

# AN INVESTIGATION INTO THE ARCHITECTURE OF THE MUGHAL EMPIRE, FEATURING A PARTICULAR CASE STUDY OF RICH INDIAN SCULPTURE

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## ABSTRACT

India has always been an agricultural nation throughout the ages. Agriculture has always been important for the ongoing growth of the nation. However, science and technology have also long been practiced in India over thousands of years. Improvements in science and technology frequently result in improvements in agriculture. India achieved strides in agriculture even during the Mughal era with the help of technology and other necessary procedures. In this regard, Babur, Akbar, Shahjahan, and others were noteworthy individuals. Improved plough various types were introduced multiple times during the Mughal era and that followed trends in order to develop agriculture and boost productivity. Not only that, but throughout the empire, specialized agricultural technology was employed, artificial reservoirs were built, and an advanced irrigation system was put into operation at this time. It's most likely that all of this date back to simpler times when technology was employed. As a consequence, it can be determined that, in the same way as other variables contributed to the improvement of agriculture during the Mughal era, technology application also had an important bearing on it.

**Keywords:** Agriculture, innovation, production, irrigation, Technology, Persian Wheel, Sakiya, water channel.

## 1. INTRODUCTION

Since ancient times, India has been mostly an agricultural nation. A vast majority of the nation's population finds employment in agriculture. Throughout India's history, agriculture has been the backbone of the rural economy; as such, it is crucial to the nation's economic development. India today ranks second in terms of agricultural productivity, and this is true for both ancient and medieval India as well as modern India. In India, the cropping and forestry sectors account for 16.6% of GDP, and the then-rulers and prominent power holders employ around 52 percent of the work force in these occupations. The data provided was gathered on a 2007 report. Thus, as we can see, the farming industry in India has been fundamental to the nation's economic growth from before recorded history to the present. Nevertheless, India has long been known for its achievements related to science and technology in addition to agriculture. Historians have maintained that science and technology were quite advanced in ancient India, in particular during the Harappan Civilization and the Gupta Regime. Despite the fact that such approaches are necessary for its promotion and maintenance. Science and technology advanced substantially in medieval India, and this advancement led to developments in agriculture as well. Especially during the Mughal era, this was also commonplace in medieval India. We shall investigate the function of modern technology in agriculture and the development of it throughout the Mughal era because this article is about that historical time. The paper's goal is to comprehensively examine these issues from an academic point of view.

### The most important objective of the study research is:

The title if the project already provides hints to the core theme. As science and technology move forward, so does each country, as we all know. A nation's ability to prosper commercially is greatly influenced by technological and scientific developments, which can also give any nation or city the upper hand in international affairs. Economic progress is significantly impacted by the expanding scope of agriculture, improvements in soil fertility, and increases in yield. In India throughout the Mughal era in the course of the Middle Ages, this was also believed. As we shall see, science and technology have been fundamental to the significant advancement of agriculture in this century as well. That is the explanation for why this post was written.

### A succinct overview of the Mughal dynasty and its main aspects.

In Indian history, the Sultanate period encompassed the Indian subcontinent from 1206 to 1526 AD. Zahiruddin Muhammad Babur conquered Ibrahim Lodi in the First Battle of Panipat, in 1526, establishing the Mughal Empire. The Mughal emperor' power continued in India until the British Empire became established. Zahiruddin Muhammad Babur (1526–1530), Humayun (1530–1540), Akbar (1556–1605), Jahangir (1605–1627), Shah Jahan (1628–1658), Aurangzeb (1658–1707), Bahadur Shah II (1837–1857), and other noticeable leaders of the Mughal Empire are some of them. As investigated by the ages, some important statements regarding this time frame are Tezuka-e-Babri, Tezuka-e-Jahangiri, Humayun Nama, Ain-e-Akbari, Akbar Nama, Muntakhab-ul-Tarikh, Padshah-Nama, etc. Throughout past times, Akbar

was the most exceptional Mughal Emperor. In 1556, Akbar returned to the throne following the execution of Humayun. Todormal introduced three distinct categories of income systems after developing a new one in 1582, during his reign. In terms of architectural sculpture by significant medieval individuals, the Mughal emperor Shah Jahan made a significant contribution. On the flip side, the Mughal a kingdom grew significantly under Emperor Aurangzeb, and as a result of his lack of strength, this vast a kingdom began to wane after his death.

#### **Farming and farmers' conditions of the period:**

The Sultan, who oversaw the agricultural system and controlled a modest plot of land, was at the head of the government throughout the Sultanate era. Land was also apportioned in accordance with the Iqtedari method. During the Sultanate era, agriculture did not advance much, and nothing is known about it. But things started to shift starting in the sixteenth century. Indian farmers grew fresh crops with little hesitation at this time. Agriculture maintained for many people's principal source of income and the main source of government revenue even during the Mughal era. Rice, wheat, silk, cotton, sugarcane, oilseeds, etc. were abundantly cultivated in the lush geographic areas. Books like Babar Nama, Humayun Nama, Ain-e-Akbari, etc. show in detail the agricultural activity of the Mughal Empire and the ancient India. In addition, the experiences of different foreign visitors can also teach us valuable lessons. Traders from abroad transported tobacco and maize to India during this time, and later on, large-scale production of both crops developed. Irfan Habib believes that maize may have come to India after 1600 AD via the Mediterranean region. Habib says that the common name of maize in India was 'Makai'. References to the cultivation of maize in western India and the Deccan are recorded in documents from the government from the seventeenth century. Moreover, it was during the time of the Mughal rulers that Indians became accustomed to cashew, pineapple, and other significant fruits. But the zamindari class and upper class governed the revenue system and agriculture primarily throughout the Mughal era. Over time, the Zamindari class continued to protect the traditional way of enjoying the land. The zamindars served as the ryots' conduit to the government. fortunately, at this point, the landlord class was divided into distinct factions, and the others emerged. First class members included Rai, Rana, Raja, and so on; second class members included Malguzari; third class membership were known as Khidmati Zamindar. Between his various professions were Deshmukh, Chaudhary, and Kanungo.

Consequently, it can be established that the zamindars had an enormous influence on the Mughal era's economy, particularly in the fields of productivity and agriculture. The Mughal era and modern times saw the arrival of a different type of revenue collectors called Jagirdars. They did not, however, have the right to inherit office. Additionally, the emperor of the day had permission to alter them whatever he pleased. However, it is suggested by an assortment of modern sources, such as the Ain-i-Akbari, that the agricultural workers riot, or any other struggles with politics served as a foundation for the Mughal agricultural system. Due to their lack of ability to mortgage or sell the land, the farmers encountered several difficulties while in anticipation of their land to be sold. Irfan Habib has provided a detailed account of the causes of the struggles faced by farmers in the Mughal and contemporary civilizations.

#### **The Mughal Time period's Technology regarding agriculture and sculptural aspect.**

The prevailing assumption is that science and technology were not practiced with major developments in medieval India. Nevertheless, it is indisputable that no technique has been used at all. because there were not any limitations on the usage of foreign and old Indian innovations. Implementers of technology at that moment usually operated in two ways. Independent manufacturers of commodities for people in both urban and rural areas were a group of craftspeople. In other systems, craftsmen were tasked with purchasing machinery while producing requirements in factories. India has made substantial advancements in shipbuilding since the beginning of the twentieth century. European traders undertook significant improvements to shipbuilding during this time. Eastern and Western naval technologies were brought together as a result, and they had an impact on each other, changing the shipbuilding industry. Traders and seamen might frequently exchange out their vessels upon discovering Indian vessels. Improvements in technology were also needed in the repair of these vessels. The seventeenth century saw even more changes to the situation. With the aid of the Dutch and the British, prominent Mughal officials established an important navy in Bengal. Bengal was the manufacturing home of the ships Pusat, Ballia, and Bepari during the Mughal era. Nevertheless, the conflict additionally coincided with the starting point of taking advantage of technology. Cannons were originally used in the first battle of Panipat in 1526 AD by Babur, the founder of the Mughal Empire. The Kazan, firandi, and Zurbaran are the three types of weapons that Babur utilized. There were various uses for firearms later, in the Akbar era. A lot of boat bridge construction also occurred during the period in question. Babur, Humayun, Akbar, and other rulers developed a large number of boat bridges. The bridge known as "Jasar-e-Rawan" originated during the reign of Humayun. Bridges built of stone and wood were also built applying this technology. In his narrative, François Bernier supplies endless examples of this. Still, during the Mughal era, advances in science and technology were openly presented in a variety of construction and art compositions. Building palaces, mosques, gardens, and other monuments has placed a high value on the use of science

and technology. According to a number of modern reports, Akbar also used the same method when building a kind of adjustable home for outdoor life. Aine Akbari provides other examples of this. Aside from this, the improvement of the paper, silk, wool, and other enterprises had great significance by the Mughals.

#### **In the period known as the M technology was implemented in agriculture:**

Considering the lack of significant intellectual or technological improvements during the Mughal era, technology was heavily employed in agriculture. There were many various kinds of farming machinery, and Indian farmers were especially intrigued in using this equipment. Drill sowing in agriculture is discussed by Francis Buchanan. A popular misconception is that India was the location where the drill sowing technique originates. During his travels about the Bhagalpur municipality, Buchanan had witnessed instances of a particular kind of the technique. Agriculture at that moment additionally utilized additional types of technology. In addition to agricultural machinery, irrigation is additionally regarded as an essential aspect in the advancement of agriculture, and there are instances of technology being deployed in this irrigation system. There was not sufficient water for cultivation in any of the parts of India that saw little or no rain. Large-scale artificial reservoir construction became necessitated as a result. The passages of Babar Nama contain numerous examples of this kind of man-made reservoir creation. According to Babur's storytelling, Punjab's agricultural land was irrigated using "Persian Wheel" technologies. From the Yamuna River, Shah Jahan had cut a 150-mile canal referred to as "Nahar-e-Faiz." The process of farming required the utilization of apparatus to extract water from this canal. In his autobiography and other literature from the early 16th century, Babur highlighted the usage of "Sakiya" in India. Water was extracted from reservoirs and other sources using many pitchers connected to ropes in this manner. Several people have claimed that the Persian and Sakiya wheels are interchangeable, including Babur. Nevertheless, as stated by Irfan Habib, the Persian and Sakiya wheels have unique features. Babar Nama book presents comprehensive information about Persian the wheels. Together with multiple additional musical instruments, this machine was used for large-scale farming during the Mughal era in northwest India and contemporary society.

## **2. CONCLUSION**

Under these circumstances, and taking into thought all of the facts and works, it can be concluded that the Mughal era was notable for more than just the empire's sustained expansion. A significant contributing ingredient to this empire's reputation is its agriculture. Numerous factors, including soil fertility, irrigation efficiency, seed quality, and transportation facilities influence agricultural development. In addition, using agricultural machinery and tools facilitates farmers' tasks and helps them use the tools with greater efficiency. Farmers throughout the Mughal era may benefit from this kind of machinery and supplies. Naturally, ancient India also made use of a large number of these materials and implements. It is also imperative to remember that the development of agriculture has been supported by the invention of numerous innovative equipment and through the introduction of some foreign practices. However, nation-wide law and order—particularly the chaos brought on by the foreign invasion—occasionally seriously harmed agriculture. In addition, agricultural damage can be brought on by floods and droughts, for which improvements in technology have had little to no beneficial consequences. But there is no denying that throughout the Mughal era, technology advanced, and agriculture progressed as a result of the use of that technology. Furthermore, agricultural productivity and output improved significantly from Akbar's reign until the 20th century, as demonstrated by historian W. Moreland. Thus, in the context of agriculture, it can be concluded that while science was not employed in medieval India, particularly in Mughal India, significant improvement was made in the use of technology and multiple additional methods available at the time.

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