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*Proceedings of the Madras Government, Public Works Department,
25th May 1875*

Read the following papers —

No 437. From J H LATHAM, Esq, Chief Engineer and Manager of the Madras Irrigation and Canal Company, to Lieutenant-Colonel J MULLINS, R E, Chief Engineer for Irrigation, dated Kurnool, 29th March 1875, No 43

Prospects of the Canal

I HAVE the honor to acknowledge the receipt of G O, No 371, of the 9th ultimo. I enclose (per book post) a copy of my letter, No. 71, of 18th idem, to Messrs Dodson and Wilks, and the latter's reply Mr Dodson was, at the time, absent at Someshwaram, and his reply only reached me the other day (Good Friday), and its classification is made under a misapprehension of the meaning of my letter This I much regret, but I will do my best to answer the order of Government without further delay I enclose Mr Dodson's summary only.

2 The subject of discussion is the income of the canal necessary to cover capital charges, such as interest, &c The object of the discussion seems to be how far the canal will, or can ever, repay these charges by direct revenue, and consequently what likelihood there is of canals being made in this country by private firms or companies receiving only direct revenue in return for their outlay. The determination of the best terms on which canals can be made by Government is, I presume, the final object of the whole discussion

3 The epoch of the discussion is 30th June 1874 Up to that date the expenditure on the canal had been, avoiding technicalities as much as possible,

Nature of Outlay and Charges, as affecting the scheme as a whole	Capital not re-payable	Debt due out of Revenue	Annual Charge
	£	£	£
On account of a million sterling raised for the scheme by the Company under a State guarantee of 5 per cent (omitting fractions)	1,000,000		50,000
Raised by the Secretary of State directly at about 4 per cent (say)	600,000	..	24,000
NOTE — The mortgage debentures are a separate financial operation, which will only complicate matters if introduced here It is a speculation which will stand or fall on its separate merits			
Guaranteed interest paid up to date of epoch	.	652,193	
Simple interest thereon at 4 per cent	.	62,564	
Interest on loan at 4 per cent to epoch	.	114,310	
NOTE — Here again there exists a separate speculation of the Secretary of State and Company, by which the former is to be paid 5 per cent by the Company, whatever the loan cost the country to raise			
Simple interest on the last-mentioned interest	..	12,244	
Simple interest on debt at 4 per cent, your supposed market rate (paragraph 2 of your letter accompanying the Government Order)			33,652
Total	1,000,000	841,311	107,652

Thus if we add the working expenses, viz £20,000, it results that, at the epoch, £127,652, or, say, Rupees 14,00,000 of gross returns are required from irrigation,

*Proceedings of the Madras Government, Public Works Department,
25th May 1875.*

This revenue, after allowance for remissions, it must be admitted, is quite possible to be earned by the canal as it exists, without more annual outlay than above allowed.

This may be shown thus.—

4 It must be remembered that the canal and largest channels have been, for all purposes of construction and apportionment, taken as required to convey two cubic yards of water an hour for every acre to be brought under their supply. Smaller channels are apportioned by a scale making them capable of passing a much larger supply. For the purpose of estimating returns these discharging powers give but a very rough approximation, and I propose to take 18 cubic yards an hour as the quantity, delivered at a tank sluice, actually known, within close limits of error, to suffice for rice cultivation in climates sufficiently resembling Kurnool. Between the head sluice or canal entrance at Soonkesula and the delivery sluices lie an area of canal water and damp earth which, including the main channels, is about 10,000 acres, of which half are tanks. Perhaps for a full canal this should be taken at 15,000 acres. During the first crop the canal receives from the drainage of the country at least as much as evaporates from the canal, but let us suppose an extreme year when this is not the case. Then since the canal can with ordinary care, and under the assumed maintenance allowance, supply demands enough to utilize 400,000 cubic yards an hour admitted at the head sluice, this will suffice to maintain an outspread of 222,222 acres of water or damp earth. Deducting 15,000 acres within the ground occupied by the canal, it appears that the canal can easily maintain 200,000 acres of rice cultivation with a margin for other purposes. It will be sufficient to estimate this at Rupees 6 an acre for first crop, and at Rupees 2 for second crop. I am aware that considerable areas will grow double crops, chargeable at Rupees 12; and that large areas will grow 4-Rupee crops requiring water only every 3rd, 4th, up to 7th day, so that 3 or 4 acres may be cultivated with the water required for one acre of rice; but these cultivations, as is the case with all second crop cultivation, involve more waste of water than rice, and I think the above to be fair. This gives for direct returns—

An average of 207,000 acres at Rupees 6 =		12,42,000
" " " " " 2 =		4,14,000
		16,56,000
Deduct remissions 5 per cent ..		82,800
		15,73,200

5 As to the area of the soil irrigable, I regret that Mr Dodson's table is obviously inaccurate. Thus in Cuddapah taluq he returns 8,499 acres irrigable, and 18,115 commanded, whereas of this last 11,034 acres require only field channels to be made to supply them without any works. The village plans of Mr. Dodson's division are not so complete as those of the Upper Division. There is, however, enough to show that there is ample area for irrigation available.

6 From navigation no returns can be drawn unless the Secretary of State decides upon trying it, but the same may be said of the estimate of irrigation. Unless the Secretary of State decide upon some means of carrying produce, that produce will not be grown.

7. It is obvious that, before the present canal pays half the above gross revenue, the Nellore canal will be made. This will involve some widening and strengthening of

*Proceedings of the Madras Government, Public Works Department,
25th May 1875.*

the first 75 miles of canal. The cost of the whole will be about a tenth, and the returns about one-third of the present canal, or, if navigation be also paying on this canal, it will of course be provided for in the Nellore portion, and will somewhat increase the cost.

8 If any further information be desired I will give it my best attention.

From J H LATHAM, Esq., Chief Engineer and Manager, Madras Irrigation and Canal Company, to A J DODSON, Esq., Conservancy Engineer, Lower Division, dated Kurnool, 18th February 1875, No 71

I HAVE the honor to ask your *prompt* and *thorough* attention to a State paper, G O, No 371, of 9th instant, which I circulate to you to-day. It is, I believe, in connection with a report immediately required by the Supreme Government, and may influence that Government in sanctioning any future expenditure of private capital on the canal or its navigation. In such a case delay will probably be exactly equivalent in its result to neglect, and should be avoided at all reasonable cost.

All that the Madras Government ask of you is in each village concerned

In each taluq—

I—(a) The accurate areas under irrigation, *i.e.*, to any part of which you are at this moment able to supply water on application, assuming the existing canal and channels in working order, and field channels only required to be made to reach the field (10 and 5 link), then as accurately as may be—

(b) How many of these are not practically arable (as being vagoos, hedgerows, rocks, graves, &c, &c)

(c) How many are thorough deep black cotton

(d) " " " injuriously sandy

(e) " " " shallow, or barren red soil suitable for irrigation, but plainly unsuitable for crop without reclamation and manure

(f) How many are really good irrigating soil of sand, silt or red soil, neat or mixed with black cotton

II—Approximate areas commanded but not yet brought into the irrigation. Though this is approximate, it needs to be given as accurately as possible. Where you have the village plans the areas will be taken from them, though until they shall have been levelled over it is not certain but what lumpy ground or hillocks may exist which cannot be irrigated, and the division into soils will take place as before.

For areas commanded but requiring *considerable* works to reach them, the area and cost may be noted in the margin, or, if the cost be so small in proportion to the area as to make the scheme obviously advantageous, the areas should be given in more detail in the columns, and also an abstract of the estimate given in the remarks.

I enclose a sample of headings for the table

From C. H WILKS, Esq., Conservancy Engineer, Upper Division, to J H LATHAM, Esq., Chief Engineer and Manager, Madras Irrigation and Canal Company, dated Kurnool, 17th March 1875, No 73

Your letter No 59 of 18th ultimo

I have the honor to forward herewith a plan and statement of the land irrigable and commanded under the canal in the Upper Division.

2 The Plan—The area colored green is irrigable land, arable and unarable, which can be easily supplied from our existing sanctioned distribution schemes.

*Proceedings of the Madras Government, Public Works Department,
25th May 1875.*

The orange is land commanded which can be supplied only by new schemes, new sluices, or decided extensions.

3 One scheme for irrigating the land north of the Bowanassey has not been entered, but the channel as formerly laid out is shown.

The channel would irrigate about 15,000 acres; but the expensive and formidable work of crossing the Bowanassey river seems to be a sufficient hindrance to the scheme, at least until every other available plot has been taken up.

4 The notes in the remark column will explain each separate scheme, and in some cases rough estimates have been given.

The Nizam's villages have been excluded, as we have orders not to supply water to them.

5 The Statement—Great care has been taken to arrive at an accurate account of the land under the headings recommended by you.

The Total Irrigable area is from the Village Registers, printed and issued under authority by the Revenue Survey: these registers record the areas of every portion of the land within the village boundaries separately, as remarked and surveyed by that department.

Fields and tracts not arable are so described in the above Register. Where portions of fields only are occupied by roads, vagoos, village sites, or graves, not so described, or are too high to be reached by the canal water, these unarable portions have been calculated from the authorized village maps by the scale (of 16 inches to the mile) to which they have been lithographed by the Survey Department.

6 In order to ensure every possible accuracy in detail, the best Overseers and Amins were called into Kurnool to give their evidence as to the soil. Every Kandam, or Trigonometrical Sub-division of each village, was separately taken into consideration, portions of each different soil have been separately taken out, and it could be scarcely possible to have a more accurate account. The village of Kortamuddy, about half of which is irrigable, is the only one of which the Survey plan has not been received, and for this the taluq map has been used.

7. The portion called *commanded area* is of course not so well known as that called irrigable. Of these villages most were taken from the taluq map by myself. Thus, plans of Yellagode, Abdoolapooram, Goontakundala, Boyarevula, Modekur, Talamudippi, Rollepau, Kurivena were not available. The deductions for land not arable were made from a comparison of the neighbouring and similar villages by taking a percentage. This varied from about 3½ to 8 per cent. of the whole area, 4 per cent. was generally the average in large villages for roads, vagoos, &c.

8 *Soils, Black Cotton*—The line between black cotton and mixed soils is a very indistinct one, and I can only say that there is very little really pure "regady" (regar). I have entered what is commonly called black cotton soil, the dark soil in which the white cholum and cotton are known to flourish, and which is generally very deep.

9 *Soudoo*—(I am not aware whether this be the same as "reh;" certainly it produces no such disastrous results.) There seems to me to be a misapprehension about soudoo soil. There exists very little real soudoo. I have entered as soudoo only those portions which are so bad as to be nearly incapable of cultivation. I say *nearly* because a careful man can grow rice on soudoo land, and will in the course of a few seasons render this despised land very fertile. In proof of this I would point out the gardens now so flourishing and valuable on the south side of the Hindry river. The land is mostly deep soudoo, or, if not so originally, became coated with salts after the first advent of water, but the cultivators were well enough off and sensible; they continued to use the water and improve the land, which is reckoned about the best in Kurnool, and now there is not an acre which is not cultivated.

There are some acres elsewhere that have been spoilt by salts, by having been irrigated for a season without manure and then abandoned. This is generally away from the canal, where the water is cheap, and cultivators ignorant. In Kulloor they never give up the use of the soudoo. The popular notion that irrigation always destroys the land is a

*Proceedings of the Madras Government, Public Works Department,
25th May 1875.*

popular error or excuse, and should be refuted. Nearly all new land when first irrigated will produce more or less the appearance of soudoo. But this disappears with ordinary treatment.

10 *Shallow and poor*—This column contains shallow, stony ground, generally poor. But most of it is fit for irrigation if carefully cultivated. Nearly one-fourth of the land in Kulloor (Kurnool) is of this description, often scarcely 6 inches deep, but it is extensively cultivated.

11 *Good mixed*—This contains all good soil mixed with sand, silt, all red soil, pure or mixed with black cotton in various proportions. It is in villages possessing this soil that irrigation (if we except Kulloor and its neighbourhood) has made the greatest progress. For instance I would mention Moomchurry, Gunnaiveram, Rudraveram, Pamulpau, and Kurimudela.

12 The delay in answering the letter has been attributable partly to my own illness, and partly to the very detailed way in which the work has been carried out. I have allowed no deviation from the plan of arriving at the facts by actual measurement or figures from the register, except as above stated when plans were not forthcoming.

8 per cent. of the whole area of land lying within the village boundaries is not arable

41 1	do	do	black cotton
1 8	do	do	soudoo
14 0	do	do	poor and shallow
35 1	do	do	good mixed

Thus shows that of the area under consideration—

90 per cent. is fit for the cultivation of wet crops

Proceedings of the Madras Government,

MADRAS IRRIGATION

UPPER

Areas irrigable and areas commanded

Taluk and Village		IRRIGABLE AREA											
		Total		Not Arable		Black Cotton		Soudv		Shallow and Poor		Good mixed Soil	
Ramakota Taluk.		ACRES.	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES.	CENTS	ACRES	CENTS
Senkesula	---	20	00	--	--	---	---	.	---	---	---	20	00
Kontalapad	---	25	00	---	---	---	---	.	---	---	---	25	00
Odurur	---	183	87	31	24	---	---	---	---	---	---	152	63
Kopalasingavaram	---	487	45	96	02	---	---	45	19	---	---	346	83
Iduzur	---	621	38	61	43	---	---	---	---	24	00	535	95
Unagalapad	---	194	88	43	01	.	---	---	---	15	76	136	11
Samudyalapad	---	394	71	90	90	---	---	---	---	17	78	286	03
Os	---	124	77	4	00	---	---	---	---	---	---	120	77
allur	---	1,092	58	314	56	60	00	20	00	240	24	457	78
urnool Town	---	20	00	---	---	---	---	---	---	---	---	20	00
harapuram	---	244	23	64	61	---	---	30	95	23	04	125	63
		3,408	87	705	77	60	00	96	05	320	82	2,226	23
Nandikotkur Taluk													
Supala Rudravaram	---	761	73	293	17	111	10	8	71	93	36	255	39
dur	---	414	63	189	59	52	24	---	---	97	85	75	45
ur	---	598	87	51	25	95	90	26	05	295	39	130	28
tanikota	---	1,336	99	202	50	---	---	---	---	579	49	555	00
ulala	---	1,049	93	42	36	---	---	---	---	---	---	654	85
iddigatla	---	865	64	.	---	352	79	---	---	---	---	---	---
inevemula	---	3,472	41	254	06	772	28	20	47	106	23	---	---
gatur	---	1,054	49	107	34	295	99	---	---	1,127	58	818	49
rvakonda	---	2,604	34	150	74	860	00	.	---	135	82	515	34
apuram	---	1,044	81	86	58	---	---	.	---	2,093	60	---	---
lala	---	2,054	39	243	12	1,260	59	50	00	373	06	585	17
gameewaram	---	645	50	6	50	640	00	---	---	850	00	150	68
chumarr	---	3,192	18	241	64	83	00	---	---	---	---	---	---
amarr	---	1,566	17	51	21	1,134	57	20	00	807	17	2,060	37
avol	---	2,351	06	1,672	21	---	---	---	---	187	23	173	17
talota	---	5,659	85	312	25	2,293	41	50	00	678	85	---	---
adiyala	---	1,703	20	63	53	249	03	60	00	613	60	2,390	59
ehmapuram	---	655	87	7	44	---	---	60	00	581	67	753	98
apavaram	---	3,574	12	315	51	904	93	---	---	---	---	643	43
analur	---	1,319	78	194	69	1,125	09	---	---	---	---	2,353	68
pad	---	2,622	72	286	21	2,008	79	30	00	40	72	257	00
avaram	---	1,859	24	157	55	261	22	30	00	487	49	922	98
goppula	---	588	20	72	08	83	40	.	---	---	---	432	72
ur	---	2,841	94	471	06	1,681	18	---	---	---	---	689	70
ur	---	2,159	86	104	18	1,503	45	100	00	---	---	1,453	23
imilla	---	1,013	23	101	37	---	---	50	00	---	---	861	86
ulapad	---	2,051	78	416	69	---	.	---	---	.	---	1,635	09
veena													
balapalli													
		436	04	33	40	---	---	---	---	---	---	402	64
Total up to Mittacondal Cutting													
		49,008	97	6,127	22	15,506	84	445	23	8,648	59	18,276	09
Mukkala													
		1,016	29	29	03	116	17	---	---	153	27	717	82
		2,107	93	73	16	626	61	---	---	290	68	1,117	47
akandala													
		4,377	89	429	32	1,753	64	30	00	---	---	2,164	93
yodu													
		---	---	---	---	---	---	---	---	---	---	---	---
ilapuram													
		1,856	55	28	77	639	65	341	55	---	---	847	55
andala													
		---	---	---	---	---	---	---	---	---	---	---	---
revula (Iyavarpalli)													
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kur (Madavaram)													
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Public Works Department, 25th May 1875.

AND CANAL COMPANY.

DIVISION

by the existing Canal and Channels, 1874-75

AREA COMMANDED.												Remarks
Total		Not Arable		Black Cotton		Sandy		Shallow and Poor		Good, mixed Soil		
ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	
"	"	"	"	"	"	"	"	"	"	"	"	* Land lying between the Huggery and Hindry rivers Ryots of Kallur have often requested the Company to build or let them build a masonry dam across the Huggery in order to supply these fields Probable cost of dam would be Rupees 600
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Proceedings of the Madras Government.

Areas irrigable and Areas commanded by the

Taluk and Village.	IRRIGABLE AREA											
	Total		Not Arable		Black Cotton		Sandy		Shallow and Poor		Good mixed Soil	
	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS
Tadicherla	1,778	65	79	79	637	25	19	81			991	80
Talamudipi	2,943	08	165	83	627	27	5	52	771	86	1,373	10
Korrapolur												
Rollapad												
Allaganur												
Regadagudur	2,855	31	191	65	2,266	89					396	77
Vansala	3,437	78	294	87	1,833	60			334	16	1,025	15
Velpunur	4,032	41	211	23	3,212	95					608	24
	72,959	85	7,630	86	27,269	87	842	11	10,198	06	27,018	95
Nandial Taluk												
Karimadula	4,766	95	100	71	1,320	00					3,346	24
Pesavayy	8,651	86	151	03	3,500	83						
Paramatur	2,061	44	16	26	360	18					1,685	00
Santazatur	16	00									16	00
Tirripad	1,473	30	116	40	1,233	13					124	77
Chindukur	2,307	00	108	69	2,098	00	87	00			13	31
Gadigerevela	2,710	27	169	72	2,345	78					194	77
Kakanur	1,331	86	36	99	1,213	44					81	43
Bandiattmakur	1,080	30	65	63	978	50	2	63			33	55
Budanur	2,110	93	395	31	1,592	54	8	32			114	76
Pulimaddi	3,106	36	128	28	2,867	66					110	42
Gadivemula	77	60	1	60							76	00
Bilakalakudur	2,229	81	174	94	1,624	97	4	85			425	05
Yerraguntla	2,520	98	81	69	2,074	12					365	17
Bhojanam	1,659	19	78	40	1,560	71	13	43			6	65
Koratamaddi	1,728	09	120	00	1,403	00					205	09
Rayamampuram	149	80	2	80	47	00					100	00
Nandial	361	77	17	77	144	00					200	00
	83,343	51	1,766	22	24,362	86	116	22			7,098	21
SUM												
Ramalakota Taluk	3,408	87	705	77	60	00	96	05	820	82	2,226	23
Nandikotukur	72,959	85	7,630	86	27,269	87	842	11	10,198	06	27,018	95
Nandial	33,343	51	1,766	22	24,362	86	116	22			7,098	21
Total... 75	109,712	23	10,102	85	51,692	73	1,054	88	10,518	88	36,343	39

Taking the grand total commanded which including all land is 152,905 10, we have the following per-centages —

Not arable	8	per cent. of the whole area.
Black cotton	41 1	do do
Sandoo	18	do do
Poor and shallow	14 0	do do
Good, mixed	35 1	do do
Total	100 0	

Public Works Department, 25th May 1875.

existing Canal and Channels, 1874-75 — (Concluded)

AREA COMMANDED												Remarks
Total		Not Arable		Black Cotton		Sandy		Shallow and Poor		Good, mixed Soil		
ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	ACRES	CENTS	Allaganur extension scheme at 0 10 0 per acre would cost 3 657 acres at 0 10 0 Rupees = 2,295 10 0.
2.3	88	4	00					29	88	220	00	
3,030	00	216	00	879	00	553	00	716	00	716	00	
1,805	00	126	00	420	00			419	00	840	00	
4,410	00	309	00	2,000	00					2,101	00	
												* Fast of the canal, but no sluice for the supply
* 8,000	00	200	00	2,300	00	212	00			288	00	
41,859	87	2,141	16	10,089	00	1,565	00	10,846	88	16,718	33	No sluices for this, it lies east of canal.
1,489	00	22	00	1,017	00	180	00			270	00	
1,489	00	22	00	1,017	00	180	00			270	00	
MARY												Deducting land not arable and sandoo we have Irrigable land available for cultivation 93,555 00 Land commanded available for do. 39,279 71 Grant Total of land which is commanded and available for cultivation 137,834 71
834	00	5	00	50	00			39	00	250	00	
41,859	87	2,141	16	10,089	00	1,565	00	10,846	88	16,718	33	
1,489	00	22	00	1,017	00	180	00			270	00	
43,192	87	2,168	16	11,156	00	1,745	00	10,885	88	17,238	33	

KURNOOL,
17th March 1875

(Signed) C H WILKS,
Conservancy Engineer

LOWER DIVISION

Abstract of Areas irrigable and Areas commanded by the existing Canal and Channels, 1874-75

Taluka.	No of villages.	IRRIGABLE AREA						AREA COMMANDED					
		Total	Not Arable	Black Cotton	Sandy	Shallow and Poor	Good, mixed Soil	Total	Not Arable	Black Cotton	Sandy	Shallow and Poor	Good, mixed Soil
Nundal .	23	18,839 96	643 69	10,051 24	107 00	3,404 81	4,633 22	8,037 23	210 68	5,230 59	62 00	1,346 31	1,187 65
Kolountla ..	28	27,290 00	411 00	9,585 00	55 00	6,860 00	10,379 00	36,691 00	748 00	22,662 00	135 00	5,195 00	7,951 00
Sirwell .	45	36,883 35	1,672 33	8,689 47	171 68	5,359 99	20,989 88	23,507 02	638 93	13,962 35	22 00	3,318 66	5,565 08
Jumbulmuddoogoo	5	2,390 00	245 00	405 00	.. .	...	1,740 00						
Prodatoor .	23	8,143 00	303 00	857 00	160 00	1,032 00	5,791 00	3,460 00	270 00	70 00	10 00	1,120 00	1,990 00
Cuddapah ..	24	8,499 00	494 00	390 00	110 00	790 00	6,715 00	18,115 00	1,200 00	1,360 00	506 00	2,694 00	12,355 00
Totals ...	148 *	102,045 31	3,769 02	29,977 71	603 68	17,446 80	50,248 10	89,810 25	3,067 61	43,284 94	735 00	13,673 97	29,048 73

DHOOR,
22nd March 1875

(Signed) A J DODSON,
Conservancy Engineer.

Proceedings of the Madras Government, Public Works Department,
25th May 1875

No 21

Note by the Chief Engineer for Irrigation

THE information furnished by the Chief Engineer and Manager, Madras Irrigation and Canal Company, with reference to G O, No 371, of the 9th February 1875, is of much importance in connection with the possibilities of irrigation under the Company's canal Mr Latham uses the term area commanded in a different sense to that commonly adopted and applied to irrigation projects generally in India. He takes it to mean the area which could be watered, were distribution channels provided, in addition to that which can now be watered, whereas in the ordinary sense it is the whole area to which water can be supplied at a level suitable for irrigation Recasting, then, the information given in the statements transmitted by Mr Latham, and adding thereto particulars of the irrigation of 1873-74 taken from the Revenue statements of that year, and of 1874-75 from the Chief Engineer's report for the month of February 1875, the following general results are exhibited —

Talucs	Number of Villages.	Area commanded.	Deduct not arable and und.	Commanded arable	AREA NOW IRRIGABLE & FOR WHICH DISBURSABLES ARE AVAILABLE			AREAS IRRIGATED		PERCENTAGE OF IRRIGATION IN—			
					Regur	Other soils	Total	1873 74	1874 75	1873 74		1874 75	
										To area commanded, column 5	To area now irri- gable, column 8	To area commanded, column 5	To area now irri- gable, column 8
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES	ACRES
Ramulkotta	11	3,753	807	2,946	60	2,547	2,607	1,541	1,049	52 30	59 11	35 60	40 24
Nundikotkur	46	114,320	12,179	102,141	27,270	37,217	64,487	4,515	3,026	4 42	7 00	2 96	4 69
Nundial	18	34,832	2,084	32,748	24,363	7,098	31,461	758	440	1 29	1 53	1 34	1 40
Koilkuntla	23	26,877	1,023	25,854	10,051	8,038	18,089	440	298	0 70	1 64	0 91	1 64
Koilkuntla	28	63,981	1,349	62,632	9,585	17,239	26,824	440	289	2 87	4 74	0 46	1 08
Sirwel	45	60,390	2,505	57,885	8,689	26,350	35,039	1,663	1,588	6 06	6 10	2 74	4 53
Jammalamadugu	5	2,390	245	2,145	405	1,740	2,145	130	44	25 57	36 16	2 05	2 05
Prodatoor	23	11,603	743	10,860	857	6,823	7,680	2,777	2,109	14 30	44 02	19 42	27 46
Cuddapah	24	26,614	2,310	24,304	390	7,505	7,895	3,475	1,359	4 76	7 78	5 59	17 21
Total	223	344,760	23,245	321,515	81,670	114,557	196,227	15,299	10,202			3 17	5 20

2. It is possible that, when the accounts of the area of irrigation in 1874-75 come to be completed, the results will be less unfavorable than those above shown, but the statement shows conclusively that hitherto irrigation in certain taluqs has been remarkably unpopular, and that compared with what was practicable the actual extent has been altogether nominal.

3. Perhaps the most satisfactory fact in the above statement is that the area of arable land commanded is very considerable. As general experience would have indicated, irrigation has made most way in taluqs in which the soil of the lands furnished with the means of irrigation is not regur. In the Nundikotkur and Sirwel taluqs, however, although the proportion of other soils is large, the ryots have not shown any desire to make use of the canal water. It seems highly probable that the proportion of regur land irrigated will always be small, and out of 196,227 acres for which means of irrigation have already been provided 81,670 acres are of this description of soil. What proportion of the 321,515 acres of column 5 are regur remains to be ascertained.

4. The estimate of revenue given in paragraph 4 of Mr Latham's letter is not, it is thought, at all likely to be realized. Possibly the area of irrigation may ultimately attain to about 200,000 acres or roughly to two-thirds of the arable land commanded, though this is somewhat doubtful looking to the large proportion of regur land within the tract affected. The average rate for first crop will certainly not however, with the rates now in force, ever be as high as 6 Rupees an acre for the first crop. In Kurnool in 1873-74 the average for the season was about 4 45 Rupees, and in Cuddapah not quite 4 Rupees. It will not be safe to assume more than 4½ Rupees at the outside as the average for the whole area. Again it is not at all likely that more than a small proportion of the lands will be twice cropped. There is no instance in the Presidency, where there is irrigation on a large scale, in which the second crop area is large. Mr Latham's report for February gives the second crop area at about one-eighth of the first crop, and probably some of the former had not been irrigated for first crop. It appears to be useless, under present circumstances, for this office to make any forecast, for practically the data as regards area which will be irrigated in ten or twenty years are wanting, and without that the calculations would be useless.

OOTACAMUND,
27th April 1875.

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

No. 438. ORDER THEREON, 25th May 1875, No 1,432.

IRRIGATION, No. 53.

His Excellency the Governor in Council considers the information furnished, with reference to G. O., No. 371, dated 9th February 1875, by the Chief Engineer and Manager, Madras Irrigation and Canal Company, as to areas commanded by the Company's canal to be of much importance and interest. The reports called for in the same order from the Collectors of Kurnool and Cuddapah are awaited, and the details given in the foregoing papers will be com-

Proceedings of the Madras Government, Public Works Department,
25th May 1875.

communicated to them through the Revenue Department, in order that they may have the advantage of these particulars in drawing up their reports, should these not already have been completed.

(True Extract)

Major, R.E.,

Offg. Joint Secretary to Government

To the Revenue Department

" Chief Engineer for Irrigation.

" " and Manager Irrigation and Canal Company

" Examiner of Railway and Irrigation Accounts

Exd E C Shunker

Spare Copies

No 21.

11. 7. 19

Note by the Chief Engineer for Irrigation

The information furnished by the Chief Engineer and Manager, Madras Irrigation and Canal Company, with reference to G.O. No. 371 of the 9th February 1875 is of much importance in connection with the possibilities of Irrigation under the Company's Canal. Mr. Latham uses the term area commanded in a different sense to that commonly adopted and applied to irrigation projects generally in India. He takes it to mean the area which could be watered, were distribution channels provided, in addition to that which can now be watered, whereas in the ordinary sense it is the whole area to which water can be supplied at a level suitable for irrigation. Recasting then the information given in the statement transmitted by Mr. Latham and adding thereto particulars of the irrigation of 1873-74, taken from the Revenue statements of that year, and of 1874-75 from the Chief Engineer's report for the months of February 1875 the following general results are exhibited.

As noted of February 1875 the following general results 16th April 1875 are exhibited.

2. It is possible that, when the amount of the area of irrigation in 1874-75 come to be completed, the results will be less unfavorable than those above shown, but the statement shows conclusively that hitherto irrigation in certain taluqs has been remarkably unpopular, and that compared with what was practicable the actual extent has been altogether nominal.

3. Perhaps the most satisfactory fact in the above statement is that the area of arable land commanded is very considerable. As general experience would have indicated, irrigation has made most way ^{in Taluqs} in which the soil of the lands furnished with the means of irrigation is not regur. In the Mundroli and Sirwel taluqs, however, although the proportion of other soils is large, the ryots have not shown any desire to make use of the Canal water. It seems highly probable that the proportion

Talugo	No. of villages	Area Commanded	Actual not made	Commanded and available	Area now irrigated			Percentage of irrigation in		
					Regur	Other soils	Not regur	1873-74	1874-75	1875-76
					Acres	Acres	Acres	to area	to area	to area
Mundroli	11	3753	59	2946	00	254	2004	1541	1049	32.30
Mundroli	40	116320	12199	104141	21290	37297	64459	4515	3000	4.42
Mundroli	15	32632	2084	29748	20203	1998	31401	440	440	1.39
Mundroli	23	20597	1023	25654	10051	5035	18609	1003	298	1.03
Mundroli	28	63981	4349	62632	4555	9239	20524	440	289	0.70
Mundroli	145	60390	2805	57585	5489	21300	35039	1003	1518	2.67
Mundroli	5	2390	215	2175	405	4746	2445	130	14	0.00
Mundroli	23	11003	743	10260	509	6823	1050	2777	2109	25.37
Mundroli	24	26644	2310	24334	490	1505	1595	3495	1009	11.30
Total	223	314700	23245	291455	51090	114537	194227	45299	10202	4.76
								17.75	3.77	

proportion of sugar land, irrigated will always be small and out of 195,227 acres for which means of irrigation have already been provided 81,070 acres are of this description of soil. What proportion of the 321,515 acres of Column 5 are sugar remains to be ascertained.

4 The estimate of revenue given in para 4 of Mr. Latham's letter is not it is thought, at all likely to be realized. Probably the area of irrigation may ultimately attain to about 200,000 acres roughly to two thirds of the available and commanded, though this is somewhat doubtful looking to the large proportion of sugar land within the tract affected. The average rate for 1st crop will certainly not however, with the rates now in force, ever be as high as 6 Rupees an acre for the 1st crop. In Kurnool in 1873-74 the average for the season was about 4.45 Rupees

and in Cuddapah not quite 4 Rupees. It will not be safe to assume more than 4 1/2 Rupees at the outside as the average for the whole area. Again it is not at all likely that more than a small proportion of the lands will be twice

cropped. There is no instance in the Presidency where there is irrigation on a large scale, in which the 2nd crop is large. Mr. Latham's report for February gives the 2nd crop of about 1/8 of the 1st crop, and probably more of the former had not been irrigated for 1st crop. It appears to be useless under present circumstances for this Office to make any forecast, for practically the data as regards area which will be irrigated in 10 or 20 years are wanting, and without that the calculations would be useless.

Ootacamund
24th April 1875
Wm. J. L. Latham Esq. Lt Col R.E.
Chief Engr for Irrig.

To the Secretary to Government

21 22
P. R. Dept.

Proc. of the Madras Government

Read the following:-

From the Chief Engineer } (MS No: 21 dated 27 April 1895)
for Irrigation }

G.O. No. 1432 of 25th May 1895

His Excellency the Governor in Council desires the information furnished with reference to C. R. S. No. 1 dated 9th February 1895 by the Chief Engineer and Engineer, Madras Irrigation and Canal Company, as to areas commanded

by the Company's Canal to be of much importance and interest. The subject is of importance to the Government.

15.5.95

From the Chief Engineer to the Government for Irrigation. The information furnished with reference to C. R. S. No. 1 dated 9th February 1895 by the Chief Engineer and Engineer, Madras Irrigation and Canal Company, as to areas commanded by the Company's Canal to be of much importance and interest. The subject is of importance to the Government.

MS No. 1761/1761/229-235
15 April - 116-117

MS No. 1875 of MS No. 122937.

From MS No. 117

The Chief Engineer for Irrigation.

To the Secretary to Government

C. R. S.

Dated 27 April 1895
Revised 30 May 1895.

Enclure 1

Note on the information furnished by the Chief Engineer & Manager in MS No. 1172 with reference to C. R. S. No. 1 of the 9th Feb 1895 regarding financial prospects of the Company's Canal.

G.O. No. 1432 of 25th May 1895
MS No. 1437

MS No. 1161/1161/229-235
15 April - 116-117

order from the Collectors
of Mineral and Metalliferous
are connected, and the details
as in the foregoing paper
it be communicated to
them through the Bureau
of the Interior that they may
be the advantage of their
particulars in drawing
up their reports should
not yet already have
been completed.

G.W.

14437/8

20 Rev. Dept.

3 ~~Rev. Sec.~~

4 Mr. Manager, U.S. Mineral Co.

5 Mr. Sec. & Mr. 7 Encl.

6 Mr. Sec. & Mr. 7 Encl.

2937 ✓

Govt. of Madras.
PUBLIC WORKS.

To The Muz. Dept.

Recd

Enc.

G. O. 25 May 1875, No 1432

Nos 437, 438

Financial Prospects of the
Madras Irrigation and
Canal Company. — Passing
orders on the Note of the
Chief Engineer for Irrigation
on the information of
the Chief Engineer and
Manager of the Company
with reference to G.O. No 371 of
the 9th Feb. 1875, regarding the —