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Indus Valley Civilization — Its Economy

ABSTRACT

In the year 1921 AD a new informative chapter was added to Indian history i.e. the Indus valley civilization. Since then the history of India started from the said civilization. Credit goes to archeologists who had borne out the information of the civilization from graves and ruins of the area by applying their methods of excavation. They hold its indigenous growth after proper examination of the sources available. The historians and scholars agreed its urban nature as well developed aspects of the society were indicated by the excavators in their excavation. But the highness of the civilization was achieved by its sound economy, which inherit extensive agriculture, large scale trade extra ordinary arts and crafts. The same contributed a long way in establishing a well developed civilization, on the basis of which it had taken lead among its contemporary civilizations of the period, Mesopotamia and Egypt.

INTRODUCTION

The discovery of India's first civilization posed a historical puzzle as it seemed to have suddenly appeared on the stage of history, fully grown and well-established The existence of civilization in the West of India, which is believed to have reached its height, when famous cities were developing their culture from the early stone age on the banks of Nile Euphrates, the Karun and the Helmond ¹. In the Indus civilization, the elaborate social structure and the standard of living (Urban nature) must have been achieved by a strong economy ². In this aspect, intensive agricultural production, large scale trade, arts and crafts played its eminence role. For the period of this monograph, archeology forms the sole source of information.

Archeology may be defined as a science which deals with the physical remains, pertaining to past human societies. These remains include plants, animals, the structure the human's built, the articles they made and their own skeletal remains. The two principal methods of archeology are:

- 1) Exploration.
- 2) Excavation.

EXPLORATION

It involves observation only, without disturbing physical remains. Sites of old settlements can be located by several means. Artifacts, notably pottery and the bricks or other traces of old structures may be found on the surface. Old walls and ditches as they fall down or fill up can be traced through ground irregularities. Sometimes such irregularities are hard to notice when the observer stands on the ground

"Aerial Photography" is of great help here. A similar purpose is served by rigorous ground survey. Geographical surveying enables one to explore what lies below the ground.

EXCAVATION

It involves a deliberate disturbance in order to collect artifacts and other objects to study more closely. Excavation may be either "vertical" or "horizontal."

Vertical excavation generally covers a small area and removes the artifacts, cut through fixed features of one striatum to reach those of another. Generally "Sondage" is dug mainly to establish the sequence of cultures. The sides of a trench whenever exposed can show the sequence of the strata. The excavator aims to reach the virgin soil, the lowest layers that bear any sign of human occupation belong to the earliest cultural phase and is assigned the period ist.

Horizontal excavation normally covers a large area and is usually designed to expose the structural remains and settlement pattern of a particular time or stratum. Mohenjo-Daro offers the classical instances of a horizontal excavation. Vertical excavation could never have exposed the layout of the roads and houses in the manner the horizontal excavation had done ³.

Civilizations developed in the river Valleys of Nile, Euphrates and Indus simultaneously. We possess enough information about the civilizations of Egypt and Mesopotamia for they left written material which has been deciphered while as Indus people did not engrave long inscriptions on stone or place papyrus scrolls in the tombs of their dead but left only brief inscriptions in their seals ⁴. History is eye witness that it was in 5th millennium B.C the permanent Villages and developed agriculture began in the Middle East. In India the earliest reference of a settled Village culture dates back to the end of 4th millennium B.C. However agricultural settlements first arose on the Eastern fringes of Baluchistan around 7000.B.C (Neolithic period).Since then they produced barley and wheat. In the Northern part of Baluchistan a site called "Rehman Dheri" developed as the earliest town with planned roads and houses. The site was located virtually parallel to Harappa in the West. It is evident that Harappan culture developed from the notion of Baluchistan settlements. During 3000.B.C the whole Indus region was well forested providing fuel to burn bricks and fodder for wild elephants and rhinoceros. The region supported many Villages of agriculturalists who had settled in the upland Valleys of Baluchistan and in fertile plains of Makran and lower Indus. The Villagers dwelt in comfortable houses of mud bricks with lower course of stone. They made pottery which was painted with different pattern.

In 1853 AD, Alexander Cunningham, the British engineer who became a great excavator and explorer noticed a Harappan seal with a bull and six written letters, but he had not realized its significance ⁵. In 1856, James and William Burton, engaged in laying out the railway line from Karachi to Lahore for commercial pursuit got bricks for their line from nearby mounds. The digging for bricks led the discovery of two ancient cities, Harappa in the West Punjab and Mohenjo-Daro in Sind ⁶. But the British Govt. of India that time paid no attention towards its excavation. Credit goes to Lord Curzon who in 1904 enacted "Ancient Monument Protection Act". The Act provided for repair, restoration and protection of historical monuments in the country. This led to the establishment of Archeological Department of India ⁷. The department handled the work of excavation at the aforesaid sites from 1921 onwards. The unceasing focus of the archeologists from the time of its discovery in 1921 has made the study of Indus civilization a researched phase of early Indian history. In 1921, an Indian archeologist

Daya Ram Sahni excavated Harappa and R.D Banerjee a historian excavated the site of Mohenjo-Daro in Sind. Both discovered pottery and other antiquities indicative of a developed civilization ⁸. Large scale excavations were carried out at Mohenjo-Daro under the general supervision of Sir John Marshal in 1931, Macky in 1938, Vats at Harappa in 1940 and Mortimer Wheelar in 1946.

In post independence period archeologists both from India and Pakistan excavated Harappa and its connected sites. Suraj Bhan, M.K Dhavalikar, J.P Joshi, B.B.Lal, S.R Rao, B.K Thapar, R.S Bisht and others worked in Gujarat, Haryana and Rajasthan. In Pakistan Kot Digi was excavated by F.A Khan and A.H Dani excavated the Ghandhara graves in the North West Frontier province of Pakistan. American, British, French and Italian archeologists also worked at several sites including Harappa. Due to the constant struggle of the excavators, at present there is a wealth of Harappan material. All scholars agree on the urban character of Harappa culture. It developed in the north Western part of Indian subcontinent. From there it spread Southwards and Eastwards. In this way the Harappa culture covered the parts of Punjab, Haryana, Sind, Baluchistan, Gujarat, Rajasthan and fringes of Western Uttar Pradesh. It extended from the Siwaliks in the North to the Arabian Sea in the South and from Makran coast of Baluchistan in the West to Meerut in the Northeast. The area formed a triangle and accounted for about 12, 99,600sq kms ⁹. No other cultural zone in the third and second Millennium .B.C in the world was so wide spread as was the Harappa.

AUTHORSHIP OF THE CIVILIZATION

Some Indian historians have tried to prove that Harappans were Aryans but this proved quite impossible. From the skeletal remains so far examined it appeared that Harappans were people of long headed, narrow nosed slender Mediterranean type found all over the ancient Middle East , Egypt and forming an important element of Indian population at present ¹⁰. The second element Proto-Australoid with flat nose thick lips related to Australian Aborigines and to some of the wild hill tribes of modern India. A single skull of Mongolian type has been found and one of the Alpine also. The bearded steatite head shows element of both latter types, while the bronze dancing girl seems certainly Proto Australoid ¹¹. Here one feels that North Western India was the meeting place of many races as it remained a commercial centre. Thus the authorship cannot be ascribed to any particular race as every element in the diverse population contributed its share to the civilization ¹².

About 2800 sites have been identified so far in the sub-continent of India. They relate early, mature and later phases of Harappa culture. There are 1,022 (406 located in Pakistan and 660 in India) such sites as reveal the mature phase of the culture. Most important of these were Harappa in Punjab, Mohenjo-Daro and Chhannu-Daro in Sind, Lothal in Gujarat, Kalibangan in Rajasthan, Banawali in Haryana, Ropur in Punjab and Mandu in Jammu. All these sites revealed the mature stage of Harappa culture including the coastal cities of Sutkagender and Sukotda. The later phase is traceable at Rangpur and Rojdi in Kathiaawar peninsula in Gujarat. Besides Dholavera lying in the Kutch area of Gujarat possesss the indications of Harappa fortification and its different phases. These phases are also manifested Rakhigashi situated on the Ghagar in Haryana ¹³.

Archeological research over the decades past has established a continuous sequence of strata, showing the gradual development to the high standard of fully-fledged Indus civilization. An extensive

excavation work at Mehrgrah near Bolan Pass in 1973 and 1980 under two French archeologists Richard.H Meadow and Jean Francoise Jarrige hold that Mahrgrah gives us an archeological record with the sequence of occupations. These strata have been named pre-Harappan, mature Harappan and late Harappan phase ¹⁴. The periods have remained a point of difference among the scholars. But the test of Radio-carbon dating 14 held at Tata Institute of Delhi solved the matte¹⁵. Accordingly the chronology was fixed as under:

Early Harappan phase 3500-2600.B.C Mature Harappan phase 2600-1900.B.C Late Harappan phase 1900-1300.B.C

The most important consequence of this research is the clear proof of the long term indigenous evolution of the civilization which obviously began on the periphery of Indus civilization in the hills of Eastern Baluchistan and spread in the plains. The cities built by the people lived in the Indus for several centuries. Their architecture hardly altered for a thousand years, it is very difficult to fix a precise date for the beginning of this civilization but certain indications synchronize it with the Village cultures of Baluchistan. Further the transition from Pre-Harappan to the mature Harappan culture is also evidenced at Aamri, where excavation took place from 1959-69. The site of Ranan Ghandai produced a stratification which showed a type of pottery with bold designs in black on "red background". Sir.R.Mortimor Wheelar was of the opinion that the city of Harappa was built on a site occupied by the people using similar pottery. There is no concrete evidence of the date of foundation of Mohenjo-Daro for its lowest strata are now below the level of Indus whose beds has slowly risen with the passage of time. Though digging have reached 30ft below the surface yet flooding has prevented the excavation of the earliest levels of the society or virgin soil 16. Thus the Harappan culture at least in Punjab was later in its beginning than the Village cultures but it remained its contemporary for traces of mutual contact have been found there. To quote Piggott, "the Harappan culture is known only in its mature form, it had no known beginning, no early phase before the out lines are firmly fixed. An origin outside India is inherently impossible". On this it may be concluded that the Harappan culture is essentially Indian hence it indicates its indigenous growth.

ECONOMY

The Indus civilization which had taken a lead among its contemporary civilizations must have been contributed by a stable economy. In this aspect agriculture, trade, art and crafts played its dominant role. The highness of the economy as achieved by the civilization during the period may be studied as:

AGRICULTURE

At present Harappan cultural zone fall in a low rainfall area, but the prosperous Villages and standard of the towns of the period as excavated in the area indicate its fertile land and large production.

This has been supported by a historian of Alexander in 4th century .B.C who holds that Sind was a fertile part of India ¹⁷. Further the Indus river folk were highly artistic who left behind a large number of static seals beautifully engraved with figures of crocodiles, tigers, antelopes and brahminy bull. From these seals, one may infer that the climate of Sind was then moist and land fertile ¹⁸.

The transition from a Village culture to the urban civilization required a substantial expansion of agriculture. The factors which could have led to such an expansion in the Indus basin have remained the subject of debate. It has been urged that there was a long "Wet" phase (5510-2220 .B.C) during which Indus basin had produced more grain than it could have produced earlier or later. Further it got accelerated by the advancement of tools marked by the appearance of a plough in the Indus culture. Its presence is confirmed not only by the evidence of "Oxhaulge" but also by the discovery of a day model of plough at Banawali (Haryana) and at Jawaiwala (Bhawalpur) a ploughed field has also been found at Shortughai in the North Eastern Afghanistan of the Indus area. They probably used wooden plough drawn by oxen.

Agriculture was generally practiced along the river banks. The fields (land) were flooded during summer and monsoon seasons. The flood deposited alluvial silt there annually. The soil then turn more productive, for which no major furrowing and manures were required. The cultivated fields excavated at Kalibangan showed crisscross furrow marks, which indicate two crops being grown simultaneously. This method is followed even today In Rajasthan, Haryana and Western Utter Pradesh ¹⁹.

Some archeologists argue for the existence of irrigation by canals during the period. They were of the opinion that the massive tank excavated at Lothal might have been a reservoir filled by water. On this it is probable that Harappans were familiar with the several methods of utilizing water for agriculture ²⁰. Gabarbands or nalas enclosed by dams for storing water were a feature in Baluchistan and Afghanistan. Excavation proved that Harappan civilization is the first culture, where access to underground water was secured by wells. There is no doubt, that (cutcha) wells were dug in Villages for irrigating vegetable beds. At Allahdino (near Karachi) a stone-masonry well built on higher ground is believed to have irrigated the low lying fields. On rivers, lakes and banded reservoirs, the liver-lift based on stone counter weight (shadaf dhankli) was in practice. Since the device is represented by a seal recovered from Mohenjo-Daro. A canal built by Indus people has been traced near Shourtughai, drawing water from Kokcha River to irrigate the land of the Indus basin ²¹.

The Indus people produced various crops which have been classified into Rabi (winter) and Kharif (summer) crops.

	Rabi	Kharif
Cereals	Wheat	Millets
	Barley	Bajra (G)
Pulses	Gram (chickenper)	Rogi
	Field per	jowert (G)
	Lentils	Oil seeds

Oilseeds Linseed (G) Sesame

Mustard Fibre

Cotton

However the position seems to have been different with the Harappans at Lothal. It seems as early as 1800 B.C the people of Lothal grew rice, as samples have been found there ²². From archeological evidence it appeared that wheat and barley formed main food crops for people living in Indus basin and millets in Gujarat. Further Indus sites have produced evidence of the date, Jujube (Ber) grape and melon. The first two have been found at the earliest inhabited levels of Mahrgrah. The rest were transmitted from Helmand basin where they were cultivated. Consequently these factors produced enormous food items, which inspired the authorities in establishing granaries to store grain i.e. why granaries were found at Harappa, Mohenjo-Daro and Kalibangan. The stored grains were in probability received as revenue from the peasants. The same was used for the payment of wages to the officials to use in emergencies and export as it formed an important item of the trade. This has been summarized from the analogy of Mesopotamian cities, where wages were paid in barley ²³.

TRADE

On the basis of thriving agricultural economy the Harappans built their developed civilization with pleasant houses. Evidently a well organized commerce made these possible, which got birth out of the strong agricultural base. The place normally became a seat of power where a class of people was engaged with this aspect. They plan, direct and control the operations. In the beginning trade was internal i.e. between one zone and another but later on external trade too developed. Agricultural produce, industrial raw material, finished goods; semi-precious shells etc were the main items of trade ²⁴. The importance of trade in the life of Indus people is supported not only by the granaries as identified by "Vats" and "Wheelar" at Harappa, Mohenjo-Daro and Lothal but also by numerous seals. In the local trade, grain was brought by grain dealers on pack oxen, carts and river crafts to sell in the market. Similarly the raw material to urban craft centers too was provided by them. This has been illustrated by the evidence of sea shells workings at Bala Kot, Dhula Vira, Nageshwar and Lothal. Further agate and cornelian used in beads at Lothal, Kuntasie and Chanu-Daro come from Ratanpure mines. Specialized products like faience articles made of shell were exported. In the warehouse at Lothal (65) seal impressions on terracotta pieces have been found. These seals were tied to the mouth of jars containing particular merchandise. None of the warehouse seal match any other seal found there. So it has been inferred that the items on which these were affixed had been brought to Lothal from other places in the Indus territory 25.

The uniformity in the style of many artifacts found at various places within the Indus territory gives the impression of long distance trade. The Harappan's had commercial links with Rajasthan. Mines in Mewar were obviously the source of Copper used in Bana's culture (3000-1300.B.C). There are signs of Indus influence on the pottery of Ganeshwar and Jodhpur. In the north the Neolithic culture of Kashmir (2500-2000.B.C) was particularly contemporaneous with the Indus civilization. It is possible that the Indus lapidaries obtained their jade from Kashmir, on the other hand Kashmir itself received cornelian and agate beads (900 of which were found in Kot Digi style pot at Burzahome) ²⁶ from Indus territories.

The Indus civilization drew its silver from the mines of panjshhir Valley in northern Afghanistan ²⁷. The Valley lies astride route connecting Indus basin with Shortughai. During (2865-1975.B.C) Shortughai followed the Indus pottery, mud brick houses and artifacts. The place is famous for making lapis lazuli beads. The material for the same used to come from Sar-i-Sang and agate and cornelian from Indus basin. Thus Indus people received lapis lazuli in exchange from Shortughai. The Indus seals have been found at Altyn-Dope in Turkmenistan particularly etched cornelian beads and ivory. On the other hand there are evidences of caravans led by Central Asian merchants to Indus basin as remains of camel had been found at Harappa ²⁸.

The trade with Western Asia was maintained through sea-route. The ships being heavily dependent upon supplies from ports situated at intermediate stages. There are indications of Indus settlements in West Sotkakoh and Sutkagan-Dar dose to Pakistan-Iran frontier. Parallel to Satkogan-Dar across the Gulf of Oman, is Rasal-Junayz where Indus imports such as large pottery, jar, Alabaster vases etched corlain beads, metal artifacts, ivory work and steatite seals have been found. From Oman, the Indus ships sailed North-Westward to enter the Persian Gulf known as "Dilmun" comprising the island of Bahrain and Faylakah (of Kuwait). The presence of indus merchants in Dilmun and then moving to Mesopotamia has been attested by six Dilmun-style seals representing Indus character, as figures of "Zabu Bull" and "Manger" been found at Ur(Southern Iraq). Then the merchants moved to Mesopotamia which has been confirmed by modern excavation in the area ²⁹. Though thousands of grave mounds still remain unopened, yet certain round button seals found in Indus and Mesopotamia seems to have originated in Bahrain³⁰. On the other hand at Lothal, Dilmun seal has been found showing that Dilmun merchants too made their way to the port.

The people of Dilmun gave the Indus basin the name of Meluha, which has been supported by various sources e.g. Sargon, the king of Akkad (2334-2279 B.C.) in an inscription claimed that the ships from Meluha sailed up the Tigris to his capital in central Iraq. Similarly, Mesopotamia texts also mentioned the name of Meluha where from etched cornelian beads ivory-inlay pieces, pot-sheds, gold, hardwoods, rare animals and slaves being imported. In return for finished goods and food grains they procured the metal from the neighboring areas. However at Mohenjo-Daro the statue of (priest king) with a beard and rob decoration displayed in Mesopotamian fashion reveal the familiarity of Indus with Mesopotamian culture. Besides a young woman buried at Harappa in the Samarian fashion wrapped in red-mating within a lidded coffin provides the evidence of the presence of a Mesopotamian community in the society. The Indus woman too used cosmetic items as recovered from graves excavated at different places in the area. This indicates the strong cultural ties of Indus with its contemporaries ³¹.

The trade both internal and external implies a regulation of exchange of weight and measure. Harappans possess a regulated and uniform system of weight and measure. The prevalence of the system in far flung Harappan sites indicates that there was a central authority to regulate exchange activities. Harappan weights were cubical and spherical in shape, which were made of chert, jasper and agate. They show that weighing largely of (16) or its multiples were used e.g. 16, 64,160,320,640. The tradition of (16) continued in India up to 1950's. Sixteen Chhetank (60gms) made a Ser (960gms), sixteen Aanas made a rupee and 16 Trakhs a Khar (80kgs). They also know the art of measurement. Sticks inscribed with measure marks have been found and one of these is made of bronze. They maintained uniformity throughout their territory. Goods were valued as per their weight and quality. Unfortunately

no metal money has been recovered. For certain transaction, particularly of grain a number of agate and cornelian beads or seashells might have been used as mode of payment. There is also probability that some seals must have served as token for goods. As two dozen Indus seals were discovered from different cities of Mesopotamia like Ur, Susa, Lagash, Kish and Tele-Asmar. It reveals that such an extensive trade system could not have functioned merely through barter system alone ³².

ART AND CRAFT

It is evident that there was a brisk trade between Indus people and its contemporaries abroad. This naturally inculcated a sense of artistic zeal among the people of the profession. They with the passage of time introduced new techniques in their art to produce goods of different varieties as demand increased.

The Indus civilization was Chalcolithic. Though there was a bulk of stone tools, yet copper tools had its own role in the development of the civilization. The bronze smiths, alloyed copper with tin, out of which they made knives, axes, chisels, hooks, sickles, razors and saws. The saw is not worthy as it simplified the task of carpenters. Further some copper tools like nails, needles, tabular-drills were found there. In addition there are references of using metal ware and mirrors by rich households. The bronze smiths constituted an important group of artisans in the Harappan society. They made beautiful images from the metal. A woman dancer with 11.5cm.in height made of bronze and a golden monkey on a pin are best specimen ³³. The dancer apart from wearing a necklace is naked. The greatest artist creations of the Harappan culture are seals. About 2500 seals have been found so far, maximum of these carry short inscriptions with pictures of animals like Buffaloes. Tigers, rhinoceroses, goats, elephants, antelopes and crocodiles which formed an important source of information and its relation with its contemporary civilizations. Further the artisans produced high valued luxury goods, jewelries of silver and gold and precious stones. The craft involved a good number of people in its production which improved their economic condition.

The Harappans were expert in the usage of potter's wheel. Numerous pots painted with a variety of designs were found there. It is remarkable that the pottery which served the masses spread wherever the Indus civilization had reached. It served a large purpose as store jars, cooking utensils, dishes, bowls, containers, strainers etc. The pottery water pipes used for house drains were made with extra ordinary skill. They also produced terracotta which represent men, woman, animals, birds etc. these are gray to black in colour as found at Mohenjo-Daro and Harappa.

Textile industry too had its important place in the civilization. It engaged a good number of people in its craft as spindle-whorls used for spinning were found in the Indus settlements. Weavers wow cloth of wool and cotton ³⁴. The minute fragments of dyed woven cotton recovered from Mohenjo-Daro constitute one of the two earliest examples of cotton in the world (the other being from Jordon) the trefoil motifs on the robe of the "Priest King" in stone sculpture from Mohenjo-Daro are obviously the result of embroidery which copper needles made easier.

The excavated places of civilization are proof that the building industry had a major role in its economy .The fired bricks used in the houses of rich, important buildings and drains were an outstanding innovation. It engaged a good chunk of people in its procurement, which functioned as a

source of their livelihood. Its size and technique were remarkable (7 ½ x15x30.inch). The Indus masons showed their skill in constructing wells ,using wedged shaped bricks ,to make them circular and putting corbelled roofing over doorways and drains.

The developed arts and crafts, led to the enormous production of finished goods which formed an important component of trade. The same felt a need of well developed transport. The toy models found at Indus sites suggest three forms of vehicles made of wood:

- 1) Two wheel cart with a broad frame.
- 2) Four wheel cart with a round frame.
- 3) A light cart chariot of which bronze models were found at Harappa and Chanu-Daro.

The Wheels of vehicles were solid (spoke less) as preserved at Daimabad. The coloured models of a wheel with a hub found at Chanu-Daro shows that wheels were made of three separate blocks of wood. This proved that the wheels though solid yet were moderate in size. Further numerous representations of ships and boats on Harappan seals and terracotta model of a ship from Lothal gives us the idea of maritime trade. In addition to it a seal carries the picture of a river boat with timbers lashed by ropes, a two storied central cabin and high prows. On one of the prows the steersman sits while rowing this survived like the bullock-cart until modern times³⁵. The system really played an important role in carrying goods from one place to other both at the level of internal and external trade. This naturally enriched the economic condition of the people which led to the growth of such a developed civilization.

CONCLUSION

The account made it clear beyond any doubt that the indigenous growth of the civilization, in which economic aspect of the society played its dominant role. Further it made the readers aware of the remarkable stage as achieved by the civilization among its contemporaries in utilizing different innovations to enrich its economy, when modern planning and expertise had not opened its eyes. It had given a place of pride to ancient Indian history in the said discipline of the world. At present more steps need to be taken in excavating other sites to bore out reliable information of the period and patch up the lope-holes, as the world had made a great advance in the field of technology being archeology the main source of the civilization.

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