

Abida Kausar Chuadhary \*

## Irrigation Sector Development: Agro- Economic transformation and Social change in Colonial District Multan (1849-1901)

### Abstract

*The aim of this research is to analyze the historical process of continuity and change that led to the socio-economic transformation associated with irrigation sector development in nineteenth-century Multan, thus supplying a missing piece in South Asian Regional economic history and it became unplanned revolution and modernization as happened with colonial Multan. The introduction of the perennial canal system and the commercialization of agricultural crops provided a real opportunity for the economic development of this region. What were the socio-cultural impacts of regional economic policies, and how it penetrates as processes of continuity and change? This research derives its frame of reference by mixing historical, qualitative and quantitative methods of research. The selected data is analyzed from a dialectical rationale approach to critical discourse. This research is based on original, unpublished official reports from British Indian Library London, Punjab Civil Secretariat Lahore.*

**Key Words:** Multan, Irrigation Development, Socio-Economic Transformation

### Introduction

The Multan region provides an excellent vantage point to assess the socio-economic transformation of colonial rule. Multan was annexed by the British in 1849 after the Second Sikh War. The district possessed a number of unique features which impacted the general changes which the British brought to this along with other regions of Punjab. Multan District serves to be a fitting case study. This region had a deep impact on colonial rule. No place in Punjab symbolizes more clearly the changes, which colonial rule had brought to it than this region. For its geopolitical and trading interests in the region, Punjab was of great importance. The district of Multan was quite different from the rest of Punjab for its historical, geographical, weather and typical social traditions.

Universal history, national history and local history each occupy a significant place in historiography. Negligence of local history can indeed lead to a lopsided view of certain aspects of national history, and studies in regional history can also go deeper into micro-history that books of the other two genres may miss. Especially when the locality has had a role to play in a broader geographic context and in perspective of history, the local data gains primary importance for the understanding of general histories. And this phenomenon fittingly applies to the case study of Multan. Historians have shed enough light on the universal history and national history, but they overlooked significant aspects of local history.

Natural resources and associated technologies have been an integral part of human life. The land has formed the main ingredients of natural resources from the beginning of civilization. The academics discuss the issue of natural resource management from various perspectives: historical, anthropological, ethnographical, political and legal. In Multan, natural resource management was mainly due to the improvement of the irrigation system through the expansion of canals. In this research, we will discuss the role of irrigation in agriculture production. Inadequate irrigation has often been used as an explanation for low agriculture productivity. Alternatively, high productivity has been attributed to extended irrigation in an area.

Agriculture became the main industry of district Multan not only in terms of production and seasonal employment but also in terms of development. The fertile and uniformly sloped land of Multan combined with its other physical and ethnological features like a river system, rainfall, depth

\* Assistant Professor, Department of Pakistan Studies, National University of Modern Languages, Islamabad, Pakistan.  
Email: [abidach07@gmail.com](mailto:abidach07@gmail.com)

of water table below the surface and its industrious peasants represented the wealth of the Multan region as well. Both welfare of the people and the prosperity of the government relied on it. The development of irrigation was, therefore, one of the major concerns of the governments which ruled the region in the period under study. Multan witnessed the commercialization of agriculture and the growth of irrigated areas following the extension of irrigation facilities. However, it was immensely transformed by the Sidhnai Canal Colony system. The research will cover irrigation development and substantial agro-economic and demographic changes brought through this transformation.

## Demographic Changes and Irrigation Sector Development

The history of the region was linked with the shifting course of the rivers and changes in district and *tehsil* boundaries associated with it. District gazetteers (Multan District Gazetteer 1901-02, pp-9-12) outline numerous alternations manifest in the formation of new *tehsils*, transfer of several estates from one district to another to cope with administrative and demographic changes. All these *tehsils* were irrigated through canals inundated by rivers.

Canal construction seemed an easy way to extend these natural drainage channels in the form of inundation canals, which provided irrigation necessary for cultivation without disturbing their natural courses. These canals ordinarily began to flow with the rise in the river towards March or April. By the end of June, the supply was regular, after which irregular supply continued till the end of August or early September. The water in these canals was heavily charged with silt and was invaluable for the alkaline soil. ( E.D.Maclagan, *Settlement Report of Multan District, 1901, pp1-5*)

Multan depended on its river flow and inundation canals. In the district, the tract between the riverain and the *bar* made the water route of inundation canals. (*Multan District Gazetteer, (1901-02,p,27)*) Floods also played a very important role in seasonal cultivation. If the flood came at the right time of sowing but soon went down to the normal level, the cultivator had to choose between earlier wheat cultivation and a substantial quantity of the *Kharif* crop. If the flood came late and went down soon at a natural level, there was a decrease in *Kharif* and *Rabi* cultivation. (*Board of Economic Inquiry Punjab, Punjab Village Survey No.11*) Chenab floods in Multan were different in potency, and these floods were more fertilizing with better alluvial deposits.

In Multan, early rulers before the colonialism like Mughals, Afghans and Sikhs were well aware of the importance of canal irrigation systems and excavated several small and large canals. The Matithal, Hajiwah and Ghulamwah were main canals with other several minor channels. Diwan Sawan Mal's era, a prominent Sikh governor in Multan, did much in this regard. Most of these canals were well working in *tehsil* Kbirwal and Mailsi in Multan at the time of colonial annexation. (*Assessment Report of Kbirwala and Mailsy Tehsils, 1920,p 67*)

In the Punjab canal, the irrigation development project was based on its average rainfall patterns and its soil classifications. The current analysis normally connected most of the Colony districts for purposes of physical typology. *Doabs* were away from the rivers and mostly arid and typically featured wasteland. The western region is classified as more arid and not easily irrigated due to geographical or seasonal conditions. (*Final Settlement Report of the Multan District, 1921*) District gazetteers usually stated that the soil was fertile, and there were variations within these physical land features. The importance of water was directly linked to the shortage of seasonal rain in Multan. (*Agnihotri, Agrarian Change in the Canal Colonies Punjab, 1890-1935, p,32*)

In Multan, dry cultivation was a difficult issue, so far it was noticed about the rainfall pattern, "Scanty as it is, is the crucial factor for an inch or two in a season may make all the difference to a crop sown with canal and well". (Douie, *Punjab Settlement Manual,81*) For these environmental factors the after studying the settlement reports of Multan District, we came to know that "Irrigation is everything to this district." (*Settlement Report of Multan District, 1873-74, p.45*)

## Sidhnai Canal Perennial Irrigation

During the colonial rule in India, the province of Punjab witnessed massive irrigational development in the nineteenth century. The construction of several hundred miles of canals which brought perennial irrigation to the vast arid wastes in this region, transformed the geo-face of the country. It was not that prior to colonization of these lands were totally unpopulated and uncultivated. On the

contrary, these lands had been the home of numerous tribes and people who engaged with grazing and pastoralism. The *bar* consisted of the hard soil, covered mainly with *Jand* and *Jal* trees, which was not cultivable, was fit only pasture grounds. (*Report on the Administration of the Punjab and its dependencies for (1900-1901,p,87)*)

Pastoralism was another option for their living hood. Due to environmental factors and difficult terrain, cultivation was a daunting task; therefore, living only on agriculture was not possible for the people of the Multan district. According to the census of 1881, the population engaged in agriculture and pastoralism was 69,777. One of the reasons why people did not put hard labor into agriculture was the primitive link of *Pathan* tribes with pastoralism which was an easy option than agriculture. (*Mooltan District Gazetteer (1883-84,p,70)*), the colonial administration devoted the same concern to the better growth of livestock as to agricultural production. Cattle breeding helped to meet the local dairy and meat consumption. Their hides were a significant source of indigenous industry and trade. Therefore, orchards were ample and became a profitable business.

The expansion in the breeding of cattle was also encouraged by the district board. The prices of agricultural stocks had also started rising, and so was the profit. At the last settlement (*Final Settlement Report of Multan District 1921, p,7*), enquiries were made, and a record was prepared of the customary prices obtained at each harvest for the sale of agricultural produce by *Zamindars* from 1852 to 1872 and from 1872 to 1895. (*Report on the Administration of the Punjab and its Dependencies for the years (18-49-1901)*). According to this calculation, prices had risen to 12%. Calculations made during the assessment operations showed that the people made an annual gross income of some Rs. 1,60,500 from the sale of ghee, Rs. 51,500 from the sale of wool and hair, Rs. 33,500 from hides, Rs. 3,66,000 from the sale of stock, and Rs. 76,500 from the hire of camels, and Rs.6,88,400 from livestock. (*Settlement Report of Multan District 1901, p,43*)

To improve the irrigated land area, wells were another important source and means of irrigation next to canals in the Pre-British revenue and economy in this largely rainless tract. (*Settlement Report of Multan District 1883-84,p,67*) Rainfall levels and rivers were directly connected to the working of the wells because both affected the level of the water table. The average rainfall was 15 inches a year: therefore, an extension of cultivation was necessarily dependent upon the extension of irrigation. (*Report on the Administration of the Punjab and its dependencies for ( 1900-1901, p,92)*) Summer or winter rainfall failure meant the loss of a great number of cattle. And the good owner was deprived of the manure for his crops. (*Register of Rent freeholdings for the District Mooltan 1852-55, File, B*)

The significance of wells sustained (*The Economic of Tube Well Irrigation, the Board of Economic Inquiry Punjab, Publication No.133*) even after expansion of perennial irrigation in the region, which started in 1885 with the opening of Sidhnaï Canal, brought a major portion of the district under irrigation. The region with strong stream water flow had a higher productivity rate depending upon the soils' hydraulic conductivity. (*Settlement Report of Multan District 1901, 30*) The transformation and development in the drainage system badly affected the wells and well-irrigated lands.

The rivers and riverain lands had a prominent place in such an economic set-up. As a result, the canal colonies, like new colony tracts of Sidhnaï Canal, emerged as economically developed urban centers of Multan. In Sidhnaï Canal, Colony, the transformation had been seen visible after 1886, and land revenue had been arising in the Multan district between 1890 and 1901. (*The Punjab Colony Manual- Revised Edition, Supplement No.1*) It was even less than the revenue generated in 1880 while overall revenue continued to increase in Punjab, including Multan. The perennial canal system and the scheme of Sidhnaï Canal Colony changed the whole landscape of the district of Multan.

The Sidhnaï Canal Colony *Sidhnaï (Canal Project, including the Koranga, Fazal Shah and Abdul Hakim, 1888)* was the first large scale irrigation project to be realized in the Multan district. It was excavated on the Ravi River between 1883 and 1886 and supplied water to an area of about 250.000 acres. (Imran Ali, *Punjab under Imperialism (1885-1947, pp, 14-15)*),

Colonization and leasing of the project were based on plots of 50 to 90 acres in size. (*The Punjab Colony Manual- Revised Edition, Supplement No.1*) All these plots were given on lease firstly. The first type of lease was "jointly to a number of shareholders of a sufficient number of 90 acres holding to form an estate or a subdivision of a state and lease jointly to several persons of a holding of 90 acres". The perennial irrigated areas of the canal, which had greater economic value, were the first to be colonized. Regarding the acquisition of property rights, 698 acres were given in the Sidhnaï Colony. (

*Annual Report on the Punjab Colonies, for the year ending 30th September 1922. p,95*) Those land acres were divided into plots.

These plots were relatively large, as compared to the pattern of land prevalent in the northern and eastern districts- that was around 5-6 acres; as well as compared to other colonies like Shahpur and Lyallpur. (Imran Ali, *Five Punjabi Centuries, Canal Colonization and Social and Economic Change, p, 87*) It is likely that the British in the 19th century did not want to break too significantly the present pattern of landed property while admitting the need for its gradual revision. Of these plots, about half were allotted to colonists from other districts: generally *Jats* and *Rajputs* from Amritsar and Gurdaspur. (Sidhnai C, BOR 4/251/3kw)

In order to utilize areas for temporary cultivation (*Annual Report on the Punjab Colonies*), short-term leases for this purpose were granted. Temporary cultivation mostly involved with the confiscated land as well as the land reserved for specific purposes, such as for artisans, *lumberdari* allowance or tree plantation until given to the concerned purpose. Temporary cultivation was best suited to reclaim poor land, test soil capacity and increase its market value. Its purpose was to get cultivation and earn money quickly. It was confined to those lands that had the possibility of irrigation and cultivation. Temporary cultivation under the new colonization scheme became regular and systematic.

The possession of the land would be left till the arrival of the purchaser. Neither colonists nor locals were willing to purchase land for such a short period. Initially, temporary cultivation did not produce good results. There were some alternations of leases terms in temporary cultivation that lease shall continue in force in each settlement in the Multan district under the government, and lessees would have no right for cancellation, alteration or any type of modification. (*Punjab Colony Manual*)

As for the proprietary Rights in Sidhnai Canal Colony, the government was the sole owner of all land for colonization. The proprietary rights were transferred directly from the government to the colonist. "New Sidhnai Canal in Multan is ready to irrigate certain lands as the property of the government in the district of Multan." (*The Punjab Colony Manual Indenture Form No. 1*)

Inland sale, the pattern of lower Bari *Doab* was followed with some modifications as per local customs. In the initial period of colonization, grantees were slow in getting proprietary rights. In transferring the land, the condition of self-cultivation was strictly adhered to, and in the case of absentee purchasers, the land was usually resumed. (*The Punjab Colony Manual Indenture Form No. 1*) Occupancy rights in the government were given only to the grantees on low-quality lands that paid lump-sum amounts.

## Agro- Economic Transformation and Social Change

The development of Bari Doab Colony had shifted the center of gravity of the cotton industry from Multan to newly developed colony towns of Jahanian, Kahanewal and Mianchuunu. This agricultural transformation is backed by the process of cotton production and the facilitation of agricultural rail born to trade. The land irrigated by Sidhnai Canal produced a large supply of American cotton. The direct rail route to Karachi connected Multan by Knanawal, Lodhran junction (*Punjab Internal Trade and Manufacture Report, 1883-84, pp.29-30*) served to increase the agro-industrial importance of these town *mandies*. (*Board of Economic Inquiry Punjab, Punjab Village Survey No.6*)

Multan also linked river born trade, and agro production began to be shipped to Karachi. ([Report on the Internal Trade of Punjab by Rail and River for the year 1899-1900, p, 42](#)) The town of Multan, which was situated on the Sutlej River, served as the main market of the district and important internal trade centre of the Punjab province bringing in substantial economic growth with the commercialization of crops and the overall prosperity of the district canal colonies.

The commercialization of crops had a far-reaching effect on the economy of the region. Agriculture was affected by the introduction of commercial cash crops and private land ownership as well as by the fixed land revenue demands ([Report on the Land Revenue Administration of Punjab for the Agricultural Year, 1st. October](#)) of the state. While tightening its grip over Colony lands government also sought to increase the financial returns. Reassessment of land at higher revenue rates, increase in the heads of charges collected, higher estimates of yield and net produce so as to arrive at a much higher proportion of net assets which formed the basis of calculation of net revenue were an exercise repeated at each settlement. The government claimed its rightful share in the increased prosperity of

the region, making it clear that this prosperity was directly a result of state action. Security of regular irrigation supply and rising prices (*Report on the Administration of Punjab and its Dependencies for (1900-1901)*) formed its justification for higher demand.

While there was the growing problem of rural indebtedness. (*Report on the Material Progress of Punjab During the Decades (1881-1891, p, 90)*). This strengthened the power of the money-lending community. The creditor received the product, and the debtor was the loser. In 1888, the Punjab government geared towards investigating a number of district officers as to whether alienations were increasing and, if so, whether any political danger was involved. (*Officiating Junior Secretary, Punjab Government, to Senior Secretary, Punjab Financial Commissioner, 7 November 1888, Revenue and agricultural (Revenue) Proceedings 1(A) May 1891*) The fear that the alienation of land to this community would undermine stability in a region of immense importance to imperial interests resulted in the major legislation of the 1901 Alienation of Land Act. ([Barrier, \*The Punjab Alienation of Land Bill 1900\*, p,69](#)). The Act had been seen as a *Benami* transaction and limited the activities of the moneylenders. The debt burden proved to be a drag on the development of the colony villages. The proprietary villages suffered the most because of the land alienation to the commercial classes.

The Hindu commercial classes, however, remained the real beneficiaries of colonial transformation. Hindus got domination in the rural areas, and it was assumed to be a cause of possible resentment. Many of the great estates were mortgaged, and some sold up to *Banias*. Accordingly, *Banias* competed with *Jagirdars* for the estate production and then threatened the economic foundation of their power. However, the political importance of the Land Alienation Act was successfully used to control the land alienation to non-agriculturalist by the Punjab Government. On the other side, communal Riots of Multan in 1881 ([Commissioner Edgeworth to Officiating Deputy Commissioner, Mooltan, 31 August 1852, Punjab Home Proceedings, July 1881, No.4](#)) was a possible and alarming warning to colonial control.

The colonial rule had many innovations to offer under bureaucratic paternalism. The benevolent policies of the government reflected in the Land Alienation Act, and the Court of Wards management saved many peasants and estates from insolvency. ([Report on the Administration of Estates under the Courts of Wards in the Punjab, 1907, p,29](#)). This was the substantial positive impact of the British policies. The village banks and cooperative societies transformed the rural credit relations. (*Report on the Punjab Co-operative Credit Societies, 1910, p, 10*) Personal ownership of land emerged from a misty dream to a court-supported reality.

In the commercial sector, due to the British policies, Multan was transformed from an agricultural to cotton ginning industrial center. Multan's economy was based on cottage industry, agro manufacturing, commerce and trade, but it also had repair workshops for railway carriage, ginning factories and military garrison. New educational and health institutions with a number of new public buildings of the district courts, jails, police lines, and new garrisons were built at a certain distance from the old walled city of Multan. (*Annual Progress Report of Public Works in Punjab for the year 1901-02*) Though initially, agriculture was the main source of income for the Multan district, where new business centres and markets were established as a result of agricultural activities. Railway network morphed rural Multan into the commercial and trade market.

A number of foreign firms had agencies in all the market towns, and this helped to expand the wheat and cotton trade. ([Report on the Working of the Factories Act in Punjab for the year 1900, p,48](#)) This opened economic avenues for the dwellers of Multan and greatly improved their social and economic position. In the villages, they were shopkeepers and petty moneylenders, but in Multan and other market towns of the Sidhnaï Canal Colony like Mian Channu and Khanewal, their status was raised, and they established themselves as bankers and commission agents and were associated with the foreign trading companies. The Sidhnaï Canal Colony set up in previously unoccupied wastelands significantly changed the settlement pattern, while earlier villages had been located near rivers and seasonally inundated channels with the canal colonies became a regular feature of the landscape of Multan District regardless of landform or relationship to rivers.

The construction of canals by the British led to a chain of Historical processes. This system was different to the tempo and life of this region prior to the advent of perennial irrigation. On the one hand, at the economic level, far-reaching changes were coming about and on the other hand, the social level all established norms of behavior, self-perception of status, values and relation with others

faced a challenge with the advent of immigration who came to occupy a dominant position both in terms of their numerical presence, as well as the economic resources were at their disposal. Matters further became complicated by the fact that these changes aimed at development often affected the fortune of the old settlers. Many found that natural sources of irrigation like wells, streams and channels had dried up and forced tenants to leave their native places. The river did not run as its old natural route. Very soon, the subsoil water level rose at a dangerous level, resulting in wells being useless and in the soil making barren.

### Socio-Cultural Change

Through colonization schemes, the government carried out massive social changes, which resulted in the settlement of agriculturists in newly established canal colonies through grants of colony lands. The British government introduced numerous reforms to encourage farming. Right from the annexation of Multan till the establishment of Sidhnai Canal Colony, the agricultural productivity of the district was greatly enhanced by the perennial canal system and the increased number of wells. The increased agricultural resource helped maintain a favorable people-land ratio and the people were willing to migrate to new canal colonies. The size of the holdings and overall agricultural yield per acre increased. Moderate revenue demands and the rising prices of agricultural commodities largely benefitted the farmer. Tenants, as well as the menials, got better opportunities in the developed agricultural environment in new canal colony lands.

However, all communities in the region did not benefit from colonial rule. The nomads and the old settlers did not share the canal colony development. The land was granted to those communities who were supporters of the colonial state, whether as a result of military service or by dint of their ability through local influence as landholders to police rural society. The new commercial opportunities in the *Mandi* towns were monopolized by members of the *Arora* and *Khatri* castes, i.e. the noble Hindu castes.

Hindu commercial classes were far ahead as compared to any other community in all markets commission agent and provided financial as well as of the district. In the villages, it was the shopkeeper who provided credit to the farmer and landowner. However, in the market towns, his counterpart worked under the label of banker and trade facilities to the foreign and local trading firms. Many Hindus who became rich moved from the countryside to new towns. They purchased properties at Khanawal and accumulated a lot of wealth from their new as well as old business, which they wanted to invest in the most lucrative cotton ginning business.

### Conclusion

After analysis, it is clear that the Canal Colony tracts were more directly linked by the market to international trends and network than to an internal market as rapid and close integration with the international market, a sort of regional economic pattern could be traced. This research reveals that the cotton industry and trade in agricultural commodities were practically under the control of Hindus. The market economy of the colony town witnessed the emergence of a new class of bankers and commission agents. It was, therefore, not only the local bankers and commission agents who wanted to invest their capital in the new cotton industry of the town but bankers from other metropolitan cities as far away as Lahore and Multan also wrote and applications to the colonization officer to established cotton factories. The wealthy commercial classes followed the new trends of business and trade, which had evolved over time, thus boosting the economy of the region. Anyhow all these socio-economic developments had diverse impacts on the localities and the communities within the district. The development pattern was skewed towards the business classes and the colony areas owing to the contradiction between the development goals and the motives of political control created unintentional effects of narrowing down the development process. Nonetheless, the socio-religious, political, economic and cultural panorama of the city of Multan seemed entirely different from the medieval period.

## References

- A., Roe, Charles. (1878). Revised Assessment Report of Tahsil Lodhran 1878, Lahore; Administration Report of the Buildings and Roads Branches for the year 1898-99, Lahore; 1906 Annual Progress Report of Public Works in Punjab for the year 1875-76, Lahore; 1876 Annual Report of the Punjab Colonies, for the ending year 30th September 1922, Lahore; 1923 Assessment Report of Mailsi Tahseels,( with Staments), 1900, Lahore; 1900 Assessment Report of Tahseel Kabirwala,( with Statement,1899,Lahore; 1899 Assessment Report of Tahseel Lodhran, (with Statement), 1900, Lahore; 1901 Barrier, N. G. (1966). The Punjab Alienation of Land Bill of 1900. *UK, Duke University, 1966*
- Commissioner Edgeworth to Officiating Deputy Commissioner, Mooltan, 31 August 1852, Punjab Home Proceedings, July 1881, No.4
- Doue, J. M. (1961). Punjab Settlement Manual, 5<sup>th</sup> ed., Lahore, 1961
- Mooltan Gazetteer, 1883-84, Lahore; 1884 Multan Multan Gazetteer, 1901-02, Lahore; 1902
- Public Works Department, Punjab administration Reports of the General Branch for the years 1880-1900
- Punjab Administration Reports, Finance Department, 1869-1901
- Punjab Administration Reports, Political Department, 1849-1901
- Punjab Administration Reports, Revenue Department, 1849-1901
- Punjab Government, Report on the Internal Trade and Manufactures of Punjab (1880-81), Lahore; 1882 Punjab Govt., Report on the Revenue Administration on the Punjab and its Dependencies for the year 1865-66, Lahore; 1866
- Register of Rent free holdings for the District Mooltan 1852-55, File, B
- Rent free holdings for the District Mooltan , 1852-55, File No, B, Multan District Record Room,
- Report of the Land Revenue Administration of the Punjab for the Agricultural year, 1st October 1891 to 30th September 1892, Lahore; 1893,
- Report on Material Progress of the Punjab for the years, 1881-91, Lahore; 1892 Report on the Material Progress of the Punjab for the years, 1891-1901, Lahore; 1902
- Report on Operations of the Department of Agriculture Punjab, for the ending the 30th June, 1906
- Report on Police Administration in Punjab and Its Dependencies for the Year 1861, Lahore; 1862
- Report on Popular Education in the Punjab and its Dependencies for the year 1864-65, Lahore; 1866,
- Report on the Administration of Estates under the Court of Wards in the Punjab, Lahore, 1907-1928
- Report on the Administration of the Punjab and its Dependencies for the year 1901-02, Lahore; 1902.
- Report on the Committee on the Establishment of Cooperative Credit Societies in India, Simla; 1901
- Report on the Department of Industries in Punjab for the year ending 31st March, 1920, Lahore, 1921
- Report on the Fifth Industrial Conference on the 30th December, 1909, Lahore; 1910
- Report on the Internal Trade of the Punjab by Rail and River for the year 1899-1900, Lahore; 1900
- Report on the Land Revenue Administration of the Punjab for the Agricultural year, 1st. October 1899 to 30th September 1900, Lahore; 1901, Multan District
- Report on the Material Progress of the Punjab for the years, 1901-02, Lahore; 1902
- Report on the Municipality of Multan, Constituted under Local Self-Government Scheme, for 1883-84, Lahore; 1884
- Report on the Operations of the Department of Agriculture Punjab, for the year ending the 30th June, 1906, Lahore; 1908
- Report on the Results of the Census of the Punjab, 1891, Lahore; 1892
- Report on the Revenue Administration of the Punjab and Dependencies for 1865-66, Lahore; 1866,
- Report on the Revised Settlement of the Multan District of the Punjab 1873- 1880, Lahore; 1883
- Report on the Third Industrial Conference on the 30th December 1907, Madras; 1908
- Report on the Working of the Factories Act in the Punjab for the year 1900, Lahore; 1901
- Report on the Working of the Income Tax Acts, ix of 1869 and xxii of 1869, for the year 1869-70 Lahore, 1870
- Reports on the Administration of the Punjab and its Dependencies for the years 1849-1901

Reports on the Internal Trade of the Punjab by Rail and River for the years 1856-1901

Reports on the Land Revenue Administration of the Punjab for the Agriculture years 1866-1899

Revenue Report of the Irrigation Department, Punjab, for the year 1887-88, Lahore; 1888

Revenue Reports of the Irrigation Department, Punjab for the years 1870-1900

The Economic of Tube Well Irrigation, the Board of Economic Inquiry Punjab, Publication No.133,  
Lahore, 1965