informed us about the presence of hero stone with boat motif.
2. This information is based on the description provided by Badal, who has written extensively on the Kharwa community of Gujarat in Gujarati.

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ACKNOWLEDGEMENTS. We thank Shri Ashok Odedra and Vajjubhai Parmar for help during the exploration work; Shri Badal for providing information on the history of Navibandar; Shri S. N. Bandodkar and Shri S. B. Chitari for necessary help and Shri P. Pradhan, Dr Tejas Garge, Dr Manoj Kumar Kurmi and Shri Anil Kumar, Archaeological Survey of India for valuable inputs during the fieldwork.

Received 18 June 2012; revised accepted 30 October 2012