

SELECTIONS FROM THE RECORDS OF THE BOMBAY
GOVERNMENT.

No. CCLII--NEW SERIES.

PAPERS

RELATING TO THE

REVISION SURVEY SETTLEMENT OF 47 GOVERNMENT VILLAGES

OF THE

SANAND TALUKA.

OF THE

AHMEDABAD COLLECTORATE.

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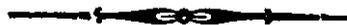
REVISION SURVEY SETTLEMENT OF 47 GOVERNMENT VILLAGES

OF THE

SÁNAND TÁLUKA

OF THE

AHMEDABAD COLLECTORATE.



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OF THE AHMEDABAD COLLECTORATE.**

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APPENDIX A.

STATISTICAL TABLE No. III.

Details of cultivation for 5 years, viz., from 1885-86 to 1889-90.

District.	Surveyed Villages.	Crops.	PERCENTAGE OF TOTAL CULTIVATION OF GOVERNMENT AND INAM LANDS.		
			Total.	Kharif.	Rabi.
1	2	3	4	5	6
Sánand	47	Jowári	22.99	22.99	...
		Bájri	11.80	11.80	...
		Rice	10.38	10.38	...
		Kodra	0.51	0.51	...
		Vari	0.70	0.70	...
		Banti	0.75	0.75	...
		Tur	0.18	0.18	...
		Mag	0.30	0.30	...
		Arad... ..	0.57	0.57	...
		Math... ..	1.73	1.73	...
		Gavar	0.12	0.12	...
		Cotton	16.34	16.34	...
		Vegetables	0.08	0.08	...
		Tal (sesamum)	0.06	0.06	...
		Pulses	0.01	0.01	...
		Flax	0.01	0.01	...
		Bavta	0.03	0.03	...
		Wheat	5.84	...	5.84
		Barley	1.57	...	1.57
		Gram	0.72	...	0.72
		Flowers	0.11	...	0.11
		Tobacco	0.71	...	0.71
		Sugar-cane	0.57	...	0.57
		Castor-oil seeds	0.73	...	0.73
		Scindia Jowári	0.10	...	0.10
		Kang	0.01	...	0.01
		Chillies	0.04	...	0.04
Rape-seed	0.03	...	0.03		
Kasumbi	0.01	...	0.01		
Roots and tubers	0.03	...	0.03		
Grass or fallow	22.97	22.97	...		
		Total ...	100.00	89.53	10.47

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

*Camp Sándheli, Táluka Thásra, }
9th March 1891.*

APPENDIX B.

STATISTICAL TABLE No. IV.

Detail of Population for 5 years from 1885-86 to 1889-90.

Taluka.	Caste.	MALES.			FEMALES.			Total of Columns 5 and 8.	CAN READ.			
		Under 15 years of age.	Above 15 years of age.	Total Males.	Under 15 years of age.	Above 15 years of age.	Total Females.		Males.		Females.	
									Number.	Per cent.	Number.	Per cent.
1	2	3	4	5	6	7	8	9	10	11	12	13
Sánand ...	Hindus	10,202	14,916	25,118	8,908	15,266	24,174	49,292	4,180	16½	135	½
	Musalmánés	403	782	1,185	360	733	1,093	2,278	99	8½	...	...
	Pársis ... ..	...	1	1	...	...	...	1	1	100	...	...
	Christians ... ..	...	...	...	...	...	...	...	...	...	...	...
	Total	10,605	15,699	26,304	9,268	15,999	25,267	51,571	4,280	16½	135	½

APPENDIX C.

STATISTICAL TABLE No. V.

Occupations of the People.

District.	Surveyed Villages.	Occupations.	Number.
1	2	3	4
Sánand	47	Agricultural	28,605
		Non-agricultural	22,966
		Total	51,571

APPENDIX D.

STATISTICAL TABLE No. VI.

Return of Houses, Chávdís, Wells, &c., and of Live and Dead Stock.

District.	Surveyed Villages.	HOUSES.					WELLS.				CARTS AND PLOUGHS.		LIVE STOCK.														
		Chávdís.	Tiled.	Flat-roofed.	Thatched.	Total.	For irrigation.	Drinking.	Out of repair.	Total.	Carts.	Ploughs.	Horses and Ponies.			Female Buffaloes.			Cows.			Cart and Plough, Oxen and Buffaloes.	Sheep, old and young.	Goats, old and young.	Donkeys, old and young.	Mules.	Camels.
													Old.	Young.	Total.	Old.	Young.	Total.	Old.	Young.	Total.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Sánand ...	47	11,354	7	2,943	14,304	1,610	29	435	2074	2,181	4,116	180	94	274	8,042	5,633	13,675	6,105	4,305	10,910	9,310	3,629	...	75	...	...
	47	21,839	81	966	23,336	1,156	96	366	1621	1,720	4,918	108	169	277	6,507	5,446	12,253	3,994	3,603	76,92	10,205	2,388	2,575	557	...	...

The upper line of figures refers to the year of Settlement.

Camp Sándheli, Taluka Thásva, }
3th March 1891.

T. B. FERNANDEZ,
Deputy Superintendent, Revenue Survey, Gujarat.

APPENDIX E.

Statement of Schools with their average Attendance for the year 1889-90 in the Villages of the Sánand Táluka.

Number of Villages.	District.	GOVERNMENT SCHOOLS.				PRIVATE SCHOOLS.		REMARKS.
		Boys		Girls.		Boys.		
		Number of Schools.	Average Attendance.	Number of Schools.	Average Attendance.	Number of Schools.	Average Attendance.	
1	2	3	4	5	6	7	8	9
47	Sánand	18	1,003	7	123	1	80	

APPENDIX F.

Statement showing the number of Survey Numbers cultivated entirely by the holders in whose names they are entered in the Village Accounts, or in partnership with others, as well as the Survey Numbers sublet for Money or Grain Payments and those that are Waste.

Surveyed Villages.	Number of Survey Numbers cultivated entirely by the holders in whose names they are entered in the Village Accounts.	Number of Survey Numbers not cultivated entirely by the holders in whose names they are entered, but cultivated by them in partnership with others.	Number of Survey Numbers sublet for Money Payments.	Number of Survey Numbers sublet for Grain Payments.	Number of Survey Numbers Waste.	Grand Total.	REMARKS.
1	2	3	4	5	6	7	8
47 villages of the Sánand Táluka of the Ahmedabad Collectorate ...	24,133	275	1,549	221	3,276	29,459	

*Camp Sándheli, Táluka Thásra, }
9th March 1891.*

T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey, Gujarát.

APPENDIX G.

Statement of Sales in the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Táluka.	Names of Villages.	Area and nature of Land.	Amount of Purchase-money.	Government Assessment.	Proportion of Purchase-money to Government Assessment, (i.e. how many times).	Remarks.	
			1884.				
		A. g.	Rs a.	Rs. a. p.			
Sánand.	Kásandra ...	2 3	339 0	8 0 0	42·37		
	Chorvadodra ...	4 1	99 0	5 0 0	19·80		
	Do. ...	6 20	899 0	7 0 0	128·42		
	Devti ...	5 6	99 0	7 0 0	14·14		
	Piplan ...	1 23	199 0	3 2 0	63·78		
	Makarba ...	4 29	199 0	11 0 0	18·33		
	Vásna Dhedhal ...	4 38	70 0	8 0 0	8·75		
	Sánand ...	2 0	400 0	3 0 0	133·33	Highest proportion.	
	Do. ...	1 34	375 0	3 0 0	125·00		
	Sola ...	2 12	125 0	5 0 6	24·85		
	Sánand ...	1 6	99 0	1 8 0	66·00		
	Sanáthal ...	9 33	250 0	15 0 0	16·66		
	Siáváda ...	3 29	200 0	10 0 0	20·00		
	Do. ...	5 0	99 0	6 4 0	15·84		
	Chorvadodra ...	6 13	200 0	7 0 0	28·57		
	Daduka ...	21 21	49 0	26 0 0	1·88	Lowest proportion.	
				Average proportion...		29·37	
				1885.			
	Sánand.	Andej ...	2 7	399 0	2 8 0	159·60	Highest proportion.
		Chorvadodra ...	1 21	199 0	6 0 0	33·16	
Juvál ...		2 28	80 0	20 0 0	4·00	Lowest proportion.	
Jholapur ...		1 37	300 0	12 0 0	25·00		
Sánand ...		1 17	75 0	2 0 0	37·50		
Do. ...		3 6	499 0	4 0 0	124·75		
Do. ...		1 17	190 0	2 8 0	76·00		
Do. ...		5 8	1,126 0	8 8 0	132·47		
Siáváda ...		1 14	150 0	10 0 0	15·00		
Sánand ...		1 16	85 0	1 0 0	85·00		
Do. ...		0 28	42 0	4 0 0	10·50		
Do. ...		2 38	300 0	4 0 0	75·00		
Do. ...		4 5	686 0	7 0 0	98·00		
			Average proportion...		49·47		
			1886.				
Sánand.	Chorvadodra ...	3 31	400 0	5 0 0	80·00	Highest proportion.	
	Do. ...	21 21	1,000 0	21 0 0	47·61		
	Vásna Dhedhál ...	3 38	165 0	7 0 0	23·57		
	Do. ...	0 34	130 0	6 4 0	20·80		
	Vásna Chácharvádi ...	8 27	90 0	7 0 0	12·85		
	Sánand ...	1 19	80 0	1 8 0	53·33		
	Sola ...	4 2	250 0	5 14 0	42·58		
	Do. ...	4 16	500 0	8 12 10	56·81		
	Sánand ...	5 8	600 0	9 0 0	66·66		
	Siávádá ...	5 7	140 0	31 0 0	4·51	Lowest proportion.	
	Do. ...	2 2	160 0	2 4 0	70·11		
	Sánand ...	0 28	65 0	2 8 0	26·00		
			Average proportion...		33·46		

APPENDIX G—continued.

Táluka.	Names of Villages.	Area and nature of Land.	Amount of Purchase-money.	Government Assessment.	Proportion of Purchase-money to Government Assessment (i.e. how many times).	Remarks.		
Sánand—continued.			1887.					
		A. g.	Rs. a.	Rs. a. p.				
		Andej ...	241 36	1,499 0	229 12 0	6.52	Lowest proportion.	
		Juval ...	24 32	40 0	24 0 0	1.66		
		Vásna Dhedhál ...	1 11	175 0	8 8 0	20.58		
		Vanália ...	1 35	100 0	7 8 0	13.33		
		Do. ...	1 3	50 0	4 0 0	12.50		
		Sola ...	3 5	275 0	10 4 0	26.82		
		Sánand ...	1 22	900 0	2 8 0	360.00		Highest proportion.
		Do. ...	1 38	299 0	3 0 0	99.66		
		Siáváda ...	11 5	290 0	11 0 0	26.36		
				Average proportion...		12.09		
				1888.				
		A'mbli ...	3 19	300 0	7 0 0	42.85	Highest proportion.	
		Do. ...	1 25	99 0	3 0 0	33.00		
		Upardal ...	1 4	75 0	0 11 0	110.29		
		Kásandra ...	1 4	195 0	0 4 0	780.00		
		Khetásar ...	11 30	500 0	11 0 0	45.45		
		Chorvadodra ...	2 24	400 0	2 8 0	160.00		
		Do. ...	12 12	87 0	13 0 0	6.69		Lowest proportion.
		Juvál ...	3 39	199 0	27 0 0	7.39		
		Thaltej ...	0 9	99 0	0 8 0	198.00		
		Dodar ...	6 37	199 0	9 0 0	22.11		
		Makarba ...	2 39½	137 0	7 0 0	19.56		
		Visálpur ...	2 12	399 0	0 9 0	658.94		
		Sánand ...	1 27½	400 0	3 0 0	133.33		
		Do. ...	1 35	230 0	3 0 0	76.66		
		Do. ...	1 39	100 0	4 5 1	23.20		
	Sutárki ...	6 22	227 0	8 0 0	28.37			
	Sánand ...	2 7½	299 0	3 8 0	85.42			
	Do. ...	2 10	100 0	4 0 0	25.00			
	Do. ...	1 26	183 0	2 8 0	73.20			
			Average proportion...		38.52			

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891.

APPENDIX H.

Statement of Sales by the Court in the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Táluka.	Names of Villages.	Area and nature of Land.	Amount of Purchase-money.	Government Assessment.	Proportion of Purchase-money to Government Assessment (i. e., how many times).	Remarks.	
Sánand ...	1884.						
		A. g.	Rs. a.	Rs. a.			
	Juvál ...	3 13	136 0	24 0	5.66		
	Do. ...	2 23	46 0	20 0	2.30		
	Piplan ...	7 11	260 0	11 0	23.63	Highest proportion.	
	Makarba ...	4 38	24 0	10 0	2.40		
	Sola ...	1 7	5 0	1 12	2.85		
	Do. ...	0 25	6 0	2 4	2.66		
	Do. ...	1 17	12 0	3 0	4.00		
	Do. ...	1 12	4 0	3 0	1.33	Lowest proportion.	
	Do. ...	0 24	7 0	2 8	2.80		
	Do. ...	1 3	6 0	4 0	1.50		
		Average proportion ...				6.21	
	1886.						
	Chorvadodra ...	2 9	40 0	2 8	16.00	Highest proportion.	
	Do. ...	5 18	36 0	6 0	6.00	Lowest proportion.	
		Average proportion ...				8.94	
	1887.						
	Juvál ...	7 22	82 0	6 8	12.61		
	Do. ...	8 24	11 0	6 0	1.83	Lowest proportion.	
Do. ...	4 39	27 0	3 8	7.71			
Kásandra ...	3 21	119 0	7 0	17.00	Highest proportion.		
Chorvadodra ...	4 20	48 0	4 0	12.00			
	Average proportion ...				10.63		
1888.							
Manipur... ...	6 16	30 0	11 0	2.72	Lowest proportion.		
Ghuma ...	3 25	77 0	7 0	11.00	Highest proportion.		
Chorvadodra ...	5 38	4 0	6 0	...			
	Average proportion ...				4.62		

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891. }

APPENDIX I.

Statement showing simple Mortgage Transactions in the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Táluka.	Names of Villages.	Area and nature of Land,	Amount of Mortgage lien,	Government Assessment.	Proportion of Mortgage lien to Government Assessment.	Remarks.
		A. g.	Rs. a.	Rs. a. p.		
Sánand.			1884.			
	Sánand ...	2 1½	83 0	2 8 0	33-20	Highest proportion.
	Do. ...	5 20	100 0	9 0 0	11-11	Lowest proportion.
			Average proportion...		15-91	
			1885.			
	Sánand ...	1 28	299 0	3 0 0	99-66	
			1886.			
	Kásandra ...	3 16	250 0	6 0 0	41-66	Highest proportion.
	Sánand ...	7 1	140 0	9 0 0	15-55	Lowest proportion.
			Average proportion...		26-00	
			1887.			
	Chorvadodra ...	19 36	475 0	19 0 0	25-00	
	Sánand ...	2 9	115 0	4 0 0	28-75	
	Do. ...	1 3	20 0	2 0 0	10-00	Lowest proportion.
	Do. ...	2 5	100 0	1 7 3	68-95	Highest proportion.
		Average proportion...		26-79		
		1888.				
Chorvadodra ...	6 2	200 0	6 0 0	33-33		
Do. ...	15 20	299 0	15 0 0	19-10		
Dodar ...	5 8½	115 0	6 8 0	17-69	Lowest proportion.	
Bopal ...	2 1	400 0	4 0 0	100-00		
Bhávanpur...	1 8	65 0	3 0 0	21-66		
Sánand ...	1 35	200 0	3 0 0	66-66		
Do. ...	0 16½	200 0	0 13 0	248-91	Highest proportion.	
		Average proportion...		38-66		

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891.

APPENDIX J.

Statement of Mortgages with Possessions in the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Táluka.	Names of Villages.	Area and nature of Land.	Amount of Mortgage lien.		Government Assessment.	Proportion of Mortgage lien to Government Assessment.	Remarks.
			Rs. a.	Rs. a. p.			
Sánand.		A. g.	1884.				
	Kásandra ...	1 5	199 0	5 0 0	39-80		
	Chorvadodra ...	9 12	250 0	10 0 0	25-00		
	Juvál ...	5 38	162 0	28 0 0	5-78	Lowest proportion.	
	Jholápur ...	6 4	200 0	7 0 0	28-57		
	Devti ...	6 33	166 0	19 0 0	8-73		
	Piplan ...	2 8	174 0	3 0 0	58-00		
	Bopal ...	1 25	199 0	3 8 0	56-85		
	Makarba... ..	5 19	299 0	30 0 0	9-96		
	Manipur... ..	2 22	150 0	3 0 0	50-00		
	Visálpur... ..	2 35	280 0	6 0 0	46-66		
	Sánand ...	4 39	300 0	7 0 0	42-85		
	Do. ...	2 5	199 0	3 4 0	61-23	Highest proportion.	
	Sola ...	4 28	199 0	9 6 4	21-17		
	Sánand ...	1 28	165 0	3 0 0	55-00		
	Do. ...	2 28	240 0	4 0 0	60-00		
				Average proportion...		22-57	
				1885.			
	Kásandra ...	2 21	400 0	8 0 0	50-00		
	Ghuma ...	2 0	180 0	3 8 0	51-42		
	Do. ...	1 15	179 0	2 8 0	71-60		
	Chorvadodra ...	15 20	125 0	15 0 0	8-33		
	Do. ...	4 12	440 0	0 10 0	709-67	Highest proportion.	
	Juvál ...	4 29	174 0	33 0 0	5-27	Lowest proportion.	
	Jhamp ...	1 15	150 0	8 0 0	18-75		
	Doduka ...	2 21	160 0	3 4 0	49-23		
	Do. ...	5 0	200 0	6 4 0	32-00		
				Average proportion...		25-06	
				1886.			
	A'mblí ...	5 5	500 0	10 0 0	50-00		
	Upardal ...	2 6	190 0	9 0 0	21-11		
	Do. ...	5 24	35 0	2 0 0	17-50		
	Kásandra ...	1 16	300 0	17 0 0	17-64		
	Ghuma ...	1 32	200 0	3 8 0	57-14		
	Chorvadodra ...	4 5	200 0	5 0 0	40-00		
	Do. ...	6 8	450 0	6 0 0	75-00		
	Chángodar ...	2 0	100 0	0 14 0	114-94	Highest proportion.	
	Juval ...	2 24	100 0	18 0 0	5-55	Lowest proportion.	
	Jhamp ...	3 17	100 0	13 0 0	7-69		
	Do. ...	2 18	100 0	13 0 0	7-69		
	Daran ...	3 18	91 0	12 0 0	7-58		
	Do. ...	2 10	80 0	9 0 0	8-88		
	Náranpur ...	5 24	100 0	7 0 0	14-28		
	Do. ...	28 7	200 0	25 0 0	8-00		
	Piplan ...	1 7	150 0	5 0 0	30-00		
Do. ...	1 4	78 0	5 0 0	15-60			
			Average proportion...		18-54		

APPENDIX J—continued.

Táluka.	Names of Villages.	Area and nature of Land.	Amount of Mortgage lien.	Government Assessment.	Proportion of Mortgage lien to Government Assessment.	Remarks.
		A. g.	Rs. a.	Rs. a. p.		
			1887.			
Sánand—continued.	Andej ...	4 5	100 0	4 0 0	25·00	
	Kásandra ...	2 21	156 0	5 0 0	31·20	
	Ghuma ...	0 24	85 0	2 0 0	42·50	
	Do. ...	1 32	185 0	3 0 0	61·66	
	Do. ...	1 27	255 0	3 4 0	80·30	
	Do. ...	1 37	300 0	3 12 0	80·00	
	Do. ...	2 1	350 0	4 0 0	87·50	
	Chorvadodra ...	19 36	475 0	19 0 0	25·00	
	Do. ...	3 11	675 0	3 8 0	192·85	Highest proportion.
	Do. ...	3 7	80 0	3 8 0	22·86	Lowest proportion.
	Do. ...	2 30	150 0	3 0 0	50·00	
	Juvál ...	8 29	199 0	7 0 0	28·42	
	Bopal ...	2 13	280 0	5 0 0	56·00	
				Average proportion...		49·84
			1888.			
	Ambli ...	1 17	190 0	2 12 0	69·09	
	Upardal ...	9 31½	150 0	6 8 0	23·07	Lowest proportion.
	Do. ...	10 13	235 0	9 0 0	26·11	
	Kásandra ...	3 8	400 0	4 8 0	88·88	
	Ghuma ...	3 14	525 0	6 0 0	87·50	
	Do. ...	2 29½	500 0	5 8 0	90·09	Highest proportion.
			Average proportion...		68·37	

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891.

APPENDIX K.

Statement of Leases in the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Táluka.	Names of Villages.	Area and nature of Land.	Duration of Lease.	Government Assessment.	Rent payable by Lessee to Lessor.	By whom Government Assessment is paid.	Proportion of Rent to Government Assessment.	Remarks.
		A. g.		Rs. a. p.	Rs. a. p.			
				1884.				
	Chorvadodra	8 35	11 years ...	9 0 0	11 0 0	Lessor ...	1.22	Lowest proportion.
	Piplan	9 13	2 " ...	13 0 0	46 8 0	Not shown.	3.57	
	Sánand	2 14	5 " ...	4 0 0	71 0 0	Lessor ...	17.75	Highest proportion.
	Do.	3 15	10 " ...	6 0 0	35 0 0	Do. ...	5.83	
	Do.	2 18	5 " ...	4 0 0	27 8 0	Do. ...	6.87	
	Do.	0 36	3 " ...	1 8 0	47 0 0	Do. ...	31.33	
	Do.	3 1	10 " ...	5 0 0	27 0 0	Do. ...	5.40	
	Do.	2 16	7 " ...	4 0 0	85 0 0	Do. ...	21.25	
	Do.	4 00	7 " ...	5 4 0	29 0 0	Do. ...	5.52	
						Average proportion ...	7.32	
				1885.				
	Jhamp	1 15	8 0 0	20 0 0	Lessee ...	2.50	Lowest proportion.
	Piplan	2 38	.....	9 9 0	50 0 0	Do. ...	5.23
	Do.	4 16	.....	6 0 0	30 0 0	Do. ...	5.00
	Bopal	1 6	.....	2 4 0	22 0 0	Lessor ...	9.77
	Matoda	6 33	.....	9 12 0	15 0 0	Lessee ...	1.53
	Vanalia	1 0	.....	4 8 0	35 0 0	Do. ...	7.77
	Sánand	2 15	.....	3 8 0	14 0 0	Do. ...	4.00
	Do.	2 33	.....	4 0 0	24 0 0	Do. ...	6.00
	Do.	3 16	.....	5 0 0	27 0 0	Do. ...	5.40
	Do.	6 21	10 years ...	8 0 0	40 0 0	Lessor ...	5.00	
	Do.	2 20	.....	6 0 0	22 0 0	Lessee ...	3.66
	Do.	3 3	4 years ...	4 0 0	30 0 0	Lessor ...	7.50	
	Do.	1 35	.....	2 8 0	12 0 0	Lessee ...	5.00
	Do.	2 4	.....	3 4 0	21 0 0	Do. ...	6.46
	Siáváda	4 18	1 4 0	30 0 0	Do. ...	24.00	Highest proportion.
	Sánand	4 14	8 0 0	50 0 0	Do. ...	6.25	Highest proportion.
	Do.	1 30	.....	3 0 0	64 0 0	Lessor ...	21.33
	Do.	9 1	.....	14 0 0	6 0 0	Lessee ...	...
	Do.	7 15	6 months...	25 0 0	45 0 0	Not shown.	1.80	
						Average proportion ...	4.38	
				*1886.				
	Chorvadodra	4 5	5 0 0	24 0 0	Lessee ...	4.80	Highest proportion.
	Do.	6 8	.....	6 0 0	54 0 0	Do. ...	9.00
	Chángodar	2 0	.....	3 8 0	9 0 0	Do. ...	2.57
	Juval	2 24	.....	18 0 0	15 0 0	Do. ...	...
	Náranpur	5 24	.....	7 0 0	12 0 0	Do. ...	1.71
	Do.	28 7	.....	25 0 0	24 0 0	Do. ...	...
	Do.	9 8	.....	10 0 0	40 0 0	Not shown.	4.0
	Do.	19 24	.....	20 0 0	85 0 0	Do. ...	4.25
	Piplan	3 0	.....	4 4 0	21 0 0	Lessee ...	4.94
	Sola	4 2	5 years ...	3 2 0	84 0 0	Lessor ...	10.89	
	Sánand	2 13	.....	0 3 0	8 8 0	Lessee ...	45.33
	Do.	3 24	.....	6 0 0	29 0 0	Lessor ...	4.83
	Sola	4 16	.....	8 12 10	49 0 0	Do. ...	5.56
	Siáváda	18 18	19 0 0	30 0 0	Lessee ...	1.57	Lowest proportion.
						Average proportion ...	3.19	
				1887.				
	Andej	3 1	3 0 0	25 0 0	Lessee ...	8.33	Highest proportion.
	Khetáar	9 21	.....	10 0 0	42 10 0	Do. ...	4.26
	Chángodar	2 23	.....	1 5 0	6 0 0	Not shown.	2.50
	Juval	9 29	.....	7 0 0	12 0 0	Lessee ...	1.71
	Piplan	3 3	.....	5 0 0	8 4 0	Do. ...	1.65
	Bopal	2 13	.....	5 0 0	16 0 0	Lessee ...	3.20
	Vanalia	1 27	.....	6 8 0	15 0 0	Do. ...	2.30
	Do.	1 27	.....	6 8 0	12 0 0	Do. ...	1.84
	Sánand	0 86	3 years ...	1 8 0	50 0 0	Lessor ...	33.33	
	Do.	0 84	5 " ...	1 8 0	35 0 0	Lessee ...	23.33	
	Do.	3 37	9 " ...	5 0 0	26 0 0	Not shown.	5.20	
	Do.	4 31	.....	8 0 0	52 8 0	Lessee ...	6.56
	Do.	1 39	5 years ...	3 8 0	85 0 0	Lessor ...	24.29	
	Siáváda	1 33½	12 8 0	15 0 0	Lessee ...	1.20	Lowest proportion.
	Do.	7 16½	.....	6 8 0	15 0 0	Do. ...	2.30
	Sánand	4 2	.....	7 0 0	47 0 0	Do. ...	6.71
						Average proportion ...	5.15	

APPENDIX K—continued.

Táluka.	Names of Villages.	Area and nature of Land.	Duration of Lease.	Government Assessment.	Rent payable by Lessee to Lessor.	By whom Government Assessment paid.	Proportion of Rent to Government Assessment.	Remarks.	
		A. g.		Ra. a. p.	Rs. a. p.				
				1888.					
Sánand—continued.	Upardal	9 31½	6 8 0	18 12 0	Lessee ...	2.88	Lowest proportion.	
	Do.	10 13	.....	9 0 0	29 8 0	Do. ...	3.27	
	Chorvadodra	9 26½	.....	9 0 0	27 0 0	Do. ...	3.00	
	Do.	1 21	.....	2 0 0	24 0 0	Do. ...	12.00	
	Do.	15 15	.....	16 0 0	30 0 0	Do. ...	1.87	
	Juval	1 34	.....	8 0 0	15 0 0	Do. ...	1.87	
	Jhamp	5 37	.....	4 8 0	12 0 0	Do. ...	2.77	
	Jholápur	25 39	.....	26 0 0	60 0 0	Do. ...	2.22	
	Piplan	5 12	10 years ...	5 0 0	28 0 0	Lessor ...	5.60		
	Visalpur	0 31	.....	1 12 0	8 0 0	Lessee ...	3.42	
	Do.	1 26	.....	5 0 0	16 0 0	Lessor ...	3.20	
	Sutárki... ..	13 32	.....	16 0 0	15 0 0	Lessee ...	...	
	Sánand... ..	0 28	1 0 0	42 0 0	Lessor ...	42.0		Highest proportion.
	Do.	4 26	.....	8 0 0	30 0 0	Lessee ...	3.75	
	Do.	2 7	.....	3 8 0	18 0 0	Do. ...	5.14	
Sola	1 12	.....	2 13 6	22 0 0	Do. ...	7.77		
Sánand... ..	1 17	5 years ..	2 0 0	35 8 0	Lessor ...	17.75			
					Average proportion ...		3.40		

T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey,
Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891.

APPENDIX L.

Statement showing the Prices prevalent in the Sánand Táluka of the Ahmedabad Collectorate for 30 years, from 1860-61 to 1889-90.

YEARS.	MEASURED SEERS OF 40 TOLAS PER RUPEE.				
	Wheat.	Rice in husk.	Jowári.	Bájrí.	Uncleaned Cotton(Káld).
1860-61	34½	40½	49½	45½	24½
1861-62	38	30½	51	45	18½
1862-63	18½	23½	22½	21½	10
1863-64	15	22	18½	17½	16
1864-65	21½	23½	25½	23½	15½
1865-66	35	24½	42½	35½	10½
1866-67	28	25½	48½	32	21½
1867-68	24½	22½	27½	26½	16½
1868-69	20½	23½	24½	22½	13½
1869-70	27½	29½	26½	24½	13
1870-71	27½	34½	33½	30½	26
1871-72	29½	36½	32	29	16½
1872-73	35	44½	44½	40	24
1873-74	36½	47½	58½	49½	20½
1874-75	33½	24½	53½	45½	20½
1875-76	28	36	37½	32	24½
1876-77	22½	21	21½	20	20
1877-78	14½	29½	20½	17½	18½
1878-79	32½	28½	40	35½	15
1879-80	41½	29½	64	49½	20
1880-81	31½	43	37½	33½	23½
1881-82	28½	41½	36½	31	19
1882-83	32½	34½	34½	30½	23
1883-84	36	45½	40	35½	25
1884-85	35½	34½	35½	32	21
1885-86	29	46½	37½	33½	23
1886-87	23	34½	31	29	23
1887-88	28½	24½	35½	22	20
1888-89	28½	28	42½	37½	19
1889-90	25½	32	42½	37½	20

T. R. FERNANDEZ,

*Camp Sándheli, Táluka Thásra, }
9th March 1891.*

Deputy Superintendent, Revenue Survey,
Gujarát.

Revenue History for 47 Villages situated in the Sānand Tāluka of the Ahmedabad

Years.	OCCUPIED LAND PAYING ASSESSMENT TO GOVERNMENT.						UNOCCUPIED ASSESSED ARABLE	
	Occupied Acres.	Full Standard Assessment.	Remissions.			Balance collected.	Acres.	Full Assessment.
			Permanent.	Casual.	Total.			
1	2	3	4	5	6	7	8	9
	A. g.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	A. g.	Rs. a. p.
1855-56 ...	26,076 31	85,952 1 6	.....	829 9 5	829 9 5	85,122 8 1	38,345 14	61,966 8 0
1856-57 ...	25,323 12	88,710 8 6	223 9 8	.....	223 9 8	88,486 9 10	42,555 17	67,198 13 3
1857-58 ...	25,932 39	90,872 4 6	876 13 6	473 0 9	1,349 14 3	89,522 6 3	42,570 36	67,274 5 3
1858-59 ...	24,676 38	84,097 11 0	798 6 11	2,432 12 2	3,231 3 1	80,866 7 11	44,127 31	71,687 6 9
1859-60 ...	24,494 4	85,608 6 4	753 5 5	.....	753 5 5	84,855 0 11	38,937 32	63,369 14 2
Total ...	126,504 4	4,35,240 10 10	2,652 3 6	3,735 6 4	6,387 9 10	4,28,853 1 0	206,537 10	3,31,496 15 5
Average ...	25,300 33	87,048 2 2	530 7 1	747 1 3	1,277 8 4	85,770 9 9	41,307 18	66,209 6 3
1860-61 ...	41,404 0	82,288 9 11	.....	3,844 7 9	3,844 7 9	78,444 2 2	23,892 8	42,480 8 0
1861-62 ...	47,544 33	92,690 3 0	.....	886 2 0	886 2 0	91,804 1 0	22,674 9	31,931 12 0
1862-63 ...	51,800 3	98,671 1 0	.....	1,107 0 2	1,107 0 2	97,564 0 10	16,277 18	27,603 4 0
1863-64 ...	58,295 11	1,24,484 0 0	.....	15,051 15 0	15,051 15 0	1,09,432 1 0	12,510 37	22,062 0 0
1864-65 ...	55,827 5	1,07,822 2 11	.....	658 15 8	658 15 8	1,07,163 3 3	11,121 12	30,930 4 0
1865-66 ...	55,645 34	1,15,891 3 7	61 8 0	.....	61 8 0	1,15,819 11 7	11,473 27	25,955 3 11
1866-67 ...	60,713 35	1,20,743 9 0	1,169 2 0	.....	1,169 2 0	1,19,574 7 0	11,135 1	27,602 2 0
1867-68 ...	60,870 26	1,21,671 11 0	993 14 0	49 14 8	1,043 12 8	1,20,627 14 4	11,700 33	27,012 6 0
1868-69 ...	62,907 4	1,26,148 15 0	993 14 0	203 3 1	1,197 1 1	1,24,951 13 11	9,527 17	22,649 10 0
1869-70 ...	62,840 26	1,25,678 11 8	993 14 0	12 11 11	1,006 9 11	1,24,672 1 9	9,641 19	23,170 14 0
Total ...	557,849 17	11,16,080 3 1	4,212 4 0	21,814 6 3	26,026 10 3	10,90,053 8 10	139,954 21	2,81,406 15 11
Average ...	55,784 38	1,11,608 0 4	421 3 7	2,181 7 1	2,602 10 8	1,09,005 5 8	13,995 18	28,149 11 2
1870-71 ...	63,617 30	1,25,087 3 0	836 14 0	297 14 7	1,134 12 7	1,23,952 6 5	9,145 23	22,491 6 0
1871-72 ...	63,047 8	1,23,145 3 0	760 14 0	533 12 11	1,294 10 11	1,21,850 8 1	9,738 31	24,709 10 0
1872-73 ...	62,448 27	1,22,678 14 6	741 2 0	345 7 0	1,086 9 0	1,21,592 5 6	10,348 37	26,123 2 0
1873-74 ...	61,731 10	1,19,224 12 2	741 2 0	237 12 3	978 14 3	1,18,245 13 11	11,165 24	25,178 2 0
1874-75 ...	59,920 35	1,12,995 12 0	741 2 0	295 9 11	1,036 11 11	1,11,959 0 1	12,784 35	21,534 12 0
1875-76 ...	58,925 25	1,10,113 2 0	716 2 0	7,162 5 11	7,878 7 11	1,02,234 10 1	10,275 1	19,158 6 0
1876-77 ...	57,835 31	1,05,672 2 0	713 2 0	95 7 2	808 9 2	1,04,863 8 10	11,154 6	21,247 14 0
1877-78 ...	58,640 36	1,06,280 2 0	667 2 0	.....	667 2 0	1,05,613 0 0	10,417 28	20,605 10 0
1878-79 ...	59,757 29	1,07,782 2 0	654 0 0	.....	654 0 0	1,07,128 2 0	8,905 7	17,794 10 0
1879-80 ...	60,746 11	1,11,224 8 0	587 8 0	.....	587 8 0	1,10,637 0 0	8,348 34	15,305 12 0
Total ...	606,672 2	11,44,203 12 8	7,159 0 0	8,968 5 9	16,127 5 9	11,28,076 6 11	102,284 26	2,14,149 4 0
Average ...	60,667 8	1,14,420 6 1	715 14 5	896 13 4	1,612 11 9	1,12,807 10 3	10,228 18	21,414 14 10
1880-81 ...	59,546 15	1,09,645 8 0	400 8 0	.....	400 8 0	1,09,245 0 0	9,093 20	16,065 12 0
1881-82 ...	59,216 27	1,09,467 0 0	400 8 0	21 8 4	422 0 4	1,09,044 15 8	9,451 18	16,324 0 0
1882-83 ...	59,224 25	1,09,702 8 0	400 8 0	10 0 0	410 8 0	1,09,292 0 0	9,424 17	15,863 12 0
1883-84 ...	58,998 25	1,09,181 0 0	400 8 0	98 3 3	498 11 3	1,08,682 4 9	9,685 16	16,419 4 0
1884-85 ...	59,645 12	1,09,751 4 0	400 8 0	52 14 3	453 6 3	1,09,297 13 9	9,028 10	15,845 8 0
1885-86 ...	60,211 0	1,10,553 4 0	115 8 0	56 3 6	171 11 6	1,10,381 8 6	8,470 0	15,083 8 0
1886-87 ...	60,320 16	1,10,558 0 0	115 8 0	88 8 10	204 0 10	1,10,353 15 2	8,591 14	15,463 8 0
1887-88 ...	60,402 38	1,10,490 12 0	120 8 0	83 1 3	203 9 3	1,10,287 2 9	8,509 29	15,535 12 0
1888-89 ...	59,898 3	1,09,000 4 0	33 0 0	120 2 10	153 2 10	1,08,847 1 2	9,000 34	16,949 12 0
1889-90 ...	60,629 23	1,09,929 0 0	33 0 0	397 14 7	430 14 7	1,09,498 1 5	8,282 2	16,108 4 0
Total ...	598,093 24	10,98,278 8 0	2,420 0 0	928 8 10	3,348 8 10	10,94,929 15 2	89,542 9	1,59,659 0 0
Average ...	59,809 14	1,09,827 13 7	242 0 0	92 13 8	334 13 8	1,09,492 15 11	8,954 10	15,965 14 5

Camp Sāndheli, Taluka }
Thāsra, 9th March 1891. }

DIX M.

Collectorate, in which the Survey Settlement was introduced in the year 1860.

GOVERNMENT LAND.	LAND THE REVENUE OF WHICH IS ALIENATED ENTIRELY OR PARTIALLY (ISA'M).			TOTAL LAND, GOVERNMENT, OCCUPIED, UNOCCUPIED AND ISA'M.			Balance outstanding at the close of year.
	Realization from Auction Sale of Grazing.	Acres.	Full Standard Assessment.	Collections, Quit-rent, &c.	Total of Columns 2, 8 and 11.	Total Assessment—Total of Columns 2, 9 and 12.		Collections—Total of Columns 7, 10 and 13.
10	11	12	13	14	15	16	17
Rs. a. p.	A. g.	Rs. a. p.	Rs. a. p.	A. g.	Rs. a. p.	Rs. a. p.	Rs. a. p.
876 4 0	28,426 13	1,04,086 11 9	10,301 12 2	92,848 18	2,52,005 5 3	96,300 8 3	.....
715 14 5	34,210 29	1,09,401 1 2	10,222 1 7	102,089 18	2,65,310 1 11	99,424 9 10	.....
632 4 4	33,886 33	1,11,012 6 2	10,598 14 4	102,390 28	2,69,158 15 11	1,00,753 8 11	.....
670 1 7	31,822 30	1,09,235 15 4	10,791 13 0	100,627 19	2,65,021 1 1	92,328 6 6	.....
1,065 8 10	32,624 38	1,06,992 15 0	9,368 13 0	96,056 34	2,55,971 3 6	95,289 6 9	.....
3,960 1 2	100,971 23	5,40,729 1 5	51,283 6 1	494,012 37	13,07,466 11 8	4,84,096 8 3	.....
792 0 3	32,194 13	1,08,145 13 1	10,256 10 10	98,802 24	2,61,493 5 6	96,819 4 10	.....
2,490 0 8	37,197 2	68,504 12 0	9,059 2 0	102,493 10	1,93,273 13 11	89,993 4 10	22 13 0
2,047 7 11	38,207 33	68,060 0 0	9,252 10 0	108,426 35	1,92,681 15 0	1,04,004 2 11	.....
3,074 13 6	38,138 0	65,597 12 0	9,280 14 0	106,215 21	1,91,872 1 0	1,09,919 12 4	.....
3,649 15 0	39,730 36	71,957 12 0	16,765 13 0	110,537 4	2,18,503 12 0	1,29,847 13 0	411 8 0
4,073 8 6	36,609 18	68,060 8 0	16,982 10 0	103,557 35	2,06,821 14 11	1,28,219 5 9	8,377 8 7
4,009 11 6	38,488 9	68,764 10 6	17,595 12 0	105,607 30	2,10,601 2 0	1,37,425 3 1	272 13 11
4,221 5 4	39,862 7	73,126 8 0	18,597 11 0	111,711 3	2,21,472 3 0	1,42,393 7 4	.....
5,227 12 6	39,848 7	73,935 14 0	19,573 8 0	112,419 26	2,22,619 15 0	1,45,429 2 10	.....
4,081 14 8	39,848 21	73,183 9 0	18,914 5 0	112,283 2	2,21,989 2 0	1,47,948 1 7	.....
8,561 12 6	39,836 30	72,930 4 0	18,714 14 1	112,318 35	2,21,779 13 8	1,46,948 12 4	.....
37,338 6 1	387,767 3	7,04,121 9 6	1,54,737 3 1	1,085,571 1	21,01,608 12 6	12,82,129 2 0	9,084 11 6
3,733 13 5	38,776 28	70,412 2 7	15,473 11 6	108,557 4	2,10,160 14 1	1,28,212 14 7	908 7 7
3,377 8 6	39,834 28	73,520 14 0	18,707 12 6	112,598 1	2,21,099 7 0	1,46,037 11 5	.....
3,437 5 3	39,812 4	73,468 10 0	18,703 0 6	112,598 3	2,21,323 7 0	1,43,990 13 10	70 1 8
4,249 1 0	40,455 7	73,406 14 0	18,695 2 6	113,252 31	2,22,208 14 6	1,44,536 9 0	.....
3,770 5 0	40,435 29	73,304 6 0	18,658 14 6	113,332 23	2,17,707 4 2	1,40,675 1 5	.....
3,815 14 8	40,826 37	73,204 0 0	18,651 14 6	123,534 27	2,07,734 8 0	1,34,426 13 3	.....
3,623 7 9	40,813 33	73,118 4 0	18,589 8 6	110,014 19	2,02,389 12 0	1,24,447 10 4	.....
3,143 1 3	40,737 8	72,809 4 0	18,489 5 6	109,727 5	1,99,729 4 0	1,26,495 15 7	.....
5,204 9 5	40,734 11	72,693 4 0	18,446 9 6	109,792 35	1,99,579 0 0	1,29,264 2 11	.....
3,268 9 11	40,557 39	72,179 4 0	18,351 15 6	109,220 35	1,97,756 6 0	1,28,748 11 5	.....
2,430 5 3	40,731 3	72,646 4 0	18,422 5 6	109,826 8	1,99,176 8 0	1,31,489 10 9	.....
36,320 4 0	4,04,940 39	7,30,351 0 0	1,85,716 9 0	1,113,897 27	20,88,704 0 8	13,50,113 3 11	70 1 8
3,632 0 5	40,494 4	73,035 1 7	18,571 10 6	111,389 30	2,08,870 6 6	1,35,011 5 2	7 0 2
2,829 0 8	40,728 16	72,599 4 0	18,403 1 6	109,373 11	1,98,310 8 0	1,30,477 1 9	.....
2,736 12 2	40,703 2	72,510 12 0	18,387 2 6	109,371 7	1,98,301 12 0	1,30,168 14 4	.....
3,050 7 4	40,702 5	72,510 12 0	18,387 2 6	109,351 7	1,98,077 0 0	1,30,738 9 10	.....
3,168 7 4	40,702 5	72,510 12 0	18,387 2 6	109,386 6	1,98,111 0 0	1,30,237 14 7	.....
3,740 4 11	40,703 16	72,514 14 0	18,389 2 6	109,377 7	1,98,111 10 0	1,31,427 5 2	.....
3,303 6 5	40,701 31	72,494 4 0	18,382 14 6	109,382 31	1,98,131 0 0	1,32,067 13 5	.....
3,280 5 10	40,460 13	72,109 12 0	18,382 0 6	109,372 3	1,98,131 4 0	1,32,016 5 6	.....
2,513 1 8	40,459 16	72,104 12 0	18,380 4 6	109,372 3	1,98,131 4 0	1,31,180 8 11	.....
3,333 13 6	39,826 8	72,105 4 0	18,380 12 6	108,725 5	1,98,055 4 0	1,30,561 11 2	179 5 6
2,845 5 1	39,855 20	72,020 8 0	18,340 15 6	108,767 5	1,98,057 12 0	1,30,684 6 0	.....
30,810 0 6	404,842 12	7,23,480 14 0	1,83,820 11 0	1,092,478 5	19,81,418 6 0	13,09,560 10 8	179 5 6
3,081 0 1	40,484 9	72,348 1 5	18,382 1 1	109,247 33	1,98,141 13 5	1,30,956 1 1	17 14 11

T. R. FERNANDES,
Deputy Superintendent, Revenue Survey, Gujarát.

APPENDIX N.

Statement showing the present and proposed maximum Water-rate of the Villages of the Sánand Táluka of the Ahmedabad Collectorate.

Number.	Name of Village.	MAXIMUM WATER-RATE.		Number.	Name of Village.	MAXIMUM WATER-RATE.	
		Present.	Proposed.			Present.	Proposed.
		Rs. a. p.	Rs. a. p.			Rs. a. p.	Rs. a. p.
<i>Class I.</i>				<i>Class II—continued.</i>			
1	Sarkhej	3 12 0	3 12 0	13	Piplan	3 5 4	3 8 0
2	Makarba	3 12 0	3 12 0	14	Devti Náni	3 5 4	3 8 0
3	Bodakdev	3 12 0	3 12 0	15	Bhávapur	3 5 4	3 8 0
4	Thaltej	3 12 0	3 12 0	16	Andej	2 10 8	2 12 0
5	Sanáthal	3 12 0	3 12 0	<i>Class III.</i>			
6	Sola	3 8 0	3 8 0	1	Juhár	4 0 0	4 0 0
7	Bhadaj	3 8 0	3 8 0	2	Vásnádhedhal	4 0 0	4 0 0
8	Hebatpur... ..	3 8 0	3 8 0	3	Daran	3 5 8	3 8 0
9	Sánand	3 5 4	3 8 0	4	Juda	2 10 8	3 8 0
10	A'mbli	3 5 4	3 8 0	5	Náranpur... ..	2 10 0	3 8 0
11	Bopal	3 5 4	3 8 0	6	Dodar	2 10 8	2 12 0
12	Ghuma	3 5 4	3 8 0	7	Chorvadodra	2 0 0	2 0 0
13	Manipur	3 5 4	3 4 0	8	Sutarki	1 0 0	2 0 0
14	Silaj	2 10 8	2 12 0	9	Khetáear	1 0 0	2 0 0
<i>Class II.</i>				<i>Class IV.</i>			
1	Visalpur	4 0 0	4 0 0	1	Siávádá	4 0 0	4 0 0
2	Bhát	4 0 0	4 0 0	2	Jholápur	8 10 8	4 0 0
3	Kásandra... ..	4 0 0	4 0 0	3	Daduka	3 5 4	3 8 0
4	Matoda	4 0 0	4 0 0	4	Rethal	3 5 4	3 8 0
5	Tajpur	4 0 0	4 0 0	<i>Class V.</i>			
6	Fatevádi	3 12 0	3 12 0	1	Upardal	3 0 0	4 0 0
7	Vanjhar	3 12 0	3 12 0	2	Vanália	3 5 0	4 0 0
8	Bádrábád... ..	3 8 0	3 8 0	3	Aniáli	3 0 0	4 0 0
9	Bakrol	3 5 4	3 8 0	4	Jhám	3 5 4	3 8 0
10	Navápura... ..	3 5 4	3 8 0				
11	Chángodar	3 5 4	3 8 0				
12	Vasnáchacharvádi	3 5 4	3 8 0				

T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey,
Gujarát.

Camp Sándheli, Táluka Thásra, }
9th March 1891.

APPENDIX O.

General Statement referred to in paragraph 54 of the Deputy Superintendent's Report No. 173, dated 9th March 1891, for 47 Government villages situated in the Sānand Tāluka of the Ahmedabad Collectorate.

Number.	Name of Village.	Old sanctioned maximum Dry-crop Rate.	New proposed maximum Dry-crop Rate.	BY FORMER SURVEY.													BY REVISION SURVEY.					
				GOVERNMENT OCCUPIED LAND.													GOVERNMENT UNOCCUPIED ASSESSED LAND.		Total Area available for Cultivation, including Inam.	Total Area not available for Cultivation.	GOVERNMENT OCCUPIED LAND.	
				Dry-crop.		Garden.		Rice.		Well Water Assessment.	Total.		Area.	Assessment.	Assessed for Sub-soil Water.							
				Area.	Assessment.	Area.	Assessment.	Area.	Assessment.		Area.	Assessment.			Area.	Assessment.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
<p>CLASS I.—MAXIMUM RATE Rs. 3-4.</p>																						
1	Sarkhej	3 0	3 4	1,397 86	227 15	643 38	1,704 12	64 17	349 12	130 30	628 4	..	1,048 5	2,682 13	15 13	23 0	1,838 23	230 38	884 22	2,787 8		
2	Makarba	3 0	3 4	2,379 34	235 11	1,360 0	2,446 11	187 39	1,036 0	291 26	1,340 12	..	1,839 31	5,223 7	44 19	118 8	2,442 2	247 2	1,529 38	5,003 0		
3	Sola	2 0	2 4	2,050 21	286 1	1,313 7	2,063 8	59 11	285 0	331 5	1,315 8	..	1,703 23	4,284 0	35 38	40 0	2,056 16	278 25	1,288 31	3,869 0		
4	Bodakdev	2 12	3 4	1,265 9	72 88	647 88	1,309 12	6 18	33 0	172 34	958 0	..	2,300 12	9 13	11 12	1,268 38	75 7	612 37	1,884 0			
5	Thaltej	2 12	3 4	1,856 9	243 10	1,119 15	2,459 13	11 24	53 4	62 20	320 4	..	1,193 19	2,533 4	7 17	36 4	1,859 25	241 20	1,105 9	3,040 8		
6	Sanathal	2 12	3 4	3,691 27	209 13	1,429 22	2,264 0	77 2	393 8	867 23	1,328 12	..	1,674 12	3,566 4	429 22	685 8	3,043 30	251 31	1,225 15	3,167 0		
7	Bhāda	2 12	3 4	1,702 8	300 17	1,123 8	1,885 8	28 9	113 0	216 21	606 4	..	1,369 38	2,806 12	58 33	124 6	1,702 2	300 25	1,088 11	2,829 8		
8	Hobatpur	2 12	3 4	651 17	164 19	330 22	650 8	6 14	27 0	137 36	495 0	..	374 32	1,072 8	6 11	11 8	652 18	104 24	262 27	881 0		
9	Silaj	2 4	3 4	1,946 16	152 22	1,044 37	1,642 8	..	..	338 32	1,111 0	58 0	1,333 29	2,911 8	52 19	135 0	1,951 14	151 7	966 29	2,744 0
10	Ambl	2 4	3 4	843 0	46 26	637 32	1,276 4	..	..	38 31	130 12	..	691 33	1,408 0	18 10	83 0	839 2	45 7	639 7	2,162 8
11	Bopaf	2 4	3 4	1,242 31	94 35	682 35	1,222 0	..	..	51 29	187 8	40 0	734 24	1,449 8	88 36	91 0	1,295 11	97 24	646 35	2,112 0
12	Ghūna	2 4	3 4	1,631 6	142 15	866 16	1,903 4	..	..	154 34	609 8	27 8	1,021 10	2,140 4	19 22	78 8	1,629 20	142 25	807 81	2,476 0
13	Sānand	2 0	3 2	9,410 28	686 37	2,172 6	3,162 8	..	..	177 10	672 12	..	2,349 16	3,835 4	902 37	1,566 4	9,430 27	560 1	637 34	1,882 8
14	Manipur	2 0	3 4	908 8	96 25	28 21	42 4	..	..	100 9	342 12	16 0	128 30	401 0	2 17	2 8	910 14	96 25	23 2	66 8
Total .. .. .		..	..	30,808 10	2,828 9	13,520 28	24,658 8	441 14	2,290 8	2,578 25	10,145 0	141 8	16,540 22	37,230 3	1,686 27	3,008 2	30,913 37	2,686 32	11,718 36	35,584 0
<p>CLASS II.—MAXIMUM RATE Rs. 2-12.</p>																						
1	Fatevādi	2 12	2 12	1,526 5	649 29	928 0	1,856 8	119 31	461 2	160 37	705 12	..	1,228 28	3,028 6	45 9	177 0	1,924 10	249 7	917 12	2,393 0		
2	Badrābād	2 12	2 12	458 34	21 26	1,9 26	268 8	4 23	19 4	48 4	242 4	..	162 18	630 0	220 81	576 0	458 26	21 25	111 16	333 8		
3	Vanjar	2 12	2 12	782 9	528 14	861 86	845 4	237 14	1,460 12	45 7	271 4	..	634 16	2,577 4	89 17	277 8	1,119 20	204 16	597 21	1,764 3		
4	Bakrol	2 8	2 12	1,233 11	596 10	449 16	847 8	90 16	475 8	111 26	526 4	..	651 18	1,849 4	129 5	510 8	1,601 32	237 2	542 1	1,484 0		
5	Vasāpur	2 8	2 12	3,558 30	772 30	929 2	1,778 8	173 18	1,157 8	439 21	2,034 12	..	1,543 1	4,070 12	1,168 3	2,818 12	3,882 27	448 18	984 0	2,618 8		
6	Navāpura	2 4	2 12	1,740 39	76 36	449 8	774 8	62 9	336 0	29 37	106 8	..	541 9	1,217 0	23 21	41 12	1,035 23	79 10	511 85	1,458 8		
7	Kāandra	2 4	2 12	1,919 18	3,066 13	570 7	1,046 0	223 13	2,364 8	150 29	540 12	..	944 9	3,951 4	26 27	808 4	4,278 3	730 22	473 22	1,256 0		
8	Chāngodar	2 0	2 12	1,566 5	161 4	349 12	449 0	..	..	189 9	711 12	63 0	538 21	1,223 12	375 4	584 0	1,594 20	146 15	231 15	1,323 0
9	Tājpur	2 0	2 12	847 22	616 23	203 15	322 4	6 13	18 0	120 8	388 4	..	329 36	728 8	189 1	311 12	847 23	517 30	171 31	446 0		
10	Bhāt	1 12	2 12	3,649 25	245 9	1,926 4	2,500 0	..	..	928 9	1,265 0	226 8	2,214 13	4,000 8	377 19	889 0	3,650 6	246 28	902 11	3,660 9
11	Vasā Chacharvādi	1 12	2 12	2,665 6	161 21	1,555 8	1,703 4	..	..	254 8	831 12	54 0	1,809 16	2,619 0	268 34	486 12	2,670 37	141 20	679 25	1,923 0
12	Matoda	1 12	2 12	1,371 27	50 39	545 32	760 4	..	..	284 23	1,115 0	16 0	630 15	1,691 4	48 11	147 0	1,370 39	61 26	161 36	434 8
13	Piplan	1 12	2 12	2,281 26	80 1	261 38	374 10	..	..	125 37	400 2	..	417 35	774 12	39 3	41 8	2,265 32	98 5	244 28	532 0
14	Devī Nānl	1 12	2 12	807 2	54 2	157 8	196 0	..	..	120 21	378 4	..	377 24	574 4	11 25	18 4	807 23	53 38	81 37	190 0
15	Bhāvanpur	1 12	2 12	440 8	395 2	210 33	308 4	..	..	76 15	819 4	6 0	287 8	628 8	36 4	113 0	439 23	396 9	190 26	499 0
16	Andej	1 8	2 12	3,406 11	182 20	1,763 21	1,557 12	..	..	167 27	514 4	12 0	1,931 8	2,084 0	286 6	292 0	3,490 31	187 18	1,733 1	3,034 4
Total .. .. .		..	..	27,724 38	7,588 10	10,800 15	15,583 2	907 17	6,292 10	2,632 38	10,321 2	385 8	14,840 30	32,642 6	3,377 20	7,678 0	31,687 19	3,814 33	8,414 37	30,918 12

APPENDIX O—continued.

Number.	Name of Village.	BY REVISION SURVEY—continued.																			PERCENTAGE DIFFERENCE OF ASSESSMENT.		Average Assessment of Government Land per Acre.
		GOVERNMENT OCCUPIED LAND—continued.		GOVERNMENT CONVERTED DRY-CROP (OR NEW RICE) LAND.				GOVERNMENT OLD RICE LANDS.				DIKHUDIAT LANDS.		BHÁTA LANDS.		TOTAL OCCUPIED GOVERNMENT LANDS.		GOVERNMENT UNOCCUPIED ASSESSED LANDS.		Increase.	Decrease.		
		Not assessed for Sub-soil Water.		Assessed for Sub-soil Water.		Not assessed for Sub-soil Water.		Assessed for Sub-soil Water.		Not assessed for Sub-soil Water.		Area.	Assessment.	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.			Area.		Assessment.
		Area.	Assessment.	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.									Area.	Assessment.		
1	2	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
CLASS I.—MAXIMUM RATE—Ra. 3-4—continued.		A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	Rs.	Rs.	Rs. a. p.	
1	Barkhoj	8 1	2 0	25 24	88 0	..	..	135 23	648 0	..	..	..	..	..	..	1,048 30	3,525 8	15 16	38 13	31½	..	2 6 2
2	Makarba .. .. .	..	..	71 38	281 0	..	..	200 5	1,558 8	..	..	..	..	..	..	1,802 1	5,842 8	42 28	102 4	31	..	2 0 5
3	Sola .. .. .	..	..	119 6	437 0	..	..	301 38	1,372 0	..	..	..	..	..	..	1,700 35	5,770 0	35 21	58 4	50½	..	2 0 5
4	Bodakdev .. .. .	..	..	49 9	192 0	..	..	161 38	530 0	..	..	..	..	..	..	823 34	2,886 0	9 8	15 4	25	..	2 7 0
5	Thalaj .. .. .	..	..	88 11	140 8	..	..	51 23	273 0	..	..	..	..	..	..	1,105 8	4,068 0	9 5	39 8	43	..	2 0 7
6	Banathal .. .. .	..	..	298 9	970 8	..	..	850 18	1,633 8	..	..	..	..	..	..	1,874 2	5,771 0	33 26	93 2	44	..	2 16 2
7	Bhábaj .. .. .	..	..	65 16	251 8	..	..	215 35	909 8	..	..	..	..	..	..	1,369 22	4,050 8	59 2	161 8	44	..	2 15 2
8	Hobatpur .. .. .	..	..	8 9	83 0	..	..	105 4	495 8	..	..	..	..	..	..	876 0	1,400 8	6 4	13 12	31	..	2 11 7
9	Silaj .. .. .	..	..	87 37	329 0	..	..	833 9	1,418 8	..	..	..	..	..	..	1,387 35	4,491 8	52 16	85 0	50	..	2 3 10
10	Ambli .. .. .	..	..	16 38	67 8	..	..	31 23	146 8	..	..	..	..	..	..	837 28	2,370 8	13 10	45 0	60	..	2 7 2
11	Bopal .. .. .	..	..	40 8	179 8	..	..	49 17	247 8	..	..	..	..	..	..	738 18	2,539 0	89 3	150 0	75	..	2 8 3
12	Ghumna .. .. .	..	..	62 31	235 4	..	..	148 38	644 0	..	..	..	..	..	..	1,019 10	3,355 4	19 21	44 4	56	..	2 4 4
13	Sánsand	1,404 4	3,336 8	110 32	496 8	82 4	110 12	151 12	900 8	18 10	48 2	..	..	..	..	2,348 25	6,744 4	914 7	2,573 4	77	..	1 13 11
14	Manipur .. .. .	..	..	8 39	40 0	..	..	97 6	413 0	..	..	..	..	..	..	139 7	518 8	2 17	5 8	39½	..	2 15 6
Total		1,407 5	3,338 8	1,003 27	3,750 4	89 4	110 12	2,424 4	11,556 0	13 19	48 8	..	..	..	..	16,588 15	54,307 0	1,612 25	4,183 4	46	..	2 2 4
CLASS II.—MAXIMUM RATE—Ra. 2-12—continued.																							
1	Fatevadi .. .. .	..	..	64 13	220 0	..	..	169 33	804 0	..	..	70 13	232 0	1 36	25 8	1,223 37	3,071 8	35 7	104 4	21½	..	2 0 0
2	Badrabad .. .. .	..	..	2 32	9 4	..	..	47 39	205 0	..	..	..	..	..	..	182 7	547 12	320 29	675 0	34	..	2 2 1
3	Vanjar .. .. .	..	..	7 6	24 12	..	..	31 26	151 0	..	..	..	..	..	..	636 13	1,940 4	64 31	171 0	34½	..	2 0 3
4	Bákról .. .. .	..	..	16 32	58 4	..	..	92 18	463 0	..	..	..	..	..	..	651 11	2,006 4	122 12	235 8	84	..	2 0 5
5	Visalpur .. .. .	..	..	104 15	310 0	..	..	421 24	2,039 8	..	..	0 2½	2 8	43 26	500 0	1,554 10	5,471 8	1,140 31	2,147 0	10	..	2 2 2
6	Navápara .. .. .	..	..	10 14	45 12	..	..	16 39	73 0	..	..	..	..	..	..	579 8	1,577 4	22 11	69 0	294	..	2 14 9
7	Kánsandra .. .. .	..	..	108 21	323 0	..	..	144 1	644 4	..	..	..	..	218 0	2,326 0	944 4	4,612 4	1 9	3 4	184	..	4 14 2
8	Chángodar	96 29	42 0	25 16	67 0	91 2	198 4	9 30	41 12	180 15	853 0	..	..	..	..	554 94	1,773 8	393 3	644 0	454	..	2 10 0
9	Tápur .. .. .	..	..	39 22	124 4	..	..	123 21	635 8	..	..	..	..	..	..	334 4	1,295 12	184 34	454 0	654	..	2 3 2
10	Bhát	845 1	1,867 0	7 6	23 8	164 25	501 8	10 4	50 0	269 9	1,314 0	..	..	..	..	2,218 16	6,316 8	892 37	911 4	58	..	2 12 6
11	Yasna Chacharvadi	854 17	1,470 0	192 38	382 8	..	..	251 34	1,237 0	..	..	..	..	..	..	1,898 94	4,471 8	235 7	496 12	67	..	2 5 2
12	Makoda	300 31	848 0	23 31	76 0	..	..	296 31	1,531 8	..	..	..	..	..	..	852 9	2,884 0	45 24	113 12	344	..	2 6 2
13	Piplan	5 27	3 8	43 5	121 0	..	..	125 23	499 0	..	..	..	..	..	..	419 3	1,155 6	22 0	19 10	49	..	2 10 2
14	Devli Nani .. .. .	..	..	75 30	279 8	..	..	120 8	692 8	..	..	..	..	..	..	273 1	1,072 0	11 29	30 12	86	..	2 12 10
15	Bháyarpur .. .. .	..	..	21 21	65 8	..	..	74 19	375 0	..	..	..	..	..	..	226 26	9 9	86 4	146 8	49	..	2 0 9
16	Andaj .. .. .	..	..	48 21	127 8	..	..	165 22	639 0	..	..	..	..	..	..	1,927 4	3,250 12	23 39	495 0	84	..	1 15 6
Total		2,002 16	4,183 8	722 10	2,247 12	275 33	604 12	2,080 12	10,041 0	449 24	2,167 0	70 38	234 8	265 23	2,920 8	14,370 1	43,492 12	3,277 9	7,961 10	23	..	2 14 6	

* The block figures give the area of the fluctuating or unassessed Bháta land.

APPENDIX O—continued.

Number.	Name of Village.	Old sanctioned maximum Dry-crop Rate.	New proposed maximum Dry-crop Rate.	BY FORMER SURVEY.												BY REVISION SURVEY.				
				Total Area available for Cultivation, including Inam.	Total Area not available for Cultivation.	GOVERNMENT OCCUPIED LAND.								GOVERNMENT UNOCCUPIED ASSESSED LAND.		Total Area available for Cultivation, including Inam.	Total Area not available for Cultivation.	GOVERNMENT OCCUPIED LAND.		
						Dry-crop.		Garden.		Rice.		Well Water Assessment.	Total.		Area.			Assessment.	Assessed for Sub-soil Water.	
						Area.	Assessment.	Area.	Assessment.	Area.	Assessment.		Area.	Assessment.					Area.	Assessment.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
CLASS III.—MAXIMUM RATE Rs. 2-0-0.																				
1	Vansa Dhedhal	2 0	2 4	1,438 35	108 18	819 34	1,278 12	..	..	127 7	897 2	80 0	047 1	2,110 14	46 28	90 14	1,480 81	112 10	809 21	1,623 8
2	Daron	1 12	2 4	2,924 27	109 30	860 15	1,010 0	..	..	370 2	1,338 0	30 0	1,230 17	2,378 0	182 37	800 4	2,919 17	178 27	101 25	307 0
3	Chorvadodra	1 8	2 4	6,467 3	433 5	3,017 30	3,050 8	..	..	357 38	987 12	..	8,375 32	4,044 4	167 28	248 12	6,407 28	427 25	115 4	205 0
4	Khetnar	1 8	2 4	1,598 32	79 10	1,536 32	1,501 8	..	..	8 7	12 4	..	1,542 30	1,573 12	33 17	23 8	1,586 35	73 83	..	..
5	Entarki	1 8	2 4	1,393 13	71 19	1,145 12	1,238 12	..	..	4 2	8 12	..	1,149 14	1,247 8	77 28	71 0	1,383 1	73 32	..	..
6	Jodar	1 8	2 4	2,158 2	228 21	1,591 19	1,484 8	..	..	51 18	157 12	..	1,642 32	1,612 4	125 2	102 8	2,102 4	231 34	82 35	86 8
7	Naranpur	1 8	2 4	765 8	36 26	611 39	621 4	..	..	81 22	267 0	..	593 21	788 4	82 35	87 12	761 2	37 26	..	..
8	Jada	1 8	2 4	1,484 8	251 1	906 3	582 9	..	..	104 29	203 0	..	1,010 82	846 9	121 0	150 0	1,393 29	842 0	110 39	139 8
9	Julufr	1 8	2 4	3,418 20	846 22	2,432 19	1,622 8	..	..	584 27	2,061 8	..	3,817 6	3,684 0	218 36	702 12	3,418 22	846 22	8 15	8 12
	Total .. ..	..	..	21,643 28	2,218 86	12,822 12	12,351 5	..	..	1,487 22	5,903 2	60 0	14,300 84	18,314 7	1,040 0	1,870 0	21,552 80	2,318 9	1,233 26	2,845 12
CLASS IV.—MAXIMUM RATE Rs. 2-0-0.																				
1	Sivada	1 8	2 0	1,062 6	102 14	1,578 19	1,045 8	..	..	296 35	1,511 12	..	1,870 14	3,157 4	..	..	1,062 29	104 23	..	..
2	Jholapur	1 8	2 0	6,292 29	190 17	3,151 35	3,253 12	..	..	450 22	2,449 12	12 0	8,602 17	6,715 8	6 12	24 4	6,275 30	184 4	197 14	319 8
3	Davuka	1 8	2 0	4,333 32	248 4	2,757 4	2,614 8	..	..	89 19	335 12	5 8	2,846 23	2,955 12	267 22	416 12	4,348 6	260 85	780 14	1,119 0
4	Methal	1 8	2 0	5,047 5	537 30	2,559 32	2,041 0	..	..	270 20	1,116 8	41 0	2,830 12	3,798 8	469 88	857 12	5,063 19	611 8	675 17	1,089 8
	Total .. ..	..	..	17,645 32	1,128 21	10,042 10	10,154 12	..	..	1,107 46	5,413 12	58 8	11,149 26	15,627 0	743 32	1,368 12	17,650 4	1,160 28	1,662 5	2,828 0
CLASS V.—MAXIMUM RATE Rs. 1-0-0.																				
1	Uparda	1 4	1 8	3,125 11	715 25	1,250 22	807 2	..	..	283 5	1,000 14	18 0	1,533 27	1,320 0	820 6	483 0	2,885 89	953 5	891 14	816 0
2	Vandala	1 4	1 8	1,539 3	1,134 20	830 3	131 19	..	..	242 2	857 8	7 0	622 5	1,076 0	240 20	501 4	1,535 19	1,126 28	376 30	262 0
3	Amali	1 4	1 8	1,367 30	1,094 0	685 7	232 4	..	..	150 37	500 0	..	736 4	738 4	314 28	336 4	1,344 30	1,118 16	1 8	1 10
4	Jhamp	1 4	1 8	4,821 4	1,119 20	984 35	695 12	..	..	412 0	1,752 8	26 8	1,396 35	2,474 12	543 23	1,226 8	4,768 34	1,181 1	932 19	838 8
	Total .. ..	..	..	10,844 17	4,063 34	3,200 27	1,916 12	..	..	1,088 4	4,146 12	61 8	4,288 31	6,115 0	1,427 37	2,347 0	10,626 2	4,379 5	1,631 31	1,418 2
	Grand Total ... ..	..	..	108,727 5	17,827 30	50,386 7	64,659 2	1,348 31	8,583	8,894 25	35,989 12	697 0	60,620 28	1,00,929 0	8,282 2	10,108 4	112,179 21	14,569 17	24,061 14	62,789 10

APPENDIX O—continued.

Number.	Name of Village.	BY REVISION SURVEY—continued.																			PERCENTAGE DIFFERENCE OF ASSESSMENT.		Average Assessment of Government Land per Acre.
		GOVERNMENT OCCUPIED LAND—continued.		GOVERNMENT CONVERTED DRY-CROP (OR NEW RICE) LAND.		GOVERNMENT OLD RICE LANDS.				DHUKDIAT LANDS.		BHATTA LANDS.		TOTAL OCCUPIED GOVERNMENT LANDS.		GOVERNMENT UNOCCUPIED ASSESSED LAND.		Increase.	Decrease.				
		Not assessed for Sub-soil Water.		Assessed for Sub-soil Water.		Not assessed for Sub-soil Water.		Assessed for Sub-soil Water.		Not assessed for Sub-soil Water.		Area.	Assessment.	Area.	Assessment.	Area.	Assessment.			Area.	Assessment.		
		Area.	Assessment.	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.							Area.	Assessment.			Area.		Assessment.
1	2	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
	CLASS III.—MAXIMUM RATE Rs. 2-4-0—contd.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.	A. g.	Rs. a.			Rs. a. p.	
1	Vasna Dhedhal .. ..	..	..	18 23	45 8	..	..	124 8	700 0	..	..	..	..	..	..	947 18	2,369 2	48 2	68 8	124	..	2 7 8
2	Daran	572 13	1,009 0	95 34	338 13	26 10	52 0	369 22	1,776 8	..	..	..	..	..	..	1,225 83	3,483 4	182 11	364 0	464	..	2 11 8
3	Chorvadodra	2,926 20	4,801 0	7 32	16 12	31 32	85 4	116 0	427 0	173 22	591 8	..	..	..	..	3,399 31	6,127 0	164 14	323 4	514	..	1 13 8
4	Khetasar	1,520 29	2,380 0	..	..	5 10	10 0	..	..	..	16 8	..	..	..	..	1,531 1	2,406 8	32 38	46 0	53	..	1 9 1
5	Sutarki	1,132 5	1,859 8	..	..	4 21	14 4	..	..	4 2	15 0	..	..	..	..	1,140 38	1,888 12	76 32	108 4	514	..	1 10 8
6	Dodar	1,535 29	2,208 0	16 6	54 0	36 1	72 0	40 30	189 0	11 16	28 8	..	..	..	..	1,073 27	2,618 0	127 8	178 12	694	..	1 8 10
7	Naranpur	525 12	813 0	..	..	30 3	61 12	..	..	80 18	368 8	..	..	..	..	625 33	1,242 4	47 32	76 8	574	..	1 15 4
8	Juda	294 6	178 8	206 39	520 8	271 25	730 8	105 9	542 8	..	..	..	..	..	..	928 33	2,107 8	62 15	83 6	1494	..	2 1 8
9	Juhar	1,811 29	2,081 8	0 10	0 0	622 10	1,480 0	0 9	0 8	279 30	1,964 8	..	..	..	..	2,817 28	5,640 10	218 36	712 0	504	..	2 0 11
	Total ..	10,818 22	15,325 8	340 24	975 14	1,018 12	2,515 12	754 28	3,636 8	654 12	2,984 8	..	..	..	..	14,820 2	27,788 14	944 28	1,964 12	514	..	1 15 2
	CLASS IV.—MAXIMUM RATE Rs. 2-0-0—contd.																						
1	Slavada	1,564 12	2,241 0	..	..	10 20	30 10	..	..	295 25	1,619 0	..	..	..	..	1,870 37	3,890 10	..	..	224	..	2 1 8
2	Jholapur	2,971 21	4,209 0	..	..	4 4	14 0	..	..	442 21	2,308 12	..	..	..	..	3,615 20	6,911 4	6 12	24 8	21	..	1 14 7
3	Daduka	2,015 21	2,618 8	..	..	..	..	58 31	228 8	..	..	..	..	..	..	2,801 26	3,965 8	298 38	377 0	344	..	1 8 10
4	Rethal	1,918 15	2,761 8	..	..	15 18	47 0	158 19	706 0	45 20	172 8	..	..	..	..	2,813 9	4,776 8	468 15	687 12	264	..	1 10 8
	Total ..	8,469 29	11,829 8	..	..	30 12	91 10	216 10	938 8	788 26	4,101 4	..	..	..	..	11,161 12	19,542 14	736 24	1,019 4	85	..	1 11 8
	CLASS V.—MAXIMUM RATE Rs. 1-8-0—contd.																						
1	Upardal	876 7	695 0	5 4	12 12	2 5	6 0	88 20	241 8	137 25	508 0	..	..	..	..	1,431 5	1,870 4	106 20	115 4	3	..	1 8 7
2	Vandla .. ..	..	..	1 35	5 4	..	..	249 34	1,138 8	..	..	..	..	..	..	619 19	1,405 12	245 22	249 4	204	..	2 0 4
3	Aniali	580 1	303 0	..	..	5 1	4 0	54 8	235 8	74 20	293 8	..	..	..	..	723 39	837 10	323 7	248 0	124	..	1 0 11
4	Jhamp .. ..	..	..	..	..	..	..	396 34	1,461 8	..	..	..	..	..	..	1,529 13	2,200 0	548 25	606 7	..	7	1 8 9
	Total ..	1,465 8	998 0	6 39	18 0	7 6	10 0	780 16	3,177 0	212 15	801 8	..	..	..	..	4,108 35	6,422 10	1,297 23	1,318 10	5	..	1 6 11
	Grand Total ..	28,753 0	35,785 0	2,078 29	6,991 14	1,368 26	3,431 14	6,254 30	29,344 0	2,112 26	10,102 12	70 35	224 8	228 22	2,920 8	60,585 25	1,61,560 2	7,095 30	16,360 8	371	..	2 7 2	

* The block figures give the area of the fluctuating or unassessed Bhatta land.

Camp Sindheli, Taluka }
Thasra, 9th March 1891. }

T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey, Gujarat.

No. 1038 OF 1891.

FROM

C. E. FROST, ESQUIRE,
Collector of Ahmedabad ;

TO

J. K. SPENCE, ESQUIRE,
Commissioner, N. D.

Camp Parántij, 21st March 1891.

SIR,

I have the honour to forward Mr. Fernandez's report on the revision assessment of the Sánand Táluka. I agree entirely with his report—my experience of the district is, in fact, insufficient to enable me to justify any difference of opinion, if such existed.

2. The total increase in the revenue on occupied land is 30,615, or 27½ per cent.

3. The total increased assessment on the occupied and unoccupied lands together is 41,995.

4. This report has been the subject of a demi-official correspondence between Mr. Fernandez and Mr. James, from which it appears that the rates and grouping are approved by Mr. James.

5. I agree with Mr. Fernandez in hoping that no charge will be made for subsoil water of the 4th order. The loss on this will be only Rs. 433.

I have, &c.,

C. E. FROST,
Collector.

 No. 763 OF 1891.

FROM

E. C. OZANNE, ESQUIRE,
Acting Survey and Settlement Commissioner ;

TO

THE CHIEF SECRETARY TO GOVERNMENT,
Revenue Department.

*Survey Commissioner's Office,
Camp Londávla, 27th April 1891.*

SIR,

I have the honour to forward proposals for the revision settlement of the khálsa villages of the Sánand Táluka which was formed in 1867. It is made up of 86 villages, of which 39 are Tálukdári or alienated, and are not dealt with in this report. The remaining 47 were originally settled with the villages of the tálukas to which they then respectively belonged.

2. To supplement the Deputy Superintendent's report, it is necessary to specify the old tálukas and the dates of settlement.

The old Dholka villages were: 1 Silaj, 2 Ámbli, 3 Bopal, 4 Ghuma, 5 Sánand, 6 Manipur, 7 Chángodar, 8 Bhát, 9 Vásna Chácharvádi, 10 Matoda, 11 Piplan, 12 Devti Náni, 13 Bhávanpur, 14 Vásna Dedhál, 15 Daran, 16 Juda, 17 Juhár, 18 Siáváda, 19 Daduka, 20 Rethal.

These villages were settled in 1855-56 by Mr. Rogers.

The old Viramgám villages were: 1 Andej, 2 Chorvadodra, 3 Khetásar, 4 Sutárki, 5 Dodar, 6 Náranpur, 7 Jholápur, 8 Úpardhal, 9 Vanália, 10 Análi, 11 Jhámp.

These were settled in 1857-58 also by Mr. Rogers.

The old Jetalpur villages were : 1 Bakrol, 2 Visalpur, 3 Navápura, 4 Kásandra, 5 Tajpur.

These were settled also by Mr. Rogers in 1853-59. The remaining villages belonged to Daskroi and were settled in 1860-61 by Captain Prescott.

The 30-year guarantee has now expired in even the last settled group.

3. The correspondence on the original settlement has been printed in the Revision Settlement Reports of Dholka (1833), Daskroi (1889) and Viramgám (1890). These reports, moreover, contain decisions which must guide that of Sánand both with respect to the enhancement justified by the rise in prices as compared with the prices on which the original settlements were based, and also with respect to the treatment of old and new rice land, bhatta and dhe-kudiat land. The only subordinate question which is still for decision is the assessment for subsoil water command in lieu of direct well taxation. That question I propose to deal with in my remarks, though it is very probable that Government will decide not to delay its orders on the Sánand proposals in order to consider a point, which is not of prime importance in Sánand, and certainly not important enough to delay the introduction of the revised rates.

4. The enhancements sanctioned in the tálukas, the outlying villages of which are now included in and make up the Sánand Táluka, were as shown marginally. In Sánand the enhancement judged by analogy cannot exceed 25 per cent., because all the villages but 11 belonged to Dholka and Daskroi. Further, it may be urged that in dealing with the details or remnants of several tálukas it may be expedient to pitch the rates even lower than in the case of the parent tálukas in order to tide over the difficulties inseparable from the assimilation of diverse rates which have ruled side by side for a generation. It will be seen that the Deputy Superintendent's grouping and rating will, with the maximum rates proposed by him, raise the enhancement to 37 $\frac{3}{4}$ per cent. He, however, readily admits that this is excessive, and his proposals regarding individual villages reduce the figure to 27 $\frac{3}{4}$ per cent.

Dholka, 25 $\frac{3}{4}$ per cent.
Daskroi, 25 per cent.
Viramgám, 33 per cent.

5. I have now to consider whether this increase can be justified, and if not, what modification in rating and grouping is necessary. Prices must be considered first, but as they have been so fully analysed in the Dholka, Daskroi and Viramgám reports, small comment will now suffice. The figures shown in Mr. Fernandez' 39th paragraph are conclusive. Not only in food-grains does the rise in prices justify his proposals but that in cotton also. Prices in cotton are at present slightly depressed, but the depression is more marked as regards the better qualities which Sánand does not produce.

6. The usual statistics which bear on the progress of the táluka are given in the Deputy Superintendent's report. These do not altogether conclusively point to progress, but the doubt arises whether the old statistics are correct. In the case of carts they are evidently incorrect. They are probably incorrect as to wells (paragraph 11, Mr. Fernandez' report), though it must be remembered that wells in this locality are generally not permanent. On the other hand, a severe check was caused by the flood of 1875 in certain villages. The railway though an inestimable boon to tracts which can export wheat, cotton and rice like Sánand, has checked the drainage. This may be of great importance in some of the Talukdári villages, but it has only a very limited effect on the Government villages. Adverse seasons have been frequent of late years, and though there is no reason to believe that they will continue, it must not be forgotten that Sánand greatly depends on the timeliness of the early rain for its rice crop. In 1888-89 the area of rice was only 645 acres. In 1889-90 again it was only 11,000, or less than 50 per cent. of the normal area, though the rainfall of these two years was about the same.

7. The revenue history of the táluka is not as satisfactory as in Daskroi or Viramgám. But this may be due to the inadequate explanation of the remissions and outstanding balances. A special reference has been made to the Collector, whose explanation will be forwarded when received.

8. There are some facts which must be prominently noticed and which, in spite of bad years, floods and the like, indicate sure progress.

The area of embanked rice land, already large, has increased by nearly half. Tobacco and cotton cultivation are extending. The figures at which land has been sold or leased or mortgaged distinctly prove its increased value. Wages have increased by 25 per cent.

On the whole, then, the proposed enhancement of 27½ per cent. is not excessive, but the great variations in the groups may justifiably bring it a little lower in order that the pressure of the increase may not be too severe in individual villages.

9. I shall now refer to the special feature of this report.

The Gogha re-settlement awaits introduction pending consideration by Government on the proposals for the next Gujarát táluka, which is Sánand. The question at issue is the assessment for sub-soil water command. When the Daskroi report was submitted, the principles initiated in Jhalod, and adopted with more or less modification in Dholka and Daskroi, were questioned, and, after a detailed report from Colonel Godfrey, were declared to be in some respects unsound. Colonel Godfreys' innovations were approved. The amended method was applied to Viramgám and the results were sufficiently satisfactory to secure sanction. It was confidently hoped that the new scale would be found applicable to the remaining tálukas of Gujarát. In the Gogha re-settlement, however, it did not assert its claim to universal applicability with conspicuous success. The Commissioner, N. D., urged that the results were such as to demand that the scale should be submitted to further test and that it should be considered only tentative, authority being given to the Superintendent to modify the valuation scale according to the special circumstances of each táluka. Government was pleased to permit the whole question to be reopened.

10. I desire to show—

First, that there is no necessary agreement between the revenue obtainable by assessment of subsoil water command and that now obtained by direct well taxation.

Secondly, that by the principles and precedents of the survey the natural advantage accruing from the presence of easily available and beneficial water in the subsoil should be dealt with in classification, should affect the relative valuation, and should vary in amount with the maximum soil rate.

Thirdly, that it is impossible to lay down a scale applicable to all Gujarát and, therefore, that the fullest discretion should be allowed to the Superintendent to modify the valuation scale according to the special conditions found in each táluka as advised by the Commissioner, N. D.

These points will be taken in order.

11. Up till the time of the Daskroi revision, with the full approval of Government, the pitch of the subsoil water assessment was regulated so as to recoup the loss resulting from the extinction of direct well taxation, but Government has now definitely ruled that "the equitable addition to the assessment on account of subsoil water command is not concerned with the extent to which in any tract the facilities at hand are utilized." Theoretically this ruling cannot be contested, but there must be some condition imposed to ensure that moderation in the rating for subsoil water advantage which Government has declared to be an essential to the success of the system. When the abolition of direct well taxation was discussed at the time of the later original settlements of Gujarát, a fear was continually present that it would entail a sacrifice of revenue and it became an accepted principle that this sacrifice should be avoided. When the substituted system was brought into use at the revision settlements, it was soon seen that the opposite result was more likely and a comparison was always made between the revenue resigned and that substituted in order chiefly to prove that moderation had guided the action of the Settlement Officers. With the experience now gained it is safe to neglect the comparison altogether as a guide. But other safeguards will be required lest by the attempt to banish for ever the inequalities, vexation, and check on improvement inseparable from all other known and tried means of assessing water advantages, too great prominence be given to what after all is one of the details of classification.

The safeguard, I think, may be secured by relegating the subject to its proper place as a detail of classification.

12. This leads to the second point. I would respectfully urge that it is against the principles of the survey valuation to deal with an advantage which affects the productiveness of land otherwise than in classification. No one opposes the principle of varying the soil maximum rates according to the facilities for disposal of produce. The occupant of a field near a railway station for instance is reasonably called on to pay a much higher assessment than he would pay if the same field were in a distant village. The justification is simply this, that he can dispose of his crop at a greater advantage and that his net cash profit is proportionately greater. The natural advantage of irrigational facility is largely similar in its effect. The net result is a larger crop and the occupant with subsoil water command, if he uses it, secures an equal addition to his crop whether he be favourably or unfavourably situated with respect to market; but the net cash profit is very different. It varies with the facilities for disposal, and the rent charge on the addition ought, I think, clearly to vary with the net cash profit. This was not forgotten in the Dholka and Daskori settlements, for the average incidence of the subsoil water charge was greater in Daskroi.

13. There is as strong proof also from analogy on the point at issue. The subsoil water command is after all only one of the "advantages" which operate to raise the classification value of land. Just as "faults" operate to lower the valuation so "advantages" raise it. To deal otherwise with subsoil water advantage would practically be to condemn the hitherto almost invariable practice. But I must show that the analogy holds; that the "subsoil water class" is similar in its nature to the "position class" or any other recognized advantage which affects classification.

14. The Joint Rules enumerated "faults" but omitted to prescribe opposite "advantages." It was however very soon found, as experience was gained, that in the interest of the relative valuation of soils it was just as necessary to recognize advantages as to allow deduction for "faults."

One of the earliest recognized "advantages" was the "alluvial" increase for which rules were laid down as early as 1855 at least. Under it lands enjoying the advantage of river flooding with the consequent deposit of valuable silt were subjected to an increase of one or more classes according to the estimate of the benefit accruing.

Another "increase" or "advantage" is the position class which has of recent years been largely brought into use in Khándesh and the Deccan with a view to improving the relative valuation of soils. In his Amalner report Mr. Stewart pointed out that "the Joint Rules do not sufficiently indicate the superiority one field possesses over another in regard to position for reception and retention of drainage from above." This position class will soon be brought into prominence in the Parántij resettlement proposals. There "bheja" lands, i.e., lowlying lands, which from their position retain sufficient moisture to grow a second or even third crop after rice, will receive an increase for position which may be as high as four classes = 8 annas.

15. It may be urged that these increases are dissimilar from that due to subsoil water, but there is another advantage dealt with at classification of old standing called the "5 chain increase" or "*budki chad*" ordained to give a higher relative value to fields situated near streams affording facilities for the erection of "budkis" or water lifts. This "*chad*" or increase varies with the character of the soil; good soils are enhanced a whole class and poorer soils half a class, while still poorer soils are exempted. It seems to me evident that the subsoil water classification is an elaboration of this "*budki chad*." In Gujarat "*budkis*" are called "*dhekudis*." *Dhekudis* were at first assessed under a bag rate, i.e., a charge per water bag used in lifting the water. But this was abandoned and an increase in classification was substituted on all lands adjudged capable of irrigation by "*dhekudis*." * It is true that this increase was not treated as a soil increase, but as a water rate varying under a special maximum

* In Jhálod however the *dhekudiat* rate was the soil maximum added as a water rate to the dry-crop assessment.

and not the soil maximum. In this respect it is an exception from the rule which governs increases, but as it in character resembles the "budki chad" and as it was a substitute for a direct charge on dhekudis, it is the connecting link between the budki chad and the subsoil water rate which is a substitution for direct well taxation. The next step was the classification increase for "natural bágáyat" in certain tracts of Gujarát. In this classification whether the irrigational facilities were utilizable by means of wells or dhekudis, the increase was effected by the addition of "guns" or increases to the soil classification. The orders on the Jhálod report distinctly recognize the natural bágáyat classification as practically a subsoil water command rate. When in Jhálod the scale for the subsoil water class was drawn up, its kinship to the original five chain increase was evidenced by the strong differentiation made according to *distance from streams*. This differentiation disappeared in Dholka where the subsoil water rate was a soil increase on account of command of water. As in the case of the "budki chad" poor lands were wholly exempted and as in the case of "natural bágáyat" and "dhekudiat" the facility was the basis of the charge and not the actual use of the facility.

16. The objections to Colonel Godfrey's system are: (1) that it makes an equal charge in tracts with facilities for disposal of produce and those labouring under grave disadvantages in this respect; and (2) that it being a soil rate, based on facilities which enhance the natural capability of soils, is not governed by the principles which regulate soil maximum rates; and (3) that it is equal in its incidence on the poorest and the best soils.

In another respect it offends against the established principles of the survey land valuation in giving the subordinates of the department the authority to "fix assessments" when by the Joint Rules it was laid down as a cardinal principle that the agency could only be trusted to "fix relative values."

17. I think that the subsoil water classification should be viewed as necessitated by the conditions found so largely in Gujarát. Not only is it essential in the work of assigning correct relative values to various soils to make a difference between those having command of subsoil water and those without such command, but still more essential to differentiate between soils where the subsoil water is good and useful for irrigation and those where the water is of doubtful value or positively harmful. This latter differentiation was accentuated in the Dholka rules where it was directed that in cases where wells exist, but are never used for irrigation, owing to the effect of the water, the subsoil class should not be imposed. I think that the difference thus attainable in the absolute assessment is imperatively necessary, for otherwise the inhabitants of a tract where the water is not easily available would have just cause of complaint if they see "natural bágáyat" classed only for soil; and in the same way the inhabitants of a tract of brackish, useless water would with justice complain if their treatment is precisely the same as that accorded to the cultivators of tracts with readily available sweet water.

18. The safeguard against excessive enhancement, as I have said, is to throw the responsibility on the Superintendent, because hard and fast rules for universal application have very early shown themselves unworkable. The Superintendent cannot lay down rules far ahead. He must study each tract as it comes up and must carry out in its spirit the policy of abolishing water taxation directly on wells and of giving due weight to the possession and the command of easily utilizable water. The Superintendent and the Commissioner have far greater and more extensive discretion in all other details of classification and I see no reason why their discretion should be hampered in this detail. I may instance the case of the water rates for rice land to fix which numerous considerations are weighed and yet the fullest discretion is necessarily entrusted to the Superintendent not only as regards the weight to be given to the various factors in classification but as regards fixing the maximum rates. In all cases the Superintendent and the Commissioner will be under the necessity of justifying their action to the satisfaction of the Revenue officers and of Government.

19. If the subject is thus relegated to its old position as a detail of classification, the opposition to it as being a covert means of enhancing the revenue will be disarmed. The principle laid down in Government Resolution No. 4313 of 14th June 1889 (Amalner Revision) with respect to the "position class"

will apply, *i.e.*, if the application of the subsoil water class causes the enhancement of assessment to exceed the limits justified by rise in prices and progress during the currency of the lease, the remedy will be a lowering of maximum rates.

If in backward tracts it is found that the facilities are great and the utilization scant, the classification must nevertheless be made as perfect as possible, and here again the subsoil water class may operate to some extent as a means of modifying the maximum rates. If in any tract the subsoil water increase causes a too sudden though justifiable enhancement, the principle has been established that the classification should be confirmed, but that the excess should be remitted till the tract can be called upon to bear it.

20. The assessment for subsoil water has been applied to Sánand according to Colonel Godfrey's scale. The total area assessed for this advantage is nearly 33,000 acres. The incidence on the average is 3 annas 10 pies per acre assessed. Of the total, 2,073 acres are new rice and 6,255 old rice land. The rest is dry-crop, and what was formerly classed as garden (1,349 acres).

In Mr. Fernandez' group 1, consisting of the light soil villages in the north-east, nearly the whole area has been adjudged liable to the assessment. The incidence is 4 annas 9 pies in this group, or $11\frac{3}{4}$ per cent. increase on the current revenue. In group 2, also of light soil villages in the south-east chiefly and mostly close to the Sábarmati, nearly 80 per cent. has been assessed. In 11 out of the 16 villages the whole area has been adjudged assessable. The incidence is 3 annas 9 pies. The actual charge adds $8\frac{1}{4}$ per cent. to the present revenue.

In group 3 extreme north-west and south central villages where the soil is not so light, one village, Vasna Dedhal, has been wholly assessed; in two others, Daran and Juda, half the area is assessed. In others the area assessed is either nil or very small. The incidence is $2\frac{1}{2}$ annas nearly and the increase 2 per cent. In groups 4 and 5 two villages, Vanália and Jhámp, have been wholly assessed. In three, Daduka, Rethal and Upardhal, the area assessed is under one-third. In the others it is insignificant. These are black soil villages near the Nal where there is no garden land and where water from wells is, as in group 3 also, only used to irrigate rice seed beds and rice crops. The incidence is 1 anna 9 pies and the increase due to the assessment $1\frac{3}{4}$ per cent. in group 4 and $3\frac{1}{4}$ per cent. in group 5.

If the Dholka scale had been applied the result would have been approximately as follows compared with the results of the Viramgám scale:—

Group.	Viramgám.	Dholka.
No. 1	4,468	3,715
No. 2	2,678	2,157
No. 3	354	215
No. 4	277	169
No. 5	196	114
	7,973	6,370

The Dholka scale would have given approximately an incidence of 3 annas 1 pie per acre and an increase of just under 6 per cent. as compared with the increase of just over 7 per cent. as proposed. The difference is not great. The general facts disclosed by the assessment are these: in group 1 the water of the subsoil, as judged by all evidences available, is sweet or very slightly brackish, and mostly found at a depth not greater than 20 feet. The same remarks apply to group 2, as regards the depth of the water bearing strata, but the character of the water is slightly inferior. In the other groups the water is chiefly found even nearer to the surface, but it is seldom sweet and is to a great extent so brackish as to be only useful for rice and for occasional crops of barley and wheat.

This analysis may be illustrated by the general remark in the Gazetteer that the water of Sánand is good.

21. In spite of the remarks which I have made with respect to the objectionable features of Colonel Godfrey's scale, I think Government will agree that

the differences which would result at this stage by applying the Dholka or Daskroi scale are not great enough to make it worth the cost and labour of making any modification. The results are fairly satisfactory. The scale has been sanctioned for Viramgám and was drawn up with immediate reference to the conditions found in Viramgám and Daskroi. But there is one point for special decision, and that is the applicability of the fourth order of water to dry-crop lands. In his 53rd paragraph Mr. Fernandez has stated the case very fully and very fairly. It is certain that water of this class is not used for dry-crop cultivation in Sánand. There is no garden in the villages of groups 3 to 5. Wells are chiefly useful for rice seedlings when, as is frequently the case, the early rains do not suffice to grow them without the help of irrigation. If the seedlings are all not ready in time the whole rice area must lie fallow unless a rabi crop of wheat or barley can be raised. Thus poor brackish water is often of great value to rice and its command is fairly assessable. I think that Mr. Fernandez has fully met Colonel Godfrey's criticisms in the Viramgám report on this subject. The Collector supports the proposal to strike out assessments under the fourth order of water in all but rice land and I fully concur. I trust that the exemption will not be merely for the term of the coming lease but permanent, because the advantage is not substantiated.

22. Mr. Fernandez has, as Government will be pleased to notice, in paragraph 51 described the method of dealing with the maximum water-rate for rice land. I confess that without this full explanation the proposals exhibited in detail in Appendix N. appear inexplicable. I know that before that appendix was drawn up Mr. Fernandez' earnest attention had been drawn to the point. He consulted the Irrigation Department as to the expenditure incurred by Government in the repair of the village tanks and he weighed the effect of the obstructions to drainage arising from the line of railway. All the conditions have then been duly weighed and the results may be accepted.

23. The features of the settlement have been now fully discussed. It remains to examine the results. The grouping of the villages and the fixing of the maximum rates are very important and involve unusual complications and difficulties. Mr. Fernandez seized the opportunity of discussing the grouping with Mr. James, whose study of recent settlements and deep interest entitle his opinion to great weight. I do not know the táluka. The complications arise naturally because, as has been shown, Sánand consists of the outlying villages of 4 old tálukas settled neither at the same time nor by the same officer. There is some weight in Mr. Fernandez' contention that the villages were grouped with reference to different centres. But it is not correct to presume that consideration was not at the same time given to the proximity of Ahmedabad. Thus the A'mbli-Bopal group of Dholka villages was rated at Rs. 2-4-0, while Juda and its neighbours at only Rs. 1-8-0 though much nearer Dholka. Nevertheless since the original grouping not only have two railways been built, but Ahmedabad and Sánand have become more important markets than they were and Dholka has declined. The course of trade has changed. The old grouping, it cannot be denied, weighed the backwardness of some villages and their contiguity to foreign territory (Baroda), at that time far more important a consideration than now, though still not a negligible quantity seeing that border thefts are still not extinct but still detrimental to prosperity not only in British villages adjacent to Baroda territory, but also in Baroda villages lying against British territory. Caste bighoti is under a necessary ban, but if the people of certain tracts are still very backward their condition cannot be ignored.

24. Mr. Fernandez has, with Mr. James' concurrence, endeavoured to group the villages according to the accepted principles, not ignoring the minor considerations. I have studied the matter anxiously and would only recommend one change which I think necessary. I cannot agree that the arguments adduced justify the raising of Andej from a maximum of Rs. 1-8-0 to one of Rs. 2-12-0. Andej is a frontier village and with Bhávanpur belongs to the same group as its neighbours of the third group, though Bhávanpur was rated at Rs. 1-12-0. Both should be transferred to group 3.

25. Having fixed maxima which appeared justified by those already sanctioned for the villages of Daskroi, Dholka and Viramgám bordering on Sánand, the Deputy Superintendent arrives at a result which he frankly admits is unsatis-

factory. Rather than disturb the grouping or the maximum rates he has recommended special treatment in no less than 27 out of the 47 villages, quoting precedents and giving reasons. In this manner the enhancement on the whole taluka is reduced to a justifiable figure and individual villages are considered.

26. I do not feel satisfied with this action. Its effect is to perpetuate inequalities of rating instead of gradually, as circumstances will allow, working up to an uniform standard. It would be better I think to keep the grouping (modified as I have indicated with respect to Andej and Bhavanpur) and to permit a slight difference in the maximum rates in a group. If after this some glaring inequalities remain they may be dealt with exceptionally according to sanctioned precedent. To illustrate my meaning. In group 1 it is evident that the rise in the Dholka villages from Rs. 2 and Rs. 2-4-0 to Rs. 3-4-0 is too sudden. If these villages, which may have been too lowly rated in 1855-56, are at once raised to the standard of the Daskroi villages of the same group, hardship must result, as the table under paragraph 54 will show, but if, taking Rs. 3-4-0 as the right maximum for the Daskroi villages, the Dholka group is rated at Rs. 3-0-0 (say), it will be easy at the next settlement to decide whether the gap which cannot now be filled in is justifiable.

The Sanand proposals have reached me late and required close study. If I wait to mature the amendments I now suggest, the revised rates will not be introduced in time. I shall, therefore, submit the report thus incomplete and a supplementary report as soon as possible.

27. As to trees, I fully support the recommendation in paragraph 59 though it does not follow the solitary Viramgam precedent. If trees are profitable produce their cultivation for profit should be encouraged. If the rights of the occupants are limited, a few may be saved it is true, but few attempts will be made to grow more.

28. The report is late, but I trust that by extending the period for receiving resignations under section 74 of the Land Revenue Code till 31st July, for which I solicit sanction, the Deputy Superintendent will receive final orders in time to introduce the revised rates before the expiry of the current revenue year.

I have the honour, to be,

Sir

Your most obedient Servant,

E. C. OZANNE,

Acting Survey and Settlement Commissioner.

THROUGH THE COMMISSIONER, N. D.

No. 1659 of 1891.

REVENUE DEPARTMENT.

Camp Andheri, 5th May 1891.

Forwarded to Government.

2. It is so essential in the interests of revenue to obtain the early orders of Government on these papers, that I am not able to retain them in order to give them the careful and deliberate attention that they require.

3. It is somewhat difficult to follow the Deputy Superintendent in his argument in paragraph 12. He takes the rainfall since 1885, which, I suppose, means 1885-86, and talks of a series of 5 bad years out of 6. I can only suppose that he means the last 6 years entered in the table given by him. But that table shows an average of about 28 $\frac{3}{4}$ inches for 17 years. If so, the rainfall in 1886-87, 26.07 inches, can hardly be looked upon as deficient; and that for 1884-85, 24.62 inches, was certainly not abnormally so. However, the fall may have been unseasonable, which is sometimes worse than a deficient fall. It is again somewhat difficult to understand how, in his 19th paragraph, the Deputy Superintendent says that the railway-borne traffic seems to have, for many years, become of a stationary character. The figures given by him certainly do not bear out this statement, as they show enormous differences from year to year.

4. There is a most satisfactory increase in the cultivated area, but there is still a very large amount of land lying waste.

5. I cannot make the figures given by the Deputy Superintendent in paragraph 32 agree with those in paragraph 5, but some explanation may be available.

6. I now come to the grouping of the villages, and it is a matter of great satisfaction that this had been discussed and settled between my predecessor and the Deputy Superintendent. The Survey Commissioner accepts the grouping with the exception that he would transfer the villages of Andej and Bhávanpur from group 2 to group 3. From the facts before me I am unable to give any opinion on this point, but, on the whole, I think it is always best to err on the safe side, and as there is a difference of opinion regarding the villages, I would place them in the lower group.

7. The maximum soil rates for the various groups were also agreed upon by Mr. James and the Deputy Superintendent; but the Survey Commissioner only accepts them tentatively, and evidently with a large amount of misgiving, as he proposes sending in a supplementary report modifying them hereafter. I must say that I would deprecate this course, and would recommend that the rates should be accepted now, or that the introduction of the revision should be postponed for a year with the attendant loss of revenue rather than that alterations should be introduced hereafter. I quite allow the force of the arguments brought forward in the Survey Commissioner's paragraphs 25 and 26, but I cannot think that it would be right to make a settlement for the sake of revenue, and then unsettle it hereafter. Unanimity of opinion, I believe to be hopelessly impossible on such a complex and difficult subject, as no two men would agree on the grouping or maximum rates for villages which have been territorially brought together under conditions which vary from those which were in existence at the time of their original settlement.

8. The Deputy Superintendent has given very careful attention to the maximum water rates and these are accepted by the Survey Commissioner.

9. As regards the assessment of subsoil water, the Deputy Superintendent has followed the scale laid down by Colonel Godfrey, but the present Survey Commissioner has opened up the whole question as to how the assessment should be settled. I do not propose to follow Mr. Ozanne through his argument which appears to be that subsoil water should be reckoned as an advantage to be included in the classification of land. Mr. Ozanne acknowledges that the settlement of the general question will not affect to any great degree the particular case of the Sánand Táluka. Mr. Ozanne agrees however that the assessment for subsoil water of the 4th order should be foregone.

10. As regards trees, I agree with the Deputy Superintendent and the Survey Commissioner in thinking that they should be conceded to occupants.

11. The main points for decision therefore seem to be:—

1. Whether the Deputy Superintendent's proposals should be accepted as they stand.

2. Whether the rates should be introduced provisionally, being liable to alteration on receipt of a supplementary report from the Survey Commissioner.

3. Whether there is to be any new departure with regard to the assessment of subsoil water.

Personally I would prefer to defer the introduction of the revised rates for a year rather than introduce them provisionally, and then alter them; but the exigencies of revenue have to be considered on the one hand, and the arguments of the Survey Commissioner on the other. My knowledge of the subject is not sufficient for me to express a very decided opinion on the subject. If the rates are to be introduced before the close of the revenue year, it will be necessary to extend the time for accepting resignations till 31st July, as proposed by the Survey Commissioner. Early orders for the introduction of the rates will also be necessary.

12. The question of the assessment of subsoil water may be left for future consideration, as its decision will have no great practical effect on the Sánand Táluka.

J. K. SPENCE,
Commissioner, N. D.

Supplementary Remarks on Sánand proposals.

Appended is the statement promised in paragraph 26. Agreeably to the ruling of Government Resolution No. 4313 of 14th June 1889 (Amalner Revision), I have avoided the expedients proposed by Mr. Fernandez of striking out the subsoil water assessment in some villages, and arbitrarily reducing the figure arrived at by strict calculation according to the maximum rates in others.

This has necessitated the lowering of the rate in groups 1 and 2 and the combination of groups 3 and 4. I have further proposed a subdivision of groups 1 and 2. I conceive it more consistent with fixed principles to thus solve the difficult problem.

I cannot subdivide group No. 1 into two groups, because the villages must be kept together, and so in group 2; but in order to avoid too sudden enhancement I propose that the Dholka villages in these groups should be rated at 4 annas less than the Daskroi and Jetalpur villages. At the next revision it will be possible to apply one rate to each of the groups.

2. Even after this is done large increases in the following villages remain, which require comment:—

Devti Náni.—The reason is that rice land in area is more than double the dry-crop, for half the area of dry-crop has, during the currency of the lease, been made into rice, and this has been charged not only with the subsoil water-rate, but with the water-rate on irrigational facility from Government tanks.

Tajpur and Juda.—The explanation is precisely similar. In Juda, however, the water-rate (*see* Appendix N) has been raised considerably. On the other hand, *Vásna Dedhal* appears to be unusually leniently treated. The reason is that the village has lapsed to Government since the date of the old settlement, and its then assessment was higher than that of its neighbours.

3. If Government so desires the three villages named above, Devti, Tajpur, and Juda, may be exceptionally treated. If this is considered necessary, the exceptional treatment may take the form of a remission of half the increase for 15 years. Tajpur is a poor backward village.

In the statement appended the subsoil water-rate for 4th order water on dry-crop land is deducted.

Early orders are requested on these proposals.

E. C. OZANNE,
Survey and Settlement Commissioner.

No. 881 of 1891.

Lonávla, 15th May 1891.

Submitted to Government in continuation of this office No. 763, dated 27th ultimo, through the Commissioner, N. D.

E. C. OZANNE,
Survey and Settlement Commissioner.

Statement to accompany Survey Commissioner's No. 881, dated 15th May 1891.

No.	Name of Village.	Proposed maximum Rate.	Increase Percentage	Remarks.
1	2	3	4	5
<i>Group I.</i>				
1	Sarkhej	Rs. 3 0	19.3	
2	Makarba	3 0	23.1	
3	Sola	3 0	26.4	
4	Bodakdev	3 0	18.0	
5	Thaltej	3 0	33.9	
6	Sanáthal	3 0	36.4	
7	Badaj... ..	3 0	85.0	
8	Hebatpur	3 0	23.7	
9	Silaj	2 12	40.2	} Dholka villages.
10	Ambli	2 12	44.8	
11	Bopal... ..	2 12	51.9	
12	Ghuma	2 12	82.7	
13	Sánand	2 12	51.5	
14	Manipur	2 12	16.2	
Total ... ..		...	32.7	
<i>Group II.</i>				
1	Fatevádi	2 12	21.3	
2	Bádrábád	2 12	32.1	
3	Vanjhar	2 12	—24.7	
4	Bakrol	2 12	8.4	
5	Visalpur	2 12	10.2	
6	Návapura	2 12	29.6	
7	Kásandra	2 12	13.7	
8	Tajpur	2 12	65.5	
9	Chángodar	2 8	36.7	} Dholka villages.
10	Vásna Chacharvadi	2 8	54.1	
11	Matoda	2 8	42.9	
12	Piplan	2 8	38.2	
13	Devti Náni	2 8	75.2	
14	Bhát	2 8	46.1	
Total ... ..		...	24.8	
<i>Group III. (Mr. Fernandez' Groups III. and IV. together.)</i>				
1	Bhávampur	2 0	20.4	
2	Andej	2 0	39.6	
3	Juda	2 0	134.2	
4	Juhár... ..	2 0	39.4	
5	Daran	2 0	36.0	
6	Vasna Dhedhál	2 0	—0.5	} Alienated at date of Dholka settlement. The decrease shows that it was assessed at a higher rate after lapsing to Government than the neighbouring villages.
7	Náranpur	2 0	44.8	
8	Dodar... ..	2 0	42.8	
9	Khetásar	2 0	36.9	
10	Chorvadodra	2 0	36.1	
11	Sutárki	2 0	34.6	
12	Siáváda	2 0	23.2	
13	Jholápur	2 0	20.5	
14	Daduka	2 0	31.1	
15	Rethal	2 0	25.6	
Total ... ..		...	31.9	
<i>Group IV.</i>				
1	Upardal	1 8	1.8	
2	Vanslia	1 8	28.1	
3	Aniáli	1 8	29.0	
4	Jhamp	1 8	—8.6	
Total ... ..		...	7.6	
Grand Total ... ..		...	28.9	

E. C. OZANNE,
Survey Commissioner.

Revenue Survey and Assessment: Revision settlement of the Sánand Táluka of the Ahmedabad District.

No. 3893.

REVENUE DEPARTMENT.

Bombay Castle, 8th June 1891.

Memorandum from the Commissioner, N. D., No. 1659, dated 5th May 1891.—Submitting the papers noted in the margin containing proposals for the revision settlement of 47 Government villages of the Sánand Taluka of the Ahmedabad District.

Letter from the Deputy Superintendent, Gujarát Revenue Survey, No. 173, dated 9th March 1891.
 Letter from the Collector of Ahmedabad, No. 1038, dated 21st March 1891.
 Letter from the Survey and Settlement Commissioner, No. 763, dated 27th April 1891.

Memorandum from the Survey and Settlement Commissioner, No. 881, dated 15th May 1891.

Memorandum from the Commissioner, N. D., No. 1789, dated 14th May 1891.

Memorandum from the Commissioner, N. D., No. 1820, dated 16th May 1891.

Memorandum from the Commissioner, N. D., No. 1872, dated 19th May 1891.

Memorandum from the Survey and Settlement Commissioner, No. 914, dated 21st May 1891.

Memorandum from the Survey and Settlement Commissioner, No. 943, dated 25th May 1891.

RESOLUTION.—His Excellency the Governor in Council regrets that he is unable to sanction the proposals submitted for the introduction of a revised settlement in Sánand during the current year. They have in his opinion received hardly sufficient consideration by the local officers on several points, and more especially in the matter of the assessment of subsoil water advantages.

2. Some explanation should have been given about the placing of Tájpur in the Rs. 2-12-0 class, lying as it does between Chángodar and Bhaet, both assessed at Rs. 2-8-0. The reason for placing Sanáthal in the first group is not evident as it appears to be no better off for situation than Ambli, Bopal and Ghuma, which are in group two. Nor can the Governor in Council understand the necessity for having two rates in one group as proposed by Mr. Ozanne, and he sees no sufficient reason why there should not be five groups with maximum rates of Rs. 3-0-0, Rs. 2-12-0, Rs. 2-8-0, Rs. 2-0-0 and Re. 1-8-0 respectively.

3. The Governor in Council is unable to accept Mr. Ozanne's proposals about the subsoil water question without further consideration and discussion. Whatever may be their merits they are opposed to the decision of Government in their Resolution No. 2282, dated 29th March 1890, and they must be subjected to further criticism and examination before they can be adopted, especially as they are intended for general application. Extract paragraphs 9—19 of Mr. Ozanne's report should be forwarded to Mr. Fernandez, the Deputy Superintendent of Survey, for his remarks, especially on technical details. He should submit his report through Messrs. Younghusband and Ozanne, and the late Commissioner, N. D., Mr. James, each of whom may be requested to note on the proposals by the light of Mr. Fernandez' technical criticism. The Governor in Council will be glad if Mr. James will favour him with his opinion on the proposals as a whole as well as on the subsoil water question.

T. D. MACKENZIE,
 Chief Secretary to Government.

To

The Commissioner, N. D.,
 The Collector of Ahmedabad,
 The Survey and Settlement Commissioner,
 The Director of Land Records and Agriculture,
 H. E. M. James, Esq., C.S.,
 A. D. Younghusband, Esq., C.S.,
 T. R. Fernandez, Esq. (with extract paragraphs 9—19 of the letter from the Survey and Settlement Commissioner, No. 763, dated 27th April 1891).

Revenue Survey and Assessment : Revision settlement of the Sánand Táluka of the Ahmedabad District.

No. 7204.

REVENUE DEPARTMENT.

Bombay Castle, 20th October 1891.

Read again Government Resolútion No. 3393, dated 8th June 1891.

Letter from the Survey and Settlement Commissioner, No. 1478, dated 12th August 1891—

Letter from the Deputy Superintendent, Gujarát Revenue Survey, No. 371, dated 20th June 1891.

Memorandum from Mr. A. D. Younghusband, dated 15th July 1891.

Memorandum from the Superintendent, Deccan Revenue Survey, No. 927, dated 17th July 1891.

Memorandum from Mr. H. E. M. James, Acting Commissioner in Sind.

Submitting the further report called for in Government Resolution No. 3893, dated 8th June 1891, on the subject of the revised rates proposed to be introduced into the Sánand Táluka of the Ahmedabad District; forwarding the correspondence noted in the margin regarding the proposals about the sub-soil water question; and making remarks.

Memorandum from the Survey and Settlement Commissioner, No. 1074, dated 13th June 1891—Forwarding one No. 2188, dated 8th idem, from the Commissioner, N. D., together with a letter No. 1928, dated 6th idem, from the Collector of Ahmedabad, who forwards petitions of objection received by him to the revision survey rates proposed to be introduced into the Sánand Táluka of the Ahmedabad District.

RESOLUTION.—The receipt of these papers has now enabled the Governor in Council to consider and pass orders on the proposals for the revision settlement of the Sánand Táluka, which were first submitted, with memorandum No. 1659, dated 5th May 1891, from the Commissioner, N. D. There have been peculiar difficulties in arriving at sound conclusions, partly on account of some differences of opinion regarding the grouping of the villages, and partly on account of doubts as to the advisability of adopting the system of assessing sub-soil water advantages, sanctioned by Government Resolution No. 2282, dated 29th March 1890.

2. Exclusive of Tálukdári and Inámi villages, which do not come within the scope of this report, the existing Sánand Táluka contains 47 villages. It was formed in 1867 from 20 villages of the Dholka Táluka, 11 of Daskroi, 11 of Viramgám, and 5 of Jetalpur. In the re-survey the measurement and classification work was done on the partial system, but it was necessary to remeasure four villages and to reclassify ten, in some cases entirely, and in some in part, owing to the original work having been defective.

3. The statistics supplied show that population has increased 28·9 per cent., the better class of houses by 88 per cent., sheep and goats by 36·8 per cent., and ploughs by 19·5 per cent. There is a large decrease in buffaloes and cows, due to the extension of cultivation. The decrease of 21·1 per cent. in the number of carts, and of 26·7 per cent. in that of wells, is noticeable, and is explained, as regards the former, by inaccurate returns at the first settlement, and as regards the latter, it is undoubted that many of them were only of a temporary kind. It may be noted as regards carts that a comparison with neighbouring tálukas, where there is on an average from one cart to 29 persons to one cart to 34, the average in Sánand is now one cart to 30 persons. Since the original settlement communications have been improved by the extension of the B. B. & C. I. Railway through the northern portion of the táluka. Prices of staple commodities have not risen during the term of the current settlement, but having regard to the statistics given, and to the general circumstances of the táluka, the Governor in Council considers that a moderate increase in the rates is justifiable.

4. As regards these, and the groups of villages in which it is proposed to introduce the different rates, it is unnecessary here to discuss in detail the various proposals submitted, and the expedients by which apparent inequalities should be repaired. It is sufficient to say that, after careful consideration of the elaborate arguments advanced, the Governor in Council accepts the groupings submitted by the Survey and Settlement Commissioner, Mr. Ozanne, in the statement accompanying his No. 881, dated 15th May 1891, with one slight modification. His statement places 14 villages in the first group with a maximum rate of Rs. 3-0-0; 14 in the second with a maximum rate of Rs. 2-12-0; 15 in the

Silāj.
Ambli.
Bopal.

Chuma.
Sánand,
Manipur.

third with a maximum rate of Rs. 2-0-0, and 4 in the fourth with a maximum rate of Rs. 1-8-0. In the first group, however, the villages noted in the margin, though nominally in the Rs. 3 class, are, during the currency of the new settlement, to have really a maximum rate of Rs. 2-12-0; and similarly in the second

Chángodar.
Vána Cháchravádi,
Mátoda.

Piplan.
Devti Náni.
Bhaet.

group the six villages named marginally, though nominally in the Rs. 2-12-0 class, will really have a Rs. 2-8-0 maximum rate. The object of this is to prevent too sudden a rise in the rates both at this and at the next revision, and to accustom the cultivators to the knowledge that at the next revision, they will be liable to be placed really in the class in which they now are only nominally. It has to be noticed however that the explanation regarding Tájpur which was called for in paragraph 2 of Government Resolution No. 3893, dated 8th June 1891, has not been furnished, and looking to the circumstances of this village, as described in the papers, the Governor in Council is pleased to direct that it also shall be placed in Rs. 2-8-0 portion of the second group.

5. The next question is as to the sub-soil water assessment. In addition to the views expressed by those members of the 1889 Committee, on whose report Government Resolution No. 2282, dated 29th March 1890, was passed, now remaining in India, Government have had before them the opinions and conclusions of Messrs. Ozanne and Fletcher. The object of that Resolution was to get rid of the idea that the new subsoil water assessment should be equal to the old well assessment, and Colonel Godfrey's scheme was a loyal attempt to carry out this object. The application of his scheme to certain talukas appeared to justify the conclusion that it was generally applicable, but further experience has shown that it is not so. The weight of opinion, both expert and otherwise, is so strongly against its further application that Government are justified in so modifying the orders contained in the above quoted Government Resolution as to substitute for them the scheme provisionally sanctioned by the Survey and Settlement Commissioner in his letter No. 1438, dated 4th August 1891, to the Deputy Superintendent, Gujarát Revenue Survey. This should therefore be done.

6. The maximum water-rates shown in Appendix N. of Mr. Fernandez' report No. 173, dated 9th March 1891, which do not differ materially from the existing rates, are sanctioned, as are also those proposed for dhekudiat and bhátha lands.

7. The revised rates as now sanctioned should be introduced with effect from the 1st August 1892.

8. Regarding Mr. Fernandez' proposals as to fruit trees, in paragraph 59 of his report, which have also been fully discussed by the various officers through whose hands the papers have passed, it appears to the Governor in Council that no sufficient reason has been shown why Government should give up a property of some considerable value. If the occupants are anxious to have the trees they may be permitted to buy them at ten years' purchase of their annual value taken at an average of the last five years.

9. The petitions of objection to the rates forwarded with the memorandum from the Survey and Settlement Commissioner, No. 1074, dated 13th June 1891, disclose no reasons for withholding sanction to the settlement.

10. The suggestion made by the Survey and Settlement Commissioner that the whole of the correspondence regarding the subsoil water question should be printed separately in the form of a separate compilation is approved.

T. D. MACKENZIE,
Chief Secretary to Government.

To

The Commissioner, N. D.,
The Commissioner, C. D.,
The Commissioner, S. D.,
The Commissioner in Sind,
The Collector of Ahmedabad (with the petitions of objection),
All other Collectors in the Presidency proper,
The Survey and Settlement Commissioner,
The Director of Land Records and Agriculture,

The Accountant General,
The Public Works Department
of the Secretariat.

H. E. M. James, Esq., C. S.,
A. D. Youngusband, Esq., C. S.,
T. R. Fernandez, Esq.,
The Government of India,
The Secretary of State for India.

With copies of
Government Reso-
lution No. 3993,
dated 8th June
1891.

With copies of Mr. Ozanne's report.

By letter.

With copies of Mr. Ozanne's report No. 1478, dated 12th August 1891, and with an intimation that the papers are being printed in the form of a selection from the Records of Government and that when it is ready the usual number of copies of it will be forwarded to them.

No. 1478 of 1891.

From

THE SURVEY AND SETTLEMENT COMMISSIONER;

To

THE CHIEF SECRETARY TO GOVERNMENT,
Revenue Department.

Poona, 12th August 1891.

SIR,

I am now in a position to submit the report and explanation called for in Government Resolution No. 3893, dated 8th June 1891.

2. To take the points in order, I shall first explain the grouping. Mr. James in his paras. 15—19, inclusive, has discussed the subject, with the result that he would retain the groups and maximum rates as originally proposed by Mr. Fernandez and would, for reasons given, allow an arbitrary treatment in more than half [27 out of 47] the villages. I think I am justified in saying that this treatment would be arbitrary, for though it may be justified by the present backward condition of certain villages and by the want of ordinary skill and attention in agriculture of the Kolis, it is totally opposed to the principles of grouping which have hitherto governed the action of the Settlement Department. Mr. James calls attention to the great loss sustained by the flood of 1875 in certain riverside villages, but if the increases in those villages are examined in the statement accompanying my letter No. 881, it will be seen that the loss of valuable land has resulted in a comparatively smaller enhancement of revenue; thus in Vanjar with the increased maximum rate the revenue has actually fallen by nearly 25 per cent., and in Bakrol, Fatevadi, Visalpur and Kasandra the enhancements are very small compared with those in the villages which were

not injured by the flood. Mr. James agrees to the lowering of Bhavanpur and Andej. After considering carefully the remarks made by him, I am more than ever convinced that the recommendations made by me in paras. 24—26 of my report and in my supplementary remarks forwarded with my letter No. 881 are the only means of making an advance towards equality of rating in villages grouped strictly according to Survey principles. There is in fact no difference in opinion now as regards the grouping of villages; the only question is whether Mr. Fernandez' expedients [for they are numerous] to lower the assessments in some villages should be adopted, or whether, as proposed by me, there should be, during the currency of the settlement about to be guaranteed, two rates in one group. I endeavoured to explain the reasons why it is undesirable to bring the Dholka villages up to the standard of the Daskroi villages immediately, and I would solicit a careful re-perusal of my para. 26. The fact that some villages in Groups 1 and 2 would, under my proposals, be rated at the same maximum appears to have elicited the criticism of Government. This similarity of rating is merely fortuitous and, if my recommendations are sanctioned, the enhancement or reduction at the next revision of rates will be made as if all the villages in Group 1 were rated at Rs. 3, and all in Group 2 at Rs. 2-12. The statement accompanying my supplementary report [Sánand Compilation, page 47] will show at a glance that even with the special reduction in the Dholka villages the percentage enhancement in them is uniformly very large; and my proposal is, that time should be allowed to these villages before they are raised to the standard which their position, climate and other considerations governing grouping demand. Mr. James has rightly pointed out that the very large enhancements in some villages are due to the inclusion in the rice rating of the charges made for improvement in water-supply by the expenditure of Government funds on the improvement of tanks. It has more than once been recognized that such additional charge ought properly not to be included in the comparison between former and present assessments. For instance, in the Deccan Survey, the enhancements due to the assessments of "pátasthal" irrigation are excluded. I have only to add that Mr. James' remarks as to the "sudden drops" in my proposed ratings is just as applicable to his. The only drop is between Groups 2 and 3, but a reference to the map will show that these groups are separated from higher groups by numerous Tálukdári villages and that necessarily and advisedly a larger difference in the maximum rates was made than in the case of Groups 1 and 2 which adjoin and between which the line of demarcation is to a great extent arbitrary.

3. In his concluding paras. Mr. James protests against the proposals regarding the recommended abolition of the special tree-tax. The amount of this tax is not large; it is anomalous and as, I have argued, likely to prevent an increase of trees rather than reckless denudation.

4. As regards the sub-soil water question, I think that Colonel Godfrey's system has been shown to be unsound in theory and unworkable in practice. I took it upon myself to obtain the technical opinion of Mr. Fletcher. This opinion is now submitted with that of Messrs. Fernández and Younghusband. During the interval which has elapsed since the issue of the orders of Government in the Resolution under reply, I was compelled to pass orders regarding the sub-soil scale to be applied to the Parántij Táluka. I append copies of the correspondence which has passed on this subject between Mr. Fernandez and myself, because it has resulted in the preparation of a scale for assessing the sub-soil water facilities of Parántij, which it is hoped will be applicable to other parts of Gujarát. In order that this scale might be weighed in the light of its practical application to tálukas already settled under other scales, I have called upon Mr. Fernandez for a special statement [see para. 2 of my letter, dated 28th July]. This statement has not yet been received, but I may, as regards the suggested scale [which, of course, I have ordered to be applied subject to the sanction of Government in order to prevent a loss of revenue by the delay in settling Parántij], make the following explanatory remarks:—

[1]. I have eliminated all depths below 40 feet, for I do not think that water at that depth can be obtained "easily;" in other words, that

a facility for well irrigation does exist, though wells may be made and profitably worked.

[2]. I have introduced a variation of the scale in order to graduate the charge according to the quality of the soil.

[3]. The scale is a classification scale and the charge for water will vary, as it should vary, with a maximum rate.

[4]. The scale is totally irrespective of present well revenue.

• [5]. It eliminates all charge, except in rice land, for water of the 4th order, that is, brackish water which is only used to raise rice seedlings when the rainfall is late, and occasionally to grow a poor barley crop when the rice land has lain fallow.

The materials are at hand for applying this scale both to Sánand and Gogha, and I suggest that it should be so applied with such modifications as Government may be pleased to make. I have hesitated to give this order myself, lest modifications should be ordered which would increase cost by necessitating recalculations, but if the principles which now have been almost universally accepted are also accepted by Government there can be no doubt that this step should now be taken.

5. I append extracts from a memorandum written before Colonel Godfrey's scale was published, when I was acting as Survey Commissioner in Baroda, on the sub-soil water question. In it I contended, as I contend now, that the duty of the Survey Department is not to value land, but to make a relative valuation which will make the burden of the land-tax as equitable as it can be made with the means employed. All the subordinate operations of the Survey Department are guided by these principles and it is not a fair criticism on the Department that its valuations are not such as would be made by land valuers in other countries. If the Department were to seek to go further than it does, the expense would be prohibitive, and I doubt whether the final result would be more satisfactory.

6. The difficulty which Mr. James points out in the concluding remarks of his 3rd para. is one which has to be faced in many details of classification. The classes must work by rule of thumb. It is the duty of the Superintendent to discount the results obtained early in the season, when the appearances are more favourable than in the hot months, and the Superintendent is not likely to forget or overlook the conditions under which the classing is made.

7. Mr. James was [see his para. 9] misled by the apparently good results as shown by Colonel Godfrey's exemplifications of the effect of the application of the scale, but as Mr. Fletcher has pointed out [his para. 9] these exemplifications were misleading because Colonel Godfrey had not the requisite data to work them out with accuracy.

8. Mr. James' [para. 12].—There will be no difficulty in working out the financial effect of the sub-soil water assessment, if it is treated as a detail of classification. Such calculations cost money, and if called for with respect to one item of classification ought to be called for with respect to others, *e. g.*, position class. It would be very interesting if the effect of all the items of classification were thus separately exhibited, but this would add considerably to the cost of compiling the Settlement Report.

9. I would suggest to Government that it would be a good plan if the whole of the correspondence regarding the sub-soil water question is printed separately in the form of a separate compilation.

I have the honour to be,

Sir,

Your most obedient Servant,

E. C. OZANNE,

Survey and Settlement Commissioner.

APPENDIX.

Note by Acting Survey Commissioner, Baroda, on the sub-soil water assessment.

TO THE SUPERINTENDENT, BARODA SURVEY.

I have the honour to place the following remarks on paper regarding the introduction of something like the sub-soil water classification of the Bombay Survey into our Survey. * * *

2. * * * In introducing a sub-soil water assessment the object is not to recoup the loss from the abandonment of direct well taxation but principally to differentiate between lands which have facilities for irrigation, where irrigation will be profitable, and where it would be unprofitable or positively harmful owing to the danger of bringing up salt in the irrigation water; and again between lands which have not the facility for irrigation and those which have, provided the water is not salt and useless. In fact, we have to solve the problem of fair distribution, which is after all the great problem at the bottom of all survey operations.

3. I look on the question of a sub-soil water assessment, then, as a question of classification and of classification alone. And the question is whether our classification rules are sufficient to differentiate between the classes of land described above and similar kinds of land. I think that you will agree that the application of the rules does not meet the cases we have to deal with, but that it will not be difficult to apply them so as to meet the difficulty, even with perhaps hardly perceptible modifications.

4. To make my meaning plainer, take the case of two tracts of black soil of full depth, of even surface, and in all points similarly classifiable under our present rules.

There may be two points of difference :

(a) In one tract, though no salt may be apparent in the surface soil to a depth of three feet, yet it may be that wells tap a stratum of salt, and that if irrigation is attempted it will be either harmful or only useful for barley. In the other the wells have sweet water, and irrigation is most profitable, and perhaps the tract may be covered with katcha wells.

(b) In the one the general level of the soil may be high and water too deep for profitable utilization. The tract may be upland, of good deep soil, and there may be no danger of salt. In the other the lie of this land is low; the water strata are close; wells may be cheap and water brought to the surface after little expenditure.

Now, under the rules practically I think in both cases the soil classification would be the same, and yet it does not require much argument to prove that in fairness and in solving the problem of fair distribution of the Government demand, a real difference should be made. Neither in ordinary classification can we with the material at our command and within an expenditure which is reasonable, nor in the special cases which I am trying to indicate, do more than make an approximation to the relative productive capabilities of the soils. But such an approximation is near enough for the practical problem with which we have to deal. We cannot dig test wells to find out the depth and character of the water underlying. We cannot use the diviner's rod, but we can as practical men use the evidence of existing wells and other evidence available, make a difference in the valuation which for practical purposes is sufficient. We know that our information is not full, and so, as in all cases of classification, we have to leave a margin for error and insufficient knowledge, and yet we feel that our action is called for in the interests of the tax-prayer, so that the burden of the assessment should fall as evenly as possible on the different kinds of land and as fairly as possible. We must use the local knowledge of the people, and though in cases of this kind that information must be received with caution, for many reasons it must not be ignored, but must be utilized by the Assistants, though no discretion can be allowed to classers. With your experience as a classer you

will bring more cases to mind than the ones I have indicated, but I have said enough to show how I look on the question.

(Signed) E. C. OZANNE.

Baroda, 25th November 1889.

(True Copy)

E. C. OZANNE,
Survey and Settlement Commissioner.

No. 371 of 1891.

From

T. R. FERNANDEZ, Esq.,
Deputy Superintendent, Gujarát Revenue Survey;

To

THE SURVEY AND SETTLEMENT COMMISSIONER.

Surat, 20th June 1891.

SIR,

With reference to para. 3 of Government Resolution No. 3893, dated 8th instant, directing me to offer my remarks on extract paras. 9 to 19 of your Sánand Report, I have the honour to state that, as you are aware, up to the time when the introduction of the revision settlements began, subsoil water was only taxed when it was utilized for agricultural purposes, but the legislature, through the Land Revenue Code, having ordained that all improvements in agricultural lands executed with private capital should not be assessed, a system of subsoil water classification and assessment had to be devised not only to recoup Government for the loss they must suffer from the relinquishment of well assessment, but for another and an equally important reason, that of assessing lands according to their natural fertility and to other advantages possessed by them of which the possession of sweet subsoil water at command is the greatest. This question has been a most difficult one to deal with, because we are confronted by a variety of reasons of great importance, which, under an old established order of things, render the arriving at a theoretically correct solution an impossibility. I say impossibility advisedly and for these reasons:— Firstly, our soil maximum rates vary so remarkably, viz., from Re. 0-12 to Rs. 7; secondly, the very wide difference that exists between the natural aptitudes of our agricultural classes, to wit the Bhatela Bráhmín and the Kanbi on the one side, and the Chunvali Koli and the Bhil on the other; thirdly, the wide divergence that there is, in advantages of situation, for instance, the difference between the situation of the talukas along the main line of railways, such as Nadiád, Broach, Jalálpor, &c., and those far from it, such as Parántij, Dohad, Mándvi, &c.; fourthly, the differences in the strength and volume of the underground springs, many wells getting exhausted in a few hours, while others may be worked night and day for several months without showing signs of depletion; and, fifthly, the lines drawn by prudence beyond which the assessment must not be raised at any one time. To fully meet these formidable considerations, how can we devise a fixed scale, which shall be inflexible, and yet satisfy us in its application to one and all of them? Indeed, for such a scale to work without producing grave results, we must not only begin from the very beginning, by making the soil and water rates dovetail into one another at all cost, but we must also possess the power to smooth away natural difficulties by the conversion of the Bhil into as intelligent and industrious an agriculturist as the Kanbi, &c. Unless we can do this, it seems to me that none but a scale that will bend and give will suit us. Now Colonel Godfrey's scale, although it has been whittled down to its low state by making allowance for the considerations mentioned by that officer in para. 46 of his letter No. 118, dated 15th January 1890, to the address of the Secretary to Government, is still, as ruled by Gov-

ernment, an inflexible scale ; hence all our troubles. Its inapplicability in the two or three instances in which it has been used has become only mildly revealed. Let me here give cases which show its total unfitness. The villages named are in Táluka Parántij which is to come on for revision next working season :—

No.	Name of Village.	Bheja area under Cultivation.	Revenue.	Number of wells.	Well assessment.	Assessment according to Colonel Godfrey's scale.	Percentage increase on column 6.	Percentage increase on column 4.
1	2	3	4	5	6	7	8	9
		Acres.	Rs.		Rs.	Rs.		
1	Jhenjuna ...	1,096	1,658	...	7	959	18,700	58
2	Vadhrota ...	414	706	...	7	362	5,171	51
3	Dalpur ...	266	359	1	3	233	7,767	65
4	Poglu ...	506	723	1	9	443	4,922	61
5	Memadpur ...	79	94	...	...	69	...	73
6	Ambávadi ...	388	697	1	...	339	...	49
7	Salol ...	256	431	1	8	224	2,800	52
8	Palachar... ..	602	948	5	37	527	1,414	55
9	Rasulpur ...	108	173	4	38	93	245	54
10	Nananpur ...	731	1,205	1	7	640	9,143	53
11	Vadrád ...	657	1,027	7	24	575	2,347	56
12	Sonasan ...	1,178	2,302	8	67	1,030	1,537	45

The figures in column 7 are estimates, but the actual figures are not likely to be much lower, if at all. The conditions in the Bheja lands of these villages (which alone are shown in the statement) are these :—Water at a depth of from 6 to 14 feet ; number of wells in each tract from 0 to 8 ; and maximum rates from Re. 1-8 to Rs. 2-0, the average subsoil water-rate according to Colonel Godfrey's scale being 14 annas. In Modása, the Petha Mahál of Parántij, sweet water is nearly everywhere obtainable at a depth of 12 to 40 feet. The springs, however, are very peculiar, because all over the country the difference in their levels in October and February extends from 4 feet to 10 feet and their force is so weak that in very few instances, indeed, can wells be worked all through a working day of nine hours. The soil maximum rates range from Re. 1 to Re. 1-12, and as the originally taxed wells are few in number, the result of the application of Colonel Godfrey's scale will be quite as startling as in the case of Parántij stated above.

2. What should be done then to solve the difficult problem ? I think the answer lies in the mode of treatment adopted in the analogous case of the assessment of lands. What does the Settlement Officer do when he has given a táluka to settle on the survey principles ? He studies its past revenue history for a long series of years as regards the revenue realized, the amounts of remission granted and the nature of the rainfall. He then qualifies the conclusion which he derives from those points by the condition and intelligence of the cultivators, the position of the táluka in respect of lines of trade, &c. Having done this, he fixes approximately the amount of the future revenue he would take, and deduces therefrom the maximum rates. At this stage he spreads the burden of the future assessment on the survey numbers proportionately to their fertility with the aid of their classification values. It was by this procedure that the Settlement Officer fixed the maximum rates of the original settlements at from 12 annas to Rs. 7 for the different tálukas of this province. That these settlements have been most successful, and have been the chief means of bringing the province to its present state of prosperity, are now acknowledged facts. Supposing that, instead of the above described rational procedure of working out the settlements, the Settlement Officer had begun by constructing a fixed inflexible scale based on a perfect theory, and then applying it to each táluka as it came on for revision, what would have been the result ? It is not difficult to say that it would have simply been disastrous. Why then should we think that

an inflexible scale for the assessment of subsoil water for the whole of Gujarát is the best means of attaining our end? The principle which gave birth to it, and which is found in the query, What is the additional value given to land by the existence of subsoil water, is no doubt perfect; but is it wise to apply abstract theories to such complex questions as the assessment of subsoil water in which the human equation forms only one out of many important points which must be faced? It is a subject which even in a prairie country would present formidable difficulties, for we could never class the subsoil water so as to give us an accurate basis for the application of a perfect theory, as it would never pay to have test borings in every acre of land. If this is so, and I think nobody will gainsay it, then what must the difficulties be in a country like Gujarát occupied for several centuries, in which customs have had time to attain the position and dignity of laws, and vested interests have grown so strong that they cannot but be respected and provided for. We can speak from the brief experience we have had with Colonel Godfrey's scale that the difficulties are so insuperable that the sanction of the proposals for the revision settlement of two talukas has been withheld and the whole subject of subsoil water assessment re-opened. The conviction has come that the scale is unworkable. In fact it is a veritable bed of Procrustes into which the Settlement Officer is expected to fit in somehow the whole of the Gujarát Talukas in their turn, whether they are giants or dwarfs (in the matter of wealth)—a process which on the face of it seems impracticable.

3. It seems to me, therefore, that we have no alternative left but to fall back upon the system which Lord Reay's Government disapproved. This system was in its main features the very same that has succeeded so well in the treatment of soil assessments described in para. 2 above. It worked in this manner:—We first discovered what the past water revenue had been and the progress the country had made since the last settlement in the building of new wells. These data were then used with the help of others furnished by our subsoil water classification, *viz.*, the extent of the several orders of the water and the various depths at which they are discoverable, to find out the rates by the application of which the new water revenue to be levied from all lands of a village possessing subsoil water advantages, can be obtained. It seems to me that this system has not only the merit of simplicity, but also that of always dealing with all the important features of a problem, which there is only one way to solve successfully and that the practical. This way may and will some time produce results which theoretically may be pronounced unsound, but when there are only two possible alternatives to select from, one the upholding of an abstract theory, and the other, the peace and prosperity of a country, I think there can be no doubt as to which of the two should be discarded and which adopted.

4. As Government have desired me to offer my remarks on the views expressed by you, I have the honour to state that I consider the line of arguments adopted by you to show that "the subject should be relegated to its old position as a detail of classification" as exhaustive. The water classification of rice numbers is a far more difficult task than that of subsoil, and yet, if it is left, as it is, entirely to the judgment and experience of the Superintendent to deal with, it seems inconsistent that his hands should be tied in respect of a matter of detail of a simpler nature. The whole history of the revenue survey shows that the officers have always been alive to the interest of both the rayats and the Government. Although the servants of the latter they have always dealt fairly by the former; nay, if necessary, I can point out instances in which they have strongly urged lenient treatment in order the better to advance the prosperity of the rayats. It may be said to their credit too that it was a Survey officer who, nearly 30 years ago, while engaged in discussing the proper pitch of well assessment, said that assessing wells was unjust and that it must before long be doomed to extinction. In the matter of assessment of subsoil water I, therefore, respectfully think that our hands might well be left unfettered. If any further argument were necessary in support of this, I may point to the fact that although our arguments run on different lines yet in the end they arrive at the same conclusion.

5. Before concluding I would add that I have from the beginning consistently held opinions adverse to the applicability of the new theory. In

support of this I would draw your attention to the letter on the subject I wrote before December 1889 and to paragraph 14 of my Virangám Sottlement Report in which I foretold the difficulties awaiting us in the future. And in the Gogho Report I intentionally showed the incidence of the new subsoil assessment in full detail to give an idea of the manner in which it worked. Mr. James was good enough to pronounce this effort of mine as laborious. But I think I may be allowed to claim the credit of bringing about a fuller consideration of the subject by the light which I strove to bring to bear on it.

I have the honour to be,

Sir,

Your most obedient Servant,

T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

[*Below Mr. Fernandez' No. 371, dated 14th June 1891.*]

I am respectfully of opinion that the principle underlying Colonel Godfrey's scale sanctioned in Government Resolution No. 2282, dated 29th March 1890, is both unsound in theory and calculated to prove inequitable in practice.

2. In para. 44 of his report No. 118, dated 15th January 1890, Colonel Godfrey, after describing the considerations which differentiate the assessments on soils of precisely similar character differently situated, goes on to say that "if these considerations were again made applicable to the water assessment also, it would amount to a double tax on position and advantages." Surely this reasoning is fallacious. Surely the factor of position and advantages is one which must be applied to each individual element of productiveness if we wish the resulting total assessment to be a measure of the cash value of the crop. It seems to me, in other words, to be a case of the simple old formula—

$$(a+b)x=ax+bx$$

where a is the soil rate, b the water rate, x the varying factor of position and advantages. It comes to the same thing whether we apply the factor x to the sum total of the rates which depend on the productiveness of soil and water together, or to each of these items separately. And if the latter process is preferred, it is surely a fallacious objection to raise that it amounts to the imposition of "a double tax."

3. But the fact that such an objection is capable of being put forward seems to me an additional argument in favour of what I am inclined on other grounds to consider the sound and logical proposal of the present Survey Commissioner, to "relegate the subject (of subsoil water assessment) to its proper place as a detail of classification."

4. I would, however, in the first place, endeavour to show by examples how the application of Colonel Godfrey's hard-and-fast scale of assessment appears to me not only theoretically unsound, but capable in practice of producing most inequitable results. To take the case put by Colonel Godfrey himself, of 16 annas soil which is assessed at Rs. 2 in one locality and at Rs. 6 in another. This is of course with reference to the dry-crop productiveness of the two fields considered; and it means (speaking broadly, and leaving minor consideration out of account,) that while the two will produce precisely the same dry-crop, the net cash profit to the occupant will, owing to his nearness to the market and similar causes, be just three times as great in the second case as in the first. Now suppose that each of these fields is found to possess precisely the same water advantages, which are of the first class. The assessment under Colonel Godfrey's scale will become Rs. 3. in the former case, and Rs. 7 in the latter. The conditions both of soil and of water being the same, the two fields will produce precisely the same irrigated crop, just as they produced the same dry-crop. But whereas in the former case the position and advantages of the second

occupant were held to be three times as good as those of the first, in this case he is assessed as if they were only as 7 to 3. Assuredly the advantage in the case of the more valuable irrigated crop will not be less than in that of the inferior dry-crop.

5. But instead of considering the effect on 16 annas soils, let us take the case of a field with the very worst soil and in the most unfavourable locality, "on the margin of cultivation," assessed neither at Rs. 6 nor at Rs. 2, but at perhaps a few annas per acre. If there should happen to be water of the best quality underlying this field within a few feet of the surface, Colonel Godfrey's scale would, as I understand it, at once add a rupee per acre to the assessment. Without insisting too strongly on the argument that such a field would in all probability be in the hands of an occupant of the lowest class, with neither the capital nor the enterprise to make use of his potential water advantages, it seems to me sufficient to point out that this means raising the assessment at one stroke by several hundreds per cent. Is not this opposed to Colonel Godfrey's own condition (para. 38) that his scale is to "make an increase in the land assessment which would scarcely be perceptible"?

6. I agree, as I have said, in Mr. Ozanne's opinion that the question of sub-soil water advantages should be dealt with as one of the ordinary details of classification, in the manner suggested by him. Whether, like soil classification, it is capable of being dealt with under a hard-and-fast scale, applicable to all cases, is a technical question on which I feel scarcely qualified to offer an opinion. I believe it is generally admitted that the rigidity of the system under which the classification of soils is carried out has advantages which far outweigh the possible disadvantages; and if it were possible to work into this a scale for sub-soil water classification (a very different thing from a rigid scale of *assessment*), which could suitably be applied to all future revisions, it might be expected that the result would be no less advantageous. But no such scale has yet been devised, and it would perhaps be very difficult, if not impossible, to produce one. In the absence of such a scale for universal application, a scale which would have to be framed on wholly different lines from Colonel Godfrey's, I am in favour of leaving the matter in each case to the responsible discretion of the Superintendent, which would of course be subject to the usual checks.

A. D. YOUNGHUSBAND,
Acting Administrator, Rájpipla State.

Nándod, 15th July 1891. . . .

No. 927 of 1891.

FROM

W. M. FLETCHER, Esq.,
Superintendent, Deccan Revenue Survey;

TO

THE SURVEY AND SETTLEMENT COMMISSIONER,
Poona.

*Deccan Survey Superintendent's Office,
Poona, 17th July 1891.*

SIR,

I have the honour to reply to your letter No. 1056 of the 12th ultimo, on the subject of subsoil water assessment in Gujarát, merely premising that as I have no experience of that district my remarks will necessarily be confined to the general principles involved and to the technical methods of applying those principles to the assessment.

2. It has been admitted from the commencement of the discussion, and indeed from a much earlier period, that the existence of sub-soil water is "an

element of value in estimating the relative value of fields," and that it affects the "inherent quality of the field as a productive agent"; also that this element of value should be assessed by means of "a small increase to the soil rates of the land which possesses facilities for irrigation by wells," and "by slightly adding to the soil valuation of those lands in which it is believed that wells can be dug with fair ease and at moderate expense." I quote these passages from among many which occur in the correspondence merely because they state very clearly and concisely the basis from which we must proceed and also indicate in a more general way the method which should be adopted. The whole subject has been so exhaustively reviewed both by Government and by officers of high standing and experience that I need not do more than allude to such passages as call for reference.

Government Resolution No. 6015, July 25th, 1884, on revision settlement of Jhálod Táluka.

Survey Commissioner's letter No. 910, May 3rd, 1884, paras. 4 and 6, on Jhálod revision settlement.

3. The present phase of the question was reached in the Government Resolution No. 2282 of 29th March 1890. Resolution which sanctioned the Acting Survey Commissioner's proposal of a new scale for general adoption, and as the method of dealing with the matter therein proposed appears to me to lose sight both of the principle and the general method of application which the whole discussion shows to be desired by Government, I will try to point out how in my humble opinion the matter may be put on a true footing.

4. In the first place it is plain that if we are to follow the principles which have been accepted in all Bombay settlements since the time of the joint report, any factor in "the relative value of fields" should be allowed for in the classification rate, to which is subsequently applied the maximum rate, *i.e.*, that which carries the factors of the relative value of villages, *viz.*, climate and communications. This is what was intended, and was in a way effected by Mr. Stewart's

*Or, to put it inversely as Colonel Godfrey does in the 34th para. of his letter above quoted:—"A sliding scale with a two-anna maximum rate to be applied to each rupee of assessment."

plan of applying the maximum rate of the group* to the subsoil addition given by his scales. Colonel Godfrey in his 44th para. of the same letter argues in favour of having a uniform rate for the subsoil water advantage throughout Gujarát, *unaffected* by the maximum rates of the different tálukas and groups; but it is surely not open to question that if the value of the additional produce obtainable by utilization of subsoil water is at A worth double what it is at B (owing to difference in communications, &c.), the assessment must vary accordingly: in short, that subsoil water must be treated like any other factor in the relative fertility of a field and be modified by the maximum rate of the group. Colonel Godfrey says that to apply the maximum rate of the group to the subsoil water classification as well as to the soil classification would be to assess twice over for the considerations of climate and communications, but I submit that to apply such considerations to certain factors of the fertility of a field and not to others is on the face of it inconsistent.

5. Colonel Godfrey goes on to propose his method for adoption, apparently under the belief that rigid disproportionate uniformity was what Government desired when they objected to similar subsoil water in adjacent villages of different tálukas being differently valued. It seems clear, however, that this was a misapprehension. What had struck Government as anomalous was the effect produced by different *scales* of valuation being adopted in two tálukas, merely because the old well revenue in one was less or more than in the other: in other words, the proportion of assessment to be taken from all land with subsoil water was being varied in order to fit in with an irrelevant circumstance, *viz.*, the amount of assessment hitherto levied on land actually irrigated. It seems evident that any arrangement which would secure a constant proportion of assessment for subsoil water throughout similar tálukas would meet the objections of Government as formulated in Colonel Godfrey's 33rd paragraph.

6. It will, I think, be admitted that if the relative value of well-irrigated and dry-crop land be practically similar in two tálukas, the assessment on land with and land without subsoil water should be relatively the same in each, and

no other consideration should be allowed to disturb the proportions of assessment borne by the two kinds of land; also, that if the same scale of additional annas for subsoil advantage be added to the soil classification rate in each taluka, the proportion of assessment on that account will be constant in all, notwithstanding the fact that the maximum rates will vary according to the respective advantages of communication in each group and taluka.

7. It may be here incidentally pointed out that if the subsoil water assessment be made, as Colonel Godfrey proposes, independent of the maximum rate of the group, the proportionate incidence of that assessment must vary in every group, and can never be constant; for instance, in a group whose maximum rate is Re. 1 the assessment on account of the highest quality of subsoil water will,

In fields of 16 anna soil, that is, in inferior fields, this proportion would be higher.

by Colonel Godfrey's scale, be in the proportion of Re. 1 for each rupee of soil assessment, while if the maximum rate be Rs. 2 the subsoil assessment will at once fall to half that proportion, and so on: it will be seen from this, moreover, that the scale in its effect is not in accord with the axiom which Colonel Godfrey in previous paragraphs has laid down for its starting point, viz., that the value of irrigable land may be taken as double that of unirrigable.

8. There seems reason to think that the amount of revenue produced by the application of Colonel Godfrey's plan would in practice be found too heavy to be realised. Leaving out of the question for the moment the main objection to this plan, viz., that the relative incidence of the subsoil water assessment must under it vary in every group, I would not undertake to express the opinion that the assessment it would impose (even where its incidence would be heaviest, i.e., where the maximum rate of the group was Re. 1 or less) would be out of proportion to the real value of the advantage assessed; but to raise by 50 per cent. or even double the assessment per acre by one operation on account of an advantage that is and may long remain unutilized, seems questionable policy, to say nothing of difficulties which would become evident when estimating the revised revenue of a taluka. One difficulty likely to arise is as follows:—Let us suppose that 20 per cent. has been the increase of revenue which, on consideration of all the circumstances, the Settlement Officer decides to be suitable in a taluka or group. If the addition for subsoil water has been included in the classification rate his task is simple; it is merely to fix whatever maximum rate will when applied to the classer's *akár* give the desired amount; but if the subsoil rate is to be, as under Colonel Godfrey's plan, independent of the maximum rate, it would be necessary first to deduct the amount which the scale is found to give from the figure which represents the 20 per cent. increase, and then ascertain what maximum rate must be applied to the classer's *akár* to give the remainder of the 20 per cent. This so far is simple enough, but it may well happen that the subsoil water assessment is found to exceed the whole increase which is to be made* ; and then the only alternative will be to make

*Note.—Difficulties like this, only less in degree, have already occurred—vide S&M report.

an arbitrary reduction, with the result that even the rigid uniformity which this scheme claims to give must be sacrificed, and the subsoil water assessment be allowed to degenerate into an arbitrary cess; for in some groups the effect of the scale would be arbitrarily modified, in others it would remain intact.

9. But, it will be said, this plan has been tried, and the scale as applied to Dholka, Daskori and Virangám proves itself suitable. A careful examination of the facts and figures, however, shows that this statement is premature, for on reference to Appendix F we find that the means did not exist for applying the scale accurately, and it is pointed out in a note that the assessment figures there given are only approximate. This it appears is because in the classers' books such data only had been recorded as were required for the former scales which, for instance, did not discriminate between depths less than 24 feet, all of which were shown under A of the former scales, while in Colonel Godfrey's scale (Appendix E) A is for 8 feet, B for 14, C for 20 feet, D for 30 feet, and so on. Thus in Appendix F the whole subsoil water area in the first two classes is, for want of detailed information, entered under D,

and in the 3rd and 4th classes under C and D ; but as the values in the scale descend rapidly for increase in depth, A giving 16 annas addition where D gives 6 annas, &c., there seems little doubt that this estimate of the effect of the new scale would be much exceeded if accurate data for its application were forthcoming. In Dholka, for instance, " water is obtainable in plenty at depths ranging from 10 to 30 feet " (*vide* Mr. Bulkley's settlement report, para. 18) ; so it would appear that most subsoil water land would fall under B and C of Colonel Godfrey's scale. In Daskori " in the south, water is found at the small depth of 12 or 14 feet " (*vide* Mr. Fernandez' report, para. 14). In Viramgám I observe that Mr. Fernandez in para. 14 of his report says that Colonel Godfrey's scale gives a water assessment of Rs. 5,044, though in Colonel Godfrey's Appendix F it had been estimated (on a somewhat larger area) to produce only Rs. 2,892, that is, the estimate was exceeded by 74 per cent.

10. The only plan which in my opinion will meet the case is the simple one of having a scale of additional annas for subsoil water advantage to be added to the soil classification annas of the field, in the same way as additions are made for other special advantages, such as liability to fertilising floods, or possibility of irrigation by budki from a nála. The scale would be uniform throughout Gujarát and the assessment obtained by it would therefore bear the same proportion to the soil assessment in each táluka. (I say this believing that there are in Gujarát no very great differences of climatic moisture such as exist between the Eastern Deccan and the tálukas adjoining the Western Gháts ; for where the difference in climatic moisture is so great as to materially alter the relative values of dry and irrigated land a change in the scale might be necessary and suitable.)

11. The construction of the scale to be adopted is a question in which local experience is most necessary, and if I may venture an opinion it would be that the scale devised in the first instance for Dholka and sanctioned by Government in its Resolution No. 6342 of 6th August 1885 is preferable to any yet proposed (1) because being framed by Mr. Stewart and Mr. Bulkley it is the outcome of the best local experience, (2) because it seems to have been what those officers thought suitable on the merits of the case before they found themselves hampered by the question of whether the amount it would yield would exceed or fall short of the old well revenue. It will be seen that when this latter point came to be looked into the values in the scale were reduced by about 50 per cent. and thereby brought, as Mr. Stewart admitted, to so low a pitch as to border on absurdity. I think an addition of 4 annas to the soil classification annas, *i. e.*, an addition of 25 per cent. on 16 anna soil, seems suitable in the case of the best quality of subsoil water, but the gradations made in the scale for inferior degrees of the advantage will need in my opinion some change. I would suggest that they should be further differentiated so as to carry approximately the same proportion downwards through the soils of inferior value. As the scale stands, for instance, the 4 annas addition, which is 25 per cent. to 16 annas, becomes 50 per cent. when applied to 8 annas ; this might be easily arranged for.

12. It will be asked perhaps wherein does the plan proposed in para. 10 above differ from that framed by Mr. Stewart and carried out in Jhálod, Dholka and Daskroi. The main difference is that I propose one scale to be fixed on for application in all tálukas whose climates do not so differ as materially to affect the relative value of irrigated and dry-crop lands, thus ensuring a constant proportion between the soil assessment and the subsoil water assessment in all similar tálukas. So far as the addition made under the scale will be subject to the action of the maximum rate of the group there is no difference between the plan now proposed and Mr. Stewart's. Mr. Stewart merely showed the revenue obtained by his scales under a separate head in order to compare it readily with the old well revenue, but as it is now agreed that this comparison is not necessary the separation need not be insisted on ; if at any time occasion should require it the detail figures would be obtainable from the classification books.

13. The drawing up of the scale to be adopted is a detail which might, I would submit, be left like others of a similar nature to the Survey Department ;

the principle that it should not vary except with great difference of climate, should be insisted on, and is one which will naturally claim attention now that the irrelevancy of the old well assessment as a governing factor has been recognised.

I have the honour to be,

Sir,

Your most obedient Servant,

W. M. FLETCHER,

Superintendent, Deccan Revenue Survey.

MEMORANDUM.

The proper assessment of subsoil water was a subject in which His Excellency the late Governor of Bombay took great personal interest and Colonel Godfrey's scale was passed at a conference at which Mr. Propert, Colonel Godfrey, Mr. Fernandez and myself were present, including His Excellency Lord Reay himself.

2. The question has been so overlaid by technical verbiage that it is somewhat difficult to follow the various arguments. But the question at issue is the following. Government used to tax wells in Gujarát and made a revenue in some talukas which I know of Rs. 20,000 a year, and I believe in parts of Broach the figure is even higher. Old permanent wells which generally watered very valuable gardens were taxed Rs. 10 to 20 each at the Settlement, and katcha wells, which in some parts of the country where water is close to the surface can be dug in the course of a day or two by a cultivator, were assessed at a small rate whenever dug and used. Government however came to the conclusion that this was not only contrary to the cardinal provision of the survey, *viz.*, that improvements should not be taxed, but discouraged the use of water for irrigation, a matter of importance in a country where rainfall is more or less precarious. On the other hand, a cultivator possessing any natural advantages is bound to pay for it, and the Government determined therefore to assess, not the well, but the water-bearing facilities of the soil. The distinction is rather a fine one, for practically (in the absence of expensive borings in every field) only the presence of a well can determine a field's water-bearing facilities, and in Gujarát, as a matter of fact, while one cultivator has a fine sweet well in his field, the cultivator next door has very often nothing but salt water in his. Similarly, a sweet well after lasting many years, may turn salt, or it may turn salt in a single season. And the non-taxing of wells while continuing to tax at special rates the rice fields which had been levelled and bunded at great expenditure by the people, was anomalous. However, in the pursuit of theoretical justice, and there can be no question that to encourage the use of water is distinctly a proper policy, Government said that wells, as such, should not be taxed. Recognizing however that payment for the use of water belonging to Government could not, in justice to the general taxpayers, be altogether remitted, they laid down that the water-bearing facilities of the soil should be taxed in addition to the assessment of the soil itself.

3. In Dholka, the first taluka of Ahmedabad which was treated in this way, the Survey officers made a rough examination of the land, measured the wells, assumed (which as a matter of fact was a wholly gratuitous and I have no doubt sometimes an erroneous assumption) that the presence of water at certain depths indicated a presence of similar water at the same depths in a certain area of the surrounding land, and put a small additional percentage on the soil on account of the fields thus held to possess water, varying this percentage according to the depth and sweetness of the water. In order to get at the standard of the percentage to be so fixed, they took the existing amount of well revenue, and chose rates from one to two annas in the rupee, which when spread over all the water-bearing fields, worked out to about the sum total of the well revenue lost. In other words, they spread the existing well revenue over all that they considered to be water-bearing land. Instead of A paying Rs. 10 for a well

and B and C in the adjoining fields, with no wells, paying nothing. A, B and C and all the cultivators in the neighbourhood had to pay an anna or two in the rupee extra all round. A was a great gainer and all the rest were small losers, save for the assurance that if they constructed wells like A, Government would charge nothing extra for them. The amount of water tax actually paid by each tract varied according to the depth and sweetness of the well, and these of course varied according to the time of year at which the well was examined by the classers, so that a well examined immediately after the rains would be the means of the rayats paying higher percentage on the surrounding fields than if the well had been examined late in the hot weather. No doubt the classers did their best to assess the wells accurately. But they could not possibly ascertain accurately the average depth of the well, the strength of the springs or the certainty of its remaining sweet, and accordingly they reduced every thing to a mere measurement and testing of the water at the time they found it.

4. The increase in the soil assessment in the Dholka Táluka was not very high, on an average a little under 3 annas in the rupee in water-bearing tracts, and Rs. 7,200 of subsoil water assessment was spread over a large area instead of a sum of Rs. 6,000, formerly paid by a few owners of wells.* When, however, Daskroi, a rich táluka, came under revision the amount of water-bearing country was found to be so large that a still smaller percentage on the soil assessment was needed than in Dholka to make up the well assessment remitted. In Dholka the maximum subsoil assessment proposed was at first 4 annas, but afterwards reduced to two annas in the rupee. In Daskroi it was only $1\frac{1}{2}$ annas and was estimated to produce Rs. 21,800 in lieu of a revenue of Rs. 19,000 from wells which was to be surrendered.

5. His Excellency Lord Reay, who took great personal interest in this question, at once noticed the faultiness of the percentage system. "Why," he said, "should A in Dholka with a field assessed for soil at Rs. 4, pay 8 annas extra for the best subsoil water, while B in Daskroi with a similar field and similar water pays only 6 annas? Again, C with a guradu field in a Daskroi village pays Rs. 3 for the soil and therefore $3 + 1\frac{1}{2} = 4\frac{1}{2}$ annas for the water, while D in a sandy field next door pays Re. 1 for the soil and therefore only $1\frac{1}{2}$ anna per acre for the same water. Your working up to the amount of the well revenue lost leads you to do injustice. Can you not fix a scale for taxing subsoil water that will be fair to all? You allow for the difference in the soil in your classification of it. The *water* you should charge for as a water company would, so much for the best supply, so much for the second best, all should pay alike."

6. Lord Reay forgot, I think, that practically, as Mr. Fernandez has explained, the Survey officers owe their success to their never having allowed themselves to be drawn into the logical results of calculations on theoretical bases, but have always checked their results by a comparison with facts. They have ascertained what the people were paying previously and rectified their proposals accordingly. If, for instance, after carefully classifying the fields of a táluka they found that the scale of rate which they proposed (and which by comparison with others elsewhere seemed fair enough,) brought out a total sum to be paid enormously in excess of what the people had been accustomed to pay, their own mother-wit came to the rescue. They said, "the táluka cannot *bear* this amount. We must cut down the rates and bring them down to what the people, we feel assured, *can* pay." Their moderation and sense, and the fact that, even though the total revenue was enhanced, all paid proportionately to the ascertained value of their fields instead of at haphazard rates as before, and that the increase was spread over all except those who had been over-assessed previously, made the settlements a complete success. I have known that distinguished Survey officer, General Anderson, go over the lists of fields in villages and actually reduce the assessment on individual fields, where he found that his rules of classification and the rates he had imposed brought out results higher than he deemed prudent. Theory in fact in the Survey has always been subordinated to the practical results to be brought about.

* I omit reference to the two tálukas in the Pauch Maháls, where the question was of small importance, but in which the experiment was first tried.

7. Acting, therefore, on the principle under which soil rates are kept down by the results they work out to, the Survey officers as a convenient way of calculating it, more than anything else, spread the loss of well revenue over water-bearing lands by a percentage increase on the soil rate and limited the amount of the new assessment to the share lost by the old. This led to discrepancies in the subsoil water rates between different talukas, it is true, but these discrepancies were not so startling as might any day have been found in the soil assessment of fields of apparently the same value in every respect in different talukas. Lord Reay forgot also that the ascertaining of the capabilities of land in the matter of subsoil water, was for the reasons stated above in paras. 2 and 3 very difficult, and he did not, I think, sufficiently appreciate the advantage of attaining to generally satisfactory results in assessing the cultivators, no matter whether *strict* theory was followed or not. On the other hand, I myself when, as Collector of Ahmedabad, was criticising (I now believe somewhat intemperately) the revision proposals for Daskroi, did, as far as I remember, find fault with the increases put upon certain dry-crop villages, and I alluded to the hardship, as I put it, of their having to pay in addition to rates which I thought too high a water rate for water which they did not use, while the owners of land in the rich well-owning villages in Ahmedabad found themselves by the abolition of the well assessment paying less revenue than before, and this result seemed to me unfair. Lord Reay therefore, in his extreme anxiety to be just and true to principle, desired Colonel Godfrey to make out fresh proposals for taxing subsoil water.

8. Colonel Godfrey went into the matter and proposed a low scale for uniform adoption. He went on the principle that all the relative value of the *soil* of fields amongst themselves was all settled by the careful and elaborate classification of soil, its faults, such as khár or destructive salt, distance from the village, liability to flood, &c., and for its advantages such as fertility, the presence of certain fertilizing silts, roads, villages, &c., which over forty years' experience has given to the Survey Department. The maximum assessment to be placed on the fields generally rested on the grouping of the village according to its advantages, kept down by the need of not assessing too highly. Therefore, he argued, the *water* in a field is a constant quantity wherever it be found and should be assessed at a constant rate, according to its sweetness, abundance of supply and depth from the surface. In other words, he followed what I may call the water-company theory. Colonel Godfrey proposed Re. 1 as a maximum, and showed that when the scale was applied to villages and actually worked out, it gave excellent and moderate results. In several talukas and villages to which he applied it, the subsoil water assessment came pretty much to the well revenue and the results were much the same as those of the Dholka percentage scale. He explained the matter fully at the conference held by His Excellency Lord Reay at Ahmedabad to which I have already alluded and we all accepted it. Government therefore sanctioned his scale (Government Resolution No. 2282, dated 29th March 1890).

9. I was afraid at the time that Colonel Godfrey's ignorance of Gujarát might lead to difficulties later; but the results were so good, I did not see any need of questioning Colonel Godfrey's new scale, especially as it was the work of a very experienced Survey officer. But in the Revision Survey assessments both of Viramgám and Gogho, both talukas notorious for the bad water supply, the area assessed under the scale was very large and I think (not having the papers by me) that the Deputy Superintendent and I both recommended that in those talukas the 4th class salt water (which is really damaging to the land, though it will raise rice and coarse barley) should be made a present to the cultivators. I suggested also on my own account that the Superintendent of Survey should be allowed to vary the maximum rate for water just as he varied the maximum rate for soil.

10. I am still of opinion that that is the best plan. Mr. Ozanne's policy, though I daresay I have failed to follow him, is not clear. In one para. (12) he would make the subsoil water a mere incident of soil classification, such as a stream in which a dhokudi can be placed. (This plan I see commends itself to Mr. Fletcher.) In para. 18 Mr. Ozanne would treat it like rice water, which

in Gujarát (except where there is very little rice in a village) is assessed separately from the soil altogether at a maximum rate in each village and classified according to the position of the fields. I do not agree with one remark of Mr. Ozanne's that "the rent charge should vary with the net profit," for it was the attempt to ascertain the net profit and take a share of it that led to the failure of Mr. Pringle's survey. But it seems to me that subsoil water is not the constant quantity that Colonel Godfrey thinks. I would, therefore, cause the Superintendent, as now, to examine it everywhere, and propose what rates he pleases, showing the results in his report.

11. How, then can His Excellency Lord Reay's objection be met, viz., that this means an unjustifiable difference in the treatment of the same product? Why should a first class sweet-water tract, in Broach, say, be assessed at Rs. 3 for subsoil water which is within the bounds of possibility, while precisely similar water in Gogho may be assessed at 8 annas or 4 annas or 2 annas? Because the circumstances of the two tracts are different. In Broach the water is more valuable, its existence is known and it can be relied upon with much more certainty than in Gogho. In Broach we can take pretty well its full value. In Gogho it is more rare and uncertain and we want to encourage the cultivators to use it. We tax it in Gogho at next to nothing, in the same way that we tax rich waste lands very low to induce people to take them up. Colonel Godfrey will say, "But the difference in the rates of waste was allowed for in the classification of soil (e.g., the cost of clearing it) and in the maximum rates." The rejoinder to this is "not entirely, as regards subsoil water at least." If a waste tract had as good water as Broach, but to induce its cultivation we put Re. 1 an acre soil rate on it instead of Rs. 10 the rate in Broach, we should fly in the face of our own policy if we also put Re. 1 (Colonel Godfrey's best water rate) for water on each. We should thereby add to the rent of one field 10 per cent. and to the other 100 per cent. and directly discourage the taking up of the waste land. As both Mr. Fletcher and Mr. Younghusband have pointed out, the maximum rate should be modified according to *all* the factors of a field's productiveness, not omitting the factor of subsoil water only. Their reasoning is, it seems to me, sound, as far as it goes. But after all, the question is only the best means of obtaining a certain end. Surface water dammed up for rice is of sufficient importance to be classed and assessed separately. "Why then," Colonel Godfrey will argue, "should not subsoil water be treated in the same way?" If Messrs. Fletcher and Younghusband's arguments were carried out to the full, "rice water should be also a detail of classification." As a practical working scale indeed with a maximum of Re. 1 per acre Colonel Godfrey's scale, especially as it worked out well, seemed to me fair enough, too high perhaps for some places, and too low probably for others, but on the whole one that would be likely to answer. Without finding any fault with it, I would now say that experience shows it inadvisable to make it immutable and discretion must be given to vary it as occasion requires.

12. This plan has the merit of meeting His Excellency Lord Reay's objection that a percentage increase on the land revenue is not the proper way of levying the water cess, though even that is not so faulty as it seems. For, *on the whole*, the best land will, I am inclined to think, be generally found in Gujarát to go with the best water and a small percentage rise all round on account of subsoil water is not severe upon any one. But, I think, looking at the matter as a matter of practical administration, by far the best plan will be to allow the Superintendent to fix his own maximum rates for subsoil water of different orders, and I would certainly give him great freedom in exempting from assessment lands where the water is known to be very bad and salt, or even liable to become so. I think that since the scale was adopted there has been a tendency to hunt for and access subsoil water over far larger areas than the facts warranted. Viramgám suffers from rather scanty rain and the subsoil water is so abominably salt that a water-supply for the town has not yet been devised, yet almost the whole or at any rate a very large portion of the táluka was assessed for the so-called advantage of subsoil water. I would, as a rule, restrict the imposition of the cess to tracts where really good wells could or might be common, and in tracts where sweet wells are liable at any moment to become briny, I would keep the rate very low. It must not of course be for-

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gotten that the larger the area over which the tax, based on the proceeds of the well tax, is taken, the less is the incidence, so that I would not restrict the Superintendent too much in this respect ; but I would keep in view the desirability of imposing the cess only upon those tracts where the advantage is really a sound and substantial one.

13. The proposal to make the presence of subsoil water a mere advantage to be allowed for in the classification would very possibly answer, but I am not in favour of it. I think that it is of importance to know the area of land classed for subsoil water, just as we do the area of land classed for rice and also to ascertain the exact sum levied for it, in order to prevent over-assessment. Treating it as a mere advantage, Government would never know the area and assessment levied, and it is important that the information should be on record.

14. The question seems to have become somewhat complicated by the fact that Government have of late years tied their own hands in the matter of percentage increases at revisions of assessment, a policy which with all respect I can never think was altogether judicious, as it prevents Government realizing in full the legitimate increases of land revenue which will follow the construction of railways and communications. The policy, however, has been promulgated and there is nothing more to be said about it. But one of the results has been that in many cases after a revision has been undertaken, when the Survey officers came to distribute over the land the normal increase in assessment decided upon for the táluka, it was found that the addition of the subsoil water has increased the enhancement above the limit allowed. In this case either the soil or subsoil water assessment has apparently to be remitted, and Mr. Fernandez is always proposing to reduce an excessive enhancement by lowering the subsoil water assessment. My own impression is that this is not necessary. Both assessments should be imposed on the field according to rule, and then if the legal increase is exceeded, the surplus must be remitted in fixing the final assessment. There is no more reason why the deduction should be made out of one component part of the assessment than out of the other.

15. As regards the grouping, there seems, unless I greatly err, some misapprehension in the remarks in para. 2 of the Government Resolution, and I imagine a wrongly coloured map must have been submitted to Government. For I find from para. 54 and Appendix O that Tajpur is in Group II along with Changodar and Bhat, and that Ambli, Bopal and Ghuma are in Group I, instead of as stated in the Government Resolution.

16. The regrouping of this táluka which was created by Sir Barrow Ellis from portions of Daskroi, Viramgám and Dholka was naturally very difficult, and I confess I am glad to see that Mr. Fernandez has had the courage to propose sweeping deductions from the figures which the maximum rates according to the new grouping have brought out, even at the risk of his proposals being condemned on this very account. I do not think that Mr. Fernandez has brought into sufficient prominence the glaring contrasts which the táluka presents, nor the fact that it has not prospered of recent years. Conspicuous in its history is the great flood of 1875 which destroyed a very large area, several thousands of acres, if I mistake not, of the richest batta land in the riverain villages. The Patel of Kasáandra once showed me a spot where, buried under many feet of sand, lay 15 pakka wells, upon which fine crops of sugarcane used to be grown, and all the area is now, *faute de mieux*, being turned into Government bábul plantations. A second calamity has been the failure of rainfall for six or seven years past. Sánand and the villages adjoining used to be as famous snipe grounds as any in Gujarát, but during the three years I was Collector of Ahmedabad the rice fields were simply dry and barren. And whereas I used to find in my records long reports of the measures proposed for draining flooded villages, I myself used to send messengers into the Kadi Pargana to ascertain if our flood waters were being diverted. It is true that throughout the táluka the area of dry-crop turned into rice has increased by 3,442·15 acres, but it consists mostly of isolated patches spread all over the táluka, conserved when the rainfall was better than it has been of late years, and some of the land at Juda and, I think, Dharan is now rice owing to Government having improved the tanks. Rice in Sánand, as Sir James Richey used to say, is a lottery, and

cultivators will go on for years paying revenue on iron-dry fields in the hope of a bumper crop some day. Another difficulty presented by the Sánand Táluka is that, side by side with a flourishing village like Bhat, inhabited by well-to-do Pátidárs, we find villages like Tájpur and Fatehwádi, the abode of thriftless hereditary Koli robbers, who have by no means abandoned their profession. And on the border to the north, the Gráikwád's villages are full of lawless depredators. Combined with all these discordant and depressing elements, we have great variation in the rates which were settled when the táluka formed part of three other tálukás, and we have now to settle the revenue on something like regular principles, easing the enhancement down where they work out too high. Undoubtedly the construction of the railway has done a great deal for the north of the Sánand Táluka, but a railway is not a panacea for every evil.

17. I am inclined therefore to accept Mr. Fernandez' proposals, though I have no objection to Bhawanipur and Andej being put in the 3rd group as proposed by Mr. Ozanne. I do not quite like Mr. Ozanne's sudden drops, broken though they be by different rates in the same group. On the other hand, if we begin at Rs. 3, as suggested by Government, we shall have the fine groups of villages in the north-east of the táluka close to a railway and the large market of Ahmedabad assessed at Rs. 3 only, while the adjoining villages, Ghatlodia, Was-trapur, &c., in Daskroi, almost exactly the same in every respect, have a maximum of Rs. 3-12. The cultivators will scarcely understand this difference. I went through the grouping and rates very carefully with Mr. Fernandez, and I should feel inclined to recommend both the grouping and maximum rates to stand.

18. No doubt the results are anomalous, and Mr. Fernandez' reductions in order to correct them are so numerous that I am not at all surprised at Government thinking the whole settlement capable of drastic revision and improvement. But I confess I do not see my way to anything better. It would be sheer throwing away money to put villages like Sarkhej and Makarba at less than Rs. 3-4. Kasándra and the riverain group will not stand more than Rs. 2-12. (I thought at first they could do so till Mr. Fernandez brought forward considerations that satisfied me.) The Dharan group, again, can stand Rs. 2-4, but not more. In this group, however, I think that Mr. Fernandez has made a mistake in recommending only 40 per cent. to be taken from Juda and Juhar. Government have spent a considerable sum in improving a tank here, and the rice cultivation is very fine. I see no reason whatever why these villages should not be omitted in calculating the percentage increase of the group. The best plan would perhaps be for the ordinary rice assessment to be placed on the lands, and then for an additional cess not exceeding Rs. 3 an acre to be taken under the Irrigation Act from those lands which have profited most by the tanks. Writing at a distance and from memory I think I am right in stating that nothing of the kind is levied. There is no advantage in throwing away revenue which Government has every right to recover. In that case the ordinary increase in the group would not be excessive.* This question should be looked into separately. The rates on Group IV and Group V (Rs. 2 and Re. 1-8) also have my concurrence. I am a little doubtful about increasing the revenue on Vanalia and Aniali; their rice has been so great a failure for many years, and they have always paid the revenue. But pains have also been taken to repair their bunds and I think that they can stand it. I would certainly make them a present of the water of the 4th order.

* *Notes.*—The following figures for Juda are extracted from Appendix O :—

	Area.	Rice. Assessment.	Rate per Acre.
By former Survey ...	384 acres.	Rs. 2,061	5 5 10
By Revision Survey—			
Old Rice ...	105 "	" 543	5 2 8
New converted Rice ...	478 "	" 1,250	2 9 10

It is not clear how 279 acres of old rice have disappeared, and this should be explained, for new rice is only assessed at the maximum dry-crop rate. But even new rice should certainly also pay its share for the outlay Government have made upon the tank.

19. By the time these papers reach the Survey Commissioner, through whom, at his request, I am sending them, Mr. Fernandez may have worked out a regrouping with the maximum rates suggested by Government and calculated the results. Should they work out to anything like the figures which Mr. Fernandez suggests should be taken from the different villages I have no objection to offer. But my impression is that Mr. Fernandez, although cutting the Gordian knot a little unscientifically, has done so with great judgment. So while conceding that Andej and Manipur may be put lower, and recording my opinion that the case of the rice lands of Juda and Juhar should be carefully gone into afresh. I would have personally no objection to accept them as they stand. The people are not in a position to pay any very great enhancement.

20. I still fail to see why the trees yielding Rs. 537-9-8 of revenue should be given to the khátedárs with leave to cut them down. Capitalized at twenty years' purchase it is a sum of over Rs. 10,000 given up, and I think a small condition may accompany the gift. When Khándesh was first surveyed, all the trees were sold to the cultivators, and I see no objection to these trees being valued by a Pancháyat and sold except the trees given in Daskroi. The reason why I object to the absolute giving away of the trees is this, that it affords a terrible stimulus to denuding the country of what the Conservator of Forests, N. C., would call arborical vegetation, and which is well known to be undoubtedly a conductor of rain. The Mámlatdár of Sánand, Ráo Sáheb Navnidhrai, made for Government in one year as much as Rs. 30,000 by the sale of Government bábul, a firewood tree which had grown ripe for the axe, to the Ahmedabad mills, and the result of the tree proclamation in Daskroi was a rush on the part of the people near Ahmedabad to cut down even their fruit-trees, tamarind, mango and rayan, for firewood. A splendid and picturesque grove of aged tamarinds always used as a camping ground close to the Shahi Bágh were cut down before my eyes, and attempts were made to destroy part of the old royal avenue. The cultivators know well enough that the fruit of the trees which they plant and rear is theirs, as is proved by their planting them, and the great bulk of trees in Sánand is private property at this moment. Many of the cultivators actually grow bábul for sale as firewood. But when Government gives up the few trees that it has left with so to speak a flourish of trumpets, the impression left in the minds of the Patels is that Government does not care for trees and the Ahmedabad wood-dealers at once tempt the cultivators to cut. I am sure therefore that a proclamation that Government had given up all its own trees, would lead to wholesale destruction. If Government desires to make a concession I have no objection to its own trees being given away, but on the condition that they are not cut down without leave. In giving away its property Government can undoubtedly make any condition that it pleases.

H. E. M. JAMES,
Acting Commissioner in Sind.

No. 467 of 1891.

To
THE SURVEY AND SETTLEMENT COMMISSIONER.

Surat, 22nd July 1891.

SIR,

With reference to your endorsement No. 1333, dated 20th instant, on Mr. Fletcher Superintendent Deccan Survey's opinion on subsoil water classification, I have the honour to submit herewith a scale which I have framed paying special attention to that officer's remarks in his paras. 10 and 11.

2. In the plains of Gujarát utilizable subsoil water is usually found under gorat and besar soils only, the maximum classification of which ordinarily is 14 annas. Wherever pure black soil prevails there, as a rule, the underground springs are salty owing to which wells are conspicuous by their absence. Taking these facts into consideration and the further one that the best garden produce requires a certain amount of consistency in the soil which is caused by the presence of loam, I have fixed the first grade of soil at from 16 to 11 annas. The other grades call for no explanation.

3. In your remarks on my Sánand Report you have agreed with me as to the unfairness of taxing salt water of the 4th order in connection with jirayat land. The scale for this order of water has therefore been made for rice land only. As the soil classification of rice lands practically runs from 5 annas to 8 annas only, soil grades for rice seem unnecessary. I have therefore not made any. It will be seen that the scale is the same as that for the first grade of soil under Order III. The reason of this is that rice crops can as effectively be saved by water of the 4th order as by that of the 3rd, and in the cold season both are used in rice lands for raising crops of barley and occasionally of wheat.

4. The scale as framed will, I think, suit all inland talukas which have no rocky substratum. Those with rocky substratum should have the scale lowered according to their special circumstances. In the case of tracts containing soil of the superior order, which is classable up to 24 annas, and in that of the coast talukas like those of Bulsár, Jalálpor, &c., where owing to the greater humidity in the atmosphere garden produce is raised with much less trouble than in the dry talukas inland, it may perhaps be found necessary to alter the scale to make it suitable to the new order of things.

5. As regards the taluka of Parántij, the revision proposals for which are due next cold season, I am of opinion that the two divisions of Parántij proper and Modása should be treated differently, because, while the former has no rocky substratum, in the latter it prevails throughout. Moreover, the Modása underground springs are weak and consequently there are but few wells indeed which can be worked the whole day without being exhausted. Further, the level of the springs sinks several feet in the hot weather leaving the wells in the high localities nearly dry. I would, therefore, propose that for the Modása Division the scale should be reduced by one-half. As the Parántij Darvari is now in hand an early answer would be highly esteemed.

I have, &c.,

(Signed) T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey,
Gujarát.

(True Copy)

E. C. OZANNE,
Survey and Settlement Commissioner.

Scale showing the Anna Value of the classes in each order of subsoil water as fixed by the depth from surface to water and the classification of the soil.

Grade of Soil.	ORDER I.				ORDER II.				ORDER III.				ORDER IV.				REMARKS.
	A Class up to 10 feet.	B Class over 10 and up to 20 feet.	C Class over 20 and up to 35 feet.	D Class over 35 and up to 50 feet.	A Class up to 10 feet.	B Class over 10 and up to 20 feet.	C Class over 20 and up to 35 feet.	D Class over 35 and up to 50 feet.	A Class up to 10 feet.	B Class over 10 and up to 20 feet.	C Class over 20 and up to 35 feet.	D Class over 35 and up to 50 feet.	A Class up to 10 feet.	B Class over 10 and up to 20 feet.	C Class over 20 and up to 35 feet.	D Class over 35 and up to 50 feet.	
16 to 11 annas.	4	3½	2½	2	3½	3	1½	1	2	1½	1	½	2	1½	1	½	The scale for the 4th order of water is applicable to rice lands only. Exceptional jirayat lands which grow tobacco with the aid of salt water will be specially dealt with.
10 to 8 annas.	3½	3	1½	1	3	2½	1	½	1½	1	½	...	...	...	...	...
7 to 5 annas.	2½	2	1	½	2	1½	½	...	1	½	...	...	...	...	...	...

N.B.—Soils below 5 annas of classification are not subjected to subsoil water assessment.

(Signed) T. R. FERNANDEZ,
Deputy Superintendent, Revenue Survey,
Gujarát.

Surat, 22nd July 1891.

(True Copy)
E. C. OZANNE,
Survey and Settlement Commissioner.

No. 1393 of 1891.

To

THE DEPUTY SUPERINTENDENT,
GUJARAT REVENUE SURVEY.

Poona, 28th July 1891.

SIR,

In reply to your letter No. 467, dated 22nd instant, I have to say that it is absolutely necessary that the scale should be fixed for Parántij now, as you point out. I am prepared then to authorize your completing the darvaris without delay, to prevent loss of revenue. If Government does not sanction the scale, the darvaris may have to be done over again, but that is the lesser risk. I have consulted Mr. Fletcher, who has now studied the question, and would make the following comments on the scale proposed by you :—

- (1) I am very strongly of opinion that a depth over 35 feet should not be admitted. Water may be obtainable at a greater depth profitably, but the expense incurred in case of success and the risk of failure after expenditure on excavation make it evident that when such depths are concerned, it cannot be said that water for irrigation is "easily obtainable." I may go as far as 40 feet if you show strong reasons.
 - (2) I approve of the soil gradations, but think that they should be slightly altered as shown in the appended statement. If rice land is, as you say, usually classed from 5 to 8 annas, this is because 8 annas in the scale are allotted to water. A rice soil classed at 8 annas would then, if dry-crop, be classed at 16 annas. The question is whether the increase for sub-soil water facilities should be based on the jirayat valuation or on the rice valuation. I think on the latter, because though the value of well water is not so great in rice land as in jirayat, yet the low soil valuation of rice land will practically exclude the scale for the higher soil grades.
 - (3) I approve of the proportion which you fixed for the soil grades with minor modifications. I think the incidence of increase should be proportionately higher on poor than on better lands, because the value of water on poor land, provided it is not bad unirrigable land, is greater, and your scale excludes all soils classed below 5 annas. Should we not say below 4 annas? for otherwise fairly assessable rice land may unreasonably escape.
 - (4) I think the way to that with tracts where a rocky substratum has to be pierced before water is reached, is to provide a fault, which will cause a reduction in the scale which is necessary. This method will also apply to other obstacles to irrigation from wells, *e. g.*, weakness of springs. A fault may be here defined as $=\frac{1}{2}$ the scale increase. Where necessary $\frac{1}{2}$ a fault only may be allowed.
2. I shall be obliged if you will work out the proposed scale for a few villages, chosen as representative ones, in Dholka, Viramgám, Sánand, Daskroi and Gogha, and compare (a) the classification result, and (b) the absolute result according to the sanctioned maximum rate, and if you will submit the comparisons with your remarks and opinion.

I have, &c.,

(Signed) E. C. OZANNE,
Survey and Settlement Commissioner.

(True Copy)

E. C. OZANNE,
Survey and Settlement Commissioner.

No. 496 OF 1891.

To

THE SURVEY AND SETTLEMENT COMMISSIONER.

Surat, 1st August 1891.

SIR,

With reference to your letter No. 1393 of 25th ultimo, I have the honour to remark as follows regarding the three clauses of your paragraph 1:—

Clause 1.—I agree with you that the maximum depth of wells should be reduced, but I think at the same time that the limit should be reduced from 50 feet to 40 feet. If it is lowered to 35 feet then most of the wells in Nadiád and Ánand will, I think, escape the subsoil water rate, and you are aware how largely they contribute to make tobacco cultivation the great success it is. There are wells to be met with in Gujarát as deep as 60 feet which are regularly used for raising crops of wheat and barley.

Clause 2.—In respect of this clause I would remark that although rice soil is classed from 5 annas to 8 annas, in calculating the *ákár* the classification values are doubled; for instance, 5 annas become 10 annas and 8 annas 16 annas; so it will be seen that rice soil will receive a treatment in no way different from *jiráyat*.

Clause 3.—In the Deccan a soil may be 7 annas and lower, but still whatever there is of it may be 1st class, for I think insufficiency of depth is one of the chief prevailing causes which there lower the valuation. In Gujarát, on the contrary, full depth is met with everywhere except in the few hilly *tálukas*. The Chief faults that here reduce the valuation are sand and salt. To bring gorat soil down to 7 annas and below, the existence of $3\frac{1}{2}$ faults and more of each of the defertilising ingredients are necessary. In Gujarát therefore soils below 8 annas are really very poor and it could not, I would respectfully add, be said of them that the value of water on them is greater than on good lands. Soils below 5 annas are nearly all sand or salt, and I am strongly of opinion that they should not be assessed for subsoil water.

2. With regard to your para. 2 the depth details of the Dholka and Daskroi wells are not available, for they were graded under the three depths fixed by the Superintendent and approved by your predecessor. The information called for by you can therefore be furnished in respect of Viramgám, Sánand and Gogha only, and it will be submitted no sooner it is ready.

3. As I think nearly all the wells in *táluka* Parántij are within 35 feet in depth, there is no reason to delay the application of the new scale to it till the point raised by me in my remarks on your clause 1st is settled. I am therefore issuing instructions to my Classing Assistants accordingly.

I have, &c.,

(Signed) T. R. FERNANDEZ,

Deputy Superintendent, Revenue Survey, Gujarát.

No. 1438 OF 1891.

To

THE DEPUTY SUPERINTENDENT,
GUJARAT SURVEY.*Poona, 4th August 1891.*

SIR,

I have the honour to sanction the accompanying scale for the assessment of subsoil water in the Parántij *Táluka* including Modása, in anticipation of the

sanction of Government. The sanction of Government will be asked when my final report on the subsoil water question is submitted; but I cannot wait till that time without seriously impeding the work of completing the darvaris.

2. I have considered your letters Nos. 467 of 26th July and 496 of 1st August. I have agreed to reduce the depth from 50 to 40 feet. As regards your explanation as to the manner of calculating the *ákár* in rice land, I have added a note to the scale. In other respects there is no difference of opinion between the scale submitted by you and that sent for your remarks with my No. 1393 of 28th July, except the differences which I suggested in the latter scale and which you apparently approved.

I have, &c.,

(Signed) E. C. OZANNE,
Survey and Settlement Commissioner.

Suggests Scale for Gujarát subsoil water additions to be made to the soil classification annas.

Soil Annas.	I.				II.				III.				IV.			
	A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.	A.	B.	C.	D.
	10 feet and less.	11 to 20.	21 to 40.	...	10 feet and less.	11 to 20.	21 to 40.	...	10 feet and less.	11 to 20.	21 to 40.	...	10 feet and less.	11 to 20.	21 to 40.	...
Above 12 ...	4	3	2	...	3½	2½	1½	...	2	1½	1	...	1	½	...	...
11 to 8 ...	3½	2	1½	...	2½	1½	1	...	1½	1	½	...	1	½	...	...
7 to 5 ...	2½	1½	1	...	1½	1	½	...	1	½	...	...	...	...	...	...

A fault ($=\frac{1}{2}$ of addition) to be given for rocky substratum or other obstacle to construction of well and one also for deficiency in the supply obtainable.

Order IV to be applied only to rice lands.

In rice land the addition required by the above scale is that which is calculated on the soil classification annas doubled.

(Signed) E. C. OZANNE,
Survey and Settlement Commissioner.

(True Copies)

E. C. OZANNE,
Survey and Settlement Commissioner.

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