

Irrigation System in Patiala State

R.S. Gurna

Associate Professor P.G. Deptt. Of History A.S. College, Khanna India

Abstract

Irrigation played a very important part in the prosperity of the Patiala State. The natural drainage the state was not in a good position and the wells both kacha and pakka were the earliest and an important source of irrigation that protected the state from the possibility of serious famines. The canal system was the most important source of irrigation in the state. Three canal systems i.e. Sirhind Canal, Sirsa Branch of the Western Yumuna Canal and the Banur Inundation Canal irrigated almost one-sixth of the total area of the state. During the winter season the supply of water was meager. During the summer season the supply of water was spasmodic and dependent on rain in the hills. The state agriculture still remained largely dependent on the occurrence of monsoon. The author in this paper has discussed the various natural and manmade irrigation systems in the erstwhile Patiala State.

KEYWORDS: Patiala State, Irrigation, Wells, Canal System, British Government, Phulkian State.

It is beyond all doubts that in the Punjab as in other parts of India agriculture was the oldest and by far the extensive and most important occupation. It provided not only the food that was absolutely necessary for the lives of people,¹ but also the raw produce by which alone imports were paid for the commodities on which the commerce of the province was based and the material for such industries as the province possessed.² Thus the Punjab was primarily an agricultural province and the Patiala State was no exception.³

Irrigation played a very important part in the prosperity of the Patiala State. Irrigation is defined as the “application of water to soil for the purpose of supplying the moisture essential for plant.”⁴ In ordinary sense irrigation means artificial application of water to soil to assist in the growth of the plants. As the agriculture was of primary importance in the economic life of the Punjab it depended on irrigation as the most important pre-requisite.⁵

Even in the olden times endeavours were made to make use of the sources of water supply such as were available at that time. The sources of artificial irrigation were embankments, streams, springs, wells & large irrigation canals.⁵ In the Patiala State irrigation was mostly done by canals and wells, both *kacha* and *pakka* masonry wells were worked with a bucket or Persian wheel. Jat used generally the bucket and Arian’s the Persian wheel, while Kambohs and Sainis used *dhingli*.

As far as natural drainage is concerned the Patiala State did not even have one perennial river cutting through its territory. Saraswati, the legendary seventh river of the Sapt Sindhu region, was once supposed to traverse through this region, but with the lapse of time it was left in the sand-dunes of the Rajasthan.

Ghaggar was the chief stream that passed through the state. It first ran from north-easterly to the south-westerly direction through the Powadh and then taking westerly course, separating Powadh from Bangar, finally leaving the state territory.

In addition to the Ghaggar some more monsoon streams passed through the state. The Sirhind *cho* flowed through Fatehgarh, Bhawanigarh and Sunam tehsils. This *cho* probably followed the alignment of the canal which was cut about 1261 by Feroz Shah when he created Sirhind as a separate district.⁷ South of this stream ran the Jhambowali *cho*, which originate near Chanarthal, running through Bhawanigarh and Karamgarh *thanas*. It joins the Ghaggar near Bhaini.⁸ The third stream was the Pathila *nadi* starting from a place near Manimajra and carrying with it the water of several other torrents. It followed past Patiala, falling into Ghaggar near Patarsi. In the Mohindergarh *nizamat* the two chief streams were Dohan and Krishnwati with its tributary Gohli.¹⁰ There were a certain number of perennial springs from which irrigation was effected in the Pinjore Tehsil.¹¹

It is relevant to note that with regard to the natural drainage the state was not in a good position. A state where a large number of population depended on agriculture for its livelihood and natural irrigation being insufficient, it required a network of artificial irrigation to sustain its agriculture. Wells were the earliest and an important source of irrigation that protected the state from the possibility of serious famines. Wells were both *kacha* and *pakka*, masonry wells were worked with a bucket or Persian Wheel. The cost of construction of a well varied according to the depth and size of a well. A single bucket well could irrigate four to five *kacha bighas* in one day. The Jats generally used the *charas*.¹² In the villages where sugarcane was largely grown and Arians were cultivators, there the Persian wheel (*rahet*) was generally used. Each requiring two to three men and a pair of bullocks. A Persian wheel irrigated a smaller area than a bucket well, but it was less trouble some.¹³ Some Kambohs and Sainis of Banur region used the *dhingi*.¹⁴ It was a modification of the *charas* system, in this a smaller bucket was used and manually operated.

In the best part of Powadh extending over Sirhind, Payal and Amargarh area, water was plentiful and wells numerous.¹⁵ However, in the rest of the sub Himalayan region extending westward to Patiala, soil was hard and water level deep, it kept down the number of wells. In Jangal wells were few, as the water was very low and soil was too light for high class cultivation.¹⁶ Well irrigation was also scarce in the Bangar tract. In well irrigated lands ancient practices like the Persian wheel continued and poor peasants could seldom afford the cost of sinking *pakka* well. Finally it may be said that in the north-west of the main block of Patiala territory, well irrigation was common and successful.

The canal system was the most important source of irrigation in the state. Three canal systems irrigated almost one-sixth of the total area of the state.¹⁷ Those were Sirhind Canal, Sirsa Branch of the Western Yumuna Canal and the Banur Inundation Canal.

In 1879, a branch canal office was opened under a *nazim nahar* but the department as such actually came into existence in 1885 when the services of an Executive Engineer were secured from the Punjab Irrigation Department. There were at that time only two subdivisions under the Executive Engineer with seven *zilladari* sections.¹⁸ Since then the department had gradually expended. In 1938-39 it was headed by a Chief Engineer, two Deputy Collectors, seventeen *zilladari* sections, twenty eight work subordinate sections and 148 *patwaris*. In *rabi* crop of 1885 there were only 4,342 acres under irrigation. During 1938-39 total irrigated area came upto 6,85,357 acres.

The construction of the Sirhind Canal from the river Satluj was first mooted by Maharaja Narinder Singh in 1861. At his instance a survey was carried out by Captain Crofton in 1862.¹⁹ The project was however then shelved considering a limited area.²⁰ In 1873 an agreement was reached between the British Government and the three Phulkian State which laid down shares in cost of construction and in the canal water. In the final estimate the canal was to command 5,322 square miles of British territory and 2,998 square miles in the Phulkian States which accounted for 64 percent and 36 percent of the total command area respectively. The cost was to be debited accordingly.²²

Each Phulkian State contributed the cost of construction of its own distributaries. Other charges were shared amongst the states in this ratio— Patiala 83.6 percent, Nabha 8.8 percent and Jind 7.6 percent. The 36 percent of the canal water which was in the share of the Phulkian States out of the total water was to be distributed among the three states according to the above ratio. The total construction cost falling in the Patiala State share upto the end of 1901 was rupees 1,14,61,277.²³

The canal was originally designed for a full supply discharge of 4,500 cusecs, rising on occasions to 6,000 cusecs. The *rabi* supply was expected to be 3,000 cusecs. By 1929-30 the canal was capable of carrying as much as 9,040 cusecs during *kharif* while its authorised for the Phulkian feeder was 3,130 cusecs in *kharif* and 2,920 cusecs in *rabi*. It was to be distributed between the states of Patiala, Nabha and Jind in the proportion referred above. This work of distribution was done by the British Executive Engineer known as Canal Agent, who was posted at Patiala.²⁴

The head works of the canal was at Ropar. In 1882 it was opened for irrigation with much fanfare.²⁵ The main canal flowed in the south westerly direction for 39 miles, then dividing into two branches at Manupur one of these belonged to the British Government and the other to the three Phulkian States. The Phulkian States branch curved in south-easterly direction to Patiala, on the way it branched out into three large distributaries known as the Kotla Branch, the Ghaggar Branch and the Choa Branch.²⁶

From the first feeder of the main canal Lisra Rajbaha took off at Bharthala, the end of the first feeder, the Kotla branch ended in a reservoir at Dasu. There was a British *rajbaha* at tail. The Patiala distributaries on that branch were Mahorana, Sheron, Barnala, Longowal, Kot Duna, Bhikhi, Bhaini, Ghuman, Talwandi, Jodhpur, Bangi, Raghuwala and Pakka. At the beginning of the second feeder the *rajbaha* Bhagwanpura took off and ended at Rohti, on the Gaaggar Branch the Patiala State *rajbahas* were the Bhawanigarh, Newada, Nidampur, Ladbanjara, Kharial, Sunam, Kolra, Dialpura, Arkbass and Boha. This branch tailed into the Ghaggar *nala*. At Rauni the end of the third feeder, the *choa* branch and Patiala navigational channels took off. On the *choa* branch the working *rajbahas* of the Patiala State were Samana and Karamgarh. This branch also tailed into the Ghaggar *nala*. The navigation channel had one *rajbaha* flowing into the Patiala Baradari.²⁷

The importance of this scheme of irrigation to the Patiala State could not be over estimated. Its distributaries covered practically the whole of the wide Jangal tract where the rainfall was meager, thus securing Patiala from a constant fear of famine.

The Sirsa Branch of the Western Yamuna Canal was constructed between 1889-92. Its head works were at Tajewala. The Patiala State contributed the entire cost of its head works and bore other construction charges in proportion to the share

of water allotted to it.²⁸ The Patiala share of the cost construction amounted to about rupees 11,00,000.²⁹ The share of the water to which the state was entitled was put at 27.66 percent of the supply in the branch.³⁰

This canal and its distributaries ran through the *bangar* tract and were invaluable to the Patiala State in securing the Tehsil of Narwana from famine, to which it was naturally predisposed by scarcity of rainfall and the relative hardness of the soil. The irrigation from the State distributaries on the Sirsa Branch started in the year 1892 and the control remained with the British Government till 1908 when the State assumed its charge.³¹

There was one inundation canal in the Patiala State. This was constructed in the time of Maharaja Karam Singh and was improved during the reign of Maharaja Mohinder Singh. It took off from the right bank of the river Ghaggar at village Chhatt,³² about five miles above the old town of Banur, from which it derived its name. This canal was originally excavated by the cultivators, but from 1893 onwards it was being maintained by Patiala Irrigation Department.³³ It used to flow at the times of heavy flood. During the winter season the supply of water was meager. During the summer season the supply of water was spasmodic and dependent on rain in the hills. There was only one channel and village *khands* or water course took off from it. Little irrigation was done in the *kharif* as even with the ordinary rainfall the country was flooded, while during the *rabi* the supply fell so rapidly that the crops sown were matured with difficulty.

The following statistical information for 1938-39 gives fairly good insight into the expansion of irrigation in the Patiala State. *Milan raqba* (irrigated area) statement of the year puts the total area of the State at 60,71,501 *pakka bighas* of which 47,14,177 or roughly 77 per cent was under cultivation:³⁴

Class of Land	Area in the year under report in Pakka Bigha	Area in the time of settlement in Pakka Bigha	Increase or decrease in Pakka Bigha
(A) <i>Irrigated</i>			
By Wells	4,97,149	3,57,616	+ 1,39,533
By Canals	10,55,585	8,51,676	+ 2,03,909
Others	13,986	25,052	- 11,066
Total	15,66,720	12,34,344	+ 3,32,376
(B) <i>Unirrigated</i>			
Sailab	76,737	73,287	+ 4,450
Barani	30,70,720	33,25,623	- 2,54,903
Total	31,47,457	33,97,910	+ 2,50,453
G.Total	47,14,177	46,32,254	+ 81,923

The canal system of the Patiala State remained an appendage of the British irrigation system. The headworks as well as the distribution in the Phulkian States was under the control of the British officers, leaving very little room for manoeuvre for the rulers in order to expand or improve the irrigation facilities in their States.³⁵ In addition the Patiala State was called to pay to the British Government a seignior age

of four *annas* per acre irrigated from the water supplied by both the Satluj and Yamuna rivers.

One sixth of the state area which was under canal irrigation, offered no immunity from occurrence of droughts. For example there was wide spread drought in 1939-40. The state agriculture still remained largely dependent on the occurrence of monsoon. In twelve crop seasons extending over years 1915 to 21, seven harvests failed owing to deficient monsoons. The eighth harvest that of *kharif* 1971 was seriously damaged by excessive rainfall.³⁶

The table below gives a detailed particular about the expansion of irrigated area and net canal revenue from 1900 to 1939.³⁷

Year	Irrigated area in acres	Gross revenue collections (in Rs.)	Working Expenses (in Rs.)	Net Revenue (in Rs.)
1900-01	1,99,081	11,48,244	3,94,527	7,53,717
1929-30	5,75,088	33,86,288	8,32,927	25,62,316
1938-39	6,85,357	41,17,907	9,43,357	32,95,730

It is clear from the above table that the irrigated area over the period increased three times, while the net revenue collection increased about four and half times. Different revenue rates were charged for different crops. The high *abiana* (water rate) in comparison to the Punjab, came in for severe condemnation from the Patiala peasantry. For example in 1934-35 the Patiala rate on the average was one rupees and eight *annas* while the rate in the neighbouring Punjab was one rupee. Its reduction became one of the chief demands of the peasantry, when the peasant movement was launched in the State.

References

1. G.S. Chhabra, *Social and Economic History of the Punjab 1849-1901* (Jullundur, 1962), p. 168.
2. *Ibid.*
3. B.S. Saini, *The Social and Economic History of the Punjab, 1901-1939* (Delhi, 1975), p. 177.
4. Orson W. Israelsen and Vaughn E. Hansen, *Irrigation Principles and Practices* (New York, n.d.), p. 3; quoted in A. N. Sharma, *Economic Structure of Indian Agriculture* (Bombay, 1984), p. 437.
5. D.G. Harris, *Irrigation in India* (n.p., 1923), pp. 1-4.
6. B.S. Saini, *op. cit.*, p. 203.
7. *Punjab States Gazetteer*, Patiala, Jind and Nabha with maps 1904, Vol. XVIIIA (Lahore, 1909), p. 2 (hereafter cited as *Punjab States Gazetteer*).
8. *Ibid.*
9. *Ibid.*
10. *Ibid.*
11. *Census Report of Patiala State for 1911*, p. 26.
12. *Punjab States Gazetteer*, p. 105.

13. *Ibid.*, pp. 104-05.
14. *Ibid.*, p. 104.
15. *Census Report of Patiala State*, 1911, p. 26.
16. *Report on Settlement at Patiala*, p. 6.
17. *Administration Report of Patiala State for 1938-39*, p. 57, also *Ibid.*, 1939-40, p. 65.
18. *Administration Report of Patiala State for 1929-30*, p. 34,
19. *Punjab States Gazetteer*, p. 105.
20. A.C. Arora, "British Government and Canals in Phulkian States" in *Punjab Past and Present*, Vol. XV-I, April 1981 Patiala, p. 96; *Punjab Administration Report for 1920-21*, p. 168.
21. *Ibid.*, p. 168.
22. *Ibid.*
23. *Punjab States Gazetteer*, p. 106.
24. *Administration Report of Patiala State for 1929-30*, p. 35.
25. *Punjab Administration Report for 1920-21*, p. 168.
26. *Report on the Settlement of Patiala*, p. 7.
27. *Punjab States Gazetteer*, p. 107.
28. Punjab State Records File No. H-5B, Punjab State Archives: C.U. Aitchison, A Collection of Treaties, Engagements and *Sanads*, Vol. III (Calcutta, 1931). pp. 239-48.
29. *Administration Report of Punjab and its Dependencies 1893-94*, p. 154.
30. *Administration Report of Patiala for 1929-30*, pp. 35-36.
31. *Administration Report of Patiala State for 1938-39*, pp. 202-03.
32. *Administration Report of Patiala State for 1929-30*, p. 36.
33. *Administration Report of Patiala State for 1932-33*, p. 36.
34. *Administration Report of Patiala State for 1938-39*, p. 57.
35. *Report on the Administration of Pepsu, 1 April 1915 to 31st March, 1952*, pp. 71-72.
36. *Administration Report of Punjab and its Dependencies for 1915-16*, p. 2; *Ibid.*, 1916-17, p. 2; *Ibid.*, 1918-19, p. 2, *Ibid.*, 1920-21 p. 3.
37. *Punjab States Gazetteer*, p. 109; *Administration Report of Patiala State, 1929-30*, p. 39; *Ibid.*, 1938-39, pp. 205-10.