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Agriculture In Harappan Civilization : An Observation

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ABSTRACT

The transition from foraging to farming is one of the turning points in human history. The seasonally mobile life of hunter-gatherers, who obtained their food from wild plants and animals, was replaced by the settled life of farmers, who cultivated crops and raised domesticated livestock. Evidence of agriculture in the Indus Valley and other area recovered in excavations in form of potteries granaries, terracotta toys and ornaments. The size of the Harappan towns itself indicates that it was a plough agriculture, with dependence on bullocks for draught. This paper deals with the information regarding the crops, fruits etc. having archaeological evidences of large granaries for surplus production in the Harappan period.

INTRODUCTION

Initiation of agriculture was a revolutionary step in human history. Agriculture, which started during the Neolithic period of man's existence on earth was initially for subsistence only, but with the increase in population grew man's needs for more agricultural production requiring the bring more land under cultivation in turn necessitated the use of animal power in agriculture. Indus Valley Civilization was one of the world's oldest civilization, and one of the most advanced as well, in various fields such as agriculture, urban planning etc. The economy of Indus Valley civilization was based on animal husbandry, arable agriculture and growing cereals, pulses and other plants.

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However, there is very poor archaeological evidences for Indus agriculture as the preservation of plant remains was difficult. Despite many problems, archaeologists all over the world have worked hard and provided some conclusions and discoveries. In coming pages description is being given regarding what crops were grown and where their evidence was found.

The Plough :

The Harappans learnt the use of the plough from the Sumerians. All primitive ploughs were made of wood, and wood is a perishable material. Hence there is no possibility of finding an actual wooden plough from a Harappan site. However, a terracotta model of a plough, 7x 19.7 centimetres has been discovered from Mohenjo-daro. There is no indication that it had a handle for the ploughman to hold.

The Harappan pattern of cropping was noticed at Kalibangan (Thaper 1973:85-104) where a furrowed field came to light during the excavation. The furrow marks suggest that the mixed cropping pattern was in existence during the Harappan times. It is perhaps the earliest evidence of plough field so far excavated anywhere in the world. It showed a grid of furrows, with one set as much closely spaced as 30 cm apart, running east to west and the other set widely spaced with furrows 190 cm apart, running north to south. Mustard and the grams are grown in two sets of furrows in the same field.

The Wheeled cart :

In the Indus Valley, wheeled carts were in use when the archaeologic record begins about 2300B.C. Bronze models of carts have also been found at Harappa and Chanhu-daro. These bullock carts had solid wheels. A toy- cart from Mohenjo-daro had a basket-like body, which indicates that it was possibly used for carting farmyard manure. Excavations at Harappa have revealed cart-ruts, 3 feet 6 inches in width. Bernal states that the bullock-cart combined two critically important ideas- the use of animal power and the wheel. "These inventions were to have enormous material and scientific consequences. The cart and the plough between them

enabled agriculture to be spread over all open plains and so far beyond the limits of the old civilizations. (J.D. Bernal, p.77)

The Harappan toys contain representations of the rhinoceros, the tiger, and the elephant. There are toys shaped as monkeys, squirrels, mongooses, snakes, pangolins wild boar and crocodiles. Out of these wild animals and birds, deer of different varieties, wild boars and parakeets must be the cause of damage to the crops of Harappans, as they do even now wherever they are found. How did the Harappans protect their crops? Terracotta sling-balls are found in all Harappan excavations. Possibly, the farmers used these sling-balls for scaring away pests. The sling is the earliest device by which force and range were given to the arm of a thrower of missiles. Slings and sling-balls are even now used by the farmers for protecting the maize crop in the submontane areas of northern India.

Saddle-quern : In a terracotta from Mohenjo-daro, a woman kneading flour. Saddle-quern recovered from the Harappan settlement, Sil and vatta are the descendants of the saddle-quern and are used for grinding spices in Indian homes. Saddle-querns were possibly used for grinding roasted barley.

Granaries : The best evidence of agriculture in the Harappan areas is in granaries which have been discovered at Harappa Mohenjo-daro, Lothal and Rakhigarhi. Morimer Wheeler thus describes the granary at Harappa as "To the north of these 'lines' the ground is littered with a medley of broken walls and floors which have not been intelligibly planned. The importance of the Harappa platforms is their indication that this process was there concentrated and possibly regimented. These granaries, each 50x 20 feet overall, are ranged symmetrically in two rows of six, a central passage, 23 feet wide. They are built upon a podium of rammed mud, some 4 feet high, riveted along parts of the eastern and western sides. The floors of the individual granaries were carried clear of the ground on sleeper-walls, three to each unit.

Wheeler describes that its units consist of rangers of a barrack-like quarters within a walled compound, serried lines of platforms apparently for pounding grain, and a marshaled array of uniform granaries within easy reach of the river. There is a

structural similarity between the Indus granaries and an Akkadian structure at Susa. From the size of the granaries it can also be concluded that the peasants paid their dues to the Government in kind, who, in turn, used it for payments to employees of various kinds. The artisans carpenters and others received their wages in kind from the farmers.

Food crops :

Harappans cultivated bread wheat, barley, sesame, peas, melons, date-palm, species of *Brassica*. Cotton was an important crop and the centre of origin of *Gossypium arboreum* lies in the Indus Valley.

Wheat: Among the cereals, wheat and barley were recorded from Harappa and Mohenjo-daro. Helbaek has pointed out that wheat and barley have been cultivated together from the very beginning of village- farming in western Asia.

Percival states that *T. sphaerococcum* is wheat of great antiquity and has been found in the excavations at Mohenjo-daro dating back to 2300B.C. It is supposed to have originated in the north- western area of the Indian subcontinent It appears that in ancient India the cultivation of *T. sphaerococcum* was widespread. It has high resistance to drought and this factor has contributed to its success.(Percival, J. 1921. p.463)

Barley :

All barleys, wild and cultivated, belong to the same potentially interfertile population and are grouped under one species, *Hordeum vulgare*. The barley culture in India appears to have come from western Asia and can be followed with fair certainty across northern India and then southwards. The series of archaeological finds from Ur and Mohenjo-daro have now pushed back the antiquity of India's relations with western Asia to the third millennium B.C. At that time the ancient Indus cities were in regular and intimate contact with the Sumerian cities of Iraq.(Bakshi, J.S & Rana,R.S.,p.47)

At Shortugai on the Amu Darya and Miri Qalat in Baluchistan, barley was more prominent. Three to four varieties of barley, both baked and hulled types were cultivated. However, at some places like Rojdi in Gujarat, barley wasn't cultivated after a particular period. More or less contemporary with the Harappan civilization, records of barely have recently been discovered from the Gangetic plain, from Atranji Khera in Uttar Pradesh dated to 2000-1500 B.C. from the Neolithic of Chirand, Bihar, estimated to date from 2500-1800 B.C. It may be that barley came to India not one but on several prehistoric occasions, either through the trade routes or along with immigrating people.

Rice :

Rice is native to South and East Asia- including Indus region and the Ganges valley. Cultivation of rice involved several different centres of domestication. As indicated by shared artifact types such as cord- marked pottery and distinctive shouldered axes, the cultures growing rice in Southeast Asia had closed cultural connections with the inhabitants of eastern India, Bangladesh and intervening regions.

In Gujarat at Lothal and Rangpur, charred rice husks and impressions of rice husks and leaves in Harappan pottery have been found. According to a study, Naomi Miller established that they are unlikely to reflect rice cultivation. As they grew wild, rice probably was one of the items that were consumed by their cattle while grazing. This resulted in rice husks being present in their excreta which was used for fuel and tempering agent in pottery. This caused their impressions in the pottery. Rice husks have also been found in pottery and bricks at Harappa. Both wild and cultivated *indica* rice were identified at Hulas.

Oats :

Oats, particularly *Avena* species was present at Mehrgarh in fourth millennium BCE and have been recovered from Pirak and late Harappan Hulas. In archaeological contexts, it is believed that oats were not deliberately sown or cultivated.

Little millet :

It was sown at the Mature Harappan Rojdi, Oriya, Timbo and Babar Kot and present at Harappa around 3000 BCE. At Rojdi, along with little millet, **browntop millet** was also grown. Seeds of another native millet – **Job's Tears**- have been found at Harappa. Broomcorn millet was probably brought under cultivation in southern Central Asia. It is also believed that it might have reached Indus Valley via outpost at Shortugai. Its first evidence was found at Pirak in the early 2000 BCE.

Ragi :

It was first reported at Rojdi during early Mature Harappan period and also ragi phytoliths bricks and sherds at Harappa. It also appeared in Cementary H levels at Harappa and Late Harappan Hulas to the east. **Bajra** was possibly present in the Late third millennium Babar Kot in Saurashtra, Gujarat. It was latter found at Rangpur and after 1800 BCE, it reached South India. **Jowar** was a major crop at Rojdi during the second millennium. It was also reported at Pirak and Late Harappan Hulas in the post- urban period.

Pulses :

Pulses which include green gram and black gram were grown at various Harappan sites and at Balathal in Rajasthan. Horse gram was domesticated in South India and is known form of Late Harappan Hulas. It is a type of pulses which has great medical importance in Ayurveda. Peas, Vats discovered seeds of peas from Harappa.

Sesame:

Botanical evidence suggests that sesame originated in Africa. The recovery of a lump of charred sesame by Vats at Harappa suggests that it was cultivated by the Indus Valley people. They are likely to have received it from Africa direct or via Mesopotamia. Both Lothal and Mohenjo-daro people had trade relations with the Sumerians and this might have led to the introduction of sesame. Once grown in India, sesame entered the

Indian dice and cookery to such an extent that we hardly feel that it came from Africa. From India it spread to China.

The Brassicas cultivated in India are of the oleiferous types, belonging to two species, *Brassica campestris* and *B. juncea*. *B. campestris* has given rise in India to three distinct cultivars: brown *sarson*, yellow *sarson* and *toria*. *B. juncea* is being known in India as mustard. The seeds of *Brassica juncea* have been recovered from Chanhu-daro, a Harappan site in Sind. The Harappans at Surkotada in Kutch had found diverse uses of the seeds of several kinds of grasses, sedges, cheno-amaranths, portulacas, and polygonums, perhaps for medicinal purposes or to feed the birds. (Vishnu – Mittre and Savithri, 1976)

Cotton :

The Indus Valley civilization is the earliest to have spun and woven cottons. The Babylonian and Greek names for cotton, *Sindhu and Sindon*, respectively, point to the Indus Valley as the home of cotton. A statuette of a man from Mohenjo-daro shows him wearing textiles. The first sample of cotton material was a small fragment of cloth found by D.R. Sahni from Mohenjo-daro. Another sample was received from Mohenjo-daro, viz. small pieces of string found attached to some pottery. The string was found to be 24 fold cotton yarn. The fibre-weight, the number of convolutions, the ribbon- width and the fibre- rigidity of the sample were strikingly similar to those of the coarse Indian cottons.

The Harappans not only grew cotton, but also devised methods of ginning, spinning and weaving it into cloth. Considering the age when it was achieved, it was a great technological advance.

Fruits :

Jujube or Ber, as known in India, an edible red berry was also found at Mehrgarh. **Walnuts** were recovered from Hulas, along with the fruit of the Peepal tree. **Date palms** occurred in Baluchistan and they have been cultivated from the very beginning. Many date stones were found from Nausharo and at Mohenjo-Daro. It is probably true that dates were transported to those parts of the Indus region where they were not grown. By 3000 BCE, grapes were being grown in the Kacchi Plain, Baluchistan and Siesta,

Grape pips which are made from pure grape seed extracts were found at Mehrgarh and Nausharo, They were also found at Shortugai.

The oldest record of the use of wood, in the Indian region, is from Harappa proper and from the sites of Harappan culture in Gujarat. At Harappa, deodar and rosewood were used for coffins. Other wood remains found at Harappa were of a wooden mortar for pounding grains. The Harappans in Kutch used timber of *Tamarix*, *Albizzia*, teak, *Adina cordifolia*, possibly for agricultural implements, carts, axles, axe handles, oil presses, grain- pounders, turnery, tanning and dyeing and for fuel. The charred timbers recovered from Lothal in Gujarat were *Acacia sp.*, *Albizzia sp.*, *Tectona*.

The Harappans had practiced the developed irrigation techniques to raise second crops during long dry season. The supply of water for irrigation was available from many sources like gabarbadis (kind of dam) and the channels were there to divert the flow of water from canals, wells, ponds, springs, etc. It is perhaps during the early Harappan time that the artificial system of irrigation was evolved and further advanced during the mature Harappan times.

Conclusion :

As the people of the Indus valley had harnessed the power of irrigation system and water supply. It allowed the people to provide for themselves and others in a stationary manner and produce crops as per the needs of people, by neglecting the old traditional nomadic ways and using contemporary techniques to satisfy the urban requirement. This is why agriculture was so important to the people of the Indus valley. Agriculture was one of the prime reasons to why the Indus valley civilization was so successful in surviving for so long. Agriculture in the Indus valley was solely dependent on good quality soil and advancements in farming technology.

REFERENCES

- Allchin, R. and Bridget. *The Birth of Indian Civilization*, Pelican, 1968
 - Anderson, E. *Evolution after Darwin*, Chicago, 1960
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- **Bakshi, J.S. and Rana, R.S.** Barley, in *Evolutionary Studies in World Crops- Diversity and change in the Indian Subcontinent* (Ed. Sir Jserph Hutchinson), London, 1974
 - **Bernal, J.D.** *Science in History*, London, 1954,
 - **Hutchinson, J.(Ed.)** *Evolutionary Studies in World Crops*, London, 1974
 - **Lal, B.B.** Perhaps the Earliest Ploughed Field so far Excavated Anywhere in the World, *Puratativa*, New Delhi,1971
 - **Lal, B.B.** *The Indus Script: Some Observations Based on Archaeology*
 - **Mehra, K.L.** History of Sesame in India and its Cultural Significance, in *Vishveshvaranad Indological Jour.*, Vol. V. 1967
 - **Mehra, K.L.** History and Ethnobotany of Mustard in India, in *Advancing frontiers of Plant Sciences*, Vol. 19, 1967
 - **Murdock, G.P.** *Africa : its People and their Cultural History*, New York, 1959
 - **Narain, A.** Rape and mustard, in *Evolutionary Studies in World Crops- Diversity and Change in the Indian Subcontinent* (Ed. Sir Joseph Hutchinson), London, 1974
 - **Rao, M.V.** Wheat in *Evolutionary Studies in World Crops- Diversity and Change in the Indian Subcontinent* (Ed. Sir Joseph Hutchinson), London,1974
 - **Rao, S.R.** *Lothal and the Indus Civilization*, Bombay, 1973
 - **Santhanam, V. and Hutchinson, J.B.** Cotton, in *Evoloutionary Studies in World Crops- Diversity and Change in the Indian Subcontinent* (Ed. Sir Joseph Hutchinson), London, 1974
 - **Thapar, B.K.** Digging up the Past- Some Recent Archaeological Finds, *Times of India Annual*, 1977
 - **Turner, A.J. and Gulati, A.N.** The Early History of Cotton, *Agric. Four Inida* Vol. 24, 1929.
 - **Vishnu- Mittre.** Palaeobotanical Evidence in Indian in *Evolutionary Studies in World Crops – Diversity and Change in the Indian Subcontinent* (Ed. Sir Joseph Hutchinson), London, 1974.
 - **Wheeler, M.** *The Indus Civilization*, Cambridge, 1968.
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