

(1) Number of pages 24

(2) Date of repair 23-2-70

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	1610	Press
B.P. No.		Mis.
Dated	11-7-1876	196

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1610

Proceedings of the Madras Government, Public Works Department.
17th June 1876.

Read the following papers :—

No. 282. Endorsement of the Secretary to Government, Revenue Department, dated Fort St. George, 12th February 1876.

From C. A. GALTON, Esq., Acting Secretary to the Board of Revenue, to the Hon. D. F. CARMICHAEL, Secretary to Government, Revenue Department, dated Madras, 31st January 1876, No. 283.

With reference to the Government Orders noted in the margin, I am directed to

G.O., Public Works Department, dated 15th October 1875, No. 2,960, communicated in G.O., Revenue Department, dated 25th November 1875, No. 1,694.
G.O., Revenue Department, dated 22nd November 1875, No. 1,668.
G.O., Revenue Department, dated 1st December 1875, No. 1,727.
G.O., Public Works Department, dated 19th November 1875, No. 3,303.
G.O., Revenue Department, dated 30th November 1875, No. 2,518.

forward the accompanying memorandum, which contains the results of the Conference of the Members of the Board with the Chief Engineer for Irrigation and the Controller of Public Works Accounts on the subject of the preparation of Capital and Revenue Accounts of Irrigation Works, and of general reports on irrigation for each year. The memorandum has been agreed to by the Chief Engineer

and the Board, but a dissent, of which copy also forwarded, has been recorded by the Controller and Deputy Controller of Public Works Accounts.

2. I am to state that if Government approve of the conclusions arrived at, and the recommendations made in the memorandum, the Board will issue the necessary subsidiary instructions to Collectors.

MEMORANDUM.

The subjects referred for consideration are—

(1.) The classification of irrigation works and the nature of the accounts and statements to be kept to show the financial results of expenditure thereon.

(2.) The instructions to be given to Mr. Wilson, who has been appointed to compile the information as to revenue receipts, which is required for the preparation of Capital and Revenue Accounts.

(3.) The nature of the annual reports on the results of irrigation which it is desirable and practicable to furnish.

(4.) The way in which Public Works Officers placed in charge of irrigation works shall be supplied with such information as to Revenue as is required by them for administrative purposes.

2. The first subject involves, besides classification of works, the determination of the method in which expenditure is to be exhibited, and of the principles on which the revenue due to irrigation and the profit or return from expenditure on particular works are to be arrived at.

3. *Classification of Works.*—As regards classification, it is considered by the Conference that, looking to the amount of labor involved in the preparation of technical Capital and Revenue Accounts in the manner required by the Government of India, the number of works to be so treated should be restricted, and that the following nine works only should be taken up :—

- | | |
|--------------------------|-------------------------|
| 1. Godavery Delta Works. | 6. Palar Anicut. |
| 2. Kistna Delta Works. | 7. Pelondorai Anicut. |
| 3. Pennair Anicut. | 8. Canvery Delta Works. |
| 4. Chembrambaukum Tank. | 9. Striviguntam Anicut. |
| 5. Madras Water Works. | |

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These works should form Class I.

4. There are, however, many other works which are of considerable importance, and for which similar accounts but extending to less detail, according to the form in Appendix A, should be maintained. The following may be taken as examples:—

Districts.	Works.
North Arcot...	Cheyaur Anicut.
Do. ...	Poincy do.
South Arcot...	Vellaur (Shatlatope) Anicut.
Do. ...	Pooniar Anicut.
Coimbatore ...	Bhowany and Ambravati Channels.
Tinnevely ...	Tambrapurni Anicuts above Striviguntum.
Nellore ...	Sungum Channels from the Pennair and connected works.

5. The Chief Engineer for Irrigation will obtain from the several District Engineers lists of all the important irrigation works in their districts on which considerable expenditure has of late years been incurred, or on which such outlay will probably be shortly made, in placing the works on a satisfactory footing; and, after considering the claims of the works in these lists to have their results separately ascertained and recorded, will furnish to the Revenue Board and Controller of Public Works Accounts and District Officers a complete list of such works, in order to arrangements being made for ascertaining as far as possible, on the one hand all past outlay upon them, and on the other the revenue obtained from them in past years; and also for maintaining a regular record of current expenditure and income.

The works which eventually find place in this list will constitute Class II.

6. After careful consideration of the classifications proposed in the Government Orders noted in the margin, the Conference is of opinion that, as it will be impracticable to determine the revenue derived from each class until the classification of every work of the kind is complete, and as this classification is arbitrary and is of no practical value for administrative purposes, all works other than those falling under Classes I. and II. described above should be grouped by districts under a single class. There will then be three classes of irrigation works, viz:—

- I. The large works, nine in number, specified in paragraph 3, for which Capital and Revenue Accounts in full detail are to be kept.
- II. The important works referred to in paragraph 4.
- III. All other works.

7. *Exhibition of Expenditure.*—The outlay on works of Class I. will be recorded and exhibited as far as possible in the manner prescribed by the Government of India, but the Conference is of opinion there will be difficulty in carrying this classification out in detail. The classification of the integral portions of each irrigation work will be obtained from District Officers and communicated to the Controller by the Chief Engineer.

8. As regards other works, the Conference observes that the circumstances of the great majority of irrigation works in this Presidency are essentially different from those of the works of Northern India, and it is believed that, if a true idea is to be obtained of the results of their management, it is requisite that expenditure on material improvements should be treated as a Capital charge, and should not be included either directly or indirectly in Revenue charges which represent the cost of maintenance to which expense of improvement does not appertain. All expenditure made as an investment when the purpose is increasing gross revenue or of

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reducing the cost of upkeep should with the limitations hereafter noted be treated as capital outlay. These opinions are in accordance with the Government Orders noted in the margin.

24th July 1874, No. 2,003, P. W. D.
15th Oct. " " 2,960, "

9. As to the manner in which charges to be considered capital and revenue outlay respectively are to be discriminated, it is observed that certain limits have been laid down for different classes of works below which limits expenditure on improvements should be treated as a revenue charge. It is not desired to alter that arrangement in principle, but the Conference would recommend that while the limit prescribed for works of Class I., viz., Rupees 2,500, remains unchanged, that for works of Class II. should be fixed at Rupees 1,000. Works of Class III., however, are of such different size and importance that no such arbitrary criterion of amount can be prescribed, but taking into account that District Officers can sanction improvements under the name of Minor New Works to a limit of Rupees 750, it appears to be desirable to lay down the following rule for their guidance:—

When the improvements to an Irrigation Work, found to be necessary, do not exceed one-fifth of the average annual gross revenue derived from the work for the previous five years, the cost will be chargeable to revenue, otherwise to capital. It is to be understood that the amount of the estimate for all the required improvements together should not exceed one-fifth of the revenue in order to bring the charge under revenue, and that no second sanction for the same Irrigation Work can be given by District Officers within a period of five years.

10. Every estimate sanctioned by a District Officer should show distinctly the head of charge and also the average revenue to enable the Controller of Public Works Accounts to see that the former has been correctly indicated. The orders on estimates for works of Class III. sanctioned by Government can show as at present the intended head of charge, which should, it is considered, continue to be determined with reference not to the amount involved, but to the nature and object of the outlay and to the revenue of the work on which it is to be made.

11. The expenditure on all works of Class III. collectively in each district will be exhibited under Capital and Revenue in an abstract statement of the same form as Appendix A., but without any sub-division of charges under "Works."

12. In dealing with past expenditure, the accounts of which have not been kept in the detail and classification now considered necessary, the settlement of the head to which doubtful items should be debited should be left to the discretion of the Controller, who can obtain the orders of Government as to the treatment of amounts of importance requiring arbitrary disposal.

13. *Receipts from Irrigation. General Principles.*—In the Circular from the Government of India, communicated with G.O., Public Works Department, dated 19th November 1875, No. 3,303, as to the classification of receipts from Irrigation Works, a distinction is drawn between direct and indirect receipts from works for which Capital and Revenue Accounts are to be kept; the former comprising water-rates and some other items, and the latter (regarding the classification of which separate orders are promised) being explained to be "land revenue due or dependent on the works" (*sic*).

14. There can be no difficulty in this Presidency as to the exhibition of direct receipts under Items III. to X. of this classification, i.e., of receipts other than those due to irrigation of land for purposes of cultivation. But from the order of the Government of India it is apparent that it is desired to enforce a division of receipts from irrigated land into two portions, due respectively to the land itself and to the use of water for its irrigation.

15. The Conference is decidedly of opinion that no such division can be made as regards this Presidency, however suitable it may be for Northern India. On this question it

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adopts the opinions which have been urged in the Proceedings of the Board of Revenue noted in the margin, and which are expressed in the Memorandum of the results of a Conference held in 1868, consisting of Colonels Strachey and Anderson and Mr. J. D. Sim. In the paper it is urged that in Madras the distinction could only be established in an arbitrary and imperfect manner; that no advantage would accrue from it; that if it were abandoned the figures for irrigation revenue can be taken without alteration from the existing revenue accounts; and that in practice a failure of the water-supply involves loss of the whole revenue and not only that part of it due to water.

17th June 1872, No. 1,019.
30th July 1873, „ 1,439.
8th Aug. „ „ 1,527.
19th June 1875, „ 1,608.
7th Sept. „ „ 2,502.
Board's Proceedings, 7th April 1868, No. 2,589.

16. The revenue from wet land in the Madras Presidency is based on a valuation of share of a wet crop, and there are absolutely no data existing on which a portion of these wet assessments can be declared to represent a valuation of the land for dry cultivation. Even in the case of the Godavery and Kistna Deltas, where what are called non-consolidated wet rates exist, i.e., where the assessment consists of two separate portions, the land assessment so called and the water-rate, the separation is illusory. In the Godavery and in the Eastern Delta of the Kistna the irrigable qualities of the land were taken into account in fixing the land assessment to which the uniform water-rate was to be added; and in the settlement of the Western Delta of the Kistna, a special standard grain was selected, the prices of which gave a commutation rate suitable for wet produce. Thus the wet assessments in these tracts, which are the only ones in which non-consolidated rates so called exist, are in reality consolidated water-rates, an arbitrary and uniform portion of which has been called water-rate. Further, water-rate should represent either the price of the quantity of water requisite to bring the crop to maturity, or the value of irrigation to the land; and since these vary with soil and other circumstances, a uniform water-rate, such as exists where non-consolidated rates have been introduced in this Presidency, cannot fulfil this requisite. It would be therefore fallacious to take this so-called water-rate alone as the irrigation revenue. The separation proposed is entirely inconsistent with a system under which the Government demand on wet land is based upon a share of a wet crop.

17. The Conference therefore recommends that, in all accounts and statements which exhibit irrigation revenue, land assessments as well as all charges for irrigation which can be identified as chargeable on account of the particular land irrigated should be included. It is believed that all such payments, except Zemindari peisheush and quit-rents on whole Inam villages, can be so identified as chargeable on particular lands.

18. It falls to officers of the Revenue Department to furnish particulars of revenue from irrigated land. Other items of irrigation revenue are now credited in the financial accounts to the Public Works Department; and it will be for the Controller of Public Works Accounts to furnish, or obtain from the Accountant-General, details of such credits, and to classify them according to any system which may be prescribed by the Government of India.

19. The heads under which revenue from irrigated lands should be classed are those which have been adopted by the Board of Revenue for what are called "Channel Registers," of which a form has been prescribed in Board's Proceedings, dated 16th July 1873, No. 1,305. The statements should be furnished for all works embraced in Class I., and will eventually be required for all works which may be placed in Class II. With the modifications to be specified below they will furnish the data as regards receipts of each year required for drawing up Capital and Revenue Accounts for works in Classes I. and II. They can also be made to furnish to the officers of the Public Works Department information which will be of value to them in regulating the irrigation under these works, and indicating in what direction measures are required for increasing or economizing the supply. With this object Column I should be abolished and the irrigation under each canal shown together in whatever taluq situated.

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understood that instructions will at once be issued by the Chief Engineer for Irrigation to District Engineers for the supply to revenue officers of a list of the canals or branches for which separate particulars of irrigation are to be furnished.

20. The form shows—

(1.) *Columns 3 to 22.*—The extent of Government land charged as irrigated, and the charge thereon for first and second crops, the charge columns being sub-divided into assessment and water-tax. In order to carry out the orders conveyed in G.O., 18th June 1873, No. 1,592, Public Works Department, which have hitherto been misapprehended, instructions should be given that opposite each canal there should be two lines, the first showing the extent and assessment of lands charged with consolidated wet rates, and the second the extent and charge in the case of lands charged with non-consolidated rates and with dry assessments and water-rate. In the very few cases when a charge is made upon wet lands in addition to consolidated wet assessments, the whole charge should be shown in the first line in the column headed "Assessment." There will never be any entries in the column headed water-rate in the first line.

(2.) *Columns 23 to 37.*—The extent of, and quit-rent or jodi payable to Government on, Inams irrigated, and the water-rates charged on Inams and Zemindaris.

No portion of the peisheush on Zemindari land can be shown as already stated as revenue on irrigated land, as there are no means of identifying the charge. The same is the case as regards quit-rents on Inams made up of whole villages, unless they consist entirely of wet lands and have no waste. The entries in the quit-rent column will therefore embrace only quit-rents on minor Inams. These Inams consist sometimes of both wet and dry lands; but the assessments are known, and the portion of quit-rent entered in the column should in such cases bear the same proportion to the total quit-rent as the assessment of the wet lands comprised in the Inam bears to the total.

Inam lands irrigated and liable to charge fall under the following classes:—

- A.—Bearing quit-rent but not liable to water-rate.
- B.— Do. do. but liable to water-rate.
- C.—Bearing no quit-rent but liable to water-rate.

The extent and quit-rent in the first case should be shown in the first line opposite each canal, and the extent and charges in the other two lumped together in the second line; as in this way the whole extent liable to water-rate will be shown together.

Together with these items should also be shown in the second line the extent of Zemindari land charged with water-rate, after deduction made for extent which is irrigated free as "Mamool wet." When any portion of this consists of charge arrived at by a composition of water-rate, details of the extent and charge in case of such lands included in the body of the statements should be given in the remark column.

(3.) *Columns 38 and 39.*—The extent of Inam and Zemindari land irrigated free of all charge. In these columns will be shown in one line the extent of Inams irrigated but not liable to either quit-rent or water-rate, and the extent of Zemindari land irrigated, but exempt from charge as "Mamool wet."

21. It will be seen from the above that the Conference proposes to include in the statement of irrigation revenue the dry assessments of lands under irrigation; but this assessment ought to be excluded from the profit due to irrigation works when the land was already occupied before the extension of irrigation to it, and to be included only when the land was taken up from waste and irrigated under the work. The extension of occupation and of revenue is affected by a multiplicity of causes, of which the construction of irrigation works is only one. It would be impossible to allow for indirect influences, which are doubtless themselves re-acted on, and intensified by, the existence of the works; but the distinction above stated is an obvious one, and also one of considerable importance and influence on the results so far as they are capable of being computed in money.

22. To make the adjustment in practice however is not easy. The deduction on account of lands already occupied must be made by addition to the standard revenue, or assumed normal revenue from the lands irrigated, prior to the construction of the work. This standard must be

obtained by averaging the revenue for a series of years; and strict accuracy would require that the history of each field, which is the unit of revenue charge, should be traced throughout. This, however, would be an almost interminable labor, even if village accounts in which alone particulars of fields are entered, were available throughout. The Conference is of opinion that for obtaining the standard revenue the village should be considered as the unit, and the average deduced from the gross irrigation revenue of villages for a series of years. This will usually be ascertainable from the abstracts made for Jamabandi purposes and preserved in the taluq offices, and no reference to the detailed fieldwar accounts kept in the villages will be necessary.

23. For the deduction to be made on account of occupied dry lands, inquiry as to fields cannot be avoided without risk of error. The Board in their Proceedings, 30th July 1873, No. 1,349, have directed that the area and assessment of occupied dry lands brought under irrigation in each year should be shown in additional columns in the channel registers, with the intention that for Capital and Revenue Accounts the assessment so stated should be deducted from the gross irrigation revenue in each subsequent year. But such land might cease to be irrigated, and the continued deduction of its assessment would therefore be improper; while, if the land after ceasing to be irrigated was supplied with water, the deduction would be made a second time. The columns added to the channel registers should therefore show—

- (1.) Extent and assessment of occupied dry lands brought under irrigation in the year.
- (2.) Extent and assessment of such lands remaining under irrigation out of those shown in the previous column in former returns.
- (3.) Total.

The assessment in the last column would be the amount to be added to the standard revenue for deduction from the gross irrigation revenue to get the profit of the year. Endeavor should be made to provide for the record of these particulars in the village account forms now under revision.

24. This point will be the only one on which the village accounts for past years will have to be consulted in preparing the accounts of past profit. When village accounts have been destroyed or are not forthcoming the following method will, it is believed, be found practicable, and will yield the best results attainable in such case. The assessment on lands charged with tirvajasti (additional charge for water) in the year in which irrigation was extended to the village, and in each subsequent year, will be ascertainable from the taluq abstracts. It will be on the safe side to assume that any increase in this assessment which may be found from year to year will belong to occupied land, and accordingly the amount of this increase, if there is any, should be deducted in addition to the standard from the gross wet revenue in each year. (The assessment of dry lands irrigated will, of course, be included in the statement of gross irrigation revenue.) From the earliest year for which village accounts are forthcoming the particulars of assessments on fields for the columns to be added to the channel registers as stated above should be ascertained and the amount deducted in addition to the standard, and to the amount of deduction last made for increase of land paying tirvajasti.

The following examples will make the matter clear. Suppose a series of figures to be obtained as follows:—

Fasli.	Assessment of Dry Lands charged for Water.	Assessment of Dry Lands irrigated known to be already occupied. (Columns to be added as above stated to Channel Registers.)	Deduction to be made in addition to Standard Revenue.
1250	RS.	RS.	RS.
1251*	150	...	...
1252	160	...	...
1253	155	...	10
1254†	170	...	5
1255	175	10	20
1256	190	15	30
	185	15	35

* Year of extension of irrigation to the village.
† First year for which village accounts are available.

Here the Rupees 150 shown in Fasli 1250 is supposed to be included in the standard revenue being part of the gross irrigation revenue for previous years on which the average is struck. In Fasli 1251 an increase of Rupees 10 is found; and, as in the absence of village accounts it is not known whether the land was occupied or not before it was irrigated, it is assumed for safety's sake to have been so, and the amount deducted in addition to the standard revenue. So also in Fasli 1252 and 1253, Rupees 5 and Rupees 20 are similarly deducted. For Fasli 1254 and afterwards village accounts are available, and show occupied dry lands, assessed at Rupees 10, to have been newly irrigated. This amount is therefore added to the assessment on lands assumed to be similar and to have been brought under irrigation since the construction of the work and up to the previous year, viz., Rupees 20; and the sum Rupees 25 deducted in addition to the standard revenue, and so also for subsequent years. The whole amount of the assessment on dry lands irrigated is of course to be included throughout in the statements of irrigation revenue.

In the Godavery and Kistna Districts, where non consolidated assessments exist, the plan of deducting the increase year by year in the assessment of dry lands charged for water would not answer at the present time, since full liberty is now conceded to ryots of taking or relinquishing water as they please. It will answer however for the period prior to the introduction of this rule, for lands were then registered separately as wet and dry. For subsequent years village accounts are available. In these districts it is necessary to observe that considerable changes of registry of lands from dry to wet have been made under the rule that land irrigated for three years should be classed as wet, and also at the time of the Survey and Settlement. The principle on which these transfers should be dealt with is that dry assessment which had been deducted before should continue to be deducted afterwards.

25. The period of years to be taken for deducing the average or standard revenue has to be considered. The Government have suggested fifteen years, but there may be difficulty in procuring information for so long a period in the case of some works. It is also questionable whether so long a period ought to be taken. All that is wanted is a sufficient number of years to get rid of the effect of fluctuations of seasons; and if too many are taken, the effect of the normal increase due to indirect causes, or causes independent of the improvement made to the works, come into play. These however work upon dry land rather than wet, and as the wet revenue of each village is alone to be taken into account, perhaps the best rule to lay down is that this should be ascertained for as many years as possible, not less than five or more than fifteen years prior to the improvement in the irrigation, and that the Board of Revenue should decide in each case on the information available what period should be taken.

26. The standard revenue so obtained however will change from year to year in the case of large works, such as the Kistna and Godavery Deltas Schemes, as irrigation is extended to villages not previously within the influence of the works. As soon as irrigation is so extended, the standard revenue of the village (that being the unit) must be ascertained and added to that ascertained for tracts previously included. Unless the channel register, which gives the irrigation revenue, includes the whole irrigation revenue for all the villages, the deduction of standard revenue will be too great. The Conference must therefore recommend that the channel registers shall show the whole irrigation revenue of the villages to which irrigation from the work has been in any degree extended. The irrigation revenue from other sources will generally be small, and its inclusion will not impair the utility of the statements as indicating the efficiency or otherwise of the arrangements for supply from the great works.

27. There are other circumstances, chiefly administrative changes, the effect of which has to be eliminated in calculating profit due to irrigation works. These may be classed as follows:—

- (1.) Changes which amount to a transfer of irrigated land from a category in which it is chargeable to one in which it is not. Examples are, the assignments of land revenue made to pagodas, &c., in commutation of cash allowances, benz deductions made on account of village service, and the like. When these changes have taken place subsequent to the construction of

the works they must be allowed for by deducting the amounts from the standard revenue in all subsequent years. In this way they will still appear as part of the profit from which, in fact, they are assignments.

(2.) Enhancement of quit-rents on Inams in consideration of enfranchisement. There is room for difference of opinion as to whether the increased payments obtained in such cases in commutation of the Government right to reversion should be credited to the profits or not. On the one hand, it may be asserted that the matter has no connection with irrigation, and, on the other, that the Inamdars were induced to accept the increased liability, and were enabled to make the increased payments by the presence of improved irrigation. On the whole, the Conference is of opinion that the additional quit-rents should be included in the profit. The item will not be a very large one. The old quit-rents will of course appear both in the standard revenue and in the subsequent gross receipts.

(3.) Direct changes in the demand on lands, such as reductions of assessment on land watered by falling rains only, or by private wells; alteration of system, such as the abolition of ulungu, or general revision of rates on the introduction of the new settlement.

Direct reductions of assessment made on grounds of general expediency such as those above named ought not to go to diminish the profit from the projects, and therefore the allowance for them should be made in the shape of permanent deduction from the standard revenue.

The abolition of ulungu will probably have to be considered only in the Cauvery Delta, and had best be treated in the same way as will now be proposed for general revisions of rates under the new settlements.

These revisions of rates generally result in an increase on the whole in revenue from irrigated land. The increased assessments or profits affected by large irrigation works have doubtless been to a great extent rendered possible by the improved irrigation, and might in many cases be properly credited in full to the projects. But it would be impossible to prescribe a criterion by which the facts for each village or tract could be worked out in detail, and some rough method must be devised for making the necessary allowance; that is to say, for crediting to the project such portion of the increased revenue as is properly due to it, and subtracting from the profit such portion as has been rendered possible by general causes. The best method seems to be to take the wet (Government) lands in occupation at the date of the introduction of the new rates in villages affected by the new irrigation, and in those not so affected, and to ascertain the ratios of increase by settlement in these tracts respectively. Any excess found in the increase in the tracts under the influence of the works above what would result from the application of the ratio of increase ascertained for the rest of the district is properly to be credited to the project. The method of making the allowance for the effect of settlement will therefore be to deduct from the gross revenue of each year subsequent to settlement, not only the standard revenue, but also such sum as will represent an increase, for the settlement year and for the villages then under the new irrigation, in the same proportion as found to result from settlement in the rest of the district.

It is to be understood that as the effect of the new irrigation was considered in fixing the new rates in all villages which were eventually to be brought under it, all such villages should be included with those actually benefited at the particular date, in deducing the ratios of increase just referred to. It may be that in some villages the introduction of the new settlement rates may have taken place in the period taken for deducing the standard revenue, i.e., prior to the extension of irrigation to the villages. In such cases, which will probably be rare, the revenue for the years in which the new settlement rates have been in force should first be corrected by deducting such a percentage of increase as is found to be due to the work, i.e., the excess of increase in the specially irrigated wet lands over that in the rest of the wet lands of the district, and striking the average revenue on the amounts left after such correction.

28. The following examples will show what is meant:—
(1.) The standard revenue for a village is Rupees 1,000. The revenue on the irrigated lands for the year of settlement is Rupees 200 at the old rates, and Rupees 1,500 at the new. The revenue of all wet lands in the district is more than under the project is found to be increased

by settlement from 5 to 5½ lakhs or 10 per cent.; while that of the wet lands irrigated under the project is raised by settlement from Rupees 10,00,000 to Rupees 12,20,000 or 22 per cent. Of the actual increase, therefore, 10 per cent. is due to general causes, and the rest to the special irrigation. Rupees 120 are therefore to be added to the standard revenue of the village in question, and the amount for the settlement year and subsequently will be Rupees 1,120.

(2.) The wet revenue of a village to which irrigation has just been extended is as follows:—

Fasli.	RS.	Corrected Revenue.
1250	500	500
1251	540	540
1252	510	510
1253*	600	541
1254	620	559
1255	590	532
		3,182
Average or standard revenue...		530

* Settlement year.

Here as 12 out of a total increase of 22 per cent. on the old rates was due to the benefit anticipated from the project, 9·84 per cent. of the settlement revenue is deducted before the average is struck. Strictly speaking the excess revenue realized in anticipation of the extension of irrigation ought to be credited to the project, but this is scarcely feasible; and the whole increase ought not in strictness to have been demanded before irrigation was afforded.

29. The principles and examples above stated assume an increase by settlement, and a special increase by specially good irrigation. But it may of course happen that the case is not so; and if so, a deduction from, instead of an addition to, the standard revenue will have to be made.

The principles enunciated in the foregoing paragraphs will determine the net receipts from irrigated land which are to be entered in the Capital and Revenue Accounts which are to be opened at once for all works in Class I., and eventually for all works in Class II. also.

30. It is here to be noted that all the information as to revenue from irrigated land which can be given must refer to demand only and not to collections, as no separate accounts are kept of collections from irrigated and unirrigated lands. No such separation would be possible without a complete revolution in the revenue system, and this fact renders impossible in Madras any separate exhibition of irrigation revenue in the Civil Finance Accounts. The collections of course cannot exceed the demand; and as arrears of the demand as settled, i.e., exclusive of remissions, rarely accrue on wet land, the revenue actually collected will not fall much short of that shown in the statements. Information as to the demand will be practically sufficient for the present purpose. It must always be given for the fasli year.

31. (ii). *Instructions for Mr. Wilson.*—The Chief Engineer for Irrigation having stated that it is of great importance that the Capital and Revenue Accounts of the Kistna Delta works should be completed without delay, and information collected as to the probable results of further extensions in view to the disposal of estimates now in hand, it is resolved to direct Mr. Wilson to proceed in the first instance to the Kistna District. It will also be of advantage that he should commence the work in a district with which he is thoroughly familiar. He should proceed to frame statements in the form above referred to and on the principles above stated for as many years as may be necessary, and should arrange the information according to a list of canals which he

should obtain from the local officers of the Public Works Department, to be submitted, if he thinks this desirable, for the approval of the Chief Engineer for Irrigation. Mr. Wilson should prepare the statements as completely as possible for all past years as far back as may be necessary; but if accounts whence full details can be obtained are not forthcoming, he must make the best approximation to the totals of irrigated revenue that may be feasible from the district records. As the inquiry as regards past years is only to ascertain profit, information as to areas need not be given for the earlier years unless it is readily forthcoming, but it should, if possible, be made complete for Fasli 1285 (1875-76) and subsequent years. The standard revenue to be applied for each year should be stated and explained, and the profit to be credited in each year worked out. In case of any difficulty of detail, he should apply to the Board of Revenue for instructions; and should lose no time in proposing such establishments as he may require for the work. The Collector should be instructed to give him every assistance in his power.

32. Mr. Wilson's inquiries should extend not only to the area now irrigated, but also to that which will ultimately be brought under the influence of the works; and he should endeavor to collect data for an opinion as to the probable result of further extensions contemplated but yet unsanctioned. On this subject he should address the District and Chief Engineers, who will afford him full information as to the tracts which will be benefited and the mode of supply.

33. (iii.) *The nature of the Annual Report on Irrigation results which it is desirable and practicable to furnish and (iv.) the way in which Public Works Officers are to be supplied with information as to Revenue results.*—The Conference next proceeds to discuss the third and fourth subjects mentioned in paragraph 1 of this Memorandum which are very closely connected. The only statement now furnished, except the Board's settlement reports, which at all bears the character of a general statement of irrigation results, is that furnished under G.O., dated 25th July 1872, No. 1,766. This statement shows the entire revenue charged in each district on lands irrigated; and the figures for receipts therein given, contrasted with the charges for improvements and upkeep of the works reported by the Controller, Public Works Accounts, are submitted to Government with a Note by the Chief Engineer for Irrigation. The objects of the report desired are to be gathered from the Note by the Chief Engineer, printed in G.O., Public Works Department, dated 22nd November 1875, No. 1,668. They seem to be that it may be possible for Government to take a general view of the management of irrigation works, the revenue derived from them, and the charges; that such general information as to remissions of demand may be given as will indicate to what extent they are due to preventable causes, in what quarter special remedial measures are necessary, or on what points special explanation should be called for.

34. These being the objects in view, the Conference is of opinion that the statement of receipts should not embrace as hitherto the revenue from wet lands in Malabar and other districts in which there are no irrigation works, or in which no expenditure is incurred upon such works by Government, and also that the revenue from lands classed as wet, as growing wet crops, though with the assistance only of falling rain, should be excluded. There are certain other items which in strictness ought also to be excluded, such as wet revenue from lands irrigated from wells and springs which are not repaired by Government, lands under tanks in rented villages, and under Dasabandam tanks; but the Conference is of opinion that it is not worth while attempting to separate these items, and that, so far as they are concerned, the statement should be prepared as hitherto.

35. The general review which embraces expenditure as well as receipts, and is principally directed to the effectiveness of such expenditure, should be drawn up by the Chief Engineer for Irrigation. The information as to outlay to be furnished by the Controller, and that as to the receipts to be furnished by Collectors, through the Board of Revenue, should be arranged according to works of Classes I., II., and III. as above detailed; and, with the details contained in the special reports referred to below, will constitute the materials for the general report to be drawn up by the Chief Engineer.

36. A single form for statements of irrigation revenue to be furnished by Collectors can be made to answer all purposes, for Capital and Revenue Accounts, for works both of Classes I. and II., and for the general irrigation review. The form already in use for the channel registers will answer, columns being added to show remissions, which should be classed thus—

- (1.) Fixed remissions.
- (2.) Occasional remissions.
 - (a.) Due to preventable causes, such as inefficient works of supply or drainage.
 - (i.) Excess of water.
 - (ii.) Defect of water.
 - (b.) Due to bad season and casual failure of supply.
 - (c.) Other occasional remissions. The net revenue and remissions for works in Class I. should be given in full detail of canals as prescribed, and each work in Class II. should have separate details, while those of Class III. should be grouped together.

37. Instructions should be issued by the Board of Revenue to Collectors to submit with their Jamabandi reports statements prepared accordingly and accompanied by a Note containing such remarks on the several points connected with the irrigation of the district and the results of the year as will be found more particularly prescribed below. A separate statement, with details for canals, &c., should be furnished for each work in Classes I. and II., and a general abstract statement should also be sent to show the whole results for the district, the totals for the works of Classes I. and II. being entered in order, and all works of Class III. being grouped together in a single line. These statements would be examined and checked with the other settlement returns in the office of the Board of Revenue, and transmitted to the Chief Engineer. Copy of the statements and of the note should be sent by the Collector to the District Engineer, so that that officer may have an opportunity of submitting to the Chief Engineer without delay his remarks on the causes of inefficient supply or drainage.

38. These statements will be progressive as regards amount of detail as particulars for works in Classes I. and II. become available. No revision of the statements will be necessary hereafter for purposes of comparison, because whatever comparison is necessary in respect of works of Classes I. and II. will be based not upon the particulars given in the annual statement but upon those posted from them into the special accounts to be maintained for each work in Controller's Office.

39. In these statements sufficient information as to the effect of the condition of the works on the revenue will be furnished to the District Engineers as regards works in Classes I. and II. It remains to make provision for information being furnished to them as regards particular works which in the general statements will be grouped together in Class III. It appears to the

Board's Standing Order, No. III. of 1869, (67-2).
Board's Proceedings, dated 8th August 1875, No. 1,527.

Conference that this had best be done in connection with the tank registers compiled under the orders noted in the margin. The form in which the information is now furnished does not contain particulars of remissions, but columns can easily be added to give them under the classification suggested above.

40. These tank registers are records of great importance, and if the entries in them could be fully relied on as correctly prepared, which the Conference is disposed to doubt, their existence would hereafter much facilitate the inquiries which will have to be made whenever it is proposed to transfer a work from Class III. to Class II. and to open accordingly an account for it extending back over many previous years.

41. The Conference is of opinion that revised forms and instructions should be issued by the Board of Revenue as to the mode in which the information as to revenue results should be supplied to District Engineers, and that the importance of the information being sent to them

*Proceedings of the Madras Government, Public Works Department,
17th June 1876.*

as soon as the Jamabandi of each village or taluq is completed, so that early steps may be taken to remedy defective condition of works, should be especially impressed upon Collectors.

42. The note or irrigation report which should accompany the statements of irrigation revenue to be submitted by Collectors to the Board as above detailed should be made as comprehensive as possible. It is impossible to put on paper definite instructions, as to the numerous matters connected with irrigation which should be noticed in such reports. Much must depend upon the local knowledge and interest of the writer, who must have an intimate acquaintance with the works, with the revenue system, with the influence of trade, and other subjects bearing upon the agricultural interests of the districts or tracts concerned. The officers of the Public Works Department will be the chief authorities on some branches of the question, and in compiling their reports Collectors should be instructed to confer freely with the District Engineers. The note should first state the return of the year on works for which Capital and Revenue Accounts are kept, *i.e.* for works in Class I. and in Class II. as soon as these are taken up. The modification in the standard revenue which may be necessary should first be noticed for each work; to it should be added the assessment on already occupied dry lands brought under irrigation, and the total deducted from the whole irrigation revenue to get the return for the year. The note should then proceed to give information on points of interest connected with the works as follows:—

The important works which constitute Class I. should be dealt with individually and at some length. The Conference note a few of the points which suggest themselves as likely to require notice. The irrigation may have developed faster or more slowly than was to be anticipated; water may have been much in demand, or the reverse, either generally or in the case of particular canals or works; the freshest rains may have been seasonable or otherwise, and may have produced corresponding results; projects may have been pushed forward in the right direction, or it may be found to be advisable to alter the programme of future working; the popularity or otherwise of the works, and their value as affecting the prosperity of the district generally, may require notice; the supply may have outrun the means of distribution, or the reverse; ryots may have shown indisposition to use the water available, or may have attempted to irrigate beyond the supply which is forthcoming; the soil of some tracts may have proved unsuitable, and dry crops may have been found more profitable; abnormal demands for special products or the state of communication with markets may have exercised influence; and are doubtless many other points on which the special circumstances of each work or locality may suggest remarks to District Officers.

The reports on works of Class II. will be more brief. These works generally affect smaller areas; the results will be more easily and speedily arrived at, and improvements, if needed, can be more readily understood and determined on.

Works of Class III. will necessarily be dealt with collectively, but anything noticeable in connection with particular works should be specially mentioned. The season will always exercise more or less influence on the results of works of this class, and as season varies in character, frequently in different parts of the same district, its effects can be contrasted. The direction in which more liberal expenditure would be beneficial would be an important point in many districts, and any changes in administrative or executive arrangements which may suggest themselves should be noticed.

43. The Conference is of opinion that the statements and reports now recommended should supersede all statements and returns as to irrigation revenue which Collectors are now required to furnish to the Public Works Department. The forms which will be prescribed under this Memorandum will ensure that information to irrigation revenue will be complete and uniform in principles, and the misunderstandings and apparent discrepancies which have arisen in the past will, it is hoped, be avoided in future.

(Signed) C. A. GALTON,
Acting Secretary.

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17th June 1876.*

APPENDIX A.

Capital and Revenue Account of

to end of the year 1878-79.

	CAPITAL			REVENUE		
	To end of 1877-78.	1878-79.	Total.	To end of 1877-78.	1878-79.	Total.
Preliminary Investigation.						
Land						
Works—						
Head works						
Supply Channels						
Reservoirs						
Distributaries						
Buildings						
Miscellaneous						
.....						
Establishment						
Tools and Plant						
Suspense Accounts						
Abatement of Land Revenue lost						
Interest						
Total						
Less Receipts						
Net						

Dissent by Controller of Public Works Accounts and the Deputy Controller for Irrigation.

BELIEVING that the object which Government had in view informing this Committee was to obtain a final settlement of every question connected with the preparation of the Capital and Revenue Accounts of the Irrigation works in the Madras Presidency, we find ourselves as regards principles unable to assent to certain of the conclusions arrived at by the majority of the Committee, and, as regards details for future procedure, we consider the recommendations made to be insufficient.

2. The Government of India according to their latest instructions do not desire that Capital and Revenue Accounts should be maintained for all the Irrigation works in this Presidency, but in cases in which some definite expenditure can be pointed to as Capital outlay and some definite receipts as Revenue resulting therefrom, the sufficiency of the relation of the Revenue to the Capital being in each case ascertained and recognized, the Government of India desire that Capital and Revenue Accounts shall be kept in certain definite forms.

3. On the other hand, in cases where
(a),—the Capital outlay cannot be ascertained;
(b),—there is no Revenue or expectation of Revenue; or,
(c),—where, although there exists both Capital outlay and Revenue receipts, the Revenue receipts cannot justly be ascribed to the Capital outlay;
the Government of India desire that the works be remitted to the class "Ordinary Agricultural" for which no Capital or Revenue Accounts are to be kept.

4. This principle clearly limits the Accounts are to be maintained. In the number of works for which Capital and Revenue Accounts in some form or other be kept for all Irrigation works. From this recommendation we entirely dissent, as involving what appears to us to be an absolutely unnecessary and useless expenditure of public money.

5. To practically carry out this task of preparing Capital and Revenue Accounts of all the Irrigation works in the Presidency (said to amount to about 40,000 in number) the Majority of the Committee recommend,

(a),—that for certain specified works included in their Class I. separate Capital and Revenue Accounts be kept in the full detail prescribed by the Government of India;
(b),—that for certain other important works at present undetermined, which are to constitute their Class II., separate Capital and Revenue Accounts should also be kept but in less detail; and,
(c),—that for all other Irrigation works, combined or lumped, Capital and Revenue Accounts be kept by districts.

6. Our objections to these recommendations we will place on record in order.
Class I.—With regard to the works enumerated in paragraph 3 as constituting Class I., we should have preferred that the principle which guided the Committee in selecting these particular nine works should have been clearly stated. There would then have been some ground for forming an opinion as to the completeness of the list as it now stands, and as the investigation proceeds, for judging the claims of other works to be included in this class. In the absence of any enunciation of the principle which guided the majority of the Committee in selecting the works in Class I., we will simply confine ourselves to stating that at present we do not clearly see the distinction between Class I. and Class II. works.

7. The expenditure on the first class of works is to be exhibited as far as possible in the manner prescribed by the Government of India. We concur with the majority of the Committee in the opinion that, in the case of the Madras Irrigation works, there will be some difficulty in conforming to this classification in detail; we think it would have been better to have gone thoroughly into this classification and to have proposed such modifications as, without preventing a comparison between the Irrigation works of Madras and those in other parts of India in all cases in which the works really are comparable, would have made the classification of expenditure

more suitable for the Irrigation works in this Presidency. We take for granted that neither the Government of India nor any body else wishes to institute an elaborate and detailed comparison between the Madras Water Works and the Ganges Canal system.

8. The present classification was, we believe, framed for systems of works consisting of a long main canal with a large net work of branches and distributaries—systems in which tanks and reservoirs are quite exceptional and altogether subsidiary. To a system such as the Madras Water Works consisting of a weir, a few miles of supply channel, and one or two large reservoirs—the reservoirs being the main features of the scheme—this classification cannot be applied without involving such an absurdity as calling the short supply channel a main canal and bringing in as entirely subsidiary to it a couple of reservoirs of which the bunds are nearly as long as the channel itself.

9. The Madras Water Works is merely a type of a large class of works common in the southern part of India, and it would, we think, have been better had the Committee stated that the prescribed classification is suitable only for one or two of the systems which they propose to include in Class I., and had they suggested for other systems some more suitable classification. It is perhaps unnecessary to observe that the keeping of technical Capital and Revenue Accounts does not involve adherence to any particular system classifying the expenditure.

10. Class II.—We object here to the want of precision in indicating the works to be included in Class II. From first to last the difficulty has not been the only practical, difficulty that has been experienced by the Accounts Department in dealing with the whole subject of the Capital and Revenue Accounts of Irrigation works for which Capital and Revenue Accounts are to be kept. It has been left with the Chief Engineer for Irrigation, and that no one has been able to obtain from that officer a list of the systems for which Capital and Revenue Accounts are to be kept, together with the necessary information regarding the component parts.

11. It is obvious that the current expenditure on works can be properly recorded only after determination of the works for which Capital and Revenue Accounts are to be kept, and of the amount of detail in which these accounts are to be kept. As yet there has been no systematic and organized attempt to record current expenditure according to systems and component parts of the simple reason that, although instructions have been given to keep separate accounts for certain systems, no information has as yet been afforded as to what works or groups of works are comprised in those systems.

12. Every day further expenditure is being incurred which, were these points settled, might at once be properly booked, but which, under present circumstances, only adds more to that ever-increasing mass of arrears and confusion which Government sooner or later will have to pay an extra establishment to grapple with and bring into some sort of order. For ourselves we are wholly unable to account for the delay of months and even years that has occurred in getting out a list of the important Irrigation works in this Presidency. The printed Annual Appropriation and Outlay Statements, together with the maps, plans, and records which exist in the Chief Engineer's office, should, we imagine, be sufficient for the preparation of such a list practically complete within a week at the outside; but whatever the difficulty, whatever the delay, we do not think that the Committee should have separated without obtaining a definite decision on such an obvious preliminary.

13. Class III.—To the combined Capital and Revenue Accounts proposed to be kept for the works under Class III. we object on the ground that neither is it possible nor is it proposed to ascertain and recognize any definite expenditure as Capital outlay, nor is it proposed to make any attempt to ascertain and recognize any Revenue as resulting from Capital. It is proposed, in fact, to start so-called Capital and Revenue Accounts in which neither of the terms Capital and Revenue has any meaning whatever.

14. We fail to see that the majority of the Committee realize that these Capital and Revenue Accounts are required to serve a useful purpose, i.e., to record the direct return which Government

derives from money invested in Irrigation works, and that the means by which this object is to be attained is a comparison of some definite Revenue with the invested Capital to which it can be justly ascribed. For Class III., works taken in the aggregate, the Committee propose to record as Capital all future expenditure on new works and all future improvements of old works if in excess of a certain (or rather an uncertain) amount, and the only thing they propose to record as Revenue is the gross Revenue under all works, new and old. We are unable to see what possible connection there can be between this Revenue and the so-called Capital; and even could we see any connection between the two, the usefulness of the accounts would, in our opinion, be entirely destroyed by the whole of the works being lumped together.

15. That the majority of the Committee practically admit the uselessness of these lumped accounts is, in our opinion, shown by their recommendation to retain the old form of Tank Registers. *Virtually therefore there is to be a separate account for every Irrigation work in the Presidency.*

16. With regard to the Tank Registers we will only remark that if an account of this sort is absolutely necessary for the purpose of ascertaining what tanks are to be maintained and what should be kept with some guarantee for its accuracy, and that this can only be done by making some central authority responsible for seeing that these books are properly kept up, and for providing the proper machinery for doing so. To make the District Engineers responsible for keeping up these books from accounts received from the Divisional Offices appears to us to be a departure from the accepted principle that District Engineers are not to be concerned in the compilation of accounts.

17. With regard to the incidence of charges as between Capital and Revenue, though we do not understand what are the differences alluded to by the majority of the Conference in paragraph 8 of their report, we cordially concur in the view which they have expressed on this point of principle—a view which apparently they base upon these differences; and we confess to feeling no little surprise when we find that in the very next paragraph of their report they recommend that, in the case of the great majority of Irrigation works in this Presidency, extensions and improvements costing less than *one-fifth* of the revenue dependent on them shall be charged to the Revenue Account. In *Northern India* they draw the line at something more like *one-fiftieth* or *one-hundredth*.

18. The principle on which all Capital and Revenue Accounts are based—the only principle indeed which can give to such accounts any meaning and usefulness—is that the cost of all original construction and equipment shall be charged to Capital, and the cost of maintaining the efficiency of such construction and equipment shall be charged to Revenue.

19. In order, however, to avoid incessant interference with the Capital Account it is in many cases found convenient to charge to Revenue all isolated additions and improvements, the cost of which is insignificant in comparison with the annual revenue; and on this ground it might perhaps be well that for the works included in Classes I. and II. of the classification adopted by the Committee (if that classification is to be adhered to) the proposed limits should be adopted for charges to the Capital Account, though this point should not be passed over without noticing that the revenue dependent on many of the works in Class II. will be found to be as large as, or larger than, that dependent on several of the works in Class I. In the case of Class III. there is no excuse for such a departure from principle, seeing that with these lumped accounts (if they are to be kept) incessant interference with the Capital Account must in any case take place.

20. Further, we think it well to point out that no convenience, but on the contrary considerable inconvenience, will be caused unless the limit below which original works are to be debitable to Revenue is made coterminous with the limit for Minor New Works.

21. In conclusion we beg to recommend—
(1.) That, as regards the keeping of Capital and Revenue Accounts, the wishes of the Government of India be strictly followed, and that such accounts be attempted only where some

definite expenditure can be ascertained and recognized as Capital outlay, and receipts can be ascertained and recognized as resulting therefrom; and that expenditure on all other works be charged to the head Ordinary Agricultural.

(2.) That the limit, if any, below which extensions and improvements are chargeable to Revenue be Rupees 2,500, or as an alternative if this limit be considered too high for the works included in Class II., that the limit be Rupees 2500 for Class I., and that for Class II. all Original Works be charged to Capital and only Repairs and Maintenance to Revenue.

(3.) We are further of opinion that the Conference should report fully on the books and returns which in connection with these accounts will have to be maintained both in the Revenue and in the Public Works Departments.

24th January 1876.

(Signed) L. CONWAY-GORDON, Captain, R.E.,
Controller of Public Works Accounts.
(") C. H. P. CHRISTIE, Lieutenant, R.E.,
Deputy Controller, Irrigation Branch.

TRANSFERRED to the Public Works Department.

(Signed) D. F. CARMICHAEL,
Secretary to Government, R.D.

No. 282-A. From W. WILSON, Esq., of Special Duty, Irrigation Accounts, to the Hon. D. F. CARMICHAEL, Secretary to Government, Revenue Department, dated Masulipatam, 31st March 1876, No. 3.

CONSIDERATION of the nature of the materials on which are based the statements of the financial results of ancient irrigation in the Kistna Deltas forwarded with my letter, No. 2, dated 28th March 1876, makes it necessary for me to submit, for the very serious consideration of Government, whether, whatever may be the case with regard to the Capital Accounts, it is in any way necessary or desirable further to employ a Special Officer for the preparation of the Revenue Accounts of irrigation in the Kistna Delta, or for any of the other works mentioned in the memorandum attached to Board's Proceedings, No. 283, dated 31st January 1876.

2. I am of opinion that it is not, because in the first place so far as the Eastern Delta of the Kistna is concerned, no amount of further inquiry will lead to any result more satisfactory than we have at present, and in the next an inquiry directed to the ascertainment of the exact amount properly to be credited to the ancient in the Western Delta would require a very much longer time than Government probably contemplated when appointing me to this special duty.

3. In the Eastern Delta there prevailed up to the year 1866-67, when a revised settlement, one of the features of which was the distinction between and separate record of land assessment and water-rate was introduced, the joint rent system under which the total demand fixed by Government on the village was distributed and apportioned by the ryots among themselves. There was under this system, speaking from a Madras point of view, no land assessment properly so called, that is, an assessment fixed by Government on each field or holding. Any attempt therefore to distinguish between land assessment and water-rate in this delta would be futile, while the

task, if attempted, would be hopeless. Thus, in Gudivada, the portion of this delta chiefly affected by the anicut "usual wet" increased from Acres 35,898, assessed at Rupees 32,759 in 1854-55, the year before anicut irrigation began, to Acres 48,857, assessed at Rupees 1,25,465 in 1865-66, the year prior to the introduction of the new settlement, and the break-up of the joint rent system. In the year last named the "dry converted into wet" amounted to Acres 16,038, assessed at Rupees 68,279. From these figures it appears that in the year prior to anicut irrigation the average assessment of wet land in this taluq was Rupees 2-3-0 an acre, and in the last year of the joint rent system was Rupees 2-6-0 an acre, while that of "dry converted into wet" was in that year Rupees 4-2-0 an acre, and the average of "usual wet" and of "dry into wet" combined was just under Rupees 3 an acre. At that time the charge for water alone prescribed by Government was Rupees 4 an acre. So far as "usual wet" is concerned, therefore it is obvious that whether the water-rate of Rupees 3 which was in force between 1860-61 and 1863-64, or the present rate of Rupees 4 be taken as the basis of calculation for the determination of the amount due to anicut irrigation, any arbitrary division between land assessment and water-rate is impossible, for the average wet assessment is in either case less than the water-rate alone. If for "dry into wet" any arbitrary distinction were attempted by assigning the portion Rupees 4, that is, the full water-rate, of the average assessment Rupees 4-2-0 to the anicut, there would remain an average of Rupees 0-2-0 per acre to be assigned to "land assessment," an amount so small that its inclusion in the return from the anicut would have but little material effect on the general result. The fact is, however, that the assessment of "dry into wet" was quite as consolidated as that of "usual wet," while it is extremely doubtful whether any means whatever exist of determining what prior to conversion was the dry assessment of the lands so as to assign accurately the portion of the assessment which whether equal to, or less or greater than, the Government charge for water should be assigned to the anicut.

4. In the Western Delta, where up till the year 1872-73 a ryotwari system prevailed, there existed, except in one division of one of the two taluqs* of which it is composed, a system of consolidated assessments. Dry lands converted into wet were under this system not simply charged with water-rate in addition to their former assessment as dry, but were charged with a consolidated assessment which was equivalent either to the average of the wet lands in their immediate neighbourhood, or, more generally perhaps, to the average wet rate of the whole village.

5. In the year before anicut irrigation the average "wet" rates of Repally and Bapatla were Rupees 5 and Rupees 5-80 respectively. In 1872-73, that is, the year prior to the introduction of a new settlement which distinguished between "land assessment" and "water-rate," the average "wet" rates were respectively Rs. 4-6-0 and Rupees 5-6-0, and the average rates for "dry converted into wet" Rupees 5-9-0 and Rupees 5-2-0 respectively. In this delta the amount to be credited to the anicut in the case of dry lands converted into wet might be arbitrarily determined by assigning to it the product of the whole area converted multiplied by the water-rate, the remainder of the assessment of such lands being credited to land assessment and not assigned to the anicut on the supposition that when converted they were already in

occupation. The assessment of dry lands converted into wet appear in the taluq accounts only in a consolidated form; there is no record there of the amounts to be assigned to land assessment and to water-rate respectively.

6. The arbitrary division here suggested as possible was not adopted in the statements submitted with my letter of 28th ultimo; these statements, in accordance with the instructions of the memorandum attached to Board's Proceedings, No. 283, dated 31st January 1876, compared the total irrigated land revenue before and after anicut irrigation and assigned the difference between the two to that work.

7. This method of determining the effect of anicut irrigation is quite as arbitrary as the other; in both there is the very great probability that something really due to land assessment is credited to the anicut, but in choosing between two arbitrary methods that is to be preferred which is most in accordance with the revenue system of the province, that is to say, the method of the statements is the preferable one.

8. Neither the Secretary of State nor the Government of India appear to expect for this Presidency returns for the past which are mathematically exact; the Revenue system of account that existed prior to the new settlements makes such returns simply impossible. What is wanted seems to be a statement of account for past years, which, based on the best information available, may be considered to be fairly accurate.

9. Should Government think that a further and more elaborate investigation is necessary for the more accurate determination of the revenue results of anicut irrigation than is afforded by the statements submitted with my letter, No. 2, dated 28th March 1876, I would observe that for the Eastern Delta no amount of investigation would elicit any better information than is now available, and that for the Western Delta the inquiry, if entered upon, would involve the detailed examination of village accounts for every year after and many years before anicut irrigation; this would be a long labor; how long I should be afraid to say; and it is for Government to consider whether the results that may be obtained are worth the time, labor, and money to be spent in trying to get them. At best, for the scheme as a whole success must be but partial. However accurately the results of anicut irrigation in the Western Delta may be finally determined, for the Eastern Delta they must for ever remain, if not uncertain, incapable of exact demonstration.

10. These considerations lead me to suggest that for the Kistna the Revenue results embodied in the statements already submitted be accepted for the past, and that for the other great works for which similar accounts are required statements drawn up on the same principles be prepared.

11. The statements for the Kistna are defective chiefly in the matter of the distribution and adjustment of charges.

12. The Controller of Public Works Accounts may at some future time be able to substitute for the estimated charges for Department of Public Works Establishments and Tools and Plant, that I have made more accurate figures, and the statements may then be modified in accordance with the changes which his distribution and adjustment of charges may render necessary, but, in the meantime, I see no reason why these statements should not be taken as a fairly accurate account of the financial results of irrigation in the Kistna.

13. For the preparation of revenue accounts of irrigation on the method adopted in these statements there can be none better fitted than the Collectors of the districts in which the work lie.

14. The labor of superintending and directing a few extra Accountants would add but little to their ordinary work.

15. Should Government still think that it is desirable to have the services of a special officer for this work, I shall proceed to the detailed examination of the accounts of the villages in the Kistna Deltas.

No. 283.

ORDER THEREON, 17th June 1876, No. 1,504.

IRRIGATION, No. 21.

Members and Secretary of the Board of Revenue.
Chief Engineer for Irrigation.
J. Wilson, Esq., on Special Duty.
Examiner of Public Works Accounts.
Deputy Examiner of Public Works Accounts,
Irrigation Branch.

Presidency. After a careful consideration of the opinions of the members of the Committee, together with the previous correspondence on the subject, His Grace the Governor in Council has arrived at the following conclusions with regard to that part of the question which will be dealt with in the Public Works Department. The basis on which the Revenue receipts due to Irrigation should be calculated will form the subject of a separate order.

2. In the first place the Government consider it advisable to limit the number of Irrigation Works for which separate Capital and Revenue Accounts are to be kept, and in this view the preparation of these Capital and Revenue Accounts will be for the present confined to the following eight works, viz. :—

Godavery Delta Works.	Palar Anicut.
Kistna do. do.	Pelandorai Anicut.
Pennair do. do.	Cauvery Delta Works.
Chembrumbaukum Tank.	Strivaiguntum Anicut.

3. For these eight works the Capital and Revenue Accounts will be prepared in accordance with the forms and the classifications prescribed by the Government of India, but as, in the case of the Chembrumbaukum tank, this classification would make the most important work of the project a sub-head of main canals and branches, while the latter are really only subsidiary to the tank, the Government of India will be requested to decide whether it would not be better to adopt an additional main-head, which might be called (2A.) Reservoirs, rather than introduce this anomaly. Similarly it seems to be desirable, looking to the number of tanks in the Strivaiguntum Anicut Project which are dependent upon distributaries, and which are really works of distribution, to introduce the sub-head "N Tanks and Reservoirs" under the main-head (3) Distributaries, and on this point also the wishes of the Government of India will be ascertained. It may be added that there are numerous other Irriga-

tion works for which Capital and Revenue Accounts are not for the present to be maintained, but for which classification of expenditure will be necessary, in connection with which the sub-head N, under (3) Distributaries, would be convenient.

4. Following the decision to restrict the number of works for which separate Capital and Revenue Accounts are to be maintained, the expenditure on all works other than the eight irrigation systems above specified will, for the present, be exhibited in the financial accounts under the head Ordinary Agricultural. The Examiner will, however, arrange to record separately under the 'classes,' 'Original Works,' 'Repairs,' &c., &c., the expenditure on any large works for which Capital and Revenue Accounts may hereafter be required or for which the Government may require separate accounts for administrative purposes.

5. But whilst the Government is resolved that no further delay shall occur in taking practical measures for the preparation of these accounts, His Grace the Governor in Council considers it absolutely necessary to commence by placing the record of current expenditure on a proper footing, and that in no other way can the work be carried to a satisfactory conclusion. It is by actually bringing into operation the necessary forms and procedure in connection with current expenditure that it is possible to realize exactly what has to be done, regard to the past, and this Government believes that any attempt to commence with the past accounts before placing current transactions on a proper footing will only lead to an indefinite postponement of the proper accounting for present transactions without in any way expediting the completion of these accounts as a whole.

6. The Chief Engineer for Irrigation will as soon as possible submit to Government a list of all the different works or systems for which separate accounts, under Ordinary Agricultural, should, in his opinion, be kept, and for such works as may be approved by Government, he will obtain a list to be sent to the Examiner of Accounts properly classified descriptive lists of all individual works which form the component parts both of these systems, and of the eight large Irrigation schemes for which Capital and Revenue Accounts are to be maintained. These lists cannot probably be at once furnished complete, but time should be lost in furnishing all the information at present available, and in taking such steps as may be necessary to supply all deficiencies of detail, and the Chief Engineer for Irrigation will report to what extent this requirement may be met at present.

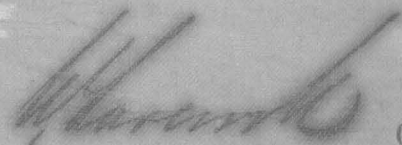
7. As this information will be of little practical use unless made readily available, the Examiner, in communication with the Chief Engineer for Irrigation, will have these lists of works printed off as soon as received, and will supply copies of them to all those who have to deal with these irrigation statistics.

8. As soon as the necessary information regarding any one system of works is complete, the Examiner, after opening Administrative Accounts for current expenditure, will at once commence on the accounts of the past in such detail as may now be found practicable. The Examiner, in communication with the Chief Engineer, will also make arrangements for securing agreement between the accounts in his own office and the registers maintained in the offices of the District Engineers for recording the expenditure on tanks and other minor Irrigation Works.

*Proceedings of the Madras Government, Public Works Department,
17th June 1876.*

9. The Examiner will now submit proposals for the establishment required for carrying out the work in connection with the Capital and Revenue Accounts of Irrigation Works.

(True Extract.)


Colonel,
Offg. Under Secy. to Govt., P.W.D.

To the Examiner of Public Works Accounts
To District Engineers.
To the Chief Engineer for Irrigation.
„ Revenue Department.

Exd. A. Grubert.

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Dated June 17th.

Issued

Recd. 10 July 1876

Encl.

G. O., 17th June 1876, No. 1,594

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Preparation of Capital and Revenue
Accounts of Irrigation Works in the Madras
Presidency.—Passing orders on the endorse-
ment of the Revenue Department transfer-
ring Proceedings of the Board of Revenue
forwarding memorandum containing the
results of the Conference held on the subject
of the —
No. 1610
communicated to the Board of Revenue. The
order referred to at the close of para 1 of this
O. will follow shortly.

11 July 1876

14 To the Board of Rev. Secy, 15 July

DEPARTMENT