



Cultivating The Past: A Historical Exploration of India's Agricultural Legacy

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ABSTRACT

This review paper provides a comprehensive overview of the history of agriculture in India, tracing its origins from ancient times to the present day. The study explores the impact of climatic changes, technological advancements, and socio-economic factors on the development of agriculture in the region. It also explores the domestication of crops and animals, the development of various farming techniques highlighting the key milestones and transformations, including the Indus Valley Civilization, the influence of foreign trade, the impact of colonization, and the Green Revolution. It also investigates the role of irrigation systems, taxation policies, and trade networks in shaping agricultural productivity and prosperity. By analyzing historical sources, archaeological evidence, and scholarly research, this study sheds light on the rich and diverse agricultural heritage of India and its significance in shaping the nation's economy and culture.

KEYWORDS: History, Agriculture, Neolithic, Chalcolithic, Indus Valley Civilization, Zabt, Irrigation, Green Revolution

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INTRODUCTION

Agriculture has been an integral part of India's civilization for millennia, shaping its culture, economy, and society. From the earliest settlements in the fertile valleys of the Indus and Ganga rivers to the present-day modern agricultural landscape, India's legacy in agriculture has been marked by both triumphs and challenges.

The significance of agriculture in Indian civilization cannot be overstated. Communities have depended on it for subsistence, employment, and as a base for socio-economic development. India's landscape has been altered by the interaction of humans and nature, agricultural development, and the cultivation of fertile regions, which have also fostered a strong bond between the country's people and the land on which they work [1].

To fully comprehend the history of agriculture in India, one needs to journey through time, exploring the ancient agricultural practices of prehistoric communities, the sophisticated agricultural systems of the Indus Valley Civilization, the agricultural innovations of the medieval and modern periods, as well as the current problems and innovations of the post-independence era.

By examining the history of agriculture in India, we can gain insights into the complexities of a nation where farming has been a way of life for generations. We can appreciate the effort of the farmers, their ingenuity in the face of adversity, and the continual importance of agriculture in ensuring food security, rural development, and sustainable livelihoods [2].

METHODOLOGY

Research: Extensive research was conducted to gather relevant information on the topic. This involved exploring various books, historical records, scholarly articles, and reliable online sources to understand the key aspects of India's agricultural history. The information thus collected was cross-verified from multiple sources to ensure accuracy and reliability.

Analysis: The collected information was carefully analysed to identify significant themes, patterns, and developments in the history of agriculture in India. This involved examining the evolution of agricultural practices, technological advancements, socio-economic factors, and the impact of various historical events on agriculture.

Synthesis: The findings from the research and analysis were synthesized to create a coherent narrative that traces the trajectory of agriculture in India. The information is organised chronologically, tracing the

development of agricultural practices from ancient times to the present day and highlighting key milestones, challenges, and innovations in different periods of Indian history.

Structuring: The paper is structured in a logical and cohesive manner. The main body of the article presents the historical progression of agriculture in India, covering various aspects and developments. Suggestions for the development of Indian agriculture are presented in the conclusion.

By employing these principles of the historical method, the paper aims to provide a comprehensive overview of the history of agriculture in India, offering readers a deeper understanding of the subject while maintaining accuracy and readability.

Background and Objectives: Agriculture has been the backbone of Indian civilization for thousands of years, playing a crucial role in the socio-economic development and cultural fabric of the nation. The objective of this research paper is to explore how agriculture has shaped Indian society, economy, and culture over time. By examining the relationship between agriculture and other aspects of Indian civilization, such as trade, urbanization, social structure, and technological advancements, the paper will bring newer, broader implications and impact of agriculture in India.

- This research paper aims to contribute to the existing knowledge on the agricultural history of India. It will provide new insights, interpretations, and perspectives on the subject, filling gaps in the current understanding.
- It seeks to document and preserve the historical knowledge and practices related to agriculture in India. By examining primary and secondary sources, this research paper presents a comprehensive overview of the agricultural advancements, techniques, and challenges faced by Indian civilization throughout history.
- This paper provides insights and recommendations for contemporary agricultural policies and practices in India. By studying historical agricultural systems, challenges, and solutions, the research paper will suggest policymakers and agricultural practitioners about sustainable practices, resource management, and the potential for innovation in modern-day agriculture.
- The research paper focuses on the preservation and conservation of traditional agricultural practices, indigenous knowledge, and biodiversity in India. It highlights the importance of maintaining sustainable agricultural practices and safeguarding the cultural heritage associated with agriculture.
- One of the objectives of this paper is to provide educational material and resources for students, researchers, and enthusiasts interested in the agricultural history of India. It will serve as a reference document, offering a comprehensive overview of the topic and acting as a starting point for further research [3].

Pleistocene Epoch and The Environmental Changes: The end of the Pleistocene, marked by a series of ice ages, had a significant impact on humans. During the Pleistocene, large parts of the Earth's surface were covered by glaciers, which restricted the availability of suitable land for agriculture. However, with the onset of the Holocene, the Earth underwent significant changes and the climate became warmer and more stable. As the ice sheets receded, previously inhospitable regions transformed into fertile landscapes suitable for cultivation. This change in environmental conditions provided early human communities with the opportunity to settle in areas that were previously uninhabited. The warming climate also had a direct impact on the growth and distribution of plant species. The expansion of forests and the diversification of plant life provided a greater variety of wild food sources for early humans. This allowed for experimentation and the selective cultivation of plants with desirable traits, leading to the domestication of crops. Early humans took advantage of these changes and domesticated animals for various purposes such as food, labor, and transportation. The domestication of animals complemented agricultural practices and provided additional resources for human societies [4].

Earliest Agricultural Practices: The Neolithic settlers were the earliest farming communities, although we have evidence of wild rice consumption during the Mesolithic period. The Belan Valley and the Kochi Plain area are identified as the earliest cultivation zones. Grains of cultivated rice, along with bones of domesticated cattle and sheep-goat, were found in the Belan Valley, dating back to 6500 to 4500 BCE. We have evidence of the cultivation of wheat, barley, and millets in the Kochi Plain of Baluchistan from the Seventh millennium BCE. They used stone hoes and digging sticks to cultivate the land. From the early stages of the Neolithic period, the inhabitants of this region engaged in the cultivation of wheat and barley. Simultaneously, they undertook the domestication of cattle, sheep, and goats. The practice of cattle rearing likely played a beneficial role in their agricultural endeavors. Excavations have unearthed many compartmented mud-brick structures, which appear to have been granaries. The potter's wheel also made its way into Baluchistan during this period and from there spread into the Indian subcontinent. Agriculture

significantly expanded from the Kochi plain area to the Indus plain area during the second half of the fifth millennium BCE [11]. There is evidence suggesting that neolithic farming in north-west India was influenced by the spread of agriculture from the Near East. However, some researchers like Jean-Francois Jarrige argue for an independent origin of agriculture in Mehrgarh (situated in Baluchistan, a province of Pakistan), suggesting that agricultural practices and the development of settled communities in this region were not solely influenced by external factors but had their indigenous roots [6]. This viewpoint challenges the traditional notion of agriculture spreading solely from Mesopotamia to the Indus Valley and recognizes the potential for parallel agricultural developments in different regions.

Agriculture during the Indus Valley Civilization: Although no evidence of hoes or ploughshares has been found in the Indus Valley Civilization, the presence of furrows discovered in the pre-Harappan phase at Kalibangan indicate that ploughing was practiced in some areas during the Harappan period. This suggests that the Harappans used wooden ploughs pulled by oxen. Additionally, the construction of "Gabarbands," enclosed by dams, was observed in parts of Baluchistan and Afghanistan. These structures were designed to divert water and facilitate the accumulation of alluvium, resulting in the formation of small, fertile fields naturally irrigated by water [8]. The Harappans produced enough grain not only for their own use but for others who were not directly involved in agricultural activities. This agricultural surplus paved the way for the rise of cities during that period.

The inhabitants of the Indus Valley were engaged in the cultivation of various crops such as wheat, barley, rai, and peas. Excavations at Banawali have revealed a significant quantity of barley, while sesame and mustard were also cultivated. At Lothal, people grew rice as early as 1800 BCE, the remains of which have been found. Large granaries have been found in both Harappa and Mohenjo-daro which were used to store the harvested food grains. Additionally, the people of the Indus Valley were pioneers in cotton production, and techniques used in cotton spinning and fabrication continued to be practiced until the modern industrialization of India. "Sindon", a Greek term for cotton, is derived from Sindh [11].

Chalcolithic Age: During the Chalcolithic age, which should have technically predated the bronze age of Harappa, but mostly overlaps or follows the Harappan Civilization, people across various parts of the subcontinent practiced cultivation of crops such as bajra alongside their staple crops like wheat and rice. Additionally, they engaged in the production of many pulses including lentil (masur), black gram (urad), green gram (moong), and grass pea (khesari). Notably, excavations at Navdatoli, (a chalcolithic settlement situated on the banks of the Narmada River in Madhya Pradesh), have yielded a remarkable abundance of these food grains, making it a significant site for cereal discoveries in India. Cotton was grown alongside rai, bajra, and several other millets in the black soil of the Deccan region. Rice, on the other hand, formed the primary dietary component in the eastern part of the country. Chalcolithic cultures existed in the central and western regions of India until 1200 BCE, while the Jorwe culture of Maharashtra existed until the seventh century BCE [11].

Agricultural advancements during the Iron Age: During the Iron Age in India (1500 BCE - 200 CE), agricultural practices continued to evolve. The summer monsoons played a crucial role in providing moisture for both winter and summer crops. Jute, a versatile plant used for making ropes and cordage, was first cultivated in India. Trees such as the Pipal and Banyan were domesticated and held religious significance. Various kinds of grains, vegetables, roots, fruits, flowers, and medicinal herbs were produced, and oils and sugar were manufactured [7]. The Indian subcontinent is also known for its native tropical fruits such as mango and muskmelon. Hemp was also domesticated and used for various purposes, including making narcotics, fiber, and oil. The Mauryan Empire (322-185 BCE) categorized soils and made meteorological observations for agricultural purposes. They also constructed and maintained dams and introduced horse-drawn chariots for transportation. Kautilya mentions water divining, devices used for water lifting, and various other irrigation techniques.

First Millennium CE saw advancements in agriculture in different regions of India. During this era, India's spice trade gained momentum as Indian spices such as cinnamon and black pepper were exported to the Mediterranean. During the first and second centuries, the trade between Southern India and the Roman Empire was extensive. Puhar, also known as Kaveripattinam, then at the mouth of the Kaveri River, was a rich and prosperous port during that time. The overland trade of India with Western Asia dated from ancient times and was conducted by several routes across Persia, Mesopotamia, and Asia Minor [13]. The Roman and Chinese civilizations engaged in trade with India, with Chinese sailors being attracted to Indian sericulture. India also made significant contributions to the development of sugar refining, with crystallized sugar being discovered during the Gupta Empire (4th to 6th century CE). Indian spice exports are mentioned in various historical records.

Agricultural Practices in South India: The people in south India cultivated a wide range of crops, including rice, wheat, barley, mustard, sugarcane, millets, black pepper, lentil, coconut, sesame, and various other grains. Ploughing, manuring, irrigation, and crop protection were practiced systematically. In

addition to cultivating pulses and vegetables, the region excelled in growing commercial crops. Different areas had their own specialties, such as cotton being the primary crop in Gujarat and Berar, millet in Maharashtra and Karnataka, and rice in the Konkan region. Mysore was known for the production of sandalwood, teak, and ebony wood, while coconut was a major product across the whole of South India. Historical accounts by travellers like Marco Polo indicate the cultivation of ginger and cinnamon in the Pandya country, while Ibn Saeed mentions the production of pepper. Al Idrisi, the author of *Nuzhat-al-Mushtaq* (more commonly known as *Tabula Rogeriana*), writes about cardamom cultivation in the hills of Malabar. Sandalwood and indigo were grown on the southern mountains. While South India boasted a diverse range of products, historical accounts also highlight periods of hardship and adversity that the inhabitants of the region endured. The *Prabandha-Chintamani* of Merutunga describes a famine that occurred during the reign of Chalukya King Bhima, highlighting the challenges faced by the kingdom during that time. Similarly, the *Periyapuranam* documents a major famine that struck the Pandya kingdom in the seventh century. During the reign of Vikram Chola, also known as Parakesari Varman, the region experienced severe floods, causing a great deal of destruction to the crops. The Tanjore Inscription provides insights into a major famine that took place during the reign of Chola emperor, Kulotung II. During these challenging times, the rulers displayed empathy by granting tax exemptions and initiating various relief efforts to mitigate the hardships faced by the people. Water storage systems were designed, and structures like the Kallanai Dam were constructed to facilitate irrigation.

According to K. A. Nilakanta Sastri, the cultivation of betel and areca nuts, ginger, and turmeric, as well as the growth of fresh fruits and flowers, constituted the primary produce of gardens in the region. Abdur Razzak observed the abundance of rose merchants in Vijayanagar and remarked that roses seemed as indispensable to the people of that city as food itself [10]. The prosperity of the cultivators depended to some extent on seasonal factors, but it was largely influenced by their tenure conditions and the methods employed by the tax-collecting authorities. It is believed that tenant conditions were relatively favorable on lands dedicated to religious and charitable purposes, with temples, mathas, and Brahmins acting as landlords. However, in cases where rights were assigned to high-ranking officials and nobles, both the tax rates and collection practices imposed significant burdens on the cultivators. Even during the reign of the Imperial Cholas, there were grievances regarding the oppressive methods employed by tax collectors [10].

Agrarian Reforms of Medieval Period and the commencement of Canal Irrigation: During the Medieval Period, Alauddin Khilji was the first ruler in the Sultanate to insist that in the Doab (the land between the Ganga and Yamuna rivers), revenue should be assessed based on the measurement of the cultivated land. He increased the tax in the Doab from one-third to half of the produce [12]. Through an increase in the state demand and generally forcing the peasants to make cash payments, he enforced a situation where the peasants were compelled to sell their produce at reduced prices to the middlemen who transported it to cities and sold it at prices already fixed by the state. The state took the initiative to establish warehouses where foodgrains were stored. These reserves were utilized to address situations such as famine or the risk of a shortage in the food supply. Whenever such circumstances arose, the stored foodgrains were released to mitigate the impact and ensure the availability of foodgrains for the population. One mann of wheat was available for 7 and a half Jitals, a mann of barley for 4 Jitals, and a mann of rice for 5 Jitals [2]; [9]. For comparison, 48 Jitals constituted 1 Tanka, and 1 Mann of Alauddin was equivalent to 15 kg in today's measurement [2]. "Kharaj" referred to the land tax levied by the rulers on their non-Muslim subjects. Muslim landowners, on the other hand, paid "Ushr." He also levied other taxes like Charai Tax which was imposed on milk-giving animals. This indicates the richness of the soil during that period and is confirmed by foreign travellers like Ibn Battuta who has left a very interesting account of the products of the country, including fruits, flowers, and herbs, etc. He mentions that the soil was incredibly fertile, enabling it to yield two crops annually, with rice being cultivated three times a year. Some of the measures taken by Alauddin Khilji served as a foundation for the agrarian reforms implemented by Sher Shah Suri and Akbar [2].

During the fourteenth century, Muhammad Bin Tughlaq set up a separate department called "Diwan-i-Amir-Kohi" dedicated to improving and expanding cultivation in the Doab region. He also introduced the Famine Code which outlined measures to tackle famine situations effectively. To encourage agricultural growth, he appointed officials who were responsible for providing loans to peasants and incentivizing them to cultivate superior crops. According to Ibn Battuta, the Sultan ordered provisions for six months to be distributed to the people of Delhi during the famine [5].

The significance of waterworks and irrigation systems is highlighted in Arabic and Persian texts, as they played a crucial role in fostering economic growth. The construction of canals, as history tells us, was started by Ghiyasuddin Tughlaq, and this project was later taken up by Firoz Tughlaq on a larger scale. He oversaw the construction of two major canals, which efficiently transported water from the Satluj and Yamuna Rivers to the vicinity of Hisar, Haryana. One of these canals was repaired by Akbar and later

became the basis of Western Yamuna Canal [1]. One canal passing through Sirsa carried water to the newly founded city of Firozabad. Another canal was dug from the Yamuna at Budhai (or Budhni) to Hisar Firoza, where it flowed into a tank but was also taken further [5]. Contemporary writers tell us that there were six of these canals. Efforts were also made to improve the cropping pattern so that wheat and sugarcane began to be cultivated in place of inferior crops [1]. These ambitious endeavors significantly expanded the irrigated area, contributing to agricultural development. With regard to the canals of Firoz Tughlaq, however, Henry Miers Elliot has noted that these canals are not mentioned by any of Timur's historians, who were very precise in their topographical details, and Babur also states in his memoirs that there are no canals in any of the Hindustani provinces (and both these conquerors must have crossed these canals if they were flowing during their time), and doubts whether anything was done beyond mere excavation [3].

Taxation Policies during the Mughal Period: One of the earliest mentions of the Persian Wheel or "Rahat" occurs in the memoirs of Babur, the Tuzuk-i-Baburi. The mention of this irrigation device highlights its significance and suggests its presence during Babur's time. Indian agriculture during the Mughal Empire was considered advanced compared to Europe at the time. Indian peasants were skilled in growing a wide variety of crops, and they quickly adapted to profitable new crops introduced from the Americas by the Portuguese, such as potatoes, peanuts, maize, tobacco, etc. Regions like Bengal became major producers of silk through sericulture and Indian crops spread to other parts of the world, including North Africa, Spain, and the Middle East.

Sher Shah abolished the system of Zamindars in revenue collection and started collecting revenue directly from the peasants. Every peasant was granted a "Patta" (title deed) by the government, in which the area of his land and rent was mentioned among other things. In return, the peasant would provide a written agreement known as "Qabuliyat" (deed of agreement) to the state by which he promised to pay the rent. He introduced a system of measuring cultivated land and determining crop rates (called rai) based on productivity. Zabirana (survey charge amounting to 2.5 percent of the produce) and Muhasilana (tax collection charge amounting to 5 percent of the produce) were also levied.

The system implemented by Sher Shah was later adopted by Akbar. However, the schedule of prices derived from that system caused significant delays and imposed hardships on the peasantry. The fixed prices were generally higher than those in rural areas, forcing the peasants to relinquish a larger portion of their produce. To address this issue, Akbar implemented a new system called the "dahsala" in 1580. Under this system, the average production and prices of different crops over the past ten years were calculated. The state's share was set as one-third of the average produce, with cash being the preferred mode of payment [2]. Akbar dropped the traditional "Sikandari Gaj" and adopted the "Ilahi Gaj" for measuring the land. The share of the state varied across different regions of the country, for instance, in Kashmir, the state's share was half of the agricultural produce, while in Rajasthan, it was one-fourth of the produce. The land was classified into four types based on its cultivation status. The first type was "polaj", which was considered the ideal land. It was constantly cultivated and never lay fallow. The second type was "parati", which referred to land that was temporarily kept out of cultivation to regain its fertility. The third type was "chachar" land, which lay fallow for a period of three to four years before being cultivated again. The fourth type was "banjar" land, the poorest type of land which remained uncultivated for more than five years. During the reign of Akbar, elaborate methods for agricultural management were implemented, leading to increased agricultural productivity. He displayed a strong commitment to enhancing and expanding cultivation. He instructed the amils, the revenue officials, to treat the peasants like their own children. They were instructed to provide loans (takavi) to the peasants during times of need for purchasing seeds, tools, animals, and other necessities. These loans were to be repaid in easy installments. The amils were to encourage the peasants to maximize their land cultivation and to grow superior-quality crops [2].

During the Mughal period, various other assessment systems were also employed. In the "galla-bakshi" (Crop-sharing) system, crops were divided after threshing (this was the proper form of "batai" or "galla-bakshi"), or while still standing in the field (known as "khet-batai"), or after being stacked in heaps (known as "lang-batai") [2]; [4]. Peasants were given the option to pay in cash or kind, except for some crops like cotton, indigo, oil seeds, and sugarcane, for which only cash payment was accepted. These crops were commonly referred to as cash crops. "Nasaq" or "kankut" involved a rough calculation of the payable amount, taking into account the past payment records of the peasant [2].

Agriculture during the Colonial Era: The British colonial era (1757–1947) witnessed the commercialization of crops like cotton, indigo, opium, wheat, and rice. Agricultural production expanded, particularly in regions like Punjab, Narmada Valley, and Andhra Pradesh, where extensive irrigation systems were developed by the British. Sir Arthur Cotton, a British general and irrigation engineer, undertook significant water management and irrigation projects in India. His initiatives included the development of the Godavari and Krishna River systems, the construction of canals along the east coast, the implementation of flood control measures in their deltas, and the improvement of navigation channels.

John Pennycuick, another British engineer, played a key role in the construction of the Mullaperiyar Dam. Proby Cautley was responsible for the construction of the Ganges Canal. Together, these projects greatly contributed to agricultural development, flood mitigation, and enhanced transportation in India. However, the implementation of land revenue systems, such as the Zamindari system in Bengal, Bihar, and Orissa, and the Ryotwari system in Bombay and Madras regions, resulted in the exploitation of farmers and the loss of their land rights. The agricultural performance during the interwar period (1918–1939) was also poor, with stagnant food output and a declining availability of food per capita, especially in Bengal.

Post-Independence Growth in Agriculture Sector: Following India's independence in 1947, several programs and initiatives were launched to improve food and cash crop production. The government implemented five-year plans focused on agricultural development which sought to address food shortages and promote self-sufficiency. Notable among these initiatives were the Green Revolution, Operation Flood, and Blue Revolution.

Norman Ernest Borlaug, an American agronomist, played a pivotal role in India's Green Revolution. He introduced high-yielding varieties of wheat to India in the 1960s. Borlaug's wheat varieties were resistant to diseases and pests while exhibiting higher yields. Borlaug's research and efforts in developing these improved wheat varieties helped increase agricultural productivity and combat food shortages not only in India but also in other countries such as Mexico and Pakistan. His work aligned with the agricultural modernization efforts led by Indian policymakers and scientists, including Indian geneticist M.S. Swaminathan, who is considered as the "Father of Green Revolution in India". The combined efforts of Borlaug, Swaminathan, and other agronomists led to the successful adoption of new wheat varieties, which significantly increased crop yields and transformed India from a food-deficit nation to a self-sufficient one. Borlaug's contributions to India's Green Revolution were instrumental in boosting agricultural production, ensuring food security, and improving the livelihoods of farmers. His innovative approaches and scientific advancements continue to have a lasting impact on global agriculture to this day.

In addition to Borlaug's contributions, the Indian government and institutions such as the Ministry of Agriculture and the Indian Council of Agricultural Research played vital roles in overseeing agricultural activities, promoting research and development, and encouraging the adoption of modern agricultural practices. These initiatives aimed at increasing productivity, mechanization, and the utilization of modern techniques such as agro-processing and biotechnology. However, it is important to acknowledge that challenges persist within the agricultural sector. Issues like farmer suicides, concerns regarding pesticide usage and environmental impact, and the need for sustainable agricultural practices continue to be ongoing challenges that require attention and concerted efforts.

One key trend expected in the future is the continued increase in food production. India's population is projected to reach 1.66 billion by 2050, creating a greater demand for food [14]. To meet this demand, the agricultural sector will need to adopt new technologies and practices, building on the success of initiatives like the Green Revolution. This will involve the use of biotechnology, precision farming, and the prudent use of land, including exploring new areas for production such as vertical farming and barren deserts.

Changing consumption patterns and increasing urbanization will drive the demand for processed food and high-value agricultural products. To cater to this demand, there will be a need for value addition at the primary level and the development of a robust supply chain management system. The industry is also expected to witness more competition among private players, leading to innovation, better quality products, and competitive pricing, which will benefit farmers.

CONCLUSION:

In conclusion, agriculture has played a vital role in shaping the socio-economic landscape of India throughout its rich history. From the early cultivation practices of the Neolithic period to the sophisticated agricultural systems of modern times, Indian agriculture has demonstrated resilience, innovation, and adaptability throughout the ages. The developments in agriculture discussed above, along with the Indian people's affection for the soil, have made agriculture a crucial pillar of the Indian society, guaranteeing food security, economic prosperity, and cultural sustainability for millennia.

Looking towards the future, Indian agriculture will need to address constraints such as small and marginal landholdings, subsistence agriculture, low access to credit, inadequate storage facilities, poor irrigation infrastructure, soil exhaustion, and outdated supply chain management. However, opportunities lie in the changing consumption patterns, increasing urbanization, and the demand for processed food and high-value agricultural products. This will require value addition at the primary level, the development of a robust supply chain management system, and a shift towards higher-value jobs in the agricultural sector. The future of agriculture in India will also see a shift in the agricultural labour force. Agricultural labour will move towards more productive jobs higher up in the value chain, while the rural farm economy will expand into allied industries such as agri-tech services and post-production activities. This transformation

will require agricultural training programs to cater to the younger generation of farmers and the changing needs of the sector.

To ensure the future success of Indian agriculture, it will be essential to invest in agricultural training programs, policy measures, and infrastructure development. By overcoming these challenges and creating an enabling environment, India can achieve sustainable agricultural growth and secure the livelihoods of its farming communities. As the nation moves forward, leveraging its agricultural traditions and addressing current constraints will pave the way for a prosperous and sustainable future for Indian agriculture.

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