408 C dy 12/2/83
409

B.V. 555 W dy 19th February 1883

No 555 W.

Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT. Date of 19th Feby 1883

~~Read the following~~

Ordered that the following telegram be sent to the Government of India.

To
Secretary
Calcutta.

In continuation of my telegram tenth instant Add fifteen thousand three hundred and seven to Regular Estimate 1882-83 Provincial making total twenty one lakhs twenty nine thousand and seven.

19/2

Telegram Despd 19-2/83

Rec'd 20/2/83.

CH 19/2

R.S.

21.50.000 Local Ln.
. corporated 53.060, Rx.
. cluded 38.782 x Roads
Harbours Irrk. Regulars
Estimate 567.000 Budget
Estimate same.

Secs L.P. 10/2

B № 635 w 7/19. 2. B

Ch 10/2

Telegram.

To

Works

To

Calcutta

Dated 10th February 1883.

Receipts Regular Estimate
1882-83. Military 30,000
Other Services Nil.
Provincial 153,000 Local
Incorporated 5,000 x
Budget Estimate Military
30,000. Provincial 2 lakhs
Charges. Regular Estimate
1882-83 Military 690,000
Other Services 278,106.
Provincial 2113700.
Local Incorporated 86,957
Excluded 63,771. Budget
Estimate 1883-84 Imperial
620000 Other Services
267,950. Provincial

Statement showing the state of Grant at the end of January 1883 under 34 other Public Works and 32 Railways.

No and Date of Sanctions	34 other Public Works. Imperial: Military	Imperial: other Services	Provincial	Local: Incorporated	Local: Excluded	32 Railways. Imperial	Provincial	Remarks.
Regular Estimate as already fixed	690,000	316,701	2,143,508	74,537	56,395	* 97,000	2741	* Included of Rs 62000 and 35000 the Government of India have sanctioned
G.O. No 2436 of 20 Jany 1883	"	- 26,145	"	"	"	"	"	
G.O. No 116 of 5th January 1883	"	- 12,450	"	"	"	"	"	
G.O. No 3174 of 2nd Dec. 82	"	"	- 971	"	"	"	"	
G.O. No 584 of 9th January 83	"	"	- 49,800	"	"	"	"	Rs 30,000 and Rs 2000 for the Vizagapatam Raipur and Bellary Extn. Railways
G.O. No 524 of 8th January 83	"	"	- 160	"	"	"	"	
G.O. No 1286 of 12th January 83	"	"	670	"	"	"	"	surveys so that the Regular
G.O. No 203 of 18th January 83	"	"	5,100	"	"	"	"	Estimate under Imperial Amounts
G.O. No 299 of 28th January 83	"	"	283	"	"	"	"	now to Rs 59000 inclusive
Accountant General's No 267 of 26th Jany 83	"	"	15,102	"	"	"	"	of Rs 3000 already sanction
G.O. No 285 of 25th Jany 83	"	"	725	"	"	"	"	ed for the Cholatapputur
G.O. No 339 of 30th Jany 83	"	"	077	"	"	"	"	and Tinnevelly State
Director of Public Instructions No 6150 of 24th November 1882	"	"	"	"	"	"	"	Railways.
G.O. No 68 of 9th January 83	"	"	"	"	180	"	"	
G.O. No 62 of 9th Jany 83	"	"	"	"	125	"	"	
G.O. No 2406 of 20th Jany 83	"	"	"	"	310	"	"	
G.O. No 2086 of 18th Jany 83	"	"	"	"	10147	"	"	
G.O. No 2046 of 18th Jany 83	"	"	"	"	- 198	"	"	
Board of Revenue No 3064 of 7th December 1882	"	"	"	"	3197	"	"	
G.O. No 3362 of 20th Dec. 82	"	"	"	747	"	"	"	
G.O. etc 66 of 10th January 83	"	"	"	1618	"	"	"	
Board of Revenue No 29 of 6th January 1883	"	"	"	8109	"	"	"	
G.O. No 423 of 23rd January 83	"	"	"	4347	"	"	"	
G.O. No 752 of 29th January 83	"	"	"	- 57	"	"	"	
G.O. No 207 of 25th January 83	"	"	"	- 3000	"	"	"	
	"	"	"	650	"	"	"	
Grand Total	690,000	278106	2113,700	86,957	63,771	59,000	2,741	
~~G.O. No 2234 dated 31 Aug 1882.~~	"	"	"	"	~~260~~	"	"	
G.O. No 573 W of 15/2/83	"	"	10.000	"	"	"	"	
" - 426 W of 8/2/83	"	"	270	"	"	"	"	
~~" - 680 W of 13/2/83~~	"	"	~~950~~	"	"	"	"	
" - 203 W of 8/1/83	"	"	5037	"	"	"	"	
" 380 C of 6/2/83								for Dy Jailor quarters at Bellary.
Grand Total	690,000	278106	~~21,29,955~~ 21,291.007	86.957	63771	59000	2741	

GENERAL.
ACCOUNT.

Govt. of {1883} Madras.

PUBLIC WORKS.

Dated August, 16th.

Recd. *Encl.*

G.O., 16th Aug. 1883, No. 2288 W.

AUGUST.

Budget Estimates

The Superintending Engineers to submit in future, as required by the Government of India, certain statements along with their —, so as to show not only the proposed expenditure in the ensuing official year, but also the approximate outlay in the current official year under all budget heads, " Major Works " being specified in detail.

16TH AUGUST 1883, No. 2288 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following letter from Colonel W. S. TREVOR, R.E., Secretary to the Government of India, Public Works Department (Account—General), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 23rd July 1883, No. 214 A.G. :—

* * * * * *

3. I am directed to state that in the opinion of the Government of India it is impossible to arrive at reliable figures in the revised estimate of a year unless the requirements and progress of the more important works are individually considered; and I am to express a hope that, in future, all modifications in grants may be based on such considerations, and that Superintending Engineers may be instructed to substantiate their forecasts by statements showing clearly the works on which important modifications of allotment or grant will be probably required.

* * * * * *

ORDER—dated 16th August 1883, No. 2288 W., Public Works.

Ordered that paragraph 3 of the foregoing letter from the Government of India be communicated to Superintending Engineers, who will in future submit the statements referred to with their budget estimates, which will therefore in future show not only the proposed expenditure in the ensuing official year but also the approximate outlay in the current official year under all budget heads, "Major Works" being specified in detail.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To Superintending Engineers.
„ the Consulting Architect to Government.
„ the Examiner, Public Works Accounts,
with full copy of Government of India letter.

Exd. E. Fernandez.
Spare Copies

IRRIGATION.
ACCOUNT.

Govt. of {1883} Madras.
PUBLIC WORKS.

Dated February, 12th.

Recd. *Encl.*

G.O., 12th Feb. 1883, No. 143 I.

FEBRUARY.
Nos. 60-61.

Minor Irrigation Works.

Letter from the Government of India accepting the proposals of the Madras Government for dealing with —, communicated to the officers concerned.

08-5557 Irg-2-83

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

No. 60.

READ—the following letter from Major G. F. L. MARSHALL, R.E., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Fort William, 26th January 1883, No. 40 I. :—

In acknowledging the receipt of your letter, No. 3273 W., dated the 11th December 1882, on the subject of Minor Irrigation Works in the Madras Presidency, I am directed, in reply, to state that the financial programme detailed in the third paragraph of your letter is approved by the Government of India, and that grants under 33, Irrigation and Navigation for the Madras Presidency, will be provided for the years 1883-84 to 1886-87 inclusive to the following extent :—

Rs.	19,78,300	1883-84
„	21,28,300	1884-85
„	22,78,300	1885-86
„	25,28,300	1886-87

2. It must be understood that these grants are intended to be final up to the year 1886-87 and to include all expenditure under both works and establishment.

3. I am to point out that, in order to ensure the fullest possible benefit being derived from this expenditure, it is essential that the Statute Labor question, the question of the extent to which the Public Works Department Agency should be superseded by that of the Collectors, also the question of the extent to which tanks should be repaired by the State, should one and all receive careful and full consideration, and I am to say that, in view to an early settlement of them, the Inspector-General of Irrigation will be deputed to Madras and may be expected to arrive there about the 25th instant, in order to discuss with the local officers these and the further subjects connected with irrigation which are still undisposed of.

No. 61.

ORDER—dated 12th February 1883, No. 143 I., Public Works.

Communicated to the officers concerned with copy of note, dated 27th November 1882, by the Chief Engineer for Irrigation.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

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

Exd. C. Howarth.
Spare Copies

PRELIMINARY ISSUE.

INCORPORATED LOCAL FUNDS.
PUBLIC WORKS BUDGET ESTIMATE.

MADRAS.

PUBLIC WORKS DEPARTMENT.

INCORPORATED LOCAL FUNDS BUDGET ESTIMATE

OF THE

PUBLIC WORKS DEPARTMENT

OF THE

GOVERNMENT OF MADRAS,

FOR THE YEAR

1883-84.

CHEPAUK,
23rd December 1882.

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

GOVERNMENT OF MADRAS.

BUDGET ESTIMATE OF INCORPORATED LOCAL FUNDS PUBLIC WORKS REVENUE IN THE MADRAS PRESIDENCY FOR THE YEAR 1883-84.

Budget Estimate of the Revenue that will be realized by, and on account of Incorporated Local Funds of, the Public Works Department in the Madras Presidency for the Year from 1st April 1883 to 31st March 1884.

—	BUDGET ESTIMATE, 1883-84.	BUDGET ESTIMATE, 1882-83.	ACTUALS, 1881-82.
	Rs.	Rs.	Rs.
Realized in Public Works Department			56
Total			56

GOVERNMENT OF MADRAS.

BUDGET ESTIMATE OF EXPENDITURE FROM INCORPORATED LOCAL FUNDS ON PUBLIC WORKS IN THE MADRAS PRESIDENCY FOR THE YEAR 1883-84.

Abstract of the Estimated Charges from Incorporated Local Funds on Public Works in the Madras Presidency from 1st April 1883 to 31st March 1884.

	Budget Estimate, 1883-84.	Budget Estimate, 1882-83.	Actuals, 1881-82.
	Rs.	Rs.	Rs.
ORIGINAL WORKS.			
Civil Buildings	...	...	4,716
Communications	22,660	42,470	70,646
Miscellaneous Public Improvements	...	...	13
Total ...	22,660	42,470	75,375
REPAIRS.			
Civil Buildings	...	...	1,501
Communications	20,560	12,900	1,37,092
Miscellaneous Public Improvements	...	...	5,449
Total ...	20,560	12,900	1,44,042
TOTAL WORKS AND REPAIRS.			
Civil Buildings	...	...	6,217
Communications	43,220	55,370	2,07,738
Miscellaneous Public Improvements	...	...	5,462
Total ...	43,220	55,370	2,19,417
Establishment	8,190	11,668	23,628
Tools and Plant	1,650	4,268	3,588
Grand Total ...	53,060	71,306	2,46,633

GOVERNMENT OF MADRAS.

ABSTRACT OF THE GRANTS ASSIGNED BY FUNDS.

	Funds to which the Grants for 1883-84 are Chargeable.					Regular Estimate, 1882-83.
	Local Funds under Act IV of 1871.	Lodging Police Fund.	Canal and Ferry Fund.	Jungle Conservancy Fund.	Total, 1883-84.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
ORIGINAL WORKS.						
Civil Buildings	...	...	...	...	...	...
Communications	2,660	...	20,000	...	22,660	36,593
Miscellaneous Public Improvements ...	...	...	...	...	...	...
Total ...	2,660	...	20,000	...	22,660	36,593
REPAIRS.						
Civil Buildings	...	...	...	...	...	...
Communications	20,560	...	...	...	20,560	23,961
Miscellaneous Public Improvements ...	...	...	...	...	...	...
Total ...	20,560	...	...	...	20,560	23,961
Total, Works and Repairs ...	23,220	...	20,000	...	43,220	60,554
Establishment	3,590	...	4,600	...	8,190	12,155
Tools and Plant	350	...	1,300	...	1,650	1,828
Grand Total ...	27,160	...	25,900	...	53,060	74,537

PRELIMINARY ISSUE

EXCLUDED LOCAL FUNDS.
PUBLIC WORKS BUDGET ESTIMATE.

MADRAS.

PUBLIC WORKS DEPARTMENT.

EXCLUDED LOCAL FUNDS BUDGET ESTIMATE

OF THE

PUBLIC WORKS DEPARTMENT

OF THE

GOVERNMENT OF MADRAS,

FOR THE YEAR

1883-84.

Prepared with reference to the Government of India Resolution No. 473 A.G., dated 17th November 1880.

CHEPAUK,
23rd December 1882.

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

GOVERNMENT OF MADRAS.

BUDGET ESTIMATE OF EXCLUDED LOCAL FUNDS PUBLIC WORKS REVENUE IN THE MADRAS PRESIDENCY FOR THE YEAR 1883-84.

Budget Estimate of the Revenue that will be realized by, and on account of Excluded Local Funds of, the Public Works Department in the Madras Presidency for the year from 1st April 1883 to 31st March 1884.

	Budget Estimate, 1883-84.	Budget Estimate, 1882-83.	Actuals, 1881-82.
	Rs.	Rs.	Rs.
Realized in Public Works Department	...	...	141
Total ...	...	...	141

EXCLUDED LOCAL FUNDS.
PUBLIC WORKS BUDGET ESTIMATE.

MADRAS.

GOVERNMENT OF MADRAS.

BUDGET ESTIMATE OF EXPENDITURE FROM EXCLUDED LOCAL FUNDS ON PUBLIC WORKS IN THE MADRAS PRESIDENCY FOR THE YEAR 1883-84.

Abstract of the Estimated Charges from Local Funds on Public Works in the Madras Presidency from 1st April 1883 to 31st March 1884.

	Budget Estimate, 1883-84.	Budget Estimate, 1882-83.	Actuals, 1881-82.
	Rs.	Rs.	Rs.
ORIGINAL WORKS.			
Civil Buildings ...	31,150	15,140	4,212
Communications	...	...	...
Miscellaneous Public Improvement	...	6,510	12,775
Total ...	31,150	21,650	16,987
REPAIRS.			
Civil Buildings ...	...	...	6,027
Communications	...	...	...
Miscellaneous Public Improvements ...	...	...	10,249
Total ...	...	...	16,276
TOTAL, WORKS AND REPAIRS.			
Civil Buildings ...	31,150	15,140	10,239
Communications	...	...	...
Miscellaneous Public Improvements ...	...	6,510	23,024
Total ...	31,150	21,650	33,263
Establishment ...	7,165	4,979	8,304
Tools and Plant	467	325	825
Grand Total ...	38,782	26,954	42,392

GOVERNMENT OF MADRAS.

ABSTRACT OF THE GRANTS ASSIGNED BY FUNDS.

	Funds to which the Grant for 1883-84 are chargeable.				Regular Estimate, 1882-83.
	Municipal.	Port Fund.	Educational.	Totals, 1883-84.	
	Rs.	Rs.	Rs.	Rs.	Rs.
ORIGINAL WORKS.					
Civil Buildings	...	...	31,150	31,150	18,466
Communications	...	...	...	...	...
Miscellaneous Public Improvement ...	...	...	...	...	19,033
Total ...	...	...	31,150	31,150	37,499
REPAIRS.					
Civil Buildings	...	...	...	...	3,065
Communications	...	...	...	...	...
Miscellaneous Public Improvement ...	...	...	...	...	5,282
Total ...	...	...	...	...	8,347
Total, Works and Repairs ...	...	...	31,150	31,150	45,846
Establishment	...	...	7,165	7,165	9,816
Tools and Plant	...	...	467	467	733
Grand Total ...	...	...	38,782	38,782	56,395

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

No. 180.

READ—the following papers :—

G.O., dated 27th September 1882, No. 1312, Financial.
" " 12th October " " 2660 W., Public Works.
" " 30th " " " 1615, Financial.
" " 18th December " " 1538, "
Budget Estimate, Excluded Local, of First Circle.
" " Sixth Circle.
G.O., dated 6th December 1882, No. 3016, Financial.
" " 11th " " " 3268, Public Works.
From the Superintending Engineer, Second Circle, dated 13th December 1882, No. 368 C.
" " " Third Circle, Budget Estimate for Incorporated Local Fund.
From the Superintending Engineer, Fourth Circle, dated 8th December 1882, No. 524.
" " " Fifth Circle, " 6th " " " 3164.
" Consulting Architect to Government, " 6th " " " 721.
Proceedings of Board of Revenue, " 21st " " " 10128.

No. 181.

ORDER—dated 23rd December 1882, No. 3426 W., Public Works.

Ordered that the Budget Estimates of Incorporated Local Funds and of Excluded Local Funds for 1883-84, containing works approved by the Departments concerned for execution by the agency of the Public Works Department, be compiled and issued to the Superintending Engineers concerned—four copies being forwarded to the Government of India.

(Here enter No. 3427 W., dated 23rd December 1882.)

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To Superintending Engineers.
To the Examiner, Public Works Accounts.
" Board of Revenue.
" Accountant-General.
" Financial Department.
" Educational "
" Marine "

No. 182.

ENDORSEMENT—dated 23rd December 1882, No. 3427 W., Public Works.

Copy of the above, with Budget Estimate, forwarded to the Government of India.

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

Exd. S. T. Austin.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1882} Madras.

PUBLIC WORKS.

Dated December, 23rd.

Recd. *Encl.*

G.O., 23rd Dec. 1882, No. 3427 W.

DECEMBER.

Nos. 180—182.

Budget Estimates of Incorporated Local Funds and of Excluded Local Funds for 1883-84.

FORWARDING Budget Estimates of Incorporated Local Funds and of Excluded Local Funds for 1883-84.

NOTE BY THE CHIEF ENGINEER FOR IRRIGATION.

The records of past years show that so long as we have managed the country the condition of the irrigation works, that is tanks and channels such as are now classified as irrigation works for which neither Capital nor Revenue Accounts are kept, has been considered unsatisfactory, and that it has on all sides been considered that larger sums than could be allotted from the revenue should be expended on their maintenance, and that considerable expenditure would be requisite to put them into an efficient state.

2. The subject seems to have been first brought to notice by Sir Arthur Cotton (then Captain A. Cotton) in a letter to the Board of Revenue, dated 13th December 1837, from which the following quotations are made:—

"The irrigation works in general are so far from being in good order that the revenue actually derived from them at present is by no means the full measure of their value.

"The average wet revenue of the Carnatic districts for five years up to Fasli 1244, omitting Tanjore, and adding 3 lakhs of rupees for Chingleput, amounted to Rs. 85 lakhs.

"The wet revenue of the Carnatic, including Tanjore, amounted to Rs. 118 lakhs."

If the irrigation works are put in good order Captain Cotton estimated that the revenue would rise from 85 to 120 lakhs, making total revenue including Tanjore 153 lakhs; he assumes the revenue to be 40 per cent. of the crop, and that the returns in revenue to Government roughly are 20 per cent. on outlay, from which he draws the following conclusions:—

(1.) The original cost of the irrigation works may be about 825 lakhs of rupees.
(2.) The annual value of the crop dependent on them, if in good order, would be about 413 lakhs.
(3.) The annual revenue to Government would be about 165 lakhs.
(4.) Present actual revenue 118 lakhs.
(5.) Present total value of annual crop dependent on them, including rent free lands, about 320 lakhs.

Captain Cotton believes that nearly all the tanks in the country and nearly all the channels also, excepting those of Tanjore and the very large ones of other districts, water less lands than they once did, many only one-fourth, and very great numbers from one-half to three-fourths; and he instances several districts in which there has been a considerable falling off of revenue, while "In Tanjore there has been an increase of nearly 40 per cent. of gross produce in thirty years."

He gives the following account of the expenditure on irrigation works:—

Average expenditure of last six years in Tank Department	Rs.	5,30,000
Total revenue dependent on the works at present ...	,,	1,18,00,000
Expenditure about 5 per cent. on revenue:—		
Revenue which would be derived from works if in good order	,,	1,65,00,000
Expenditure as at present below 4 per cent. on this revenue:—		
Total value of gross produce at present	Rs.	3,20,00,000
Expenditure at present on total annual amount of property about 2 per cent.		
Supposed original cost of works	Rs.	8,25,00,000
Annual expenditure less than ⅔ per cent.		

He says:—

"In England canals and such works, in which water is retained, require an annual outlay of 3 to 4 per cent., or from four to six times as much as here allowed.

"As the works are so very generally in want of extensive repairs, I am satisfied that a sum double the amount of the present expenditure would be most economically laid out for some years; indeed, I feel sure that if it is desirable to bring the same extent of land under effective irrigation as has been so at times within the last thirty years, it cannot be done with less than an annual expenditure of that sum, viz., 12 lakhs of rupees, at the very least for some years to come.

"I know that there are still numberless works, which if put into an efficient state would most amply repay the outlay. I would further urge an extended expenditure, not only on the ground of policy, but also of justice, the lands that are watered by Government works, are bought and sold in dependence upon the faith of Government that it will keep up a vigilant attention to those works; there are at this moment multitudes of estates that are of one-fourth or one-half the value that they once were, owing to the decayed state of the irrigation works.

"Even in the last twenty years, omitting Tanjore, the land revenue of the watered districts was on the average of five years terminating with—

"Fasli	1214	214 lakhs.
"	1219	216 "
"	1222	203 "
"	1229	215 "

Since when it has regularly declined in fifteen years to 189⅓ lakhs, being a falling off in that period of 26⅓ lakhs per annum, more than four times the whole cost of the Tank Department at present.

"It thus appears that in most of the districts there has been an actual, and in many a very considerable falling off, even during the short period of which we have any returns; and as the irrigation has undoubtedly been better attended to for the last ten years than it was twenty years ago, we cannot be mistaken in concluding that it had been declining previous to the period of the returns; and when to this is added the consideration, that almost all the districts when they came under our charge had been in such a state of confusion for some time that all the public works were in a dilapidated state (and the comparison is made with their revenue while in that state) the sad effects of the neglect of the irrigation must be most palpable; for it is certain that instead of the revenue having declined, had the tanks, &c., been put into a state of repair, it would have very greatly increased.

"The expenditure upon the irrigation has certainly not exceeded one-third of what upon the strictest principles of economy it ought to have been."

3. In 1851 a Commission was appointed by Government to inquire into and report upon the system of Public Works in the Presidency. The Commissioners submitted an exhaustive Report in December 1852, quoting largely from Captain A. Cotton's letter above referred to, and printing it in an appendix to their report. They value capital invested in construction of Government works of irrigation at 1,500 lakhs, and state that the annual outlay on works on average of past ten years has been 7 lakhs.

Therefore cost of repairs is less than half per cent. on original cost,
or less than 2 per cent. on gross yearly proceeds,
or 4⅔ per cent. on annual revenue derived by Government.

They state that in the twelve following irrigation districts:—

Bellary,	Salem,
Cuddapah,	Trichinopoly,
Nellore,	Tanjore,
North Arcot,	Coimbatore,
South Arcot,	Madura, and
Chingleput,	Tinnevelly,

in Fasli 1259 the ayacut being ... ... 2,682,260 acres, and
assessment ... ... 1,84,21,555 rupees.

Cultivation in that, a good year, was 1,787,909 acres, assessment Rs. 1,12,89,352, leaving waste no less than 894,351 acres.

"In most districts it appears probable that the whole extent of the ayacut was formerly under cultivation though not all at the same time.

"Making allowance for all disabling causes by a deduction of even as much as one-third of the whole extent entered as irrigated, waste in above districts would amount to 1,262,906 acres."

Further on they state—

"In short all the works in the country, with a few exceptions, are in a state that may be called 'below par,' that is they are below their state of full efficiency, and incapble of effecting their proper amount of irrigation. The tanks are in want of sluices, or such as they have are out of order, or they have no calingulahs, or such as there are are too small or too high, and so the stability of the tank is in danger, or the bank is low or weak, and the ryots are afraid to store a full tank, or their channels of supply have been become choked up and no longer bring a full supply of water, and as to the irrigating channels many of them are in the state described * * * from the want of regulating works at their head; or they have become filled up by deposit, or the river has thrown up a bank in front of them and they get no water; or they have too few outlets for irrigation and the ryots cut through the bank; or the outlets are too large and a vast quantity of water is wasted. Such is unfortunately the description which now applies to a very large proportion of all the works of irrigation throughout the country, with the partial exception of the favored districts of Tanjore and a part of Trichinopoly."

The Committee drew up a list of the works undertaken by Government in the past fourteen years for the improvements of irrigation. Most of them are the larger channels in the districts which show a very considerable return on expenditure; the general results are —

There are thirty-nine works, original cost Rs. 3,22,278. Percentage of yearly net revenue given on first cost—

Thirteen works vary from 259⅜ per cent. to 77 9/16 per cent.
Twenty-one „ „ 47½ „ to 7⅞ „
Two works are between 3 and 4 per cent.
Three works are unremunerative.

"It must never be forgotten that for every 100 rupees of revenue so sacrificed a further loss of fully 150 rupees is entailed on the ryots."

On the subject of proposed outlay they say—

"Revenue from land irrigated by Government works amounts to 135 lakhs yearly; add for Inam lands under works which Government are bound to maintain 15 lakhs; total 150 lakhs. The sum now expended annually on repairs is about 7 lakhs of rupees. This would probably be sufficient if the works were once brought into good order, but they are in general much out of repair, and a considerable expenditure is required to bring them to a proper point of efficiency so as to yield a maximum return. We would propose 15 lakhs yearly as the usual expenditure in maintaining existing works and bringing them into an efficient condition, including the furnishing them with proper sluices and calingulahs, improving their sources of supply and other minor and ordinary improvements; 15 lakhs of rupees steadily laid out every year on these objects, under able and judicious direction, would soon produce a marked effect. The proposed expenditure would be 10 per cent. on the present revenue from irrigation, but this rate would be gradually reduced as the effect of the improvement became apparent and as the whole number of works in efficient repair became larger year by year.

"The Native Princes who constructed the works of irrigation subjected every acre of land irrigated to a special cess for the purpose of keeping the works in repairs. After the assumption of the Government by the English, all the items making up the land revenue were consolidated into a single demand, for the most part a fixed sum in money per acre or cawny, the revenue in kind being commuted; these fees are therefore paid to Government on the express condition that the works shall be kept in good repair."

In addition to 15 lakhs to be expended yearly on maintenance and minor works, the Committee propose that 7½ lakhs at least should be annually devoted to the object of extending the benefits of irrigation.

"Thus the whole ordinary and usual sum proposed to be spent yearly on works of irrigation is 22½ lakhs.

"We have been brought to the opinion that the surplus revenue of this Presidency when fairly computed, *i.e.*, the surplus over its own expenditure or over the expenditure of the territories of which it receives the revenue, is much larger than appears under the present mode of making up the Imperial accounts.

"But whether the present surplus of revenue over expenditure be large or small, we would contend against the principle of making the accidental amount of that surplus, the measure of the expenditure on improvements morally certain to produce a large increase of revenue by the legitimate and really beneficial means of augmenting the comfort and the resources of the people."

The Committee recommend that the sum they have fixed for expenditure on irrigation works should be so expended without consideration of the current surplus revenue, that it should be, if necessary, raised by loan, it being the part of true wisdom to borrow money at 5 per cent. which will return directly 20 per cent.

4. In consequence of this report the Public Works Department was, in very much its present shape, organized and entrusted with the maintenance of all irrigation works, and under the new régime all help from the ryots, which under the name of Kudimaramut or customary labor had been enforced while the works were under the Revenue Department, ceased, and the cost of maintenance thrown upon the Government was necessarily enhanced. The new Department not having worked altogether satisfactorily a Committee was, after the lapse of some years, appointed to report on the subject. Their report was submitted in 1870, and in it they say:—

"Evidence shows that the works are not in that state of efficiency in which they require to be placed and that, treating the works as a whole, the expenditure of money on them has not been sufficient.

"Public Works Commissioners in 1851 state the average annual outlay on repairs of irrigation works was 7 lakhs, or 5 per cent. on the revenue then yielded by irrigated land. Adverting to the great increase which has since taken place in the cost of labor and materials, and having

in mind how much State expenditure on irrigation works was at that time supplemented by the co-operation of the ryots, we have no doubt that the average expenditure of late years represents an outturn of work, especially of minor works, far smaller than that executed in former years.

"A percentage of the revenue from irrigation should be devoted to the maintenance of the works, to be treated as a first charge on the revenue. We recommend that this charge be fixed at 8 per cent. on the revenue, and that the sum so obtained be devoted entirely to the maintenance of such of the irrigation works of the several districts as are not otherwise provided for, including under the head of maintenance such minor improvements, the construction of sluices, &c., as may be found requisite for the safety of the works, or for increasing their usefulness.

"Eight per cent. on the revenue, taking the revenue on irrigated lands at 170 lakhs, would give an annual grant of Rs. 13,60,000 for the maintenance of existing works. This sum is less than the grant, viz., 14 lakhs, which for the last two or three years has been annually entered in the budget under the head of Agricultural Repairs, but it is considerably more than has actually been spent on irrigation repairs."

5. Major (now Colonel) Mullins, in a dissent from Commissioner's report, says,

"I concur entirely with the report of the majority in considering that the irrigation works generally are not in that condition of efficiency in which they require to be placed, as also in the opinion that the grants of money for irrigation repairs, have, for a series of years, been altogether inadequate.

"I am of opinion that it will be necessary to allow, for several years to come, a considerably larger outlay (than 8 per cent. on the revenue)."

6. Sir W. Robinson, in a minute attached to the report, says,

"The conviction is thus forced on one that, however faithfully the proposed assignment may in future be apportioned amongst the works needing repair and maintenance, an assignment of 8 per cent., or even a much larger proportion of the gross wet revenue, if spent on the extravagant system now followed, must fail to meet the urgent demands of the country within any reasonable period."

Sir W. Robinson in referring to "the extravagant system" contemplated more being done by the people themselves.

He does not consider that there was any obligation on the State to maintain single-handed the old existing communal agricultural works, or that the consolidated wet revenue demand is a special charge conditional on the supply of State water.

He recommended that minor irrigation works should be classed as grant-in-aid works, that $6\frac{1}{4}$ per cent. (one anna in the rupee) should be assigned as a Local Fund in the district to meet grants-in-aid not exceeding half the estimated cost, for the repair and improvement of any work. The cultivators under the work paying the rest and finding the labor as occasion requires.

7. The Department was after this reorganized, but the result as regards minor irrigation works has not been very satisfactory, no more money being available for them. The next enquiry into the state of these works was made by the Famine Commissioners in 1878 who state as follows:—

"Petty Irrigation Works.—The account given of the condition of these is by no means satisfactory. In former days they were to a great extent maintained by a system of contributed or statutory labor, the Government being held liable only for any considerable work of improvement or restoration, and the ordinary petty yearly repairs being done by the population interested in the irrigation. In 1856-57 the duty of initiating tank repairs was transferred from the Revenue officials to the re-organized Public Works Department without, however, the power which has been enjoyed by the Collector, of enforcing statutory labor. Since that time the ryots have taken less and less part in the maintenance and repair of tanks and channels. On the other hand, the Public Works Department, though spending considerable sums annually in the repair of particular works have not been able to carry out all the necessary restorations; and there are many works which have fallen out of order for want of proper supervision and timely repair.

"There is a general consent that the measures now adopted for the maintenance of the tanks in efficiency are wholly inadequate. The expenditure has been more liberal of late years; but still the Irrigation Department reckon that, in order to make the more important tanks safe in years of ample rainfall, an annual grant three times as great as that hitherto appropriated for this purpose, and a period of 20 years would be necessary. Such a delay in effecting a necessary improvement would be very bad economy. The security of the annual revenue of £700,000, which is dependent on these works, is a matter which the Government cannot be justified in overlooking; and any loss which Government sustains corresponds to far more serious damage inflicted on the agricultural class. The Government ought then, in our opinion, to frame a scheme for putting the tanks into order with as little delay as financial considerations and the arrangements of the administration will permit, and carry it out in a systematic and continuous method till this serious cause of preventible loss has been removed."

8. In an appendix to the Famine Commissioner's Report is a report by the Irrigation Committee appointed under them, in which certain recommendations for the treatment of minor irrigation works are made, which have been approved by Government and are now being carried out. Generally speaking the works are being divided into two classes:—

(1.) Those which irrigate more than 200 acres, which are called "Imperial."
(2.) Those which irrigate less than 200 acres, which are called "Minor."

All works however coming under the second head which from their position affect Government works of any consequence are classed under the first head.

Imperial works are to remain under the charge of the Public Works Department and minor works are temporarily placed under the charge of the Revenue Department, it being intended that subsequently they should be sub-divided into three classes, some of them being entirely handed over to the ryots and others maintained by the ryots in return for a certain remission of revenue. A Kudimaramut Bill has also, in accordance with the recommendations of the Committee, been prepared and submitted to Government, and an Irrigation Law has been drafted. Steps are thus being taken towards better management of the tanks and channels, but from all districts come complaints that the funds allotted for minor irrigation works are insufficient and that the works are generally in bad order.

9. It would thus appear that the condition of the irrigation works in the Presidency is much the same as when Captain A. Cotton reported on them in 1837, but from Statement I appended it appears that the expenditure on the works was considerably increased after 1866-67, the average expenditure of the five years ending—

1851-52 being ... ... Rs. 7,79,402
or 7·54 per cent. on the revenue.
For the five years ending 1871-72 being ... ... „ 14,12,870
or 12·34 per cent. on the revenue.
For the five years ending 1876-77 being ... . „ 11,53,426
or 10·54 per cent. on the revenue.

The average revenue for these periods being—

Rs. 1,03,42,713
„ 1,14,50,543
„ 1,09,40,747

and the reports of late years show that latterly—

194 tanks * have been put in good order,
1,289 sluices * have been built,
1,139 weirs * have been constructed.

* From 1874-75 to 1881-82.

Statement II shows the grants that have been made for the past six years for Original Works and Repairs, and it will be seen that while the annual grant for repairs varies from a little over 6 lakhs to nearly 9 lakhs, from $2\frac{1}{4}$ to $3\frac{1}{4}$ lakhs were allotted annually for Original Works.

Statement III shows the expenditnre on Agricultural Works, under which head are classed River Embankments, River Conservancy, Drainage, &c., for a series of years, and proves that while the improvement of tanks and channels have received attention, a considerable proportion of the available funds has been expended on these essential works.

Before the famine, steps were taken under the direction of the Chief Engineer for Irrigation to group the tanks and channels in all districts, that is, to ascertain the circumstances of each individual work with reference to those lying above and below it in each drainage basin, and to note the requirements. The progress made in this work is as follows:—

	Area.	Revenue.
Works grouped	392,697	18,94,654
Works to be grouped	2,413,021	70,92,836
	2,805,718	89,87,490

This necessary work was interrupted by the famine, and the subsequent reduction of establishment in the Department prevented it being again taken up, and latterly the time that would have been occupied on this work has been taken up in classifying the

works as Imperial and Minor. When this classification has been finally completed, which it is anticipated it will be very shortly, it is proposed to take up the subject of the future maintenance of minor irrigation works specially, and to this end the evidence taken before the last Committee appointed by the Madras Government to consider the subject has been abstracted and the opinions of selected officers are being collected. Until this is done the expression of my individual opinion would be premature, and it need only be said that the subject must ere long be definitely disposed of.

10. Meanwhile, although full enquiry into the circumstances of each individual work is necessary to allow of money being economically expended, there are many works whose requirements have been ascertained, but not yet attended to, and many minor works on which to prevent risk of loss to Government and the cultivators, repairs of a nature not requiring scientific superintendence, are emergently required, and on these works a larger annual grant than is now made can be usefully expended.

11. The work to be done must be classed under two heads.—

(1.) Bringing each work up to the standard of efficiency and providing proper weirs and sluices.

(2.) Maintenance of works already brought up to the standard.

The first of these will bear no relation to the revenue, in many cases it will mean simply restoration, but in the case of most works it will be a work of improvement; the majority of the smaller tanks have never been provided with efficient weirs and in very many instances water has been drawn from the tanks by cuts through the banks or by rough sluices of hollow trees which are a continued source of danger to the works. In these cases the work to be done would be classified as "Extensions and improvements."

Under the second head "Maintenance," which must be understood to mean ordinary repairs which the ryots cannot perform, the expenditure should, it is thought, be a certain percentage of the revenue, and here we have the opinions of the Committees and individuals above noted for guidance. Starting with that of Sir A. Cotton we have the statement that works in which water is retained require an annual outlay of 3 to 4 per cent. on the cost of the works. The Committee of 1852 state that 10 per cent. on the revenue should be expended on maintenance and improvement. The Committee of 1870 considered that 8 per cent. on the revenue should be expended on maintenance including minor improvements. Major (now Colonel) Mullins considered that a much larger outlay than 8 per cent. on the revenue would be required for many years and Sir W. Robinson proposed $6\frac{1}{4}$ per cent. (one anna in the rupee) on the revenue only as a grant-in-aid. If we suppose the total assessment, including second crop, to average 6 rupees per acre, 8 per cent. on the revenue would approximate to a charge of 8 annas per acre, and here perhaps may be a guide in settling the charge. The cost of maintenance on the principal systems of irrigation is as follows:—

Godávari Delta	$4\frac{1}{3}$ annas per acre.	Srívaikuntham Anicut	11 annas per acre.
Kistna "	8 " "	Pálár "	$4\frac{1}{2}$ " "
Pennér Anicut	5 " "	Chembrambakam Tank	$3\frac{3}{4}$ " "

These works have the advantage of being concentrated, and under an efficient establishment, so that in the case of scattered works, many of which cannot be under the immediate eye of the permanent establishment, it does not appear unreasonable to allow a maintenance charge of 8 annas per acre, which on existing cultivation (say 2,500,000 acres) would amount to an annual grant of Rs. 12,50,000.

12. Returning now to the first head of proposed expenditure, "bringing each work up to the standard of efficiency," it is extremely difficult to estimate the cost of the work to be done, but taking the Report of Famine Commission, which quotes the opinion of the "Irrigation Department" as a guide, we find it is estimated that an expenditure of three times the annual grant hitherto appropriated will be necessary for twenty years. The annual expenditure (average of five years before the famine) was in round numbers Rs. 11,50,000, so that the proposed annual grant amounted to Rs. 34,50,000; this sum was of course to include the cost of maintenance, so that if we deduct 8 annas per acre for maintenance, the balance, Rs. 22,00,000, represents the sum which should be annually available for expenditure on "Restoration" or "Extensions and Improvements." In twenty years this would amount to 440 lakhs, or adding one-fourth for Establishment and Tools and Plant to 550 lakhs. In the Note by the Chief Engineer for Irrigation, printed with G.O., No. 685 I., 11th October 1881, copy

of which was forwarded to the Government of India, it is stated that 65 lakhs will be required to furnish tanks and channels with requisite masonry works and for minor miscellaneous improvements, but it may be noticed that this does not include the work that would be necessary to bring the tanks to a proper standard of efficiency.

13. As to the return to be expected from this expenditure, it is necessary to refer to a statement printed with letter No. 2696 W., dated 16th October 1882, from the Madras Government to the Government of India. Here it is shown that under the class of works now being treated of—

The ayacut was	Acres	5,190,000
The assessment was	Rs.	2,48,20,000

but that in consequence of the bad condition of the works the aggregate losses each year, in the opinion of the Revenue officers of Government, amount to not less than 40 lakhs. The ayacut is supposed to be the irrigable area under the work, but there are many cases where the ayacut includes land which in its present state cannot be irrigated and possibly never may be irrigated. It is true that if each work were brought up to its original irrigating capacity, though some of the ayacut might remain uncultivated, other waste lands not included in the ayacut might be irrigated, and it may be reasonable to set off the one against the other. Here then is the return to be expected from the outlay as given above, it amounts to 7·2 per cent.

14. The question now arises, how the money required can be expended, and it is necessary to call attention to the fact that to avoid loss by wasteful expenditure a considerable sum must be spent on "preliminary expenses." The grouping must be completed. As each group is worked out, and the circumstances of every individual tank in it ascertained, work can then be taken up without waiting for the grouping in each district or division to be completed, but the first thing to be done is to put on an establishment to deal with the grouping. The permanent establishment is not sufficiently strong to deal with it, and also to carry out works on any extended scale. The subject of the future management of minor irrigation works must be connected with the work of grouping, because the determination of what tanks should be abandoned, and what tanks can be handed over to the ryots without risk to other interests, depends on the investigation of the circumstances of each work.

The proposal that has been made to constitute tank divisions seems on the whole to be the best way of dealing with the subject, and it has this advantage that the working may be extended by the constitution of more divisions. It is in the first instance essential that work should be started on a proper footing, and though the tank divisions would work under the Superintending Engineers, it does not seem advisable, owing to the different number and condition of the works in each civil district, simply to give each Superintending Engineer a new division and let him commence work in his own way. An officer of some experience should be appointed to start the work, as at first the settlement of the question of the future management of the smaller tanks would claim considerable attention, but once the work was started on a proper footing and a decision come to as to the management of the smaller works, he might be withdrawn and the divisions left to the Superintending Engineer. It may also be desirable to appoint an Executive Engineer as Assistant to the Chief Engineer for Irrigation for a time. These would be special appointments, and would, with establishment, cost about Rs. 24,000 a year.

The cost of one tank division would be Rs. 32,000, and as considering the works are much scattered a large sum cannot be expended by each division in carrying out work, it is probable that $1\frac{1}{2}$ lakhs per annum would be the expenditure including establishment and tools and plant of each division. If the work is begun next year, one division might be started, and $1\frac{1}{2}$ lakhs would be required, the following year two divisions, and so on, as men were available, till at least one division would be working in each circle, and the expenditure would then be $9\frac{1}{4}$ lakhs or, as the special officers might by that time be withdrawn, to 9 lakhs. An annual expenditure of 10 lakhs would make the work last fifty-five years, and although tank divisions might be increased to almost any extent yet there seems no hope of bringing the works up to the proper standard of efficiency in a short time, and when we find twenty years spoken of as an unreasonable time to be occupied on it, it can only be supposed that the magnitude of the work has not been fully considered. If work is

taken up as proposed, the following is a rough forecast of the expenditure necessary in the next five years:—

	Improvements to Irrigation Works. LAKHS OF RS.
1883-84	1·5
1884-85	3
1885-86	4·5
1886-87	7
1887-88	10

This expenditure is to be incurred solely on the work to be undertaken by the tank divisions, until they are working properly. Works of maintenance and improvement must be carried out, as they are at present, imperfectly, by the permanent establishment. In the fourth year probably all works of improvement will be taken up by the tank divisions, and then the budget should provide, under Ordinary Irrigation and Navigation Works, 7 lakhs for Improvements to Irrigation Works; Maintenance at 8 annas per acre, (say) $12\frac{1}{2}$ lakhs, and Agricultural Works 4 lakhs; total $23\frac{1}{2}$ lakhs—to be increased the following year to $28\frac{1}{2}$ lakhs.

27th November 1882.

(Signed) J. O. HASTED, Colonel, R.E.,
Ag. Chief Engineer for Irrigation.

I.

STATEMENT showing the Total Area irrigated under, the Revenue derived from, and Outlay incurred on, Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept in all the Districts of the Madras Presidency for 35 years from 1847-48 to 1881-82.

Years.	AREA IRRIGATED.		Revenue.	Outlay.	AVERAGE FOR FIVE YEARS.					Remarks.
					Area irrigated.		Revenue.	Outlay.	Percentage of Outlay on Revenue.	
	Government.	Zemindari and Inam.			Government.	Zemindari and Inam.				
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
1847-48	14,70,536	..	1,05,34,173	10,30,546	..	..	..	..	..	
1848-49	15,22,315	..	1,00,94,515	7,35,465	..	..	..	..	..	
1849-50	14,80,308	..	95,38,470	6,14,143	..	..	..	..	..	
1850-51	15,52,009	..	1,02,42,763	6,03,060	..	..	..	..	..	
1851-52	15,58,714	..	1,13,03,646	9,13,796	15,16,776	..	1,03,42,713	7,79,402	7·54	
1852-53	17,14,197	..	1,20,87,102	..	..	..	..	..	..	
1853-54	15,94,979	..	1,19,19,669	..	..	..	..	..	..	
1854-55	16,16,077	..	1,17,26,498	..	..	..	..	..	..	
1855-56	16,07,113	..	1,27,37,307	11,06,337	..	..	..	..	..	
1856-57	16,77,076	..	1,26,59,048	11,95,244	16,41,888	..	1,22,25,925	..	..	
1857-58	15,60,510	..	1,26,52,542	9,34,017	..	..	..	..	..	
1858-59	17,35,405	..	1,43,80,514	13,50,960	..	..	..	..	..	
1859-60	17,75,760	..	1,17,44,407	11,40,355	..	..	..	..	..	
1860-61	17,55,558	..	1,11,88,920	8,00,887	..	..	..	..	..	
1861-62	18,32,719	..	1,17,32,628	6,74,706	17,31,990	..	1,23,39,802	9,80,185	7·94	
1862-63	19,53,249	..	1,21,97,313	7,70,795	..	..	..	..	..	
1863-64	19,35,007	..	1,17,57,392	5,76,304	..	..	..	..	..	
1864-65	18,38,901	..	1,11,41,000	8,52,184	..	..	..	..	..	
1865-66	20,19,648	..	1,17,39,503	6,61,042	..	..	..	..	..	
1866-67	21,02,641	..	1,20,36,978	8,00,886	19,15,889	..	1,17,74,439	7,32,242	6·22	
1867-68	18,86,179	..	1,10,39,761	* 17,18,916	..	..	..	..	..	* Includes famine expenditure in 1866-67 and 1867-68.
1868-69	19,56,063	..	1,14,71,294	15,72,795	..	..	..	..	..	
1869-70	19,63,278	..	1,14,63,203	13,15,604	..	..	..	..	..	
1870-71	20,42,968	..	1,19,95,310	13,15,194	..	..	..	..	..	
1871-72	22,99,555	4,39,985	1,12,83,150	11,41,843	20,29,608	..	1,14,50,543	14,12,870	12·34	
1872-73	24,46,645	3,33,400	1,17,27,801	11,72,302	..	..	..	..	..	
1873-74	23,93,862	2,49,363	1,10,36,160	12,30,853	..	..	..	..	..	
1874-75	21,57,302	9,26,782	1,33,80,398	11,51,985	..	..	..	..	..	
1875-76	22,94,096	7,94,344	1,10,57,875	10,71,212	..	..	..	..	..	
1876-77	18,92,533	7,19,019	75,01,503	11,40,777	22,36,887	6,04,581	1,09,40,747	11,53,426	10·54	
1877-78	24,01,710	7,19,336	1,17,89,730	11,07,772	..	..	..	..	..	
1878-79	25,17,670	7,78,363	1,19,92,215	12,61,896	..	..	..	..	..	
1879-80	25,13,870	7,37,866	1,20,01,671	7,30,815	..	..	..	..	..	Public Works Establishment was reduced.
1880-81	25,11,835	8,87,579	1,21,35,092	4,11,009	..	..	..	..	..	Value of work done from Famine funds on the Pálár anicut channels erroneously debited to this head in 1878-79 was written back during the year.

II.

STATEMENT of Grants for Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept, from 1876-77 to 1881-82.

Districts.	1881-82.		1880-81.		1879-80.		1878-79.		1877-78.		1876-77.	
	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	5,000	30,000	5,000	10,000	4,000	30,000	4,500	19,820	4,500	17,000	3,000	29,000
Vizagapatam			2,500	8,000	2,000	12,000	2,000	11,890	1,800	16,500	2,000	19,000
Godávari	4,809	8,000	5,160	1,500	7,000	22,000	7,500	17,840	17,111	17,000	11,500	15,200
Kistna	500	4,100	500	3,000	7,000	10,000	7,000	8,920	10,500	8,000	3,500	5,200
Nellore	8,000	40,000	10,000	60,000	6,000	60,000	7,000	59,470	7,000	60,000	19,850	36,900
Bellary	10,000		..	..	7,000	40,000	7,000	49,560	7,000	50,000	8,000	60,000
Cuddapah	6,000	60,000	20,743	22,500	10,000	45,000	11,000	45,090	9,500	30,000	12,000	40,000
Kurnool	..		5,000	12,000	12,301	25,000	10,000	44,600	18,120	50,000	28,000	52,000
Chingleput	27,297	40,000	47,847	75,000	22,000	78,210	16,300	88,210	48,840	89,000	52,942	87,900
North Arcot	11,000	53,000	15,000	63,000	14,200	80,000	14,800	76,320	15,000	97,000	20,000	86,500
South do.	42,000	90,000	10,000	86,000	10,000	1,06,000	12,000	99,110	17,000	92,510	42,000	1,04,000
Salem	40,000	20,000	20,000	..	37,486	42,000	16,000	67,390	20,500	64,000	20,000	53,000
Coimbatore	10,970	35,000	13,830	60,000	7,000	46,500	7,500	49,100	5,500	56,400	6,000	70,500
Tanjore	4,000	11,000	12,720	15,000	2,500	10,000	2,500	9,910	3,500	10,000	3,000	..
Trichinopoly	6,000	30,000	6,000	36,000	6,000	44,000	7,500	39,660	16,250	40,400	8,000	43,000
Madura	2,000	10,000	..	..	6,000	50,000	11,000	59,480	5,400	49,000	4,000	49,000
Tinnevelly	12,200	60,000	8,000	70,000	20,000	1,20,000	24,216	1,48,680	22,354	57,600	36,100	61,000
Reserve ..	36,500	1,33,900	39,000	95,000	10,800	..	35,000	..	54,274	..	41,500	..
Total ..	2,26,276	6,25,000	2,21,300	6,17,000	1,91,287	8,20,710	2,04,816	8,95,050	2,84,149	8,04,410	3,21,392	8,12,200

III.

STATEMENT showing Outlay on Agricultural Works incurred from 1863-64 to 1881-82.

Districts.	1863-64.		1864-1865.		1865-66.		1866-67.		1868-69.		1875-76.		1876-77.		1877-78.		1878-79.		1879-80.		1880-81.		1881-82.	
	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam ..	1,235	..	..	..	..	..	..	..	..	..	1,319	12,617	54	19,692	782	16,548	53	3,480	104	2,560	..	676	..	..
Vizagapatam.	..	..	..	..	..	..	..	..	..	..	..	1,914	15	837	3	880	..	628	1	2,208	..	..	..	180
Godávari ..	..	..	..	..	..	..	..	..	..	..	42,734	40,993	29,602	46,019	15,952	26,561	..	21,935	..	22,575	32,486	21,118	73,881	24,694
Kistna ..	..	..	1,575	..	3,177	..	415	..	..	..	..	14,981	..	6,744	8,433	3,405	1,978	2,746	9,128	443	11,121	7,200	10,193	5,684
Nellore ..	..	..	..	..	..	..	..	..	..	..	4,498	4,999	45,999	3,005	15,481	100	4,373	2,046	10,449	184	5,357	131	1,483	804
Cuddapah ..	..	..	..	..	..	..	..	..	..	..	..	6,849	1,489	914	801	609	5,236	797	1,466	744	470	485	..	431
Bellary ..	..	..	..	..	..	..	..	..	..	..	28	..	89	..	170	200	18	..	..	..	..	..	..	..
Kurnool ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput..	..	..	..	..	..	..	8,446	..	274	..	..	4,736	115	8,070	1,889	1,524	12	3,132	3,556	276	3,890	1,095	914	967
North Arcot.	..	..	..	..	..	..	..	..	..	..	..	2,925	142	1,450	..	127	93	..	496	..	..	..	25	..
South do.	..	..	2,310	..	..	..	3,500	..	..	..	255	10,491	112	1,927	..	11,207	110	4,905	..	14,494	249	19,303	..	12,099
Salem ..	..	..	..	..	..	..	..	..	..	..	42	3,864	..	3,271	..	..	639	630	..	1,262	..	1,448	176	436
Coimbatore.	..	..	..	..	..	..	..	..	..	..	3,350	5,861	106	4,167	..	402	102	2,856	2,333	7,272	1,858	6,150	501	8,306
Tanjore ..	..	..	..	..	1,900	..	3,284	..	..	..	..	1,14,216	1,312	61,413	759	60,657	..	51,483	969	52,562	1,002	68,355	1,335	68,844
Trichinopoly	..	..	..	..	..	..	..	..	..	..	..	30,551	2,515	56,561	6,657	88,330	15	36,014	628	15,396	2,015	19,408	795	30,537
Madura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	366	..	..	..	511	..	..	..	..
Tinnevelly..	..	..	..	..	..	..	..	..	..	..	..	4,269	..	3,703	..	471	..	29,153	7,060	5,025	5,503	5,135	17,228	3,000
Total ..	1,235	..	3,885	..	5,077	..	15,645	..	274	..	52,226	2,59,266	81,550	2,17,773	50,927	2,11,377	12,629	1,59,805	36,190	1,25,512	63,950	1,50,501	1,06,031	1,55,982