



## Technology and Colonialism: Public Infrastructure Development in the Punjab during British India

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**Abstract:** Britain was the first country to complete the industrial revolution in the early 19th century, and its mastery of advanced science and technology. Britain's industrial productivity made a quantitative and qualitative leap. Influenced by geostrategy, India became a bridgehead for Britain to expand its colonial power. In order to benefit from India and maintain Britain's own interests, British began to develop India in various methods. This paper focuses on Punjab with the construction of irrigation and railroads by British in the second half of 19th century. It emphasizes that new technologies were used in colonial period, which contributed to the development of the colony, at the same time it had a colonial character.

**Keywords:** Technology, Colonialism, Infrastructure development, Punjab

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### Introduction

Science and technology are important factors and significant forces in the development of productive forces, and the first industrial revolution brought about a dramatic change in the relationship between science, technology, and production. The development of science and technology created powerful conditions for the technologically powerful countries to seek to gain possession in underdeveloped regions. Starting from the 15th century, European countries, led by England, Portugal and Spain, acquired large colonies in North and South America, Asia and the islands of the oceans.<sup>[1]</sup> Technology was a means of domination for the colonial powers, which helped to change the local situation, accelerate the process of civilization, and promote the development of colonization. The industrial revolution, which broke out in the second half of the 18th century, changed the course of human history. The first industrial revolution, which took place in England in the early 19th century, was a great change in the history of technology and ushered in the era of replacing manual labor with machines.<sup>[2]</sup> For Britain this revolution was not only a technological and economic revolution, but also a complex political, social and cultural transformation.<sup>[3]</sup>

By this time, Britain had become the hegemon of Europe and began to colonize overseas. 1757 saw the beginning of British occupation by force in South Asia, and in February 1858, with the passing of the Government of India Act, Britain began to exercise direct rule over India.<sup>[4]</sup> Thereafter, in the process of colonial expansion, Britain relied on advanced technology to control the construction of overseas colonies. For the sake of Britain's own interests, Britain began to develop construction in the colonies vigorously. Due to the unique natural geography of India, it could be a supplier of raw materials. At the same time, India's vast territory and large population could also become a dumping ground for British goods. In view of the need for industrial raw materials and colonial rule, Britain began to build up the colony on a large scale. The behavior of the British rulers in India, in general, presented a distinct contradiction. It consciously fulfilled its destructive mission while unconsciously fulfilling its constructive one. This paper takes the Punjab region as the object of study to analyze how Britain used technology to accomplish infrastructure construction in the colony in the mid to late 19th century. Since the Punjab was a riverine alluvial plain suitable for agriculture, rulers since the time of the Mughal Empire and the Sikh kingdom recognized the importance of building and controlling irrigation facilities to consolidate Punjab rule.<sup>[5]</sup> This paper presents an analysis of the contribution of British irrigation and water and railroad construction techniques to the development of urban infrastructure in the Punjab during the early years of British India.

After the annexation of the Punjab, in view of the natural and social conditions of the Punjab and in order to safeguard the interests of colonial rule, the British and Indian authorities decided to develop the wasteland of the West Punjab on a large scale. From the latter half of the 19th century until the partition of India and Pakistan in 1947, the Anglo-Indian authorities built a vast modern irrigation system in the West Punjab and established nine irrigation colonies on the newly developed large areas of irrigated arable land. The construction of the irrigation colonies brought lucrative benefits to British colonial rule and brought about a dramatic change in the socio-economic landscape of the Punjab, but nothing is known about their history. No research on this issue has been conducted in the country. The construction of the Punjab Canal Colony was an important part of British colonial rule in the South Asian subcontinent, and the western Punjab, where the Canal Colony was located, became the richest province in present-day Pakistan. The construction of the Punjab Canal Colony is therefore important not only for understanding British colonial rule in South Asia, but also for understanding the importance of the present-day Punjab in Pakistan. This paper analyzes the

contribution of British irrigation and water and railroad construction techniques to the development of urban infrastructure in the Punjab during the early years of British India.

### **The influences of the first industrial revolution in Britain in the nineteenth century**

The First Industrial Revolution, which emerged in the 1760s, lasted until the 1830s and 1840s. During this period, human production and manufacturing methods gradually shifted to mechanization, replacing manual production with large-scale factory production. As the invention and use of machines became the hallmark of this era, historians call this era the Age of Machines.

The Industrial Revolution, which had already begun around 1759, originated in central England. In 1769, after the Englishman Watt improved the steam engine, a series of technological revolutions caused a major leap from manual labor to powered machine production. Subsequently, the Industrial Revolution spread from England to the whole European continent, and England was the first country to begin and the first to end the Industrial Revolution. The beginning of the Industrial Revolution was closely linked to a handful of inventions that began in the second half of the 18th century. Advances were made in the 1830s in such important areas as textiles, the steam engine, and steel production: Textiles - Mechanized spinning, initially by waterwheel and later by steam engine, greatly increased the output of workers. The power loom increased workers' output by 40 percent. The spinning and weaving of wool and flax also produced dramatic productivity gains. Watt invented the steam engine in 1781, based on Thomas Newcomen's 1712 steam engine. Steam power - the efficiency of steam engines increased so that they required only one-fifth to one-tenth of the original fuel. The adaptation of stationary steam engines to rotary motion made them suitable for industrial use. High-pressure engines with high power-to-weight ratios made them suitable for use in transportation, and trains for long-distance overland traffic were born. steam power became rapidly popular after 1800. The steam engine changed the limitations of the previous production, which relied only on human and animal power, and provided cheap and sufficient power for industrial production and transportation. The use of coke instead of charcoal in steel production greatly reduced the cost of fuel for pig iron and wrought iron production, and increased the toughness and strength of steel. Advances in the steel industry provided the raw materials necessary to produce a variety of new machines from technological innovations, while also putting Britain's vast coal resources to use. The fact that the Industrial Revolution first took place in North Central England is inseparable from the vast coal and iron resources available in North Central England.

### **Historical background of Punjab**

The Punjab is located in the northwestern part of the South Asian subcontinent, bounded by the Yamuna and Indus rivers. "Punjab" was named by the Turkic-Persian rulers and means "land of five rivers". The ancient Punjab (Greater Punjab) was a vast region that included parts of present-day northern India, eastern Pakistan, and Afghanistan, and at one time extended as far east as the Yamuna River.

Punjab can be divided into three major regions according to geographical features: the plain from the NWFP border to Rajasthan is known as West Punjab; the plain from the foothills of Kangra to Ambala is known as East Punjab; and the belt between East and West Punjab is Central Punjab. The West Punjab, today's Punjab province of Pakistan, is the main part of the Punjab region, covering an area of 205,344 square kilometers, where about 90 percent of the population speaks mainly Punjabi. Eastern Punjab, today's Punjab region of India, includes the states of Punjab, Haryana, Himachal Pradesh, and the UT of Delhi; Punjab covers a total area of 50,362 square kilometers, of which about 92.2 percent speak Punjabi.

Punjabis were also known as Aratas or Vashikas in ancient times by their demographic characteristics, and these designations combined a number of ethnic groups including the Kenyan, Kass, Paurava, Iranian, and offshore Kambojas, Borobas, and Persianized Ionians.<sup>[6]</sup> The main ethnic group in the Punjab is Aryan, and the region has been ruled by different ethnic groups at different periods of history, including ancient Greeks, Persians, Arabs, Turks, Mughals, Afghans, Sikhs, and British. Beginning in the eighth century A.D., under Mughal rule, Islam gained dominance and the Punjab region became the economic and cultural center of the South Asian subcontinent. Over time, the frequent rebellions of the Sikhs led to the acceleration of the British conquest of the region.

The Punjab, by religious identity, was a ruling center during the Vedic period and later became the dominion of the Muslim Mughal Empire and then the territory of the Sikh kingdom in the 18th century. Historically, the Punjab was multi-religious and sectarian, with Muslims, Hindus and Sikhs intermingling for a long time.

According to the climatic characteristics, Central and East Punjab are under the influence of tropical monsoon, coupled with the flat and open terrain, the rainfall in normal years can meet the needs of crop growth, but in case of drought crop yields are often reduced on a large scale. West Punjab is at the western edge of the monsoon region of the South Asian subcontinent and has a dry and semi-dry subtropical climate. Rainfall here is very scarce, with a rapid decline from northeast to southwest, with most areas receiving only 125-500 mm of annual precipitation, mainly in the rainy season of July and August. Due to the lack of precipitation all year round, a large area of land in West Punjab is in a state of desertification, and agricultural production almost entirely depends on river irrigation. Punjab is known as the "land of five rivers", with the Indus River and its five tributaries flowing through the western Punjab. The regular annual flooding of these rivers, coupled with frequent historical changes in their course, has left much of the wasteland

of the western Punjab covered with thick alluvial soils. Although these sandy clay soils lack humus, they are rich in minerals and have the potential to be developed into fertile arable land. The Indus River and its tributaries, while bringing fertile alluvial soils to the western Punjab, also provide sufficient water for the development of irrigated agriculture in the western Punjab and provide conditions for the large-scale construction of irrigation channels.

### **Construction of irrigation canals in the West Punjab in early British India**

Since ancient times, irrigation water has been a matter of agricultural development and social stability, and rulers during the Mughal and Sikh kingdoms recognized the importance of constructing and controlling irrigation facilities to consolidate rule in the western Punjab. Although these irrigation projects played a great role in the agricultural production of the Punjab, the construction of irrigation facilities during this period was technologically primitive, and these flood storage ditches and sparsely distributed tube wells could only satisfy the irrigation water of small areas of agricultural land near the river, resulting in most of the inter-river uplands of the Western Punjab remaining in an undeveloped and barren state.

Prior to the British annexation of the Punjab in 1847, the Director of Agriculture of British India had theorized that much of the wasteland of the Western Punjab could be developed into fertile land if the problem of irrigation water could be solved, and in 1849, after two wars against the Sikh kingdom, the British finally annexed the Punjab. Through a series of examinations of the natural and social conditions of the Punjab, the British colonial authorities realized that the large-scale establishment of irrigation facilities in the West Punjab would bring great rewards for their colonial rule. First, the vast unclaimed wasteland of the Western Punjab could provide Britain with much-needed industrial raw materials and agricultural products, and by the mid-19th century, the British Industrial Revolution was almost complete, prompting Britain to seek industrial raw materials and agricultural products around the world. As a result, the colonial authorities enacted the Criminal Tribes Act in 1871, which allowed them to dispose of the unexplored wastelands of the West Punjab as they saw fit in order to meet Britain's domestic needs for overseas markets and raw materials. Secondly, the development of the West Punjab wasteland also helped to alleviate social conflicts and enlist the upper classes of society. Due to geographical and climatic differences, the West Punjab was sparsely populated. In addition to a few large Muslim landowning families living in the irrigated river valleys, there were semi-nomadic tribes scattered across the vast unexplored desert; in contrast, the Central and Eastern Punjab were overpopulated, with populations far exceeding the land's capacity. Thirdly, as some of the Sikh ruling class was resigned to losing power, they frequently launched anti-British struggles. To appease the discontent of the Punjabi society, the British colonial authorities returned the confiscated farmlands to the nobles and used a large amount of arable land for rewards, while the large amount of unexplored barren land in the Western Punjab met the huge demand of the colonial authorities for arable land. The massive reclamation of arable land and the construction of irrigation colonies became important measures for the British colonial authorities to maintain their rule in the Punjab.

The modern irrigation system in the Punjab was built by the British colonial administration in two phases: the construction of tube wells and the construction of irrigation canals. In 1873, the British colonial authorities enacted the North India Canal and Drainage Act, which vested all irrigation facilities in the Punjab in the government, and took control of irrigation facilities from the local power elite. The colonial authorities took control of the irrigation facilities from the local elites. Subsequently, the colonial authorities adopted a planning scheme for the construction of a modern irrigation system in the West Punjab, with priority financing from major banks in British India. Most of the rivers in the Punjab originate in the Himalayas, and when temperatures rise each year, the snow melts in the mountains to form numerous streams that converge with the precipitation in the north and flow into the Indus River and eventually the Indian Ocean. With the help of modern engineering technology, the colonial authorities built barrage weirs or diversion dams on these rivers, and constructed a dense network of irrigation trunk and branch channels on both sides of the rivers. The irrigation canals generally take water from the barrage weirs or diversion dams, and then transport the water through the dry and branch canals to each outlet to irrigate the farmland. Due to the great lifting effect of the barrage weir dams on the river level, these irrigation canals are able to transport river water to the highlands between rivers that previously could not be irrigated by small-scale irrigation projects, and then deliver the river water to the farmland that needs irrigation through the field ditches.

By the beginning of the 20th century, the number of tube wells in Punjab reached 300,000, and large-scale construction of tube wells met the large demand for water for irrigation in Punjab agriculture. However, because tube wells could only be constructed in the groundwater-rich lowlands along the river, large areas of the inter-river uplands of the western Punjab remained unirrigated by river water. By the end of the 1920s, the British colonial authorities had built three irrigation canal systems in the West Punjab, the Lower Chenab Canal, the Lower Jhelum Canal, and The Triple Project, over the last half century. The Triple Project includes The Upper Jhelum Canal, the Upper Chenab Canal and the Lower Bari Doab Canal. The total length of the main irrigation canal of all the irrigation projects in western Punjab is over 9,000 miles, while the dense branch canals are over 20,000 miles. These irrigation projects are finally connected to the irrigation facilities in Sindh and together form the most extensive modern irrigation water system in the world. The construction of large-scale tubewell and modern irrigation canal systems by the British colonial authorities organically combined large irrigation canal networks with smaller tubewell irrigation networks, making river irrigation

available to the vast majority of the land in West Punjab, and transforming much of the land from barren to densely ditched, virtuous fields.

From 1885 to 1947, before the British withdrew from India, 11 million acres of irrigated land were added to the Punjab. Most of this newly developed irrigated arable land was in the West Punjab, with the largest of these, the Lower Janab River Irrigation Canal alone, turning 2,506,270 acres of desert into good land. The newly reclaimed irrigated areas of the West Punjab, collectively referred to by the British colonial authorities as the irrigation colonies, covered an area of approximately 6 million acres, or one-fifth of all the arable land in the Punjab.

The construction of irrigation systems and the settlement of irrigation canal colonies required large numbers of immigrants to move in. During this period, numerous irrigation systems, houses, bridges, roads and railroads and other infrastructure were built in the irrigation colonies. These construction works provided a lot of employment opportunities for the population of other parts of Punjab and a large number of artisans and laborers from Central Punjab entered the irrigation colonies in search of work opportunities. For the purpose of developing production and relieving the remaining agricultural population in the Central and Eastern Punjab, the new irrigation colonies accommodated a small number of Muslim tribes and local nomads from the northwest, except for the vast majority of new agricultural migrants from the traditionally farmed and developed regions of the Central and Eastern Punjab.

According to the 1931 census of British India, more than one million Punjabis moved in during the first 15 years of the construction of the West Punjab Irrigation Canal System alone, another 750,000 between 1901 and 1911, and 700,000 between 1911 and 1921. This massive migration led to a rapid expansion of the population of West Punjab. In the Janab River Irrigation Colony, the population increased from 112,000 in 1891 to 1.1 million in 1911. In Montgomery Colony and Lyallpur Colony, the total population increased from 416,669 and 60,306 in 1891 to 1,814,000 and 2,157,000 in 1941, respectively.

For more than half a century, the British colonial authorities established nine canal colonies in the Western Punjab through the construction of irrigation systems, road excavation, and population migration. The colonial authorities allocated these nine canal colonies to different groups as required by the interests of their rule. Most of them were distributed to the newly arrived farmers, some were given as rewards to the soldiers and officers serving in the British-Indian colonial army, some were given to families and officials who had contributed greatly to the colonial cause, and some were used exclusively for the breeding of war horses or mules for military purposes.

### **Railway construction in the colonies**

First, most of the newly developed irrigation colonies had no railroads or roads, and prices were affected by the lack of timely transportation of agricultural products after harvest. Second, in 1846, the "cotton crisis" in the United States forced Manchester's garment manufacturers to choose British India as a new source of raw materials. Third, when the British colonists were faced with the dilemma of frequent rebellions and the inability to reach the rebellious areas quickly, the colonial authorities soon realized that the development of the irrigation colonies had to build railroads and roads as soon as possible. In this process, the British East India Company, which was the commercial arm of the British government at that time, was the first to bring railroads to India, so that in April 1853, the 34 km long Bombay-Tana railroad was officially opened as the first railroad in Asia, and in February 1855, a 195 km long railway line from Howrah to Raniganj was opened to traffic. These two lines successfully opened the door to rapid railroad expansion. The colonial authorities had a clear plan for the development of the colonial railroad network.

In 1853, Lord Dalhousie, saw railroads as the engine of social progress. He also elaborated on the rationale and guidelines for the development of railroads in the South Asian subcontinent. Dalhousie attached great importance to the economic benefits that the railroads would bring and believed that they would certainly enhance the flow of trade between the South Asian subcontinent and Britain. Britain imported cotton from the South Asian subcontinent, and the latter exchanged the revenue for British industrial products. More than 30 years of development in countries such as Europe and the United States have shown that railroads can stimulate business, boost production, help develop natural resources such as coal and other metallic minerals, and promote overall economic development. However, achieving commercial goals was not central to Dalhousie's thinking; he valued the political significance of railroads more than anything else. British authorities and armies wanted to rule over vast colonies, they needed the means to deploy troops quickly, and rulers would do anything to stay in power

The development of railroad technology had a great significance in the social, economic, human and political spheres of the Punjab region, and this influence could be radiated to the entire subcontinent, and even to the present-day India and Pakistan. During the period of control by the Indian colonial authorities, British capital accelerated its entry into the field of Indian railroads, which greatly advanced the process of building colonial railroads and at the same time better promoted the economic development of the areas along the railroads and the development of colonial transportation. The network of British Indian railroads was gradually completed under the leadership of British capital, which played a great role in promoting the development of the colonial transportation industry. The construction of the railroads strengthened the infrastructure of the colony and organically linked the vast areas of the colony into the country's well-connected railroad network. The railroads solved the problem of long-distance transportation in the economic activities of the colony, eliminated the bottleneck of transportation in the economic development of large

areas of the colony, and greatly increased the capacity of the colony to transport goods, thus providing a strong guarantee for the economic development of the colony.

The construction of the railroads had a profound impact not only on the colonies but also played a decisive role in the prosperity of the British Empire. Paisey believed that the more capital accumulated at home the lower the rate of profit was before 1914, and conversely, the demand for capital in overseas colonies was more robust. British India, as Britain's second largest trading partner, was a source of profit and a destination for British investment. Britain made a lot of investments in British Indian colonies, mainly in the field of railroads and in the field of borrowing by Indian colonial authorities, so that for Britain, through the export of capital, Britain's surplus capital obtained a place for investment, made relevant profits for Britain, and strongly promoted and facilitated the development of the British economy; at the same time, by strengthening investments in railroads in British India, it also gradually strengthened Britain's control over the colonies. The stability of the colonies enabled Britain to have a strong influence on the British economy. The stability of the colonies enabled Britain to exert greater influence in the world political and economic arena.

During the control stage of the colonial authorities in British India, British capital accelerated its entry into the field of Indian railroads, which greatly promoted the process of railroad construction in British India, and at the same time better promoted the economic development of the areas along the railroads and the development of the transportation business. The railroad network in British India was gradually completed under the leadership of British capital, which played a great role in promoting the development of transportation in British India. By 1880, British India already had a complete railroad system, and the mileage of railroad construction had ranked first in Asia, which was the result of British capital investment.

The construction of the railroads strengthened the infrastructure of British India, organically linked the vast areas of British India, and brought all parts of British India into the country's well-connected railroad network. The railroad transportation in British India was greatly improved, facilitating the transportation of industrial and agricultural products and raw materials, promoting commercial prosperity, accumulating funds for industry, solving the problem of long-distance transportation in British India's economic activities through railroad transportation, eliminating the transportation "bottleneck" constraint in the economic development of vast areas of British India, and greatly enhancing the capacity of British India's cargo transportation capacity, the development of India's transportation business to create good infrastructure conditions, thus providing a strong guarantee for India's economic development. However, we should also see that the development of Indian railroads under the control of the colonial authorities in India, with the investment of British capital, had a serious impact on the national industry of India. At the same time, due to the lack of capital in British India itself, the investment mainly came from Britain, and the construction of railroads was done under the domination of Indian colonial authorities, so the capital for the construction of railroads mainly depended on loans from Indian colonial authorities and British domestic capital. In order to pay the interest of these capitals, the Indian colonial authorities not only carried heavy financial burden, but also gave up most of the benefits to Britain. In general, the British capital invested in the construction of Indian railroads in this period, which accelerated the construction of Indian railroads and at the same time gained stable profits and rich political interests for British capital from India.

### **The impact of technology on Punjab in Colonial India**

Of all the British colonies of the 19th century, India was undoubtedly the jewel in the crown of the British Empire. Indians often say that the British left them three things: English, Parliament and the railroads, and they take pride in this as the cornerstone of India's rapid development and its emergence into the world. For India British capital investment in the construction of the Indian Railways was determined by the times in which they lived, and was a product of the requirements of history and the development of the times.

The construction of railroads in British India began on April 16, 1853. At that time, the first steam locomotive traveled only 34 kilometers. Since then, Indian railroads have grown considerably. It now has 7,000 stations spread across the country with a total rail network of 63,000 kilometers. It has become one of the largest organizations in the world today, employing 1.6 million people. At the same time, Indian Railways is the main mode of transportation for passengers and goods. About 7,500 passenger trains operate in different parts of this country every day, carrying more than 11 million passengers. The growth of Indian Railways, which is so important today as an important means of transportation, could not have been possible without the British contribution to Indian Railways in the 19th century. The chart below shows the mileage of railroads operating in British India from 1853-1911.

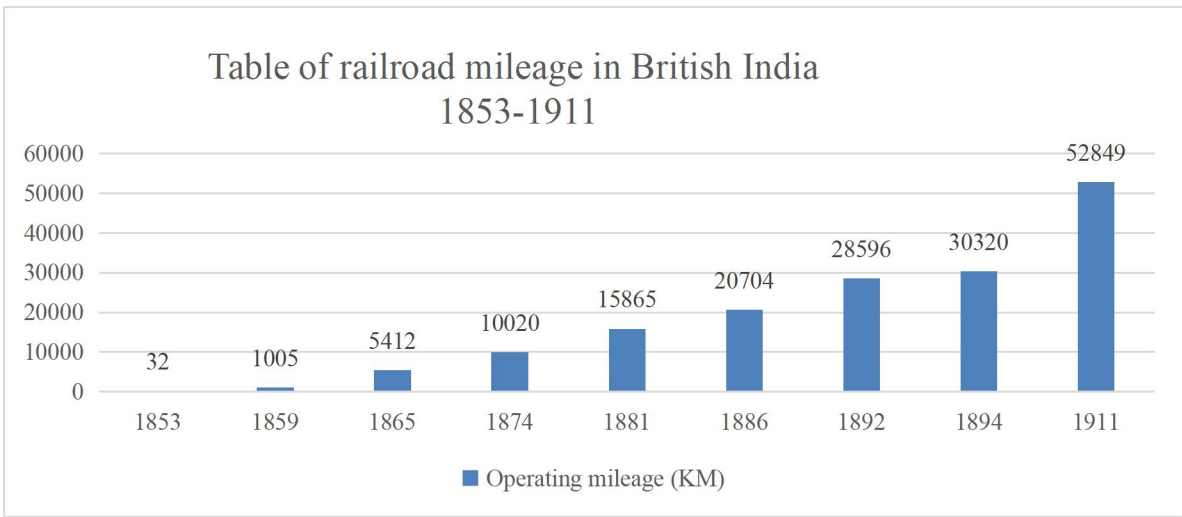


Table1: Table of railroad mileage in British India 1853-1911

The British colonial government used advanced irrigation canals and railroads, and road technology had a profound impact on the subcontinent as well as on Britain. Similarly advanced technology also had an important role in the social, political and economic development of India. The introduction of advanced technology facilitated the subsequent hundred years of rule and plunder by the British Empire, and was a forerunner in giving birth to the modern enterprise system, a product of modern industrial civilization. Advanced irrigation canal and railroad technology was also one of the products and hallmarks of the modernization of the Punjab region, influencing and driving the development of modernization.

With the development of agriculture, the urbanization of the Punjab region has advanced rapidly. The massive trade in agricultural products and the production and sale of consumer goods led to the creation of a large number of businesses. The agricultural and rural prosperity provided a huge market for goods from Britain and other parts of British India. At the same time, the Punjab markets became increasingly connected to the rest of British India and to world markets as the Northwest Railway network continued to improve. For details of the data, see the map of import and export trade of the Punjab region in the nineteenth century

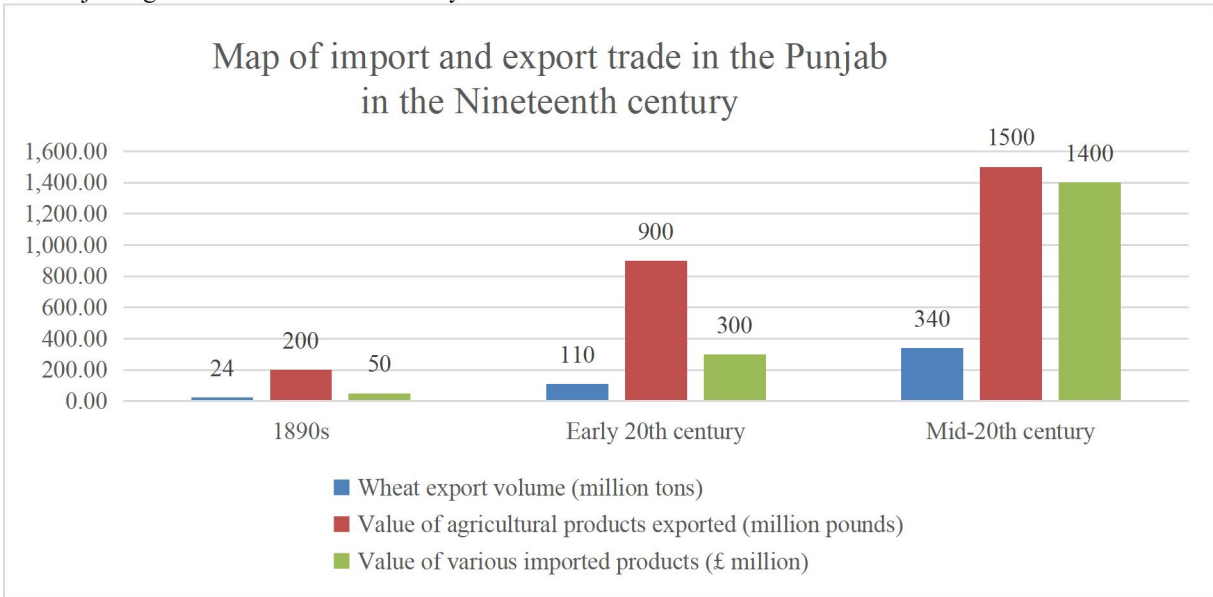


Table2: Map of import and export trade in the Punjab in the Nineteenth century

With the growing prosperity of the irrigation canal colony society, the level of civilization in Punjabi society also increased rapidly. With the construction of large-scale irrigation systems and railway lines, Punjabi society began to say goodbye to barbarism and vulgarity. People were no longer satisfied with the simple and boring life of the past and slowly accepted the modern lifestyle of the West. More importantly, the British colonial authorities built a large number of new schools in the irrigation areas, which greatly improved the cultural and intellectual level of the people. At the same time, Punjabi society was becoming more and more stable, with crime rates in the formerly chaotic Punjab dropping dramatically and law and order improving.

The development of irrigation technology in British India promoted the rise of other sectors in British India, and the development of railroads gave a tremendous impetus to the development of the colony. The construction of the irrigation colonies not only brought enormous economic benefits to the British colonial authorities, but also strengthened British colonial rule over the Punjab and India as a whole. Through the colony a set of management system was established which was different from that of the Punjab with its advanced management system, which strengthened the control and management of the colonial areas by the British colonial authorities and brought great economic benefits to them.

The opening of the railroads brought much more than the progress of material civilization to peninsular India; it changed the ideology and way of life of the entire Indian subcontinent. Advanced irrigation canals and railroad technology played a major role in spreading modern democratic ideas, unifying multi-ethnic cultures and weakening the caste system in India, gradually integrating the colony into modern society. Gandhi traveled around the country in a third-class carriage, and Nehru claimed to have discovered India on a train trip around the country.

### **Conclusion**

In second half of 19th century, Britain used advanced irrigation and railroad construction technology to build Punjab, which on the one hand brought huge economic benefits to the British colonial rule and further consolidated its colonial rule in South Asia. On the other hand, the development of irrigated land and the improvement of transportation conditions have led to the growing prosperity of Punjab's agriculture, making Punjab the most developed commercial agricultural production area in South Asia. Advanced technology has played a key role in building urban infrastructure in Punjab. As Marx wrote in 1853 on the British colonial rule of India: "Britain has a dual mission to fulfill in India: a destructive one and a constructive one." The British colonial policy to India is "exploitative colonization", which aims to plunder wealth by destroying the social and economic structure of the colonies. This kind of colonization had both negative and positive effects on the colonies. On the one hand, it exploited the interests of the colonial people and made them suffer from exploitation. On the other hand, it relies on the advanced technology produced by the Industrial revolution to promote the social development of Punjab, which also makes the social landscape of Punjab changed greatly. Punjabis gave up the vulgarity and savagery of nomadic society and began to live a settled agricultural life. The level of civilization in Punjabi society was greatly improved.

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