



From Subsistence to Surplus: the Implications of the Agricultural Revolution

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Abstract : In the pre-Neolithic era, when humans were hunting and gathering wild plants and animals, they were living the life of a nomadic forager, but in the Neolithic period, the advent of agriculture and domestication of animals led to a wide range of fundamental changes in human cultural progress. Humans left the life of drifters and started living by occupying an area permanently. Therefore, families expanded, villages grew and rapid expansion of agriculture in all parts of the world happened. All these changes created a large food surplus, social inequalities and the division of labor and lubricated the wheels of civilizations. This article aims to explore how the beginning of agriculture changed the lives of humans and the major implications of the agricultural revolution in our lives.

IndexTerms – Neolithic period, Nomadic forager, Agricultural Revolution, Domestication of Animals, villages, families, food surplus, civilizations.

I.INTRODUCTION

The beginning of agriculture was not an event, it was a process. So, it would not be justified if we suggest a particular year for the beginning of agriculture.

Scholars once believed that agriculture spread from a single Middle Eastern point of origin to the four corners of the world. Today, scholars agree that agriculture sprang up in other parts of the world not by the action of Middle Eastern farmers exporting their revolution but entirely independently.¹

There are several theories regarding the beginning of agriculture propounded by social scientists.

The earliest theories were related to climate crisis in the early Holocene period leading to the extinction of a large number of animal species forcing the remaining animal species and humans to move towards water-rich areas. Here a symbiotic relationship between humans and animals provided the impetus for the growth of farming and animal husbandry. The 'push' theories mainly deal with the imbalance between natural resources and demographic expansion and caused by sedentism in areas with sufficient natural resources. Demographic expansion and the resulting population-resource imbalance forced humans to move towards marginal areas (with limited food resources) and broaden their diet. This led to experimentation with wild seeds and ultimately food production. The 'pull' models try to identify special characteristics of certain plants (mutant varieties) that attracted humans towards them. The increasing reliance on these mutant plants at the expense of other food resources forced humans to cultivate them and abandon plant gathering and hunting. Social theories increasing social complexities in the post Pleistocene period as reflected in the exchange of trade goods. This created economic and social pressure for humans not only to produce more and more surplus goods including food for subsistence but also to successfully engage in exchange. A few social theorists also talk about the transformation in human society from band society to proto-household society which provided the necessary impetus to produce food. Cultural models point out the human capacity for innovation and experimentation as a factor behind the growth of agriculture. It argues that in the 'nuclear zones' where potentially domesticable plants and animals were available in plenty, humans experimented and intervened in the natural process of growth of plants and animals ultimately leading to the domestication of both.²

However, there is a general view that mono casual explanations are not enough in themselves in explaining this transition. That is why nowadays the beginning of agriculture has been seen as a process rather than an event. This vital event changed the lives of humans drastically.

¹ Yuval Noah Harari, *Sapiens: A Brief History of Humankind* (London: Penguin Random House, 2014), 88.

² Rakesh Kumar, *Social Formations in The Ancient World: From Evolution of Humans to The Greek Civilisation* (New York: Routledge, 2024), 94-95.

II. MAJOR IMPLICATIONS OF AGRICULTURAL REVOLUTION:

The Coming of agriculture changed the human diet. In Paleolithic era humans relied on meat but with the advent of agriculture humans started consuming more cereals (wheat, rice). Moreover, milk and derivatives created a space into human food regime because of animal domestication. All these changes affected human life span, metabolism, resistance. Because of the changing diet, there were a few craniofacial changes that occurred. The hunter-gatherers had a larger skull than the Neolithic farmers because life was much more mobile and active. A nomadic hunter-gatherer consumed tougher food, which required more chewing apparatus, but agriculture made the food more soft and easier to chew change. This change made our teeth more lazy and less mechanical demand in the bones of the face gradually contributed to overall reduction in our jawline and our face became smaller. Beginning of agriculture changed human attitude. Human merit increased day by day, humans started thinking how to produce more food that thinking helped him to create new agricultural techniques. He started questioning and seeing things around him- why seeds germinate? What type of soil will grow more crops? This curiosity resulted into today's modern world. Agriculture also changed humans view about time. Seeds are sowed in a season, harvested in another season. Thus, it created the sense of hope and aspirations in which we focus on future. The coming of agriculture created many new diseases which were unknown to early farmers. Negative impact on human health and hygiene resulted into new diseases. For instance, sedentary life created ideal environment for mosquitoes. Especially because of agriculture humans started storing water, irrigating crops, settling near marshy lands. These mosquitoes enhanced disease like malaria. Permanently living in an area, helped disease carrying hosts in spreading diseases. When human started domesticating animals, many viruses jumped from animals to human's body; diseases like smallpox and measles are example of this.

The increase in population was the result of agriculture because it increased the food supply. Farmers could grow more than hunter gatherers could collect. Even farmers could store those surplus food for a lengthy period. On the other hand, refusing the life of a nomadic forager helped the women to have a child every year. All these increased the population. These new mouths ate the surpluses so new fields were needed too, that's why settlement also expanded. Hunting and gathering required humans to move from one place to another after completely using the resources of that area so they lived the life of a nomadic forager and did not get the opportunity to settle in a land, but the advent of agriculture required the early farmers to stay in a place for long period because from sowing seed to harvesting it needed a lot of attention and for that humans were forced by the wheat to stay in a place. Gradually multiple settlements over that fertile land led to the emergence of villages.

Before the beginning of agriculture there was 'co-operation,' but that Cooperation was limited for a short span of time than the post Mesolithic period. Hunting gathering required cooperation only for that period of hunt and gather but agriculture required cooperation from sowing seeds to harvesting the crops. This cooperation across the year strengthened the social ties and led to the emergence of communities. Permanent settlement led to the social and occupational divisions. With the advent of village settlement, the occupation of people got diversified as farmers, breeders, herders, potters, carpenters, stoneworkers. With time this division paved the way for craft specialization.

The division of labor first happened between sexes- man and woman. When the nomadic men were busy in hunting animals, the nomadic women were busy in gathering fruits, vegetables, eggs, other eatable materials. They also took care of babies. With the development of agricultural techniques such as ploughing, drainage and irrigation which needed physical strength these activities became dominated by men. This thing solidified the fallacious notion that women are weak, and it paved the way of societal inequality.

The beginning of agriculture created the wars more significant. Before agriculture was practiced humans were hunter gatherer, if any outsider group would have attacked there living area, then they would simply leave that place, but it was not the case for early farmers. They invested hardships and labor to create an area abundant or productive then why they would simply leave that area to that outsider group, they would surely provide resistance and that's how agriculture increased violence.

Agriculture changed the human psychological system, society and even the belief system. New form of rituals and religious structure appeared with the advent of agriculture. New deities appeared with linkage to farming and nature. For example, GOD of fertility, GOD of rain etc. Rituals were appearing that could appease the GOD to get that favorable condition of agriculture.

The advent of agriculture improved the technology of that period. To produce more food the early farmers invented the techniques of ploughing, irrigation, drainage. The tools they used in agriculture it also faced the swift of changes; it was more improved by time. There were different stones for different works like planting, harvesting and for grinding those grown crops. To preserve surplus food there was requirement of storage, it also improved the food storage techniques and advanced the ceramic pottery than earlier Mesolithic period. After the invention of wheel in 6000 BCE, wheel pottery became famous in West Asia. Settling permanent in an area led to the advancement of house building technologies by using mud, stones. So clearly that house was much more long lasting than earlier periods.

The concept of land ownership appeared with the advent of agriculture. People started claiming those lands in which he gave all his hardships. Wheat didn't like rocks and pebbles, so Sapiens broke their backs clearing fields. Wheat didn't like sharing its space, water and nutrients with other plants, so men and women labored long days weeding under the scorching sun.³ All these hardships they did to produce crops, then why they will share them and the field with any other group or family? That is how the idea of land ownership and private property appeared. The cultivation of crops and even cotton (Mesopotamians started its cultivation back in the Neolithic period) started the trade although it was done in exchange with another product, but it gradually developed the concept of market.

³ Yuval Noah Harari, Sapiens: A Brief History of Humankind (London: Penguin Random House, 2014), 88.

III. CONCLUSION:

The agricultural revolution is a very vital process (not event) of history that reshaped the human life in myriad ways. The advent of agriculture brought many changes in diet, diseases, attitudes, gender roles, populations, settlement types, art, conflict and in religious belief system which were profound and far reaching. All though with all these ubiquitous changes, it also introduced few challenges that have continuous resonance even today. Like the appearance of power and personal wealth created social divisions. The increasing dependency on crops somehow transformed the situation more vulnerable. Less diversified food consumption led nutritional deficiencies. Farming practices caused environmental degradation. All these things proves that there are long term consequences along with many new introduced challenges of Agricultural revolution so we must accept the dual nature of the agricultural revolution. Understanding the agricultural revolution and its impact on humans gives us many valuable insights about the gradual process of development and about the moving towards the way of civilization. It is undoubtedly a part of our ongoing journey as a species.

REFERENCES

- [1] Bellwood, Peter. First Farmers: The Origins of Agricultural Societies. Malden, MA: Blackwell Publishing, 2005.
- [2] Childe, V. Gordon. Man Makes Himself. London: Watts & Co., 1936.
- [3] Cohen, Mark Nathan. The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture. New Haven: Yale University Press, 1977.
- [4] Harris, David R. The Origins and Spread of Agriculture and Pastoralism in Eurasia. London: UCL Press, 1996.
- [5] Piperno, Dolores R., and Deborah M. Pearsall. The Origins of Agriculture in the Lowland Neotropics. San Diego: Academic Press, 1998.
- [6] Price, T. Douglas, and Anne Birgitte Gebauer, eds. Last Hunters, First Farmers: New Perspectives on the Prehistoric Transition to Agriculture. Santa Fe, NM: School of American Research Press, 1995.
- [7] Kumar, Rakesh. Ancient and Medieval World: From Evolution of Humans to the Crisis of Feudalism. Delhi: Aakar Books, 2021.
- [8] Harari, Yuval Noah. Sapiens: A Brief History of Humankind. Translated by the author. London: Vintage Books, 2015.