CHAPTER 5: EARLY HISTORIC TRADE

5.1 Concepts, Theories and Models

Trade and other forms of exchange among people are important aspects of research in the archaeology of early civilization. There has been considerable progress in this area of research resulting in a specialized study of trade and exchange. This area of research has witnessed methodological changes in our approach to understanding the dynamics of trade and exchange.

This chapter discusses the nature of trade during the Early Historic period in the study area: establishing the trade network of the region; listing the commodities, identify their provenance, and trace the river and land routes long which the movement of goods took place. A brief summary of different approaches and models on trade is given below, which is followed by the presentation of literary, inscriptional and archaeological data relating to the study area.

The term trade is difficult to define and requires a comprehensive approach as it covers a wide range of aspects touching on different spheres of human activity. Trade may be defined, in a broad sense, as the exchange of goods through peaceful means (Chang 1975: 211, 221-222: Renfrew
It is difficult to differentiate between trade and exchange, if the exchange activity of a particular region is not corroborated by concrete evidence, as exchange is the spatial distribution of materials from hand to hand and social group to social group (Earle 1982: 2), whereas trade involves use of money as well. Adam (1974: 239-245) observes that "ancient trade is often too narrowly identified with habitual patterns in the movement of goods, and the study of trade factor not only requires new field and laboratory data, but also the awareness of ethno-historic, historic and ethnographic studies that are already responsive to a richer and more valid research paradigm". In the study of trade, importance is given to ecology-based geographical units of analysis of progressively increasing size and complexity, with different forms and degrees of social interaction characterizing each. In the study of trade and exchange, a distinction is made between internal exchanges taking place within the specific society, and external trade or exchange where goods are traded over much greater distances, moving from one social unit to another (Renfrew and Bahn 1991).

Two different approaches are being followed by archaeologists in the interpretation of trade: (a). analytical approach which involves typological studies for establishing trade relation between two areas, and (b), theoretical development of models for the identification of the mechanism, institutional
framework and social context within which trade operated. These two approaches have their own set of parameters for the study of trade and exchange network.

**Analytical Approach**

The objective of this approach is to identify the sources of various raw materials and their production centres. There are several scientific methods such as X-Ray Diffraction, X-Ray Fluorescence, Neutron Activation Analysis. Thin Section microscopy, Optical spectroscopy, Beta-ray back-scatter, Petrological analysis and so on, which are helpful in tracing the provenance of ceramics, lithic tools, metals, glass, semi-precious stones, etc. (Renfrew and Bahn 1991: 314-20).

**Theoretical Approach**

This approach to trade and exchange is largely based on anthropological, geographical and sociological data. This approach plays a crucial role in the comparative studies. The following are the different methods propounded in the studies related to trade mechanism.
I. Substantive Approach

This approach focuses on three aspects namely, supply, demand and market, to reconstruct the network of primitive and ancient societies, since economic activities in these societies are governed by social relationships (Polanyi et al. 1957; Dalton 1969). Among reciprocity, redistribution and market, the last one is given more emphasis. The co-relation of exchange systems with social types has been used extensively in archaeology in an evolutionary scheme (Renfrew 1972; Hodder 1978). According to Hodder (1982: 200) "Substantist economy is concerned with two different types of analyses, the former of output and performance, and the latter of social context of exchange.

II. Formalist Approach

Locational analysis is the prime concern in this approach where distribution of a particular material is taken into consideration for identifying modes of exchange (Renfrew 1969: 157, 1977: 73; Hodder 1982: 201). This method helps in judging the amount of an exchanged item found at a site, which is described mathematically as a function
of distance of the size of the interaction/transaction centres (Hodder 1982: 201).

III. **Social Exchange Approach**

In this approach social transactions constitute the main focus where all sorts of interactions affect family structure and the social patterns (Belshaw 1968: 95). This approach has been utilized in archaeology by highlighting common access to items of external trade, which can be used as markers of social status and the role of exchange as ‘social storage’ (Frankenstein and Rowlands 1978; Halstead 1981). It involves the economic concepts of maximization and operation, the dimension of social strategies and the availability of subsistence resources and control over production (Hodder 1982: 205).

IV. **Symbolic and Ideological Approach**

This approach considers exchange as more than ‘economic’, since it takes place within a cultural, ideological and historical context (Hodder 1982: 207-209). It attempts to analyze as to how the
symbolism associated with the exchanged commodities provides
the basis of power for some groups and also the process of
legitimization of such power.

V. Trade and System Theory

In this framework, culture is considered as a system
which again is divided into many ‘sub-systems’. Interaction
between and among the sub-systems describes the change and
continuity in a society. Renfrew (1972) applied this systems
theory model in the Aegean in connection with the emergence
of civilization. In this culture change is not explained in terms
of diffusion or adaptation but in terms of a multiplier effect.
Even important aspects like environment, development,
population growth etc. are not taken into consideration.

VI. World System Approach or Centre-Periphery Model

Wallerstein (1974) developed this approach for the study of
capitalism in Europe. Champion (1989: 2-13) observes that, “the kind
of relationship (centre and periphery) typically analyzed in this way
has been comparatively small scale, within a defined zone, whether that is geographical entity, such as an island or a river drainage or a historically defined polity, and focuses on a single central point, whether a small settlement in relation to the resources in its catchment area or a large urban centre in relation to its hinterland.

The application of this approach to the ancient cultures has been critically examined (Basa 1995). According to Rowlands (1987: 51), "the exchange system of recapitalized societies was different from that of the capitalist ones since in the former case the form of exchange is more politically motivated and directed towards control over persons rather than the directed towards control over persons rather than the direct intervention in the technological conditions of production and commodity exchange". In the recent years, the world system perspective has been widely reviewed and applied in a broad sense by considering the ideological and cosmological aspects which were ignored by the earlier workers (Basa 1995). In world system perspective, trade is organized at three levels: pan-regional, regional and local. Thus it contextualizes the ‘centre-periphery’ approach in archaeology. This approach is relevant to both varied landscapes and a single geographical region.
VII. Commercial Development Model

This approach emphasizes the economic growth, which results in specialization and exchange. When the economy spreads, it enables individuals to take the advantage of the benefits of specialization and exchange, there is an increase in social complexity (Parsons and Price 1971; Million 1973).

VIII. Ethnographic Model for Trade and Exchange

In order to transcend the limitations of archaeological evidence, archaeologists often depend on ethnographic data, which help bridge the gap between a living culture and archaeological remains. Ethnographic parallels are not only useful in identifying specific objects that are exchanged but also give ample evidence to deal with the associated data that are realistic in terms of actual behaviour (Chang 1972). People living in diverse ecological and physiographic zones exploited resources and exchanged them with others for objects they did not possess. The exchange network takes place in two forms: (i.) impersonal form of trade with little oral communication or close face to face contact that has been termed as ‘silent trade’ (Price 1980)
and (ii.) trade in general form. This trade also includes regional and inter-regional perspectives (a) Long distance type between traders from traders from state societies and people from primitive tribes, and (b) Short distance trade between traders from chiefdoms and tribes with the people from organized societies.

5.2 LITERARY AND INSCRPTIONAL EVIDENCES

i. Sangam Literature

The Sangam literature, an anthology of love and war poems in Tamil, serves as a primary source of information for the early historic period, which is otherwise called the Sangam Age of Tamilakam. The major works of the Sangam corpus are, *Ettutogai* (Eight Anthologies) and *Paththupattu* (Ten Idylls), collectively known as *Pathinenmelkanakku* (18 major works). The literature narrates the day-to-day life of people residing in five-different landscapes, namely, *Kurinji* (the hilly zone), *Mullai* (pastoral zone), *Marutam* (the riverine zone), *Zeytal* (coastal zone) and *Palai* (the arid zone), as conceptualized by the poets. The first three centuries of the Christian Era is the widely accepted date for the composition of the Sangam Literature,
though there are debates about the exact chronology. The *Purananuru* and *Ahananuru* are the most important Tamil poems referring to Roman trade. They make specific reference to *Yavanas*, who brought gold and wine to south India, undoubtedly indicating that these *Yavanas* were Romans. We also know through other sources that gold and wine were among the chief commodities of export from Rome to India.

*Yavanas* were in great demand in ancient Tamil Nadu owing to their technical abilities as builders, carpenters and blacksmiths. Some of the Tamil kings even employed the *Yavanas* to produce sophisticated warfare, specially ‘Siege engines’.

The *Manimekalai* (19, 107-108) mentions, artisans from distant northern kingdoms such as Avanti and Magadha. They worked with Yavanas to build the splendid city of Kaveripattinam or Puhar on the Coromandel coast. The *Silappadhikaram* (5-10) mentions a *Yavana* settlement in this city.

The poem *Mulleipattu* (59-62) alludes to the fact that Yavanas were strong and well-built, equipped with ‘murderous swords’, ignorant of the
Tamil language and had no local sympathies, formed ideal gatekeepers or bodyguards in the palaces and forts of ancient Tamilakam.

The Tamil poems also refer to the Yavana lamp that was known for its steady flame without a flicker. Such lamps were in great demand in India. These exotic lamps were indeed a novelty to the Indians. The poem Perumbanatruppadai (311-319) refers to a Yavana lamp in the shape of a swan. Another poem named Nedunalvadei (101-103) describes a different variety of Yavana lamps crafted as statues of women, holding in their folded palms, the tahali or bowl to contain the oil for lighting the lamp. These lamps are very similar to the pavai vilakku- a female figure, in metal, with a lamp in its hands- used in some homes and temples of Tamil Nadu to this day.
5.2.2 Western Accounts

The principal Graeco-Roman books dealing with the trade include *Naturalis Historia* or *Natural History* by Pliny (77 A.D.), the *Periplus Maris Erythraei* (80-89 A.D.?) and Geography by Claudius Ptolemy (150 AD). These Graeco-Roman works are more useful than the Tamil poems not only because they provide more detailed and accurate descriptions of the trading networks and goods, but also because they are precisely datable. Thus, a comparative study of the information provided in these classical texts reveals a clear picture of the gradual development of the trade. These texts collectively confirm that trade slowly began on the Malabar coast around the 2nd - 1st centuries BC and steadily shifted to the Coromandel coast by the 1st century AD. Thus, while the periplus (1st century AD) provides limited information on the east coast of India, Ptolemy’s Geography (2nd century AD) contains copious references to the Coromandel ports.

The most noteworthy Graeco-Roman work is the *Periplus Maris Erythraea*, which refers to the sea that included Red Sea, the Gulf of Aden and western Indian Ocean. It is believed to have primarily served as a guide book for ancient sailors of the Indian Ocean. The author of the *Periplus* was

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probably a Greek sailor who sailed from the ports of Red Sea to the western coast of India in the last decades of the 1st century AD. The book describes the routes from Red Sea to the western coast of India, and the major harbours and emporia including Muziris and the commodities of trade.

The lists of the items of trade in the *Periplus* corroborate and substantially add to the information provided by the Sangam Literature. As per the *Periplus* (56), the items imported into India included coins, topaz, coral, antimony, copper, tin, lead, crude glass, wine and wheat. Wheat was meant exclusively for the foreign merchants stationed in India. Among the exports from India to Rome were fine pearls, diamonds, sapphires, ivory, silk, spikenard, pepper and tortoise-shell.

Like the *Periplus*, Pliny’s *Natural History* vividly describes certain trade commodities such as coral, beryl and pepper. He says that the beryl stones were found exclusively in India and were considered very valuable by the Roman (*Naturalis Historia*, XXvII-xx 76; XXI 80). It seems European coral was as valuable to the Indians as the Indian pearls were to the Romans (*Naturalis Historia*, XXXII-XI21, 23). Pliny expresses surprise at the Roman attraction for the India pepper that has neither a sweet taste nor a pleasing appearance (*Naturalis Historia*, XII-XIV 26, 29).
Apart from the above major classical works, there are many more Graeco-Roman evidences for the trade. The Roman emperor Tiberius, in a letter to Senate, castigated those who squandered their wealth on Indian gems (*Annals of Tacitus*, III. 53). Then, there is the story of the lady who took no care of her looks for her husband but saved up her Indian lotions and perfumes to impress her lovers (*Satires VI*, 464-66). The *Tabula Peutingeriana* or *Peutingerian Tables* (forth century A.D.?) records a temple for the Roman emperor Augustus at Muziris but no trace of the same exists on date. A mid-2nd century AD. Papyrus from Vienna documents the shipment of around 700 to 1700 pounds of nard, 4700 pounds of ivory, and 790 pounds of textiles from Muziris to the African port of Alexandria.

Ancient Greek and Latin sources constitute the sole evidence for the exchange of embassies between the South Indian Kingdoms and Rome. Writers like Suetonius (first-second centuries AD), Lucius Annaeus Florus (Second century AD), Aurelius Victor (fourth century AD) and Paulus Orosius (fifth century AD) mention diplomatic missions sent by the kings of India to the Roman emperor Augustus in the years 25 BC and 20 BC one of the Indian envoys received by Augustus to have been from the Pandya
Kingdom. Among the other Roman emperors to receive envoys from India were Trajan (98-117 AD), Antoninus Pius (138-61 AD) and Constantine the Great (307-37 AD). Constantine received ferocious animals and precious stones as gifts from the Indian ambassadors.
5.3 Trade and Trade Routes

5.3.1 Trade Routes in Tamil Nadu

It is widely accepted that trade is considered as one of the chief traits of state society. Trade played an important role in the territorial expansion during the early historic period. Exchange of commodities among the various places of Tamil Nadu as well as to other regions of south India were one of the factors responsible for the rise of commercial centres/markets which later developed into urban centers (Fig. 88). Direct barter was a common mode of exchange as known from the literature (Purananuru 33: 1-6). Rice and salt were popular in the barter trade 'as a common measure of value' because of their demand and storability (Singaravelu, 1966). The salt merchants traveled on their bullock carts exchanging salt for paddy (Ahananuru 140: 7). Indirect evidence of exchange of goods is also available from the archaeological record. The occurrence of shell (Turbinella pyrum), fish bones, and cowrie (Moneta moneta) shells of marine origin in the interior regions of Tamil Nadu is a definite archaeological evidence for the exchange of goods (Selvakumar, 1996; cf. Smith, 2002: 140-141). Trading was a profit-oriented activity and thus attracted the Paratavars, who were
Fig. 88: Map showing Trade centres and Ports in Tamil Nadu
mainly fishermen and salt makers (Maloney, 1969), suggesting the participation of locals in the trade activities.

The variation in the landscape and the differential distribution of resources created a structural disparity that seems to have encouraged the trade and exchange activities. The development of interest for products of the hill region (venison and areca nut) in the coastal region and vice versa (i.e. fish and salt from the coastal region) definitely shows active interaction among the various regions. Perhaps such a demand for a variety of goods among the regions required specialized traders. The term ‘vanikan’ was used to denote traders and cattu to caravans. Traders moved in groups and employed yavanars (foreign bodyguards) for their protection from robbers. The Tamil-Brahmi inscriptions at Mangulam and Kodumanal refer to nigama (guild or corporate bodies) attesting the trading organizations. The Alagarmalai inscription (in Madurai district) of the 1st century BC refers to salt merchant (uppa vanikan or umanar), jaggery or toddy (?) trader (panita vanikan), and trader in ploughshare (kolu vanikan) (Mahadevan, 2003) as the donors of caves for heterodox sects. The Cirupanarrupadai mentions that the carts of salt traders traveled long distance for selling salt. Pattinappalai has a reference to paddy that came by boats moored at Kaveripattinam. The cities of Puhar and Madurai had very active markets.
known as *angadis* (Champakalakshmi, 1996: 106). It appears that various
groups right from the tribal of the hill areas to the fishermen of the coastal
area participated in trade (Stiles, 1993; Gupta, 2002; Selvakumar, 2002) (see
Table below). The extensive nature of the trade network is attested by the
presence of fragments of Rouletted Ware and pottery with Tamil-Brahmi
inscriptions at the inland (rural) settlements of S. Pappinayakkapatti and T.
Kallupatti in the Gundar Basin.

**Table 3: Specialized Traders of the Early Historic Period**

<table>
<thead>
<tr>
<th>Item of Trade</th>
<th>Name of the Trader</th>
<th>Type of Evidence &amp; Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt</td>
<td>Umanar or Uppu vanikan</td>
<td>Arch: Pottery from Uraiyur</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ins: Alagarmalai Inscriptions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lit: <em>Cirupanarrupadai</em>;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Ahananuru</em> 140</td>
</tr>
<tr>
<td>Jaggery/toddy(?)</td>
<td>Panita Vanikan</td>
<td>Ins. Alagarmalai and Pugalur</td>
</tr>
<tr>
<td>Ploughshare</td>
<td>Kolu Vanikan</td>
<td>Ins. Alagarmalai</td>
</tr>
<tr>
<td>Gold</td>
<td>Pon Vanikan/ponkolvan</td>
<td>Ins. Alagarmalai</td>
</tr>
<tr>
<td>Bead or Gem testers</td>
<td>Mani vannakkan</td>
<td>Ins. Alagarmalai and Pugalur</td>
</tr>
<tr>
<td>Textile</td>
<td>Aruvai vanikan</td>
<td>Ins. Alagarmalai</td>
</tr>
</tbody>
</table>

(after Mahadevan, 2003: 60 & 141)
Arch: Archaeological, Ins: Inscriptions, Lit: Literary
5.3.2 Long Distance Trade and Contacts

Trade and contacts with North India

The ancient Tamilakam in the beginning of the early historic period rose above the intra eco-zone trade to active inter-regional trade with other provinces of the subcontinent. This inter-regional trade must have begun much before the 1st century BC, when trade with the Mediterranean region commenced as attested by the presence of Rouletted Ware in the Pre-Arretine level at Arikamedu. More research is necessary to ascertain this. The Indian Ocean trade must have incorporated the already existing local trade networks and exchange systems. The evidence of NBPW from Alagankulam and Korkai, references to the pearls of the Pandyan country in the Kautilya's *Arthasastra* (Arunachalam, 1952), the possible source of Rouletted Ware—abundantly found at the coastal sites of Arikamedu and Alagankulam—being the Bengal origin, the presence of Tamil-Brahmi inscriptions with a mix prakrit words, concepts such as nigama, performances of sacrifice (e.g. Rajasuya) by the chieftains of the Sangam age, rock shelters with beds dedicated to the Jaina monks with inscriptions, bricks and tiles comparable in form and size to those from the North India, presence of the Mauryan punch marked coins, and Red Polished Ware
sherds from Arikamedu and Kaveripattinam highlight contacts with the Deccan and the north. There must have been migration of people from North India, though one is not sure about the nature, intensity and the precise chronology of these migrations. Some of the traders perhaps migrated from North India and participated in trade activities. The terms such as Nigama and Visaki in the Tamil-Brahmi inscriptions at Kodumanal are taken to indicate the presence of merchants from Deccan and Andhra Pradesh (Champakalakshmi, 1996). There are references to ‘v angam’ as a type of ship and ‘kalingam’ as a type of cloth in the Sangam literature. It appears that ‘kalingam’ cloth was made in the Kalinga region. Does ‘V angam’ refer to a type of boat made in Bengal?

Gogte (2002) argues for the colonization of the Coromandel coast by the traders from Bengal and political control based on the material culture evidence especially that of Rouletted Ware. How does the appearance of bricks and new types of pottery can be explained? Do these new material remains indicate new groups of people? Though these material remains could have been introduced by the migrant traders, it is far fetched to assume that traders from Bengal single-handedly set-up and operated the ports and ‘ruled substantial part of South India’ without a critical analysis of the
material remains and the historical processes. For example, there are references to the Chola king collecting duties on the commodities at Kaverpattinam (Pattinappalai 120-136), which is a clear evidence for the political control of the Cholas over the port. Similarly, Arikamedu/Virampattinam was under the control of Thithan of Virai according to the literature.

5.3.3 Trade with the Mediterranean and East Asia

Long distance trade connected the Tamil country with the Mediterranean region and Southeast Asia through the Indian Ocean trade network (Warmington, 1974; Begley and De puma, 1991; Gupta, 1997; Rajan, 2002). The impact of the overseas trade was high in peninsular India, especially the Tamil country, since the direct sea-route to the Mediterranean region was very active after the ‘discovery’ of the monsoon winds by Hippalus (Fig. 89). The luxury items such as Roman gold, silver, wine and table ware were imported and spices, beads of semiprecious stones and fine cloths were exported. The Greco-Roman texts and the discovery of coin hoards point to the large amount of gold that went to India because of pepper/spice trade. Amphorae, a jar used for importing wine and other
Fig. 89: Map showing important sites on the ancient trade routes between Rome and India.
commodities (garam sauce and olive oil) occur at many sites on the Coromandel Coast such as Vasavasamudram, Kaveripattinam, Arikamedu, Alagankulam, Kudikadu, and Korkai, and on the Malabar coast coast at Pattanam. Apart from the Mediterranean pottery such as amphorae and Arretine (*terra sigillata*) found in India, the materials of Indian origin found at Jaffna in Sri Lanka, Beikthano in Burma (Thaw, 1968: 64), Thailand (Shanmugam, 1993), Indonesia, Quseri-al-Qudim and Berenike on the Red Sea coast, Egypt (Tomber, 2000; Mahadevan, 2003) attest to this trade. The Sinhalese-Brahmi inscriptions identified at Arikamedu, Alagankulam, Kaveripattinam and Kanchipuram point to strong foreign contacts. The Sangam literature mentions that the people of Kaveripattinam could speak many languages, as numerous traders visited the port from various regions. The traders from all regions- Tamil country, Andhra, Sri Lanka and North India could have been involved in overseas trade. The distribution of the Roman coins and other artefactual remains in the Tamil country suggest that the wealth generated through this trade was distributed among the local population. This trade must have been a major source of economic gain for the various groups involved in trade, since a definite increase in the variety of archaeological remains from the excavated sites is seen with the onset of this trade.
3.4 Overseas Trade at Arikamedu

The author of the *Periplus* mentions Poduke, believed to be Arikamedu, as one of the emporia on the Coromandel Coast, but he tells us very little about it or its trade. Imports from the Mediterranean, thus, are the primary source of information for understanding the history of maritime commerce at Arikamedu in particular and South India in general. Found at the site so far are fragments of shipping amphorae, cups and plates of *terra sigillata*, ceramic lamps and unguentaria, blue glazed faience and glass bowls, and perhaps gems. Most imported artefacts survive in very small fragments.

The most difficult of all questions is how to establish the identity of the traders and regulators of trade at Arikamedu. It has usually been taken for granted that the overseas trade was initiated and handled by Roman subjects. Greco-Roman involvement in the trade is almost certain from the finds. Further more, the pottery suggests that some westerners may have resided at Arikamedu on a long-term basis, but whether they controlled all the flow of trade to the west is far from certain. From the finds it is difficult to gauge what the strength of the western population might have been at any
given time, or what role the westerns might have played in the regulation of trade. On the other hand, it is evident that the architecture of Arikamedu is not Greco-Roman. The imported pottery, including amphorae, forms a mere 1% of the pottery of the site, and even pottery which seems to evolve from the western prototypes is small. The imports and derivatives from imports reflect the presence, perhaps needs, of westerners but not on a large scale.

The maritime route between the Mediterranean and Arikamedu or the Coromandel Coast in general, was probably through the Red Sea throughout the ancient period. Although the Arabian-Persian Gulf route to the upper coast of western India is of great antiquity and was in use at the time of trade with Arikamedu, archaeological evidence so far does not indicate the extension of this route to the Coromandel Coast. The Red Sea route to south India, on the other hand, is very vividly described in the *Periplus*.

On the western end of the route, Alexandria and the Red Sea ports were points of transshipment of merchandise to and from the Mediterranean. The uncertain element is whether the Malabar ports were points of transshipment for the Coromandel Coast, particularly Arikamedu.
On the basis of a study of the *Periplus*, Lionel Casson in several of his most recent publications has proposed that western ships did not sail, at least on a regular basis, to the east coast of India. In order to reconcile the evidence of western presence at Arikamedu and Kaveripattinam with that of the *Periplus* he suggests that westerners residing on the east coast were middlemen chiefly engaged in forwarding goods to associates on the Malabar Coast and not all the way to Egypt. We still do not fully understand the mechanisms of commerce between the Malabar and Coromandel coasts.

Moreover, recent analysis of sherds of “rouletted ware” from Sembiran and Pacung in Bali and Arikamedu and Karaikadu on the Coromandel Coast suggests uniformity of source materials (Ardika et al. 1993). But where the points of distribution and redistribution of luxury ceramics were remain to be identified.
5.3.5 Coastal and Inland Trade at Arikamedu

Interconnecting the overseas trade were no doubt inland and coastal trade networks (Fig. 90). To determine their extent we must rely primarily on the distribution of pottery, particularly fine wares. Dishes of what is commonly known as “rouletted ware” are the most extensively distributed of all types of pottery found at Arikamedu. Briefly stated, its presently known distribution extends over most of the eastern coast, from Chandraketugarh and Tamluk in the north of east coast to Alagankulam and Periyapattinam in the south, and to Mantai and Kantarodai on the Sri Lankan coast. Inland it has been reported from Anuradhapura in inland Sri Lanka, from various locations in Tamil Nadu and Andhra Pradesh, mostly in the plains of the Krishna and Kaveri Basins. Occasional sherds are reported from sites in Maharashtra and Uttar Pradesh as well; these most probably traveled on routes along the rivers of the Godavari and the Ganga drainage systems. Thus, the distribution of “rouletted ware” shows that the pottery or its technology was traded from a place of original manufacture. It also appears that one network on which “rouletted ware” traveled was all along the eastern sea board, including Sri Lanka; the other networks interconnected with the interior. Another fine ware vessel form, first identified at
Fig. 90: Map showing important sites connected with the Roman trade in South India
Arikamedu (Wheeler et.al. 1946: Type 10), is a bowl with stamped figurative motifs. This bowl form seems also to have traveled on the coastal route, but in small quantity and to a limited number of destinations. In the case of coarse wares, the situation might be somewhat different. A few of the distinctive vessel forms first identified at Arikamedu have parallels elsewhere; these may represent a different type of trade. Distribution of certain other coarse ware forms, such as jars with perforations, or jars/bowls with paddle impressed decoration, may also reveal short or long distance trade. Of all the graffiti at Arikamedu which can be read, only a few (Wheeler et.al., 1946: Fig, 47, nos. 15 and 20; and fig. 5.21 here) refer to the ownership of the vessel. In all three cases, the profile is of a “rouletted ware” rim profiles.

Turing to other types of information, most of the raw materials for lapidary at Arikamedu must have come from the inland region, traveling perhaps on the same routes as ceramic fine wares, through the Krishna and Godavari River valleys. Inland communication networks between the eastern and western parts of the extreme south apparently intersected at major metropolitan centres, such as Uraiyur and Karur, where ceramics and other products from different regions seem to overlap (Begley 1983: 480).
Therefore, other crafts, craft technologies, or simply ideas may have traveled on these routes as well. Like that the presence of several lapidary wasters from earlier excavations suggesting the existence of a local industry which may have been Western inspired. So what else traveled on these routed, archaeology does not clarify as yet; a variety of merchandise ranging from staples to luxury items could have been traded, some no doubt for or from the overseas market as well.
5.3.6 Items of Local and Regional Exchange in the Subcontinent

The archaeological record permits us to examine the variety of manufactured and traded items within the Indian subcontinent. The Pyramidal diagram (Fig. 91) indicates three types of trade goods found in Indian archaeological sites of the early historical period (Monica L. Smith 2002).

![Pyramidal diagram](image)

*Fig. 91: Goods found at Early Historic sites in the subcontinent*

Products are listed at the top of the 'pyramid' being the rarest and represent exotic products arriving in the subcontinent as a result of Indian Ocean trade. The goods in the middle category are those found at almost all sites of the
early historic period in India, and which are derived from local raw materials. The final category represents the types of goods which probably constituted the largest proportion of inland trade. These goods were traded between sites for domestic use, but also became part of the long-distance trade network, because items such as forest products and agricultural products were desired goods for overseas trade. However, these goods are perishable, so only indirect evidence of the production and consumption of these goods is usually found in archaeological sites. The most likely items to be found archaeologically are located in the middle category, consisting of durable goods whose distribution appears to be limited to the Indian subcontinent. Excavation reports from Early Historic sites throughout India consistently list a common catalog of items such as marine shells, ornaments, fine ceramic and coins. The widespread appearance of the same types of artifacts is due to two factors: the transfer of actual items, and the transmission of ideas and styles (Monica L. Smith 2002).

One particularly striking proof of the exchange of material items throughout the subcontinent in this period is found in the use of marine shells. The large gastropod *Turbinella pyrum* has a natural distribution on the southeastern and northwestern coasts of the subcontinent (Nagappan
Nayar and Mahadevan: 1974). However, it is found in many inland sites of the Early Historic period, in both whole and fragmentary form. The discovery of shell fragments far inland indicates that whole shells were transported rather than the fragile bangles; because the shell is quite distinctive, it is easy to recognize fragmentary portion in the archaeological record. As the shells of the minimum appropriate size for making bangles represent at least 150g, we can begin to see that regional exchange was not limited to very small items. The recovery of marine shells in the interior of the subcontinent indicates the transfer of both raw materials and technology and expertise, since the manufacture of bangles from the shell requires skills in breaking the interior of the shell, and in sawing the upper rounded portion of the shell into bangles (Kenoyer 1983).

Other types of ornaments, such as beads and ear spools, were also widespread in the Early Historical period. The existence of prevailing bead styles indicates that both beads and information about fashion circulated in the inland trade networks. Beads made from rare or distant raw materials, such as lapis lazuli and carnelian, are sometimes recovered. At the same time, a consistent style of beads is noted from materials which are widely available, such as agate and freshwater shell. The presence of unfinished beads at many Early Historical sites suggests that beads were locally made,
perhaps because the grinding and polishing of stone beads was a labour intensive but not particularly skilled task.

Another indicator of flourishing trade in the subcontinent is found in the use of coins. As with the appearance of ornaments, the widespread distribution of coins indicates several levels of exchange activity, in the trade of physical coins as well as the understanding of the concept of coinage as facilitator of trade (Monica L. Smith 2002).

Other types of goods, such as ceramics, also provide evidence for the widespread distribution of prevailing styles as well as the transfer of actual objects. Many sites of the early historic period contain well-made ceramics, such as the Red Polished Wares recovered at many sites in the western subcontinent, and Rouletted Wares primarily distributed on the eastern coasts of India (for maps of distribution, see Fig. 67). V. Begley characterizes Rouletted Ware as being entirely different from the fine wares of the western coast, with a very limited range of styles in fabric. This is predominantly gray pottery (Begley 1991). The only shape in which this ware is found is a flat-bottomed dish with a distinctive pattern of concentric circular bands of tiny indentations in the interior (Krishna Deva in Wheeler 230).
et al. 1946: 45) These wares have gained importance not only because they are distinctive and well manufactured, but also because of speculations that they were either direct Mediterranean imports, or made in the subcontinent in imitation of Mediterranean wares (e.g. Subbarao 1953; Begley 1991, 1994).

Moreover, the archaeological evidence from the subcontinent indicates that many types of goods were manufactured, both from locally-available materials (such as clay in the making of ceramic vessels) and from non-local materials (as seen by marine-shell debris found hundreds of kilometers inland). In the analysis of early trade routes through which goods were transported, the identification of the production strategies utilized in the manufacture of finished products is as important as the identification of the raw materials used. The production of items for local and regional exchange within the subcontinent was the result of a variety of manufacturing techniques. The archaeological record provides evidence for specialized manufacture in items such as shell bangles and metal coins, where the manufacture of finished items could have been accomplished by single individuals or small teams.

Evidence for the large-scale manufacturing of goods in this period is limited, though it appears that the concept of the large-scale organization of
production was recognized as indicated by inscriptions which mention 'guilds' as donors to religious institutions (Ray 1986). The traders/guilds mentioned in the early and medieval Tamil literature include weavers, potter, bamboo-workers, bead maker and salt seller (Ray 1985). The presence of what appears to be organized corporate bodies identified as makers of particular goods or holding market specialties indicated that certain craft activities were carried out on a scale surplus production areas. At the same time, there is also evidence for relatively unskilled and repetitive labour, such as that utilized in the manufacture of beads. The use of unskilled labour is also implied in the many mundane steps of the production process of ceramics, terracottas and clay ornaments: acquisition of fuel and clay, initial preparation of raw materials, and transportation of the finished products. Many of the trade items documented by the historical and archaeological record, including textiles and agricultural commodities, could have been produced at the household level utilizing the family labour. Households would have engaged in trade directly, through barter or sale, and may also have seen the results of their production pooled for exchange by guilds and merchants acting as middlemen.