

THE SUSTAINABILITY OF AGRICULTURE PRODUCTION AND URBANISATION (c.7000BCE-1700BCE)

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ABSTRACT

Food is indispensable for man's survival. Agriculture ensures a steady production and supply of food. Food is not the only thing ensured by agriculture though. Food surplus also played a major role in urbanisation. Rural centres gave way to urban cities because of surplus food production. The rise of farming communities like that of Neolithic Mehrgarh led to the beginning of settlements and man soon realised the importance of crop sustainability. This sustainability of agricultural production led to the first period of urbanisation in third millennium BCE. Drawing a correlation between sustainability of agricultural production and urbanisation is the purpose of this present paper.

KEYWORDS: *Urbanisation, Crop Sustainability, Agricultural Production*

INTRODUCTION

The necessity of food for man's survival cannot be disputed. *Taittiriya Upanishad* while declaring "Annam Brahma",¹ meaning that food possesses the attributes of Brahman states that 'food should be produced in abundance'.² While the importance of a steady supply of food was realised during the end of Mesolithic period with man taking to agriculture, the need for its surplus production was discovered in the Neolithic times. It is this surplus agrarian produced that when sustained over many centuries led to urbanisation during third millennium BCE.

In India, as elsewhere in the world, man thus lived for millennia in the hunting and food-gathering stage during the Palaeolithic age. Human communities entered a new stage of development in the Neolithic age during which they became less dependent on hunting and food gathering and began to produce their own food. The emergence of early farming communities in the Neolithic age was a result of an evolution of preceding indigenous cultural traditions. 11,000 years ago, with temperatures warming after the ice age, plants and animals became more plentiful, and as a result, permanent settlements began. Agriculture set the stage for an important phase of human history allowing for larger and more complex societies to thrive. Neolithic man had become so efficient at deriving energy from domesticated food that the land area, which would have supported only a single hunter gatherer, now could support thousands. Cereals were produced in substantial quantities and stored in granaries which have been discovered in different phases. Some of the buildings during the earliest phase at Mehrgarh (7000-5500 BCE) have revealed small cell like compartments and were made of mudbricks which were used for constructing dwellings, suggesting that these might have been used for the storage

¹*The Taittiriya Upanishad: with the commentaries of Sankaracharya, Suresvaracharya and Sayana (Vidyaranya), Trans. by A. Mahadeva Sastri, G.T.A. Printing Works, Mysore, 1903, p. 74*

²*Ibid., p. 765*

of grains.³Two structures with six symmetrical rooms each have been unearthed in level 7. ⁴In view of the absence of any domestic activity in them, these structures have been designated as the prototype of the compartmented buildings of Period II A which have been interpreted as granaries or stores. ⁵The buildings of Period II (5500-4500 BCE) were set over the ruins of the earlier period and on the alluvial terraces overlying the lower half of Period I.⁶systematically constructed platforms and the retaining walls of mud bricks were provided on the edge of the slopes of the earlier mound.⁷The quadrangular buildings divided into narrow compartments, which have been found filled with fallen bricks and a huge quantity of imprints of cereals suggest that these buildings were used as granaries.⁸Their number and sizes show an enhanced efficiency in agriculture and its production. With technological advances it was possible to produce more food than the minimum required by the band of people. This surplus food had the potential of being used for a variety of exchanges. This use of the extra food gradually introduced stratification into a society where some controlled the food and used it for exchange, while others were left to produce the extra food. Sites such as Mehrgarh, show a well demarcated transition from early agriculture to the preliminaries of urbanisation.⁹With growing population and more mouths to feed, man learnt to plant seeds. A higher density of population in places where agriculture was practiced might also have brought about a more sedentary population. It is thought that gradually those practicing settled agriculture may, on occasion, have overwhelmed hunter-gatherers and shifting cultivators. Habitats might have tended to encourage a concentration of people. According to Romila Thapar,¹⁰ this would eventually have made urbanisation possible.

During the Neolithic times, crops were kings.¹¹ To keep track of them, our ancestors developed the first writing; to protect them, the first armies; and to administer them, the beginnings of politics. The key to having a state or a flourishing civilization is agrarian surplus. If you produce enough food, you can have a class of people who don't need to farm. They can then fulfil other duties in this increasingly numerous and complex society whether they be leaders or judges who settle disputes, bureaucrats who deal with administration and infrastructure, doctors who heal the sick, priests who make sacrifices to vengeful gods or soldiers who provide security or at least extract a portion of the agricultural surplus for the leadership through some kind of taxation. In 1950 Childe presented his famous list of ten criteria, all deducible from archaeological data, to distinguish even the earliest cities from any older or contemporary village.¹²Surprisingly, his ten traits that included dense population, different vocations, and presence of monumental public buildings, sophisticated styles of art, foreign trade, taxation and writing system as features of an urban centre require agrarian surplus as a pre-condition.

³V.K. Jain, *Prehistory and Protohistory of India: An Appraisal*, D.K. Printworld (p) Ltd., New Delhi, 2006, p. 81

⁴Rakesh Tewari, "The Beginning of Wheat, Barley and Rice Cultivation, Mehrgarh and Lahuradeva", in *History of Ancient India vol II: Protohistoric Foundations*, ed. by D.K. Chakrabarti et.al. Vivekananda International Foundation in assc. With Aryan Books International, New Delhi, 2014, p. 5

⁵*Ibid.*,

⁶*Ibid.*, p. 14

⁷*Ibid.*,

⁸*Ibid.*,

⁹R. Thapar, *The Penguin History of Early India*, Penguin Books, New Delhi, 2002, p. 76

¹⁰*Ibid.*, p. 75

¹¹J. Oberoi, "Food Security and Governance: Exploring the Reciprocity in Ancient India" in *Pankhuri, Issue 1, Vol. 2, Business Press India*, New Delhi, 2015, p. 97

¹²V.G. Childe, "The Urban Revolution", in *Town Planning Review*, 21, 1950, pp. 9-16

Although the Indus Valley civilization, according to available facts, is supposed to be an urban civilization, yet the agriculture was the mainstay of life and provided sound base to their economy. That the agricultural production of the Harappans catered to more than their day-to-day needs is clearly indicated by large granaries in the metropolitan cities, as in Mohenjodaro and Harappa.¹³In all probability, cereals were received as tax or tribute by the state and stored in granaries for the payment of wages as well as for use during emergencies. This can be surmised from the analogy of Mesopotamian cities where wages were paid in barley. To the west of the Great Bath in the Mohenjodaro citadel, there was the granary of which only the basal part now survives, measuring 45m east west and 22.5m north-south, consisting of twenty seven blocks of kiln fired bricks, arranged in three rows of nine each.¹⁴The space in between these blocks provided passage for air so that the grain stored on the wooden floor of the granary could breathe and thus be saved from humidity.¹⁵Among the more important structures discovered in Mound F of Harappa particular mention may be made of a massive granary. It had two blocks, one each on the east and west, with a passage in between and each block consisted of six units, each unit measuring eternally 15x6m.¹⁶An area in which the Harappans of Dholavira excelled spectacularly pertained to water harvesting with the aid of dams, drains, 16 reservoirs and storm water management, probably to boost the agricultural economy. In the Bailey at Dholavira too there was a structural complex comprising four juxtaposed, stone-lined, underground chambers and is thought to have been used for the storage of grains.¹⁷While these granaries may have functioned as special reserves under the control of some central authority to be used on special occasions or in emergency, even individual householders had their own arrangements for storage, for example, by the presence of a number of large-sized jars in one of the rooms in a house in Lower Town at Kalibangan.¹⁸

Thus, as is conspicuous from the evidence of Indus Valley civilization, to take the epic step from city to civilization, agrarian surplus was the key and to sustain that civilization the Harappans had to master agrarian surplus. Urbanisation did not take place in a single day, but was a long-drawn process with many other factors. The process of urbanisation was the culmination of a gradual progressive change in the economic and social structure, begun centuries earlier, the seeds of which were sown by the sustenance of agricultural surplus.

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