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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.
B.P. No.

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Dated 28.6.1876

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Ad.

Read the following papers :—

No. 362. Proceedings of the Government of India in the Public Works Department, (Account—Irrigation,) dated Fort William, 11th January 1876, Nos. 6—7 A.—I.

Assimilation of system of Public Works Accounts in Madras and Bombay with that of the rest of India, and preparation of Capital and Revenue Accounts of Irrigation Works.

Read again the following papers :—

P. W. D. letter to Secy. to Govt. of Madras, No. 394 A.—G, dated 1st July 1875.

Do. to Secy. to Govt. of Bombay, No. 395 A.—G, dated 1st July 1875.

Despatch to Secretary of State, No. 70 P. W., dated 1st July 1875.

Read also the following despatch from the Secretary of State for India, to the Government of India, dated 11th November 1875, No. 67.

I HAVE received your Excellency's letter, No. 70, of the 1st July last, reporting that the systems of Public Works Accounts obtaining in the Madras and Bombay Presidencies have been assimilated to that in force under the Government of India. This arrangement is one of much importance in relation to the proper administration of the Public Works Department, and especially to that part of it which relates to the record of the financial results of works carried out with borrowed capital.

2. It is a matter of much satisfaction to me that these arrangements have been completed with the concurrence of the Madras and Bombay Governments.

3. The preparation of satisfactory accounts of all Irrigation Works, similar in form to those kept of the canals in the North-western Provinces and the Punjab, is manifestly very desirable, and it is, therefore, of the first importance that a correct annual statement of all Irrigation Works should be available, prepared upon one uniform system for the whole of India, and I desire that, if it be practicable, such an account should be sent to me in time for presentation to Parliament next session.

4. It can, perhaps, hardly be expected that the first returns upon any approved system submitted for Madras and Bombay should be perfect, but it is more important that the accounts should be rendered promptly and regularly, in a fairly correct manner, than that no accounts should be submitted at all. In view to this end, further prolonged discussions regarding details should be avoided. Difficulties may, no doubt, arise in particular cases, which will, perhaps, require a somewhat arbitrary treatment, as, for instance, where there is no distinction made, in assessing or collecting the land-revenue, between the shares relatively attributable to the land and the water. But it will be much better, under such circumstances, to accept at once that conclusion which seems best, after reasonable inquiry and consideration, than to prolong a discussion which, in its very nature, can only result in an approximate or arbitrary solution.

—

ORDER.—Ordered that the Despatch read be communicated to the Governments of Madras and Bombay for information and guidance, with a request that it may be stated when a report of the financial results of Irrigation Works in the forms in use in

the North-western Provinces and Punjab, made up to end of 1874-75, or, if that cannot be done, to end of 1873-74, may be expected. In order to comply with the wishes of the Secretary of State, the returns should be received in this department during next May at the latest.

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

No. 362-A. From Colonel C. H. DICKENS, R.A., Secretary to the Government of India, Public Works Department, to Major-General G. W. WALKER, R.E., Secretary to Government, Public Works Department, Irrigation Branch, Fort St. George, dated Fort William, 25th January 1876, No. 48 A.—I.

I AM directed to acknowledge the receipt of your endorsement, No. 2,960, dated 15th October last, forwarding, in advertence to my letter of the 17th September, a copy of the Proceedings of the Government of Madras on the method of making up the accounts of Irrigation Works.

2. In a recent despatch* from the Secretary of State, His Lordship has urged

* See copy of His Lordship's Despatch, No. 67, dated 11th November 1875, forwarded separately with Public Works Department Resolution, Nos. 6—7 A—I, dated 11th January 1876.

that a correct statement of the financial results of Irrigation Works should be submitted to the Home Government in time for presentation to Parliament next session.

3. The Governor-General in Council is most anxious that this should be done, and relies upon the Government of Madras to ensure that this department is furnished, by May next, with a statement of the financial results of all important Irrigation Works to end of 1874-75. The results should be drawn up in the forms and in the manner in which the annual Revenue Reports from the North-western Provinces and Punjab are prepared. And an abstract of the results should be rendered in

† Financial results of Irrigation Works in the North-western Provinces up to the close of 1872-73.

somewhat the same form as is used in the accompanying volume,† the headings being of course modified to suit the specialities of the Madras Irrigation Works.

4. The Governor-General in Council is aware that the consolidated assessment of land-revenue that prevails in the greater portion of the Madras Presidency renders it difficult to make up an immediate account of the results of the smaller Irrigation Works. But for the larger works in the Godavery and Kistna Deltas, it is not understood that there is anything to prevent the submission of returns showing the financial results in those deltas. A portion of the revenue of these districts is already levied under the name of water-rate and is shown separately in the annual Land-revenue Report of the Madras Presidency. In cases where the water-rate is not distinguished in the assessment, the necessities of the case could be met by taking the difference between the dry and the wet rates as the revenue due to the works, the amount of any further indirect revenue being left to be ascertained by future inquiry.

5. It is understood that the area of land protected by each work, and in consequence of which the wet rates of assessment are charged, are on record in the District Offices, as also the amount of total wet revenue realized from each tract. If this be

so, then there would not seem to be any real difficulty in ascertaining the direct return, and working up the amounts in a regular series of statements for present financial purposes. If in any case there was any wet revenue before the construction of the works, the proper course would probably be to deduct the difference between that revenue and the dry rates from the amount to which the work is entitled to credit.

6. It is, however, left to the Government of Madras to decide on the best way of arranging to meet the wishes of the Secretary of State for a correct account, and I am to inquire whether the Governor-General in Council may feel assured that the requirements of the Home Government will be met by the time indicated.

No. 362-B. MEMORANDUM A.

THE construction of the Godavery Anicut was completed in fasli 1256. I have examined the Jamabundy accounts for four years prior, and for all the years subsequent, to that year, and I find it impossible to estimate, even approximately, the increased revenue obtained from lands irrigated by the anicut. The irrigation extended gradually, not by taluqs, but by villages, and there are no villagewar accounts in the Board's Office. Even to go by taluqs, full particulars are not available regarding the area and classification of land as irrigated and unirrigated. The revenue was formerly raised under three different systems, known as *Izara*, *Asra*, and *Vesabadi* or rents, division of produce, and money rates. For the revenue raised under the first two ^{modes} ~~works~~, particulars regarding the extent (which, however, is not correct, as there were no measurements) and classification as wet and dry and the revenue derived from each source are ~~not~~ known; but as regards *Izara* or rented lands from which the major portion of the revenue was derived, the particulars are not available up to fasli 1263. Even after fasli 1263 full information is not available for all years up to fasli 1277. In some years lands irrigated by the Godavery channels are distinguished from those irrigated from other sources; in others they are mixed up, the remissions on dry and wet and the miscellaneous revenue are shown in a lump, and there are several other disturbing elements, such as Revenue Survey and Settlement, the effect of which it is difficult to estimate.

2. There is, however, one mode of estimating the benefits derived from the anicut in a general way. I suggest it, not as an accurate measure of the benefit, but as the only one practicable in the state of information available in the Board's Office.

3. I propose to compare the entire revenue, dry and wet, derived each year after the anicut from the Deltaic and Non-deltaic taluqs separately with the average of five years previous to the anicut, and see how the revenue progressed under each tract. Then the difference between the rate of increment in the two different tracts may be taken to be the rate at which the revenue progressed in consequence of the anicut. For instance of the total revenue of the Deltaic taluqs increased from 1,000 to 2,000 Rupees, while in the Non-deltaic it rose only from 800 to 1,000, I would credit 750 Rupees to the anicut, being the excess over the 25 per cent. increase discovered in the Non-deltaic taluqs. This mode of calculation allows for all increase from natural causes and from effects of survey and settlement, and allowance can be made for any further increase from special causes, such as increase of quit-rent on unirri-

gated lands by the Inam Settlement, reversion of Zemindaries, transfers of taluqs from one district to another, and so forth.

If this course will do, I can prepare the statement in the form given by the Government of India in the course of twenty days or a-month. Some detailed accounts for some years are not forthcoming, and I have to get copies from the districts, if on further search they are not to be found.

The total revenue derived from the Godavery district from fasli 1262 up to date is given below :—

Fasli.	Rs.
1252	17,53,802
1253	17,07,954
1254	17,69,984
1255	17,68,138
1256	18,25,827
1257	18,75,526
1258	19,31,299
1259	19,44,806
1260	19,91,485
1261	20,45,537
1262	20,67,116
1263	20,55,281
1264	20,65,723
1265	21,01,992
1266	22,25,039
1267	22,98,752
1268	24,61,398
1269	30,03,055
Taluqs yielding above 3 lakhs were transferred from Bander.	
1270	32,93,824
1271	32,35,022
1272	34,71,336
1273	35,82,285
1274	36,97,630
1275	41,67,277
1276	38,37,754
1277	39,84,649
1278	38,36,626
1279	40,97,046
1280	42,22,903
1281	40,00,086
1282	40,95,628
1283	41,74,403
1284	42,12,391

THE Kistna Anicut was completed in fasli 1265.

The numerous territorial changes that have since taken place in the district renders any calculation from the accounts in the Boards' Office impossible.

The present taluqs are composed of parts of a number of the former taluqs. For instance, the present Bapatla taluq is composed of—

1. The whole of Bapatla;
2. Part of Martur;
3. Part of Pennur;
4. Part of Prattipad;

and the Board have not details of the villages transferred from each taluq and the revenue derived from their irrigated lands prior to the anicut.

In 1870 Mr. Boswell forwarded a statement showing the following results :—

Fasli.	Revenue from Irrigated Lands.
1261	92,907
1262	97,578
1263	97,006
1264	1,08,137
1265	1,76,425
Average	
1266	1,12,411
1267	2,56,509
1268	3,05,285
1269	4,05,592
1270	4,42,720
1271	2,91,329
1272	4,77,574
1273	5,02,025
1274	6,28,566
1275	6,19,423
1276	6,74,730
1277	6,86,192
1278	7,42,675
1279	6,76,095
1279	6,99,660

Mr. Boswell states that the figures of fasli 1261 to 1264 do not include the revenue of two important taluqs, Repalli and Bapatla; so they are useless. If at all, we must adopt the figure given for fasli 1265 as the standard revenue prior to the anicut.

Even for subsequent years Mr. Boswell says the figures cannot be said to be correct up to fasli 1273, they having been in some cases estimated owing to the absence of accounts. The figure against fasli 1270 does not include the revenue of one whole taluq.* If something is necessary to be done, we must accept the

figures ^{substituting} ~~substitutively~~ for the figure of fasli 1270 that of fasli 1269.

There is also one more point to be considered. A large portion† of the revenue is derived from dry land converted into wet, and there is nothing to show whether

the dry so converted into wet was formerly paying assessment or waste brought under cultivation in consequence of the anicut. If the former, we cannot credit the land assessment to the project; whereas if it is the latter, we have to credit it to the project. The land assessment of dry lands converted into wet amounted to Rupees 2,30,000 in fasli 1279, and more than three lakhs in fasli 1277. I cannot ^{guess} ~~give~~ the amount to be credited to the project, and I think the best course under the circumstances is to ask Mr. Wilson on the spot to make a rough estimate and send it to Government.

I do not think that the plan suggested for Godavery will quite answer for the district, as the dry revenue in the Deltaic taluqs in this district is a great deal too large to admit of a fair comparison.

Vide Statement A.

(Signed) CHENTSAL RAO,
Sheristadar, Board of Revenue.

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20th May 1876.

A.

		DELTA TALUQS IN GODAVERY.	FASLI 1234.	Total.
		Revenue from Ancient Lands.	From other Lands.	
		RS.	RS.	RS.
1	Narasapur	4,44,091	1,16,878	5,60,969
2	Bhemaveram	4,08,585	23,910	4,32,495
3	Amlapur	2,75,087	2,36,708	5,11,795
4	Kotaramachendrapuram	6,28,084	1,83,790	8,11,874
5	Tanuku	3,95,395	93,424	4,88,819
6	Ellore	1,29,553	50,640	1,80,193
7	Coconada	12,796	2,775	15,571
Delta Taluqs in Kistna.				
1	Repalli	3,13,834	2,28,429	6,42,263
2	Bapatla	2,02,872	3,85,198	5,88,070
3	Gudivada	3,80,161	64,179	4,44,339
4	Bandar	29,547	98,279	1,27,826
5	Bazera	31,698	89,601	1,21,303

* Includes Godavery and Kistna—Godavery 79,642, Kistna 49,911.

No. 3,904.

FORWARDED to the Under Secretary to Government, Public Works Department,
with reference to his memorandum, dated 18th March 1876, No. 507, with a request
that they be returned after perusal.

FORT ST. GEORGE,
20th March 1876.

(Signed) H. B. GRIGG,
Acting Under Secy. to Govt.

No. 70.

OFFICIAL MEMORANDUM.

THE undersigned has the honor to transfer the undermentioned papers relating
to Irrigation Accounts to the Secretary to Government, Public Works Department—

No. 1,341. Memorandum from the Head Sheristadar, Board of Revenue, dated 1st
April 1876, on increased revenue Godavery, Coleroon, Srivaikuntham, and Palar
Irrigation Works.

No. 1,342. From Mr. Wilson on Special Duty, Irrigation Accounts, dated 28th March
1876, No. 2 on the financial results of irrigation under the Kistna Anicut Scheme.

Further memorandum from the Head Sheristadar, Board of Revenue, dated 5th April
1876, in connection with increased revenue under the Srivaikuntham Anicut.

FORT ST. GEORGE,
8th April 1876.

(Signed) D. F. CARMICHAEL,
Secy. to Govt., Rev. Dept.

No. 1,341.

MEMORANDUM.

1. Godavery Anicut. 4. Srivaikuntham Anicut.
2. Coleroon Upper Anicut. 5. Palar Anicut.
3. Do. Lower Anicut.

I BEG to submit the statements showing
the increased revenue due to irrigation under
the works noted in the margin.

GODAVERY ANICUT.—In their despatch, dated 25th January 1876, No. 4,841, the Govern-
ment of India observe, that "it is not understood that there is anything to prevent the submis-
sion of returns showing the financial results of the Godavery and Kistna Anicuts since a portion
of the revenue of these districts is already levied under the name of water-rate and is shown

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separately in the annual Land-revenue Reports." With reference to this observation, it has to
be remarked that the system of collecting a separate water-rate was not introduced throughout the
districts till the introduction of the Survey and Settlement in 1862, while the anicut was con-
structed in 1847. Prior to 1862, the revenue was raised chiefly by renting out villages, the rents
being from time to time enhanced in consideration of the increased facility for irrigation, and the
accounts, chiefly those prior to 1853, do not show how much revenue was realized from irrigated
lands and how much from unirrigated lands. For this reason, and for the several reasons given
in the memorandum of the Irrigation Conference, the revenue creditable to the Godavery Anicut
has been calculated, as directed by Government, by taking the difference between the entire
revenue (dry and wet, land-tax and water-rate) derived from the Deltaic taluqs before and after
the anicut, and deducting therefrom the natural increase estimated with reference to the progress
of revenue in the Non-deltaic taluqs. The results of this calculation are as shown below:—

Faslis.	Total increase.	Deduct increase for natural causes.	Net increase.
1	2	3	4
	RS.	RS.	RS.
1257	1,11,121	...	1,11,121
1258	1,58,473	24,402	1,34,071
1259	1,68,244	38,481	1,29,763
1260	2,01,016	98,840	1,02,176
1261	2,30,963	1,49,770	81,193
1262	2,49,916	1,65,987	83,929
1263	2,46,179	1,32,599	1,13,580
1264	2,46,171	1,75,526	70,645
1265	2,83,734	1,66,940	1,16,794
1266	4,00,728	1,88,881	2,11,847
1267	4,73,134	1,87,927	2,85,207
1268	6,14,833	2,64,244	3,50,589
1269	7,83,772	3,65,643	4,18,129
1270	10,12,450	5,35,604	4,76,846
1271	9,62,873	4,87,723	4,75,150
1272	11,94,181	5,21,128	6,73,053
1273	12,89,125	5,71,237	7,17,888
1274	14,20,655	5,23,355	8,97,300
1275	18,43,010	6,87,043	11,55,967
1276	15,56,950	5,32,263	10,24,687
1277	16,70,591	5,58,988	11,11,603
1278	15,52,807	4,56,544	10,96,263
1279	17,80,564	5,32,263	12,48,301
1280	18,96,992	5,46,739	13,50,253
1281	17,11,289	4,33,160	12,78,129
1282	17,77,747	5,48,965	12,28,782
1283	18,59,596	4,88,640	13,70,956
1284	18,61,080	5,85,712	12,75,368
Total ...	2,75,58,194	99,68,604	1,75,89,590

I am not quite sure whether it is fair to deduct the sum above shown in column 3 as
increase due to natural causes. To me the sum appears rather large considering that most of
the lands in Godavery Delta were unfit for dry cultivation, and that it is impossible for wet
revenue, which must depend upon water, to rise in the same proportion in which the dry revenue
has increased. I think that it would be fair to deduct from the increased revenue only half the
amount calculated as natural increase, and credit the whole remainder to the project. I have
followed this course in the statement herewith sent. If this plan is not approved, the above
figures may be adopted.

The anicut was completed in fasli 1256. I have taken the average of five years previous
to the anicut as the standard revenue. It is true that the irrigation had been slightly improved
even before the date of the completion of the anicut, but there is not much difference in the

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total revenue of the district during the five years preceding the completion of the anicut, and the years previous to that period, as will be seen from the following figures :—

Faslis.	RS.
1247	17,85,000
1248	17,38,000
1249	17,75,000
1250	17,41,000
1251	17,63,000
1252	17,53,000
1253	17,07,000
1254	17,69,000
1255	17,68,000
1256	18,25,000

The increase in the last three years was owing to the reversion of Zemindaries, for which I have made due allowance in the calculation.

COLEROON UPPER ANICUT.—More information is available for this work than for the Godavery Anicut. The revenue derived from irrigated lands both before and after the anicut is known, but the figures given in the accounts require modification with reference to the administrative changes since introduced, such as the abolition of the Oolungoo system and assignment of lands to Pagodas in lieu of ready-money allowance, which have contributed to the fluctuation of revenue. I have made allowance for these disturbing causes as far as possible. I say as far as possible, because I am not in possession of complete information and was therefore obliged to estimate in some cases the revenue due to each cause.

In calculating the increased revenue, I have taken into account the gain by price under the Oolungoo system only on lands newly brought under irrigation, but not that on lands cultivated before the anicut, as it would have resulted under any circumstances whether the anicut existed or not.

I believe that the anicut has also in some measure benefited the lands in Trichinopoly, but the area influenced by it is small, and there is no account to show the increase of revenue, which however must be slight. For this and the following works I have made no allowance for increase due to natural causes. I tried to obtain some data by ascertaining the increase in the taluqs unaffected by the anicut, but was unable to draw any correct inference owing to the various administrative changes that have taken place.

LOWER ANICUT.—This anicut supplies irrigation to South Arcot and Tanjore. I have taken the revenue in both the districts into account.

SRIVAİKUNTHAM AND PALAR ANICUT.—These are small works and call for no remark.

In this Presidency the collections from irrigated lands are not distinguished from those of unirrigated lands. I have, therefore, calculated the profit with reference to the demand, but deducted from it, except in the case of the two small works of Palar and Srivaikuntham in which the entire demand may be considered to have been collected, a certain amount as balance uncollected, the same being estimated with reference to the entire demand of the district, including assessment on dry lands, the actual collections and the amounts remitted; so that the amount shown as profit may be regarded as money actually brought into the Government treasury.

The results of the above calculations are as shown below :—

	Annual Increase according to the results in the latest year.	Increased Revenue obtained up to date.
Godavery Anicut	15,68,224	* b 2,25,73,892
Coleroon Upper Anicut	7,27,222	* a 1,49,11,202
Lower Anicut	3,15,444	* a 69,01,017
Srivaikuntham Anicut	37,504	61,638
	Stated to be necessary.	
Palar Anicut	1,06,866	* b 13,37,740

* b Up to fasli 1284.

* a Up to fasli 1283.

1st April 1876.

(Signed) B. CHENTSAL RAO,
Sheristadar, Board of Revenue.

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20th May 1876.

A-A.

Statement showing the increased Revenue obtained from the undermentioned Works—

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
1	2	3	4	5
		RS.	RS.	ACRES.
	1257	1,11,121	1,11,121	Correct area not known.
	1258	1,46,272	2,57,393	
	1259	1,49,003	4,06,396	
	1260	1,51,596	5,57,992	
	1261	1,56,078	7,14,070	
	1262	1,66,923	8,80,993	
	1263	1,79,879	10,60,872	
	1264	1,58,408	12,19,280	
	1265	2,00,264	14,19,544	
	1266	3,06,288	17,25,832	
	1267	3,79,170	21,05,002	
	1268	4,82,711	25,87,713	
	1269	6,00,951	31,88,664	
	1270	7,41,648	39,33,312	
Godavery Anicut.	1271	7,19,012	46,52,324	
	1272	9,33,617	55,85,941	
	1273	10,03,506	65,89,447	
	1274	11,58,978	77,48,425	
	1275	14,99,489	92,47,914	
	1276	12,90,818	1,05,38,732	
	1277	13,91,097	1,19,29,829	
	1278	13,24,535	1,32,54,364	
	1279	15,14,433	1,47,68,797	514,650
	1280	16,23,622	1,63,92,419	
	1281	14,94,709	1,78,87,128	
	1282	15,03,264	1,93,90,392	
	1283	16,15,276	2,10,05,668	
	1284	15,68,224	2,25,73,892	513,143

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Statement showing the increased Revenue obtained from the undermentioned Works—

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
1	2	3	4	5
		RS.	RS.	ACRES.
Tanjore Upper Anicut.	1247	1,79,491	1,79,491	668,386
	1248	2,43,420	4,22,911	670,661
	1249	2,64,130	6,87,041	677,524
	1250	2,15,347	9,02,388	678,893
	1251	1,72,089	10,74,477	689,476
	1252	2,23,367	12,97,844	686,680
	1253	2,50,042	15,47,886	687,751
	1254	3,02,308	18,50,194	686,938
	1255	4,65,519	23,15,713	697,160
	1256	5,09,427	28,25,140	704,591
	1257	3,77,671	32,02,811	703,546
	1258	3,60,271	35,63,082	710,244
	1259	3,99,462	39,62,544	712,260
	1260	4,09,504	43,72,048	710,204
	1261	3,98,809	47,70,857	714,622
	1262	2,39,941	50,10,798	711,811
	1263	1,70,838	51,81,636	631,831
	1264	4,79,839	56,61,475	711,408
	1265	3,60,144	60,21,619	703,877
	1266	3,72,598	63,94,217	709,305
	1267	2,88,093	66,82,310	689,533
	1268	1,33,759	68,16,069	673,560
	1269	3,55,872	71,71,941	728,270
	1270	2,43,089	74,15,030	733,779
	1271	3,00,143	77,15,173	750,418
	1272	4,02,654	81,17,827	766,753
	1273	4,19,902	85,37,729	741,773
	1274	5,19,324	90,57,053	734,278
	1275	4,34,219	94,91,272	714,979
	1276	5,57,562	1,00,48,834	741,454
	1277	6,36,720	1,06,85,554	748,124
	1278	6,60,275	1,13,45,829	753,903
	1279	6,93,299	1,20,39,128	762,936
	1280	7,07,049	1,27,46,177	768,974
	1281	7,03,451	1,34,49,628	769,409
	1282	7,34,352	1,41,83,980	773,217
	1283	7,27,222	1,49,11,202	767,685

Statement showing the increased Revenue obtained from the undermentioned Works—

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
1	2	3	4	5
		RS.	RS.	ACRES.
Lower Coleroon Anicut.	1248	1,26,744	1,26,744	59,043
	1249	1,39,102	2,65,846	60,243
	1250	1,33,020	3,98,866	59,751
	1251	76,660	4,75,526	52,940
	1252	34,991	5,10,517	47,609
	1253	67,748	5,78,265	51,232
	1254	91,401	6,69,666	53,366

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Statement showing the increased Revenue obtained from the undermentioned Works—

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
1	2	3	4	5
		RS.	RS.	ACRES.
Lower Coleroon Anicut.	1255	1,17,792	7,87,458	56,812
	1256	1,79,713	9,67,171	64,035
	1257	1,69,695	11,36,866	62,567
	1258	1,04,742	12,41,608	55,550
	1259	64,088	13,05,696	51,634
	1260	1,41,338	14,47,034	60,487
	1261	1,53,788	16,00,822	61,296
	1262	1,34,513	17,35,335	59,145
	1263	54,593	17,89,928	54,997
	1264	1,25,556	19,15,484	67,184
	1265	1,24,688	20,40,172	67,064
	1266	1,59,917	22,00,089	71,940
	1267	1,60,529	23,60,618	72,189
	1268	1,54,215	25,14,833	70,494
	1269	1,69,838	26,84,671	73,539
	1270	2,12,026	28,96,697	79,509
	1271	2,98,013	31,94,710	102,567
	1272	3,00,167	34,94,877	103,638
	1273	2,98,587	37,93,464	102,147
	1274	3,02,650	40,96,114	102,846
	1275	3,17,339	44,13,453	105,690
	1276	3,05,473	47,18,926	104,765
	1277	3,06,716	50,25,642	104,915
	1278	3,12,391	53,38,033	105,008
	1279	3,08,373	56,46,406	105,286
	1280	3,10,551	59,56,957	104,360
	1281	3,12,484	62,69,441	105,243
	1282	3,16,132	65,85,573	108,393
	1283	3,15,444	69,01,017	108,631

Statement showing the increased Revenue obtained from the undermentioned Works—

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
		RS.	RS.	ACRES.
Srivaikuntham Anicut.	1281	16,321	16,321	21,222
	1282	—15,327	994	17,183
	1283	23,140	24,134	22,648
	1284	37,504	61,638	26,255

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20th May 1876.

Statement showing the increased Revenue obtained from the undermentioned Works in the District
of North Arcot.

Name of Work.	Fasli.	Increased Revenue during the year.	Increased Revenue up to the year.	Total Area irrigated.
		RS.	RS.	ACRES.
Palar Anicut.	1266	76,454	74,454	24,006
	1267	38,049	1,14,503	21,532
	1268	60,263	1,74,766	25,071
	1269	62,180	2,36,946	26,143
	1270	63,128	3,00,074	24,557
	1271	59,994	3,60,068	24,103
	1272	68,677	4,28,745	26,164
	1273	70,452	4,99,197	27,132
	1274	80,706	5,79,903	27,941
	1275	83,075	6,62,978	34,326
	1276	88,441	7,51,419	30,298
	1277	47,388	7,98,807	22,728
	1278	64,486	8,63,293	26,349
	1279	68,454	9,31,747	27,671
	1280	97,968	10,29,715	31,902
	1281	96,914	11,26,629	31,964
	1282	21,022	11,47,651	18,431
	1283	83,223	12,30,874	33,809
	1284	1,06,866	13,37,740	37,672

MEMORANDUM.

In continuation of my memorandum on the Irrigation Registers, I beg to state that in calculating the increased revenue under the Srivaikuntham Anicut, I have only shown the actual increase, but not included in it the saving of the estimated amount of reduction (Rupees 20,000) in the old assessment which it is stated would have been necessary to make but for the anicut. I have not taken the amount into account, because the increase is not real, and the Government also did not take it into calculation, but simply made the following observation in their Order dated 19th July 1875, No. 1,085:—

"It seems probable that but for the anicut it would have been necessary to make a considerable reduction in the settlement of these lands, the former rates having been abnormally high with reference to the quality of irrigation available. The Special Agent who conducted the settlement estimates the saving in reduction at Rupees 20,000, and, though this has not been brought into calculation given above, it is a feature in the case which must not be lost sight of."

If this amount is to be taken into account, which I think it should not be, the figures given by me for fasli 1284, when the settlement was introduced, will have to be altered as shown below, and intimation of the same given to the Controller of Public Works Accounts, as the corrected figures I gave him yesterday do not include this amount of Rupees 20,000:—

Revenue during the year	...	...	For 37,504	Read 57,504
Do. up to the year	...	...	61,638	81,638

5th April 1876.

(Signed) B. CHENTSAL RAO,
Sheristadar, Board of Revenue.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

From W. WILSON, Esq., on Special Duty, Irrigation Accounts, to the Honorable D. F. CARMICHAEL, Chief Secretary to Government, Fort St. George, dated Masulipatam, 28th March 1876, No. 2.

I HAVE the honor, in reply to your demi-official dated 2nd current, to enclose a memorandum with statements appended of the financial results of irrigation under the Kistna Anicut Scheme.

2. The printed enclosures of your letter are returned as requested.

MEMORANDUM.

THE anicut which dams the Kistna between the hills of Bezvada on its left bank and Seetanagaram on its right was begun on the 1st May 1852, and was finished on the 31st March 1856.

Its length is 1,115 yards and its crown is 20 feet above the level of the river bed.

From it spring two systems of canals, the one irrigating the Eastern Delta on the left bank of the river, the other the Western Delta on the right.

In the Eastern Delta are comprised the Government taluqs of Bunder and Gudivada, and part of the taluq of Bezvada, and parts of the Zemindaries of Nuzeed, Vulloor, Goodoor and Devaracottah.

The Western Delta consists of the two Government taluqs of Repally and Bapatla.

The Eastern Delta is irrigated from four main canals—

- (1.) Bunder,
- (2.) Ellore,
- (3.) Eyves',
- (4.) Pullairoo,

with their subsidiary branches and minor distributaries.

In the Western Delta there are three main canals—

- (1.) Western Bank,
- (2.) Nizampatam,
- (3.) Commamore,

with subsidiary branches and distributaries.

Of the main canals the Ellore and Bunder in the Eastern Delta and the Nizampatam and Commamore in the Western Delta are also extensively used for navigation. The Ellore canal connects the Kistna system of canals with that of the Godavery.

To prevent misconception it may be as well at once to mention that the term "main canal" as used with reference to the Kistna project bears a signification entirely different from the same term as used in the reports of the financial results of irrigation in the North-Western Provinces. In those reports a "main canal" is a short term for a complete project; what are called main canals in the Madras Presidency are simply subsidiary parts of a project. In the statements appended to this memorandum, therefore, the charges, revenue, &c., are not shown for canals; but for the Kistna project as a whole irrigation under the anicut dates from the year 1855-56, when an area of acres 2,449 assessed at Rupees 4,235, and lying partly in the Eastern and partly in the Western Delta, was irrigated.

In the year 1874-75, that is twenty years afterwards, the area of Government land irrigated under the Kistna channel system was acres 226,226, and the revenue, including water-cess, levied on Zemindaries and Inams, &c., credited to the anicut, was Rupees 8,80,314.

It may be objected that a large part of this, viz., the portion which represents the land assessment of occupied dry lands converted into wet under the influence of the channels, ought not properly to be credited to the anicut. This is undoubtedly plausible and may be true, but owing, in the first place, to the revenue system prevailing in the district up till the introduction of the revised settlements of 1866-67 and 1873-74, and, in the second place, to the system of account in use throughout this Presidency, whereby assessment on irrigated land is shown in a consolidated form without distinguishing the amount due to land assessment and that due to water-rate, it is quite impossible to attempt for the purposes of this report, which, owing to the limited time (about three weeks) allowed for its preparation, has no pretension to strict accuracy, and, as will presently appear, is so far as the figures for charges are concerned defective, and based largely on estimate to eliminate from the revenue credited to the anicut the amount of the land assessment of occupied dry lands converted into wet. When, however, it is considered that in the taluqs of the Eastern Delta there prevailed from the first beginning of anicut irrigation till the year 1866-67 the system of joint rents under which the Government demand was fixed with reference to the supposed resources of the village as a whole, the distribution being left to the ryots themselves; that, while under this system irrigation rapidly extended, the consolidated wet assessment of many thousands of acres was actually less than the

* Vide Appendix E.

charge* for water alone prescribed by rules which, except in the case of Zemindaries and Inams, were never enforced till the introduction of the new settlement; and that similarly in the taluqs of the Western Delta, where for the most part a system of consolidated wet assessment was allowed to continue till the introduction of the revised settlement of 1873-74, the consolidated assessment of much land was less than the charge for water alone; it may be questioned whether the land assessment of occupied dry lands which, from the necessity of the case, has been, in the accompanying statements credited to the project, may not on strict inquiry be found to be actually less than the amount which, had the prescribed water-rate been collected in full from the first conversion of the lands, would have been credited as properly due to the anicut. Water supplied under such conditions from the anicut scheme to lands held in joint rent or on consolidated assessment, and notably in the case of the former, had the effect of rapidly and enormously extending irrigation. If the terms had been harder the area irrigated would have been less extensive though the return might not have been less.

REVENUE.—With this promise I have to observe that irrigated land-revenue is in the Kistna Delta derived from the following sources:—

- (1.) Usual wet land.
- (2.) Dry land converted into wet.
- (3.) Dry crops watered.
- (4.) Ghattoo-toomoolu commuted.

N.B.—Ghattoo-toomoolu was a charge of 5 per cent. in kind on the gross produce of irrigated Inams in the Western Delta for the repairs of tanks; it was commuted in 1847 to a charge of one rupee an acre.

Of these, the figures for the third and fourth represent the charge for water only.

In the second (except in Zemindaries and Inams where the figures represent the charge for water only), as has already been stated, the land assessment and water-rate have been so blended and mixed up in the accounts prior to the introduction of the new settlements that it would be a hopeless task to attempt to separate them, at least for the purposes of this report. From the introduction of the new settlements the amount credited under this head to the anicut scheme is on account of water-rate only.

In the case of the first—"usual wet"—the assessment was till the new settlement consolidated.

By the term "usual wet" is meant not merely those lands which were irrigated prior to the anicut scheme, and the former sources of supply of which have been merely replaced thereby, but all lands which under the rules of Revenue Administration have been in the course of years subsequent to the anicut permanently classed as "wet."

To determine the amount of the assessment of "usual wet" and of "dry converted into wet" which should be credited to the anicut, the following rough method of approximation has been adopted.

The average "wet" revenue of each of the taluqs affected by the anicut scheme for five years prior to the introduction of anicut irrigation is taken as the standard wet revenue of the taluq. The difference between this and the "wet" revenue of each succeeding year is credited or debited as the case may be to the anicut. The influence of the new settlements of 1866-67 and 1873-74 is also allowed for in this manner; the former affected the Eastern Delta, and resulted in an increase of 79.6 per cent. on the irrigated land-revenue of the Delta taluqs. In the Upland taluqs affected by the same settlement the increase was 17.7 per cent.

The difference between these or 61.9 per cent. is credited to the anicut.

In addition to the standard revenue, therefore, there has been deducted in the Eastern Delta as a correction for the influence of the new settlement $\frac{17.7}{179.6}$ or 10 per cent. from the total irrigated land-revenue.

In the Western Delta, on the other hand, the new settlement of 1873-74 increased the irrigated land-revenue by 13.4 per cent., but diminished that of the Upland taluqs affected by it by 14.7 per cent. The difference between these or 28.1 per cent. is attributed to the anicut, and $\frac{14.7}{113.4}$ or 12 per cent. is deducted from the standard revenue.

From the foregoing considerations it will be manifest that, though the forms adopted for the financial results of irrigation in the North-Western Provinces may be followed in the main, it is impossible in the case of the Kistna project so far to make any distinction between "direct income by water-rates" and "increased land-revenue due to irrigation." The total irrigated land-revenue is therefore shown in a single column.

Further, in tabulating the particulars of receipts from the scheme, it is impossible to follow the form adopted for the North-Western Provinces so far as the heading "water-rates" and its sub-divisions are concerned.

The necessity of the case compels us to alter for the Kistna scheme the heading "water-rates" to "irrigated land-revenue."

The sub-heads are recorded as in the North-Western Provinces, but all columns except the "total" are left blank, because in the first place there is absolutely no method of determining what amount of the arrears due* on a taluq, village, or individual at the end of any year is on account of irrigated land-revenue as distinguished from dry, and in the next for all practical purposes the actual receipts of the year may be taken as equivalent to the demand, that is, to the assessment, exclusive of remission; to fill up all the columns would therefore be to repeat the same figures three times over.

CAPITAL CHARGES.—For the purpose of determining the amount chargeable to the capital account, I have in the absence of information from the Controller of Department of Public Works,

* There is no such difficulty in the North-Western Provinces schemes where the water-rates are assessed and collected by the Canal Officers, that is, by the Public Works Department, not by the Revenue Department; and where the water-rate has been always kept distinct and apart from the land assessment. In this Presidency, on the other hand, collections are made faslywar, that is, for the revenue years to which the items belong, but without distinguishing between the sums paid on account of wet and dry.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

who has informed me that he cannot now supply it and cannot tell when he will be able to do so

21st Jan. 1869, No. 193, Public Works Department.
20th Feb. 1874, " 418, " "
21st Aug. 1874, " 3,365, " "
3rd July 1875, " 1,868, " "

but from whom it must of course be ultimately obtained, taken the figures entered in the returns of expenditure on the scheme embodied in the Government Orders noted in the margin.

The expenditure is therein classified and distributed between "Original" and "Repairs." Though some of these "Original" works would, under the rule that all works the cost of which was not over 2,500 Rupees should be charged to "Repairs," perhaps be found on examination to be properly chargeable to that head, I have in consideration of the fact that "Original" charges under Rupees 2,500 may be merely part expenditure of larger estimates, and because there is no way of ascertaining whether these items are properly chargeable to "Capital" as part of an "Original" work or to "Revenue" as a "Repair," except by a detailed examination of estimates for which there is no time, and which is purely matter of control, I thought it best to charge them all to "Capital."

I have been unable to ascertain either from the Controller of Public Works Accounts or from the Superintending Engineer what amounts are chargeable since the year 1867-68 to "Ordinary" and "Extraordinary", respectively.

The charges for that and the subsequent years appear therefore in a single bracketed sum entered in the "Total" column.

In the absence of all information from the Controller as to the distribution and adjustment of charges for working expenses, I have, on the principle adopted in estimates, charged* 25 per cent. for Public Works Department establishments and 8 per cent. for tools and plant on and in addition to the expenditure; for Revenue establishments I have charged 4½ per cent. (a rate deduced from a tablet appended to this memorandum) on the collections.

* Appendix F.

CHARGES FOR INTEREST.—The charge for interest has been calculated on the following principle. The amount was about four years under construction; the total sum expended upon it is taken as having been borrowed on the first day that the works were commenced, and interest thereon calculated at 4½ per cent. for four years. Similarly for each succeeding year the expenditure during the year is supposed to be of a sum borrowed on the first day of the year.

In charging interest on expenditure incurred from "ordinary" revenue the rule of the North-Western Provinces, to which I am instructed to adhere as far as possible, has been followed, though it is necessarily a fanciful charge when it is considered that no interest was ever paid or ever due upon the capital upon which it is charged.

That capital was merely saved income invested in what was supposed to be a profitable undertaking. What possible advantage is to be obtained from making a charge which never was charged, or from comparing it with the net revenue, that is with the actual interest derived from the investment of the capital, is not apparent.

The reason for showing the charge for interest against the revenue derived from "Extraordinary" expenditure, that is from the expenditure of borrowed money, is obvious enough, but I have not been able to see any reason for making such a charge against the return from "Ordinary" expenditure.

FINANCIAL RESULTS.—Taking the figures entered in the accompanying statements as a fairly approximate estimate of actual expenditure upon and return from the works, we have a capital charge of Rupees 48,96,241 incurred in twenty-three years, that is up to the end of 1874-75, and a net revenue of Rupees 63,74,121, or 130 per cent., returned in twenty years.

MASULIPATAM,
28th March 1876,

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

APPENDIX A.
General Abstract of Financial Results of the Kistna Anicut.

Years.	CAPITAL OUTLAY.				REVENUE.				WORKING EXPENSES.		NET REVENUE.			
	DURING THE YEAR.		TO END OF YEAR.		DURING THE YEAR.		TO END OF YEAR.		During the year.		DURING THE YEAR.		TO END OF YEAR.	
	Ordinary.	Extraordinary.	Total.	Ordinary.	Extraordinary.	Total.	Direct Income by Water-rates and Miscellaneous Receipts.	Increased Land Revenue due to Irrigation Works.	Total.	During the year.	Direct Income.	Increased Land Revenue.	Total.	TO END OF YEAR.
1874-75...	1,69,335	48,96,241	50,65,576	1,69,335	48,96,241	50,65,576	8,90,758	8,90,758	93,02,598	2,65,756	29,23,477	6,23,997	63,74,121	...
1875-76...	1,63,740	47,26,906	48,90,646	1,63,740	47,26,906	48,90,646	8,46,211	8,46,211	84,11,845	2,55,089	28,61,721	5,91,142	57,50,124	...
1876-77...	1,29,610	45,76,166	47,05,776	1,29,610	45,76,166	47,05,776	7,31,142	7,31,142	75,68,634	1,76,388	24,06,652	5,64,754	51,58,982	...
1877-78...	1,44,468	44,46,656	45,91,124	1,44,468	44,46,656	45,91,124	6,76,789	6,76,789	68,24,432	1,41,857	22,30,264	5,34,932	45,94,238	...
1878-79...	1,29,793	43,03,168	44,32,961	1,29,793	43,03,168	44,32,961	6,48,059	6,48,059	61,47,703	1,32,370	20,88,407	5,15,689	40,59,296	...
1879-80...	1,88,521	41,72,870	43,61,391	1,88,521	41,72,870	43,61,391	6,14,505	6,14,505	54,99,644	1,62,940	19,56,037	4,61,565	35,43,607	...
1880-81...	2,66,675	39,89,849	42,56,524	2,66,675	39,89,849	42,56,524	5,42,343	5,42,343	48,85,139	1,22,130	18,03,937	4,20,238	30,82,042	...
1881-82...	2,99,236	36,97,174	39,96,410	2,99,236	36,97,174	39,96,410	6,14,129	6,14,129	43,42,786	1,07,959	16,80,977	5,06,170	26,81,819	...
1882-83...	1,89,615	33,97,938	35,87,553	1,89,615	33,97,938	35,87,553	5,44,580	5,44,580	37,23,667	1,35,247	15,73,018	4,10,333	21,55,649	...
1883-84...	1,33,300	32,68,323	34,01,623	1,33,300	32,68,323	34,01,623	5,44,580	5,44,580	31,74,057	1,79,632	14,37,771	3,86,137	17,36,816	...
1884-85...	2,10,769	31,86,023	33,96,792	2,10,769	31,86,023	33,96,792	4,91,439	4,91,439	28,29,268	2,15,864	12,58,089	2,75,565	13,71,179	...
1885-86...	2,75,896	29,24,254	32,00,150	2,75,896	29,24,254	32,00,150	4,79,355	4,79,355	26,89,268	1,61,735	10,42,925	3,17,620	10,95,614	...
1886-87...	2,99,306	26,48,355	29,47,661	2,99,306	26,48,355	29,47,661	3,32,132	3,32,132	16,68,444	1,20,633	8,80,400	2,11,610	7,77,994	...
1887-88...	1,74,997	23,49,052	25,24,049	1,74,997	23,49,052	25,24,049	2,96,435	2,96,435	13,26,346	1,37,242	7,59,862	1,72,081	3,60,884	...
1888-89...	1,64,144	21,74,055	23,38,199	1,64,144	21,74,055	23,38,199	2,66,435	2,66,435	10,17,032	1,14,375	6,32,619	1,52,060	3,94,403	...
1889-90...	1,12,852	20,09,911	21,22,763	1,12,852	20,09,911	21,22,763	2,79,030	2,79,030	7,50,557	1,09,416	5,08,344	1,69,614	2,42,343	...
1890-91...	89,424	18,97,059	19,86,483	89,424	18,97,059	19,86,483	2,19,219	2,19,219	4,71,557	1,12,739	3,93,838	1,06,480	7,79,229	...
1891-92...	1,33,755	18,07,635	19,41,390	1,33,755	18,07,635	19,41,390	1,88,823	1,88,823	2,52,388	1,00,599	2,86,089	38,224	33,751	...
1892-93...	3,98,537	16,73,890	20,72,427	3,98,537	16,73,890	20,72,427	97,310	97,310	1,13,515	1,89,513	1,56,490	42,203	71,975	...
1893-94...	12,50,343	12,50,343	25,00,686	12,50,343	12,50,343	25,00,686	16,205	16,205	1,16,205	45,977	45,977	29,773	29,773	...
From 1862 to 1855-56.														

General Abstract of Financial Results of the Kistna Anicut.—(Concluded.)

Years.	CHARGES FOR INTEREST.				DIFFERENCE BETWEEN NET REVENUE AND CHARGES FOR INTEREST.		AREA OF LAND IRRIGATED DURING YEAR.			Irrigating capacity of Canal at the end of each year.	Cost of working expenses per acre of land irrigated.	LENGTH OF CANAL OPENED AT END OF EACH YEAR.		Distributaries opened at the end of Year.			
	DURING THE YEAR.		TO END OF YEAR.		During the year.	To end of year.	ACRES.	ACRES.	ACRES.			Main Canals.	Main branches.				
	Ordinary.	Extraordinary.	Total.	Ordinary.											Extraordinary.	Total.	
					RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	MILES.			MILES.
1874-75...	1,40,165	...	2,20,331	...	4,03,666	33,62,624	12.74	2,26,236	...	...	1.18	269	241	467	...		
1875-76...	1,47,074	...	2,12,711	...	3,78,431	29,58,958	12.50	1,99,017	...	...	1.28	269	241	467	...		
1876-77...	1,41,076	...	2,05,792	...	3,68,963	25,80,527	12.34	2,15,074	...	...	.82	269	241	447	...		
1877-78...	1,31,591	...	2,00,100	...	3,34,832	22,21,565	12.02	2,03,299	...	...	.69	269	241	447	...		
1878-79...	1,19,176	...	1,870,71...	...	3,22,091	18,86,733	11.98	1,99,187	...	...	.66	269	241	446	...		
1879-80...	...	...	1,869,70...	...	2,73,808	15,64,642	11.06	1,88,112	...	...	.81	...	...	...	...		
1880-81...	...	...	1,868,69...	...	2,40,950	12,90,884	10.54	1,72,999	...	...	.70	...	...	...	...		
1881-82...	...	...	1,79,273	...	3,39,797	10,49,884	12.69	1,80,269	...	...	.60	...	...	...	...		
1882-83...	...	...	1,66,373	...	2,79,168	7,10,087	12.33	1,80,762	...	...	.75	...	...	...	...		
1883-84...	...	...	1,47,074	...	2,18,063	4,30,919	11.17	2,04,665	...	...	.88	...	...	...	...		
1884-85...	...	...	1,41,076	...	1,84,489	2,12,856	8.79	1,93,888	...	...	1.03	...	...	...	...		
1885-86...	...	...	1,31,591	...	1,86,029	78,367	10.86	2,07,570	...	...	.77	...	...	...	...		
1886-87...	...	...	1,19,176	...	92,334	1,07,662	7.98	1,68,939	...	...	.71	...	...	...	...		
1887-88...	...	...	1,05,707	...	66,374	1,99,896	7.32	1,55,967	...	...	.87	...	...	...	...		
1888-89...	...	...	97,832	...	54,228	2,66,370	7.00	1,09,840	...	...	1.04	...	...	...	...		
1889-90...	...	...	90,446	...	79,168	3,20,538	8.40	1,15,517	...	...	.94	...	...	...	...		
1890-91...	...	...	85,368	...	21,112	3,99,766	5.61	1,15,616	...	...	.97	...	...	...	...		
1891-92...	...	...	81,343	...	43,119	4,20,878	2.11	93,478	...	...	1.03	...	...	...	...		
1892-93...	...	...	75,324	...	1,17,527	3,77,759	2.51	78,057	...	...	1.79	...	...	...	...		
From 1852 to 1855-56.	2,30,460	...	2,30,460	...	2,60,232	2,60,232	3.32	...	...	...	...	...	...	...	...		

* For eleven months, from 1st May 1866 to 31st March 1867, the term of official year was changed from 1867-68.

† These seasons differ from those of this part which are three:—Poonasa, Pedda, and Paira; it is quite impossible, however, to ascertain from our accounts the extent irrigated in these respectively.

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Abstract of charges against the Capital Account of the Kistna Anicut.

Years.	DURING THE YEAR.					TO END OF YEAR.				
	Works.	Establishment.	Plant.	Profit and Loss.	Expense.	Capitalization of abatement of revenue from Land taken up for Canals.	Less receipts on Capital Account.	Total charge.	Profit and Loss.	Expense.
1874-75	RS. 1,27,365	RS. 31,841	RS. 10,189	RS. ...	RS. ...	RS. ...	RS. 60	RS. 1,69,335	RS. ...	RS. ...
1875-76	1,15,594	28,898	9,248	...	...	...	...	1,53,740	...	...
1876-77	95,164	23,791	7,613	...	...	...	...	1,26,510	...	...
1877-78	1,08,638	27,159	8,691	...	...	...	...	1,44,488	...	...
1878-79	97,593	24,398	7,807	...	...	...	...	1,29,798	...	...
1879-80	1,41,745	35,436	11,340	...	...	...	...	1,88,521	...	...
1880-81	2,15,545	53,886	17,244	...	...	...	...	2,86,675	...	...
1881-82	2,24,990	56,247	17,999	...	...	...	...	2,99,236	...	...
1882-83	97,455	24,361	7,796	...	...	...	...	1,29,615	...	...
1883-84	1,00,226	25,056	8,018	...	...	...	...	1,33,300	...	...
1884-85	1,58,473	39,618	12,678	...	...	...	...	2,07,699	...	...
1885-86	2,07,441	51,860	16,595	...	...	...	...	2,75,896	...	...
1886-87	2,25,042	56,261	18,003	...	...	...	...	2,99,306	...	...
1887-88	1,31,577	32,894	10,526	...	...	...	...	1,74,997	...	...
1888-89	1,23,417	30,854	9,873	...	...	...	...	1,64,144	...	...
1889-90	84,851	21,213	6,788	...	...	...	...	1,12,852	...	...
1890-91	67,237	16,809	5,378	...	...	...	...	89,424	...	...
1891-92	1,00,568	25,142	8,045	...	...	...	...	1,33,755	...	...
1892-93	2,95,893	73,973	23,671	...	...	...	...	3,93,537	...	...
From 1852 to 1855-56.	9,59,971	1,68,372	1,52,000	...	...	...	...	12,80,343	...	...

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

APPENDIX C.
Particulars of Receipts from the Kistna Anicut.

Years.	WATER RATES AND REVENUE DUE TO IRRIGATION OR IRRIGATED LAND REVENUE.					Navigation receipts.	Mill rents or Water power.	Revenue from Canal planta- tions and Grass Rents.	Water-supply to Masul- patam Mani- cipality.	Fines.	Miscel- laneous.	Any other Special receipts.	Asses- ment of year.	Actual Re- ceipts during year.	TOTAL.
	Unrealized balances at the end of last year.	Assess- ment during Current year.	Total.	Actual receipts of the year.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1874-75	...	RS.	RS.	RS. 8,80,314	RS. 6,673	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	8,90,753	RS.
1875-76	...	...	...	8,28,782	8,663	...	1,794	1,364	...	...	157	451	...	8,46,211	...
1876-77	...	...	...	7,20,415	9,746	...	6,614	1,364	...	...	788	...	...	7,41,142	...
1877-78	...	...	...	6,60,711	7,565	...	8,193	1,364	...	1,424	...	...	...	6,76,789	...
1878-79	...	...	...	6,33,875	8,043	...	5,638	1,364	...	1,109	...	...	...	6,48,089	...
1879-80	...	...	...	6,00,914	7,700	...	4,777	1,364	...	...	...	...	...	6,14,605	...
1880-81	...	...	...	5,32,974	6,723	...	4,527	1,364	...	...	...	...	...	5,42,343	...
1881-82	...	...	...	6,01,117	8,220	...	2,646	...	...	...	...	...	...	6,14,129	...
1882-83	...	...	...	5,43,151	6,662	...	4,792	...	...	...	...	...	...	5,54,580	...
1883-84	...	...	...	5,34,979	6,743	...	4,767	...	...	...	...	...	...	5,44,819	...
1884-85	...	...	...	4,83,563	5,378	...	3,097	...	...	...	...	...	...	4,91,429	...
1885-86	...	...	...	4,73,194	5,341	...	2,488	...	...	...	...	...	...	4,79,355	...
1886-87	...	...	...	3,32,138	...	...	820	...	...	...	...	...	...	3,32,138	...
1887-88	...	...	...	3,09,324	...	...	...	...	...	...	...	...	...	3,09,324	...
1888-89	...	...	...	2,66,435	...	...	...	...	...	...	...	...	...	2,66,435	...
1889-90	...	...	...	2,79,030	...	...	...	...	...	...	...	...	...	2,79,030	...
1890-91	...	...	...	2,19,219	...	...	...	...	...	...	...	...	...	2,19,219	...
1891-92	...	...	...	1,38,823	...	...	...	...	...	...	...	...	...	1,38,823	...
1892-93	...	...	...	97,310	...	...	...	...	...	...	...	...	...	97,310	...
1893-94	...	...	...	16,205	...	...	...	...	...	...	...	...	...	16,205	...

* The figures up to the year 1868-69 are taken from a report by Mr. O. G. Master, on the Irrigation Works in the Kistna Delta, embodied in G.O. No. 3,112, dated 6th December 1869. The figures for the subsequent years have been obtained from the Tahsildars for the purpose of this Report.

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

APPENDIX D.
Abstract of Charges for Working Expenses of the Kistna Anicut.

Years.	ESTABLISHMENT.										Tools and Plant.	Profit and Loss.	Total.
	Direction and Accounts.	Proportion of Executive Establishment on Works and Repairs chargeable to Revenue.	Revenue Establishment.	Navigation and Delta Establishment.	* Medical.	* Plantations.	Total.	Repairs including Works chargeable to Revenue.	Plantations.	Total.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1874-75	...	RS. 36,332	RS. 39,614	RS. 24,744	RS. ...	RS. ...	RS. ...	RS. 1,00,690	RS. 1,45,330	RS. 9,110	RS. 11,626	RS. ...	RS. 2,66,756
1875-76	...	34,861	37,295	24,054	...	...	...	96,210	1,39,442	8,262	11,155	...	2,55,069
1876-77	...	21,047	32,419	24,466	...	...	...	77,932	84,188	7,533	6,735	...	1,76,388
1877-78	...	15,293	29,732	23,580	...	...	...	68,605	61,171	7,187	4,894	...	1,41,857
1878-79	...	18,769	28,524	24,348	...	...	...	66,641	55,074	6,249	4,406	...	1,32,370
1879-80	...	17,483	27,041	23,640	...	...	...	68,164	69,932	9,249	5,595	...	1,51,940
1880-81	...	12,144	23,934	23,532	...	...	...	59,680	48,574	10,000	3,950	...	1,22,120
1881-82	...	9,926	27,050	24,153	...	...	...	61,123	39,704	3,950	3,176	...	1,07,359
1882-83	...	16,739	24,441	21,756	...	...	...	62,936	66,955	...	5,356	...	1,35,247
1883-84	...	25,291	24,074	21,060	...	...	...	70,425	1,01,164	...	8,093	...	1,79,632
1884-85	...	32,606	21,760	20,640	...	...	...	75,006	1,30,424	...	10,434	...	2,15,884
1885-86	...	22,927	21,294	18,470	...	...	...	49,694	65,680	...	5,254	...	1,20,628
1886-87	...	16,420	14,946	18,328	...	...	...	50,889	79,957	...	6,397	...	1,37,243
1887-88	...	19,989	13,920	16,980	...	...	...	44,613	64,594	...	5,168	...	1,14,375
1888-89	...	16,148	11,989	16,476	...	...	...	44,142	60,489	...	4,835	...	1,09,416
1889-90	...	15,110	12,556	16,006	...	...	...	42,199	65,315	...	5,225	...	1,12,739
1890-91	...	16,328	9,865	15,912	...	...	...	36,903	58,978	...	4,718	...	1,00,599
1891-92	...	14,744	6,247	11,646	...	...	...	39,237	92,848	...	7,428	...	1,39,513
1892-93	...	23,212	4,379	...	...	...	...	9,234	34,021	...	2,722	...	45,977
1893-94	...	8,505	729	...	...	...	...	...	...	...	...	...	...
From 1862 to 1855-56	...	...	...	...	...	...	...	...	...	...	...	...	...

* Included in Repairs Column 10.
† Included in Column 11.

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

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Proceedings of the Madras Government, Public Works Department,
20th May 1876.

APPENDIX E.

Statement showing the Rates at which Water-rates and Navigation Receipts have been realized for Kistna Anicut Channels.

WATER-RATES.

Class.	Nature of Crop.	PER ACRE IRRIGATED.			—
		Natural flow.	Lift.	Compounded rate for two crops for a term not less than 5 years.	
	Up to 1861-62 there was no fixed rate for water. The following rates were adopted from 1861-62 :—				
1.	For a single wet crop for 1st year ...	1 8 0	...	...	Per acre.
2.	Do. do. from 2nd year ...	3 0 0	...	...	Do.
3.	For two-crop land, including sugarcane ...	4 0 0	...	...	Do.
4.	Temporary irrigation for dry crops ...	1 0 0	...	...	Do.
	These were increased as follows from 1865-66 :—				
1.	For a single wet crop ...	4 0 0	...	...	Do.
2.	For a second do. ...	4 0 0	...	6 8 0	Do.
3.	Sugarcane, betel, plantains and other such garden produce remaining on the ground for a time of two crops ...	8 0 0	...	6 8 0	Do.
4.	Temporary irrigation for a wet crop on dry lands ...	4 0 0	...	...	Do.
5.	Do. for dry crops on dry lands ...	2 0 0	...	...	Do.
	Water taken without permission for any of the above double of the above rates.				
	These rates were modified as follows from 1873-74 :—				
1.	Single wet crop ...	4 0 0	...	...	Do.
2.	Second do. ...	4 0 0	...	...	Do.
3.	Do. dry crop on irrigated land ...	2 0 0	...	...	Do.
4.	Sugarcane, betel, plantain and other garden produce remaining on the ground for a term of two crops ...	8 0 0	...	...	Do.
5.	Dry crop ...	2 0 0	...	...	Do.
	Water taken without permission for any of the above double of the above rates.				

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Navigation Rates, Kistna Canal.

Particulars.	Rate.	Per
On large Boats plying on Canal—		
From 1st November 1863 ...	1 0 0	Per ton per annum.
Do. 1st January 1874 ...	1 0 0	Do. do.
On Passenger Boats plying on Canal—		
From 1st November 1863 ...	0 4 0	Per sq. foot deck per annum.
1st-class boats from 1st January 1874 ...	0 6 0	Do. do.
2nd-class boats from 1st ...	0 3 0	Do. do.
Paddle and other boats of private parties plying on Canal—		
From 1st November 1863 ...	0 2 0	Do. do.
From 1st January 1874 ...	0 1 0	Do. do.
Transit on rafts entering Canal—		
Teakwood from 1st November 1863 ...	2 8 0	Per raft 150 × 20 feet.
Countrywood from do. ...	1 8 0	
Bamboos from do. ...	0 8 0	
Teak, countrywood or bamboos from 1st January 1874 ...	1 0 0	Do. do.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Accounts.

Proceedings of the Madras Government, Public Works Department,
20th May 1876.

APPENDIX F.

Memorandum showing the Collection and charges of Land Revenue, Kistna District.

Years.	Collection.	CHARGES.			Charge per cent. on Land Revenue Collections.	—
		Total Land Revenue Charges.	Deduct $\frac{1}{2}$ debitable to Magisterial.	Net Land Revenue.		
	RS.	RS.	RS.	RS.		
1865-66 ...	33,78,304	2,11,113	41,832	1,69,281	5.	
1866-67 ...	28,91,821	2,04,055	40,022	1,64,033	5.7	
1867-68 ...	31,14,438	2,11,595	41,923	1,69,672	4.9	
1868-69 ...	38,96,388	2,07,839	41,226	1,66,612	4.2	
1869-70 ...	36,91,602	2,10,436	41,750	1,68,686	4.6	
1870-71 ...	35,91,726	2,10,136	41,590	1,68,546	4.7	
1871-72 ...	38,46,937	2,09,276	41,272	1,68,004	4.3	
1872-73 ...	37,61,040	2,16,492	42,016	1,74,476	4.6	
1873-74 ...	37,30,110	2,23,472	43,910	1,79,583	4.8	
1874-75 ...	38,15,763	2,19,035	43,797	1,76,238	4.6	
					4.7	Average.

MASULIPATAM,
28th March 1876.

(Signed) W. WILSON, District Judge,
On Special Duty, Irrigation Account.

No. 363.

ORDER THEREON, 20th May 1876, No. 1,268.

IRRIGATION, No. 37-B.

Account.

In the former of the two foregoing communications from the Government of India, communicating a despatch from the Secretary of State, it was requested that it

might be reported whether a financial statement of the Irrigation Works of the Madras Presidency, prepared in the forms in use in the North-Western Provinces and Punjab and made up to the end of 1874-75 if practicable, or otherwise to the end of 1873-74, could be transmitted so as to reach the Government of India during May 1876 at latest.

In the letter of the 25th January 1876, the Government of India refer to the importance attached to the preparation of a correct statement of the financial results of Irrigation Works in time to admit of its submission to the Secretary of State for presentation to Parliament next session, and, after alluding to the way in which the statement should be prepared, it is mentioned that, while the Governor-General in Council is aware that the consolidated assessment of land-revenue that prevails in the greater portion of the Madras Presidency renders it difficult to make up an immediate account of the results of the smaller Irrigation Works, it is not understood that there is anything to prevent the submission of returns showing the financial results of the works in the Godavery and Kistna Deltas, and it was then left to this Government to decide on the best way of arranging to meet the wishes of the Secretary of State for the immediate preparation of a correct account.

2. On the receipt of these communications it appeared to Government that the only way of meeting the wishes of the Government of India and of the Secretary of State

would be to obtain from the Revenue Board and from Mr. Wilson, who has been employed for a short time specially on the investigation of the revenue results of the Kistna Delta works, such information as was immediately available, and that to allow of the preparation of a return within the time desired the requisite investigations should be confined to the few more important works regarding which some progress had already been made, and the circumstances of which were more or less known.

3. The Board of Revenue and Mr. Wilson were accordingly informed of the requirements of the Government of India, and the Head Sheristadar of the Board drew up a memorandum* showing how it was proposed to deduce from the total increase

of revenue shown in the accounts the approximate increase due to the Irrigation Works concerned, and this method appearing to be likely to give as accurate an idea of the financial results of the works as could be obtained without special and detailed examination, which would necessarily have occupied a much longer time than was available, the proposed method of calculation was generally approved and has been adopted in estimating the returns from the following works:—

Godavery Delta.
Upper Coleroon Anicut (Cauvery Delta).
Lower Coleroon Anicut (Tanjore and South Arcot).
Srivaikuntham Anicut (Srivaiguntham).
Palar Anicut.

As thus prepared the information for the Godavery Anicut shows for each year from fasli 1257 (1847-48) to fasli 1284 (1874-75) the following results:—

	RS.
Total increase	2,75,58,194
Increase due to natural causes	99,68,604
Net increase	1,75,89,590

The Head Sheristadar expresses the opinion that the deduction made is too large as most of the land in the Godavery Delta was unfit for dry cultivation, and as it is impossible for wet revenue, which must depend upon water, to rise in the same proportion in which the dry revenue has increased. He thinks therefore that it would be fair to deduct from the total increase of revenue only one-half of the increase assumed to be due to natural causes, and in preparing the statement he has made only this smaller deduction, so the total net increase up to 1874-75 inclusive is there represented to be Rupees 2,25,73,892 instead of Rupees 1,75,89,590, as given in the memorandum accompanying the statements. It appears to His Grace the Governor in Council that it is clear that without water the increase of wet revenue in the delta due to natural causes would have been insignificant, and that similarly the increase of dry revenue had the delta been left unprovided with Irrigation Works would have been very small. It would seem therefore to be safe to assume that the larger net increase shown in the statement will be likely to be enhanced rather than diminished when

* Marked A.A. that the figures given in the statement* rather than those of the memorandum should be incorporated in the financial returns,

4. In preparing the statements for the Upper Coleroon Anicut, the Lower Coleroon Anicut, the Srivaiguntham and Palar Anicuts, no deduction has been made for increase of revenue due to natural causes, the requisite data not being available. The figures given in the statements of the first two and last of these works which accompanied the Sheristadar's memorandum of the 1st April will be incorporated in the accounts.

5. With regard to the statement for the Srivaiguntham Anicut it is explained in the Sheristadar's later memorandum* that the increase of revenue shown for this

* Dated 5th April. work does not take into account the amount, estimated at Rupees 20,000, by which the assessment of the lands formerly irrigated would have been reduced had the anicut not been built. The Sheristadar, while thinking that this amount should not be included in the statement of increase of revenue, points out that it must not be lost sight of, and the Government concurring in this recommendation direct that the following permanent N.B. be exhibited on all financial returns of the Srivaiguntham Anicut Project.

"The Revenue Settlement Officers' report that in revising the assessment of the lands under this anicut, which were formerly irrigated, it would have been necessary to fix the assessment at Rupees 20,000 less than the amount which has been imposed, had not the supply of water by the construction of the anicut been so far improved as to render such reduction unnecessary. This effect of the anicut has not been taken credit for in the returns of financial results."

6. Mr. Wilson, in transmitting a complete set of statements for the Kistna Delta, has forwarded a memorandum giving a sketch of the works and their circum-

stances, explaining the revenue systems of the several taluqs, and the difficulties rendering an absolutely accurate determination of the results of the anicut and canals impossible, and showing the basis upon which his estimates of increase of revenue have been framed. Mr. Wilson has not only furnished the most accurate statement of increase of revenue which his former knowledge of the delta and its circumstances as well as his recent special investigations have enabled him to prepare, but he has exhibited the capital outlay, interest charges, and financial results. These latter entries, while valuable for the more ready comprehension of results in reading Mr. Wilson's remarks, it is the duty of the Examiner of Accounts to determine. The revenue information to be incorporated in the financial accounts will be found in Mr. Wilson's statement A. of the 28th March 1876, in which it is shown that for and up to the year 1874-75 the increased revenue amounted to Rupees 8,90,753 and Rupees 93,02,598 respectively.

7. The Revenue Authorities are entirely agreed as to the impracticability of deducing from any existing accounts the returns from Irrigation Works in this Presidency under the two heads of direct income by water-rates and increased land-revenue due to irrigation. An arbitrary division of the assessment so as to effect a determination of revenue under these heads might be made, but the inevitable result would apparently be to exhibit results much less reliable than those obtained from a

*Proceedings of the Madras Government, Public Works Department,
20th May 1876.*

comparison of the assessment, as it is made, of different periods with such corrections
as the revenue information on record renders feasible.

(True Extract.)

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

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

Exd. E. C. Shunker.

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Revenue 1870 Department

Govt. of 1876 Madras.

PUBLIC WORKS.

1512

THE REVENUE DEPARTMENT,

Ac. &c. &c.

[Signature]

Dated May 20th

Issued

Recd. 28 June 76

Encl.

G. O., 20th May 1876, No. 1,268.

MAY.

Nos. 362-363.

Dr. [Signature]

Capital and Revenue Accounts of Irrigation Works.—Passing orders on papers relating to the preparation of

*Communicated to the [Signature]
to Mr. Wilson on 28 June 76*

14 Feb 80 Board of Revenue July
1. 15 Wilson's [Signature]

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