

Crossing the Rivers at Fords in the Prehistory and Later Prehistory: Tracing the Probable and Lesser-Known Movements

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ABSTRACT

Crossing the Rivers at Fords in the Prehistory and Later Prehistory: Tracing the Probable and Lesser-Known Movements is focused on the prehistoric and early historic sites located on the perennial rivers of south India. This topic suits Session 22, Underwater Cultural Heritage and Maritime Museums. The region has potential archaeological site-centric data on the cultural heritage of the perennial rivers due to the lack of methodological frameworks we have known least on the inland (short/long distance) water navigation network and the frequent river crossing patterns adopted by the ancient societies. The significance of rivers in inland routes has taken the lesser focus of Indian Archaeology, except for several studies centred on the Ganga-Yamuna rivers and coastal ports of the Indian Peninsula. The rivers Kaveri, Krishna, Tungabhadra, and Bhima, origin from the Western Ghats in south India, flow through several ecological regions and plateaus on reaching the Bay of Bengal. At several places, these rivers have broader (1-1.5km in width) and narrow channels cutting through the plains and valleys. Early sedentary villages and larger settlements leading to urbanisation seem connected with the rivers. For example, Neolithic and Megalithic site complexes (T-Narasipura and Koppa, Talakadu and Kaveripattinam on the river Kaveri; Sannati-Kanaganahalli on the river Bhima; Nagarjunakonda on the river Krishna are few sites that hold a prominent discussion in this paper. There need to be more conceptual and methodological frameworks for such topics that pose point-blank-range challenges to research. What archaeological and cultural materials (directly or contextually) can support such studies, and to what extent the geolocations and the local geomorphological characteristics can support the inland navigation are to be assessed. Hence, this paper is the beginning of new research directions and will contribute to developing methodological perspectives towards the cultural heritage of perennial rivers.

Keywords: River Crossing, Fords, Ferries, South India

INTRODUCTION

The Indian rivers are both perennial and non-perennial rivers. Perennial rivers are fed by the Himalayan glaciers, draining Indus, Ganges, Yamuna, and Brahmaputra systems. While connecting to the archaeological site distributions, much of the later prehistoric and early historic sites are reported along the Indus and Gangetic riverine systems. They likely played ecological implications on the rise and spread of the first and second urbanisation of Viz Indus Valley Culture in the second and third millennium BCE and Ganga Valley culture during the first millennium CE. The central and southern part of India is drained by the non-perennial rivers fed by the monsoonal precipitation originating from the Western Ghats, such as the river Godavari, Krishna, and Kaveri, major river systems traversing various geological formations on their confluence into the Bay of Bengal in the east. Much of the archaeological sites of prehistoric cultures are reported from the near river banks and at their tributary channels. By the early historical period (300 BCE- 800 CE), the concentration of the settlements increasingly happened to be located on the river banks in southern India. Such broad archaeological and temporal distinction is noticeably clear in the geo-cultural studies of the river-based settlement developments in Indian archaeology.



Figure 1: Major Rivers of India. Source: www.mapsofindia.com

CASE STUDIES

Case study 1, river Krishna

Krishna is another major river of Southern India originating from the Western Ghats and confluences with the Bay of Bengal by crossing 1400 km. The river Krishna has a wider channel in its middle reaches ranging from 1 km to 1.5 km in the region of Raichur (also called Raichur Doab and the north bank is associated with the geography of Shorapur Doab. In monsoonal seasons, the river flows with massive water discharge disconnecting the north and south bank inhabitants. This disconnection and uneasy river crossing is also reflected in mediaeval warfare records. Archaeological studies have reported many prehistoric sites across the river Krishna at the Raichur (see Korisettar 1979; Paddayya 1974; Arjun 2018, 2021). On either side of river banks, the density of middle Palaeolithic and Mesolithic/ microlithic sites are exceptionally higher, ranging from 35-40 areas spreading at the river

stretch of c. 30km. The Palaeolithic and Mesolithic economies were engaged in foraging for food resources and raw materials for their stone tools; their occupational location on the river banks indicates frequent river crossing.

Case study 2, river Tungabhadra

River Tungabhadra is a significant tributary of Krishna and the region of their confluence forms Raichur Doab in the Raichur and Bellary regions. And this is also a part of the core Southern Neolithic culture developed during 3200-1200 BCE. Of many well-studied Neolithic sites, Halluru can be contextually discussed here. Halluru is located on the left bank of Tungabhadra, a significant Neolithic-chalcolithic site showing potential agricultural development during c. 1400-1100 BCE continues to develop further in the Iron Age phase until the dawn of 100 BCE (Nagaraja Rao 1971). Excavations have revealed the cultivation of crops such as cotton, millet, and rice. Though much of the Neolithic settlements were concentrated on the smaller stream orders and isolated hillocks, sites like Halluru, Brahmagiri, and T- Narasipura remain focused on riverine environs. Several Iron Age and Early Historic sites are reported from the riverine areas of Tungabhadra in the region of Hampi. At the outset, Hampi itself was a significant capital city of a mediaeval kingdom, the Vijayanagara.

Case study 3, river Kaveri

River Kaveri originates from peaks of the Western Ghats in the Coorg Plateau in Karnataka and flows through 805 km and conflux with the Bay of Bengal in the east. The river flows through narrow and steep gorge cutting across the valleys and gains momentum, often causing flash floods in the upper reaches (Kale et al. 2010; Kartika et al. 2018) until it enters a relatively plain landscape in the middle reaches. Recent archaeological surveys in 121 sq. km. of an area on the river bank of Kaveri and its tributary stream Harangi recorded 39 Iron Age period sites (Fig. 1 and Table 1) relatively datable to first millennium BCE (see Arjun et al. 2018; Arjun 2019, 2021). Such a high density of sites on either side of the riverine valleys indicates frequent crossing over the c. 100-150m broad channel river banks.

Case study 4, river Bhima

Bhima is a tributary river of Krishna, originating in the Western Ghats of Maharashtra and flowing south-east towards Krishna in Karnataka. The confluence region is known as Shorapur Doab. Shorapur Doab is the earliest occupational site in human and cultural evolution, dating to 1.2 million years. Along the Bhima River, the upper and Middle Bhima basin is reported with a number of Chalcolithic and Early Historical sites. At the lower basin, site complexes like Sannati, Kanaganahalli and Ranamandala developed as a marker of early urbanisation in the region with increasing significance for Buddhist monasteries and Stupas. Bhima and further along the river Krishna, Nagarjunakonda and Amaravati show the high probability for inland navigation connecting multiple early historic Buddhist sites during the Satavahana reign (100 BCE- 300 CE). In this session, see the paper 'Geospatial Study of Early Historic Sites and Navigation Potentialities at the lower reaches of River Bhima, South India' for more details.

Overall, this paper attempts to identify major archaeological settlements in Karnataka ranging from prehistoric to early historic periods located on the rivers such as the Krishna, Tungabhadra, Bhima, and Kaveri. Though there is a lack of direct physical evidence for the navigation infrastructure, the geolocation of the sites and socio-economic activities indicates the human association with the river in knowing the fords and engaged in crossing over the riverbanks by foot or using wooden/ thatched ferries depending on the year-round seasons must have been an inevitable part of sustenance.

RESOURCES

Research conducted on the line of crossing rivers and fords based on the geolocations of prehistoric and early historic sites are almost nil, except random attempts made by Allchin and Allchin. The archaeology of river crossing by Allchin and Allchin (1962) attempted to identify geographically strategic locations, such as valley passes and river confluences, in the context of trade routes connecting various geographic regions with prominent settlements. They mapped a few megalithic sites on the river of Krishna near the Raichur and discussed the possible activities engaged in crossing over the rivers on ferries likely in the modern period before the advent of rail/roadway bridges.

Archaeological sources

Large-scale archaeological data is available in the form of prehistoric and historical period sites located along the river banks of Krishna, Bhima, and Kaveri (e.g. Korisettar 1979; Paddayya 1974; Nagaraja Rao 1971; Allchin and Allchin 1962; Allchin 1954; Arjun 2018, 2021; Munn 1934; Paddayya 1971; Subbarao 1948; Sundara 1969; Varaprasada Rao 2002). The resources to conduct this research is handicapped by the lack of research conducted on the technology and tradition of river crossing

Historical sources

Though there are references to trade routes running through the river banks and often crossing the rivers to enter other regions and trading centres, they largely remained at the Ford location to cross over. Often, during the battle, the army crossed the rivers during the low tides, and in the case of high-water flows, they camped on the river banks waiting for the river water to recede. There is a corpus of reports on the trade routes (Lahiri 1992; Begley 1981; Chakrabarti 2010) and places of religious importance (e.g. Seshadri and Sundararaghavan 2012) developed throughout the historical period along the mighty rivers throughout its journey and often indicates prominent locations meant to cross over the rivers.

Framework and results on prima facie study

As discussed above, direct physical archaeological sources in the form of ferries, anchors or any associated infrastructures addressing river crossing and identification of fords needs novel methodological initiatives. As many sites of different prehistoric and historical cultural phases are reported on the river banks and closure to river banks, it conjecturally indicates a close association of the people with the rivers and crossing over them to move beyond foraging for food resources and procurement of raw materials. During the early historical period, as the trade routes formed throughout the rivers or crossing over the rivers, landmark fords must have begun to play a crucial point of activities during the monsoon and post-monsoon. As the rivers are non-perennial, multiple approaches in the river crossing must have been determined subject to seasonal variations. One can walk through the river bed if the water level is below knee length or on a dry bed, usually during the summer. In the monsoon and post-monsoon, the river may pose suitable conditions to navigate as crossing over by foot is hampered. To cross over the river, the medium of transport must have been likely a smaller ferry made of bamboo and wooden trunks.

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