



Research Paper

## Canal Colonization and the Transformations: Reshaping Punjab's Agrarian Landscape

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### Abstract

Following its integration into the British Empire, Punjab experienced significant agricultural transformations on account of the introduction of canal colonies. Due to the geostrategic and geopolitical dynamics, Punjab became a strategic stronghold for the British Indian Army. Considering the objectives, the Indian government had initiated the development of military infrastructures, along with other supporting sub-structures in the region such as railways, roads, communication, and agricultural infrastructures. Among these, the transformations in agriculture and the construction of canal colonies emerged as significant engineering achievements for the British Indian Government in Punjab. As a result, it made significant impacts on the agricultural practices of the region. It transformed the arid subsistence production into a commercial focused production system by connecting local markets with the national and global economy. Punjab was not only as remained just a cannon fodder but turned the same into as food provider on account of its agricultural productivity. Punjab became a significant source of food security, not only for other parts of India but also for the British Empire's expeditionary forces. This paper aims to analyse the agricultural transformations that took place during British rule and their impact on the region's history. Specifically, it focuses on mapping out how Punjab turned from cannon fodder to food provider as a result of canal colonies.

**Keywords:** British Empire and Punjab, British Agrarian Policies and Transformations, Canal Colonies, Natural Calamities, Food Security.

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The establishment of canal colonies in Punjab brought about a significant transformation in the region, turning it into a vital source of food provider. The British government's canal expansion led converted the arid areas into fertile cultivable and concomitantly boosted agricultural productivity. The canal colonies transformed agriculture into a profitable enterprise, focusing on producing goods for the market. Canalization, on the other hand, had significant impacts on agricultural areas beyond just boosting agricultural productivity. Additionally, there are some drawbacks associated with it, such as waterlogging and salinity. The canal colonies of Punjab had a well-structured labour system, where workers of different types were organised into a three-tier system on large estates. This method undermined the unity among workers, enabling landlords to categorise them into different labour groups during the postcolonial era. In Punjab, the establishment of canal colonies had a profound impact on the local economy, labour relations, and agricultural output.

### Rationale for the Canal Colonies

The establishment of Punjab Canal Colonies in western Punjab were transformed from barren to cultivable land during the British Raj.<sup>1</sup>After their establishment of British Empire in 1849, the East India Company took charge of Punjab. The individual administrators who were from the Maharaja Ranjit Singh's empire were not replaced by the new ones, but rather utilised as intermediaries between the population and the government.<sup>2</sup>According to the new provincial administration's original plan, landowning cultivators were promised consistent support from the British government.<sup>3</sup>Over time, the British authorities diligently surveyed

<sup>1</sup>Talbot, Ian. Khizr Tiwana, the Punjab Unionist Party and the Partition of India. Routledge, 2013.

<sup>2</sup>Ali, Imran. The Punjab canal colonies, 1885-1940. The Australian National University (Australia), 1979.

<sup>3</sup>Barrier, N. Gerald. "The Punjab Disturbances of 1907: the response of the British Government in India to

the territory and conducted revenue settlements in each district. The local government has implemented a new tax regime to support the newly established provincial administration. The primary focus was to promote the commercialization of agriculture in order to achieve the strategic objectives. Unlike the complex property ownership systems that existed before the British, they supported the idea of individual property rights, which was a major shift away from the communal ownership practiced by village groups.

The predominant population during the 19th century resided in the arable areas situated in central and eastern Punjab. Inadequate rainfall prevented large-scale agriculture in the western Punjab; consequently, a vast expanse of land remained uncultivated.<sup>4</sup> This area was mostly undeveloped and designated as Crown land.<sup>5</sup> A huge irrigation system for the mostly abandoned wastelands was being designed in the 1880s by Charles Umpherston Aitchison's Punjab administration.<sup>6</sup> The government's stated goal was to, "Establish villages that would surpass anything that had previously existed in the Punjab in terms of comfort and civilization."<sup>7</sup>

The implementation of canal colonization had a profound and enduring effects on agricultural output, leading to a subsequent increase in both government revenue and productivity.<sup>8</sup> At first, the British government generously funded the construction of canal irrigation systems in Western Punjab. Extending canal irrigation entailed promoting established agriculture and establishing it in new places.<sup>9</sup> In addition, the government's colonisation strategy had a profound effect on the society that developed in the Canal Colonies.<sup>10</sup> The canals were developed to provide water for agriculture while mitigating the effects of erratic monsoonal challenges.<sup>11</sup> The establishment of canal colonies also involved bringing together disparate workers under a three-tier labour structure, which was used to hamper the workers' unity.<sup>12</sup> These circumstances contribute to the formation of an 'agrarian question of labour' in Punjab's canal colonies.

Prior to the construction of canal colonies in Punjab throughout the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, the region had been facing various challenges. Water scarcity was a major concern, particularly during the dry seasons, as traditional irrigation systems were insufficient for Punjab's agricultural needs. Extensive areas of land remained dry and unsuited for farming, impeding the region's economic development. The prevailing Zamindari system's land income structure proved to be not only ineffectual, but also repressive ones, imposing significant financial responsibilities on peasants and impeding agricultural progress.

There were substantial social and economic disparities prevailed in the society, with a small minority of landlords wielding significant power and the majority of peasants struggling with poverty and debt. Furthermore, British colonial policies, which prioritised resource exploitation over local welfare, exacerbated existing difficulties and hampered long-term regional development. Lack of sufficient infrastructure continued to counter the progress and development, with limited transportation and communication networks impeding the flow of products and services. Converting barren soil into fertile farmland provided significant engineering challenges that necessitated extensive land reclamation.<sup>13</sup>

Overall, the creation of canal colonies in Punjab effectively tackled a range of socio-economic and agricultural issues that the region was grappling with. Through their efforts, Punjab underwent a remarkable transformation into a thriving agricultural hub. However, this progress brought about far-reaching consequences in various aspects, such as shifts in land ownership, the rise of new social classes, and the complexities faced by workers' unity. In addition, the historical context and policies implemented by the British greatly influenced the course of development in the region.

### **Canalization and Canal Colonies**

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Agrarian unrest." *Modern Asian Studies* 1, no. 4 (1967): 353-383.

<sup>4</sup>Ali, Imran. *The Punjab canal colonies, 1885-1940*. The Australian National University (Australia), 1979.

<sup>5</sup>Varis, Olli, Cecilia Tortajada, and Asit K. Biswas. *Management of transboundary rivers and lakes*. Berlin: Springer, 2008.

<sup>6</sup> *Gazetteer of the Chenab colony*. Government of Punjab. Lahore: Military Gazetteer Press, 1904.

<sup>7</sup> Report of the Punjab Colonies Committee, 1907-08, (IOR: 10(3514)), Ch.1, Para. 16

<sup>8</sup>Mazumder, Rajit K. *The Indian Army and the making of Punjab*. Orient Blackswan, 2003.

<sup>9</sup> Singh, Bhupinder, Sandeep Singh, Hareet Meena, and Bawa Singh. "Agrarian transformations in British India: A case study of colonial Punjab." *Sikh Formations* (2024): 1-15.

<sup>10</sup>Khurshid, Kiran, and Khalid Manzoor Butt. "Performance of Land Revenue Administration in Faisalabad (2001-2013): An Overview of Collection of Water Rate Abiana." *J. Pol. Stud.* 23 (2016): 453.

<sup>11</sup>Agnihotri, Indu. "Ecology, land use and colonisation: The canal colonies of Punjab." *The Indian Economic & Social History Review* 33, no. 1 (1996): 37-58.

<sup>12</sup>Ali, Imran. *The Punjab canal colonies, 1885-1940*. The Australian National University (Australia), 1979.

<sup>13</sup>Singh, Bhupinder, and Bawa Singh. "Punjab under the British Rule: Historicising the Local Transformations." *Indian Historical Review* 46, no. 2 (2019): 207-226.

After the establishment of the canal colonies, Punjab had experienced a rapid progress in agriculture and irrigation. They constructed the largest canal system in the region.<sup>14</sup> It resulted in a significant increase in agricultural productivity in Punjab. Around twenty-six million acres of land were incorporated into a new created irrigation system. The canal colonies played a significant role in changing the region from a poverty-stricken agricultural area to a thriving granary and a key hub for canalised and commercialised agriculture in South Asia during the colonial era.<sup>15</sup> Starting in the mid-1880s, Punjab had experienced a significant economic growth and implemented large-scale irrigation projects. As a result of these advancements, extensive uncultivated land in western and central Punjab was converted into one of the most prosperous agricultural regions in the area.

The nine canal colonies reshaped the population distribution of Punjab. The first British canal colony constructed in Punjab was the Sidhnaï Colony, which was founded in the Multan district between 1886 and 1888 and 176,702 acres area brought under cultivation. A minimum of 50 acres were allotted to settlers, who also had to cultivate Rabi crops. This programme made a substantial contribution to the region's agricultural development.<sup>16</sup> In the late 19th century, Montgomery District's Sohag Para Colony comprised of 90,000 acres. Using a seasonal inundation canal for irrigation, it started attracting the farmers. The colony helped to boost agriculture in the region despite its small size.<sup>17</sup>

Chunian Colony was founded in southern Lahore in 1896. The Punjabi urban bourgeoisie and wealthy landowners had expressed their interests in the land auction when the government first auctioned it. In the next step, surrounding village landowners had received pieces of land as compensation for losing their grazing rights. Jatts, Kamboh, Lubana, Saini, and Arains received the most funds.<sup>18</sup> The Chenab Colony, founded in 1892, covered Lyallpur, Jhang, Gujranwala, and Lahore. The Chenab Canal was used to cultivate barren land in this massive colonisation operation and consequently settled nearly one million Punjabis in the colony, relieving demographic pressures in other parts of Punjab.<sup>19</sup> Between 1902 and 1906, the Jhelum Colony was established near Shahpur, with its headquarters in Sargodha, which was a newly founded town. The colony promoted agrarian excellence and reduced population pressures.

The established canal colonies have transformed the desolate and deserted regions of the Punjab into hubs of productivity and economic activities.<sup>20</sup> The Chenab Colony, for example, was the most extensive canal colony established by the British, covering 809,500 hectares (2 million acres) of land and boasting the most extensive irrigation system in India. The project began in 1892 and saw significant growth until the 1930s. As the canal colony expanded, Lyallpur (Faisalabad) emerged as a key market hub. The regions surrounding Amritsar, Ludhiana, and Jullundur had also experienced development due to this irrigation initiative.<sup>21</sup> Another example is the transformation of the Peshawar region into a significant area from what used to be a deserted region, thanks to the establishment of the cantonment and the introduction of water through the canal colony project. Over time, the gardens located to the south of the city gained recognition for their variety of fruits such as quinces, pomegranates, plums, limes, peaches, and apples. The abundance of these productions continued to grow luxuriantly. The expansion of vegetation transformed the appearance of the Peshawar cantonment and city, as documented in the Peshawar District Gazetteer of 1883-84.<sup>22</sup>

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<sup>14</sup> Talbot, Ian. *Punjab and the Raj 1849-1947*. Manohar, 2020.

<sup>15</sup> Singh, Bhupinder, and Bawa Singh. "Punjab under the British Rule: Historicising the Local Transformations." *Indian Historical Review* 46, no. 2 (2019): 207-226.

<sup>16</sup> "Sidhnaï Canal", File 11/ 2 51/ 3 k.w. (BOR), 'PC's letter, 27 October 1885; pp.23-25.

<sup>17</sup> Printed papers regarding the Lower Sohag and Para Canals", File H/251/97 (BOR), p.177.

<sup>18</sup> E.R. Abbott, Assistant Commissioner, Kasur, on the colonisation of new villages in the Chunianlahsil, 22 March 1898'; in PRAP(G), June 1898, No.18.

<sup>19</sup> F.P. Young, Report on the colonisation of the Rakh and Mianali Branches of the Chenab Canal (Lahore, Government Printing Press, 1897), pp.2-5.

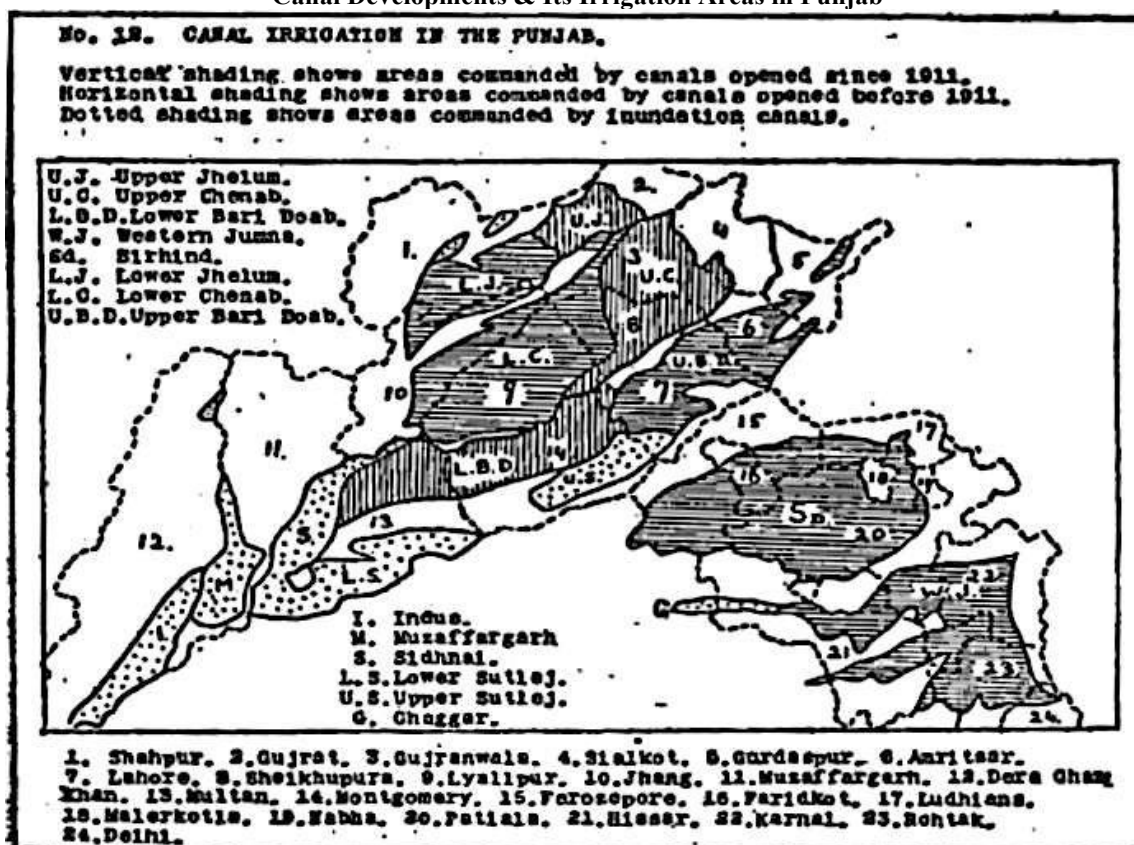
<sup>20</sup> Singh, Sukhwant. "Agricultural science and technology in the Punjab in the nineteenth century." *Indian Journal of History of Science* Calcutta 17, no. 2 (1982): 191-204.

<sup>21</sup> *The Punjab: Moving Journeys*

Available At: <http://www.rgs.org/NR/rdonlyres/64D5A277-42AA-44ED-B019-BA08E667850F /0/ The Punjab MovingJourneysPart1.pdf> (Accessed on 04 March, 2024).

<sup>22</sup> Govt of Punjab. *Peshawar District Gazetteer*. Lahore, 1883-84, pp. 35.

Canal Developments & Its Irrigation Areas in Punjab



Source: Census of India, 1921: 12

According to the Census Report of India (1921, 14), work on the Upper Jhelum began in 1905 and the irrigation was started in 1915 and finished in 1917. It has irrigated about 345 thousand acres of land in the area in 1921. In addition, work on the Lower Bari Doab began in 1906 and was finished in 1917. In July 1913, irrigation had begun there. Once these river colonies opened, Punjab's arid lands became one of South Asia's most productive regions. The British-ruled Nili Bar Colony located in Montgomery (now Sahiwal) and Multan. This massive facility irrigated 800,000 acres perennially and 260,000 acres non-perennially. The colony planned to turn semi-arid wasteland into arable land to help Punjab's agriculture.<sup>23</sup>

On account of these canals colonization, the lives of the locals were significantly transformed the socioeconomic perspectives. In addition, the region had a large influx of immigrants due to demographic shifts. In his research, Singh (2013) noted that as the population began to concentrate, new towns and cities also sprung up in the canal colonies along the major transportation routes.<sup>24</sup> Table No 1 is vividly projecting the role of irrigation projects in transforming the Punjab region as given below:

Table No: 1  
Canal Irrigation (Acres) in Punjab: 1912-1920

Year	Upper Jhelum	Upper Chenab	Lower Bari Doab
1912-13	-----	123, 236	-----
1913-14	-----	164, 110	73, 578
1914-15	-----	211, 882	189, 204
1915-16	-----	325, 062	283, 294

<sup>23</sup> Census of India (Part-II). Calcutta. 1921 Available At: Census of India, 1921. Vol: India. Census Commissioner: Free Download, Borrow, and Streaming: Internet Archive (Accessed on 26 March 2024).

<sup>24</sup> Singh, Bhupinder. "Cantonmentisation and transformation in south Asia: a study of colonial military of Punjab/Firozpur." (2013).

<b>1916-17</b>	117,605	437,477	514,936
<b>1917-18</b>	177,006	382,935	621,600
<b>1918-19</b>	246,609	426,864	678,004
<b>1919-20</b>	298,857	542,656	869,432
<b>1920-21</b>	345,189	601,347	852,638

Source: Census of India, 1921: 15

Punjab was developed into one of India's most productive agricultural regions as a result of massive irrigation projects undertaken by the British Empire.<sup>25</sup> The colonial state's biggest achievement was the remarkable technical feat of converting 6 million acres of desert into one of Asia's finest agricultural regions. In the 1920s, Frank Brayne argued that the canal colonies were proved as tool for, "modernising force for social change" and consequently Punjab was turned into a leader of growth of Indian agriculture. Between 1891 and 1921, the per capita productivity of all its crops climbed by over 45 percent. The introduction of cash crops by the British significantly increased peasant income. A vast number of new crop kinds, including tea, coffee, sugarcane, indigo, New Orleans cotton, English fruits and vegetables, and more, were introduced to the agricultural world in the late 1800s as a result of new agricultural experiments.<sup>26</sup> Conversely, the region's acreage planted to conventional crops including rice, wheat, and barley decreased significantly. Here, we can figure an example of that in the following table.

Table No: 3  
**Area under Various Crops in Thousands of Acres**

Sr. No	Crop	1876	1921
1	Wheat	6,609	8,951
2.	Cotton	668	1,540
3.	Oilseeds	118	1,172
4.	Rice	708	829
5.	Barley	1,874	1,099

Source: Singh, 1982: 200

The most amazing development in India's history of productive irrigation was the colonisation of the Punjab with canals, which had numerous effects. The Punjab's "Canal Colonies" were becoming a focal point of significant economic transformation. First, from 5.98 million acres in 1868–1869 to 9.37 million acres in 1901 to 133.88 million acres in 1940—or 22.71 times the initial ones—the irrigated area in Punjab than tripled. As a result, thousands of people moved to these newly opened agricultural regions of Punjab created by irrigation from Central Punjab, primarily from Jullundhar and Hoshiarpur. This reduced traffic in the densely inhabited areas.

The colonial authorities had a unique perspective on Punjab in comparison to the other Indian provinces. In his study, Saini (1975, 154) proved that Punjab was developed as a raw material region for the Lancashire cotton textile industry. The development of canal colonisation had transformed desert swaths of land into one of the Raj's most rewarding regions.

Furthermore, the British Government set up seed farms throughout the canal colonies. Improved cotton seeds were supplied to peasants. For example, in 1912-13, the villagers received approximately 45 mounds of enhanced indigenous cotton seeds and 83 maunds of American cotton seeds from the Punjab Agriculture College and Research Institute at Lyallpur. In 1926, roughly 32, 100 maunds of enhanced cotton seeds were sold to peasants. Besides, it had risen to 91,100 maunds in 1937-38. All in all, Agriculture College (Lyallpur) and the Punjab Agriculture Department performed an important contribution in enhancing cotton seed varieties.

On the other hand, the robes of honour, the sword of honour, cash rewards, government land grants, and tax-free land for people and communities were given to Punjabi soldiers. Also, families of soldiers who died in wars got a lot of land gifts. Since this was the case, most Punjabi families began to settle down in these land grants of canal towns. As a result, farming and military service became the main ways for Punjabis to make ake-out during the British rule. However, these benefits had lasting impacts on the social and economic lives of

<sup>25</sup>Singh, Bhupinder. "Colonialism and Transformation in Punjab: A Story of Railway Development." In *The Railways in Colonial South Asia*, pp. 397-412. Routledge, 2021.

<sup>26</sup>Talbot, I. (2020). *Punjab and the Raj 1849-1947*. Manohar.

the Punjabi people (Chandan, 2009). During the same time period, Bihar and Orrisa's social and economic lives were bitter and they were going through a farming crisis.<sup>27</sup>

According to Singh (2018), the colonies had also served the British Empire's imperial interests because affluent families were granted greater holdings, or yeoman horse-breeding grants, which required them to take care of several mares at a cost of forty acres each. This was developed in response to the requirements for a consistent supply of camels and mares throughout the World Wars. Furthermore, the goal of these colonies was to "create villages that were superior to anything that had previously existed in the Punjab in terms of comfort and civilization." However, self-interest is the primary—and occasionally the only—interest, as is the case with all colonial powers. Midway through the 1800s, England's agricultural situation was dire. Its current status resulted from the effects of the Industrial Revolution, when small farmers abandoned agriculture and were absorbed by large and small industries and consequently, food grain and other farm produce production were declined. Thus, "Imperial Need" overrode all other considerations in the British government's Punjab canal colonization. The strategy adopted by the British government improved productivity and built a robust infrastructure, but it also exacerbated the exploitation of small and middle-class peasants.<sup>28</sup>

The above discussion and analysis suggested that Punjab's agriculture was benefited significantly from the introduction of several technological innovations, such as the canal colonization, Persian wheel and fertilisers. Plenty of water and new technologies contributed significantly to the rise in agricultural output.<sup>29</sup> The local market output was linked to the regional, national, and even international markets through the advancements in communications and transportation. Moreover, this transformed Punjab into centres of commerce as well.<sup>30</sup> The British had simultaneously created railways, canals, and many other related infrastructures mainly to serve their own self-interests.<sup>31</sup> In summary, the imperial goal of using the peripheral for the benefit of metropolitan interests was served by the growth of agriculture, railroads, and other allied industries. All things considered, nevertheless, new technologies, new agriculture aided by canal water, and cantonments significantly altered Punjabi life.

Overall, the policies implemented by the British during their colonial rule had a profound effects on Punjab's agriculture, economy, and society. These policies, such as the establishment of canal colonies, brought about significant changes that ultimately served the interests of the imperial power.

### **Famines in India**

During the time of British colonisation in India, famines and epidemics were occurred frequently. The people's misery was made worse by the inadequate network of trade and transportation, which interrupted the supply of food grains and fodder.<sup>32</sup> Famines began to affect more of the nation since the 1800s. They spread further, affected more people, got worse, and eventually turned into full-fledged national catastrophes. Every following famine in the latter 19<sup>th</sup> century spread to a greater geographic area.<sup>33</sup> Over the span of 2500 years, there have been more than 90 documented famines in South Asia.<sup>34</sup>

Approximately 25 major famines struck India during the British colonial era. The number of severe and recurrent famines peaked in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, when the British Empire was at its peak in India. These famines had an exceptionally high death toll, and it's possible that some of them were made worse by British policies.<sup>35</sup> The Great Bengal Famine of 1770 claimed the lives of one to ten million people.<sup>36</sup> The

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<sup>27</sup>Singh, Sukhwant. "Agricultural science and technology in the Punjab in the nineteenth century." *Indian Journal of History of Science* Calcutta 17, no. 2 (1982): 191-204.

<sup>28</sup>Singh, Bhupinder, and Bawa Singh. "British Indian Army: Role of Punjab in the World War I." *JSPS* 25, no. 2 (2018): 202.

<sup>29</sup>Singh, Sukhwant. "Agricultural science and technology in the Punjab in the nineteenth century." *Indian Journal of History of Science* Calcutta 17, no. 2 (1982): 191-204.

<sup>30</sup>Chattha, Ilyas. "Economic Change and Community Relations in Lahore before Partition." *Journal of Punjab Studies* 19, no. 2 (2012).

<sup>31</sup>Singh, Bhupinder, and Amandeep Kaur. "Railway Development in Colonial Punjab: Social and Cultural Assimilation." *International Journal of Social Science and Humanities Research* 3, no. 1 (2015): 80-84.

<sup>32</sup>H. Green, *The Deccan Ryots and their Land Tenure*, Bombay, 1852, 62; Karl Marx, F. Engels, *On Colonialism*, Moscow, 1976 ed. 83.

<sup>33</sup>Nand, Brahma. "Nature and Causes of Famines in Colonial India." In *AAS-ICAS Special Joint Conference*. 2011.

<sup>34</sup>Hall-Matthews, David. "Inaccurate conceptions: Disputed measures of nutritional needs and famine deaths in colonial India." *Modern Asian Studies* 42, no. 6 (2008): 1189-1212.

<sup>35</sup>Earle, Rebecca. *Feeding the people: the politics of the potato*. Cambridge University Press, 2020.

<sup>36</sup>Datta, Rajat. *Commercialization in rural Bengal, c. 1760-1800: society, economy, and the market*. Manohar Publishers & Distributors, 2000.

Chalisa Famine of 1783–1784 claimed the lives of eleven million people, the Doji Bara Famine of 1791–1792 killed the eleven million people, and the Agra Famine of 1837–1838 claimed the lives of 0.8 million people. Five million people perished in five major famines in India between 1896 and 1897; two million perished in the Upper Doab famine between 1860 and 1861; 5.5 million perished in the Great Famine between 1876 and 1878; and one million perished in the Indian famine between 1899 and 1900.

A famine that struck Bengal, Orissa, and Bihar in 1769–1770 claimed over 10 million lives in Bengal, accounting for one-third of the province's total population. Millions of Indians starved to death in Southern India between 1781 and 1783; a similar crisis occurred in Northern India the next year. Because of the frequent occurrence of droughts, there were severe food shortages in the North-Western Provinces in the years 1803/4, 1812/13, 1817–19, 1824–26, and 1833. Anarchy in the Doab region and the deaths of 15–20 percent of the population were predicted by the series of food shortages that preceded a severe famine in 1836–1837.<sup>37</sup> During the war, the Bengal famine of 1943 was one of the worst famines in South Asia, impacting the Bengal region. Between 1.5 and 3 million people perished in what was the first major famine of the 20<sup>th</sup> century (David, 2008, p. 1–24).

During British colonial rule in India, there were frequent famines and epidemics that had devastating consequences. The crises were exacerbated by insufficient trade and transportation networks, leading to disruptions in food supplies. During this period, there were more than 25 major famines that resulted in devastating loss of lives. Notable examples include the Great Bengal Famine of 1770 and the Bengal famine of 1943. British policies may have worsened certain famines, leading to extensive suffering and loss of life.

### **Punjab: A Garrison State for WW-I&II**

Punjab was used as strategic source by the British government during the throughout World Wars. According to the UK's Foreign and Commonwealth Office (FCO), there were 1.2 million subcontinental soldiers. According to Omissi (2016: 5-6)<sup>38</sup> and Mazumder (2013: 15),<sup>39</sup> 1,440,437 men had been recruited by December 1919, including 877,068 combatants and 563,369 as non-combatants.

During the WW-I, 360,000 combatants were recruited from Punjab, which is nearly half of them hailing from the subcontinent. This comprised 136,000 Muslims, 88,925 Sikhs, and 23,000 Hindus. Singh (2018) conducted a detailed review of the British Indian Army's history, pointing out that half of the Indian Army soldiers were Punjabis, with the majority of them being Sikhs.<sup>40</sup> Furthermore, according to Leigh (1922: 41), prior to the outbreak of World War I, 100,000 troops from Punjab were enlisted in the British Indian Army, accounting for half of the entire personnel. At the outbreak of World War I, the number of combatant soldiers had increased dramatically to 400,000, and by the end of the war, Punjab's total strength in the British Indian Army had reached to 470,000 personnel. During World War I, 40% of fighting soldiers for the British imperial army were mobilized from Punjab.

There are numerous conflicting accounts about the soldier statistics in World War I. However, several renowned scholars such as Leigh (1922), Fox (1985),<sup>41</sup> Talbot (1988),<sup>42</sup> Mazumder (2003),<sup>43</sup> Yong (2000),<sup>44</sup> Roy (2011),<sup>45</sup> and others have extensively supported the assertions that Punjab was a significant recruitment source for the British Indian Army. Yong (2000) noted that Punjab played a significant role in recruitment, making it a crucial imperial front during World War I.<sup>46</sup> The details of the same are represented by the Table:

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<sup>37</sup>Simonow, Joanna. "Famine relief in colonial South Asia, 1858–1947: Regional and global perspectives." In *Routledge handbook of the history of colonialism in South Asia*, pp. 497-509. Routledge, 2021.

<sup>38</sup>Omissi, David. *The Sepoy and the Raj: the Indian army, 1860-1940*. Springer, 2016.

<sup>39</sup>Mazumder, Rajit K. *The Indian Army and the making of Punjab*. Orient Blackswan, 2003.

<sup>40</sup>Singh, Bhupinder, and Bawa Singh. "British Indian Army: Role of Punjab in the World War I." *JSPS* 25, no. 2 (2018): 202.

<sup>41</sup>Fox, Richard Gabriel, and Richard Georg Thomas Fox. *Lions of the Punjab: Culture in the Making*. Univ of California Press, 1985.

<sup>42</sup>Talbot, Ian. *Punjab and the Raj 1849-1947*. Manohar, 2020.

<sup>43</sup>Mazumder, Rajit K. *The Indian Army and the making of Punjab*. Orient Blackswan, 2003.

<sup>44</sup>Tai-Yong, Tan. "An imperial home-front: Punjab and the First World War." *The Journal of Military History* 64, no. 2 (2000): 371.

<sup>45</sup>Roy, Kaushik. *The Indian Army in the Two World Wars*. Vol. 70. Brill, 2011.

<sup>46</sup>Tai-Yong, Tan. "An imperial home-front: Punjab and the First World War." *The Journal of Military History* 64, no. 2 (2000): 371.

**Table No: 4**  
**Punjab's Recruitment (Combatants) in the World War I - 1914-1918**

Area	Kaushik Roy	Omissi&Maz umder	M.S. Leigh	Official Record of Calcutta
Punjab	349, 688	360,000	480,000	415,000
Rest of India	388,209	517,068	497,000	570,000
Punjab's total share as percentage	47.4	41	49.2	42.2

Source: Roy, Omissi, Mazumder, Leigh, Official Record of Calcutta

Lord Linlithgow (18 April 1936-1 October 1943) declared World War-II without consulting the Indians in 1939. According to Prasad's (1956) analysis, 2,128,000 soldiers were served in the Indian Army as of September 1, 1945, both inside and outside of the country. The official history states that on October 1, 1945, there were 2,644,323 total armed forces in India, comprising 2,018,196 Indian Army soldiers, 240,613 British Army soldiers, 99,367 Indian States Forces soldiers, and a few additional soldiers. Roger (1999) reported that in 1939, the Indian Army was comprised of 205,000 native troops, 63,469 British soldiers, and 83,706 men from the princely states. By the time the war came to end, the total number of soldiers had increased to about 2.5 million.<sup>47</sup>

During the World War II, Punjab was proved to be a "Pile Arms of the Raj." According to many scholars, including Nakra (1946), Yong (2002)<sup>48</sup>, Green (2009), and Singh & Fenech (2014), a significant number of Punjabis (Sikhs and Muslims) were enlisted in the British Indian Army at the start of World War II. During World War II, almost 300,000 Sikh men fought for the British Indian Army. More significantly, most Sikh troops joined the army to serve as warriors.<sup>49</sup>In 1940, there were 43,291 Muslim soldiers from Punjab, which grew to 165,497 by 1942. Overall, the Indian Army expanded rapidly, from 1,50,000 in 1939 to 10 lakhs in 1942, with a 50,000-man growth every month. A separate researcher, Kamtekar (2002), reported 24,338 soldiers killed and over 64,000 wounded. During World War II, 12,000 soldiers were killed and over 80,000 were captured.<sup>50</sup>

### **Punjab as a Cannon Fodder**

Approximately 1.5 million personnel were mobilised from the Indian subcontinent to serve in the British Indian Army during World War I. As was previously stated, Punjab had played an instrumental role in providing soldiers of exceptional bravery and selflessness services during World War I and II, who were died, wounded, or captured. Extensive details regarding the casualties suffered by British Indian Army soldiers throughout World War- I were furnished by Kapur (2010:39). According to Saleem (1995:453), India had incurred quite a few more casualties in comparison to its European counterparts. The military personnel of districts including Rawalpindi, Ludhiana, Mianwali, Jhelum, Jullundur, Jind, Ambala, and Lahore had been reduced by more than 3 percent. Rawalpindi suffered substantial losses in personnel and material during World War I as a result of its substantial engagement in British Indian affairs. The second district to be significantly affected by the conflict was Jhelum. A member of the Sangat Group (2008) accurately remarked, "Thousands of Punjabis perished in the First World War; I consider that to be among the greatest tragedies of the 20th century; they were cannon fodder." A substantial proportion of the nine Victoria Crosses (VCs) bestowed upon the

<sup>47</sup>Prasad, S N. Expansion of the Armed Forces and Defence Organization: Official History of the Indian Armed Forces in the Second World War (1939-1945), in Prasad, Bisheshwar (Ed.). Calcutta: Orient Longman, (1956) pp. 195, 399.

<sup>48</sup>Yong, Tan Tai. "Mobilisation, militarisation and 'mal-contentment': Punjab and the second world war." South Asia: Journal of South Asian Studies 25, no. 2 (2002): 137-151.

<sup>49</sup>Kohli, Aakriti. "Militarization of Sikh Masculinity." Graduate Journal of Social Science 12, no. 3 (2016).

<sup>50</sup>Kamtekar, Indivar. "A DIFFERENT WAR DANCE: INDIA 1939-45." In Proceedings of the Indian History Congress, vol. 61, pp. 648-659. Indian History Congress, 2000.

Indian army in recognition of valorous deeds were bestowed upon soldiers from Punjab. This, however, was not without consequence, as 67,771 Punjabi soldiers were wounded and 61,041 were killed.<sup>51</sup>

**Table No: 5**  
**Punjab vs India 's Casualties During the World War-I**

Sr. No.	Casualties	Punjab Number	India Number
1	Died	12,794	37,237
2	Missing	1,083	3,159
3	Wounded	20,536	59,770
4	Prisoners of War	2,562	7,457
5	Total	36,975	109,256

Source: Saleem, 1995: 453; Kapur, 2010: 39

According to Kohli, Sikhs have long been recognised as powerful fighters and highlighted their significant role played by Sikhs in World War II. Between 1940 and 1942, the number of Sikhs rose from 24,723 to 72,059, while Jat Sikhs increased from 18,465 to 42,087.<sup>52</sup> During World War II, a total of 300,000 Sikh soldiers served in the British Indian Army. It is crucial to note that the majority of Sikh soldiers were enlisted as combatants in the armed forces. Among the nine Victoria Crosses (VCs) awarded to the entire army from the subcontinent for valour and bravery, eight were received by Punjabis. However, this achievement came with a significant death and wounded toll of 61,041 dead and 67,771 respectively.<sup>53</sup>

#### **Food Security in Colonial Era: Punjab Initiatives**

After the establishment of canal colonies, Punjab became a region that not only ensured food security for other parts of India but also for the Indian expeditionary forces as well. Before British rule in India, famines were a common problem caused by poor environmental conditions and inadequate social structures. During the period of British rule, famines became increasingly widespread, frequent, and severe, impacting larger areas and leading to national disasters. The vulnerability of colonized regions to food shortages was worsened by structural changes and environmental conditions. Countless lives have been lost in various famines, such as the Great Bengal famine of 1770 and the Chalisa famine, shedding light on the significant humanitarian issues. British colonial practices have faced criticism, suggesting that administrative decisions may have exacerbated some famines. The Bengal famine of 1943, occurring during World War II, demonstrates the intricate connection between local crises and global events, adding complexity to understanding the dynamics of starvation.

The canal colonisation in Punjab has significantly influenced food security. The British government's investment in canals in Punjab led to the growth of settled agriculture and an increase in agricultural production.<sup>54</sup> Anticipated that the construction of extensive canal irrigation infrastructure would benefit low-income food producers by enabling more intense cropping and increased agricultural productivity.<sup>55</sup> Moreover, through expanding arable land, these irrigation systems transformed agriculture into a market-oriented capitalist business.

The creation of canal colonies in Punjab, it was believed that the same had emerged not only as "the most export-oriented in all of Asia," rather had become "a new agrarian frontier".<sup>56</sup> With a canal network spanning more than 3220 kilometres and 20 million acres under irrigation, the Punjab possessed the greatest irrigation system. In Punjab, the total irrigated area made up 52% of the total cultivated area. Improved varieties

<sup>51</sup>Saleem, A. Punjab Revisited: A collection of 70 scholarly papers on the history and culture of undivided Punjab. Gautam Publishers, (1995).

<sup>52</sup>Kohli, A. (2016). Militarization of Sikh Masculinity. Graduate Journal of Social Science, 12(3).

<sup>53</sup>Maynard, J. (1923). The Sikh Problem in the Punjab, 1920-23'. The Contemporary Review, 124, 292-303.

<sup>54</sup>Agnihotri, Indu. 1996. "Ecology, Land Use and Colonisation: The Canal Colonies of Punjab." The Indian Economic & Social History Review 33(1): 37-58.

<sup>55</sup>Pillay, D. Padma Kumar, and TK Manoj Kumar. "Food security in India: Evolution, efforts and problems." Strategic analysis 42, no. 6 (2018): 595-611.

<sup>56</sup>Islam, M. M. (1997). Irrigation, agriculture and the Raj: Punjab, 1887-1947 (No. Ed. 1). Manohar Publications.

of sugar, cotton, and wheat attained 50%, 70%, and 64% of the market, respectively.<sup>57</sup> From over 30 million acres in 1939–40 to nearly 35 million acres in 1942–43, the total cropped area grew. The cropping pattern experienced significant modifications even though Punjab saw a high rate of rise in the production of both food and cash crops. As one of the "least profitable" crops, wheat's share of the land fell in line with the profit-maximization concept. Cotton, on the other hand, had a clear advantage and made the most money per unit of production cost.<sup>58</sup>

During World War II, India experienced significant fluctuations in agricultural output, with food production declining by 0.02 percent annually between 1924 and 1944. As per Kamtekar (2000), the Bengal famine of 1943–1944, resulting in the death of approximately 3.5% of the region's total population, was a severe blow to the British government. With the onset of World War II, this already severe situation deteriorated further.<sup>59</sup>

In order to tackle the starvation and famine situations, the Department of Supply was founded on August 26, 1939, and later restructured in November 1939 to handle supply-related issues crucial for the ongoing war efforts. In 1942–1943, campaigns were initiated to increase food production. The rural population was encouraged to expand the area under agriculture through the Punjabi "Grow More Food" programme. There was a rise in the total cropped area from nearly 30 million acres in 1939–40 to about 35 million acres in 1942–43. By that time, 25.6 million acres in the Punjab were cultivated with food crops, showing an increase of approximately half a million acres compared to 1933–1934.

In July 1943 there was a famine in Bengal especially and in South India as a whole. In India, the British government's major concern was now food scarcity. In the middle of all this chaos, Punjab had stood up and promised to supply wheat to the starving districts, especially Bengal. Based on Sohal's (2013) report, on December 1, 1944, the Punjab government transported 21,410 tonnes of food grains—13,109 tonnes of wheat, 1450 tonnes of millets, and 6,851 tonnes of rice—to the front lines of action. Moreover, by the beginning of July 1945, Punjab had shipped 7,632 tonnes of food grains to the starving districts. Typically, 6, 80,000 tonnes of foodgrains were sent to the front lines of battle between March 1945 and February 1946.<sup>60</sup>

However, with massive irrigation networks, the Punjab had emerged as 'a new agrarian frontier', which was said to be 'the most export-oriented in the whole of Asia'. The Punjab had the largest irrigation system with 20 million acres under irrigation, with a canal network running over 3220 kilometres. The total irrigated area accounted for 52 per cent of the total cropped area in the Punjab. By the introduction of 'Grow More Food' campaign, the total cropped area increased from about 30 million acres in 1939–40 to nearly 35 million acres in 1942–43. The area under four important crops – wheat, rice, maize and bajra – was the highest ever recorded in 1942–43. With the coming of British, Punjab integrated well with Rail-Road network into rest of British India. At the time, Karachi and Bombay were the major ports, connecting the Punjab into rest of the British Empire. With the expansion of agriculture, Punjab had become a 'breadbasket' province for Britain and Western Europe, where Punjabi wheat complemented and competed with American and Russian supplies.<sup>61</sup>

In July 1943, the South India in general and Bengal in particular suffered from famine. Shortage of food had become the major concern for the British government in India. In such chaos, Punjab had stepped forward and had promised to supply wheat to the famine-stricken areas prominently to Bengal. In order to meet famine situation, On 26 August 1939, the Department of Supply was created and reconstituted (November 1939) to deal directly with the problems concerning supplies of all kinds required for the execution of the ongoing war. The 'Grow More Food' campaigns had been started in 1942–43. During the World War II, Punjab had been dispatched wheat 13,109 tons; millets 1450 tons; and rice 6,851 tons to the various war fronts by the Punjab Government on 1 December 1944. Moreover, by the beginning of July 1945, approximately 7,632 tons of food grains had been sent from the Punjab to the famine-stricken areas. In such a typical case, total 6, 80,000 tons of foodgrains had been exported to war fronts from March 1945 to February 1946. The rural population was rallied to intensify the area under cultivation through 'Grow More Food' campaign in the Punjab. The total cropped area increased from about 30 million acres in 1939–40 to nearly 35 million acres in 1942–43. By then, the area under food crops in the Punjab reached 25.6 million acres which exceeded by nearly half a million acres over

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<sup>57</sup>Talbot, I. (2020). Punjab and the Raj 1849-1947. Manohar.

<sup>58</sup>Islam, M. M. (1997). Irrigation, agriculture and the Raj: Punjab, 1887-1947 (No. Ed. 1). Manohar Publications.

<sup>59</sup>Kamtekar, I. (2000, January). A Different War Dance: India 1939-45. In Proceedings of the Indian History Congress (Vol. 61, pp. 648-659). Indian History Congress.

<sup>60</sup>Sohal, Sukhdev Singh. "Food Crisis, Inflation and Political Control in Punjab (1940-47)." *Journal of Punjab Studies* 20 (2013).

<sup>61</sup>Lally, J. (2015). Trial, error and economic development in colonial Punjab: The Agri-Horticultural Society, the state and sericulture experiments, c. 1840–70. *The Indian Economic & Social History Review*, 52(1), 1-27.

the year 1933-34.

Thus, Punjab had remained very special for British Indian Army, particularly during the World Wars. It is well established that it was one of the most fertile ground for the recruitment. For maintaining and expanding the British Empire, Punjabi soldiers didn't fear to shed their blood. In this background, they had mobilized in substantial number to the various theater of World Wars. In spite of this, other war supporting materials also sent from Punjab. Ironically, their contribution remained away from taking appropriate place in the pages of history.

### **Conclusion**

Lastly, the introduction of canal irrigation systems brought about a significant transformation in Punjab's agricultural landscape, leading to remarkable economic and social changes. The transformation of arid lands into fertile agricultural hubs has greatly increased productivity and established Punjab as a vital provider of food. In addition, the canal colonies played a crucial role in promoting agricultural growth, leading to the emergence of different social classes and transforming the way land was owned. The arrival of immigrants in the newly irrigated areas brought about significant changes in the population. In addition, the canal colonies played a crucial role in driving Punjab's economic growth by facilitating the connection between local agricultural production and markets at regional, national, and global levels.

However, in addition to these economic benefits, certain challenges arose, such as waterlogging, salinity issues, and the imposition of hierarchical labour structures by landlords. In addition, the British colonial policies had far-reaching consequences for Punjab. The region played a crucial role as a strategic stronghold for the empire, making substantial contributions to its agricultural and economic interests. Although the positive effects of the canal colonies cannot be ignored, it is crucial to acknowledge the negative outcomes of British colonial rule. These include the worsening of famines and epidemics caused by insufficient trade and transportation networks. Influenced by British colonial rule, Punjab's agriculture, economy, and society underwent significant transformations that continued to shape its trajectory long after the colonial era. At last, we can say that Punjab has not been remained as cannon fodder, rather it became food provider not only for the country rather for the British Empire as well, leaving drastic impacts for social transformations.