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**State Formation in The Indus Valley**
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**ABSTRACT**

*Indus valley civilization is unique in its nature among other ancient civilizations of the world. The theories and models have been applied to understand the insights of cultural development about the urban phase 2600-1900 BCE, for which two contradictory models have been proposed (a) scholars who believed in a sudden boom or rapid growth of the urban centers (Possehl 1990, Durrani and Erdosy 1995), and (b) those who argue for a gradual growth leading up to the foundation of Harappan cities (Kenoyer 1991, 1992, 1994, 1996, and 1997; Muhgal 1970, 1990, 1991). This debate centers on important changes in settlement organization and sociopolitical development occurred around 4000-2600 BCE. According to the agreeable chronological scheme; the Regionalization Era has been picked for closer examination, this era has been divided further into three parts: (a) Early Regionalization Era 4500-3300 (b) Middle Regionalization Era 3300-2800 and (c) Late Regionalization Era 2800-2600. In this scheme the Late Regionalization Era fits in present debate. It is characterized by the development of multi-tiered settlement pattern and inter-regional trade networks that may resulted to a more complex sociopolitical system like state formation in the Indus Valley Civilization.*

**INTRODUCTION**

The origin and formation of states in the Indus Valley is one of the most widely discussed issue in current literature on archaeology of Indus Civilization. Debates over this issue have continued more than two decades. The present study partakes in this debate –here the issue is examined in light of the models provide and proposed by Kenoyer (1991, 1994) and Shaffer (1992). The main focus of the debate centers on the period prior to the urbanization. Indus Scholars like M.R. Mughal (1970, 1990, 1991), G.L Possehl (1991), J.G. Shaffer (1992), and J. M. Kenoyer (1991, 1992, 1994), and Xu Chaolong (1994) provide major contributions to this discussion. From data, discussion, some conclusions about the initial origin and formation of state with the Indus Valley are illustrated.

The focus of the present study centers on three factors; (1) the geographical distribution of significant cultural traditions such as the Baluchistan tradition and Indus Valley tradition during the Late Regionalization era; (2) the strong interaction and the great organization of these traditions; this

includes: (a) habitational organization (b) subsistence patterns (c) craft technologies and (d) trade networks; and (3) the complexity in the organization and the of formation of state. These issues combine factors such as sociopolitical organization, economic control and ideological influence. As mentioned earlier, these complicated factors will be examined using two models. The first model proposed by Mark Kenoyer (1991), suggests four sets of preconditions necessary for the development of socio-economic complexity and the rise of urbanism. The second model, proposed by Shaffer (1992) focuses on the spread of traditions and the consequent interactions between Baluchistan and Indus Valley Traditions through space and time. On the basis of my reanalyzes of the available data I would argue that there are evidences of an early urban phase and developing State level organization during the Late Regionalization Era.

## **AREA OF THE STUDY**

The regionalization era of the Indus Valley tradition is marked by new infra-structure which emerged during the period from 3000-2600 BC and recorded in terms of the well developed phases such as Balakot phase, Amri phase, Hakra phase, and Kot Diji phase (Shaffer 1992). The late regionalization period has lump together various regions such as Bannu Basin, Gomal Valley, Texila Valley, and the river plains of Punjab and Sindh (Mughal 1990). In this grouping, I would venture to include the Kutch and Saurashtra regions as well where early Harappan period sites have also been reported. In other words, my study area includes the greater Indus and Ghaggar-Hakra Valleys. It's geographical extant includes the Himalayan Highlands in the north to Karachi and Kutch coastal zones in the west to the Aravalli hills in the east and the Gangetic plains in the northeast. This ecologically diverse region consists of perennial river system, springs, lakes, land for agriculture and pasturage, and marine resources (Kenoyer, 1991). On a large scale, the main river systems – such as the Indus and Ghaggar –Hakra rivers in the Indus plains and the Gangetic river system in the Gangetic plain – provided diverse resources and the best possible opportunity for indigenous populations to establish huge urban centers.

## **PROPOSED CHRONOLOGY FOR EARLY URBANISM OF LRE**

The general chronology for the Indus Valley tradition begins with the Early Food Producing Era (c. 6500 BC), followed by the Regionalization Era (4000-2600 BC) with complete urbanization occurring during the Integration Era (2600 to 1900 BC) (Shaffer 1991, Kenoyer 1991). It is argued here that there was a gradual change happening among the communities of Indus Valley during later part of the Regionalization Era leading to the formation of early urbanism. Further more, this process of change set the foundation for mature urbanism around 2600 BC. This latter part of the Regionalization Era is the termed as the Late Regionalization Era and the proposed dates for this early urbanism process can be assigned 2800-2600 BC. Which is generally known as the Early Harappan or Kot Dijian "B" (Mughal 1990). Rafique Mughal (1990) has divided the Kot Dijian period further into three phases such as (1) Phase A 3500-3000 BC; (2) Phase B 3000-2500 BC; (3) Phase C 2500-2100 BC. According to this classification, the Kot Dijian phase "B" dated as 3000-2500 BC is significant because this is when important changes in the cultural and socio-economic system seems to be happening.

Above suggested chronology provided by Mughal needed to be modified, however, present research allows one to suggest a new date for Regionalization Era. I would break this era into three periods, following a simple three partitive early middle and late scheme; as (1) The Early Regionalization Era 4500-

3300; (2) Middle Regionalization Era 3300-2800; and (3) Late Regionalization Era 2800-2600 BC. Consequently, I would suggest that during 2800-2600 BC some towns grew and achieved the levels of the incipient urban centers. My approximation of the date is one hundred years earlier than what Mughal (1990) has proposed (c. 3000-2500 BC) and is based on more recent work by Kenoyer at Harappa (Kenoyer 1997). Those towns are for instance Rehman Dheri, Mehrgarh, Amri, Kot Dijian, Harappa, and Kalibangan. There might be some other centers which archaeologists still do not know and further research is required in this regard.

### **PRECONDITION MODEL FOR EARLY URBANISM**

As mentioned earlier that during the Early and the Middle Regionalization Eras; the people of the Indus Valley underwent many cultural changes for example, food production, craft technology, ideology and others as well as discussed below. Consequently, during Late Regionalization Era, phenomena became more complex in which they fulfilled the preconditions necessary for the development of urban centers. Looking at the complexity, Kenoyer (1994) has proposed a set of four preconditions necessary for those urban centers. A set of those four preconditions are discussed below:

- Precondition 1.** Diversity of the Subsistence Base and resource Variability which have the potential Production of surplus
- Precondition 2** The development of Social and Economic Interaction Networks between Major Ecosystem and resource areas.
- Precondition 3** Technological capability to fill specific needs of urban and state-level society
- Precondition 4** Differentiation in status on the basis of access to essential resources.

Recent studies of archaeological sites have provided evidence to support the existence of these preconditions which resulted in the re-organization and strong interactions among the various communities in the highlands and lowlands of the Indus valley. For instance, the sites of Mehrgarh, Kalibangan and Jalilpur have provided evidences which suggest multiple crop systems and heavy reliance on domesticated animals primarily cattle (Meadow 1989, Costantini 1981, and Mughal 1990). Many other sites show evidence for agricultural practices and domestication of animals. Various niches allowed and provided for the diversity of subsistence patterns in each area of the late regionalization era of the Indus Valley tradition.

The wide spread of technology and extensive interactions is reflected through the presence of non local material such as shell, and other stone objects at the site of Mehrgarh; lapis lazuli, carnelian, agate, shell, and steatite at Amri; and pervasive presence of Kot Dijian pottery at all of the sites. Furthermore, only one copper bead is discovered from the Kot Dijian settlement which suggested that, if nothing else but the reach of material as an example of the interaction phenomenon. However, the exploitation of the above mentioned resources recommend complexity of the interaction networks between the settlements and those various distant resource areas. It is obvious that these major sites are located far from each other as well as from source areas. Shell came from coastal areas such as Makran, Karachi, and Khambhat. Lapis lazuli came from Badakshan which is Northeast of Afghanistan, Chagai Hills, Southern Baluchistan. Steatite was coming from Baluchistan and the Aravalli hill range of Southern India. The closer lazuli resource areas were locating closer to the Rehman Dheri site than to the Kot Diji site. However, shell was located closer to the Kot Diji than to Rehman Dheri Site. Then the question arises as

(1) locating the exact resource area used in exploitation (e.g. was steatite coming from Baluchistan or the Central Asia as well as the Aravalli hill range; (2) who controlled those resources and (3) who was involved in manufacturing and the distribution of items. To answer these questions, (a) trace element studies are needed to locate exact exploitation of the raw material; (b) dental and bone analysis is required to understand mobility of peoples; and (c) microware analysis of stone, shell and metal objects is required to find out use and manufacturing process which further might indicated the patterns of distributions and spread of technology. It is my opinion that these types of studies will support the presence of socio-economic networks and hierarchies required for the rise of urban centers. This phenomena indicates not only that strong interactions between distant communities existed but also reflects the importance of “commodity” in and of itself. These factors resulted in the organization of social hierarchies and the pervasive use of symbols that reflected a shared ideology during the Late Regionalization Era.

Networks of interaction were not based solely on the exploitation of distant commodities but also involved local and internal relationships between communities. It is evident that the mass production of ceramics and terra cotta objects was present at ever settlement. In the late regionalization ear there is evidence to suggest that potters began using marks which signifies personal identification. This indicates three things (1) competition among potter groups; (2) the control and assurance of production; and the (3) kin-relationship of p0otter folks. Widespread painted motifs include fish scales, horn deity, and intersecting circles. These motifs are considered to be ceramic characteristics of the Late Regionalization (Kot Diji “B”) phase. The pots with painted motifs that carried significance are believed to have been a part of competition among the manufacturer on the one hand and trader on the other hand. More important to mention is that the possible origins of some signs used in the later Indus script have been in the shape of potter’s mark discovered from Rehman Dheri(Durrani 1982, Durrani and Erdosy 1995) and recently from Harappa (Meadow and Kenoyer 1996). Furthermore, the end result of competition was complex interaction networks and socio-economic inequality.

During the Late Regionalization Era, social differentiation became more defined. This is evident through the possession of exotic items which were produced at the site by craft specialists of brought in through trade from distant areas. These objects include various kinds of beads and bangles which were considered to be items marking one’s status. Ceramic objects like figurines and painted pots can be assumed to have been used as ritual items used in the greater ideological system. Apparently these artifacts reflected the growth of computational phenomenon, including control of major of major commodities, and the possession of exotic goods by high status people. Potter’s marks as a symbol of identity may have played a vital role in recognizing and realizing the importance of the quality of the item and its ownership. This symbolic identity may have set the foundation for the bureaucratic system of the integration Era that is reflected in the seals of the Indus period. (Kenoyer 1994). In this situation, ideological factors seem strong and therefore, were able to integrate the entire system.

Settlements such as the Harappa, Kot Diji, Amri, Mehrgarh, Rehman Dheri, Kalibangan sites in Cholista, grew larger and most of them consisted of two mounds existing side by side. Architecture was increased in scale and thick walls were constructed around the settlements. However, the settlement pattern studies are not complete that mi9ght urge to reconsider present issue of growth of urbanism and clear the confusion which is present among the scholars of Indus Valley. At present, Possehl (1990) assumes that there is no multi-tiered pattern. By following, Fairservis (1975), Possehl thinks of villages

with two tiered settlement hierarchy during LRE. However, on the other hand, Mughal (1981, 1983) argues that there is a multi-tiered settlement pattern as seen through the Cholistan survey (Mughal 1983). Mughal has discovered three tiered hierarchy by the presence of larger towns which were the incipient urban centers of LRE. Additionally, my own research in the upper part of the Thar Desert supports multi-tiered model (Mallah 1994). The recent research at the Harappa and Rehman Dheri also supports the notion of growth of the urban centers at first place (Kenoyer 1996, Durrani and Erdosy 1995). These studies as done by Kenoyer (1991, 1994, 1996); Mughal 1993; Jarrige (1992); and Mallah (1994) has supported the notion of indigenous growth of early urban centers by gradual processes of development. Forthcoming results of the gradual growth were agglomerations of population at one place, thus requiring an organization to maintain law and order situation among the society. In other works, true urban centers like the Harappa and Mohen-Jo-Daro existed.

### **EARLY URBANISM IN THE INDUS PLAINS AND BALUCHISTAN HIGHLANDS**

It is obvious that the communities of these regions were not isolated but rather they fulfilled four preconditions model and maintained a network of inter-related connections based on factors such as environment, subsistence, technology, trade networks, ideology, and social organization (Kenoyer 1991). Furthermore, Kenoyer is of the opinion that “these factors [which] are closely inter-related and together, provided the necessary foundation for the development of urbanism and state level society” (Kenoyer 1991: 342). Kenoyer also feels that this occurred only after 2600 BC. Whereas the present archaeological research has provided enough data to improve our understanding about the LRE. The more recent data from the Harappa (Kenoyer 1997, Mehrgarh (Jarrige 1991), Rehman Dheri (Durrani and Erdosy 1995), Cholistan (Mughal 1997) and Kot Diji have suggested that all four preconditions were fulfilled during the LRE and consequent result is the growth of incipient urban centers.

Ecological setting of the Indus Valley and Baluchistan highlands have played a substantial role in the growth and establishment of urban settlements, for instance the river plains are very different from the highlands. As mentioned earlier, that the river plains lie in-between the Himalayan mountains at the northern end, the Arabian sea at the southern end, the highlands and plateaus of Baluchistan to the west, and the Thar Desert, Rann of Kutch and Aravalli hills southeast. This is vast region encompass the home area of Late Regionalization Era where many settlements grew its urban status. These urban centers of 2800-2600 BC include the Rehman Dheri, Mehrgarh, Kot Diji, Harappa, Jalil Pur, Kalibangan, and many other settlements scattered all over the Valley which are still unknown to archaeologists. We have to wait until the comprehensive documentation of these sites is completed.

In the above mentioned home land of Late Regionalization Era (LRE), at the times of c. 2800-2600 BC. There were two separate rivers- the Indus (on the west) and Ghaggar-Hakra (on the east) flowed. Ghaggar-Hakra is now dry, and Indus is still alive which gets dry or very little water during winter season at the lower reach beyond Kotri barrage. Both rivers ran parallel to each other finally merging together into the Arabian sea. Their flood plains provided vast attractive areas for highland people to bring in the herds during winter season when it was difficult to find the suitable grasslands for their animals, and this need was satisfied at the river plains. On the other hand these two rivers were the major source of *salibi* and multi-crop agriculture and fishing as well. This diversity, abundance and availability of resources consequently resulted huge metropolitan cities on the river plains.

In these flood regions during the LRE culture became highly developed and complex. There were many so called “cultural groups” as Shaffer (1992) has called them as phases. The consequent phases are

discussed below which are very important because (a) these phases hold their separate identity; (b) show gradual development to the level of the incipient urban centers and beyond; and (c) they are integrated in the pervasive social, economic, and ideological system of LRE. Here, I am following the same categorization of Phases as suggested by Shaffer (1992) however, this categorization also needs to be revised in the future investigations. I would explain phases in terms of their geographical location as the Amri comes in the very south and moving ahead towards north to the Kot Diji itself by taking river flood plains. In addition to this I would also discuss the situation in Baluchistan during the LRE. The entire discussion would further clearly depict the scenario of the LRE at larger scale.

### **AMRIAN SETTLEMENTS DURING LRE**

Amri phase is one of the early phases which has encompassed many settlements in and around and is very important because it has participated in the interaction of the LRE. Amri phase sites are located primarily in the lower Indus river valley. The Khirthar foot hills and Kohistan regions have the densest distribution of amrian villages (flam 1986). This phase shows strong relationships with Mehrgarh, Kili Gul Mohammad in Baluchistan, Kachi, and in Balakot in coastal areas. Amri IA and Kot Diji maintained identifiable quantities of interaction during the Kot Diji phase at the Amri. Mughal (1972) believes that this phase should be known as the Hakra phase. However, I am of the opinion that evidence is not in favor of a Hakra phase but rather the Kot Diji phase. The excavation of Hakra phase sites may clarify this problem.

The economy was based on fishing, agriculture, and pastoral life. Cattle were the major domesticated animals, along with lesser quantities of sheep and goats. The hunted species included pigs, rhinoceros, gazelles, deer, and turtles (Shaffer 1991, Meadow 1989). Craft specialization is suggested by the presence of metal and semiprecious stones such as lapis lazuli, carnelian, agate, steatite and shell (Kenoyer 1983). Other artifacts include pottery, terra-cotta bangles, humped bovid figurines, and triangular terra-cotta cakes. Comparative ceramic studies has provided evidence for the relationship between Amri and the people of Kot Diji (Xu Chaolong 1994).

The significance of the Amrian phase settlements are that perhaps these were the people who supplied shell (i.e. Balakot) to the northern communities (i.e. Mehrgarh) and brought semi-precious stones with them. This supply of specific commodity (i.e. shell) further suggests that the Amrian did not live as an isolated group rather equally shared and absorbed newly dominating cultural traits of the LRE of the Indus Valley.

### **KOT DIJIAN SETTLEMENTS DURING LRE**

The Kot Dijian phase developed in upper Sindh and are named after the type site of the Kot Diji which may not be representative of the Late Regionalization Era. However, for better understanding, it is necessary to review knowledge about the Kot Diji site itself.

The Kot Diji site is situated 25 km south of Khairpur under the shadow of a medieval fort built on a rocky hillock of the Rohri hills. The excavation was conducted by F.A. Khan in 1955-57. The mound consists of two parts- the citadel and the lower city.

Of the structural remains, the so called "defensive wall" consisting mud bricks and lime stone blocks as foundations is one of the most important feature.

Inside the citadel, structural remains were also found to be of mud bricks that were erected on stone foundations as well as massive walls of sun dried bricks. Community ovens with mud brick lining appear to be common and a kiln has also been reported.

The general characteristics of the wheel turned pottery common in the Indus Valley are fine thin body, short everted rim, and a black band around the neck. Noteworthy motifs include fish scales, intersecting circles, horizontal and wavy lines. On full pot-a squat globular jar-is worth mentioning here as it carries the so-called "horn-deity" design. The horns encircle six petalled sun flowers and the eyes are indicated by black dots.

Other artifacts include bull figurine, stone balls, tools, bone, and shell objects sickle blades and grinding stones and a copper bead. The Kot Diji site itself is not the center of the representative of the Late Regionalization Era but the ceramic style is taken as exemplary for the distribution and consolidation of the Kot Dijian phase. Therefore, the term Late Regionalization Era as representative of the early urban phase is favored.

The Kot Dijian settlements are found at Bahawalpur, Harappa, Gumla II-IV, Jalilpur II Kalibangan I, Rehman Dheri I-III, Saraikholal A-II, Siswal sites and Sawat valley (Shaffer 1992). The present concentration of sites in central and north-central Indus valley, may mean that except for ceramics; the material items such as lapis lazuli, turquoise, steatite, shell and copper were not locally available. Obviously Kot dijian groups were participating an interaction system responsible for the distribution of such materials as well as for other types and of cultural information.

The extent and intensity of this participation is indicated by the findings of objects related to this phase throughout Sindh, Kashmir, Baluchistan and Southern Afghanistan (Shaffer 1991).

The situation in Baluchistan was different. The Baluchi settlements were part of great interaction networks, and pervasive ideological systems. However, for some reason larger settlements or urban centers did not rise in Baluchistan. Using the four preconditions models, future research oriented in this direction might prove helpful for a clear understanding. What was the situation in Baluchistan during the LRE. is discussed below.

### **HIGHLAND SETTLEMENTS OF THE BALUCHISTAN DURING LRE**

Baluchistan area itself consists of several Northeast-Southwest mountain ranges which are separated by narrow alluvial valleys. The Khirthar and Suleiman ranges are famous, where the narrow alluvial valleys (like Makran, Kharan, Las Bela, Zhob, Loralai, Queeta, and Pishin) are characterized by sources of riverine, springs, perennial wells (Fairervis, 1979), and torrents such as nais (Flam, 1986) and Karez (Pastner and Pastner, 1982). There are 15 known sites in the Khirthar mountains alone. Of these 15 sites, 11 sites lie close to nais (a torrent) and four sites are located near springs (Flam, 1986).

Evidence indicates that interaction between the inhabitants of the highlands and those in the plains was essential to the development of civilization. The Baluchistan tradition has a long developmental sequence, marked by many by many cultural phases (Shaffer 1991). Mehrgarh is an example (Jarrige 1991). I believe that the phases most closely related with the Late Regionalization Era includes the Kechi Beg, Nal, Kulli, Perino and Bampur phases. Shaffer (1991) and Fairervis (1972) has labeled them as separate "ethnic groups". However, I am skeptical of this interpretation and it is not appropriate here.

Nonetheless, it is important to understand that the Baluchistan phase could not have produced huge urban settlements during the integration period. It is because the rocky environment conditions did not allow them to establish cities like Mohen-Jo-Daro and Harappa. However, highland communities

did maintain their separate identity and interacted with other surroundings communities including low land communities of the Indus flood plains.

### **AGGLOMERATION AND INTERACTIONS**

In all likelihood, the process of integration began during the Late Regionalization Era or Kot Dijian "B" (2800-2600) period which was the result of agglomeration and interactions among the communities of the Indus Valley. It is possible that during these four hundred years, at least twelve generations might have lived; similarly Kenoyer counts twelve generations for the integration Era (urban period). These people might have intensified and shared their ideological and technological ideas, thereby integrating and unifying the whole cultural system. For instance, a symbolic motif of the "horn deity" (as well as other motifs as discussed below) and over all pottery styles supports the notion of unification, integration and pervasiveness of such ideas. During this unification period, some settlements achieved urban characteristics.

During and Erdosy (1995:84-85) has discussed the question of relationships between the center and periphery in terms of exploitation of the resources. In this regard, a detailed study of what was available where? is suggested for future research. During and Erdosy have argued that Rehman Dheri was one of the core centers in the northern Pakistan and had peripheral regions as was the Mehrgarh another center in the Kachi plains of Baluchistan. Amri in the south and the Kot Diji, sites in Cholistan and Harappa in clockwise pattern (Durrani and Erdosy 1995:84-85). Nevertheless, the present state of research suggests that the people of the Late Regionalization Era associated with all these centers, were perhaps not bounded in the core/periphery relationships, however such relationship could be argued for the Integration Era when sociopolitical situation was highly complex in bureaucratic sense of control.

Evidences for the greater interaction has been recorded at 226 sites throughout the Indus Valley on the basis of surface collection as excavation of 18 of these sites (Mughal 1990). The Kot Dijian pottery types and wide range of other artifacts are being used to define the wide spread "cultural Phenomenon". The ceramic style is characterized by a simple everted-or beaded rim, short neck and sharp swelling body (XU Chaolong 1994). This style is further characterized by bands on the plain surface. These are usually painted below the neck and complemented with intersecting circles, fish scales, "horn deity" and floral papal leaves. All motif are painted in black, brown, or red slip patterns (Mughal 1990, Shaffer 1991). A study of the trace elements of clay properties are required in order to understand the production and locate centers of pottery distributions.

Moreover, interaction networks supported ideological pevasiveness which is also reflected from symbolic terra-cotta objects that include triangular cakes, bangles, beads, balls, as well as animals and human figurines. Were either seated with frontal extended or bent legs, or standing with a flat stylized torso. They have abstract facial features and arms raised or extended to the front (Shaffer 1991). The decorative elements on ceramic vessels, and the ornamental objects (for example the beads and bangles and figurines) indicated their ideological system (Kenoyer 1994). The burials may be consider as a part of the ideological system.

That LRE culture has strong organizational elements is reflected through important factors such as architecture, subsistence pattern (i.e. domestication of Plants and animals) technology and burials. These factors can shed light on a very complex system made up of social organization and society's ideology as discussed below separately in the following sections of the present paper.

Furthermore, each variable's general perspective is described in order to understand the cultural development and social organization of LRE villages and urban centers in the Baluchistan uplands and the Indus Valley river plains.

## **HABITATIONAL ORGANIZATION OF LATE REGIONALIZATION ERA**

The habitational organization of late regionalization era (here after LRE) includes living arrangements, subsistence patterns and burial systems. All these variables are seen well developed and as described below:

The archaeological excavation shows that during middle of the fourth millennium BC. Villages developed. This development can be seen at Mehrgarh IV-V and Kechi Beg traditions where small houses with multi rooms mud brick was the main material of construction and rough stone were used for foundation. No pise construction is reported.

The villages of Damb Sadaat phase and Mehrgarh VI-VII and Amri became more sedentary and larger in size. The houses were well-made mud brick consisting on several rooms, some were small as 2x3 meter and some larger as 2x7 meter. The prepared slab of limestone were used in wall foundation frequently. The houses were provided with community oven and storage jars (Fairservis 1972). The sites are often separated into two distinct sectors which at one time were referred to by Flam (1986) as “acro-sacntum” and lower town, but in fact this functional distinction is not supported by subsequent excavations (Flam personal communication).

The Kot Diji and Kulli phases showed further development of architecture. The houses were built on platforms and clear divisions of citadel and lower city. Some settlements had fortification walls as at Kot Diji. The community ovens and storage jars continued. Architectural remains as evidence of socio political system have been discussed in terms of massive enclosures. The sites with massive enclosure occurred during LRE (Kot Dijian phase) The purpose of these massive walls as indicator besides the political organization of ranked society was defensive or type of regional trade center. This concept is elaborately seen during the mature Harappan times with city gates (Kenoyer 1997).

## **SUBSISTENCE PATTERN**

The earliest evidences for subsistence pattern comes from aceramic Neolithic levels at Mehrgarh (Costantini1981, Meadow 1989). The subsistence economy was depending on the crop cultivation and domestication of animals. Thousands of imprints in bricks from the earliest levels of the site have been identified as cultivated naked six-row barley, hulled six-row barley einkorn wheat, domesticated emmer wheat and durum wheat. These crops could have been grown in naturally moist areas near marshes, lakes springs, or water courses (Meadow 1991).

In the developmental stages important features of irrigation system occurred that is “Gabarbunds”. These massive stone/mud dams are into the shapes as Kach or terrace dam like those of South Arabia and Negev (Fariservis 1985). The chronology of these Gabarbunds is not clear yet. The Nais, or seasonal torrents also comes from mountain highlands to plains and provide sufficient water for cultivation.

In Indus river plains the Sailabi ( Inundation) method, which indicated by the flooding cycle and pattern of water distribution inherent in the rivers and flood plains of the region, was probably the means of agricultural irrigation during the fourth and third millennia (Flam 1986, Kenoyer 1991).

By analogy with traditional system not using intensive irrigation, two major grain crops could have been raised, depending on annual rainfall or flooding season within a specific region. The Rabi crop is sown in fall and with sufficient winter rain, can be harvested in spring without irrigation. These crops would include wheat, barley, pulses, sesamum, peas, vegetables and possibly perennial cotton. (Kenoyer 1991, Personal observations)

A second crop Khraif is sown during the monsoon flooding and includes the crops of cotton mustard, sesamum dates melon and peas. The rice, sorghum, and various millets were grown in Gujarat region by 2600 BC (Kenoyer 1991).

The archaeological discoveries like granaries storage jars, sickles, grinding stones, imprints in the bricks, charred seeds and Gabargunds suggests that the double and intensive cropping system in most regions prior to 2600 BC.

### **DOMESTICATION OF ANIMALS DURING LRE**

During the LRE period both the wild and domesticated animals were supplemented as part of their subsistence system. The forms of wild animals identified includes gazelle, wild sheep, wild goat, water buffalo, spotted deer, barasingha, nilgai, wild cattle onager, black buck, wild pig and possibly elephant (Meadow 1989, Possehl 1990). The preferred habitats of these animals include the foot hills, plains and Riverine environment, but almost all were attracted to cultivated lands, and could have been killed in or near the agricultural fields. From all these wild species, only sheep, goat and cattle were first domesticated. The cattle became dominant in the early periods of Mehrgarh more than 60% faunal remains of cattle have been reported. (Meadow 1991). The 70% of cattlebone also have been found from Jalilpur (Mughal 1990).

### **BURIAL SYSTEMS**

The well documented evidences of burials comes form Mehrgarh. However, the graves have been discovered at Damb Sadaat and Kalibangan (A Kot Dijian Site) but not has been much analyzed and reported yet.

The largest cemetery is reported at Mehrgarh, 150 graves discovered within an area at least 220m sq.: in extent they will be described below.

Generally, burials were provided with grave goods, animals offerings, and frequently wear the ornament as necklace, pendants, bracelets, belts and anklets. The beads are made from a range of material such as perforated or worked shell, mother pearl, lime stone or semi-precious stone (turquoise, lapis lazuli).

Sellier (1991) has distinguished all burials into three categories: (1) Those with no grave goods (2) Those with steatite beads (Standard ornaments ) only (3) and those accompanied by more exceptional goods of pottery, bronze or semiprecious stone. The child burials belong largely to the first categories (73%), while the adult female burials have most goods (36%) with "exceptional" goods, (39%) with "standard" ornaments and a mere 25% without any goods. The adult men comes in between -60% with no goods and 20% in each of the other two categories The ratio of burials indicates the social stratification in which the women probably has got first priority, children comes second and few adult men could obtain any social status. Some one can suggests two things i.e. family structure was based on matriarchal or the women has got ideological status as goddesses of fertility. However, this was further supported by the presence's of clay figurines and "Horn deity" from Kot Dijian phase of Indus river plain villages.

The factors of habitational organization such as elaborated architecture, intensive and diverse subsistence pattern and burial systems shows that the communities of LRE were considerably developed and living in the cities. Generally the settlement pattern grew as three tier settlement hierarchy (Mughal 1990, Kenoyer 1994) The communities were connected through ideology and trade networks.

## TECHNOLOGY DURING LRE

The early technologies includes ceramic industry, metallurgy and lapidary works and Shell industry. These industries indicated culture change sociopolitical development and the high possibility of kin relations, extra-kin interaction economic and ideological legitimization (Kenoyer 1994)

### CERAMICS

The ceramic technology developed earlier than the others. Originally pottery was hand made and mold made, but afterwards wheel made pottery appeared and becomes the dominant. A wide variety of vessel forms occurred. The vessels were treated with a verity of colored slips as well as textured slips, monochrome, bichrome and rarely polychrome schemes are found that utilized a rich variety of geometric zoomorphic and floral motifs (Shaffer 1991).

The mass production of ceramic at various local production centers is observed and no doubt almost every big town was also producing ceramic according their own needs. Existence of such centers implies sophisticated economic organization capable of coordinating commodity production and distribution. The presence of local styles of ceramic suggests the local development of the industry prior to LRE. The potter marks appeared which supports the notion of the control of a commodity. The Kot Dijian style is found every where in above noted phases of the Late Regionalization Era. This was the first time when a process of consolidation began. Trace element studies of clay of the LRE pottery will indicate the production center and trade of ceramics

### METALLURGY

Metallurgy was also developed and included a variety of copper/bronze and gold personal ornaments and tools. Although the quantity and quality of those object vary from one settlement to another, the general impression is that of a variety of part time and full-time craft specialists (Kenoyer 1994).

The resources of gold is found from Northern Indus Valley and Afghanistan; the copper is found at Khetri in Rajasthan, South, Baluchistan and Afghanistan. The archaeological evidences of the copper use are found from Mehrgarh, Jalilpur and Kot Diji and other sites. These sites show the presence of the material but do not show the working areas. The future research may be reveal some good results.

### LAPIDARY CRAFT

The Lapidary was one of the important industries where large variety of semiprecious stone beads and pendants, necklace, bracelets, and head bands made of lapis, turquoise and steatite carnelian and agate are reported. The chert drills were used for stone perforating. The chert drills were used for stone perforating. This shows that lapidary crafts were highly developed.

The resource areas of raw material procurement is locating very far distant as listed below:

Lapislazuli	Badakshan North east of Afghanistan
	Chagai Hills Southern Baluchistan
Turquoise	Central Asia or Iran
Agate	Saurashtra
Carnelian	Saurashtra,
Carnelian (deep red /orange)	Kutch and Gujarat
Steatite	Baluchistan, Aravalli range
Chert	Rohri Hills and Baluchistan

Above list shows strong interaction networks of the LRE people who were engaged in this difficult task of the acquisition of raw material. This might have been produced full time trader who provided the raw material to the craft specialists at settlements for further processes. The production might have given to the an other trader who reached inter-communities which are again locating very far from each other as discussed above.

## **SHELL INDUSTRY**

Shell was one of the major trade commodity and symbol of status and wealth since Neolithic (Kenoyer 1994). The white shell items such as bangles and disc beads were almost identical to those produces in later periods. The communities along coast were engaged in the trade of shell to inland settlements.

During LRE shell was coming from Western Coast (Karachi and Makran) Eastern Coast (Gulf of Kutch and Gulf of Khambhat) and Coast of Oman. It is possible that due to the far-distan locations shell could not reach at the upper parts of Indus Valley. One can ask the question of presence and absence of shell at Rehman Dheri and semi-precious stone at Kot Diji site. The presence and absence of commodities indicate two things (1) the factor of distance (2) the factor of ideology. The further excavations can clarify this issue.

Besides the stone, shell and metal, it can be assumed that the perishable commodities viz. fruits and nuts, grains, spices (garam masalhas), animals, and textile might have been traded from lowland to highland from Central Asia, Afghanistan and Iran towards Indus Valley. This type of trade was continued in the historic Mughal periods (Dale 1994: 14-30. Even in modern days; peoples from highlands and lowlands have trade connections and brings all those dried fruit/ nuts not available in their respective areas. This trade practice is observed during moderate climatic conditions for the people who are engaged in the trade. For transportation purposes, the caravan, boats and carts were used. The caravan was consisted of cattle, goat sheep and dog (Kenoyer 1991). The mentioned commodities might have been carried in animal skin, bags made of wool and straw and ceramic vessels. (Personal observation). This strong interaction played major role in the spread of ideological thoughts, integration of the communities and the rise of urban settlements during late regionalization era.

## **CONCLUSION**

The discussion about early cities should now be settled that there were early cities in the Indus Valley during Late Regionalization Era. By all definitions and criterion suggested by various scholars are being fulfilled. For example the model of four preconditions proposed by Kenoyer (1991,1994) is completely recognizable all over the Indus Valley during late Regionalization Era. Shaffer's (1991) studies related to the Baluchistan and Indus Valley Traditions has suggested the transition and spread of those traditions through space and time. An other set of criterion is discussed by Michael Jansen and Coningham (1989,1995) [after Childe 1950] they defined 10 criteria for city which are easily countable and recognizable during the LRE.

Combination of all above referred model and definitions clarify the issue of incipient urban centers. These LRE settlements were continuously developing, however, the process of development was gradual (Mughal 1991, and Kenoyer 1991) which eventually resulted huge urban state centers. Therefore, I propose that LRE centers may be considered as early states.

Recent discoveries from excavations at the Harappa has supported the notion of gradual growth of the city (Kenoyer 1997). A stratigraphical and contextual process of development has been recorded from the Harappa. Nevertheless, overall picture of all communities of highlands, lowlands and coastal

areas were linked each other through trade networks and pervasive ideology. Craft technology became widely spread with mass production of ceramics. The initial steps for control is indicated through potter marks and fortifications around the settlements. Consequently by considering vital information as discussed here, it now conformed that the situation was highly favorable during LRE 2800-2600 BC. for the rise of early urbanism in the Indus Valley.

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