Revenue (~~191~~ 1892) Department.

Press SERIES.

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[Despatch Abstract.]

Irrigation works in the Kistna Delta.
Mr. C.G. Master's Report on the subject reviewed.

Fusly 1278 was less than the area cultivated before the anicut was made, and even the revenue has fallen since Fusly 1275 in spite of the increase in the assessment.

6. The revenue derived from converting punjah into nunjah in zemindaries and inams and from supplying water for crops grown on punjah has fluctuated considerably ; but it increased from Rs. 2,363 in Fusly 1265 to Rs. 1,35,651 in Fusly 1278. The extent of land involved is not known ; but, as far as can be ascertained by inspecting the figures, it is about 42,000 acres. In zemindaries the revenue derived from irrigating dry crops decreased suddenly after Fusly 1273, in which year it was first tried, and again after Fusly 1277 ; but no reason is given. The revenue from punjah converted into nunjah has steadily increased.

7. The total revenue derived from anicut water up to Fusly 1278 was Rs. 48,66,551.

8. In paragraphs 24 to 68 an account is given of the past and present systems of wet cultivation and the manner in which the water-rate rules have been applied.

9. Anicut irrigation began in Fusly 1265 and great eagerness was shown for water up to Fusly 1273, when application began to be made for leave to relinquish irrigation. The first water-rate rules were passed in October 1861. They fixed the rate at Rs. 1-8-0 for the first year and Rs. 3 for the second year, and they gave the cultivator no opportunity of giving up water after he had once taken it ; but this was, nevertheless, allowed on the production of a certificate from an Officer of the Department of Public Works showing that the land was unfit for irrigation either from its soil or its position. The water-rate was raised to Rs. 4 an acre in May 1865, and the new settlement and the new water-rate, which together increased the demand by forty-seven per cent., were introduced into Bezwada, Gudiwada, and Bundur in Fusly 1276. The revised rules allowed ryots (for the future) to refuse water after trying it for one or two years ; but not after taking it for three years. This concession affected a very small portion of the land which had been converted from dry into wet, and it remained almost unknown to the ryots. Cultivators thought they could never give up water after once taking it. There were cases in which fine punjah had become saline and worthless under irrigation, and, seeing that hundreds of acres on which dry crops were raised were paying water-rate, they became afraid to try the experiment of taking water. It was clear that hardship had been caused and that there was reason to fear that few would venture to try irrigation unless the rules were temporarily relaxed, and in their orders of August 1868 and June 1869 the Board directed that an opportunity of re-conversion should be offered to all ryots holding land irrigated by anicut water.

10. These general changes had different effects in the different taluqs.

11. The taluqs north of the river are Bundur, Gudiwada, and Bezwada. When the anicut irrigation commenced they were all under easy joint-rent or sharing systems. In Bundur and Gudiwada the joint-rents were raised when anicut water was taken with reference to the extent irrigated and its produce. In Bezwada, where there had been no wet cultivation previously, fixed rates, varying from R. 1 to Rs. 3-8-0, were charged. The first water-rate rules of 1861 raised the varying rates in Bezwada to a uniform rate of Rs. 1-8-0 for the first year of irrigation and Rs. 3 afterwards ; but they were not allowed to affect the joint rents in Bundur and Gudiwada. The enhanced water-rate of Rs. 4 was imposed in Bezwada in Fusly 1275 without producing any effect except upon the revenue, and it was introduced into Gudiwada and Bundur with the new settlement in Fusly 1276. The effect of this sudden increase in the revenue demand was, as has been already remarked, to cause a large relinquishment of land.

12. In the taluqs south of the river—Repally and Bapatla—a field assessment had been introduced before the anicut irrigation commenced. In the uplands of Repally, where there was no nunjah, a water-rate was charged which rose by R. 1 a year from *nil* to Rs. 4. In Fusly 1272 this arrangement was superseded by the rate of Rs. 1-8-0 in the first year of irrigation and Rs. 3 afterwards, and in Fusly 1275 the revised rules raised the rate to Rs. 4. In the lowlands of Repally and in Bapatla, where there had been nunjah previously, a consolidated nunjah assessment was charged, and this has been left undisturbed up to the present time pending the settlement of Guntoor.

Read again G. O., 21st May 1869, No. 1,432, 16th July 1869, No. 2,070, and 6th December 1869, No. 3,112.

No. 187. Read also the following Proceedings of the Board of Revenue, dated 25th July 1870, No. 5,022 :—

Read the following Proceedings of the Madras Government, dated 27th January 1870, No. ——, Revenue Department.

ABSTRACT.—Referring to the Board for remarks report from Mr. C. G. Master, on Special Duty, on the subject of irrigation works in Kistna Delta.

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IN paragraphs 1 to 11 of this report Mr. C. G. Master gives an account of his appointment to investigate the reasons for the reluctance which the cultivators of the Kistna Delta have shown of late years to use the water provided by the anicut. He enumerates nine causes which had been suggested by Colonel Winscom, Colonel Anderson, and the Board, viz., the introduction of the new settlement, deterioration of soil under irrigation, falling prices, indolence of cultivators, insufficiency of water, want of communications, the concession of the option to continue or discontinue irrigation after taking water for two years, the cyclone of November 1864, and the enhancement of the water-rate in 1865.

2. In paragraphs 22 and 23 information is given as to the area commanded by the anicut and the statistics of irrigation from Fusly 1265 to Fusly 1278.

* Uncultivable		336,948	
Cultivable—			
Government...	Dry	777,049	
	Wet	186,318	
Inams		142,115	
			1,105,482

3. There are 447 villages in the Delta with an area of acres 1,442,430.* The area occupied in Fusly 1278 was as follows,

Punjah ... ... Acres 459,058, assessed at Rs. 7,91,011
Nunjah ... ... ,, 60,710, do. at ,, 3,35,228
Punjah converted into nunjah ... ,, 58,941, do. at ,, 3,38,081

so that the area under wet cultivation had been nearly doubled by the anicut.

4. The extent of punjah which had been, or might have been, converted into nunjah up to Fusly 1278 is given by Mr. Master as follows :—

	Acres.	Assessment. Rs.
Already irrigated	48,228	2,53,530
Still unirrigated, but irrigable under exising channels ...	8,437	54,746
Irrigable under channels not yet made, but which might be made	113,388	5,59,862
	121,825	6,14,608

There was a steady increase in punjah converted into nunjah till Fusly 1277, when it amounted to 69,000 acres ; but in Fusly 1278 it fell to 59,000. The decrease was greatest in Repally and Bapatla. The advance which had been steady in Gudiwada and Bezwada was checked by the introduction of the new settlemen and enhanced water-rate in Fusly 1276. In Bundur the extent was always small, and it almos disappeared in Fusly 1276, probably because the increase in the demand followed so close on the cyclone of 1864.

5. The area of land rated as nunjah which was cultivated before anicut irrigation commenced depended on precarious supplies of water from streams and rain-fed tanks. It averaged acres 43,565 ; but in the first eleven years after the anicut was built it increased to acres 75,000, or by seventy-two per cent. The introduction of the new settlement into the northern taluqs had a marked effect on this species of cultivation. The average of the three years from Fusly 1276 to Fusly 1278 shows a decrease of fifty-three per cent. on the extent for Fusly 1275. The area in

13. When irrigation commenced in zemindari and inam lands they seem to have been treated generally like the Government lands in the neighbourhood. The rules of 1861 and 1865 were applied to them directly they were issued.

14. The effect of the permission to relinquish irrigation on production of a Department of Public Works certificate has extended to 2,700 acres, and that of the Revised Rules of 1865 and the Board's Orders of 1868 and 1869 to acres 10,119, altogether 12,819 acres have been re-converted from nunjah into punjah. This amount is twenty-two per cent. on the area of Fusly 1278. It appears that in some cases ryots have availed themselves of the liberal order of 1869 who had previously made no complaint, and that in some cases ryots have gone on using water after applying to be allowed to give it up. Mr. Master believes that much of the relinquished irrigation will be taken up again, and the Board have no doubt this will be the case when the fear of deterioration of the soil (which Mr. Master has shown is unduly great) and of a withdrawal of the coveted option has passed away.

15. The accounts of Fusly 1278 show that, while the extent of punjah occupied has remained almost undiminished, the extent of nunjah has decreased by acres 19,303 assessed at Rs. 1,06,542. More than half this decrease occurred in Gudiwada, and must be ascribed to the pressure of the settlement. Falling prices and deterioration of the soil were the reasons generally given. Acres 4,000 in Bapatla were given up because of want of drainage.

16. In paragraphs 69 to 156 Mr. Master discusses the causes of the reluctance to use anicut water. It appears that in the 368 villages into which irrigation has been introduced acres 26,213, or twelve per cent. on the cultivable area in the villages under anicut irrigation, are declared by the ryots to be unfit for wet cultivation. As far as can be ascertained the percentage to be ascribed to the different causes at work is as follows :—

Soil—		
Soudoo or salt efflorescence	25·6	
Pulludu or looseness and poverty of soil	12·3	
Vellatunga or coarse grass	3·1	
Gulukarai or gravel	1·2	
	——	42·2
Inundation (by the cyclone)		18·8
Irrigation—		
Inaccessibility to irrigation	30·1	
Flooding	8·4	
Leakage	·5	
	——	39·0
		100·

This statement cannot be implicitly relied upon ; but it is satisfactory so far as it goes, for it shows that, although the extent unfit for irrigation through peculiarities of soil has probably been exaggerated, it is only acres 11,067, or five per cent. of the cultivable area.

17. Mr. Master divides the causes into—

I.—Physical causes.
II.—Causes depending on the character of the people.
III.— Do. resulting from the action of the Revenue Department.
IV.— Do. within the province of the Department of Public Works.

18. PHYSICAL CAUSES.—The extent to which *Soudoo* prevails has already been noticed. The efflorescence is caused by the water-liquifying salts in the soil. It renders land barren for years, and the suddenness with which fertile punjah has thus become sterile on being irrigated has alarmed the people. It can be remedied in time by manuring and flooding. *Gulukarai* and *Pulludu* lands seem to be unfit because of their being too loose and light ; no cure has been suggested. *Vellatunga* is a coarse grass which smothers the paddy, and can only be eradicated

with great trouble in the dry weather. It is difficult to estimate the real effect of the *cyclone*, because it does not seem to have much influenced cultivation till the revenue demand was raised; but then it became evident, for the percentage of land relinquished in villages which had been inundated was much greater than in villages which has escaped. 5,000 acres are supposed to have been permanently injured. It has been suggested that the *rainfall* has been so favourable during the last few years that the ryots have not felt the want of irrigation. Mr. Master shows that this has not been the case, inasmuch as the rains have not been remarkable either as being copious or as being seasonable. Valuable information is given as to *prices* which it had been suggested had fallen so as to check wet cultivation. It is clear that whatever effect they may have produced in causing the relinquishment or refusal of water has been slight and transitory. It is noticeable, however, that of late years, or since Fusly 1264, the price of paddy has risen in comparison with cholum, so that the difference of profits in favour of wet cultivation has increased. Taking the data of the Settlement Department, the comparison, according to the prices of Fuslies 1277 and 1278, will stand as follows :—

Price per Garce from Fusly 1260 to Fusly 1278.

Grain.	1260—1264.	1265—1269.	1270—1274.	1275-1276.	1277-1278
	Rs.	Rs.	Rs.	Rs.	Rs
Cholum.....	138	138	187	215	179
Paddy	100	122	154	198	155
Difference, per cent.	38	11	21	9	15

Grain.	Produce of an Acre.		Expenses per Acre.		Profit per Acre.
	Madras measures.	Value.	Labour, etc.	Assessment.	
		Rs.	Rs.	Rs.	Rs.
Paddy	753	36·47	12·55	5·74	18·18
Cholum	296	16·56	5·23	1·74	9·59

19. Causes depending on the character of the people.—Mr. Master shows satisfactorily that the ryots are not prevented from taking water either by natural *indolence* or by an unreasonable *preference for dry cultivation*. The ryots are as eager in the Kistna District as elsewere to increase their profits, and their fear of abandoning a system which gives them splendid crops for one which *may* make their land barren under certain conditions of soil is quite consistent with perfect readiness to accept irrigation where it can be profitably applied. It does not appear to be true that irrigation improves the land so as to make it produce *better dry crops* when the irrigation is stopped.

20. Causes resulting from the action of the Revenue Department.—*The new settlement and 4-Rupee water-rate* introduced into the northern taluqs in Fusly 1276 increased the demand by forty-seven per cent. and caused the relinquishment of no less than a third of the ryots' holdings. There is abundant proof that the people have not recovered even yet from this sudden shock, and it has necessarily made them unable to pay additional water-rates on the portion of their lands which they have retained. The *incidence of the water-rate* cannot be otherwise than unequal because it is uniform, and the properties the land would show under irrigation were excluded from the data of the settlement. It is heavier in Kistna than Godavery; but there is no reason to think it is too high "except for exceptionally poor lands," and it is not desirable that water should be wasted in these whilst it can be more profitably employed elsewhere. Looking to the retrogression in the northern taluqs Mr. Master advises a temporary modification of the water-rate in the joint-rent villages of Gudiwada and Bundur; but the Board are not convinced

that this is necessary. The introduction of a graduated water-rate would cause confusion, which should be avoided now that a uniform rate has prevailed so long and it could only be calculated on the irrigable properties of the soil, with regard to which there are no data in existence. The most doubtful question which came before Mr. Master was the question whether the ryots should be allowed a free or restricted *option* with regard to taking and relinquishing water. It was at first intended by Government to allow an unrestricted option; but in practice, when anicut irrigation was first introduced, the ryots did not ask for any option, and the charge was never discontinued unless the means of irrigation failed. This practice was confirmed by the rules of 1861. In 1863 the Secretary of State pronounced in favour of allowing relinquishment of water, and the rules of 1865 permitted ryots to refuse water after trying it for two years. It has already been shown that this order, applying, as it did, to only a few acres of ground, was almost inoperative and had to be extended in 1868 to lands for which water had been taken in previous years and the owners of which had had no opportunity of declining irrigation, though some could only cultivate dry crops on land for which the water-rate was charged. The objection to the grant of unrestricted option is that it would necessitate annual examinations of fields, offer opportunities for fraud and extortion, especially in zemindaries, and materially increase the work of the Officers of the Revenue Department and the Department of Public Works. The officials of the district belonging to both the departments concerned are opposed to the grant of any free option than is allowed at present; but Mr. Master is in favour of it *if* the difficulties in the way are not insurmountable. He points out that the procedure must be made much stricter than it is now if free option is granted, and that, if the option is restricted as at present, the rules should be altered so as to allow the transfer of nunjah to punjah whenever it becomes unfit for irrigation from any uncontrollable cause; that the date for the application to convert land should be changed from the 31st March to the 30th June or the 31st July;* and that application for water for punjah crops should be sent to the Tahsildars through Revenue Inspectors. He is of opinion that the period of option now allowed, viz., three years, should not be altered. Some officials think it too long, others too short, and the ryots are not unanimous. The charging of a *separate cess* for water, which it had been suggested might be unpopular, is not cared for by the people.

* Conceded by Government Order dated 24th June 1870, No. 987, Revenue Department.

21. Causes within the province of the Department of Public Works.—The chief cause of the reluctance to undertake wet cultivation is clearly the *precariousness of the water-supply*, which is caused at present not so much by scarcity of water as by the state of the channels. Out of acres 3,293 of land, which had to be cultivated with dry crops in Fusly 1278 although the owners were paying the water-rate, acres 2,548 were without the means of irrigation, 68 were rendered unfit by flooding, and 665 by other causes. Successive jummahbundy reports show that year after year the failure of irrigation is always dreaded and often experienced. Some of the channels are so narrow and silted up that they cannot carry the requisite volume of water. At the close of each season it is usually necessary to economize water by filling and closing the channels in rotation. This state of things is no new discovery, but has been repeatedly brought to notice. It is due partly to the eagerness of the ryots at first to extend their wet cultivation beyond the capacity of the channels, partly to waste of water through the ignorance of the people and the faulty design of some of the works, and partly to the necessary abandonment of the cross bunds which in the beginning were placed across channels to irrigate high land. The Engineers fear that the shallowness of the river in October and November will always be a source of anxiety. The *drainage* of the Delta is admitted on all hands to be incomplete, and this has compelled the relinquishment of water in many instances. As regards the *administration of the Public Works Department* in the distribution of water, etc., there is not much to be said. There are the same faults amongst the subordinates as there are everywhere when the supervision is insufficient, and the difficulty and delay in clearing minor channels is an admitted evil in all parts of the Presidency. As regards *communications and means of export* Mr. Master shows that much remains to be done. The two Imperial roads are in great part unmade and impassable

in bad weather. The local roads though improving are still far from sufficient. The three navigable canals are only navigable during part of the year, and even then the navigation is sometimes interrupted. The ports are so inconvenient that much of the produce is shipped from Cocanada in the Godavery District.

22. Having now passed in review the facts recorded in Mr. Master's satisfactory and exhaustive report, the Board will proceed to express their views on the subject.

23. It is clear that the disappointing state of the anicut revenue is due to no peculiarities either in the soil or the disposition of the people. Irrigation increased too rapidly at first. More punjah was converted into nunjah than the channels could supply. Ryots who had subjected themselves to the water-rate with eagerness found that even when their supply of water was cut short the Sircar required that they should still pay the water-rate. In their ignorance of the new species of cultivation they did not anticipate that any soil could be the worse for irrigation, and when, in a few cases, Soudoo appeared, they became alarmed and did not know where the evil would stop. The fear that water might fail or the soil turn barren almost assumed the proportions of a panic. Then came the devastating cyclone of 1864 closely followed by the sudden increase of the revenue demand in Fusly 1276, which forced the ryots to contract their holdings by a third. It is not to be wondered at that the people are slow to recover their confidence.

24. It may be concluded, therefore, that, presuming there is water enough in the river, there is no cause for anxiety as to the ultimate success of the anicut. There is probably no larger proportion of land unfit for irrigation in the Kistna Delta than would be found to be so in any other tract of country. Estimating it at five per cent. (paragraph 16), the area which will be irrigated may be taken to be about acres 115,000; on the other hand, the progress of irrigation will be gradual and not sudden. The Water Works must be improved and extended at a great cost of time and labour. The effects of the settlement of Fusly 1276 in the northern taluqs and of the settlement which is pending in the southern taluqs, must pass away. Finally, the communications and the ports of the district must be improved to keep pace with the demands of trade in a rice-producing district.

25. The most perplexing question before the Board is as to the liberty of relinquishing water when it has once been taken, which should be conceded to the cultivators. It seems to be proved that the ryots are only too glad to get water when it is profitable; that there is no extraordinary percentage of land unfit for irrigation; and that the supply of water is not so copious that it is desirable to expend any of it unprofitably. The present rules force the ryot to leave his land dry once in three years, if he has any fear that Soudoo, etc., may appear in the future. It can never have been intended to make people pay for water when they could not get it or when it would be absolutely injurious to the soil, and the restriction of the period of option to three years must have been meant to prevent ryots from giving up water capriciously. The Board are convinced that there is no danger of this, and it seems to follow that the option should be entirely free. But the Officers of the Revenue Department and the Department of Public Works interested in the Delta and the Collector of the neighbouring district of Godavery are almost unanimous in considering that free option need not, and should not, be conceded. After carefully examining the question in all its aspects the Board are strongly of opinion that it is safe and wise to conform to the spirit of the original intention of Government, of the despatch of the Secretary of State in 1863, and of the condition on which the Governor-General in Council passed the Water Cess Act, and make the option entirely free. It is probable that if this is done the strength of the Revenue (and perhaps of the Department of Public Works) establishment must be increased; but the cost will be amply re-paid by the accelerated readiness with which ryots will take irrigation when they have once realized the fact that the cause for their very reasonable dread of the tempting experiment has been swept away.

26. If Government decide, however, that the option should still be restricted, the Board will be prepared to submit a draft showing the modifications which they consider necessary in the present rules.

Proceedings of the Madras Government, Revenue Department,
21st August 1872.

27. With regard to Soudoo, which is a real evil, though its extent has been so much exaggerated, the Board propose that water for flooding land so affected be given freely and without payment so long as it continues barren.

28. With regard to public works, the Board have little to say which will not suggest itself to every one on reading Mr. Master's report. As the causes which have checked irrigation are temporary and the profit which will be secured by the anicut works is certain, there is no reason why the money requisite for improving and extending them should not be obtained by borrowing.

29. It is very desirable that the Imperial roads should be completed. The one from Masulipatam to the Hyderabad frontier is in an indifferent state throughout, and the portion between Masulipatam and Bezwada is impassable in wet weather. The greater part of the other, the Great Northern Road, has been left untouched for years.

30. The local roads are gradually improving. The Road Fund is large, and the expenditure is often limited only by want of supervision. It must be remembered, however, that the cost of roads in the Delta, and especially of bridges, which, as Mr. Master shows, are much wanted, is very great. The Collector will consider and report on the proposition that additional ferries should be provided.

	Rs.
Receipts in 1869-70	2,82,810
Expenditure in ,, ...	1,43,253

31. The great wants of the district are a Railway from Masulipatam to Hyderabad and an extension of the East Coast Canal from Nellore. The former project should find a place in the great scheme of Indian Railways. The Kistna and Godavery Deltas are the proper rice-farms of the Nizam's country, and the value of the Railway as an outlet for their surplus produce and, therefore, as a stimulus to the use of irrigation can scarcely be over-estimated. The Board have very little doubt that it would be successful financially. A statement is appended showing the exports of produce from the ports of the district for the last ten years. It will be observed that the export of rice is very trifling, and it follows that the market for it must be in the interior.

32. The port of Nizampatam is the best in the district. There is a road in progress between it and Repally which should be pushed on, and the Collector should consider the expediency of connecting it with Guntoor and Bapatla by a road to Chandole. The Board hope that the proposed road from Cheltalurpad to Ipurpalem will soon be commenced. This port should be connected with Bapatla. Mottapally will be touched by the Imperial salt line from Inkole to Chinna Ganjam when it crosses the sand heaps at which it now stops.

33. It is recommended by Mr. Master that the water-rate should be temporarily reduced in villages near the coast injured by the cyclone, and he is of opinion that if it is feasible the distribution of water should be managed by the Revenue Department. The Board consider that the water-rate should be kept uniform, and they do not think the time has come when it would be safe to have the great works and the minor channels under different departments. It is, of course, desirable that there should be as close supervision of the Delta Goomastahs as possible.

34. The only other point to be noticed is the difficulty of keeping the village and field channels in repair. The Board believe that here, as elsewhere, it is impossible for the Department of Public Works to take charge of petty village irrigation works, and they think the time has come when the villagers should be compelled by law to do the work themselves.

Exports from the Kistna District of the under-mentioned articles for ten years.

Years.	Paddy and Rice.		Other dry Grains and Pulses.		Oils.		Seeds.		Cotton.		Tobacco.		Spices.		Indigo.		Total value.
	CWT.	Rs.	CWT.	Rs.	GALLONS.	Rs.	CWT.	Rs.	LBS.	Rs.	CWT.	Rs.	CWT.	Rs.	CWT.	Rs.	Rs.
1859-60	.....	.....	44,796	1,08,628	15,134	5,944	20,415	83,035	198,670	15,913	108	3,921	3,885	12,843	.....	.....	2,30,284
1860-61	.....	.....	27,844	81,587	2,843	1,890	51,442	2,37,258	458,017	36,677	646	8,241	2,224	10,939	.....	.....	3,76,592
1861-62	.....	.....	46,531	1,51,911	12,631	9,650	103,402	4,27,412	317,716	30,924	1,298	15,782	330	2,100	.....	.....	6,37,779
1862-63	.....	.....	6,219	17,480	14,583	11,919	215,087	8,69,353	187,600	36,946	458	5,027	7,942	40,934	10	3,000	9,83,909
1863-64	8,781	28,735	1,063	3,506	36,989	30,085	127,853	5,14,242	444,634	3,12,405	1,495	15,916	7,697	46,189	132	20,282	9,71,360
1864-65	.....	.....	7,196	16,442	52,454	44,077	36,710	1,47,373	1,312,103	6,96,538	1,965	17,032	673	4,575	9	1,798	9,27,834
1865-66	.....	.....	1,188	6,550	24,536	21,540	1,438	5,825	.....	.....	2,106	25,598	1,276	7,379	.....	.....	66,822
1866-67	33,728	1,46,676	6,693	42,356	39,203	32,183	23,445	97,166	150,000	43,680	379	5,574	5,689	34,586	.....	.....	4,03,221
1867-68	57	176	2,132	10,223	40,337	41,571	60,263	2,55,694	1,653,300	5,47,125	545	7,729	4,611	25,388	.....	.....	8,87,906
1868-69	493	1,005	1,718	6,431	25,457	23,213	157,865	5,81,599	1,868,700	3,95,990	1,510	15,208	6,228	34,797	2	350	10,58,593

No. 188. ORDER THEREON, 21st August 1872, No. 1,239.

Irrigation, No. 4.

IN the Order in Public Works Department dated 17th December 1868 the Government communicated certain papers regarding the irrigation works of the Kistna District to the Board of Revenue, in view to their considering the practical working of the Water-Rate Rule, which prescribes that when water is taken for three years consecutively for the purpose of raising wet crops in dry lands, such lands shall then be permanently classed as wet, and the full assessment and water-rate levied so long as irrigation can be supplied to them. They were to report whether it would be desirable to revoke the rule experimentally.

2. The immediate cause of this reference was the expression of opinion by the Chief Engineer for Irrigation, the late Colonel Anderson, that the option given by the rule was likely to prevent ryots from taking water every third year, as by this means they would retain the classification of their land as "*dry*" and every third year would obtain a dry crop improved by the floodings of the two previous years.

3. In reply to this reference the Board pointed out that the revocation of the rule would certainly not have the effect of increasing the number of applications to convert dry into wet cultivation, as even under the three years option given by the rule there had been very serious complaints, so much so that the Board had found it necessary to allow all ryots who had converted their dry land into wet the option once more of re-converting it into dry, no matter for what period they might have been supplied with water.

4. The Board had granted this concession on the representation of Mr. Thornhill, then Collector of the district, that 4,000 acres of land in the Repally Taluq which had been converted from dry to wet, had under the rule been charged with water-rate though not an acre of it had been cultivated with a wet crop, and that in many other cases there was a strong wish on the part of the ryots to re-convert their lands into dry, owing either to the insufficient supply of water or to the land having become impregnated with salt from the application of water. It was also represented that the limited option sanctioned by the rule had never been really given to the ryots, the lands having been supplied with water as it became available on the application of the ryots, and "measured at the close of the season for the assessment of the water-rate and thenceforward entered as 'Dry into Wet.'"

5. The Board entered at some length into what appeared to them to be the temporary causes which were likely to check the spread of wet cultivation in the district. They expressed their opinion that it would be desirable to ascertain whether when land became "*Soud*" * an assurance that neither land assessment nor water-rate would be charged and that water would be gratuitously supplied for flooding, would remove the apprehensions of the people; whether the imposition of a separate cess for water had any material effect in causing the rejection of water; whether the fact of the distribution of water being in the hands of the Department of Public Works had any influence towards the same end; whether the present charge for water (Rs. 4 per acre) was too high; whether it would be safe to concede the entire option of taking or refusing water to the ryots; and finally recommended that a special officer should be appointed to conduct an inquiry into the whole question on the spot.

* "Chavudu," an efflorescence of salt.

6. In the G. O. under date 21st May 1869, No. 1,432, the Government expressed themselves in favour of giving the ryots a larger option in regard to taking or refusing water; but observed that, when heavy expenditure was incurred by the State for irrigation works, it was essential that an agreement should be taken from the parties interested that they would accept and pay for the water for a term of years. They, however, agreed with the Board as to the importance of an inquiry of the nature indicated before final orders were passed, and appointed Mr. C. G. Master to the duty.

7. The papers now under consideration are Mr. Master's report on the subject, with the Board's Proceedings thereon. The Board in their Proceedings have summarized Mr. Master's report very completely. It appeared that instead of 500,000 acres being irrigable in the Kistna Delta as originally estimated by the Public Works Department, there are only 186,318 acres of registered wet land, and 121,825 acres of dry land which have been, or can hereafter be, converted into wet; so that, supposing the whole of the wet land in the district to be under the influence of the new works (which, however, is not the case), there would only be 308,143 acres irrigable by them when completed, being little more than one-half of the estimate. Of the 186,318 acres classed as Nunjah only 6 ,710 were cultivated at the date of the report, and nothing was stated as to whether any portion of the remainder was in any way dependent on the new irrigation works. Of the 121,825 acres of dry land capable of irrigation 48,228 acres were then irrigated, 113,383 acres could not be irrigated without an extension of the works, and only 8,437 acres capable of wet cultivation were not taken up.

8. The two statements (Appendices I. and II. of Mr. Master's report) do not agree, as in No. I. the dry cultivation converted into wet is stated to have reached 68,963 acres in Fusly 1277 and to have fallen to 58,941 in Fusly 1278, whereas from Statement No. II. it would appear that only 56,665 were capable of being converted from dry to wet under existing channels, of which only 8,437 had not been entered on up to Fusly 1278. The only explanation which suggests itself is that the latter statement referred to the new works only, and that the former included old works as well as new. From the latter statement it would appear that the conversion of dry into wet had been nearly equal to the supply of water. It is clear that the chief cause for any backwardness in applying for water is the insufficient supply, and the secondary cause the fact that much land becomes "Soud" on the application of water, though undoubtedly the imposition of the new assessment had at first a marked effect in checking the cultivation of the ordinary nunjah land. The cyclone of 1864 had also a simi arly unfavourable influence in the villages which were affected by it.

9. As to the particular points to which Mr. Master's attention was specially directed, it would appear to have been his opinion that the supply of water gratis to land which has become "Soud," and the exemption of such land from both land-tax and water-rate so long as it continues in this state, was not really needed, the concession of 1868 under which the land assessment only of land so situated is charged being considered sufficient; that the separate charge of the water-rate is a matter of indifference to the ryots, being only shown in the accounts, and the rate being viewed by them as a component part of the assessment on their land; that it would undoubtedly be a popular arrangement to transfer the general distribution of water to the Revenue Department, if feasible; and that village and field channels should certainly be left to the ryots to maintain. He considered that the charge of Rs. 4 water-rate per acre could not be viewed generally as too high except in the villages visited by the cyclone of 1864, where he advocated a temporary reduction to Rs. 3; and that there is much to be said both for and against giving the ryot entire option in regard to taking or refusing water. On the whole, he saw great difficulties in the way of granting it (see Report, paragraph 243).

10. The Board of Revenue did not think it necessary to remit any portion of the water-rate in any locality. They would give the ryots entire option as to taking or refusing water, making any addition to the strength of the Revenue Department which such a change might render necessary; they would grant water free for the flooding of land which has become "Soud;" they would leave the distribution of the water to the Department of Public Works, but have the Delta Goomastahs more closely supervised; they would require the villagers themselves to keep in repair and manage the village and field channels; they would improve the ports and communications of the district and put in hand the Railway from Masulipatam to Hyderabad and the extension of the East Coast Canal from Nellore. They consider, on the whole, that there is no cause for anxiety in regard to the success of the anicut project; that if the works give a full and proper supply of water the irrigation of the district will inevitably be gradually developed; and that the disappointing state of the anicut revenue is in no way to be ascribed either to peculiarities of the soil or to

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the disposition of the people, but to exceptional causes which will be only temporary in their action and effect.

11. The time which has elapsed since the date of the papers above recorded has enabled Government to judge more accurately of the probable effect of the rule regarding option in the use of water which it is proposed to relax, and they find that whereas from Fusly 1265 to 1275 the area of *wet* holdings in the Delta increased to areas 186,308, assessed at Rs. 9,26,058, it fell rapidly from that date to acres 122,446, assessed at Rs. 6 63,519, in Fusly 1278. Improvement has since been manifested, as shown below; but the recent result is still very considerably below that which was attained five years before.

	Acres.	Rs.
Fusly 1279	134,661	7,32,988
,, 1280	144,789	7,88,878

12. During this period the system of [illegible]on has been in force, and from the evidence adduced in the papers before them the Gove[illegible]t cannot doubt that the restriction against ceasing to pay for irrigation after three years consecutive use of it has materially checked the free application for water, for it must be observed that the works have been gradually extended in the above period, so that the results are deduced from a wider area.

13. The Government do not doubt that the maincause why so much land has not been irrigated as was originally anticipated is the incomplete state of the works. The supply of water is insufficient and uncertain, and due attention has not been paid to drainage. As the works are improved and completed the area under irrigation will undoubtedly extend, for there is evidently no general reluctance on the part of the ryots to convert their lands into "Nunjah" if a sufficient and seasonable supply of water be assured and its use proves to be profitable.

14. The works are now being carried on as [illegible]ly as possible by means of Loan Funds, and all that seems necessary in this direction is to i[illegible]ss on the Engineering Officers the primary importance of perfecting existing works rather than of extending them.

15. As regards the regulation of the irrigation, the Government after mature consideration have come to the same conclusion as the Board of Revenue that that entirely free option as to the use of the water from year to year, which was prescribed by the Secretary of State in 1863 as the rule to be generally observed, and formed the condition of the Governor-General's assent to the enactment of Madras Act VII. of 1865, for the levy of a separate water-rate, should be absolutely and unreservedly conceded, subject only to such notice of relinquishment as may be fairly demanded in order to prevent waste.

16. The Government see no cause for apprehension that this freedom will prove injurious to the revenue, or productive of material additional expense or inconvenience to the Revenue or Public Works Departments.

17. There is every reason to believe that, so far as the present rule affects the revenue, it acts injuriously by checking applications for water or inducing relinquishments when perfect certainty as to the advantage of its continued use has not been attained by the ryot, and that to relax the rule may increase the former and reduce the latter.

18. Uncertainty or inadequacy of supply, imperfect drainage or proved injurious effects on the soil, are reasons for relinquishing irrigation which should be unhesitatingly admitted. Should the cultivation of dry crops be preferred by the landholder, to force him to pay for irrigation is unjustifiable.

19. The Governor in Council is fully satisfied that self-interest is the best guide in determining the weight that should be allowed to these several considerations, and that, when it is really for the benefit of the ryot to take and retain the use of irrigation, he will unhesitatingly do so if he is a free agent in the matter, and that to attempt to coerce him is in the highest degree inexpedient.

20. His Excellency in Council resolves, therefore, to adopt the Board's view and to direct that in the Godavery and Kistna Deltas the free option of taking or relinquishing water from year

to year be unreservedly conceded to the ryots, subject only to the condition that due notice shall be given. He believes that even when new works are desired it is impolitic to maintain any restrictions which are opposed to the interest of the ryot, and that only when from the position of the land it cannot but derive benefit from surrounding irrigation should free option in the matter of taking or not taking water be denied.

21. The Government desire that the Board will revise the rules now in force on the subject of the Delta Water-rate and submit the existing rules, and those they would propose in lieu of them in parallel columns, for the consideration of Government. The free use of water for flooding "Soud" land may be conceded when available.

22. As regards the other points to which is specially directed in the papers under consideration, the Governor in Council is of no reason is shown for deeming modification of the revised Land Settlement, or of necessary; but, if still deemed advisable, some temporary remission out of the land may be allowed in those villages which were devastated by the cyclone of 1864.

23. The Government trust that the change in the organization of the Public Works Department, which is about to be introduced, and which will assign a District Engineer to each district, will go far to remedy the administrative deficiencies which are believed to exist; but it will be considered in the Department of Public Works whether the transfer in the deltas of the charge of village and field channels to the ryots themselves, and the distribution of the water among the ryots to the Revenue Department, is expedient.

24. The improvement of the internal communications of the country is now in the hands of the Local Fund Boards, and the Government do not doubt that these will be developed as fast as means are available for the purpose; but the importance of the short branch line of rail from Hyderabad to Masulipatam will be again considered in the Department of Public Works.

25. The attention of Government is already directed to the extension of the East Coast Canal and the improvement of the minor ports.

26. In conclusion, the Governor in Council desires to thank Mr. Master for the thorough and satisfactory manner in which he carried out the investigation entrusted to him. His exhaustive report and the fairness with which he has stated the case both for and against opposing views on moot points has enabled the Government to come with confidence to a final judgment in the matter.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.
,, the Public Works Department.
,, the Chief Engineer for Irrigation.
,, C. G. Master, Esq.
,, the Director of Revenue Settlement.

Exd. A. S. Rodgers.

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Read again G. O., 21st May 1869, No. 1,432, 16th July 1869, No. 2,070, and 6th December 1869, No. 3,12.

No. 187. Read also the following Proceedings of the Board of Revenue, dated 25th July 1870, No. 5,022:—

Read the following Proceedings of the Madras Government, dated 27th January 1870, No. ——, Revenue Department.

ABSTRACT.—Referring to the Board for remarks report from Mr. C. G. Master, on Special Duty, on the subject of irrigation works in Kistna Delta.

IN paragraphs 1 to 11 of this report Mr. C. G. Master gives an account of his appointment to investigate the reasons for the reluctance which the cultivators of the Kistna Delta have shown of late years to use the water provided by the anicut. He enumerates nine causes which had been suggested by Colonel Winscom, Colonel Anderson, and the Board, viz., the introduction of the new settlement, deterioration of soil under irrigation, falling prices, indolence of cultivators, insufficiency of water, want of communications, the concession of the option to continue or discontinue irrigation after taking water for two years, the cyclone of November 1864, and the enhancement of the water-rate in 1865.

2. In paragraphs 22 and 23 information is given as to the area commanded by the anicut and the statistics of irrigation from Fusly 1265 to Fusly 1278.

* Uncultivable		336,948	
Cultivable—			
Government...	Dry	777,049	
	Wet	186,318	
Inams		142,115	
			1,105,482

3. There are 447 villages in the Delta with an area of acres 1,442,430.* The area occupied in Fusly 1278 was as follows,

Punjah	Acres	459,058,	assessed at Rs. 7,91,011
Nunjah	,,	60,710,	do. at ,, 3,35,228
Punjah converted into nunjah ...	,,	58,941,	do. at ,, 3,38,081

so that the area under wet cultivation had been nearly doubled by the anicut.

4. The extent of punjah which had been, or might have been, converted into nunjah up to Fusly 1278 is given by Mr. Master as follows:—

	Acres.	Assessment. Rs.
Already irrigated	48,228	2,53,530
Still unirrigated, but irrigable under existing channels ...	8,437	54,746
Irrigable under channels not yet made, but which might be made	113,388	5,59,862
	121,825	6,14,608

There was a steady increase in punjah converted into nunjah till Fusly 1277, when it amounted to 69,000 acres; but in Fusly 1278 it fell to 59,000. The decrease was greatest in Repally and Bapatla. The advance which had been steady in Gudiwada and Bezwada was checked by the introduction of the new settlement and enhanced water-rate in Fusly 1276. In Bundur the extent was always small, and it almost disappeared in Fusly 1276, probably because the increase in the demand followed so close on the cyclone of 1864.

5. The area of land rated as nunjah which was cultivated before anicut irrigation commenced depended on precarious supplies of water from streams and rain-fed tanks. It averaged acres 43,565; but in the first eleven years after the anicut was built it increased to acres 75,000, or by seventy-two per cent. The introduction of the new settlement into the northern taluqs had a marked effect on this species of cultivation. The average of the three years from Fusly 1276 to Fusly 1278 shows a decrease of fifty-three per cent. on the extent for Fusly 1275. The area in

Fusly 1278 was less than the area cultivated before the anicut was made, and even the revenue has fallen since Fusly 1275 in spite of the increase in the assessment.

6. The revenue derived from converting punjah into nunjah in zemindaries and inams and from supplying water for crops grown on punjah has fluctuated considerably ; but it increased from Rs. 2,363 in Fusly 1265 to Rs. 1,35,351 in Fusly 1278. The extent of land involved is not known ; but, as far as can be ascertained by inspecting the figures, it is about 42,000 acres. In zemindaries the revenue derived from irrigating dry crops decreased suddenly after Fusly 1273, in which year it was first tried, and again after Fusly 1277 ; but no reason is given. The revenue from punjah converted into nunjah has steadily increased.

7. The total revenue derived from [illegible]ut water up to Fusly 1278 was Rs. 48,66,551.

8. In paragraphs 24 to 68 an account is given of the past and present systems of wet cultivation and the manner in which the water-rate rules have been applied.

9. Anicut irrigation began in Fusly 1265 and great eagerness was shown for water up to Fusly 1273, when application began to be made for leave to relinquish irrigation. The first water-rate rules were passed in October 1861. They fixed the rate at Rs. 1-8-0 for the first year and Rs. 3 for the second year, and they gave the cultivator no opportunity of giving up water after he had once taken it ; but this was, nevertheless, allowed on the production of a certificate from an Officer of the Department of Public Works showing that the land was unfit for irrigation either from its soil or its position. The water-rate was raised to Rs. 4 an acre in May 1865, and the new settlement and the new water-rate, which together increased the demand by forty-seven per cent., were introduced into Bezwada, Gudiwada and Bundur in Fusly 1276. The revised rules allowed ryots (for the future) to refuse water after trying it for one or two years ; but not after taking it for three years. This concession affected a very small portion of the land which had been converted from dry into wet, and it remained almost unknown to the ryots. Cultivators thought they could never give up water after once taking it. There were cases in which fine punjah had become saline and worthless under irrigation, and, seeing that hundreds of acres on which dry crops were raised were paying water-rate, they became afraid to try the experiment of taking water. It was clear that hardship had been caused and that there was reason to fear that few would venture to try irrigation unless the rules were temporarily relaxed, and in their orders of August 1868 and June 1869 the Board directed that an opportunity of re-conversion should be offered to all ryots holding land irrigated by anicut water.

10. These general changes had different effects in the different taluqs.

11. The taluqs north of the river are Bundur, Gudiwada, and Bezwada. When the anicut irrigation commenced they were all under easy joint-rent or sharing systems. In Bundur and Gudiwada the joint-rents were raised when anicut water was taken with reference to the extent irrigated and its produce. In Bezwada, where there had been no wet cultivation previously, fixed rates, varying from R. 1 to Rs. 3-8-0, were charged. The first water-rate rules of 1861 raised the varying rates in Bezwada to a uniform rate of Rs. 1-8-0 for the first year of irrigation and Rs. 3 afterwards ; but they were not allowed to affect the joint rents in Bundur and Gudiwada. The enhanced water-rate of Rs. 4 was imposed in Bezwada in Fusly 1275 without producing any effect except upon the revenue, and it was introduced into Gudiwada and Bundur with the new settlement in Fusly 1276. The effect of this sudden increase in the revenue demand was, as has been already remarked, to cause a large relinquishment of land.

12. In the taluqs south of the river—Repally and Bapatla—a field assessment had been introduced before the anicut irrigation commenced. In the uplands of Repally, where there was no nunjah, a water-rate was charged which rose by R. 1 a year from *nil* to Rs. 4. In Fusly 1272 this arrangement was superseded by the rate of Rs. 1-8-0 in the first year of irrigation and Rs. 3 afterwards, and in Fusly 1275 the revised rules raised the rate to Rs. 4. In the lowlands of Repally and in Bapatla, where there had been nunjah previously, a consolidated nunjah assessment was charged, and this has been left undisturbed up to the present time pending the settlement of Guntoor.

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13. When irrigation commenced in zemindari and inam lands they seem to have been treated generally like the Government lands in the neighbourhood. The rules of 1861 and 1865 were applied to them directly they were issued.

14. The effect of the permission to relinquish irrigation on production of a Department of Public Works certificate has extended to 2,700 acres, and that of the Revised Rules of 1865 and the Board's Orders of 1868 and 1869 to acres 10,119, altogether 12,819 acres have been re-converted from nunjah into punjah. This amount is twenty-two per cent. on the area of Fusly 1278. It appears that in some cases ryots have availed themselves of the liberal order of 1869 who had previously made no complaint, and that in some cases ryots have gone on using water after applying to be allowed to give it up. Mr. Master believes that much of the relinquished irrigation will be taken up again, and the Board have no doubt this will be the case when the fear of deterioration of the soil (which Mr. Master has shown is unduly great) and of a withdrawal of the coveted option has passed away.

15. The accounts of Fusly 1278 show that, while the extent of punjah occupied has remained almost undiminished, the extent of nunjah has decreased by acres 19,303 assessed at Rs. 1,06,542. More than half this decrease occurred in Gudiwada, [illegible]nust be ascribed to the pressure of the settlement. Falling prices and deterioration of t[illegible]oil were the reasons generally given. Acres 4,000 in Bapatla were given up because of wa[illegible]f drainage.

16. In paragraphs 69 to 156 Mr. Master discusses the causes of the reluctance to use anicut water. It appears that in the 368 villages nto which irrigation has been introduced acres 26,213, or twelve per cent. on the cultivable area in the villages under anicut irrigation, are declared by the ryots to be unfit for wet cultivation. [illegible]r as can be ascertained the percentage to be ascribed to the different causes at work is as follows :—

Soil—		
Soudoo or salt efflorescence	25·6	
Pulludu or looseness and poverty of soil	12·3	
Vellatunga or coarse grass	3·1	
Gulukarai or gravel	1·2	
		42·2
Inundation (by the cyclone)		18·8
Irrigation—		
Inaccessibility to irrigation	30·1	
Flooding	8·4	
Leakage	·5	
		39·0
		100·

This statement cannot be implicitly relied upon but it is satisfactory so far as it goes, for it shows that, although the extent unfit for irrigation through peculiarities of soil has probably been exaggerated, it is only acres 11,067, or five per cent. of the cultivable area.

17. Mr. Master divides the causes into—

I.—Physical causes.
II.—Causes depending on the character of the people.
III.— Do. resulting from the action of the Revenue Department.
IV.— Do. within the province of the Department of Public Works.

18. Physical Causes.—The extent to which *Soudoo* prevails has already been noticed. The efflorescence is caused by the water-liquifying salts in the soil. It renders land barren for years, and the suddenness with which fertile punjah has thus become sterile on being irrigated has alarmed the people. It can be remedied in time by manuring and flooding. *Gulukarai* and *Pulludu* lands seem to be unfit because of their being too loose and light ; no cure has been suggested. *Vellatunga* is a coarse grass which smothers the paddy, and can only be eradicated

with great trouble in the dry weather. It is difficult to estimate the real effect of the *cyclone*, because it does not seem to have much influenced cultivation till the revenue demand was raised; but then it became evident, for the percentage of land relinquished in villages which had been inundated was much greater than in villages which has escaped. 5,000 acres are supposed to have been permanently injured. It has been suggested that the *rainfall* has been so favourable during the last few years that the ryots have not felt the want of irrigation. Mr. Master shows that this has not been the case, inasmuch as the rains have not been remarkable either as being copious or as being seasonable. Valuable information is given as to *prices* which it had been suggested had fallen so as to check wet cultivation. It is clear that whatever effect they may have produced in causing the relinquishment or refusal of water has been slight and transitory. It is noticeable, however, that of late years, or since Fusly 1264, the price of paddy has risen in comparison with cholum, so that the difference of profits in favour of wet cultivation has increased. Taking the data of the Settlement Department, the comparison, according to the prices of Fuslies 1277 and 1278, will stand as follows :—

Price per Garce from Fusly 1260 to Fusly 1278.

Grain.	1260—1264.	1265—1269.	1270—1274.	1275-1276.	277-278.
	Rs.	Rs.	Rs.	Rs.	Rs.
Cholum.....	138	138	187	215	179
Paddy	100	122	154	198	155
Difference, per cent.	38	11	21	9	15

Grain.	Produce of an Acre.		Expenses per Acre.		Profit per Acre.
	Madras measures.	Value.	Labour, etc.	Assessment.	
		Rs.	Rs.	Rs.	Rs.
Paddy	753	36·47	12·55	5·74	18·18
Cholum	296	16·56	5·23	1·74	9·59

19. Causes depending on the character of the people.—Mr. Master shows satisfactorily that the ryots are not prevented from taking water either by natural *indolence* or by an unreasonable *preference for dry cultivation*. The ryots are as eager in the Kistna District as elsewere to increase their profits, and heir fear of abandoning a system which gives them splendid crops for one which *may* make ther land barren under certain conditions of soil is quite consistent with perfect readiness to accept irrigation where it can be profitably applied. It does not appear to be true that irrigation improves the land so as to make it produce *better dry crops* when the irrigation is stopped.

20. Causes resulting from the acton of the Revenue Department.—*The new settlement and 4-Rupee water-rate* introduced into the northern taluqs in Fusly 1276 increased the demand by forty-seven per cent. and caused he relinquishment of no less than a third of the ryots' holdings. There is abundant proof that the people have not recovered even yet from this sudden shock, and it has necessarily made them unable to pay additional water-rates on the portion of their lands which they have retained. The *incidence of the water-rate* cannot be otherwise than unequal because it is uniform, and the properties the land would show under irrigation were excluded from the data of the settlement. It is heavier in Kistna than Godavery; but there is no reason to think it is too high "except for exceptionally poor lands," and it is not desirable that water should be wasted in these whilst it can be more profitably employed elsewhere. Looking to the retrogression in the northern taluqs Mr. Master advises a temporary modification of the water-rate in the joint-rent villages of Gudivada and Bundur; but the Board are not convinced

that this is necessary. The introduction of a graduated water-rate would cause confusion, which should be avoided now that a uniform rate has prevailed so long and it could only be calculated on the irrigable properties of the soil, with regard to which there are no data in existence. The most doubtful question which came before Mr. Master was the question whether the ryots should be allowed a free or restricted *option* with regard to taking and relinquishing water. It was at first intended by Government to allow an unrestricted option; but in practice, when anicut irrigation was first introduced, the ryots did not ask for any option, and the charge was never discontinued unless the means of irrigation failed. This practice was confirmed by the rules of 1861. In 1863 the Secretary of State pronounced in favour of allowing relinquishment of water, and the rules of 1865 permitted ryots to refuse water after trying it for two years. It has already been shown that this order, applying, as it did, to only a few acres of ground, was almost inoperative and had to be extended in 1868 to lands for which water had been taken in previous years and the owners of which had had no opportunity of declining irrigation, though some could only cultivate dry crops on land for which the water-rate was charged. The objection to the grant of unrestricted option is that it would necessitate annual examinations of fields, offer opportunities for fraud and extortion, especially in zemindaries, and materially increase the work of the Officers of the Revenue Department and the Department of Public Works. The officials of the district belonging to both the departments concerned are opposed to the grant of any free option than is allowed at present; but Mr. Master is in favour of it *if* the difficulties in the way are not insurmountable. He points out that the procedure must be made much stricter than it is now if free option is granted, and that, if the option is restricted as at present, the rules should be altered so as to allow the transfer of nunjah to punjah whenever it becomes unfit for irrigation from any uncontrollable cause; that the date for the application to convert land should be changed from the 31st March to the 30th June or the 31st July;* and that application for water for punjah crops should be sent to the Tahsildars through Revenue Inspectors. He is of opinion that the period of option now allowed, viz., three years, should not be altered. Some officials think it too long, others too short, and the ryots are not unanimous. The charging of a *separate cess* for water, which it had been suggested might be unpopular, is not cared for by the people.

* Conceded by Government Order dated 24th June 1870, No. 937, Revenue Department.

21. Causes within the province of the Department of Public Works.—The chief cause of the reluctance to undertake wet cultivation is clearly the *precariousness of the water-supply*, which is caused at present not so much by scarcity of water as by the state of the channels. Out of acres 3,293 of land, which had to be cultivated with dry crops in Fusly 1278 although the owners were paying the water-rate, acres 2,548 were without the means of irrigation, 68 were rendered unfit by flooding, and 665 by other causes. Successive jummahbundy reports show that year after year the failure of irrigation is always dreaded and often experienced. Some of the channels are so narrow and silted up that they cannot carry the requisite volume of water. At the close of each season it is usually necessary to economize water by filling and closing the channels in rotation. This state of things is no new discovery, but has been repeatedly brought to notice. It is due partly to the eagerness of the ryots at first to extend their wet cultivation beyond the capacity of the channels, partly to waste of water through the ignorance of the people and the faulty design of some of the works, and partly to the necessary abandonment of the cross bunds which in the beginning were placed across channels to irrigate high land. The Engineers fear that the shallowness of the river in October and November will always be a source of anxiety. The *drainage* of the Delta is admitted on all hands to be incomplete, and this has compelled the relinquishment of water in many instances. As regards the *administration of the Public Works Department* in the distribution of water, etc., there is not much to be said. There are the same faults amongst the subordinates as there are everywhere when the supervision is insufficient, and the difficulty and delay in clearing minor channels is an admitted evil in all parts of the Presidency. As regards *communications and means of export* Mr. Master shows that much remains to be done. The two Imperial roads are in great part unmade and impassable

in bad weather. The local roads though improving are still far from sufficient. The three navigable canals are only navigable during part of the year, and even then the navigation is sometimes interrupted. The ports are so inconvenient that much of the produce is shipped from Cocanada in the Godavery District.

22. Having now passed in review the facts recorded in Mr. Master's satisfactory and exhaustive report, the Board will proceed to express their views on the subject.

23. It is clear that the disappointing state of the anicut revenue is due to no peculiarities either in the soil or the disposition of the people. Irrigation increased too rapidly at first. More punjah was converted into nunjah than the channels could supply. Ryots who had subjected themselves to the water-rate with eagerness found that even when their supply of water was cut short the Sircar required that they should still pay the water-rate. In their ignorance of the new species of cultivation they did not anticipate that any soil could be the worse for irrigation, and when, in a few cases, Soudoo appeared they became alarmed and did not know where the evil would stop. The fear that water might fail or the soil turn barren almost assumed the proportions of a panic. Then came the devastating cyclone of 1864 closely followed by the sudden increase of the revenue demand in Fusly 1273, which forced the ryots to contract their holdings by a third. It is not to be wondered at that the people are slow to recover their confidence.

24. It may be concluded, therefore, that, presuming there is water enough in the river, there is no cause for anxiety as to the ultimate success of the anicut. There is probably no larger proportion of land unfit for irrigation in the Kistna Delta than would be found to be so in any other tract of country. Estimating it at five per cent. (paragraph 16), the area which will be irrigated may be taken to be about acres 115,000; on the other hand, the progress of irrigation will be gradual and not sudden. The Water Works must be improved and extended at a great cost of time and labour. The effects of the settlement of Fusly 1276 in the northern taluqs and of the settlement which is pending in the southern taluqs, must pass away. Finally, the communications and the ports of the district must be improved to keep pace with the demands of trade in a rice-producing district.

25. The most perplexing question before the Board is as to the liberty of relinquishing water when it has once been taken, which should be conceded to the cultivators. It seems to be proved that the ryots are only too glad to get water when it is profitable; that there is no extraordinary percentage of land unfit for irrigation; and that the supply of water is not so copious that it is desirable to expend any of it unprofitably. The present rules force the ryot to leave his land dry once in three years, if he has any fear that Soudoo, etc., may appear in the future. It can never have been intended to make people pay for water when they could not get it or when it would be absolutely injurious to the soil, and the restriction of the period of option to three years must have been meant to prevent ryots from giving up water capriciously. The Board are convinced that there is no danger of this, and it seems to follow that the option should be entirely free. But the Officers of the Revenue Department and the Department of Public Works interested in the Delta and the Collector of the neighbouring district of Godavery are almost unanimous in considering that free option need not, and should not, be conceded. After carefully examining the question in all its aspects the Board are strongly of opinion that it is safe and wise to conform to the spirit of the original intention of Government, of the despatch of the Secretary of State in 1863, and of the condition on which the Governor-General in Council passed the Water Cess Act, and make the option entirely free. It is probable that if this is done the strength of the Revenue (and perhaps of the Department of Public Works) establishment must be increased; but the cost will be amply re-paid by the accelerated readiness with which ryots will take irrigation when they have once realized the fact that the cause for their very reasonable dread of the tempting experiment has been swept away.

26. If Government decide, however, that the option should still be restricted, the Board will be prepared to submit a draft showing the modifications which they consider necessary in the present rules.

27. With regard to Soudoo, which is a real evil, though its extent has been so much exaggerated, the Board propose that water for flooding land so affected be given freely and without payment so long as it continues barren.

28. With regard to public works, the Board have little to say which will not suggest itself to every one on reading Mr. Master's report. As the causes which have checked irrigation are temporary and the profit which will be secured by the anicut works is certain, there is no reason why the money requisite for improving and extending them should not be obtained by borrowing.

29. It is very desirable that the Imperial roads should be completed. The one from Masulipatam to the Hyderabad frontier is in an indifferent state throughout, and the portion between Masulipatam and Bezwada is impassable in wet weather. The greater part of the other, the Great Northern Road, has been left untouched for years.

30. The local roads are gradually improving. The Road Fund is large, and the expenditure is often limited only by want of supervision. It must be remembered, however, that the cost of roads in the Delta, and especially of bridges, which, as Mr. Master shows, are much wanted, is very great. The Collector will consider and report on the proposition that additional ferries should be provided.

	Rs.
Receipts in 1869-70	2,82,810
Expenditure in ,, ...	1,43,253

31. The great wants of the district are a Railway from Masulipatam to Hyderabad and an extension of the East Coast Canal from Nellore. The former project should find a place in the great scheme of Indian Railways. The Kistna and Godavery Deltas are the proper rice-farms of the Nizam's country, and the value of the Railway as an outlet for their surplus produce and, therefore, as a stimulus to the use of irrigation can scarcely be over-estimated. The Board have very little doubt that it would be successful financially. A statement is appended showing the exports of produce from the ports of the district for the last ten years. It will be observed that the export of rice is very trifling, and it follows that the market for it must be in the interior.

32. The port of Nizampatam is the best in the district. There is a road in progress between it and Repally which should be pushed on, and the Collector should consider the expediency of connecting it with Guntoor and Bapatla by a road to Chandole. The Board hope that the proposed road from Cheltalurpad to Ipurpalem will soon be commenced. This port should be connected with Bapatla. Mottapally will be touched by the Imperial salt line from Inkole to Chinna Ganjam when it crosses the sand heaps at which it now stops.

33. It is recommended by Mr. Master that the water-rate should be temporarily reduced in villages near the coast injured by the cyclone, and he is of opinion that if it is feasible the distribution of water should be managed by the Revenue Department. The Board consider that the water-rate should be kept uniform, and they do not think the time has come when it would be safe to have the great works and the minor channels under different departments. It is, of course, desirable that there should be as close supervision of the Delta Goomastahs as possible.

34. The only other point to be noticed is the difficulty of keeping the village and field channels in repair. The Board believe that here, as elsewhere, it is impossible for the Department of Public Works to take charge of petty village irrigation works, and they think the time has come when the villagers should be compelled by law to do the work themselves.

Exports from the Kistna District of the under-mentioned articles for ten years.

Years.	Paddy and Rice.		Other dry Grains and Pulses.		Oils.		Seeds.		Cotton.		Tobacco.		Spices.		Indigo.		Total value.
	CWT.	Rs.	CWT.	Rs.	GALLONS.	Rs.	CWT.	Rs.	LBS.	Rs.	CWT.	Rs.	CWT.	Rs.	CWT.	Rs.	Rs.
1859-60	.....	.....	44,706	1,08,628	15,134	5,944	20,415	83,035	198,670	15,913	108	3,921	3,885	12,843	.....	.....	2,30,934
1860-61	.....	.....	27,844	81,587	2,543	1,890	51,442	2,37,258	458,017	36,677	646	8,241	2,824	10,039	.....	.....	3,76,592
1861-62	.....	.....	46,531	1,51,911	12,631	9,650	103,402	4,27,413	317,716	30,934	1,208	15,782	330	2,100	.....	.....	6,37,779
1862-63	.....	.....	6,219	17,480	14,583	11,919	215,087	8,69,353	187,600	36,946	453	5,027	7,942	40,234	10	3,000	9,83,909
1863-64	8,761	28,735	1,963	3,606	36,989	30,085	127,853	5,14,242	444,634	3,12,405	1,405	15,916	7,697	46,189	132	20,282	9,71,360
1864-65	.....	.....	7,196	16,442	52,454	44,077	36,710	1,47,372	1,312,103	6,96,538	1,365	17,032	673	4,575	9	1,798	9,27,834
1865-66	.....	.....	1,188	6,550	24,536	21,540	1,438	5,825	.....	.....	2,108	25,598	1,276	7,879	.....	.....	66,822
1866-67	38,728	1,46,076	6,603	42,356	39,203	32,183	23,445	97,166	150,000	43,680	379	5,574	5,639	34,536	.....	.....	4,03,221
1867-68	57	176	2,132	10,223	40,337	41,571	60,263	2,55,694	1,653,300	5,47,125	545	7,729	4,611	25,383	.....	.....	8,87,906
1868-69	493	1,005	1,718	6,431	25,457	23,213	157,865	5,81,599	1,868,700	3,95,990	1,510	15,208	6,228	34,797	2	350	10,56,593

No. 188. ORDER THEREON, 21st August 1872, No. 1,239.

Irrigation, No. 4.

IN the Order in Public Works Department dated 17th December 1868 the Government communicated certain papers regarding the irrigation works of the Kistna District to the Board of Revenue, in view to their considering the practical working of the Water-Rate Rule, which prescribes that when water is taken for three years consecutively for the purpose of raising wet crops in dry lands, such lands shall then be permanently classed as wet, and the full assessment and water-rate levied so long as irrigation can be supplied to them. They were to report whether it would be desirable to revoke the rule experimentally.

2. The immediate cause of this reference was the expression of opinion by the Chief Engineer for Irrigation, the late Colonel Anderson, that the option given by the rule was likely to prevent ryots from taking water every third year, as by this means they would retain the classification of their land as "*dry*" and every third year would obtain a dry crop improved by the floodings of the two previous years.

3. In reply to this reference the Board pointed out that the revocation of the rule would certainly not have the effect of increasing the number of applications to convert dry into wet cultivation, as even under the three years option given by the rule there had been very serious complaints, so much so that the Board had found it necessary to allow all ryots who had converted their dry land into wet the option once more of re-converting it into dry, no matter for what period they might have been supplied with water.

4. The Board had granted this concession on the representation of Mr. Thornhill, then Collector of the district, that 4,000 acres of land in the Repally Taluq which had been converted from dry to wet, had under the rule been charged with water-rate though not an acre of it had been cultivated with a wet crop, and that in many other cases there was a strong wish on the part of the ryots to re-convert their lands into dry, owing either to the insufficient supply of water or to the land having become impregnated with salt from the application of water. It was also represented that the limited option sanctioned by the rule had never been really given to the ryots, the lands having been supplied with water as it became available on the application of the ryots, and "measured at the close of the season for the assessment of the water-rate and thenceforward entered as 'Dry into Wet.'"

5. The Board entered at some length into what appeared to them to be the temporary causes which were likely to check the spread of wet cultivation in the district. They expressed their opinion that it would be desirable to ascertain whether when land became "*Soud*" * an assurance that neither land assessment nor water-rate would be charged and that water would be gratuitously supplied for flooding, would remove the apprehensions of the people; whether the imposition of a separate cess for water had any material effect in causing the rejection of water; whether the fact of the distribution of water being in the hands of the Department of Public Works had any influence towards the same end; whether the present charge for water (Rs. 4 per acre) was too high; whether it would be safe to concede the entire option of taking or refusing water to the ryots; and finally recommended that a special officer should be appointed to conduct an inquiry into the whole question on the spot.

* "Chavudu," an efflorescence of salt.

6. In the G. O. under date 21st May 1869, No. 1,432, the Government expressed themselves in favour of giving the ryots a larger option in regard to taking or refusing water; but observed that, when heavy expenditure was incurred by the State for irrigation works, it was essential that an agreement should be taken from the parties interested that they would accept and pay for the water for a term of years. They, however, agreed with the Board as to the importance of an inquiry of the nature indicated before final orders were passed, and appointed Mr. C. G. Master to the duty.

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7. The papers now under consideration are Mr. Master's report on the subject, with the Board's Proceedings thereon. The Board in their Proceedings have summarized Mr. Master's report very completely. It appeared that instead of 500,000 acres being irrigable in the Kistna Delta as originally estimated by the Public Works Department, there are only 186,318 acres of registered wet land, and 121,825 acres of dry land which have been, or can hereafter be, converted into wet; so that, supposing the whole of the wet land in the district to be under the influence of the new works (which, however, is not the case), there would only be 308,143 acres irrigable by them when completed, being little more than one-half of the estimate. Of the 186,318 acres classed as Nunjah only 6 ,710 were cultivated at the date of the report, and nothing was stated as to whether any portion of the remainder w s in any way dependent on the new irrigation works. Of the 121,825 acres of dry land capable of i rigation 48,228 acres were then irrigated, 113,388 acres could not be irrigated without an exte sion of the works, and only 8,437 acres capable of wet cultivation were not taken up.

8. The two statements (Appendices I nd II. of Mr. Master's report) do not agree, as in No. I. the dry cultivation converted into wet stated to have reached 68,963 acres in Fusly 1277 and to have fallen to 58,941 in Fusly 1278, whereas from Statement No. II. it would appear that only 56,665 were capable of being converted from dry to wet under existing channels, of which only 8,437 had not been entered on up to Fusly 1278. The only explanation which suggests itself is that the latter statement referred to the new works only, and that the former included old works as well as new. From the latter statement it would appear that the conversion of dry into wet had been nearly equal to the supply of water. It is clear that the chief cause for any backwardness in applying for water is the insufficient supply, and the secondary cause the fact that much land becomes "Soud" on the application of water, though undoubtedly the imposition of the new assessment had at first a marked effect in checking the cultivation of the ordinary nunjah land. The cyclone of 1864 had also a similarly unfavourable influence in the villages which were affected by it.

9. As to the particular points to which Mr. Master's attention was specially directed, it would appear to have been his opinion that the supply of water gratis to land which has become "Soud," and the exemption of such land from both land-tax and water-rate so long as it continues in this state, was not really needed, the concession of 1868 under which the land assessment only of land so situated is charged being considered sufficient; that the separate charge of the water-rate is a matter of indifference to the ryots, being only shown in the accounts, and the rate being viewed by them as a component part of the assessment on their land; that it would undoubtedly be a popular arrangement to transfer the general distribution of water to the Revenue Department, if feasible; and that village and field channels should certainly be left to the ryots to maintain. He considered that the charge of Rs. 4 water-rate per acre could not be viewed generally as too high except in the villages visited by the cyclone of 1864, where he advocated a temporary reduction to Rs. 3; and that there is much to be said both for and against giving the ryot entire option in regard to taking or refusing water. On the whole, he saw great difficulties in the way of granting it (see Report, paragraph 243).

10. The Board of Revenue did not think it necessary to remit any portion of the water-rate in any locality. They would give the ryots entire option as to taking or refusing water, making any addition to the strength of the Revenue Department which such a change might render necessary; they would grant water free for the flooding of land which has become "Soud;" they would leave the distribution of the water to the Department of Public Works, but have the Delta Goomastahs more closely supervised; they would require the villagers themselves to keep in repair and manage the village and field channels; they would improve the ports and communications of the district and put in hand the Railway from Masulipatam to Hyderabad and the extension of the East Coast Canal from Nellore. They consider, on the whole, that there is no cause for anxiety in regard to the success of the anicut project; that if the works give a full and proper supply of water the irrigation of the district will inevitably be gradually developed; and that the disappointing state of the anicut revenue is in no way to be ascribed either to peculiarities of the soil or to

the disposition of the people, but to exceptional causes which will be only temporary in their action and effect.

11. The time which has elapsed since the date of the papers above recorded has enabled Government to judge more accurately of the probable effect of the rule regarding option in the use of water which it is proposed to relax, and they find that whereas from Fusly 1265 to 1275 the area of *wet* holdings in the Delta increased to areas 168,308, assessed at Rs. 9,26,058, it fell rapidly from that date to acres 122,446, assessed at Rs. 6,63,519, in Fusly 1278. Improvement has since been manifested, as shown below; but the most recent result is still very considerably below that which was attained five years before :—

	Acres.	Rs.
Fusly 1279	134,661	7,32,988
,, 1280	144,789	7,88,878

12. During this period the system of imperfect option has been in force, and from the evidence adduced in the papers before them the Government cannot doubt that the restriction against ceasing to pay for irrigation after three years consecutive use of it has materially checked the free application for water, for it must be observed that the works have been gradually extended in the above period, so that the results are deduced from a greater area.

13. The Government do not doubt that the main reason why so much land has not been irrigated as was originally anticipated is the incomplete state of the works. The supply of water is insufficient and uncertain, and due attention has not been paid to drainage. As the works are improved and completed the area under irrigation will undoubtedly extend, for there is evidently no general reluctance on the part of the ryots to convert their lands into "Nunjah" if a sufficient and seasonable supply of water be assured and its use proves to be profitable.

14. The works are now being carried on as speedily as possible by means of Loan Funds, and all that seems necessary in this direction is to impress on the Engineering Officers the primary importance of perfecting existing works rather than extending them.

15. As regards the regulation of the irrigation the Government after mature consideration have come to the same conclusion as the Board of Revenue that that entirely free option as to the use of the water from year to year, which was prescribed by the Secretary of State in 1863 as the rule to be generally observed, and formed the condition of the Governor-General's assent to the enactment of Madras Act VII. of 1865, for the levy of a separate water-rate, should be absolutely and unreservedly conceded, subject only to such notice of relinquishment as may be fairly demanded in order to prevent waste.

16. The Government see no cause for apprehension that this freedom will prove injurious to the revenue, or productive of material additional expense or inconvenience to the Revenue or Public Works Departments.

17. There is every reason to believe that, so far as the present rule affects the revenue, it acts injuriously by checking applications for water or inducing relinquishments when perfect certainty as to the advantage of its continued use has not been attained by the ryot, and that to relax the rule may increase the former and reduce the latter.

18. Uncertainty or inadequacy of supply, imperfect drainage or proved injurious effects on the soil, are reasons for relinquishing irrigation which should be unhesitatingly admitted. Should the cultivation of dry crops be preferred by the landholder, to force him to pay for irrigation is unjustifiable.

19. The Governor in Council is fully satisfied that self-interest is the best guide in determining the weight that should be allowed to these several considerations, and that, when it is really for the benefit of the ryot to take and retain the use of irrigation, he will unhesitatingly do so if he is a free agent in the matter, and that to attempt to coerce him is in the highest degree inexpedient.

20. His Excellency in Council resolves, therefore, to adopt the Board's view and to direct that in the Godavery and Kistna Deltas the free option of taking or relinquishing water from year

to year be unreservedly conceded to the ryots, subject only to the condition that due notice shall be given. He believes that even when new works are desired it is impolitic to maintain any restrictions which are opposed to the interest of the ryot, and that only when from the position of the land it cannot but derive benefit from surrounding irrigation should free option in the matter of taking or not taking water be denied.

21. The Government desire that the Board will revise the rules now in force on the subject of the Delta Water-rate and submit the existing rules, and those they would propose in lieu of them in parallel columns, for the consideration of Government. The free use of water for flooding "Soud" land may be conceded when the supply is available.

22. As regards the other points to which attention is specially directed in the papers under consideration, the Governor in Council is of opinion that no reason is shown for deeming modification of the revised Land Settlement, or of the water-rate necessary; but, if still deemed advisable, some temporary remission out of the land assessment may be allowed in those villages which were devastated by the cyclone of 1864.

23. The Government trust that the change in the organization of the Public Works Department, which is about to be introduced, and which will assign a District Engineer to each district, will go far to remedy the administrative deficiencies which are believed to exist; but it will be considered in the Department of Public Works whether the transfer in the deltas of the charge of village and field channels to the ryots themselves, and the distribution of the water among the ryots to the Revenue Department, is expedient.

24. The improvement of the internal communications of the country is now in the hands of the Local Fund Boards, and the Government do not doubt that these will be developed as fast as means are available for the purpose; but the importance of the short branch line of rail from Hyderabad to Masulipatam will be again considered in the Department of Public Works.

25. The attention of Government is already directed to the extension of the East Coast Canal and the improvement of the minor ports.

26. In conclusion, the Governor in Council desires to thank Mr. Master for the thorough and satisfactory manner in which he carried out the investigation entrusted to him. His exhaustive report and the fairness with which he has stated the case both for and against opposing views on moot points has enabled the Government to come with confidence to a final judgment in the matter.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.
,, the Public Works Department.
,, the Chief Engineer for Irrigation.
,, C. G. Master, Esq.
,, the Director of Revenue Settlement.

Exd. A. S. Rodgers.

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Mr Master's report shows that the Main Canal & much land not being irrigated as originally expected, is the incomplete state of the annicut works. The supply of water is insufficient and uncertain - and the alterations not been laid to drainage - As the works are finished and completed, the area under irrigation will be greatly increased - for there is evidently a general reluctance on the part of the ryots to convert their lands into Nunjal - if sufficient & suitable supply of water be assured - and the other canals, which have hitherto operated in retarding irrigation - should be cleared & deepened. The works are now being carried

on, as speedily as possible, with from
January - I think the last can be
done at present is confined to the
Left & Right the water in between &
interfering the existing works than
simply Extending them -

As regards the future whilst the
Bye to new Law of dealing water in
the third year, I share the Board's
opinion that absolute freedom until
the last place - and I do not think
the there is any risk, in the meantime, of
material loss - This freedom was ordered
by the Secy of State - the restriction was
mainly owing to a plea on the part of Farmers
loss - As however the irrigation works are
not in yet in such a condition of ef-
ficiency that the people can fully ap-
preciate their real value, the same pre-
sent cannot perhaps be objected
the period of return from 3 to 5 yrs It is

the 3d yr in order to retain the water
after - if we find that at the same time
is done in the 5th yr, we can then ex
tend the Experience of obtaining the
restriction - save that if the Bye Laws
at present make in the Evening year
cannot fix restriction by a stated date
Rule 1 - should be modified - if freedom
is not conceded - to as to include con-
sistability of soil - proved to the Collr
Certificate - as one of the factors for
converting land into Dry land.

The simultaneous introduction of the
new settlement & the enhancement
water rates has & will cause much
inquiries & the cl on the Extension of
cultivation & irrigation - I see no reason
known for hurrying either - Except
that of stable necessary in the villages
devastated by the Cyclone - a temporary
remission might be allowed - I would

than the water rate - because it is very undesirable to interfere any more than uncertainty as to the latter - because the holders of municipal bonds could not have been the only sufferers.

I would refer on the sub & Engr. Report as to the Engineering of transferring the care of the village & field channels & the distribution of the water among the eight to the Asst. Engr. in charge of the having a Sub Asst. Engr. for "D" under the Administrative district Limit to Exist.

Wards are now entrusted to the L. T. Offr. who will do it better & as much as their means permit.

The "irrigable" assessment we look to leave alone - it would be impossible if we had tried hard how long it would be to carry it out - Eg: for. In case of Dry land i.e. let us suppose fairly assessed at 2 Rs - when irrigated it can fairly pay 8 Rs - but the "irrigable" value

to the true Dry rate - for that would be working a hardship for water he did not use & for water he can use took it or when water is given - for that would make the water rate 6 Rs instead of 4 Rs - The first - unless injustice is to be wittingly inflicted - badly re-duces itself into a variable water-rate which the true figure lies for-hidden.

The collection of a separate cess seems to be a matter of indifference to the payers -

The Extent of Sound land is trifling & he may well pay it water free of charge, for 3 or 5 yrs - if available -

The Master has evidently taken great pains & should, I think, be thank

The most important point for
decision in this matter is
how far it is expedient to
alter the present rule under
which the right in the
Victoria Docks are confined
to ships which actually
discharge or load cargo
in the docks, this rule
is the source of the
chief, if not the only
ground of complaint against
the docks. The docks is
of a full opinion that
though this question is
with some reason the District

[illegible] being opposed to the measure on the ground that it will greatly increase the work [illegible] of the Metropolitan Board of Works and in the Department of Public Works. My Honourable Colleague the Member for Bow and Bromley [illegible] has objected to the Bill on the ground that the Water would be delivered at too high pressure and that the consequence would be that the Water would be wasted by extravagant and careless people. I am sure no Member of this House would attribute such motives to the Water Companies. It appears to me that the pressure at which it is proposed to deliver the Water is not unreasonable. I am informed on the best authority that the Water Companies have no desire to waste the Water, but on the contrary they are anxious to prevent waste. I am informed that the Water Companies have no objection to the Bill being referred to a Select Committee, but as the Bill has been introduced by the Government, and as the Government have undertaken the responsibility of providing the means of this Metropolis, it is [illegible] in the interests of the Metropolis, and in the interests of the Water Companies themselves, that the Bill should be passed this Session. I therefore hope that the House will allow the Bill to be read a second time.

Mr. Alderman Cotton said that he had no objection to the Bill being referred to a Select Committee, but as the Bill has been introduced by the Government, and as the Government have undertaken the responsibility of providing the means of this Metropolis, it is [illegible] in the interests of the Metropolis, and in the interests of the Water Companies themselves, that the Bill should be passed this Session. I therefore hope that the House will allow the Bill to be read a second time.

by the Irish Government on the
Municipal Institutions of Ireland
and it is the view which I entertain
which have been recently laid
down by the Govt. of India
with reference to Municipal Institutions
in the North Western Provinces &
and in the Punjaub. But I
do not understand the principle
of the rule which has been adopted
in the Kistna District which
gives the right of voting for two
persons, and two, if he contributes
to the rate in the third
person, apportioning the rate
between the three persons, for
the purpose of qualifying the
voter. The rule is adopted upon
the report of the Collector of
all and I cannot say that
if he is not to be supported with
better rule as soon as the ratio
is made available. He should
not be kept from the vote if
he is not to be taxed, or having
taxed it to which point it
is in practice fixed, giving those
who pay the tax in addition to
the [illegible]

the Secretary of State having
decided that the use of the
words and occupant should
for the words only
be kept optional, and the
words of the Act having been
passed, as last under which
I would cancel the present
rule as recommended by
the Board.

In the other particulars raised
by the Memorial with the exception
of observing that the qualification
which are evidently framed
in the interest of the
Mahomedan community, occupant as
the substitute of a minor
voter will, I think, meet
the objection that the principle laid
by so many Bombay Officers
of employing the head
man of a municipal district
Mahomedan or Hindu land
in the person and of the
town.

W. Lang 72 A. A.

I would adopt the recommendation of the Board of Revenue and leave to the ryots of the Kistna district entirely free option of taking the Annuk water

The causes of the hesitation of the ryots to make use of the water are clearly exhibited in Mr. Masters carefull report; their hesitation was perfectly reasonable & will doubtless only be temporary.

The ryots have been alarmed at the probability of being permanently charged for water which was uncertain in quantity or w^h from the nature of the soil operated injuriously.

It is clearly shown by the papers circulated, that the ryots of the Kistna district are eager to convert dry cultivation into wet when they consider that the water supply is certain.

We have only to give them confidence that they will not be ruined by a permanent water rate if they find that they have made a mistake & that their land cannot be perpetually placed under wet cultivation

I agree with Mr. Scott that the importance of improving & perfecting the existing works - in preference to an extension

of the works should be suspended in the taking Engineer
Much of the difficulty that has arisen in the
District has been due to the defective condition of
of the works - & the imperfection of the drainage
The Board's proposal that water for flooding
land affected by Loans, be given freely &
without payment so long as the land continues
barren should be approved
I agree with Mr. Scott that there is no present
necessity for any general modification of the recent
settlement as of the water rate - but that temporary
remission of Land Revenue should be granted in
those villages which have been most seriously
affected by the Cyclone flood.
The improvement of the roads is being carried
out by the Local Fund Boards but I think the
importance of the Port Railway from Masulipatam
to Hyderabad should be pressed on Govt of India

I agree with Mr. Scott & the Board in thinking that
the Public works department should relinquish
the charge of the village & field channels but
this measure had perhaps better be deferred
until the reorganization of the Public works
department which is imminent - [illegible]

Revenue Deptt.

Memorandum.

The Arenicut irrigation Commenced in the Khulna District in Fasli 1265. The wet-holdings in the Delta Talooks rose gradually year after year till they amounted to Acres 1,68,308 Assessed at Rs 9,26,058 in Fasli 1275. But in Fasli 1276 there was a large and sudden decrease. The occupied wet area in that year was Acres 1,39,060 Assessed at Rs 7,62,470 and it fell to Acres 1,22,446 Assessed at Rs 6,63,519 in Fasli 1278. But from 1279 it is rising as shown in the margin.

Estmt acres.	Asstt.
1,34,661 -	7,32,988
1,44789 -	7,88,878

The extent under occupation

in Fasli 1280 was more than
that of any of the previous four
years although it was
below the occupied area of
Fasli 1275. The large decrease
subsequent to this year is
almost solely the result of
the introduction of the new
Survey & Settlement.

A Statement showing the
Talookwar particulars of the
figures given above is appended.
This Statement was prepared
from the jamabundy returns
of the District in which
"dry to wet" and "usual wet"
are classed together as "wet."
It is not possible to show
these

these separately as given in
Mr Masters Statements,
the necessary information
not being available here.

Another Statement
showing the water tax
assessed on Ryotwari Delta
Talooks and Zemindaries during
the last six years is also appended.
This Statement shows that there
has been a considerable increase
of this tax on ryotwari lands
in the last three years and it is
very probable that while the ryots
enjoy the benefits of irrigation
they evade the classification
of the lands under "wet."

27/6/12

Statement of the occupation of "wet" land in the Delta Talooks of the Kistna District.

Faslies	Bander		Gudiwadah		Bezwadah		Repali		Bapulla		Total	
	Extent Acres	Assessment Rs.	Extent Acres	Assessment Rs.	Extent Acres	Assessment Rs.	Extent Acres	Assessment Rs.	Extent Acres	Assessment Rs.	Extent Acres	Assessment Rs.
1275	20,205	91,476	67,752	3,82,519	10,289	49,204	41,976	2,33,228	28,086	1,69,631	1,68,308	9,26058
1276	10,042	47,228	49,667	2,64,964	10213	48,967	41,234	2,33,165	27,904	1,63,146	1,39,060	7,62,470
1277	10,977	51,277	42,554	2,42,504	8,822	43,818	43,908	2,48,085	30,433	1,81,130	1,36,694	7,66,814
1278	10,249	47,988	32,161	1,84,697	9003	44,635	43,007	2,27,645	28,026	1,58,554	1,22,446	6,63,519
1279	11,966	55,600	46,216	2,62,347	9,255	45,808	40,111	2,13,589	27,113	1,55,644	1,34,661	7,32,988
1280	14,282	65,892	51,159	2,88,255	9,166	45,267	40,257	2,17,027	29,928	1,72,337	1,44,789	7,88,878
Average	12,954	59,910	48,251	2,70,881	9,458	46,283	41,749	2,28,790	28,581	1,67,574	1,40,993	7,73,455
Average 1st 3 years	13,741	63,327	52,324	2,96,662	9,775	47,330	42,343	2,38,159	28,808	1,72,969	148,021	8,15,447
Rs. 2 3 years	12,169	56,493	43,175	2,45,188	9141	45,237	41,125	219,420	28,355	1,62,178	133965	728,461

Statement of waste land assessed in the Bills delivered and remainders in the Collectors

Collectors	Parishes	Quantities	Rates	Value	Bills delivered	Collectors remainders
		Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
1275	1358	2431	657	7364	2395	14,205	11,569	125.774
1276	1109	1373	444	3241	1191	7358	1.06,770	114.128
1277	161	5359	1292	5873	1016	13.707	11,965	133.372
1278	1464	61,490	16,870	136,878	40,894	2.57,596	107.069	3.64,665
1279	1144	70,693	16,506	116,519	47,609	2,52,471	[illegible]910	3.25.381
1280	2201	77,234	17,769	108,511	57,949	2.57,664	133.718	3.91.382
Amerand	1240	36,430	8924	63.064	24,176	1.33.834	108,650	2.42.484
Amerand 3 Square	876	3034	800	5493	1534	11.757	112.735	1.24.492
Do. 2.3 quan	1603	69,806	17048	120,656	46,817	255.090	104.566	3.60.476

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L.R. 559

Memo: for orders on
No. 2333/2074

In the order in
P.W. Dept. dated 17th Dec. 1878
the Govt communicate d
certain papers regarding
the irrigation works of the
Kistna Dist. to the Board
of Revenue, in view to
their considering the e
practical working of the
Water Rate Rule which
prescribes that when wate
is taken for three years,
consecutively, for the e
purpose of raising wet
crops on dry lands, such
lands shall then be per-
manently classed as wet,
and the full assessment
and

and water rate levied so long as irrigation can be supplied to them, and also reporting whether it would be desirable to revoke the rule experimentally

2. The immediate cause of this reference was the expression of opinion by the Chief Engineer for irrigation, the late Colonel Anderson, that the option given by the rule was likely to prevent ryots from taking water every third year, as by this means they would retain the classification of this land as 'dry', and every third year would obtain a dry crop improved by the flooding of the two previous years

By

3 In reply to the reference the Board pointed out that the revocation of the rule would certainly not have the effect of extending the number of applications to convert dry into wet cultivation, as even under the three years option given by the rule there had been very serious complaints, so much so that the Board had found it necessary to permit all ryots who had converted their dry land into wet the option once more of reconverting it into dry, no matter

For

for what period they might have been supplied with water.

4. They had granted this concession on the representation of Mr. Thornhill, then Collector of the District, that 4000 acres of land in the Republy talook which had been converted from dry to wet, had under the rate been charged with water rate though not an acre of it had been cultivated with a wet crop, and that in many

other

other cases there was a strong wish on the part of the ryots to re-convert their lands into dry, owing either to the insufficient supply of water or to the land having become impregnated with salt from the application of water. It was also represented that the limited option sanctioned by

by the rule had never been really given to the ryots, the lands having been supplied with water as it became available on the applica- cation of the ryots, and "measured "at the close of the "season for the as- "sessment of the "water rate and

thence forward

"thence forward entered as
"dry into wet."

5. The Board entered at some length into what appeared to them to be the temporary causes which were likely to check the spread of wet cultiva- vation in the District. They expressed their opinion that it would be desira- ble to ascertain whether When land became "loud" an assurance that neither land assessment nor water rate would be charged and the gratuitous supply of water for flooding when land became "loud" would

imprinted with Salt

would remove the apprehension of the people - whether the imposition of a separate cess for water had any material effect in causing the rejection of water - whether the fact of the distribution of water being in the hands of the D.C.W. had any influence towards the same end - whether the present charge for water (Rs 4 per acre) was too high - whether it would be safe to concede the entire option of taking or refusing water to the ryots - and finally recommended that a special officer should be appointed

appointed to conduct an enquiry into the whole question on the spot.

6. In the G.O. under date 21st May 1869, No. 1432 the Govt. expressed themselves in favor of giving the ryots a larger option in regard to taking or refusing water, but observed that when heavy expenditure was incurred by the State for irrigation works, it was essential that an agreement should be taken from the parties interested that they would accept and pay for the water for a term

term of years. They, however, agreed with the Board as to the importance of an enquiry of the nature indicated before final orders were passed, and appointed Mr C. G. Master to the duty.

7. The papers now under consideration are Mr Masters report on the subject with the Board's Pro: thereon. The Board in their Pro: have summarized Mr Masters report very completely. It appears that instead of 500,000 acres irrigable in the Kistna Delta

Delta as originally estimated by the P. W. D. there are only 186,318 acres of registered wet land and 121,825 acres of dry land which may hereafter be converted into wet; so that supposing the whole of the wet land in the District to be under the influence of the new works, (which, however, is not the case) there would only be 308,143 acres irrigable by them when completed, being little more than half of the estimate. Of the

186,318 acres

acres classed as Nunjah only 60,710 ~~are now~~ were cultivated, and nothing is stated as to whether any portion of the remainder is in any way dependent on the new irrigation works. Of the 121,825 acres of dry land capable of irrigation 48,228 acres are ~~now~~ were now irrigated, 113,388 acres ~~cannot~~ could not be irrigated without new extensions of the works, and only 8,437 acres now capable of wet cultivation are not taken up.

8. The two Statements (appendices I & II of Mr

Mr Masters report) do not agree, as in No 1 the dry cultivation converted into wet is stated to have reached 68,963 acres in Fasli 1277 and to have fallen to 58,941 in Fasli 1278. Whereas from State ment No II it would appear that only 56,665 were capable of being cultivated from dry to wet under existing channels, of which 8,437 had not been entered upon, up to Fasly 1278. The only explanation which

which suggests itself is that the latter statement refers to the new works, and that the former includes old works as well as new.

If the latter statement ~~can be relied on~~, the demand for the conversion of dry into wet ~~seems to~~ have been nearly equal to the supply. It is clear that the chief cause for any backwardness in applying for water is owing to the insufficient supply, and the secondary cause the fact

fact that much land becomes "sour" on the application of water, though undoubtedly the imposition of the new assessment had a serious effect in checking the cultivation of the ordinary Punjab land, and that the cyclone of 1864 had a similarly unfavorable influence in the villages which were affected by it.

9. As to the particular point to which Mr. Master's attention was specially

specially directed,
it appears, that the
supply of water
gratis to land which
has become "land", and
the exemption of such
land from land tax
and water rate so
long as it continues
in this state, is not
really needed, the con-
-cession of 1868, under which
the land apept. only of
land so situated is
charged being consider-
-ed sufficient: that

that the imposition of
the separate water cess
is a matter of indifference
to the ryots, being only
shown in the accounts
and being viewed by
them as a component part
of the assessment of their
land: that though there are
occasional complaints
against the D.P.W and though
it would undoubtedly
be a popular arrangement
to transfer the general
distribution of water
to the Revenue Department,
Mr. Master would appa-
-rently leave matters
as they at present are

as they are, (He makes
no definite recommendation
on the subject see paras 285-
90) though he would leave
village and field channels to the
ryots - and thinks it
desirable that if feasible,
the general distribution
should be transferred to
the R.D. = that the charges
of Rs. 4 per acre cannot
be viewed as generally as
too high except in the vil-
leges visited by the cyclone
of 1864, where Mr. Thacker
would reduce the rate
to Rs. 3 for the next five
years = that there is
much to be said both
in

(In his 335- para
he expresses himself
in favor of this transfer
"if possible".

in favor and against giving
the ryot entire option in re-
gard to taking or refusing
water, and that Mr. Thacker
on the whole sees great
difficulties in the way of
granting it (see Report para
243).

10.- The Board of
Revenue do not think it
necessary to remit any
portion of the water rate
in any locality; they would
give the ryots entire option
as to taking or refusing
water, making any addition
to the strength of the
Revenue Department
which such a change
might

might render necessary.
They would grant water
free for the flooding of
land which has become
"sand". They would leave
the distribution of the water
to the D.P.W. but have the
Delta Jemadars more
closely supervised. They
would require the villagers
themselves to keep in repair
and arrange the village and
field channels. They would
improve the ports and
communications of the
District and put in hand
the Railway from Masulipatam to Hyderabad, and
the extension of the Coast
Canal

759

Canal from Nellore.
They consider on the whole
that there is no cause for
anxiety; that if the irrigation
works give a full & proper
supply of water, the irriga-
tion of the District will
inevitably be gradually
developed; that the dis-
appointing state of
the ancient revenue is in
no way to be ascribed
either to peculiarities of
the soil or to the disposi-
tion of the people, but to
exceptional causes which
will be only temporary
in their action and effect.

Copy

11. It appears to
be

be questionable whether enough has been elicited by the enquiry to show the necessity for any immediate change in the water rate rules, especially if such a change is to necessitate additional establishment and increased expense. It seems clear that the rules as they stand have never had a fair trial, & never have been strictly or fairly acted upon. The concessions of the Board in 1868 has given all persons who were saddled with land incapable or unfit for irrigation at irrigated rates, the opportunity of altering the classification, and the two years' option may, it is submitted, be fairly given a trial, but before proceeding further with works or estimates, it is essential that the provisions of rule 7 in regard to agreements being taken from the ryots to accept and pay for water should be acted upon before the works are further extended.

12 There are however two points raised by Mr. Master in his report which seem deserving of consideration though they are unnoticed in

in the Proceedings
of the Board of Revenue.
In paras 183 to 200 Mr.
Thornton discusses the water
rate and summarizes the
correspondence which has
taken place on the subject.
He points out that whereas
it was finally decided
to have a uniform water
rate instead of a variable
one with reference to
the benefit derived
by particular soils
by the application
of water, it was urged by
Sir

Sir Charles Trevelyan
and the Secretary of State in
1859 and 1860 who were both in
favor of the uniform rate, that
in fixing the land assessment
the irrigable properties of the
land would be taken into ac-
count. This was not done ac-
count. This was not done in
the Kistna District, and
the proviso which originally
found a place in the water
rate rules was struck out at
the instance of Mr. Newill,* as
practically the irrigable properties
of land could only be disclosed
imperfectly, "and it is better to
leave put what may thus prove
a source of future discussion."
It thus appears that in recent
Settlements one of the strongest
arguments of those in favor
of a uniform rate is wanting

and

* Mr. Newill's letter to Board
dated 29th April 1861 recorded in
G.O 26th October 1861 No. 2054

and the inequalities produced by such a rate, and the hardship upon poor lands is aggravated beyond what was originally intended. It might perhaps be worthy of consideration whether the Settlement Dept. should not be required to consider "irrigable properties" whenever the land and water rate are separated.-

13. The other matter is referred to in para 233 of the report. It is shewn that the working of the existing rules is very hard upon Inamdars. If a Govt. ryot has converted his land from dry to wet finds that it eventually becomes unprofitable he can always resign it, and so escape the payment of land Assessment and water rate for an unprofitable property. If on the other hand an Inamdar (and apparently a Zemindar equally) accepts water for three years for his land, he is bound ever more to pay Rs 2 an acre as water rate, no matter how unprofitable he may find wet Cultivation. It is submitted that if this be the correct interpretation of the existing rules (which seems somewhat doubtful) they should be modified.-

Revenue Department.

No. 1239.

Proceedings of the Madras Government.

Under date the 21st August 1872.

Read again G. O.
21st May 1869, No. 1132 & 15th July 1869,
No. 2070

Read also the following
papers:-

From C. G. Master Esqr, Cn Spl duty-
Submitting the report called for
on the subject of irrigation works in
the Kistna Dt. — R. E. 4th Novr 1869, No. 50

Rec: Board of Revenue
Reviewing Mr. Master's report
on results of his investigations into
causes of reluctance shown by Cultivators
in Kistna distt to use water provided
by Anicut. — R. E. 25 July 1870, No. 3022

In the Order in
P. W. Dept. dated 17th Decr.
1868 the Govt communicated
certain papers regarding
the irrigation works of the
Kistna Dt. to the Board
of Revenue, in view to their
considering the practical
working of the Water Rate
Rule which prescribes that
when water is taken for
three

Memo
Mr Master's Cp
Report on Irr.
Works
in Kistna Dist

Cur

B. D.

Dt.

Sd

Squire R. 3 Jan 72

three years, consecutively, for the purpose of raising wet crops in dry lands, such lands shall then be per-
-manently classed as wet, and the full assessment and water rate levied so long as irrigation can be supplied to them, They were to and also reporting whether it would be desirable to revoke the rule experimentally.

2. The immediate cause of this reference was the ex-
-pression of opinion by the Chief Engineer for irrigation, the late Col: Anderson, that the option given by the rule was likely to prevent ryots from taking water every third year, as by this means they would retain the classification of their land as 'dry' and every third year would obtain a dry crop improved

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improved by the floodings of the two previous years.

3. In reply to this reference the Board pointed out that the revocation of the rule would certainly not have the effect of increasing the number of applications to convert dry into wet cultivation, as even under the three years option given by the rule there had been very serious complaints, so much so that the Board had found it necessary to allow all ryots who had converted their dry land into wet, the option once more of reconverting it into dry, no matter for what period they might

might have been sup-
- plied with water.

The I had granted
this concession on the repre-
- sentation of Mr. Thornhill,
then Collector of the District,
that 4000 acres of land
in the Repully talook
which had been con-
- verted from dry to
wet, had under the
rule been charged
with water rate though
not an acre of it had
been cultivated with a
wet crop, and that in
many other cases there
was a strong wish

on

on the part of the ryots
to reconvert their lands
into dry, owing either
to the insufficient
supply of water or
to the land having
become impregnated
with salt from the
application of water.
It was also represent-
- ed that the limited
option sanctioned
by the rule had
never been really
given to the ryots,

the

the lands having been
applied with water
as it became available
on the application of
the ryots, and "measured
"at the close of the
"season for the assess-
-"ment of the water
"rate and thenceforward
"entered as "Dry into Wet"

5. The Board
entered at some length
into what appeared
to them to be the
temporary

temporary causes which
were likely to check
the spread of wet
cultivation in the District.
They expressed their
opinion that it would
be desirable to ascertain
whether when land
became "Soud" an
assurance that neither
land assessment nor
water rate would be
charged and that the water
would be gratuitously
supplied for flooding,
~~and unprepared with cost,~~
would

Chandra "an effervescence
felt.

would remove the apprehensions of the people — whether the imposition of a separate cess for water had any material effect in causing the rejection of water — whether the fact of the distribution of water being in the hands of the D. P. W. had any influence towards the same end — whether the present charge for water (Rs. 4 per acre) was too high — whether it would be safe to concede the entire option of taking or refusing water to the ryots — and finally recommend — ed that a special officer should be apointed

appointed to conduct an enquiry into the whole question on the spot. In the G. O. under 6. date 21st May 1869 N. 1432 the Govt. expressed themselves in favor of giving the ryots a larger option in regard to taking or refusing water, but observed that when heavy Expenditure was incurred by the State for irrigation works, it was essential that an agreement should be taken from the parties interested that they would accept and pay for the water for a term of years. They

They however agreed with the Board as to the importance of an enquiry of the nature indicated before final orders were passed, and appointed Mr. C. G. Inaster to the duty.

78. The papers now under consideration are Mr Inaster's report on the subject, with the Board's Proceedings thereon. The Board in their Proc. have summarized Mr Inaster's report very completely. It appeared that instead of 500,000 acres irrigable in the Kistna Delta as originally estimated by the P. W. D. there are only 186,318 acres of registered wet land, and 121,825 acres of dry land which has been or can hereafter be converted into wet; so that supposing the whole of the wet land in the District to be under the influence of the new works (which however is not the case) there would only be 308,143 acres irrigable by them when completed, being little more than one half of the Estimate. Of the 186,318 acres classed as

as Punjab only
60,710 were cultivated
at the date of the
~~Board's~~ report, and nothing
was stated as to whether
any portion of the
remainder was in any
way dependent on the
new irrigation works.
Of the 121,826 acres of
dry land capable of
irrigation 48,228 acres
were then irrigated, 113,388
acres could not be irrigated
without an Extension of
the works, and only 8,437
acres capable of wet
cultivation were not
taken up.

8. The two Statements
(appendices I + II of

Mr. Master's report) do
not agree, as in St. I the
dry cultivation converted
into wet is stated to
have reached 68,963 acres
in Fasli 1277 and to have
fallen to 58,941 in Fasli
1278- whereas from
Statement St. II it would
appear that only 56,665
were capable of being
converted from dry
to wet under Existing
channels, of which only
8,437 had not been
entered upon up
to Fasly 1278- The
only Explanation
which suggests
itself is that
the

the latter Statement
refered to the new
works, and that the
former included old
works as well as new.
From the latter Statement
it would appear that
the conversion of dry
into wet has been
nearly equal to
the supply for waters.
It is clear that
the chief cause for
any backwardness in
applying for water is
owing to the insufficient
supply, and the
secondary cause
the fact that

much land becomes
"sour" on the appli-
-cation of water, though
undoubtedly the imperfection
of the new assessment
has had a marked effect
in checking the
cultivation of the
ordinary punjab land.
The cyclone of 1864 had
also a similarly
unfavorable influence
in the villages which
were affected by
it
9. As to the
particular points
to which Mr Masters
attention was

specially

specially directed, it would appear to have been his opinion that the supply of water gratis to land which has become "Sond," and the exemption of such land from the land tax and water rate so long as it continues in this state, was not really needed, the concession of 1868 under which the land assessment only of land so situated is charged being considered sufficient.

— that the separate charge of the water rate is a matter of indifference to the ryots, being only shown in the accounts, and the rate being viewed by them as a component part of the assessment on their land: that it would undoubtedly be a popular arrangement to transfer the general distribution of water to the Revenue Department, if feasible, — and that village and field channels should certainly

certainly be left to the ryots to maintain. He considered that the charge of Rs 4 water rate per acre could not be viewed generally as too high except in the villages visited by the Cyclone of 1864 where he advocated a temporary reduction to Rs 3: and that there is much to be said both for and against giving the ryot entire option in regard to taking or refusing water. On the whole he saw great difficulties in the way of granting it (see Report para 243).

10. The Board of Revenue did not think it necessary to remit any portion of the water rate in any locality; they would give the ryots entire option as to taking or refusing water, making any addition to the strength of the Revenue Department which such a change might render necessary. They would grant water free for the flooding of land which has become "Loud". They would leave the distribution of the water to the V.P.W., but have the

the Delta Guncaskets
more closely supervised.
They would require the
villagers themselves to
keep in repair and
manage the village and
field channels. They
would improve the ports
and communications
of the District and put
in hand the Railway
from Masulipatam to
Hyderabad and the
extension of the East Coast
Canal from Nellore. They
consider on the whole that
there is no cause for anxiety
in regard to the success of the Cuttack project
that if the irrigation work
give a full and proper
supply of water, the
irrigation of the District

will inevitably be gradually
developed; and that the disappoint-
ing state of the anicut revenue
is in no way to be ascribed
either to peculiarities of
the soil or to the disposition
of the people, but to exceptio-
al causes which will be
only temporary in their
action and effect.

The time which has
elapsed since the date of
the papers above recorded
has enabled Govt. to judge
more accurately of the
probable effect of the rule
regarding option in the
use of water which it is
proposed to relax, and
they

they find that whereas from Fusli 1265 to 1275 the area of wet holdings in the Delta increased to areas 168,308, assessed at Rs. 926,055, it fell rapidly from that date to acres 132,446 assessed at Rs 663,619 in Fusli 1278. Improvement has since been manifested as shown below, but the most recent result is still very con-siderably below that which was attained 5 years before

Fusli	acres	Rs
1279	134,661	732,988
1280	144,789	788,878

During this period the system of imperfect option has been in force, and from the evidence adduced in the papers before them, the Govt cannot doubt that the restriction against ceasing to pay for irrigation after 3 years consecutive use of it has materially checked the free application for water, for it must be observed that the works have been gradually extended in the above period, so that the results are deduced from a wider area.

The Govt do not doubt that the main cause why so much land has not been irrigated as was originally anticipated is the incomplete state of the works. The supply of water is insuf-ficient and uncertain and due attention has not

not been paid to drainage.
As the works are improved
and completed the area
under irrigation will
undoubtedly extend, for
there is evidently no
general reluctance on
the part of the Ryots
to convert their lands
into "Nunjah" if a
sufficient and reasonable supply of water
be assured, and its
use proves to be profitable.

The works are now being
carried on as speedily
as

1079

as possible by means of
Loan funds; and all that
seems necessary in this
direction is to impress on
the Engineering officers the
primary importance of
perfecting existing works
rather than of extending them.

As regards the regulation of the irrigation,
the Govt. after mature
consideration have come
to the same conclusion
as the Board of Revenue
that that entirely free
option as to the use of
the water from year to
year, which was pre-
scribed by the Secretary
of

State in 1863, as the rule
to be generally observed,
and formed the condition of
the Governor Generals assent
to the enactment of Madras
Act 7 of 1865, for the levy
of a separate water rate,
should be absolutely and
unreservedly conceded,
subject only to such notice
of relinquishment as may
be fairly demanded in
order to prevent waste.

The Govt see no
cause for apprehension
that this freedom will
prove injurious to the
revenue or productive
of material additional

Expense

expense or inconvenience
to the Revenue or Public
Works Depts

There is every reason
to believe that so far as
the present rule affects
the revenue it acts injuriously
by checking applications
for water — or inducing
relinquishments when perfect
certainty as to the advantage
of its continued use has
not been attained by the
Ryot, and that to relax
the rule may increase the
former and reduce latter.

Uncertainty of
inadequacy of supply, im-
perfect drainage or proved
injurious effects on the soil

are

are reasons for relinquishing irrigation which should be unhesitatingly admitted. Should the cultivation of dry ~~(rather than wet)~~ crops be ~~preferred~~ preferred by the landholder, to force him to pay for irrigation is ~~unjustifiable~~ simply tyrannical.

The Govt. are fully satisfied that self interest is the best guide in determining the weight that should be allowed to these several considerations, and that when it is really for the benefit of the Ryot to take and retain the use of irrigation, he will unhesitatingly do so, if he is a free agent in the matter, and that to attempt to force him

in the highest degree his is ~~a matter of~~ therefore to adopt the Board's view and to direct that in the Godavery and Kistna deltas the free option of taking or relinquishing water from year to year be unreservedly conceded to the Ryots, subject only to the condition that due notice shall be given. They believe that even where new works are desired, it is impolitic to maintain any restrictions which are opposed to the interest of the Ryot, and that only where from the position of the land it cannot but derive benefit from surrounding irrigation,

should

should free option in
the matter of taking or
not taking water be denied
them.

They desire that the
Board will revise the rules
now in force on the subject
of the Delta water rate
and submit the existing
rules, and those they would
propose in lieu of them
in parallel columns, for
the consideration of Govt
the free use of water for
flooding "Soud" land may
be conceded, when the
supply is available.

As regards the other
points to which attention
is specially directed in
the papers under consider-
-ation, the Govt in Circ
are of opinion
that no reason is shewn
for desiring modification

of

of the revised Land Settlement
or of the water rate now pay-
-able
but if still deemed necessary,
some temporary remission
out of the land assessment
may be allowed in those
villages which were devastated
by the Cyclone of 1864.

The Govt trust that the
change in the organization
of the Public Works Dept;
which is about to be intro-
-duced, and which will assign
a District Engineer to each
District, will go far to remedy
the administrative deficiencies
which are believed to exist,
but it will be considered
in the D.P.W. whether the
transfer in the Deltas of
the charge of village and
field channels to the Ryots
themselves, and of the

distribution

distribution of the water among the Ryots to the Revenue Dept: is expedient.

The improvement of the internal communica-tions of the country is now in the hands of the Local Fund boards, and the Govt: do not doubt that these will be developed as fast as means are available for the purpose, but the importance of the short branch line of rail from Hydrabad to Masulipatam will be again insisted ~~upon by the Govt of India~~ in the D.P.W.

The attention of Government is already directed to the extension of the East Coast Canal,

and

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and the improvement of the minor ports.

In conclusion the Govt: in Council desire to thank the Board for the thorough and laborious manner in which it has carried out the investigation entrusted to him. His knowledge of the subject and his fairness with which he has stated the case both for and against the proposals now before the Govt: has enabled the Govt: to arrive at its conclusions on final judgment in the matter.

W. R.

14 To the Board of Rev: Res: 30 August 72.
21 " Public Works Dept " "
5 " Chief Engineer for Irrigation " "
1 " C.E. Master Engr: — " —
13 " Director of Rev: Settlement " "

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CURRENT No.

ENCLOSURES TO C. No.

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STATEMENT WITH DITTO.								
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