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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	164	Press
B.P. No.		Mis.
Dated	28 - 3 - 1873	196 .

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department,
17th March 1873.

No. 416. Read the following Endorsement of the Chief Engineer for Irrigation, dated Cuddapah, 15th February 1873, No. 97 :—

From the District Engineer, Nellore, to the Chief Engineer for Irrigation, dated Nellore, 20th January 1873, No. 6.

I HAVE the honour to enclose, for your perusal, a copy of Mr. VansAgnew's letter No. 2,910 of 16th ultimo to my address, regarding the preparation of the Financial Statements, of the results from Irrigation works, in this Presidency, ordered in G. O. No. 1,102 of 30th April 1872.

2. From paragraph 4 of the letter referred to, you will observe the Collector has called for detailed information under particular heads, and I should feel obliged by your letting me know if the revenue realized, under all the heads enumerated in Mr. VansAgnew's letter, is to be entered as "special water rates" in the column "receipts" of the statements under reference.

From G. VANSAGNEW, Esq., Collector of Nellore, to the District Engineer, Nellore, dated 16th December 1872, No. 2,910.

I HAVE the honour to acknowledge the receipt of your letter No. 89, dated 27th ultimo, forwarding thirteen statements relative to groups Nos. II. III. and IV., and requesting me to return them after filling in the column "receipts" in three of those statements.

2. The entries to be made in column "receipts" are shown to be as follows :—

(1.)—Irrigation.
(2.)—Special water rates.
(3.)—Navigation.
(4.)—Water-power.
(5.)—Plantations.
(6.)—Miscellaneous.

3. It is not clear what entries are to be made under the head of "Irrigation" or the head of "Special water rates." The other items do not appear to refer to the Revenue Department.

4. I have called upon the local officers to furnish information in the following form for the groups referred to, and I will forward the same as soon as I get their replies :—

		Acres.	Assessment.
Government land.	Wet lands cultivated with one crop and waste charged ...		
	Do. cultivated with a second crop and Faslijaste charged thereon		
	Dry lands irrigated and the additional charge made for such irrigation		
Inam land.	Dry lands irrigated and the additional charge made for such irrigation		
	Survey excess charged on wet Inams		
	Total...		

5. I beg to return all the enclosures received with your letter, and to request that, if any information is required from this office, a definite form may be given, with reference to the items of demand recognized in this district.

No. 38.

REFERRED to the Controller of Public Works Accounts for report.

(Signed) C. J. SMITH, Captain, R.E.,
For *Chief Engineer for Irrigation.*

FORT ST. GEORGE,
28th January 1873.

No. 416A. From the Controller of Public Works Accounts, to the Chief Engineer for Irrigation, dated Fort St. George, 7th February 1873, No. 2,604.

I HAVE the honour to return, herewith, the correspondence forwarded with your docket No. 38, dated 28th ultimo, and with reference thereto I beg to submit the following remarks:—

2. With G. O. No. 1,102, dated 30th April 1872, the Government communicated to the Revenue Board and the Revenue Department and to all Superintending Engineers certain forms, received from the Government of India, showing the detail in which the annual accounts of irrigation works were in future to be submitted; and called upon Collectors and Superintending Engineers to lose no time "in determining how their respective charges may be divided into groups or sub-divisions, and in collecting the information required to admit of the financial statements of irrigation being prepared at an early date."

3. The financial statements here referred to are, in effect, Capital and Revenue Accounts, in various degrees of detail, of each group of irrigation works; and the receipts side of the Revenue Account is required to show for the year to which the accounts relate, the revenue under the following heads, namely:—

Special water rates,
Navigation,
Water power,
Plantations,
Miscellaneous,

and also *the total net revenue up to the close of the year.*

4. The head "Special water rates" is quite inapplicable in most of the Collectorates of this Presidency in which the assessment on irrigated lands is, as a rule, consolidated. In the accounts of those districts in which special water rates do not obtain, it will probably be better to substitute for the head "Special water rates" a head "Share of land revenue irrigated."

5. What this share is to be, must be settled by the local officers, Collectors and District Engineers, in consultation one with the other. Any such apportionment of the land revenue must necessarily be, more or less, arbitrary. If half a dozen Collectors and as many District Engineers were associated in pairs, to apportion the land revenue in the same district, no two pairs could be expected to arrive at the same conclusion. The most that can be looked for is that the limits of possible divergence of opinion, and, therefore, the arbitrariness of the apportionments, shall be reduced to a minimum by the adoption of *fixed general principles* to regulate the apportionments throughout the Presidency, and I respectfully submit that these principles should be defined by the Government before any attempt is made to assess the irrigation share of the land revenue irrigated in any one district, or for any single group of irrigation works.

6. I would further point out that, excepting for a group of works [which has been *entirely* carried out within quite recent years, it is simply impossible to give at present, the total net revenue up to the close of any one year, for the reason

that no date can be fixed for opening the capital and revenue accounts until laborious search amongst a mass of old records and accounts shall have shown, for each group of works, how far back it is possible to trace expenditure.

7. And here I wish to refer to a difficulty in connection with the opening of the capital accounts. Whatever system or systems of grouping may be adopted for the irrigation works of the province, it may, I think, be safely predicted that there will not be a single group or project which can be completely dissociated from old works constructed years ago under Native Governments, works the cost of which it is obviously impossible to ascertain, and almost as impossible to estimate even if it were desirable to do so.

8. In dealing with the capital accounts of such groups, two courses are open:—

I. It may be ascertained for each group how far back actual expenditure can be traced. That date, when found, will fix the time for opening the capital and revenue accounts. All subsequent outlay on the group which is not debitable to revenue may then be taken as the capital cost of the group, the actual revenue under the works at that date may be ascertained; and all subsequent increase in the irrigation share of land revenue irrigated may be taken as direct returns on the capital expended on the group; or

II. The actual expenditure on the group may be traced as far back as possible, and the cost of works, the expenditure on which cannot be traced, may be estimated.

It is not clearly understood which of these courses the Government desire to follow.

9. Colonel Strachey, in his report on Irrigation works, dated 2nd September 1868, refers to the first course as the only practicable one. In paragraph 109 he says, "The only practical way of reviewing the financial results of the outlay on these works, is to compare the income as it was at a certain arbitrary starting point with the income now received. In such cases it will necessarily be assumed that all outlay before the fixed date taken was a direct set off against the gross revenue."

10. On the other hand, paragraph 7 of the note accompanying the forms printed with G. O. No. 1,102, dated 30th April 1872, runs as follows:—"The capital accounts to be opened in Madras and Sindh must be necessarily quite arbitrary, as in fact the real cost of existing works cannot, it is believed, be now ascertained," etc., etc., and the Accountant-General, Public Works Department, writing to this office on the 2nd December last, says, "It is readily admitted that much difficulty will be experienced in the preparation of the required account for several of these works, especially for those constructed by Native Governments."

11. These extracts appear to me to point to a desire on the part of the Government of India that the capital account should be opened in the second of the two modes indicated by me; and I gather from Captain Smith that such is the impression left in his mind by a conversation on the subject with the Honourable Sir

R. Temple; and at the risk of going beyond the sphere of my duties, I venture to express here a most decided opinion against adopting such a course.

12. I need scarcely dilate here upon the extreme difficulty, not to say impossibility, of arriving at a fairly accurate estimate of the cost of works carried out under Native Governments; this is admitted when it is said that "the capital accounts to be opened in Madras and Sindh must necessarily be *quite* arbitrary;" I will therefore only point out that if the course proposed by Colonel Strachey be followed, the accounts, though they will not reach back to the beginning of all things, will, as far as they go, be records of actual facts, and any conclusions drawn from them as records of past experience may be at once utilized for future guidance; but if the other course be adopted, no useful lessons can be drawn from the accounts until they have been corrected by the elimination of items, the introduction of which will have rendered one half of the account *quite arbitrary*, and therefore the whole quite useless. At any rate, if the cost of existing works is to be estimated, and no arbitrary starting point is to be assumed, it will be necessary that definite instructions should be issued as to the manner in which the *total net revenue* up to the close of any given year is to be arrived at.

13. I have only further to point out that the Accountant-General, Public Works Department, has called upon this office to prepare the financial statements, which Government in their Order of 30th April 1872, called upon Superintending Engineers and Collectors to prepare; and I would, therefore, suggest that the latter should be relieved from the duty, and should be requested to confine their attention to the writing up of the irrigation registers, and to the preparation of schemes for grouping the irrigation works in their several charges. I would also suggest that, with a view to securing uniformity of system as far as possible, the proposal for grouping of works should be submitted to the Government for approval before such grouping is accepted as final; and I would submit for your consideration whether, instead of grouping together in the irrigation registers all tanks the cultivation under which is less than ten cawnies, it would not be preferable to lump together only such of these tanks as come under one group.

SUBMITTED for the consideration and orders of Government.

(Signed) J. MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

No. 417. ORDER THEREON, 17th March 1873, No. 837.

IRRIGATION, No. 17.

THESE papers relate to the way in which the Financial Accounts of Irrigation works are to be prepared, and instructions are required as to the mode in which the entries on the capital and revenue sides of these accounts are to be calculated.

2. Taking first the capital side of the account, the Controller alludes* to the difficulty which will be experienced in opening the capital account of groups of irrigation works, however these may be arranged, owing to every such group

* Paragraphs 7 and 8.

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being more or less associated with old native works of the outlay on which there is no authentic record, and he proceeds to point out that two courses are open in dealing with this subject; the one under which the capital account would be opened from the comparatively modern date to which records of expenditure extend, subsequent to which all outlay would be debited to capital or revenue according to its nature, and the results as indicated by the revenue returns obtained after that date, as contrasted with the previous revenue, would be compared with the outlay on improvements, and the cost of maintenance; this arrangement would, therefore, deal with the financial results of modern outlay only. The second course would be to ascertain first the outlay according to existing records, and secondly to arbitrarily estimate the prior outlay, and so obtain a complete capital expenditure account, with which the whole revenue, as distinguished from the difference of revenue, prior and subsequent to a certain date in the former case, would be contrasted. This arrangement would, if correctly worked out, show whether the works had or had not been, with reference to the total outlay, financially successful.

3. It may here be noticed that the first of the two courses above described is in effect that which the Government have already, in paragraph 10 of the Order of the 30th April 1872, No. 1,102, directed to be adopted. It is there stated that, for the great mass of the irrigation works in this Presidency, the capital outlay is to commence with the expenditure of 1856-57, the year of the transfer of the executive of public works to a professional department; while, for certain larger works which were commenced prior to that date, the capital account will be opened from the date on which they were begun. The Government have to consider what is really practicable, and His Excellency the Governor in Council is convinced that there would be no prospect whatever of the capital and revenue accounts of Madras Irrigation works being ever completed, were an attempt to be made to estimate the original cost of the thousands of tanks which are dotted all over the country. There are absolutely no data for such a calculation. The accounts thus prepared, so far as they might in time be completed, would be utterly valueless; they would be necessarily compiled in the absence of any definite information as to the circumstances under which the works were constructed, and as to the actual cost of work at the time, they would, therefore, be misleading instead of useful, and they would in no way serve as a guide to what the State could or could not advantageously undertake to do at the present time.

4. The capital accounts of large works will, therefore, be opened from the date on which they were commenced; those in the Tanjore Delta or belonging to that system of irrigation date from an earlier period than any others, as the Upper Anicut was commenced about the year 1834; probably it will be possible to trace the expenditure from that time forwards, as correspondence relating thereto and alluding to the results is believed to be still in existence. For the Godavery system of works which dates back to 1845, and for the Kistna Delta works, statements of expenditure from the beginning were prepared by the late Colonel Anderson, and these will require to be supplemented only so far as may be necessary to bring to account the cost of establishments and land, with the capitalized value of the latter. For other large works, the difficulty of ascertaining the

capital outlay will, it is hoped, be comparatively slight, as most of them were constructed in recent times; but, should the records be found to be incomplete as regards details, it is probable that definite information will be obtainable at least as regards the total expenditure upon them in each year.

For the comparatively small works all or nearly all of which were constructed prior to the date of any records, the capital account will, as already directed, commence with the year 1856-57.

5. With regard to the revenue side of the accounts, the Government consider that, in the vast majority of cases, the difference between the average net revenue prior to the date on which the capital account may be opened, and the net revenue actually obtained since that date, should be credited to the works. The average net revenue, which may be called the standard revenue, should, for all except large system of works, be determined by ascertaining the gross revenue, and the expenditure for maintenance, for the period of ten years prior to 1856-57, while for large works the similar standard will be deduced from the period of fifteen years prior to the commencement of these works. If in any case the records of the Revenue Department will not afford the required information as to expenditure on maintenance, this latter must be deduced by ascertaining the expenditure for ten years from 1856-57, or subsequent to the opening of the capital account, and by correcting the average thus obtained by comparing the outlay on irrigation repairs for the whole district in the one period with that during the other. Thus if for a group the outlay on repairs for 1846-47 to 1855-56 inclusive be unascertainable, the best approximation will be thus obtained. The outlay from 1856-57 to 1865-66 will be taken, and if the outlay on repairs for the whole district is found to have been 50,000 Rupees in the earlier ten years, and 60,000 Rupees in the later similar period, five-sixths of the outlay on the repairs of the group in the latter will be assumed to be the sum to be deducted from the gross revenue of the earlier ten years, in order to obtain the standard net revenue.

6. No attempt should be made to ascertain the share of land revenue belonging to any irrigation work or group of works, except in the way thus indicated, unless the revenue aspect of any work or group of works has already formed the subject of special investigation, and has been reported upon to Government. The effect of alterations of assessment, correction of irrigated areas consequent upon the revenue survey, and many other circumstances may properly be taken into consideration in estimating the financial merits of an individual large work when brought forward for sanction, but it would be impracticable to apply such corrections of results to the existing works generally. The remarks contained in paragraph 5 of the Controller's letter will, therefore, not need to be considered in preparing the accounts.

7. Where water rates have been introduced in supersession of a consolidated assessment, the works will, from the date of the change, be credited with the water rate, and the standard net revenue will have to be adjusted by deducting from the amount, as ascertained in the way already laid down, the land assessment as fixed under the new settlement. The column in the accounts headed "Special water rates" will, where the assessment is consolidated, be termed "land revenue irrigated."

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8. The Controller reports (paragraph 13) that the Accountant-General, Public Works Department, has directed him to prepare the financial statements in his office, and to this arrangement the Government have no objection. District Officers will, therefore, furnish the Controller with all the old records of expenditure on which the capital accounts must be based, so far as these may be necessary to supplement the information to be found in the Controller's office. This latter should be ascertained as soon as possible, in order that the District Officers may not be asked for anything which is already among the Controller's records. The irrigation registers in their present form go back only to the year 1867-68; but the former registers will, it is believed, contain much of the information required for the preparation of the financial statements. Instructions regarding the grouping of works will form the subject of a separate order. In the meantime the determination of the standard net revenue of each irrigation work in each district should be taken up in earnest; the revenue details and those of expenditure on repairs will alike have to be furnished from the Collector's records, except in those cases in which the probable cost of repairs prior to 1856-57 may have to be deduced from the subsequent expenditure, when the District Engineers will provide these details; at the same time the particulars of revenue for years subsequent to the date of opening the capital accounts, and the expenditure on both new works and maintenance, should be ascertained and recorded, where this has not already been done in either the irrigation registers formerly in use or in those which commenced with the year 1867-68.

(True Extract.)

John Hawkins Lieut.-Colonel, R. E.,
Joint Secretary to Government.

To the Controller of Public Works Accounts.
,, Chief Engineer for Irrigation.
,, Revenue Department.
,, Financial ,,

Exd. E. C. Shunker.

Revenue Dept
W. 870.

Govt. of [1873] Madras.

PUBLIC WORKS.

To

THE CONTROLLER of PUBLIC WORKS.

ACCOUNTS.

&c., &c., &c.

Dated March 1873.

Read. a 2d Encl.

G. O. [illegible] March 1873, No. 837.

MARCH

Nos. 416-417

17 Feb. 1873 to Govt. on subject

Irrigation Works.—Passing orders on papers relative to the preparation of the financial accounts of Irrigation works.

W. 164.

Comm. [illegible] Bd. Rev.
for their [illegible]
[illegible]