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Government of Madras.

Public works DEPARTMENT.

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Dated 19. 3 1867.

Not to be folded or roughly handled

No. 418. Read the following Proceedings from the Government of India, in the Public Works Department, (Irrigation), dated Fort William, 26th February 1867, No. 131:—

Revenue Report of Canals in the N. W. P. for 1864-65.

Read—

Letter No. 647 I, dated 3rd December 1866, from the Under Secretary to Government, N. W. P., P. W. D., Irrigation Branch.

1. The Local Government express regret at the delay which has occurred in the submission of this Report. This delay was in some measure caused by the pressure of work in the Irrigation Department in consequence of the appointment of the Ganges Canal Committee; but the principal reason assigned for it, is, that the whole of the capital and revenue accounts of these canals, and those recently transferred to the Punjab, have been re-cast for many years back.

2. The re-casting of these accounts, owing to the imperfect manner in which establishment charges had been previously distributed, is stated to have been necessary to a correct exposition of the financial state of these canals.

3. The change is made in accordance with the views expressed in the 63rd and 64th paragraphs of the Resolution of the Government of India, No. 656C of 15th August 1864. It consists in charging ratably the cost of the Chief Engineer's Establishment and general charges, according to the expenditure and revenue of each canal, and in like manner distributing the divisional establishments ratably on the expenditure on original works, on working expenses, and on revenue collections, so that the charge shall be made in a fair proportion to capital and revenue.

4. The principle adopted in apportioning establishments is approved; but the Governor General in Council considers that it would be an improvement to calculate the cost of Public Works Establishments of all kinds separately from Revenue Establishments. In some cases the apportionment of charges between the two must be arbitrary, but some approach to accuracy might be made, and the cost of collection of revenue would thus be deduced separately from that of establishment employed on works. This has to a certain extent been done in the Punjab Reports for 1864-65.

GENERAL FINANCIAL RESULTS IN 1864-65.

5. There are as yet no reliable data for fixing the exact sum for which credit should be taken by the Irrigation Department on account of enhancement of land revenue. The Board of Revenue has been called on for returns on this subject, but these have not yet been furnished. It is understood, however, that they are in course of preparation.

6. In the absence of data for a more accurate calculation of profits, a Statement has been framed on the supposition that water-rate and enhancement of land revenue together should yield Rupees 4 per acre irrigated, excepting only the Rohilkund canals and the Agra Irrigation Works, where Rupees 2 would suffice. (See page 99, paragraph 66.)

7. On this supposition the returns would be as follow:—

Series.	Capital invested to end of 1863-64.	Gross Income.			Working expenses, not including interest.	Profit or Loss		Per-centage of profit or loss on Capital expended to end of 1863-64.	
		Direct.	Indirect.	Total.		From direct Income.	From total Income.	From direct Income.	From total Income.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
Ganges Canal..	2,12,98,203	9,90,866	13,71,025	23,61,891	8,07,683	1,83,183	15,54,208	·86	7 30
Eastern Jumna Canals.	16,78,288	3,39,458	5,79,273	9,18,731	1,23,807	2,15,651	7,94,924	12·85	47·36
Dhoon Canals.	5,19,988	27,357	64,215	91,572	27,589	— 232	63,983	— ·04	12·34
Rohilkund Canals.	3,29,180	47,737	1,47,759	1,95,496	31,903	15,834	1,63,593	4·81	49·67
Agra Irrigation Works.	2,03,740	4,629	16,443	21,072	10,669	— 6,040	10,403	2·96	5·10
	2,40,29,399	13,70,047	21,78,715	35,88,762	9,91,651	4,08,396	25,87,111	1·70	10·76

8. From the foregoing table it will be apparent that the whole of the North-Western Provinces Canals taken together contribute only sufficient direct income to pay 1·7 per cent. of the interest of the capital expended, so that taking the market value of money at 5 per cent. there is a loss of 3·3 per cent. The smallness of that result is chiefly due to the present small returns from the Ganges Canal, the capital expended on which is more than 88 per cent. of the whole capital expenditure in the North-Western Provinces. The Eastern Jumna Canal alone more than repays the interest on the capital expended.

9. The Lieutenant Governor remarks, with regard to the amount assumed as the indirect income from enhanced land revenue, that the rate of Rupees 4 was assumed on the supposition that the water-rate should amount to Rupees 2-8-0 per acre on the three first, and 8 Annas on the two last works, thus giving a uniform rate of Re. 1-8-0 per acre for enhancement of land revenue. This is far from the case now, the water-rates being—

	Re.	
Ganges Canal	1·58	per acre.
Eastern Jumna Canal	1·43	,,
Dhoon Canals...	·77	,,
Rohilkhund Canals	·47	,,
Agra Works	·43	,,

10. Reliance cannot, therefore, be placed on the statement of total profits now submitted, and the Governor General in Council desires that no time may be lost in obtaining the returns of the actual enhancement of Land Revenue under preparation by the Board.

Ganges Canal.

11. The following figures show the general results of the operations on this canal for the year as compared with those of 1863-64:—

	1863-64. Rs.	1864-65. Rs.
Direct income	7,73,390	9,90,866
Maintenance	5,59,543	8,07,683
Profits	2,13,847	1,83,183
On a capital of	2,12,98,202	2,17,17,308
or	1 per cent. ...	·84 per cent.

It is thus apparent that the growth of the net revenue in proportion to that of the gross income has been checked by the rise of the cost of maintenance. This is due, first to the canal having received heavy repairs during the closure of July 1864; secondly to the fact, that while the usual establishments were kept up, the expenditure on capital account was smaller while the question of the improvement of the canal was under discussion, and a larger share of the charge therefore fell on revenue. The unfavorable aspect of the account for 1864-65 is thus exceptional. The repairs effected in July 1864 have been such as to permit of the canal working for 20 months since without a closure; and this expenditure will therefore bear fruit in the next Revenue Report.

12. The increase in gross income, on the other hand, is very satisfactory, and goes through every head except mill-rent, in which there is a slight falling off. The water-rate above shows an increase of 49 per cent. in the khurreef, and 18 per cent. in the rubbee crop, or 29 per cent. in all, as compared with that of the previous year.

13. The water-rate per acre irrigated was nearly stationary, being Rupees 1·54 in 1863-64, against Rupees 1·58 in 1864-65, showing that little change was made in the proportions of the various classes of crops grown. The amount entering the canal per second was almost precisely the same in the two years, being 4,028 cubic feet in 1863-64, and 4,026 cubic feet in 1864-65.

14. It is evident, therefore, that the increase in the revenue from water-rate is due to greater economy in the use of water. This conclusion is borne out by the figures given in the table at page 75 of the Report, from which we find that each cubic foot of water entering the canal per second irrigated—

In 1862-63	42 acres.
,, 1863-64	111 ,,
,, 1864-65	140 ,,

The amount reached is not yet what it should be, but the progress of improvement is very marked.

15. The Table in Appendix B shows the income from, and expenditure of various kinds on, this canal from 1855-56 to 1863-64.

16. After debiting the works with the interest on the money expended from the first, and with all charges for maintenance, and giving it no credit for increased land revenue, the total loss on this canal to the end of the year stands at £912,000. This appears a large debt; but it would be extinguished with ten years net income at 10 per cent.

Colonel Dyas gives an interesting calculation of the progress of irrigation on the Ganges Canal, which shows that in ten years it has reached to 30 per cent. of its probable ultimate usefulness; while the Eastern Jumna Canal, which now yields so fair a profit, took 30 years to reach the same stage of development. If the progress in the Ganges Canal continues as now, it is probable that, in the course of the next ten or twelve years, it will yield a return of 10 per cent., and meanwhile will have extinguished a large portion of its debt.

Eastern Jumna Canal.

17. This canal continues to show increased profits.

18. According to the new calculation of charges, the year 1864-65 is the first in which there has been a balance in favor of the canal, calculating all income and charging main tenance with interest on capital, from the year in which the canal was opened. For some time past, each year has shown in itself a good profit, but the small returns of the first series of years had to be made up for. The year 1863-64 closed with a balance of charges amounting to Rupees 4 1,245, whilst that under review closes with a balance of income of Rupees 90,492.

19. The gross income in 1864-65 was Rupees 3,39,458, against a gross expenditure, including interest, of Rupees 2,07,721. This gives a net return of Rupees 1,31,737, against Rupees 75,079 in the previous year, or an increase of 28 per cent. Of this increase it is calculated that about 12 per cent. is due to the introduction in November 1863 of consolidated, and partly enhanced, water-rates.

20. The balance of the excess is due, (1) to an increase in the supply of water at the head of the canal, from 932 to 1,025 cubic feet per second; (2) to an increase in the duty of water from 194 to 220 acres per cubic foot of water entering the canal per second.

21. The cost of repairs is somewhat higher than usual, but this is attributed to the employment of more officers, thereby preventing negligence in carrying out repairs which are really necessary.

Dhoon Canals.

22. The re-calculations made show, as did the former calculations, that in each year, from 1841 downwards, these canals have been worked at a loss. The capital expended on them to the end of 1864-65 is Rupees 5,33,701, and and the balance of charges in the Revenue Account, which has steadily increased from year to year, amounts to Rupees 2,59,439. The actual expenditure on maintenance only (excluding interest) has exceeded the income since 1841 by about Rupees 5,000, so that practically the income has just covered the working expenses. Taking indirect returns into consideration, a return of 12·37 per cent. during the year, on the capital expended, is claimed for these canals.

23. The Beejapoor and Rajpoor canals together yield, from direct income alone, a return of 1½ per cent. after paying the interest of the capital expended on them, the remaining three of this series of canals, the Kutta Puthur, the Kullunga, and the Jakhum canals, all showing a large excess of expenditure over income. In the whole of these cases, however, the income is increasing, and the expenditure decreasing every year.

24. The chief reason for the previous want of success on the last named canals is, that they run a great deal through land hitherto unreclaimed, and that therefore the water is not used to the fullest possible extent.

25. On the Beejapoor and Rajpoor canals, the duty has reached 163 and 212 acres respectively per cubic foot per second.

Rohilkund Canals.

26. These canals cover their expenses and nearly pay interest in addition from the water-rates alone. With the enhancement of land revenue, they may be considered as giving a good profit, though there is no precise return of its actual amount.

Proceedings of the Madras Government, Public Works Department,
19*th March* 1867.

27. Owing to the want of gauges for measuring the amount of water entering the canals per second, no reliable returns of the area irrigated per cubic foot per second can be given. It is understood that measures will be taken for remedying this defect, and for gradually improving the system of working these canals, as far as practicable in the present state of the works.

28. The Government of India will look with interest for Captain Thomason's project for introducing an improved system of works into Rohilkund.

Agra Irrigation Works.

29. The gross income during the year from these works has been Rupees 4,628 against Rupees 13,981 in the previous year, the charges being Rupees 20,856, against Rupees 21,257 in 1863-64.

30. Here, as in the case of the Rohilkund canals, the cost of repairs is very much less than in the previous year (less than one-half) whilst the cost of Executive Establishments is very largely in excess.

31. A project for re-modelling these works is in hand, and its completion should be expedited.

Order.—Ordered, that a copy of the foregoing Resolution be forwarded to the Government of the North-Western Provinces, in the Public Works Department, Irrigation Branch, for information and guidance, with a request that endeavours may be made to submit the returns for 1865-66, which are now over-due, as early as practicable, and to furnish those for subsequent years as soon after the close of the official year to which they refer as possible.

Ordered also, that copies of the Resolution be forwarded to the Governments of Madras, Bombay, and the Punjab, and to the Home Department of the Government of India, for information; and further, that copies of this Resolution and of the Revenue Reports, be forwarded to Her Majesty's Secretary of State for India.

(Signed) C. H. DICKENS, Colonel, R. A.,
Secretary to the Government of India.

No. 419. Order thereon, 19th March 1867, No. 834.

IRRIGATION, No. 12. Ordered to be recorded.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

Exd. S. T. Augustin.

18. According to the new calculation of charges, the year 1864-65 is the first in which there has been a balance in favor of the canal, calculating all income and charging main tenance with interest on capital, from the year in which the canal was opened. For some time past, each year has shown in itself a good profit, but the small returns of the first series of years had to be made up for. The year 1863-64 closed with a balance of charges amounting to Rupees 4 1,245, whilst that under review closes with a balance of income of Rupees 90,492.

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Recorded

Fort St George
19th March 67

P 2 1867 Dept
Pro: of Govt for Irrn etc
P 812

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION.

To

The Secy to Govt N W P
Dept

No. 131 I.

Dated February 26, 1867.

Received 7 March 67.

No 834 - 19 March 1867.

834

Revenue Report of Canals in the North Western Provinces for 1864-65.

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