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REVENUE DEPARTMENT.

Commissioner's Office,

Karachi, 24th March 1905.

From

J. W. P. MUIR MACKENZIE, ESQUIRE,  
M. R. A. C., I. C. S.,  
Commissioner in Sind,

To

HIS EXCELLENCY THE RIGHT HONOURABLE  
CHARLES WALLACE ALEXANDER NAPIER  
COCHRANE BAILLIE, LORD LAMINGTON,  
B.A. (Oxon.), G.C.M.G., G.C.I.E.,  
Governor of Bombay.

MY LORD,

I have the honour to submit proposals for the revision settlement of the three talukas of Thul, Kandhkot and Kashmir belonging to the Upper Sind Frontier District. The proposals have been prepared, in consultation with the Deputy Commissioner, Mr. Baker, by Mr. Wali Muhammed Hasan Ali, Deputy Collector, who held charge of the talukas from the 31st January 1900 till the 22nd October 1904, and represent the concurrent opinion of both officers. I myself have toured in Thul and Kandhkot, but was able to see no more than a corner of Kashmir. Mr. Wali Muhammed's report as originally submitted was so extremely lengthy and contained so much matter not really relevant to the proposals that I thought it advisable to curtail it considerably. Nothing, however, is omitted which will enable Government to come to a decision on the proposals, and even now the report covers 73 pages of print, exclusive of the appendices, and suffers from diffuseness and incoherency. But although the report is not all that could be wished, it has been compiled with the most conscientious pains, and gives the result of patient and exhaustive inquiry, and a thorough knowledge of the country and people. I shall limit myself in this review to a discussion of the progress of the tract during the currency of the existing settlements, and of the assessments proposed for the next settlement.

2. The existing rates have been current for periods extending from 1885-86 in certain villages of Thul and 1894-95 in Kashmir Taluka up till the present year 1904-1905, when the guarantees of all these talukas expire. These guarantees therefore will have lasted for periods varying from twenty to eleven years. In the report, however, the statistics from which progress may be gauged are given for only the ten years 1893-1894 to 1902-1903 in the case of Thul, and for nine years, commencing 1894-95, for Kandhkot and Kashmir. These periods are sufficient to judge of the progress of the whole tract, which prior to 1893-94 was in a comparatively backward condition.

3. It will be found that, compared with the first half of the decade, the second half shows the following increases of cultivation:—

In Thul, from 92,301 acres to 1,10,895, or 20 per cent.

In Kandhkot, from 75,360 acres to 94,425, or 25 per cent.

And the following fall:—

In Kashmir, from 54,492 acres to 48,303, or 11 per cent.

There has been a remarkable increase of cultivation in the first two and a disappointing fall in the third. To my mind, this is an incontestable indication of sound progress in the former and retrogression in the latter. I shall have more to say on this subject when I come to discuss the rates.

4. Comparing the census of 1901 with that of 1891, we find that in Thul population had increased by 46 per cent. and in Kandhkot by 60 per cent., while in Kashmor it had increased by less than 7 per cent. This is another indication that the two former talukas have made considerable progress, while the latter has remained stationary.

5. Regarding agricultural stock, the statistics give no useful information. The figures are considered unreliable, I fear with only too good reason, and we have them only for five years.\*

6. In communications, the only improvement effected during the ten years is in Kashmor, where  $21\frac{1}{2}$  miles of road have been made. This improvement is little more than nominal, as it consists merely in the clearing of a track, and the construction perhaps of a bridge or two over a canal or distributary.

There is, however, a fairly brisk export traffic from the division. Carts seem to have entirely displaced camels—a process which was noticed by Mr. Disney as having developed appreciably as far back as 1891. The markets for cart traffic are Jacobabad and Shikarpur, and Sukkur is reached by the river.

7. Wells for irrigation are very few. But there has been in Kandhkot quite a remarkable increase in their number, which has more than doubled. Their use, however, seems to be confined almost wholly to Kandhkot.

8. The following table shows the average Demand, Remissions, Revenue from Collections and Balances over the periods for which statistics are given:—

	Demand.	Remissions.	Revenue for Collection.	Balance.
	Rs.	Rs.	Rs.	Rs.
Thul ...	2,47,284	13,789 or 6 per cent.	2,33,320	8,057 or 3·4 per cent.
Kandhkot ...	2,16,072	29,570 or 13 per cent.	1,73,589	14,541 or 8 per cent.
Kashmor ...	1,16,788	10,994 or 9·4 per cent.	1,05,067	8,523 or 8 per cent.
TOTAL ...	5,80,144	54,353 or 9 per cent.	5,11,976	31,121 or 6 per cent.

On the average of the demand, 9 per cent. has to be remitted and 6 per cent. remains uncollected at the end of the year. The remissions are considerable, and point to the extreme fluctuations to which the yield is subject. These fluctuations are due, however, to destruction of crops by locusts and other insect pests at least as often as, and sometimes to a much larger extent than, to failure of the irrigational supply. They are swollen by the heavy remission of Rs. 61,810 allowed in the year 1902-1903 in the Kandhkot Taluka, largely due to locusts.

9. The year 1903-1904, for which the report gives no figures, supplies an eloquent example of the effect of these vicissitudes to which crops are subject in this district. The inundation was an extremely fine one, with the consequence that cultivation was largely extended and the demand rose to nearly  $7\frac{1}{2}$  lakhs. But owing to destruction of the crops, and particularly of the til crops, by locusts and insect pests, remissions to the extent of Rs. 1,31,000 or nearly 18 per cent. of the demand had to be granted, a considerable amount of the collections had to be postponed, with the result that the arrears amounted to Rs. 98,270, equal to about 16 per cent. of the revenue for collection, or more than double the average for the period with which the report deals.

\* Note.—I should here state that I hardly see how stock statistics of any value can be obtained in Sind, where the village accountant's charge is 48 square miles in area and the stock all scattered in numerous tiny hamlets.



10. Liberality in remissions and postponements will always be required in the Upper Sind Frontier District. Generally speaking, when this requisite is satisfied, there is no inordinate difficulty in collecting the revenue. Occasionally, however, years will come like 1903-1904 when difficulty arises, and considerable discrimination and forbearance is necessary.

11. Careful examination of Form XXI shows the degree to which the severer forms of coercive process have to be put into operation. The average number of cases per annum of each kind is specified below:—

Penalty under Section 148	...	...	...	116
Distrain and sale of moveable property under Section 154	...	...	...	19
Forfeiture and sale of occupancy under Section 153	...	...	...	78

• These numbers are pretty high in a district where the holdings are not numerous. But the Baluch is probably the most unpunctual of all zamindars in the payment of revenue, and the coercive process is not here an indication that the assessment presses severely. The areas affected are rather large, but that is because the holdings are large.

• 12. The statistics as to the sale-value of land, such as they are, indicate that the value of rice and flow lands is fair. There has been a very considerable rise in the value of flow lands since 1894. But even in Thul Taluka, where the rise is greatest, their present value is only Rs. 30 per acre or about 14 times the average assessment. Rupees 40 to 50 per acre for rice land, however, is not a high value, indeed, being about half or less than can be obtained for moderate rice lands, and only one-fourth of the price of first rate rice lands in the Larkana District.

13. Judging from the figures in paragraph 58 of the report, the mortgage value is peculiarly low. In Thul, it does not much exceed one year's assessment: in the other two talukas, curiously enough it is rather more.

14. On the other hand, the statistics of leases on cash rent (paragraph 55) seem to show that for kharif flow land and lift more than twice the assessment is obtainable as rent.

15. If, then, the figures of sale and mortgage are to be taken as indicating that the assessment is at all high, those of lease would seem to show that it is perfectly moderate, if not low.

But I do not attach much value to these statistics. It is true that land is in demand, but the buyers and mortgagees are the Banias, of the well known astute, business like, and often unscrupulous type, or the shrewd reclaiming farmers, possessed of ample means, and adding field to field, wherever they see a favourable opening, like Bahadur Khan Khoso and others of his class, alluded to by Mr. Wali Muhammad and Mr. Baker. The sellers are the ordinary rough, improvident Baluch zamindars, wholly ignorant of the true value of their property, and unable for want of capital and knowledge of farming to turn it to good account. They let it go for a song, and the prices they obtain are no true index of its value. The rise in the price of land, however, shows that juster notions are spreading, and I should be much surprised if the next decade does not show a further rise. On the other hand, cash rent leases are too few in number to furnish a useful criterion.

16. Coming now to out-turn, I think that, even taking Mr. Wali Muhammad's figures (paragraph 51) to be correct, and Mr. Baker (paragraph 3) says that they are decidedly low, we shall find that they demonstrate the perfect moderation of the existing assessment. In an acre of rice, the lowest out-turn given by Mr. Wali Muhammad is 10 maunds, and taking an average price of no more than Rs. 1-10 per maund its value is Rs. 16-4. The zamindar's share of this is three-fifths or Rs. 9-12. Half of this is Rs. 4-14, and the highest rice rate is Rs. 3-4, or only one-third of this share. In an acre of kharif flow growing juar, the principal crop, the lowest out-turn is 6 maunds, which at Rs. 1-12 per maund gives Rs. 10-8 as the value of the gross produce (excluding straw), and the value of the zamindar's three-fifths at Rs. 6-5, which exceed 2½ times the highest assessment on kharif flow. Making every allowance for the lowness of prices obtained by the zamindar, I feel no doubt that his crop on the average gives him considerably more than twice the assessment.

17. Other facts bearing on the incidence of the assessment are—

(a) Alleged deterioration of the soil (Mr. Baker, paragraph 3).—Mr. Baker in discussion was very positive about this. Zamindars assert the same. There is indisputably, as I could see, a great deal of *kalar* in the division. But whether it has increased or not I could form no opinion. I myself find it exceedingly difficult to credit general deterioration in the face of steady and maintained increase of cultivation. A temporary increase of cultivation would occur no doubt, while zamindars were seeking for virgin lands to till in place of those which no longer yield remunerative crops. But the increase would not be permanent, since the land which no longer paid would be gradually thrown up. I cannot help suspecting that Mr. Baker may have been impressed too much by cases of local deterioration such as would naturally occur in numerous localities, but would probably be balanced by improvement in others. What deterioration there is is certainly due mainly, if not solely, to *kalar* and not to over-cropping.

(b) The still prevailing backwardness of agriculture.—This is undoubtedly correct. Except where the land has been taken in hand by the remarkable class of keen farmers of whom Bahadur Khan Khoso is a type, tillage is most elementary. On the other hand, the large increases of population indicate a most substantial addition to the supply of labour, which must result in the improvement as well as in the extension of cultivation. One very remarkable instance of good farming is the existence of something approaching to rotation with a leguminous crop—land cropped with a cereal one year and with gram in the succeeding year, thus diminishing the necessity of fallows. There remains, however, a great deal of reclamation to be done. Much land is very imperfectly cleared of jungle, or scarcely cleared at all. Until better tillage prevails much more largely than at present, high rates are out of the question.

18 As regards prices, the only material rises shown in the statistics summarised in paragraph 52 are found in Thul. I much doubt the value of the figures. Anyhow, the rise is due partly to the famines of recent years, from which the zamindars ought to have profited considerably in the disposal of their produce, but partly also to failure of crops, *e. g.*, in the case of til which, as already mentioned, was an almost complete failure in one or two recent years. I should be sorry to base an increase of assessment on the prices. What the zamindar gets is probably very different from the bazaar price, except perhaps in the case of rice. In discussing the rates, then, I shall assume that there has been no material variation in the price which the average zamindar obtains for his crops.

19. Next, and most important in relation to the assessment proposals, I invite attention to the facts relating to the irrigational supply in the canals. These have been set out at length by the Executive Engineer in his report, reproduced by Mr. Wali Muhammad at paragraph 31. The general effect is that the Desert Canal has been re-modelled with the result that not only has irrigation been extended, but old irrigation has been placed in a considerably improved position. On the Unhar Wah, the total supply is excellent, though the distribution is susceptible of improvement. On the Begari, the cultivation is capable of extension, if more water were made available, and existing cultivation receives a full supply. Mr. Wali Muhammad in paragraphs 32 to 34 of his report, while finding himself in general accord with the Executive Engineer, emphasises the deficiencies admitted by the latter, and differs from him on a few points of detail. But it is clear that since 1895 about 11½ lakhs have been spent on the Begari. (Compare Mr. George's report, paragraph 2 (a), with Mr. Wali Muhammad's paragraph 25.) Since 1894-95, nearly 2½ lakhs have been spent on the Unhar Wah and over 8 lakhs on the Desert Canal, and this expenditure has resulted in material improvement, which is demonstrated, to my mind, in Kandhkot and Thul Talukas by the large extensions which have occurred in rice and kharif flow cultivation. In Kashmor, however, no improvement has resulted, except in certain villages watered direct from the Desert Canal.

20. As regards the general condition of the people, it is no doubt true that they are mostly wild and backward, especially in Kashmor, and there is probably a considerable amount of indebtedness where there is credit. The figures of mortgages given in paragraph 58, compared with those in Table I of paragraph 42, show that, during the period for which statistics are given, in Thul, 40 per cent. of the occupied area was mortgaged, compared with 14 per cent. in Kandhkot, and 11 per cent. in Kashmor. Mortgaged debt has thus gone furthest in really the least backward taluka of the three.



This is not really surprising, for it is in Thul that people find land investment most profitable owing to its proximity to Jacobabad. It will probably be some time, unless communications are vastly improved, before the bania will care to penetrate far into Kandhkot and Kashmir. It is, I fear, not unlikely that the replacement of the primitive lease-hold tenure by the survey occupancy has helped to swell the amount of mortgage debt. But it is satisfactory that only one-third of the area is mortgaged with possession. The restricted tenure and the Deccan Agriculturists Relief Act will, I hope, arrest the transfer of land to the bania. This is one of the few districts where continuance of the transferring process might very conceivably be fraught with political danger. What the Baluch would do if he found himself driven off the land by the bania is not very satisfactory to imagine.

21. There is another consideration which must not be neglected, and that is the undoubted low pitch of the current assessment. Even in 1885, Mr. Erskine, the then Commissioner, wrote of the Thul rates—

“These rates are so low that at first I was inclined to think it might be necessary that they should be somewhat raised all round, for these rates, low as they are, are not to be levied in full, a deduction on account of the clearance of private canals being allowed, amounting to 3 annas an acre in the case of flow irrigation and 4 annas in the case of lift. After, however, giving the matter careful consideration, I am satisfied that the rates, low though they be, are sufficiently high and should be accepted.”

22. To sum up the above facts, on the one hand we have the following which are unfavourable:—

- (1) The low value of land as shown by the sale and mortgage statistics.
- (2) The backwardness of the population and of agriculture.
- (3) The alleged deterioration of the soil.
- (4) The extreme vicissitudes to which the out-turn is liable, not only from variation in the inundation, but from insect pests.
- (5) The considerable indebtedness in Thul at least, as evidenced by the large area under mortgage in that taluka.
- (6) The slightly retrograde figures of cultivation and the relatively slightly progressive figures of population in Kashmir.

As already stated, however, I doubt (a) whether much weight can be attached to the first of these, owing to the peculiar relative position of buyer and seller, lender and borrower; (b) whether the third is the result of correct observation; (c) whether the fifth is evidence of more than the measure of credit.

23. On the other hand, we have the following facts which indicate that Thul and Kandhkot have been advancing steadily in prosperity throughout the period of the current Settlement, and that the existing assessment is everywhere moderate in relation to the sources of livelihood:—

- (1) Large expansion of cultivation and population.
- (2) Development of export trade by means of carts.
- (3) The smallness on the average of arrears of collections and other indications that, after allowing remissions, the revenue is usually collected without great difficulty.
- (4) The relation of cash rents under leases to assessment.
- (5) The moderate fraction of the zamindar's share represented by the assessment.
- (6) Extensive improvements in the canals, resulting in extensions of cultivation above referred to.
- (7) The undoubtedly low pitch of the assessment.

24. In these circumstances, I should have anticipated proposals for a material enhancement at any rate in those parts of Thul where the rates have run unchanged for 20 years. Instead of this, Messrs. Wali Muhammad and Baker make proposals involving only an enhancement of 4.16 per cent. in Thul, 3.23 per cent. in Kandhkot, and no rise at all in Kashmir.

25. Mr. Wali Muhammad has expounded his arrangement of rates and groups at great length, and the results are by no means easy to apprehend. He writes of raising a village from a lower to a higher group or of reducing a village to a lower group, and it is found that the rate is unaffected. The effect is confusing. In order to enable the proposals to be more clearly understood, I append 3 tables, showing at a glance the existing and proposed rates in the different villages of the several groups. In considering the rates and groups, reference should be had to these tables.

## TALUKA THUL.

## KHARIF.

Proposed Groups and Number of Villages.			PRESENT RATES.							PROPOSED RATES.								
			No. of Group.	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rain-fall.)	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Flow aided by Lift.	Chahi, i.e., Wells.	Barani (Rain-fall.)
I ... 23	...	...	I.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	No rate prescribed, but cultivation is charged for under Rule 6 of Special Circular No. 59 as printed in italics, i.e., according to the description of canal irrigation available for the land. Where no description of canal irrigation is available, then Rabi Lift.	Barani pays Re. 1-8 per Acre.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
			II.	3 8	3 4	2 8	2 4	2 8			3 8	4 0	3 12	2 12	2 4	2 8	2 4	2 12
II ... 17	...	...	I.	3 8	3 4	2 8	2 4	2 8			3 4	4 0	3 8	2 8	2 0	2 4	2 8	2 0
			II.	3 4	3 0	2 4	2 0	2 4										
III ... 16	...	...	II.	3 4	3 0	2 4	2 0	2 4			3 0	4 0	3 4	2 4	1 12	2 0	2 4	1 12
96			These rates are equal to Kharif Lift rates (vide new Rule 6, p. 674 of the Manual).															

These rates are equal to Kharif Lift rates (vide new Rule 6, p. 574 of the Manual).

## RABI.

Proposed Groups and Number of Villages.			PRESENT RATES.										PROPOSED RATES.										
			No. of Group.	Bosi and Saila- bi.	Bosi and Saila- bi aided by Lift.	Rabi Lift.	Bosi and Saila- bi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rainfall).	DUBARI.		Bosi and Saila- bi.	Bosi and Saila- bi aided by Lift.	Rabi Lift.	Bosi and Saila- bi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rain- fall).	DUBARI.	
												Watered.	Unwater- ed.									Watered.	Unwater- ed.
			Rs. a.	Rs. a.	Rs. a.							Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
I	...	23	I.	2 12	3 8	3 4	A.	A.	A.	See note above under Wells.  Barani is assessed at Re. 1-8 per Acre.	...	0 4	{ 2 12 }	3 12	3 12	3 12	3 12	3 12	2 4	1 8	1 0	0 8	
			II.	2 12	3 8	3 4					...	0 4											
II	...	17	I.	2 12	3 8	3 4					...	0 4	{ 2 12 }	3 8	3 8	3 8	3 8	3 8	2 0	1 8	1 0	0 8	
			II.	2 12	3 8	3 4					...	0 4											
III	...	16	II.	2 12	3 8	3 4					...	0 4	{ 2 12 }	3 4	3 4	3 4	3 4	3 4	1 12	1 8	1 0	0 4	
96																							
			These rates are equal to Kharif Lift rates (vide new Rule 6).																				

These rates are equal to Kharif Lift rates (vide new Rule 6).

A.A.A. Note.—There is no specific rate fixed for these modes of irrigation under the present Settlement, but they are assessed at the Rabi Lift rate.



# TALUKA KANDHKOT.

## KHARIF.

Proposed Groups and Number of Villages.		PRESENT RATES.							PROPOSED RATES.										
		No. of Group	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Chahi, i. e., Wells.	Barani (Rain-fall).	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Flow aided by Lift.	Chahi, i. e., Wells.	Barani (Rain-fall).		
I ...	14	I Kashmor ...	Rs. a. 3 4	Rs. a. 3 0	Rs. a. 2 4	Rs. a. 2 2	Rs. a. 2 4	No rate is prescribed, but cultivation is charged for under Rule 6 of Special Circular No. 69 as printed in italics, i. e., according to the description of canal irrigation available, falling which the Rabi Lift rate.	Barani cultivation pays Re. 1-8 per Acre.	Rs. a. 3 4	Rs. a. { 4 0 3 8 }	Rs. a. 2 8	Rs. a. 2 0	Rs. a. { 2 4 2 0 }	Rs. a. { 2 8 ... }	Rs. a. 2 0	Rs. a. 1 0		
	5	II Do. ...	3 0	3 0	2 2	1 14	2 2			3 4	{ 3 8 4 0 }	2 8	2 0	{ 2 0 ... }	2 0	1 0			
	22	II Thul ...	3 4	3 0	2 4	2 0	2 4			3 0	{ 4 0 3 4 }	2 4	1 12	{ 2 0 1 12 ... }	2 4	1 12	1 0		
II ...	5	II Kashmor ...	3 0	3 0	2 2	1 14	2 2			3 0	{ 4 0 3 4 }	2 4	1 12	{ 2 0 1 12 ... }	2 4	1 12	1 0		
	9	II Thul ...	3 4	3 0	2 4	2 0	2 4			3 0	{ 4 0 3 4 }	2 4	1 12	{ 2 0 1 12 ... }	2 4	1 12	1 0		
III ...	5	II Do. ...	3 4	3 0	2 4	2 0	2 4			3 0	{ 4 0 3 4 }	2 4	1 12	{ 2 0 1 12 ... }	2 4	1 12	1 0		
	15	II Kashmor ...	3 0	3 0	2 2	1 14	2 2			3 0	{ 4 0 3 4 }	2 0	1 8	{ 1 12 1 8 ... }	2 0	1 8	1 0		
	12	Kacha dehs to which kacha rates will apply, vide below under Rabi.																These rates are equal to Kharif Lift rates (vide new Rule 6).	
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## RABI.

Proposed Groups and Number of Villages.		PRESENT RATES.										PROPOSED RATES.										RATES ON KACHA LANDS—PRESENT AND PROPOSED THE SAME.													
		No. of Group.	Bosi and Sailabi.	Bosi and Sailabi aided by Lift.	Rabi Lift.	Bosi and Sailabi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rain-fall).	Dubari.		Bosi and Sailabi.	Bosi and Sailabi aided by Lift.	Rabi Lift.	Bosi and Sailabi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rainfall).	Dubari.		Kharif and Peshras.	Wheat and Barley.	Ploughed and sown with other Crops.	Unploughed.	Simko.								
											Watered.	Unwatered.									Watered.	Unwatered.													
I ...	...	14	I Kashmor	Rs. a.	Rs. a.	Rs. a.	A	A	A	Vide Note above under Wells.	Now assessed at Re. 1-8 per acre.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.								
		5	II Do.	2 10	3 0	3 4						0 4	2 10	3 8	3 8	3 8	3 8	3 8	3 8	2 0	1 8	1 0	0 8	2 12	3 0	2 12	1 8	0 8							
		22	II Thul	2 10	3 4	3 0						0 4	2 8	3 4	3 4	3 4	3 4	3 4	1 12	1 8	0 8	0 4													
II ...		5	II Kashmor	2 10	3 4	3 0						0 4	3 10										3 0						3 0	3 0	3 0	1 8	1 8	0 8	0 4
		9	II Thul	2 10	3 0	3 4						0 4	3 4																						
III ...		5	II Do.	2 12	3 0	3 4						0 4	3 10	3 0	3 0	3 0	3 0	1 8	1 8	0 8	0 4	These rates are equal to Kharif lift rates (vide new Rule 6).													
		15	II Kashmor	2 10	3 4	3 0						0 4	2 0																						
		12	Kacha dehs to which kacha rates will apply.																																
		87																																	

A. A. A.—There is no specific rate fixed for these modes of irrigation under the present Settlement, but they are assessed at the Rabi Lift rate.

# TALUKA KASHMOR.

## KHARIF.

Proposed Groups and Number of Villages.		PRESENT RATES.								PROPOSED RATES.							
		No. of Group.	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani, i.e., Rainfall.	Gardens.	Rice Flow.	Other Flow and Sailabi.	Lift.	Lift aided by Flow.	Flow aided by Lift.	Chahi, i.e., Wells.	Barani (Rain-fall).
I	... 13	I	3 4	3 0	2 4	2 2	2 4	No rate is prescribed, but cultivation is charged for under Rule 6 of Special Circular No. 59 as printed in italics, i.e., according to the description of canal irrigation available, failing which the Rabi Lift rate.	Barani cultivation pays Rs. 1-8 per Acre.	3 4	4 0	2 6	1 14	1 14	2 6	1 14	1 0
	1	II	3 0	3 0	2 2	1 14	2 2			3 0	3 8				...		
II	... 5	I	3 4	3 0	2 4	2 2	2 4			3 0	4 0	2 2	1 10	1 10	2 2	1 10	1 0
	9	II	3 0	3 0	2 2	1 14	2 2			3 0	3 4				...		
III	... 1	I	3 4	3 0	2 4	2 2	2 4			3 0	4 0	2 0	1 8	1 8	2 0	1 8	1 0
	7	II	3 0	3 0	2 2	1 14	2 2		3 4				...				
	26	Kacha dehs to which the <i>kacha</i> rates will apply, <i>vide</i> below under Rabi.															
	62																

These rates are equal to Kharif Lift rates (vide new Rule 6).

## RABI.

Proposed Groups and Number of Villages.		PRESENT RATES.										PROPOSED RATES.										RATES ON CULTIVATION IN KACHA LANDS (PROPOSED AND PRESENT THE SAME).							
		No. of Group.	Bosi and Sailabi.	Bosi and Sailabi aided by Lift.	Rabi Lift.	Bosi and Sailabi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rain-fall.)	Dubari.		Bosi and Sailabi.	Bosi and Sailabi aided by Lift.	Rabi Lift.	Bosi and Sailabi aided by Flow.	Rabi Flow.	Lift aided by Flow.	Chahi, i.e., Wells.	Barani (Rain-fall.)	Dubari.		Kharif and Peshwa.	Rabi.					
											Watered.	Unwatered.									Watered.	Unwatered.		Wheat and Barley.	Ploughed and sown with other Crops.	Unploughed.	Simko.		
I	... 13	I	...	2 10	3 8	3 4	A	A	A	Vide Note above under Wells.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
	1	II	...	2 10	3 4	3 0					1 8	...	0 4	2 6	3 6	3 6	3 6	3 6	3 6	1 14	1 8	0 8	0 4	These rates are equal to Kharif Lift rates (vide new Rule 6).	2 12	3 0	2 12	1 8	0 8
II	... 5	I	...	2 10	3 8	3 4				1 8	...	0 4	2 2	3 2	3 2	3 2	3 2	3 2	1 10	1 8	0 8	0 4							
	9	II	...	2 10	3 4	3 0				1 8	...	0 4		3 2	3 2	3 2	3 2	3 2											
III	... 1	I	...	2 10	3 8	3 4				1 8	...	0 4	2 0	3 0	3 0	3 0	3 0	3 0	1 8	1 8	0 8	0 4							
	7	II	...	2 10	3 4	3 0				1 8	...	0 4		3 0	3 0	3 0	3 0	3 0											
	26	Kacha dehs to which the kacha rates will apply.																											
	62																												

A. A. A.—No specific rate is prescribed for these modes of irrigation under the present Settlement, but the rate levied is the Rabi Lift rate.



26. In the grouping, the chief factors taken into consideration have been proximity to markets, character of water-supply and quality of soil. The first two are usual and legitimate considerations. The third is more questionable. But the more I consider Sind Settlements, the more I am convinced that soil, being taken into no account by classing, must be given some weight in the grouping—particularly when, as in this case, *kalar* and sandiness are the chief elements which are taken into consideration. There can be no doubt that these two elements do very largely affect the yield, and that if they are left wholly out of consideration there will be a serious risk of over-assessment. In considering this element to the extent which they have, I am persuaded that Messrs. Baker and Wali Muhammad have been well advised. The other two elements of water-supply and proximity to markets have been taken fully and judiciously into account. I think, therefore, that the grouping may be accepted. Mr. Wali Muhammad apologises for a departure from symmetry, but I do not think that, for the sake of symmetry, there should be run any risk of over-assessment.

27. *The Rice rate.*—I am decidedly of opinion that the rates should be raised to a greater extent than is proposed. The crop is subject to the minimum of vicissitude. The yield is large, its value is considerable in proportion to the existing assessment, and it takes three times as much water as any other crop. The Engineers press for a higher rise in order—not to make the rate penal, but—to deter people from reckless extension of rice cultivation, to the injury of other irrigators whose supply the rice-growers succeed in intercepting. The paying character of the cultivation is evidenced by enormous increases during the period of Settlement, and by the relatively high value of rice lands.

28. The extent of rise proposed by the Settlement Officer is 12 annas only in 5 villages of Thul, 8 annas in 23 villages of Thul, 41 villages of Kandhkot and 14 of Kashmor, and 4 annas in 33 villages of Thul, 34 of Kandhkot and 22 of Kashmor.

In the remaining villages, the rice rate is not raised at all.

29. I recommend that this rate should be raised by 1 rupee above the lowest existing rate in the villages of each proposed group. In the first group of Thul, only 5 villages will be raised 1 rupee, and the remaining 23 will be raised 12 annas. Elsewhere, the rise will be 1 rupee. The assessment will, I think, be still most moderate. The financial effect will be to raise the rice assessment of Group I in Thul from Rs. 2,052 to Rs. 2,552, being about 27 per cent. The rise in the other groups of Thul, and in Kandhkot and Kashmor will be 33 per cent. This, however, represents only the maximum enhancement on an individual holding, and will occur only when the holding consists exclusively of rice lands. If other rates remained unaltered, and in many villages it is proposed even to lower them, the enhancement on an entire holding will, of course, be much less than 33 per cent., and might be *nil*. The total area of rice is so small and is distributed among so many dehs, and the holdings are everywhere so mixed, that I do not think there need be any fear of this enhancement pressing too severely on individuals.

30. It may be objected that there is no differentiation made for the several groups and talukas. Theoretically, there ought to be. But in the current Settlement the only differentiation made was the charge of 4 annas extra to 40 villages in the first group of Thul. All the rest in the three talukas were charged Rs. 3. If any differentiation were to be made, it should be by charging the villages of the higher groups in Thul and Kandhkot something more than Rs. 4, and I refrain from proposing this only because the additional enhancement might press too heavily on individuals.

31. I hope that Government will not hesitate to adopt these proposals as regards the rice rate. I need hardly say that the rate is far lower than that charged for good rice land in the Presidency, where the water is supplied not by a Government canal, but either by rainfall or by tanks, many, if not most, of which were probably constructed by the people themselves, and the supply from which is most precarious. I am ready at all times to support low rates for bad

lands, but for lands which, like these, are the prize-lands of the tract, I think it is absolutely sound and fair to take a full rate.

32. *Kharif other Flow and Sailabi*.—This may be called the prevailing rate of the tract. Flow for crops other than rice is the prevailing form of kharif irrigation, and the greater part of the revenue is paid by the lands receiving it.

33. The proposals under this head may be accepted. I should have thought that there was scarcely a village in Thul or Kandhkot in which a rise would not have been justified, whereas in 33 of Thul and 14 of Kandhko no enhancement is proposed, and in 20 of Kandhkot it is proposed actually to reduce the rates. It is to my mind, as I have already stated, clear from the large increases of cultivation and population that the tracts must have advanced and that the existing rates are very low.

34. I only very partially agree with the *dictum* of Mr. Giles on this subject, referred to by Mr. Baker in paragraph 4 of his report. If there be a large and steady increase of cultivation, the strong presumption is, in my opinion, that the rates can bear enhancement, and it lies on the person who says they will not to give special reasons in support of his contention. People will not, I believe, extend cultivation until they are well satisfied with the water-supply obtainable for existing cultivation. Whenever cultivation recedes, the fact is employed, and quite rightly, as evidence that the rates will not bear enhancement, and in the interest of the State the converse should be held good until the contrary is proved.

35. In the present case, however, Mr. Baker is strongly and deliberately averse from any further enhancement, and I bow to his judgment, which coincides with that of Mr. Wali Muhammad regarding the local circumstances of the various dehs, which they have taken infinite pains to investigate. The Irrigation officers also are contented with the rates. They yield also an enhancement of 9 per cent. in Thul and 7 per cent. in Kandhkot, which is fair. The enhancement in Kashmor is under 3 per cent. But the backward state of that taluka justifies no greater enhancement.

36. *Kharif Lift*.—The following changes are proposed in reference to these rates. In Thul, they are raised in 5, remain the same in 58, and are lowered in 33. In Kandhkot, they are raised in 5, stationary in 22, and lowered in 48. In Kashmor, they are stationary in 1 village and lowered in the rest.

I cannot myself see sufficient justification for the lowering in Thul and Kandhkot, particularly not in Kandhkot, where the increase in cultivation under this form of irrigation is very considerable. As an encouragement of lift cultivation, the reductions will be valueless since, as Mr. Baker points out, the zamindars generally do not know the rates. While, moreover, flow cultivation continues to increase, no measure will induce cultivators to adopt lift in preference.

37. On the authority of the Irrigation Commission, the Government of India have recently suggested the lowering of lift rates as a means of increasing the difference between rates for lift and flow, and thus proportioning the rate more nearly to the supply of water. The suggestion is one to which in my opinion it would be a mistake to give more than very limited effect in Sind. The Irrigation Commission overlooked the special circumstances of the Province. In Upper India, the rate considered is an occupier's rate. In Sind, the whole rate is levied from the landlord, and has to be assessed with reference, at least as much to the landlord's share of the crop, as to the amount of water supplied. Now, the crop obtained from a lift supply is in many parts of Sind considerably superior, and in the Upper Sind Frontier District is, I understand, quite equal to the crop obtained from flow. In the Jamrao tract, the Colonisation Officer reports the landlord's share of one-third of the crop in lift lands yields him as much as his share of one-half in flow lands. There the landlord really deserves no lower rate for lift than for flow. The lowering of the lift



rate does little or no good to the actual cultivator who bears the labour and expense entailed by the lifting, and is by way of being remunerated for that expense by the larger share he gets of crop. The one difficulty under which the zamindar labours with reference to lift irrigation is in procuring *haris*.\* When there is flow land within reach, the *haris* are apt to desert in a body from the lift lands. The difficulty has been seriously felt in the tracts adjoining the Jamrao area. But once the landlord has his *haris*, he gets, I understand, not infrequently as good rents per acre on the lift lands as he would on flow; and the difficulty he may have in procuring *haris* is shown in diminution of the area he cultivates, not in the rent he gets per acre.

38. On the whole, then, I think there is rarely sufficient reason for lowering lift rates in Sind in order to proportion them to the smaller amount of water taken. I should not, if I had been Settlement Officer, have proposed to lower them in the present case.

39. But the financial stake is small. The Engineers do not object, being under the impression—mistaken, as I think—that the lower rate will encourage this form of cultivation. I therefore do not press for any alteration of the proposals, even in Thul and Kandhkot. In Kashmor, I am in favour of the reductions as being a suitable method of avoiding any substantial general enhancement, which, for reasons already given, I consider inexpedient.

40. *Lift aided by Flow*.—It is proposed to lower the rates on this class of irrigation by making them equal to the lift rates. I am unable to support the proposal. The question as to the correct rate for this kind of irrigation is one on which reams have been written, and opposing views are entertained by good authorities. But after full deliberation Government have settled in their Resolution (No. 3352, dated the 3rd May 1904), on the Mehar Settlement, that for lift aided by flow there should be charged a rate intermediate between that of flow and lift. I can see no reason for making an exception to that order in favour of the Upper Sind Frontier District—an exception which will be taken as an excuse to re-open the whole question. It is to me quite incredible that there is no advantage derived from the measure of flow obtained. I am sure that land which gets partial flow must be more valuable, and easier to get and keep labour for, than purely lift land, and the produce is probably a degree more secure against fluctuations of water-supply. More water also is used. I should have liked to keep the rates as they are, since there is nothing to show that they have worked badly, but as that is not compatible with the grouping, and an intermediate rate is in conformity with the orders, I propose for Thul and Kandhkot the rates marked in italics in the three tables. For Kashmor, I should accept the rates proposed by the Settlement Officer for the reasons recorded in paragraph 39.

41. Apparently, the greater part of the land is genuine lift aided by flow. But there probably exists some flow aided by lift. I think that, in conformity with the orders, a rate for this class of land should be introduced, and that it should be charged flow rates—otherwise, the aid of Tapadars will certainly be enlisted to charge it with merely lift rates. The flow rates are so moderate that no hardship can possibly arise.

42. I do not think the misclassification of these lands by Tapadars at all a good reason for not making the distinctions in these classes of irrigation and the rates chargeable for them. According to my information, it is perfectly feasible to distinguish the classes of land by inspection. And it is the business of the supervising agency to keep the Tapadars up to the mark.

43. I accept the *Well* and *Barani* rates, and now turn to the *Rabi*.

44. *Rabi, Bōsi and Sailabi*.—This is a very important rate, applying as it does to the class of irrigation which, next to kharif flow, accounts for most of the cultivation of the division. It is proposed to assimilate the rate to kharif flow on the ground that this is the practice in most other parts of Sind, and that for the reasons specified by Mr. Wali Muhammad at page 63 of his report, it is desirable to encourage that form of cultivation.

\* The vernacular term for the cultivating annual tenant-at-will.

The effect is to cause reductions of rates involving, in bosi, a loss of Rs. 2,747 in Thul, of Rs. 2,569 in Kandhkot and Rs. 650 in Kashmir. In the last named taluka, the sacrifice is small, and for reasons already stated and because rabi cultivation has largely decreased there, I will not object to the reduction. Elsewhere, I think the rates ought not to be reduced more than is necessary for observation of the new grouping. In Thul, cultivation of rabi has increased but slightly (about 9 per cent. in the second five years of the decade as compared with the first). But in Kandhkot there has been a large increase. These facts prove that the existing rates have not discouraged rabi cultivation in either Kandhkot or Thul. It is true that the quantity of water taken is not large. But rabi cultivation by inundation, whether natural or artificial, represents a valuable constituent of soil, namely, retentiveness of moisture, or of situation facilitating the necessary flooding, and these are qualities for which charge may be rightly made. The crops—wheat, grain, jambho, sariha—judging by the prices per maund, are decidedly more valuable than either bajri and juari, the staple kharif crop, though far less valuable than til, which is frequently grown, yet the latter, it must be remembered, is specially liable to vicissitude, and must be regarded as a largely gambling crop. There would be no real gain even in simplicity, as the one rate would be just as easy as the other to assess, and there can, of course, be no confusion between lands irrigated for kharif or rabi.

45. In view of these considerations, I can see no justification for reductions of the rates with the mere object of making them conform to the rates for kharif flow. I therefore propose the rates specified in italics in the tables. My only doubt about them is whether Rs. 2-12 should not be the rate for Kandhkot, and a rise should not be taken in Thul.

46. The other rates I accept, with only the remark that, for "dubari" or second crop, I strongly support the increased rate of 8 annas for unwatered, and Re. 1 for watered land. The valuable advantage of the second crop is at present obtained for a ludicrously small payment.

47. The financial effect of my proposals as roughly calculated is given in the appended statement.

The general effect will be to raise the existing revenue in Thul by Rs. 15,481 or 6 per cent., in Kandhkot by Rs. 10,699 or 6 per cent., and in Kashmir by Rs. 181 or virtually *nil*. I feel confident that this enhancement is extremely moderate and would be easily borne, and repeat that only my confidence in the judgment and local knowledge of Mr. Baker, and respect for his strong convictions on the subject have prevented me from proposing higher rates. The assessment, will still be exceedingly low, and will leave an ample margin for enhancement, in consideration of further substantial improvement of the canals.

48. In view of the probable introduction of such improvements, I support the Settlement Officer and Deputy Commissioner in recommending a guarantee of only ten years, and, for safety, I think the usual saving notification should be issued, empowering Government to make an extra charge for any improvement in the water-supply which may be introduced before the expiration of the guarantee.

49. In conclusion, I must apologise for the length of this review, which, however, seemed to be required in order to set forth clearly the nature of the proposals and the reasons in support of them.

I have the honour to be,

My Lord,

Your Lordship's most obedient Servant,

J. W. P. MUIR MACKENZIE,  
Commissioner in Sind.



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STATEMENT showing the FINANCIAL RESULTS on the Rates proposed  
by the Commissioner.

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STATEMENT showing the RESULTS of the proposed RATES as compared with the existing Rates of DISTRICT on the basis of the Cultivation

KHARIF.																						
Taluka.	Group.	Number of Villages.	Description of Assessment.	GARDENS.			RICE FLOW.			OTHER FLOW AND SAILABLI.			LIFT.			LIFT AIDED BY FLOW.			BARANI.			
				Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Thul.	I	28	{ Existing Assessment...	200	2 8	698	638	3 4	2,052	10,184	2 8	46,590	4,974	2 4	11,128	2,544	2 8	6,347	...	1 8	...	
			{ Proposed Assessment...	200	3 8	700	638	4 0	2,552	10,184	2 12	52,756	4,974	2 4	11,192	2,544	2 8	6,360	...	1 0	...	
	II	52	{ Do. do. ...	427	3 4	1,454	823	3 0	2,523	37,795	2 4	86,750	6,253	2 0	13,179	2,405	2 4	5,638	...	1 8	...	
			{ Do. do. ...	427	3 4	1,388	823	4 0	3,202	37,795	2 8	94,468	6,253	2 0	12,506	2,405	2 4	5,411	...	1 0	...	
	III	10	{ Do. do. ...	70	3 4	229	60	3 0	180	8,172	2 4	18,387	1,736	2 0	3,472	820	2 4	1,947	...	1 8	...	
			{ Do. do. ...	70	3 0	210	60	4 0	240	8,172	2 4	18,387	1,736	1 12	3,038	820	2 0	1,640	...	1 0	...	
	TOTAL...		{ Do. do. ...	697	...	2,381	1,521	...	4,755	65,151	...	1,51,757	12,963	...	27,779	5,769	...	13,832	...	...	...	
			{ Do. do. ...			2,298			6,084			1,65,631			26,736			13,411				
	Kachkot.	I	41	{ Existing Assessment...	85	3 4	276	2,167	3 0	6,501	37,764	2 4	84,621	5,123	2 0	10,108	2,244	2 4	5,627	37	1 8	56
				{ Proposed Assessment...	85	3 4	276	2,167	4 0	8,068	37,764	2 8	94,410	5,123	2 0	10,246	2,244	2 4	5,049	37	1 0	37
II		14	{ Do. do. ...	104	3 4	330	454	3 0	1,962	11,594	2 4	25,791	2,690	2 0	5,226	303	2 4	674	2	1 8	3	
			{ Do. do. ...	104	3 0	312	454	4 0	1,816	11,594	2 4	26,086	2,690	1 12	4,707	308	2 0	616	2	1 0	2	
III		20	{ Do. do. ...	85	3 0	259	297	3 0	691	6,617	2 2	14,886	1,237	1 14	2,399	197	2 2	482	...	1 8	...	
			{ Do. do. ...	85	3 0	255	297	4 0	1,188	6,617	2 0	13,672	1,237	1 8	1,605	197	1 12	345	...	1 0	...	
TOTAL...		{ Do. do. ...	274	...	805	1,918	...	8,754	56,175	...	1,25,278	9,050	...	17,733	2,749	...	6,133	39	...	59		
		{ Do. do. ...			848			11,672			1,34,168			16,518			6,010			39		
Kashmar.	I	14	{ Existing Assessment...	25	3 4	61	169	3 0	507	12,756	2 4	30,626	764	2 2	1,594	270	2 4	606	...	1 8	...	
			{ Proposed Assessment...	25	3 4	61	169	4 0	676	12,756	2 8	32,623	764	1 14	1,493	270	1 14	506	...	1 0	...	
	II	14	{ Do. do. ...	30	3 0	93	55	3 0	165	4,802	2 2	10,556	1,285	1 14	2,457	69	2 2	152	23	1 8	36	
			{ Do. do. ...	30	3 0	90	55	4 0	220	4,803	2 2	10,297	1,285	1 10	2,087	69	1 10	112	23	1 0	23	
	III	8	{ Do. do. ...	27	3 0	61	87	3 0	261	1,110	2 2	2,401	186	1 14	353	8	2 2	16	...	1 8	...	
			{ Do. do. ...	27	3 0	61	87	4 0	348	1,110	2 0	2,220	186	1 8	279	8	1 8	12	...	1 0	...	
	TOTAL...		{ Do. do. ...	82	...	255	311	...	933	19,649	...	43,783	2,235	...	4,404	847	...	774	23	...	36	
			{ Do. do. ...			252			1,244			45,050			3,799			630			23	



Assessment in the THUL, KANDHKOT and KASHMOR TALUKAS of the UPPER SIND FRONTIER  
of 5 years 1898-99 to 1902-1903.

RABI.																								
BOSI AND SAILABI.			BOSI AND SAILABI AIDED BY LIFT OR FLOW.			FLOW, LIFT AND LIFT AIDED BY FLOW.			DUBARI.						BARANI.			TOTAL.		DIFFERENCE.				
									WATERED.			UNWATERED.												
Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Rate.	Assessment.	Area.	Assessment.	Increase.	Decrease.			
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44			
Acres.	Rs. a.	Rs.	Acres.	Rs. a.	Rs.	Acres.	Rs. a.	Rs.	Acres.	Rs. a.	Rs.	Acres.	Rs. a.	Rs.	Acres.	Rs. a.	Rs.	Acres.	Rs.	Rs.	Rs.			
8,163	2 12	22,467	31 3 8	...	102	675 3 4	...	2,193	146 0 4	...	57	1,741 0 4	...	439	...	1 8	...	38,301	{ 92,058	7,630	...			
8,168	2 12	22,462	31 3 12	...	116	675 3 12	...	2,531	146 1 0	...	146	1,741 0 8	...	871	...	1 8	...	...	{ 99,686	...	...			
9,240	2 12	25,414	304 3 8	...	965	1,096 3 4	...	3,568	75 0 4	...	18	2,089 0 4	...	524	...	1 8	...	60,507	{ 140,031	8,454	...			
9,240	2 12	25,410	304 3 8	...	1,064	1,093 3 8	...	3,896	75 1 0	...	75	2,089 0 8	...	1,045	...	1 8	...	...	{ 148,615	...	...			
899	2 12	2,474	5 3 8	...	16	139 3 4	...	453	10 0 4	...	3	109 0 4	...	29	...	1 8	...	12,020	{ 27,000	...	603			
899	2 12	2,472	5 3 4	...	16	139 3 4	...	452	10 0 8	...	5	109 0 4	...	27	...	1 8	...	...	{ 26,487	...	...			
18,307	...	{ 50,355	340	...	{ 1,083	1,910	...	{ 6,215	231	...	{ 58	3,039	...	{ 992	...	...	...	110,828	{ 239,207	15,461	...			
...	...	{ 50,344	...	...	{ 1,196	...	...	{ 6,819	...	...	{ 226	...	...	{ 1,043	...	...	...	...	{ 274,088	...	...			
7,221	2 12	19,521	...	3 8	...	656 3 4	...	2,119	19 0 4	...	6	1,383 0 4	...	350	...	1 8	...	56,699	{ 128,595	12,063	...			
7,221	2 10	18,955	...	3 8	...	656 3 8	...	2,296	19 1 0	...	19	1,383 0 8	...	692	...	1 8	...	56,699	{ 140,648	...	...			
1,121	2 12	3,028	1 3 6	...	3	7 3 4	...	21	6 0 4	...	1	150 0 4	...	39	...	1 8	...	16,437	{ 36,478	71	...			
1,121	2 10	2,943	1 3 4	...	3	7 3 4	...	23	6 0 8	...	3	170 0 4	...	38	...	1 8	...	16,437	{ 36,549	...	...			
2,020	2 10	5,357	5 3 4	...	16	20 3 0	...	60	14 0 4	...	5	92 0 4	...	23	...	1 8	...	10,784	{ 24,328	...	1,435			
2,020	2 10	5,463	5 3 0	...	15	20 3 0	...	60	14 0 8	...	7	92 0 4	...	23	...	1 8	...	10,784	{ 22,893	...	...			
10,362	...	{ 27,006	6	...	{ 19	693	...	{ 2,200	39	...	{ 12	1,625	...	{ 412	...	...	...	83,920	{ 189,301	10,600	...			
...	...	{ 27,361	...	...	{ 18	...	...	{ 2,379	...	...	{ 29	...	...	{ 753	...	...	...	...	{ 200,000	...	...			
753	2 10	1,978	...	3 8	...	94 3 4	...	3 7	19 0 4	...	5	142 0 4	...	38	54	1 8	82	16,026	{ 36,024	1,527	...			
753	2 6	1,788	...	3 6	...	94 3 6	...	317	19 0 8	...	10	142 0 4	...	35	54	1 8	82	16,026	{ 37,551	...	...			
612	2 10	1,608	3 3 4	...	10	16 3 0	...	48	24 0 4	...	6	77 0 4	...	20	116	1 8	174	7,113	{ 15,324	...	1,020			
612	2 2	1,301	3 3 2	...	9	16 3 2	...	56	24 0 8	...	12	77 0 4	...	19	116	1 8	174	7,113	{ 14,304	...	...			
253	2 10	603	...	3 4	...	11 3 0	...	33	12 0 4	...	3	87 0 4	...	22	...	1 8	...	1,781	{ 3,833	...	320			
253	2 0	506	...	3 0	...	11 3 0	...	33	12 0 8	...	6	87 0 4	...	22	...	1 8	...	1,781	{ 3,507	...	...			
1,618	...	{ 4,249	3	...	{ 10	121	...	{ 388	55	...	{ 14	306	...	{ 60	170	...	256	24,920	{ 55,181	181	...			
...	...	{ 3,595	...	...	{ 9	...	...	{ 400	...	...	{ 28	...	...	{ 76	...	...	...	...	{ 55,362	...	...			

J. W. P. MUIR MACKENZIE,  
Commissioner in Sind.

# SETTLEMENT REPORT OF THUL, KANDHKOT AND KASHMOR TALUKAS.

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No. 82 OF 1904.

REVENUE DEPARTMENT.

*Settlement Officer's Office,  
Jacobabad, 18th July 1904.*

From

A. W. M. HASAN ALI, ESQUIRE,  
B.A., LL.B.,  
Settlement Officer,  
Upper Sind Frontier,

To

C. M. BAKER, ESQUIRE,  
I.C.S.,  
Deputy Commissioner,  
Upper Sind Frontier.

SIR,

I have the honour to forward herewith—

(a) My report on the revision of Settlement in Thul, Kandhkot and  
Kashmor Talukas,

(b) Appendices I to XXII (Appendices I and II maps, being in a  
separate tin case),

for favour of submission to the Commissioner in Sind.

I have the honour to be,

Sir,

Your most obedient Servant,

A. W. M. HASAN ALI,  
Settlement Officer,  
Upper Sind Frontier

No. 81 of 1904.

REVENUE DEPARTMENT.

Jacobabad, 18th July 1904.

From

A. W. M. HASAN ALI, ESQUIRE,  
B.A., LL.B.,  
Deputy Collector,  
Upper Sind Frontier,  
On Special Duty,

To

THE HON'BLE MR. J. W. P. MUIR MACKENZIE,  
M.R.A.C., I.C.S.,  
Commissioner in Sind.

SIR,

In compliance with your predecessor's No. 2191 of the 6th August 1903 and Government Resolution No. 7841 of the 10th November 1903, I have the honour to submit the following report and proposals in connection with the Revision Settlement to be introduced in the Thul, Kandhkot and Kashmor Talukas of the Upper Sind Frontier District.

2. *Position.*—The Upper Sind Frontier District is composed of five talukas running contiguous from east to west, north of the Sukkur District, formerly called the Shikarpur Collectorate. The three talukas to which these proposals relate form a Revenue Division in charge of a Deputy Collector, and lie between latitudes  $28^{\circ}$  and  $29^{\circ}$  and longitudes  $68^{\circ}$  to  $70^{\circ}$ .

3. *Boundaries.*—The division in question is bounded as follows:—

North, by the Kalat territory recently leased to the British Government, and administered by the Baluchistan Agency, and a portion of the Panjab.

West, by the Jacobabad Taluka of the same district.

South, by the Shikarpur Taluka of the Sukkur District, the River Indus and the taluka of Ghotki.

East, by Ghotki and Ubauro Talukas and by the Bahawalpur State.

4. *Area.*—The extreme length of Thul Taluka as shown in Colonel J. Anderson's Settlement Report of 1885 is 45 miles, east to west, and an average breadth of 18 miles, north to south, while Mr. Seymour, who submitted the first report for Kashmor in 1893, gives the mean average length of the then taluka as 22 miles and the mean average breadth as 31. The present Kandhkot Taluka was then included in Thul and Kashmor, as I shall show later on. The figures above given, however, cannot be compared, as in the one instance the extreme length is taken and the mean length in the other. I shall not be far wrong, however, if I take 60 miles as the average mean length of the division, and the average mean breadth as 27.



5. The present area of the three talukas in square miles as supplied by the officer in charge No. 12 Party (Sind) of the Survey of India is as below :—

No.	Taluka.	Area in Square Miles.
1	Thul ...	498.12
2	Kandhkot ...	549.55
3	Kashmor ...	482.62
TOTAL ...		1,530.29

The above figures do not tally with those given by Messrs. Disney and Seymour in their first Irrigational Settlement Reports for the then Thul and Kashmor Talukas, which are 821.9 and 753.17 square miles, giving a total of 1574.26 square miles. The difference of 43.97 square miles has thus to be accounted for. It might be stated, however, that in Kashmor and Kandhkot the area varies according to the periodical alluvion and diluvion of the river, which probably accounts for the difference.

6. *Main Physical Features.*—A reference to the map will show that the three talukas under notice are formed of a narrow, but long strip of land, stretching from the river on the east to about the middle of the district, where the Thul Taluka ends about 3 miles from the head-quarters of Jacobabad. The country is a flat plain, but at several places there appear high and extensive sand hills, and numerous high mounds of earth, but that adjacent to the river in the Kashmor Taluka and north of it is generally high, which has a gradual fall towards the south-west. This gradual incline is continued through Kandhkot and Thul to Jacobabad, where there is a depression extending over several miles, giving splendid rice and *dubari* (twice-cropped) cultivation. Then the level of the country again rises, and reaches a maximum near the hills beyond the Shahdadpur Taluka, known as the Khirthar hills. The land is from 170 to 273 feet above sea level. Kashmor is about 257 feet higher than the sea, while Jacobabad is only 180. This last is about 90 feet below the level of the Indus. Along the Kashmor Band from about Chandul Daro, near Badani, there commence deep depressions, one of which, known as the Sind Dhora (depression), starting from Badani, extends to a distance of about 28 miles, with a very uneven course; and it is popularly said that this *dhora* formed the bed of the Indus in former ages.

7. To the north of the talukas of Kashmor and Kandhkot, at a distance of about 16 miles from our border, lie the well known hills, Koh Suleman. These hills extend to a considerable length, and are inhabited by Bugtis, Maris and other Baluch tribes. The country lying between these hills and Kashmor has been almost annually subject to hill torrents coming down these hills by natural water-courses, known as the *nais* (rivulets) of Shori, Zamurdan, Gokalwali, Dolewari, Lene and Sheikh Lanjhu, after the rains. The Kandhkot Taluka is also subject to hill floods from the *nais* known as Byam Shahi, Gazi, Phaiz Bogi, Duzd Kushta, Sarposh and others. Of these *nais*, the Shori floods sometimes crossed the Kashmor Band at its north-east corner and reached as far as the northern embankment of the Desert Canal. These floods used to irrigate portions of the northern dehs Selachi, Gishkori and Chachar. If, on the other hand, the floods came down in rabi, some parts of dehs Kehwali, Doriewali and Pako Kashmor used to be irrigated. But more often these torrent waters caused considerable damage, to arrest which an escape channel was constructed above the head regulator of the Desert Canal, which passed a considerable amount of this surplus water down the canal, while the rest escaped to the river towards the south. Since the excavation of the Adio Wah last year, above the Desert, however, the progress of these floods has been arrested, and the water now

passes down the new canal, thus aiding it to a certain degree, but probably silting it up also. Owing to this diversion of torrent water, the dehs of Lain Purani, Pako Kashmir, Gulanpur and Karimabad, which were formerly subject to its ravages, have been saved; but dehs Selachi, Gishkori, Chachar and Mahar are still under its influence, and large areas of kharif crops are sometimes ruined.

In Kandhkot Taluka, the lands to the north of the Desert Canal were also formerly subject to those hill floods, as stated above. But since the construction of the Frontier Raj Wah, these floods have ceased doing any material damage, while the Thul Taluka has had complete immunity from the ravages of these floods.

Mr. R. Giles, late Commissioner in Sind, in his letter No. 625 of the 10th March 1901 to the address of Government, described the three talukas as "a fairly homogeneous tract." I am therefore induced to write one joint report for them all, as I consider it would be wasting my own time, as also of the officers who have to review the proposals, as well as of Government, were I to write separately. The course I have adopted would, moreover, avoid unnecessary repetitions.

7 (a). The country from the riverside as far as the Manchar lake in the Kashmor Band. Schwan Division of the Larkana District was subject annually to river floods of greater extent, and far-reaching consequences, prior to the year 1874. The floods of 1874 were of greater extent and duration than any previously known. The flood began early in June, with a high river, and by the 19th of that month what is known as the Kashmor *let*, or flood, began to spread over the district, flowing in a westerly direction. This was augmented in volume by hill floods from Kachi, and, conjointly with high winds which prevailed in portions of June, July and the early part of August, had the effect of destroying in a greater or less degree nearly 80 towns and villages, besides nearly sweeping away the important town and Military station of Jacobabad. These recurring floods were very disastrous. In December 1876, Colonel Sir W. L. Merewether, the then Commissioner in Sind, wrote to Government—

"3. In the Commissioner's opinion, there can be no question of the imperative necessity of making this Band complete and sound. Until it is, not only is the Frontier District, in which it is most desirable to foster cultivation and induce the wild inhabitants to adhere to industrious, peaceful habits, liable to be covered by disastrous floods, rendering kharif cultivation impossible, or, when attempted, sure of destruction, but the destroying element passes on into the Shikarpur Collectorate, and has this last season produced heavy loss to Government and to the people in the talukas of Shikarpur, Naushahro, Rotodero, Sujawal, Kambar, Larkana, Nasirabad, Mehar and Kakar, and ruined magnificent crops, then nearly ripe, in the Dadu and Sehwan Talukas of the Karachi Collectorate, having followed a course of more than 200 miles after leaving the river. Its strength was partially added to, certainly, by another flood from below Sukkur—the Jhali flood, but by far the greater injury arose from the Kashmor water.

4. The loss to Government has by a late return been estimated at over 3 lakhs of rupees in the Shikarpur and Karachi Collectorates alone; that for the Frontier District has not yet been received, but it will swell the total to about 4 lakhs. The loss to the people in property and realisations from crops, with loss of labour and capital, must, at the lowest estimation, be put down to three times that amount, or nearly 12 lakhs of rupees. Further comment is unnecessary. \* \* \* \* \*

To protect the country from the devastating influence of this almost yearly over-flow of the Indus, the Kashmor Band was undertaken by Government. It was begun in 1874-75, and completed in 1878-79. It begins from the mouth of the Begari, and runs all along the river frontage to a distance of 48 miles, ending about 4 miles above the village of Kashmor. It has been a very productive work, in so far that lands on the protected side of it have greatly improved, and have been ploughed without risk from year to year; and people have been able to establish permanent villages all over, which before the Band were constantly being swept away along with their cattle and belongings. Besides this, the cultivation in the *kacha* itself has benefitted immensely by the construction of the Band because, the level of the lands surrounding the river being generally high, the spill water from the river found its way



unchecked to low-lying plains far and wide before the construction of the Band, leaving the river *kachas* practically without moisture.

The Kashmir Band shut out the over-flow of the river effectively. There have been, however, occasional breaches in it, some of which have been more or less serious. In 1894, the head regulator of the Unhar Wah was swept away and caused a bad breach in the Band. In 1895, again, the Band was cut away in Miles 9 and 12. Suffice it to say that, whenever the inundation has been a very favourable one, a breach has usually been the result; and only last year a serious breach occurred in Mile 8 of the Band which gave considerable trouble, but was, eventually, successfully closed. The Band, together with its loops, have up to date cost Government about 18 lakhs of rupees. The total length of the loops is 29 miles.

8. The general nature of the soil is an alluvial deposit brought down by canals, occasionally covered with a layer of loose sand. The land on the north of the Desert Canal is a mixture of sand and earth of a reddish tint, hard and cracked.

The nature of the soil.

Number of Dehs.

9. The three talukas as at present constituted contain dehs as below :—

No.	Taluka.	Dehs.
1	Thul ...	96
2	Kandhkot ...	87
3	Kashmor ...	60
	TOTAL ...	243

Of the 87 in Kandhkot, 75 belong to the *paka* and 12 to the *kacha*. Of the latter, 2 dehs, *viz.*, Keti Belo Sadhuja and Bindi (mentioned in Government Notification No. 4756-A of the 30th July 1900), were completely washed away by the river before their transfer to Kandhkot, and no longer exist. These two must therefore be struck off. The number of dehs existing at the time of making these proposals in the taluka was therefore only 85. Under the circumstances, the total number of dehs in the three talukas affected by these proposals are 241 according to the current Settlement. But 2 dehs in Kashmir and 2 more in Kandhkot have been recommended herein to be broken up, each into two, *vide* paragraph 88. These proposals therefore relate to a total of 245 dehs.

10. The population of the three talukas at the census of 1901, as compared with the census of 1891, is shown below :—

Population.

Taluka.	1891.			1901.			INCREASE.	DECREASE.
	Males.	Females.	TOTAL.	Males.	Females.	TOTAL.		
Thul ...	17,379	15,327	32,706	26,106	21,680	47,786	15,080	...
Kandhkot ...	16,663	13,706	30,369	27,740	20,983	48,723	18,354	...
Kashmor ...	20,081	15,082	35,763	21,509	16,670	38,179	2,416	...
TOTAL ...	54,123	44,715	98,838	75,355	59,333	1,34,688	35,850	...

The following table shows the percentage increase and the relative density of population per square mile for each taluka separately:—

Taluka.	Percentage Increase of Population.		Density per Square Mile.	
	1901.	1891.	1901.	1891.
Thul ...	46.1	...	95.9	65.7
Kandhkot ...	60.4	...	88.7	55.3
Kashmor ...	6.8	...	79.1	74.1

The taluka of Kandhkot did not exist in 1891, but the figures for that taluka have been abstracted by the Provincial Census Department and shown in the report for the census of 1901. The figures showing comparative density for each taluka separately have not been shown in the Census Report, and have had to be found out in the office. But in calculating the density for 1891, I have had to employ the present area of the respective talukas, as the then mileage of Kandhkot cannot be ascertained.

There has been a very large and substantial increase in the population of Thul and Kandhkot, but comparatively slight so far as Kashmor is concerned. The chief reason for the increase will be found in the total figures of cultivation for the two years, which are given below. No comparison can be made between the figures for the respective talukas, as the figures for Kandhkot for 1891 are not available:—

No.	Taluka.	1891.		1901.	
		A.	g.	A.	g.
1	Thul ...	81,524	14	1,22,306	34
2	Kandhkot ...	...	...	97,334	25
3	Kashmor ...	88,564	1	60,805	33
	TOTAL ...	1,70,088	15	2,80,447	12

I submit that the increased cultivation must necessarily have attracted people from across the border. The very large increase in the population of the division as a whole is also in some measure due to famine in Marwar and Rajputana at the time of the census of 1901, as also to the re-modelling works of the Desert Canal, which were in full swing at the time, and employed several thousand persons. The figures of population according to different religions stand as follow:—

Taluka.	1891.				1901.			
	Hindus.	Musal-mans.	Others.	TOTAL.	Hindus.	Musal-mans.	Others.	TOTAL.
Thul ...	3,771	40,988	97	44,856	4,206	43,577	3	47,786
Kandhkot ...	...	...	...	...	4,341	44,379	3	48,723
Kashmor ...	4,733	49,194	55	53,982	2,997	35,177	5	38,179
TOTAL ...	8,504	90,182	152	98,838	11,544	123,133	11	134,688
INCREASE...	...	...	...	...	3,040	32,951	...	85,991
DECREASE...	...	...	...	...	...	...	141	141
NET. INCREASE ...	...	...	...	...	...	...	...	35,850



- which gives an increase of 36.27 per 100 in the three talukas of the division over the census of 1891.

11. The following figures, showing the agricultural population of the talukas under notice, *vide* Appendix VI, have been taken from the Census Report:—

Agricultural Population.

No.	Taluka.	1901.	1891.
1	Thul ... ..	3,202	43,084
2	Kandhkot ... ..	3,158	...
3	Kashmor ... ..	5,720	18,188
	TOTAL ... ..	12,098	61,272
	NET DECREASE...	...	49,174

The above table would appear to give a probable figure for Thul in 1891, so far as agriculturists are concerned, but the figures for Kashmor are not reliable. I consider that the old Kashmor Taluka contained a much larger number of the cultivating class than shown. Kandhkot did not exist then, hence figures for that taluka for 1891 are not available.

12. Nor, again, are the figures in the column for 1901 reliable. In the Census Report, the number of agriculturists in the whole of the district is given as 172,208, while the total population for the district is 232,045. According to these figures, the agricultural population of the district as a whole forms 74 per cent. of the whole population, which is the more probable, the district being almost wholly agricultural. It follows, therefore, that the net decrease in agricultural population shown above must also be not real. It also follows that almost the whole of the total increase in population given above consists of agricultural population.

13. There is no emigration or immigration proper from and into the division, beyond the shifting of cultivating classes, labourers, and cattle-owners, who occasionally remove from one place to another temporarily. Permanent tenantry is unknown throughout the district; therefore, cultivators continue changing land and masters. Again, as land has to be allowed to lie fallow for some years, the people on the border of the Mazari country and the Bahawalpur State have to remove for a time according to where they find land for tillage.

14. The details of agricultural stock are as usual given in Appendix X, and relate to the last 5 years. The figures show the number to be varying from year to year; but I cannot pass over the fact that registration of this stock is by no means satisfactory. The duty devolves upon the already over worked tapadars, and they are not at all to blame in the matter, because it has been found that it is almost impossible to get true figures from ignorant cultivators. Frequently, they give false figures, being afraid lest Government take away their stock for purposes of the Commissariat. Thul and Kandhkot supply goats, sheep and oxen for the markets of Shikarpur, Sukkur and Jacobabad, while beef for the Quetta Commissariat is largely supplied by the Jacobabad market. And oxen from Thul, Kandhkot and Kashmor are usually carried to the Panjab as they can be got cheaper and of better quality here.

15. The plough oxen of the division under consideration are, however, in no way superior to, healthier and stronger than in, the rest of Sind. Good,

sound and healthy stock, true to type, is almost impossible to get. In this respect, I believe the agricultural stock of the Jacobabad Taluka is far superior, from its proximity to Kelat territory, where the stock is infinitely so, being well built and bred. The cows of the country are specially poor, and milk much less than ordinary cows in Lower Sind. On the other hand, goats and sheep, especially from the hills to the north, are fine in quality. It will not be out of place here to say a few words as to the quality of horses, mares and mules, though not agricultural stock proper. The Baluchis as a rule are fond of their horses and mares, and especially the latter, which they possess both for riding and breeding purposes; and so long as they can help it, they will not part with them. The Government stallion stables at Jacobabad, which are perhaps the largest in the Province, and those out in the talukas, have contributed much to improve the quality of the breed, and large numbers of mares are periodically branded by the Veterinary Department for breeding purposes. Mule-breeding is also slowly taking root, as mules are sold, perhaps, better than ordinary horses.

There has been no serious epidemic among cattle during the past ten years.

Communications.

16. The following table will show the number and length of roads in the division :—

No.	Taluka.	Number of Roads.	Total Length in Miles.
1	Thul ...	26	258
2	Kandhkot ...	27	226
3	Kashmor ...	21	145
TOTAL MILEAGE ...			629

No new roads have been constructed in Thul and Kandhkot during the expiring Settlement; but 5 new roads were made in Kashmor, of the aggregate length of  $21\frac{1}{2}$  miles, at a cost of Rs. 372. The Local Boards maintain these roads departmentally, at a cost of about Rs. 9,000 a year, throughout the division. The longest road is the one known as the Telegraph road, from Jacobabad to Dera Ghazi Khan, a distance of 226 miles. This road passes, at a distance of 6 miles from Thul, through Kandhkot and Kashmor. The distance up to Kashmor is about 76 miles; thence to Dera Ghazi Khan is about 150 miles. Beyond our boundary, it is maintained by the Panjab Government. The ground is very soft and friable all over the division, owing to which the roads are badly cut up by the heavy cart traffic passing over them, and it becomes necessary occasionally in the inundation season to let water on to some of the roads to harden the earth. There is no stone anywhere in the division which could be used for purposes of metalling the roads.

17. The railway nowhere passes through the division, but the Sind-Pishin section of the North-Western Railway passes at a small distance from the western villages. The stations of Humayun and Jacobabad are about 4 to 6 miles from the boundary of Thul Taluka. The flag stations of Abad and Kot Sultan are 1 to 6 miles; but the railway is seldom used for purposes of import and export. Jacobabad and Shikarpur being within a distance of about 25 to 35 miles from places most remote in the taluka, merchants prefer transporting their produce by means of carts.

The main line of the North-Western Railway passes from across the River Indus through Rohri, Ghotki, Mirpur and Ubauro Talukas of the Sukkur



District. The stations of Mahesar and Ghotki are opposite the Kandhkot Taluka, while those at Sarhad and Daharki are opposite Kashmir Taluka. However, even these stations are not availed of for purposes of export or import. The zamindars on the southern side of Kandhkot deal with Shikarpur and Jacobabad markets by road, while almost the whole of Kashmir and the upper part of Kandhkot avail themselves of the boat traffic on the Indus to Sukkur, the freight being cheaper than by road or rail.

The ordinary means of transport by road is by carts and camels only. A cart can convey 12 maunds, a camel 6 maunds. A boat on the river can carry from 250 to 500 maunds. The rates of carriage per maund per mile are as follow :—

Taluka.	Cart.	Camel.	Boat.
Thul...	3 pies	2 pies	.....
Kandhkot	1½ to 2 pies	1½ pies	} 8 pies per Kandi down the river and 4 pies up.
Kashmor	3 pies	2 pies	

18. All the taluka towns in the division are market towns to a certain extent, though not on a large scale. Of these, Thul has a much larger trade, both in imports and exports, than Kandhkot and Kashmir. Similarly, the villages of Mirpur and Mubarakpur in Thul, and Ghauspur in Kandhkot, are also market towns for local consumption. But the markets of Jacobabad, Shikarpur and Sukkur are easily accessible, and the bulk of the produce of the division finds its way to those places, the merchants there having business agencies all over the division, and also direct dealings with zamindars in many instances. No European firm has any office, branch or agency anywhere in the talukas. Messrs. Ralli Brothers of Karachi have an agency in Jacobabad, however, and no doubt many zamindars deal with them directly, especially those of the Thul Taluka. It is also not unusual for merchants or their agents to buy up produce on the threshing floors or grain yards, and frequently also the crops while yet standing unreaped. Large quantities of juari, bajri, tilseed, jambhū, sirah, gram, wheat, etc., are thus secured by forward contracts. Ordinarily, therefore, the zamindars have little or no difficulty in disposing of their produce, but the rates of course vary for several reasons. If, for instance, a zamindar is indebted to a Bania, or goes to him for a loan, the latter drives a hard bargain, and compels the zamindar to enter into an agreement to sell to him all his crop at a particular rate, no matter what the current rates then, or at the time of delivery be. This state of things is common, and is a fruitful source of the impoverishment of small land-holders.

19. Frequently, however, there is no demand for cereals at Karachi, the ultimate destination of all produce; and the rates continue low for an unusually long time. The rates for the last kharif and rabi produce have thus continued abnormally low for several months, and many a zamindar who stored up his grain, preferring to wait for better times, has had to bear a heavy loss. One of such men told me he was compelled to sell his juari recently at Shikarpur at Rs. 26 a kharar with all carriage paid, while the current rate in Jacobabad, at the time of my writing, for gram is only Rs. 1-12 a maund. Thus, it will be seen that zamindars had to face a serious privation last year: on the one hand, the til (*sesamum*) crop almost entirely failed, juari and bajri were destroyed by locusts, and on the other whatever remained could fetch very little price.

20. The principal exports of the division are juari, bajri, til, wheat, *matar* (peas), gram, oilseeds, ghi, cots and other wooden articles. The imports are *gur* (jagri), sugar, cotton, pulses, snuff, all kinds of cloth, spices, cocoanuts, kerosine oil (which is, however, very little in demand), dates, etc.

21. There are no manufactures or industries in the division worthy of the name.

Manufactures and Industries.

Kashmor is known for its lacquer work, which is carried on by local non-Baluchi artizans of the Drakhan class. The work is well known all over Upper Sind, but is far inferior to that turned out at Khanot in the Hala Taluka of the Hyderabad District. The industry is slowly dying for want of encouragement and support, and the Drakhans are taking to agriculture. The remoteness of Kashmor from markets, such as Sukkur and Shikarpur, is also a reason for the trade not thriving; and the result is that the artizans cannot make a living. There are shoe-makers scattered over the division who ply their trade, tan and prepare leather for shoes and other leather articles. But even this class find agriculture more profitable. A few Baluchi women, specially the Jakhranis, manufacture carpets which have beautiful designs and are very substantial and strong in texture. But there is no regular trade in this branch, and it is rare that one comes across such carpets in the market.

22. The climate of the district as a whole is too well known, and begs a description.

Climate and Rainfall.

However, a few facts relating to the climate of the three talukas of Thul, Kandhkot and Kashmor will not be out of place. It is very hot and trying, but dry during the period May to September, which constitutes the summer season, the temperature being very variable. Strong hot winds blow from about the end of April to about the middle of July, especially in the tract of the treeless country to the north of the Desert Canal abovementioned. From about the middle of July to September, the hot winds cease greatly, but it becomes extremely close, especially towards the evening and for a greater portion of the night. It cools a bit towards the latter part of the night. All through the season pankhas are required all day and night, and cases of sun-stroke and heat apoplexy are common at this time of the year. Mosquitoes and sand flies greet us in abundance where ever we go, day and night; but in Kashmor the pests are so persistent that it is almost impossible to find rest. In March and April, the weather is moderate and comparatively pleasant; so also in the latter part of September. Thereafter, the malarial season sets in, which lasts up to about the end of November, owing to the soaking of land all round for agricultural purposes, and accumulation of water in low-lying places, where it stagnates. During this season, intermittent fever accompanied by lung diseases is generally the prevalent sickness of the country, and very few escape it. It is only on the cold weather setting in, about December, that it drives away sickness; and the following two months are pleasant and enjoyable, though there is always danger of pneumonia. The maximum temperature in the hot weather is 114° F. in Thul; while the minimum temperature in winter has been 38° F. in Kashmor. Ice and frost prevail in consequence of low temperature, which are not uncommon even in February and March. In June, July and August, the force of the heat is fully experienced, and sometimes there is hardly any difference in temperature during day and night.

23. The average rainfall in Kashmor during the past 9 years has been

Rainfall.

2.53 inches, while the average for 10 years in Thul has been 2.10 inches. There was no rain gauge in Kandhkot until 1902-03, hence no figures have been available for that taluka. The rainfall throughout the division in 1896-97, 1898-99 and 1899-1900 has been but nominal. There is no cultivation on rainfall in Thul whatever; in Kandhkot and Kashmor such cultivation does exist, but very slightly. The fall of rain is not so important so far as agriculture is concerned in a Province like Sind, where the cultivation almost wholly depends upon river water, except in hilly tracts on high levels, away from the reach either of natural inundation or Government canals. However, seasonable rains in July and August benefit kharif crops, especially in the latter month, when the crops greatly need the final watering; on the other hand, as the canals are not perennial, the winter rains of January and February are very valuable for the rabi crops, and without them a full rabi crop is rarely secured.



24. The sources of irrigation of the three talukas of the division under Irrigation. Settlement are three, viz. :—

(a) Inundation, due to over-flow of the river; (b) irrigation by Government canals; and (c) cultivation due to rainfall.

(a) The lands between the river and the protective embankment depend for their supply on river inundation. The river has considerably changed its course during the last five years, with the result that there has not been much inundation in dehs Khewali, Domiwali, Badani, Makhan Belo, Miani, Khali Wadi, Khahi Nandhi Kacho, Gublo, Bhanar, and Shahgarh Kacho, in which large tracts of land have lain waste, while in dehs Bindo Murad, Kubhar and Gondak Kosh the river has wrought a considerable change, owing to erosion. It has rendered land uncultivable on the one hand, and thrown up fresh land on the other. There are some other dehs which are being altered in character at the present moment. A similar change has also been brought about by the action of the river in the Kandhkot Taluka, also, during the last 10 years. The present taluka of Thul has, however, had complete immunity, as the river nowhere touches it.

The following statement will show the area dependent on the river directly :—

Taluka.		Area.	
		A.	g.
Kandhkot	...	29,117	3
Kashmor	...	1,58,487	12
TOTAL	...	187,604	15

The land entirely depending on rainfall, for which no canal water is available, is shown below :—

Taluka.		Area.	
		A.	g.
Kandhkot	...	96	25
Kashmor	...	12,429	12
TOTAL	...	12,525	37

All this land is situate on the north of the Desert Canal, and is for the most part high and sandy ground, which is irrigated either by floods from the hills or by rain water.

The remainder of the division depending upon canal water is on the protected side of the Band. This portion was also originally cultivated on spill water from the Indus, and also from the Begari. Since the construction of the Band in 1879, the over-flow of the river has stopped and irrigation now depends upon canal water.

There are four main canals in the division, viz. :—

1. The Begari Canal.
2. The Desert Canal, popularly called the Shahi Wah.
3. The Unhar Wah.
4. The Adio Wah.

All of these were small *karias* or water-courses originally, and have been improved and widened from time to time, as I shall presently show.

25. The Mirza Wah, now a branch of the Begari, is the oldest of them all, and dates as far back as the Dadpotas, prior to the Kalhoras in Sind, *i. e.*, almost 300 years ago.

Begari Canal.

The Dadpotas built the town of Shikarpur in the year 1617 A. D., and seem to have had their sway as far as the river, which then flowed through what is now known as the "Sind Dhoru." Mirza Khan Dadpoto excavated a channel from the river, known after him. Parts of this channel, now disused, can still be seen near Karampur. During the time of Nur Muhammad Kalhoro, his Vazir, Murad Khan by name, constructed the Begari, nearly 200 years ago, through the present deh Dari. He enforced labour for the purpose, and used to distribute flour, ghi and dal every evening among the labourers, but paid them no cash. The channel was popularly known as Begari Wah from *begar*, forced labour. The same individual is also credited with having dug the Murad Wah, near Kashmor, named after himself. The naming of this canal is said to have enraged Nur Muhammad. Murad Khan, on learning of the rage of his master, caused another wah, near Jacobabad, to be made, which he named Nur Wah after the Kalhora ruler, now another branch from the Begari.

The Begari is perhaps the longest canal in Sind. Its length prior to 1852-53 was 40 miles; but in that year it was enlarged at General Jacob's recommendation, at a cost of Rs. 1,30,000, along with its branch, the Nur Wah abovementioned; but it terminated at Koreja in the Jacobabad Taluka, about 3 miles from the Abad Railway flag station. In the same year, however, sanction was given to the expenditure of Rs. 25,344 for extension and improvement of the Nur Wah, and to Rs. 10,000 more for further extension of the Begari to a distance of 10 miles. In 1856, the main canal was further extended to Garhi Khairo Jamali; and at the instance of Lieutenant Ford, the then Deputy Collector, the zamindars excavated a branch thereout, known as Idan Wah. In 1857, the Mirza Wah *ex* Begari was improved at a cost of Rs. 14,772. In 1861-62, the Begari was further enlarged at a cost of Rs. 55,166, and the total cost up to 1875 was Rs. 2,35,282. Since then, also, large sums have been spent on this canal, but the details are not available, the Executive Engineer not being in a position to supply the information. The above details as to improvement and cost I have traced from the records of the Revenue Department.

Although the Executive Engineer does not wish to commit himself to an opinion, a project for the further improvement of the Begari system is on the *tapis*, and will in all likelihood be sanctioned in the near future, especially with a view to improve the supply at the tail in the Shahdadpur Taluka. It is also hoped the re-modelling will improve the supply at the head, where also there are serious complaints. This canal has 6 regulators, but no fall, which is greatly required for improving the high level supply.

26. Originally, the Desert Canal seems to have been only a small water-course belonging to a Mazari by name Maksuda, and it was called after him. This man irrigated

Desert Canal.

an area of only about 100 acres thereon. In 1857-58, he became a defaulter of land revenue to the extent of Rs. 219, wherefore his land and the Maksuda Wah became forfeited to Government, the man himself leaving the country. The Government thereupon took over the maintenance of the wah. It was gradually enlarged and improved from time to time, and in about 1870-71 it could irrigate an area of about 20,000 acres. About the year 1874-75, it became capable of irrigating about 40,000 acres. In 1877-78, it was given its present name, as it irrigated the country which previously lay practically a desert. The original mouth of the canal failed in 1886, in which year a new mouth was given to it. This latter worked satisfactorily until 1891, when, owing to a change in the course of the river, a fresh mouth was excavated higher up the river, and this has continued up to date.



In 1882-83, the Murad Wah was made, which takes off from above the head regulator of the main canal; in 1885-86, the old Fall, the Bugti, the Burdi, the Ahmed, the Manjhi and the Tharu Raj Wahs were also joined to the system, while the new Fall Raj Wah was excavated in 1887-88. The final addition was made in 1888-89, when the Toj Raj Wah was made and joined. The area under irrigation went on increasing, and it was found that the capacity of the canal required considerable augmentation. Accordingly, in 1900, the scheme of re-modelling the entire system was taken in hand, and completed in 1902; and the canal, its branches and distributaries have up to date cost Government a sum of money to the tune of about Rs. 19,61,572.

Originally, the Desert Canal, was constructed for political reasons, to induce the wild Baluchis to forsake their predatory and marauding habits, and to take to the plough for an honest living. Under such circumstances, the canal was not considered to be a productive work for several years. But this idea has now worn away, and there can be no two opinions that the work has become a highly remunerative one. Large patches of waste land in Kashmir and Kandhkot have been given out in recent years for cultivation, and the revenue has shown a steady increase. As regards the present state of the water-supply, however, I shall say a few words below in its proper place. This canal is famous for a high level supply as there are two regulators and four fall regulators which are constructed at 19, 26½, 44½ and 52 miles, respectively.

27. The next Government canal on my list is the Unhar Wah. Originally, this was also a small water-course, of prehistoric times, and appears to have taken its name from Jam Unhar, a ruler of the same tribe, in the 14th century. After the construction of the protective embankment, the Begari and the Desert Canals, it was found that there was still an area of about 200 square miles between the two canals above referred to which had practically no water to irrigate the land. The old Unhar was therefore taken in hand in 1884, and completed in 1887, at a cost of Rs. 3,39,128. The length of the canal is 36 miles, and with its branches 67. It was again improved in 1894-95, when a new mouth was excavated, and has cost Rs. 2,45,849 up to date. In the year 1894-95, the river was very favourable to its mouth, but since that year it has gradually receded until it is now complained that the canal receives a 'back water-supply'. Mr. Robertson has pronounced the mouths of all the three canals as satisfactory, but it is very doubtful at all events if that of the Unhar is so, or will continue for very long.

There is a considerable area lying waste on this canal, which cannot be given out owing to the supply being insufficient; and I understand a scheme for re-modelling it is also under consideration of the Public Works Department; but the same will take a long time yet to come to a head. This canal has 9 regulators, but no fall regulator like the Desert.

28. The Adio Wah is a new canal taken up and completed last year at a cost of Rs. 1,03,859. It was for the first time thought of in 1890, when it was found that the Desert Canal could not reach an area of about 15,000 acres north of Kashmir. The scheme, however, lay in abeyance until the re-modelling project of the Desert Canal was taken up. It therefore formed a part of that project, and was sanctioned along with it. It could, however, only be taken in hand last year. It derives its name from a small water-course dug from the river by one Adiomal, which, however, could not answer his purpose, and had to be abandoned. The present canal, however, takes its mouth from a *dhand*, which requires a high flood in the river to feed the canal. It is 18 miles long, and is designed to serve dehs Kashmir Pako, Lain Purani, Kathgarh, Daro Jundó, Kinjhar, Gulanpur, Karimabad, Chachar, Mahar, Selachi, Machhi, Toj and Gishkori in Kashmir, and one deh—Lahri Dombki—in Kandhkot.

29. There are several branches from the Desert, the Begari, and the Unhar Canals; but none from the Adio. It is, however, proposed to make one from this last next cold weather.

30. The following statement gives the length of each canal, branch or distributary, together with the area dependent on each :—

Name of Canal Branch or Distributary.	Length in Miles.	TRUL.		KANDHOKOT.		KASHMOR.		TOTAL.	
		Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.
		A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.
Begari Canal ...	76	16,064 24	6,976 4	5,489 11	4,750 32	...	...	21,648 35	11,736 36
Son Wah ...	6	5,772 34	4,077 24	...	...	...	...	5,772 34	4,077 24
Mirsa Wah ...	10	40,506 26	14,369 15	...	...	...	...	40,506 26	14,369 15
Nur Wah ...	19	2,310 27	948 15	...	...	...	...	2,310 27	948 15
TOTAL ...	...	64,654 31	26,361 18	5,489 11	4,750 32	...	...	70,184 2	31,112 10
Unhar Wah ...	36	49,738 24	7,925 6	16,762 34	10,504 25	...	...	60,501 18	18,429 31
Ghatapur Branch ...	4 02	...	...	4,798 7	11,563 31	...	...	4,798 7	11,563 31
Tangwaji Branch ...	14	527 30	80 10	14,751 0	6,195 38	...	...	15,274 30	6,276 8
Nasir Branch ...	35 50	53,178 5	20,005 19	15,827 26	11,752 30	...	...	64,705 31	31,768 8
Saifai Branch ...	8 12	14,745 3	3,753 19	4,960 7	5,991 1	...	...	19,745 10	9,744 30
TOTAL ...	...	112,239 22	31,764 14	50,789 34	46,008 6	...	...	169,029 16	77,772 19
Desert Canal ...	75	15,918 20	820 29	13,015 13	892 36	16,976 17	1,306 39	45,910 19	3,130 34
Murad Wah ...	6	...	...	...	...	1,888 25	2,374 26	1,888 25	2,374 26
Kandhkot Raj Wah ...	31 06	...	...	14,723 29	11,7 8 24	14,114 14	4,900 12	28,838 13	16,688 36
Distributary No. I of Raj Wah ...	7 05	...	...	905 10	293 26	6,886 0	986 1	7,491 10	1,273 37
Distributary Subranipur of Kandhkot Raj Wah ...	4 02	...	...	170 10	332 15	1,394 33	136 17	1,574 3	468 32
Distributary Malhir of Kandhkot Raj Wah ...	3 08	...	...	...	...	...	...	...	...
Do. Zorghar do. ...	4 1	...	...	10 5	...	860 2	1,082 10	870 7	1,082 10
Frontier Raj Wah ...	23	207 0	...	5,364 30	25 5	...	...	5,661 30	25 5
Distributary No. I of Raj Wah ...	3	...	...	3,502 33	6 20	...	...	3,502 33	6 20
Do. II do. ...	6 50	...	...	6,796 25	...	...	...	6,796 25	...
Do. III do. ...	6 50	1,683 15	1 15	1,762 24	...	...	...	3,445 39	1 15
Toj Raj Wah ...	10	...	...	19,998 39	1,637 34	7,263 25	718 27	27,153 24	2,371 21
Distributary No. I of Raj Wah ...	1 54	...	...	2,821 38	311 25	...	...	2,421 38	311 25
Do. II do. ...	2 13	...	...	6,818 23	87 36	...	...	6,818 23	87 36
Fall Raj Wah ...	24 75	15,405 33	51 4	12,874 29	8 5 11	...	...	28,277 22	866 15
Fall Raj Wah Branch ...	10 60	...	...	26,707 28	1,017 28	...	...	26,707 28	1,017 28
Bugti Raj Wah ...	11	...	...	3,715 19	126 15	...	...	3,715 19	126 15
Ahsad do. ...	6 50	2,898 10	66 20	2,933 35	16 10	...	...	6,782 6	82 30
Thariri do. ...	4	8,759 15	24 10	...	...	...	...	8,759 15	24 10
New Manjhi Raj Wah ...	5 40	7,128 15	60 35	...	...	...	...	7,128 15	60 35
Old do. ...	1 60	2,985 10	...	...	...	...	...	2,985 10	...
Tharu do. ...	3	5,627 12	80 10	...	...	...	...	5,627 12	80 10
TOTAL Desert Canal and its Branches ...	...	69,790 18	1,205 3	120,961 30	17,343 5	49,074 6	12,130 12	230,726 15	80,677 30
Adio Wah ...	18	...	...	...	...	25,038 3	13,382 8	25,038 3	13,382 8
MINOR CANALS OF BAND.									
Band Mori Drakhan ...	2	...	...	256 5	699 19	...	...	256 5	699 19
Band Mori Bahadur Shah ...	1	...	...	180 8	136 34	...	...	180 8	136 34
Kasim Wah ...	2	...	...	2,770 11	3,201 4	...	...	2,770 11	3,201 4
Gangri Wah ...	1 50	...	...	470 17	236 3	...	...	470 17	236 3
Band Mori at Mile 14 ...	1	...	...	168 5	168 11	...	...	168 5	168 11
Mirani Wah ...	12	...	...	3,318 18	2,945 23	128 15	226 30	2,476 33	3,174 13
Mirani Wah Shakh ...	2	...	...	264 10	3,784 10	36 25	145 31	289 35	3,930 10
Khani Wah ...	2	...	...	...	...	2,167 1	5,112 14	2,167 1	5,112 14
Nur Wah ...	4	...	...	...	...	1,682 17	7,118 38	1,682 17	7,118 38
Bakhsb Ali Wah ...	4	...	...	...	...	1,374 12	4,41 5	1,374 12	4,421 5
Dhara Ghoraghat ...	...	...	...	45 25	17 26	...	...	45 25	17 26
Kuhub ...	...	...	...	14 5	...	...	...	14 5	...
TOTAL Band Canals ...	...	...	...	6,597 24	11,178 18	5,377 30	17,036 36	11,975 14	28,205 15
Barani (rain cultivation) ...	...	...	...	95 25	...	...	12,429 12	95 25	12,429 12
Well ...	...	...	...	139 0	...	...	...	139 0	...
GRAND TOTAL ...	...	237,584 32	59,330 35	100,064 4	79,279 20	79,489 38	54,918 30	607,133 25	198,679 5

The above statement also shows the area of land remaining to be given out on each canal. It would, however, appear that there is very little land lying to be given out on the Desert, while on the Begari and Unhar there is a considerable area of virgin soil, but it cannot be given out until the supply from both the canals is considerably increased. The mouth of the Adio is not very favourable, and cannot be depended upon; therefore, no land thereon has yet been given out permanently, but on *khas mokal*—i.e., one-yearly lease.

31. The following is the report of the Executive Engineer, Begari Canals, on the working of the canals in the division :—

#### "KASHMOR TALUKA.

Kashmor Taluka from an irrigation point of view may be divided into four sections—

(a) The land between the River Indus and the Kashmor Band.

(b) The land north of the Desert Canal as far west as the Frontier Raj Wah—dehs Kashmor Pako, Lain Purani, Daro Jundo, Kinjhar, Kathgarh, Gulampur, Karimabad, Chachar, Selachi, Mahar, Machhi, Gishkori, Toj and Lahri Dombki.



In 1882-83, the Murad Wah was made, which takes off from above the head regulator of the main canal; in 1885-86, the old Fall, the Bugti, the Burdi, the Ahmed, the Manjhi and the Tharu Raj Wahs were also joined to the system, while the new Fall Raj Wah was excavated in 1887-88. The final addition was made in 1888-89, when the Toj Raj Wah was made and joined. The area under irrigation went on increasing, and it was found that the capacity of the canal required considerable augmentation. Accordingly, in 1900, the scheme of re-modelling the entire system was taken in hand, and completed in 1902; and the canal, its branches and distributaries have up to date cost Government a sum of money to the tune of about Rs. 19,61,572.

Originally, the Desert Canal, was constructed for political reasons, to induce the wild Baluchis to forsake their predatory and marauding habits, and to take to the plough for an honest living. Under such circumstances, the canal was not considered to be a productive work for several years. But this idea has now worn away, and there can be no two opinions that the work has become a highly remunerative one. Large patches of waste land in Kashmir and Kandhkot have been given out in recent years for cultivation, and the revenue has shown a steady increase. As regards the present state of the water-supply, however, I shall say a few words below in its proper place. This canal is famous for a high level supply as there are two regulators and four fall regulators which are constructed at 19, 26½, 44½ and 52 miles, respectively.

27. The next Government canal on my list is the Unhar Wah. Originally, this was also a small water-course, of prehistoric times, and appears to have taken its name from Jam Unhar, a ruler of the same tribe, in the 14th century. After the construction of the protective embankment, the Begari and the Desert Canals, it was found that there was still an area of about 200 square miles between the two canals above referred to which had practically no water to irrigate the land. The old Unhar was therefore taken in hand in 1884, and completed in 1887, at a cost of Rs. 3,39,128. The length of the canal is 36 miles, and with its branches 67. It was again improved in 1894-95, when a new mouth was excavated, and has cost Rs. 2,45,849 up to date. In the year 1894-95, the river was very favourable to its mouth, but since that year it has gradually receded until it is now complained that the canal receives a back water-supply. Mr. Robertson has pronounced the mouths of all the three canals as satisfactory, but it is very doubtful at all events if that of the Unhar is so, or will continue for very long.

There is a considerable area lying waste on this canal, which cannot be given out owing to the supply being insufficient; and I understand a scheme for re-modelling it is also under consideration of the Public Works Department; but the same will take a long time yet to come to a head. This canal has 9 regulators, but no fall regulator like the Desert.

28. The Adio Wah is a new canal taken up and completed last year at a cost of Rs. 1,03,859. It was for the first time thought of in 1890, when it was found that the Desert Canal could not reach an area of about 15,000 acres north of Kashmir. The scheme, however, lay in abeyance until the re-modelling project of the Desert Canal was taken up. It therefore formed a part of that project, and was sanctioned along with it. It could, however, only be taken in hand last year. It derives its name from a small water-course dug from the river by one Adiomal, which, however, could not answer his purpose, and had to be abandoned. The present canal, however, takes its mouth from a *dhand*, which requires a high flood in the river to feed the canal. It is 18 miles long, and is designed to serve dehs Kashmir Pako, Lain Purani, Kathgarh, Daro Jundo, Kinjhar, Gulampur, Karimabad, Chachar, Mahar, Selachi, Machhi, Toj and Gishkori in Kashmir, and one deh—Lahri Dombki—in Kandhkot.

29. There are several branches from the Desert, the Begari, and the Unhar Canals; but none from the Adio. It is, however, proposed to make one from this last next cold weather.

30. The following statement gives the length of each canal, branch or distributary, together with the area dependent on each :—

Name of Canal Branch or Distributary.	Length in Miles.	THUL.		KANDHROT.		KASHMOR.		TOTAL.	
		Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.	Occupied Area.	Un-occupied Culturable Area.
		A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.
Begari Canal ...	76	16,054 24	6,976 4	5,489 11	4,750 32	...	...	21,543 33	11,726 33
Son Wah ...	6	5,772 34	4,077 24	...	...	...	...	5,772 34	4,077 24
Mirza Wah ...	10	40,506 26	14,359 15	...	...	...	...	40,506 26	14,359 15
Nur Wah ...	19	2,310 27	948 15	...	...	...	...	2,310 27	948 15
TOTAL ...	...	64,644 31	26,361 18	5,489 11	4,750 32	...	...	70,134 2	31,113 10
Unhar Wah ...	36	48,738 24	7,925 6	16,762 34	10,504 25	...	...	60,501 18	18,429 31
Ghauspur Branch ...	4 62	...	...	4,798 7	11,763 31	...	...	4,798 7	11,563 31
Tangwari Branch ...	14	527 30	80 10	14,741 0	6,195 38	...	...	15,274 30	6,276 8
Nasir Branch ...	38 50	53,178 5	20,005 19	15,627 26	11,762 30	...	...	64,705 31	31,768 9
Saif Branch ...	8 12	14,745 3	3,763 19	4,960 7	5,991 1	...	...	19,745 10	9,744 20
TOTAL ...	...	112,239 22	31,764 14	56,789 34	46,008 5	...	...	169,029 16	77,772 19
Desert Canal ...	75	15,918 29	620 29	13,015 13	892 36	16,976 17	1,306 39	45,910 19	3,120 24
Marad Wah ...	6	...	...	...	...	1,888 25	2,374 26	1,888 25	2,374 26
Kandhkot Raj Wah ...	21 96	...	...	14,723 29	11,788 24	14,114 14	4,950 12	28,838 13	16,688 26
Distributary No. I of Raj Wah ...	7 86	...	...	905 10	293 26	6,866 0	986 1	7,491 10	1,779 27
Distributary Subranipur of Kandhkot Raj Wah ...	4 92	...	...	179 10	332 15	1,394 33	136 17	1,574 3	468 22
Distributary Malhir of Kandhkot Raj Wah ...	3 08	...	...	...	...	...	...	...	...
Do. Zargarh do. ...	4 1	...	...	10 5	...	860 2	1,082 10	870 7	1,082 18
Frontier Raj Wah ...	23	297 0	...	5,364 30	25 5	...	...	5,661 30	25 5
Distributary No. I of Raj Wah ...	3	...	...	3,502 33	6 20	...	...	3,502 33	6 20
Do. II do. ...	6 50	...	...	6,796 25	...	...	...	6,796 25	...
Do. III do. ...	6 50	1,683 15	1 15	1,762 24	...	...	...	3,445 39	1 15
Toj Raj Wah ...	19	...	...	19,398 39	1,617 34	7,263 25	712 27	27,152 24	2,371 21
Distributary No. I of Raj Wah ...	1 84	...	...	2,821 38	311 25	...	...	2,821 38	311 25
Do. II do. ...	2 13	...	...	6,818 23	87 36	...	...	6,818 23	87 36
Fall Raj Wah ...	24 75	15,402 33	51 4	12,874 29	8 5 11	...	...	28,277 22	606 16
Fall Raj Wah Branch ...	10 50	...	...	25,707 28	1,017 28	...	...	25,707 28	1,017 28
Bugti Raj Wah ...	11	...	...	3,715 19	126 15	...	...	3,715 19	126 15
Ahmad do. ...	6 50	2,898 10	60 20	2,853 35	16 10	...	...	6,762 6	82 30
Thariri do. ...	4	6,759 15	24 10	...	...	...	...	8,759 15	24 10
New Manjhi Raj Wah ...	5 50	7,128 15	60 35	...	...	...	...	7,128 15	60 35
Old do. ...	1 60	2,985 10	...	...	...	...	...	2,985 10	...
Tharu do. ...	3	5,627 12	50 10	...	...	...	...	5,627 12	50 10
TOTAL Desert Canal and its Branches.	...	60,799 19	1,306 3	120,951 30	17,343 5	49,074 6	12,130 12	230,726 15	30,677 20
Adio Wah ...	18	...	...	...	...	25,038 3	13,382 8	25,038 3	13,382 8
MINOR CANALS OF BAND.									
Band Mori Drakhan ...	2	...	...	256 5	699 19	...	...	256 5	699 19
Band Mori Bahadur Shah ...	1	...	...	180 8	136 34	...	...	180 8	136 34
Kasim Wah ...	2	...	...	2,770 11	3,201 4	...	...	2,770 11	3,201 4
Gangli Wah ...	1 60	...	...	470 17	236 3	...	...	470 17	236 3
Band Mori at Mile 14 ...	1	...	...	168 5	168 11	...	...	168 5	168 11
Mirani Wah ...	12	...	...	1,318 18	2,945 23	128 15	228 30	2,476 33	3,174 13
Mirani Wah Shakh ...	2	...	...	264 10	3,784 19	36 25	145 31	289 35	3,930 10
Khairi Wah ...	2	...	...	...	...	2,157 1	5,112 14	2,157 1	5,112 14
Nur Wah ...	4	...	...	...	...	1,682 17	7,118 38	1,682 17	7,118 38
Baksh Ali Wah ...	4	...	...	...	...	1,374 12	4,461 5	1,374 12	4,461 5
Dhara Ghoraghat ...	...	...	...	45 25	17 25	...	...	45 25	17 25
Kumb ...	...	...	...	14 5	...	...	...	14 5	...
TOTAL Band Canals	...	...	...	6,597 24	11,178 18	6,377 30	17,026 38	11,975 14	29,235 16
Barani (rain cultivation) ...	...	...	...	96 25	...	...	12,429 12	96 25	12,429 12
Well ...	...	...	...	139 0	...	...	...	139 0	...
GRAND TOTAL	...	237,534 32	59,330 35	100,064 4	79,279 20	70,489 39	54,918 30	507,133 25	193,679 5

The above statement also shows the area of land remaining to be given out on each canal. It would, however, appear that there is very little land lying to be given out on the Desert, while on the Begari and Unhar there is a considerable area of virgin soil, but it cannot be given out until the supply from both the canals is considerably increased. The mouth of the Adio is not very favourable, and cannot be depended upon; therefore, no land thereon has yet been given out permanently, but on *khas mokal*—i.e., one-yearly lease.

31. The following is the report of the Executive Engineer, Begari Canals, on the working of the canals in the division :—

#### "KASHMOR TALUKA.

Kashmor Taluka from an irrigation point of view may be divided into four sections—

(a) The land between the River Indus and the Kashmor Band.

(b) The land north of the Desert Canal as far west as the Frontier Raj Wah—dehs Kashmor Pako, Lain Purani, Daro Jundo, Kinjhar, Kathgarh, Gulampur, Karimabad, Chachar, Selachi, Mahar, Machhi, Gishkori, Toj and Lahri Dombki.



(c) The land between the Kashmor Band and the line of deep depressions, known as *dhoras*, which runs nearly parallel with the river and Band, from one to four miles inland.

(d) The land to the south of the Desert Canal and west of the line of *dhoras*.

In—

(a)—There is no canal-irrigated land to speak of, the only exceptions being some small areas in dehs Kashmor Kacho and Khoski Kacho, settled on the Adio Wah and Murad Wah, respectively, which get a lift supply from those canals when the river is high enough to give rather more than a full supply level on the canals. Should the river rise much higher again, these lands receive a flood supply direct from the river.

Section (b).—The supply to these lands has in the past been somewhat variable, the northern and eastern dehs receiving practically no supply from the canals, except just along the Desert Canal edge, and the lands to the west receiving on the average an excellent supply (principally flow) through a long water-course from the 7th mile of the Desert Canal, the lands on the water-courses from higher up the canal not receiving nearly such a good supply. All the northern dehs received only a precarious lift supply.

Owing to the construction of the new Adio Wah, all the lands to the south of that canal, with the exception of a small area in dehs Lain Purani and deh Kashmor Pako, can receive a flow supply. To facilitate some of the lands receiving such a supply it is hoped that a distributary will be constructed through dehs Kashmor Pako, southern part of Lain Purani, Daro Jundo and Kinjhar. The lands to the west of the tail of the Adio Wah, in dehs Karimabad, Chachar (southern part), Mahar, Machhi, Toj and Lahri Dombki, will receive a higher flow supply than they did before; the rest of the lands a supply with lower lift, and some with flow.

The lands to the north of the Adio Wah will receive a lift supply. These lands are, however, liable to damage by hill floods, which have on more than one occasion breached the canal's northern bank.

The objection to the supply for all this tract is that it begins late and ends early, with the present mouth at any rate; and it remains to be seen whether the mouth can be improved or not. There is thus no chance of winter cultivation.

Tract (c) is worse supplied with water than any other part of the district. Cut off from the direct flooding of the river inundation by the Kashmor Band, it receives a precarious supply in places from small channels through the Band. These only flow with a high river.

Last year, however, a partially successful attempt was made to get water into the bed of the Sind Dhoro, and now the bed of this channel has been further cleared, and a better supply may be anticipated.

It is also hoped to irrigate the lands at present on the Bakhsh Ali Wah from the Murad Wah, which would secure to those lands a regular supply.

Tract (d).—The great part of this is watered by the Kandhkot Raj Wah. Till 1899, these lands were watered by the Murad Wah and its branches, and received an inadequate supply at a fair level, but were certainly poorly watered lands.

In the year 1899-1900, the re-modelling of the Desert Canal cut off the Murad Wah at its 6th mile, and gave part of the tail with part of the branch and the connecting lengths of the new canal the name of Kandhkot Raj Wah. Part of the old Murad Wah became Branch No. 1, Kandhkot Raj Wah, and the rest passed into the Toj Raj Wah. The new Kandhkot Raj Wah had a head just above the 7th mile regulator of the Desert Canal; but this head did not work at all satisfactorily, and before long the supply in the canal fell very short. To remedy this, the Band at the 6th mile of the Murad Wah was cut, and the Kandhkot branch supplied from both sources. This has been done for the last three years, but has not worked satisfactorily. This year, therefore, the mouth from the 7th mile of the Desert Canal has been abandoned, and the old Murad Wah mouth has been deepened and improved, and it is expected that an excellent supply will result.

During the last three years, however, there has been a considerable increase of cultivation. The land is very uneven, lift and flow irrigation being found on all the branches; but it is hoped that, with the present head, a considerable increase in the flow area will be possible.

Two new distributaries have been recently made, bringing the water nearer to the cultivators' lands in dehs Suhranipur, Bai Rip and Zorgarh.

There is a small area in the north-west watered by the Toj Raj Wah.

These lands were watered by the old Murad Wah and the Desert Canal direct, and received an inadequate supply.

In the year 1900-1901, the present arrangement, by which a new mouth was made from above the new 19th Mile Fall of the Desert Canal joining on to the old Murad Wah at Mile 25, came into force. Since that time, the Toj Raj Wah has received a greater supply than was necessary. There is no reason to suppose that the supply will be in any way deficient in future.

The remaining dehs of Kashmor Taluka are watered direct from the Desert Canal. These dehs have also for the last three years received a very large supply of water, owing to the construction of the new Fall. The pavement of the Fall has been lowered this year, but it is hoped that they will continue to receive an excellent supply in the future, which, though perhaps not quite so good as during the last three years, will be much better than the supply that they received before the re-modelling of the Desert Canal.

#### KANDHKOT TALUKA.

Kandhkot may be divided into three portions for irrigation purposes—

- (a) The land dependent on the Desert Canal and its branches for water.
- (b) The portion dependent on the Unhar Wah and its branches.
- (c) A very small area dependent on the Begari Canal.

In—

- (a) In this part, dehs Suhraupur, Malukan, Machko, Malhir, Kandhkot, Akhero, Chiman and Burdi are settled on the Kandhkot Raj Wah. The re-construction of this branch has been described under Kashmor Taluka. The supply during the last three years has been better than it was, and it is hoped will be better in future.

A distributary has been constructed in deh Malhir, and the question of a distributary into dehs Chiman and Burdi is under consideration.

For the rest of (a), with the exception noted below, the improvements in the Desert Canal and its branches have wrought much good. Not only has the water-supply been more plentiful, but it has usually been at a better level. The exception is in the case of lands settled on the Ahmed Raj Wah. On these lands, there has been no improvement of supply so far, though it is hoped that this year a better result will be obtained.

The improvements to the Desert Canal referred to are—

1. Widening the Desert Canal.
2. Widening and extending Kandhkot Raj Wah.
3. Do. do. Toj Raj Wah.
4. Do. do. Fall Raj Wah.
5. Do. do. Fall Branch.
6. Do. do. Ahmed Raj Wah.
7. Excavating distributaries from Kandhkot and Toj Raj Wahs.

- (b) The supply on the Unhar Wah system has been in the past quite fair, but there are certain parts where there are still complaints and where something remains to be done.

The Ghauspur branch carries an excellent supply, but might, with advantage, be extended as there is much waste land in dehs Dhandhi, Shah Muhammad Jilani and Manghi that could be brought under cultivation.

On the Tangwani branch, the low land in the upper reaches of the canal takes off so much water that, in spite of recent improvement, costing Rs. 12,212, there is still some call for extra water at the tail. I am bound to say, however, that the crops seem to be excellent, and the outery does not seem to be very well founded.

In the upper part of the Nasir branch, again, there is some complaint of want of water, without, I think, very much foundation as the supply admitted to the canal has for years past been considerably in excess of the designed full supply level; and there does not seem to have been any general falling-off in areas cultivated in dehs Nar, Baragh, Khariro and Gurdo.

A new branch or series of branches to open up the country between the Nasir Canal and the Begari might, perhaps, be advantageous as this land at present receives a somewhat poor supply. Of the land on the main canal, it can only be said that it receives as good a supply as its level allows under present conditions, the low lands getting a very abundant flow supply and the high lands a good lift supply. The water "duty" on this canal system is lower than on either of the other canals in the district, i.e., the land receives more water per acre on an average.



- (c) The lands along the Begari call for no special remark. Their condition has not been altered either for better or worse during recent years.

There still remains a portion of the taluka unaccounted for, *i.e.*, the lands on the river edge, in the compartment of the protective embankments, and behind these embankments and on the river side of the long and deep depression known as the Sind Dhero. The first two receive water from the river inundation either directly or through sluices in the front embankments; the third class receives at best but a scanty supply from small sluices through the banks, and in most cases receive no water at all. The question of improving the water-supply in this tract is under consideration.

#### THUL TALUKA.

Thul Taluka may, for irrigation purposes, be divided into three parts—

- (a) Receiving water from the Desert Canal system.
- (b) Receiving water from the Unhar Wah system.
- (c) Receiving water from the Begari system.

In—

- (a) Is entirely in the northern part of the taluka, and is watered by the Ahmed Raj Wah, Old and New Manjhi Tharu and Tharri Raj Wahs, and from the Desert Canal direct.

The supply in the Ahmed Raj Wah has not been good of late years, though it is hoped that it will improve.

The supply in the other Raj Wahs has, however, been excellent, and there is no reason to anticipate any decrease in this supply in the immediate future. For the part watered by the Desert Canal direct, there is no doubt that the land-owners have suffered during the last two or three years owing to want of command of the water in the canal. Steps have been taken to remedy this, however, and it is confidently anticipated that these land-owners will receive a greatly enhanced supply.

- (b) The lands receiving water from the Unhar Wah system are, generally speaking, in the east of the taluka and receive an excellent supply. There have been no recent changes in this system as far as it affects this taluka, and the irrigation calls for no special remark.
- (c) The lands depending on the Begari system have not altered their conditions during the last ten years.

The lands on the Son Wah continue to receive a fair supply during the kharif season, but cannot hope for much winter cultivation.

The lands on the Mirza Wah receive a very good supply, but this supply might be improved, perhaps, by a new head to the Mirza Wah somewhat higher up the Begari. The land in dehs Odbano, Pako, Khatan, Miral Nao, Dil Murad, Mitho Thariro on the tails of the long water-courses flowing north from the Mirza Wah could probably be more economically watered, though, perhaps, no better watered from an extension of the Unhar Wah system.

As far as the Nur Wah is in Thul Taluka, the supply is quite good and has not altered in the last 10 years.

In 1902-03, the Saifal Wah *ex* Unhar Wah was widened and extended at a cost of Rs. 6,280. The supply is ample—more especially at the tail in dehs Sajan Wah and Saido Kot; but all dehs are well supplied.

#### GENERAL.

Reviewing the water-supply of Kashmor, Kandhkot and Thul Talukas as a whole, it may be said that the recent re-modelling of the Desert Canal and its branches has generally resulted in an increased supply at a better level than heretofore, and that the expenditure on the system has not only enabled irrigation to be extended, but has placed the old irrigation in a considerably improved position.

On the Unhar Wah, though the total supply is excellent, there is some ground of complaint as to its distribution. The question of the re-modelling and extension of this system is receiving attention, but the proposals are somewhat nebulous at present; and there does not seem to be any gain in making statements of proposed works that, very possibly, if not probably, will be carried out in a totally different way, if carried out at all. On the Begari, the supply is not equal to the demand, and there is no doubt that cultivation could be extended, were more water available. The existing cultivation, however, receives a fully adequate supply. On

this canal two proposals for improvement have been put forward. The badly supplied tracts as far as canal water is concerned may be taken as the upper reaches of the Unhar Wah (dehs Haibat, Dhandhi, Wakro, Sheran, Chiman and part of Suhranipur), the dehs at the tail of the Kandhkot Raj Wah, the lands between the Nasir and Begari Canals in dehs Khariro, Gurdo, Draho, Muhib Wah, Bakhtawarpur, and a few dehs at the tail of the Son Wah. For all these areas of bad supply, improvements of one sort or another are being considered, but, as stated above, no useful end would be served in going into long details concerning proposals that, so far, are, in most cases, merely paper proposals."

32. Officers of the Revenue and Public Works Departments seldom agree

Remarks on the Report of the Executive Engineer.

as to the state of water-supply, but I must admit I have very few comments to offer on Mr. Robertson's remarks on the irrigation of the division, as I find he is generally in accord with my own views. In Thul, the supply from the branches of the Desert Canal is admittedly good, except from Ahmed Raj Wah, which waters deh Bari and a part of Abdulah Jakh-rani. The greater portion of the latter deh is watered by other branches, so that its supply on the whole is good. There is generally a cry, however, of insufficiency of water in the tail of the Desert Canal, both in Thul and Jacobabad on the one hand, while, on the other, that the Khan of Kelat's lands on the opposite side of the Desert Canal carry away a disproportionately large supply. There is justification in this complaint, and I need only quote Mr. Steele on the point. Writing in 1891, when Deputy Commissioner of the district, he says—

"It may be as well, however, to recall attention to the fact that the work was primarily carried out with a political object, and that during the past two years more than one-third of the irrigated area has been cultivated across the border, and that on such land only one rupee per acre is levied on account of assessment. In fact, the people on the upper part of the canal complain that an undue portion of the supply is thus utilised, and there would appear to be some grounds for the complaint made," etc.

And it will be conceded, I hope, that, since the recent re-modelling of the canal and the construction of the Uch and Manuti Raj Wahs, the supply to that part of the country has been largely enhanced. Our zamindars consider this to their detriment, for whom the canal was primarily intended. During the Abkalani of 1902, I myself witnessed the reading in the two Raj Wahs in question to be 6 feet 8 inches and 4 feet as against 6 feet and 3 feet 9½ inches, respectively, in the Desert Canal itself. This speaks for itself. Were the supply to the Khan's lands which now constitute the Nasirabad Tahsil of the Baluchistan Agency restricted, it would benefit the whole of this division generally, as high lands in Kandhkot and Kashmir would receive a supply at a higher level.

To remedy the defect in the tail of the Desert Canal, the Executive Engineer is, this year, lowering the pavements of all the falls in the canal. This has greatly alarmed all the zamindars along the canal from Kashmir downwards, who fear their supply will henceforward be more stinted. The Executive Engineer in his No. 2331 of the 9th May 1904, however, says "The lowering of the sill that is now in progress will not, *it is believed*" (the italics are mine) "adversely affect the supply in the dehs you mention, while it will materially improve the supply lower down." This reply is by no means confident enough. Again, in his report on the irrigation of the division quoted above *in extenso*, he says "These dehs have also for the last three years received a very large supply of water owing to the construction of the new fall. The pavement of the fall has been lowered this year, but *it is hoped*" (the italics are mine) "that they will continue to receive an excellent supply in the future, which, *though perhaps not quite so good as during the last three years, will be much better than the supply that they received before the re-modelling of the Desert Canal.*" (The italics are mine.)

Several zamindars along the Desert Canal have complained to me of the lowering of the pavements, and, in my humble opinion, the remedy for giving a better supply at the tail lay in restricting the supply to Nasirabad rather than in depriving the lands higher up, and no case was made out against these



lands that they received more than enough of water. The Nasirabad zamindars can only expect what remains over our own wants, and with that they must remain content.

As for the Unhar Wah, though the Executive Engineer says the supply therefrom has been excellent, yet he admits later on in his general remarks that "there is some ground of complaint as to its distribution. The question of the re-modelling and extension of this system is receiving attention \* \* ." I must state that the mouth of the Unhar is not generally reported to be favourable. It received its supply from the Begari Dhand formerly. For 3 years past, however, the river set into the Dhand and has now receded back, with the result, as I have already said, that it now receives a back water-supply. It was only in 1902 that the mouth failed in the middle of the season, and Bahadur Khan Khoso, an enterprising zamindar, went with a large number of persons to clear the mouth at his own expense, but with little success. With all this, the Executive Engineer characterises the mouth as "fairly satisfactory" in his No. 2330 of the 9th May last, yet adds "It is, of course, impossible to say whether they" (referring to the mouths of all the canals) "will be the same three months hence even." It is, however, satisfactory that he admits that the higher reaches of this canal are badly off.

Turning next to the Begari, he admits "The supply is not equal to the demand, and there is no doubt that cultivation could be extended were more water available. The existing cultivation, however, receives a fully adequate supply." With this last remark, I regret I cannot agree, if that remark applies to any taluka of my division; and yet directly after he says "The badly supplied tracts as far as canal water is concerned may be taken as \* \* \* the lands between the Nasir and Begari Canals in dehs Khariro, Gurdo, Daho, Muhib Wah, Bakhtawarpur and a few dehs at the tail of the Son Wah."

#### KANDHKOT.

33. My remarks above apply equally to the irrigational facilities of this taluka, also. The supply *ex* Kandhkot Raj Wah has certainly improved since the re-modelling, yet is defective in parts. But the new mouth of this branch, the Drakhan regulator, proved deceptive, and it has been found necessary to revert to the old mouth above the head regulator of the Desert Canal. Of the dehs mentioned by the Executive Engineer, Suhranipur has now got a separate distributary, constructed last year, while Machko and Chiman have had only a fair supply; Malhir and Kandhkot have had little or no supply at all, and the two are almost lying a waste. A new distributary has just been taken to the former deh, and it remains to be seen yet with what success it works. The remaining dehs of Malukan, Akhero and Burdi (henceforward to be called Matihar) have had a good supply. I have already said in my remarks on Thul Taluka that there is much complaint as regards Ahmed Raj Wah, and in Kandhkot Taluka dehs Gazi, Lashari and part of Shah Ghazi, settled on that wah, are badly off. I am not aware of any improvements that are contemplated to this branch canal as the Executive Engineer has preferred reticence on the general question of future improvements that may be in contemplation, but I believe he is referring to the lowering of sills in the Desert Canal when he says he hopes better results will be obtained this year. In the rest of the portion settled on the Desert Canal and its branches, there is more or less a good supply, and the result has been a general enhancement in this part, as will be seen when I come to discuss grouping and the rates.

I have not much to add to my remarks on the Unhar Wah, already stated. The dehs of Draho, Kundhar, Haibat Pako, Dadar Nasir, Sheran and Khair Wah may be taken to be admitted by the Executive Engineer to be without water.

I regret again to differ from the opinion of Mr. Robertson in regard to the Ghauspur branch. In my opinion, which is shared by the zamindar, Mir Ali Murad Sundrani, this little branch is hardly serving much purpose. Some

zamindars—notably Bahadur Khan Khoso—possess much larger *karias* than this branch canal, which is little bigger than an ordinary sized zamindari water-course. The result is that the dehs Mukhwani, Ghauspur and the part of Arain settled on it are lying waste, in addition to Dhandhi, Shah Muhammad Jilani and Manghi, mentioned by the Executive Engineer. The Tangwani branch draws much more water since its widening and extension, but there is still complaint in dehs Sheran, Son Wah, Bijarani and Unhar. The Executive Engineer seems to think that the complaint is not well founded, which, I submit, hardly fits in with his statement just a few lines above.

He dismisses the Nasir branch with a similar remark. But dehs Nasir, Nar, Baragh, Jamal, Duniapur, Khariro and Gurdo have always complained of insufficiency. This the Executive Engineer practically admits when he says “A new branch or a series of branches to open up the country between the Nasir Canal and the Begari might, perhaps, be advantageous as this land at present receives a somewhat poor supply;” and I believe this branch could not work better than the main canal from which it takes off. But this branch will no doubt also be improved when the Unhar is taken in hand.

The Begari gives a fairly good supply to dehs Teghani, Arain and a small part of Manghi, while Karampur and Shergarh are almost entirely without water. This is, perhaps, because the last two dehs are high land just near the head of the canal; a distributary, however, taking off just at the mouth of the Begari might irrigate these lands with advantage both to Government and the zamindars.

#### KASHMOR.

34. There is not much to be said on the water-supply of the portion between the protective embankment and the river. This is by far the larger portion of the taluka, comprising as it does 9 tapas (26 dehs) which can only be cultivated on spill water or soakage from the river; and in any year when the inundation is poor, the people have to leave their homes in search of bread elsewhere. The inundation of 1902 was of such a character when, except a few occasional patches, almost the whole area, extending over about 250 miles, lay barren. The inundation of 1903 was a favourable one, and crops raised, especially of wheat, were magnificent. No other taluka in the Province has such an extensive *kacha*.

I have nothing to say in regard to the Desert Canal tract, as I agree with the remarks of the Executive Engineer. As regards Adio Wah, in his Abkalani report for 1903, the Executive Engineer says “Unless its feeder channel improves, it will not do well, except in really good years, as it takes a high river to feed the channel properly.” He is still of the same opinion. With such an uncertain mouth, it could not be expected that zamindars would undergo the expense of taking long water-courses from the canal itself, who have hardly any confidence in the canal, and those whose lands have been transferred from the Desert to this canal are loud in complaint. Shah Ali Khan Dombki is the largest of them all; and last year, though the inundation was one of the best, he could not get an adequate supply from the Adio. The Executive Engineer was therefore obliged to allow him to re-open his water-courses from the Desert, and it was only then that he could get a final watering for his crops.

The proposed distributary through Lain Purani, Daro Jundo, and Kinjhar will no doubt bring much soil under cultivation which is at present lying idle, but much depends upon the mouth of the main canal. The land to the north of the Desert Canal, again, is peculiarly hard, gravelly and cracked, with an admixture of sand and of a redish tint, which requires a larger quantity of water

Tract (c) consists of dehs Sorah, Mirpur Pako, Badani Pako, Khahi Pako, Sain, Shahgarh Pako and parts of Thalo and Zorgarh. All this tract is for the greater part lying barren, and there does not appear any prospect of improving its supply in the near future. The small water channels *ex* the Band have never worked satisfactorily, nor does the Public Works Department accept any responsibility in regard to them, and under the Commissioner-in-Sind's No. 562 of the 25th March 1902 the operation of the Fallow Rules has been suspended on these canals in Kashmir and Kandhkot Talukas.

I have little to add to my remarks on the Kandhkot Raj Wah, given under the taluka of that name. I am bound to say, however, that some of the dehs in this tract, such as Jakhrani Kumbri and Shahalipur, have had an



excellent supply in the past few years; but these dehs, except Kumbri, are also watered by the Desert Canal itself, and their supply must materially diminish henceforth, owing to the lowering of the sills.

Deh Zorgarh has had a new distributary given to it from last year, but it did not bring in a sufficient supply. Even the lift supply was stinted, and the zamindars are in as bad a condition as ever, while Bahaduranpur, Khoski Pako, and Thalo are in no better plight. A new distributary is to be excavated next cold weather for this last mentioned deh, which is very high-lying, and a lift supply can only be expected.

The Toj Raj Wah has admittedly worked well, though, in Kandhkot, the supply from its distributaries (especially No. 1) is not enough.

35. The improvements effected in the irrigational resources of the division have been fully described above. To summarise them here, it may be stated that—

(a) The Unhar Wah and its branches were improved in 1894-95; and, with the exception of the first 6 miles of Son Wah, the rest of its length was given to the Nasir branch. The following statement will give the cost of the said improvements from 1894-95 to date :—

Particulars.	Amount.			REMARKS.
	Rs.	a.	p.	
Regulators ...	69,505	0	0	The canal was widened and deepened, and the regulator bridges, etc., were constructed.
Bridges ...	8,478	0	0	
Buildings ...	4,627	0	0	
Zamindari Sluices ...	13,012	0	0	
Earth Work ...	1,50,227	0	0	
<b>TOTAL ...</b>	<b>2,45,849</b>	<b>0</b>	<b>0</b>	

The Nasir branch having relieved a considerable part of Son Wah, the following dehs benefitted to a large extent:—Mahir Ali Khoso, Bahadurpur, Udi, Pako, Musa Wah, Chandan, Talib Shah, Thul Nao, Dhani Baksh Banglani, Odhano, Bachro, Khuda Baksh Kanrani, Dabi, Bolaki, Dul, Sameja Thul Purano and Ladu.

(b) The re-modelling of the Desert Canal and its branches, in 1900, 1901 and 1902, has been fully described by the Executive Engineer, to which may be added the new Thariri Raj Wah.

A statement showing the expenditure of re-modelling the Desert Canal up to 31st March 1904, as supplied by the Executive Engineer, Begari Canals, is given below :—

Item No.	Name of Work.	Masonry Work	Earth Work.	TOTAL.
		Rs.	Rs.	Rs.
1	Widening Desert Canal ...	1,17,268	2,94,038	4,11,306
2	Do. Murad Wah ...	4,674	1,373	6,047
3	Do. Extension, Kandhkot branch ...	15,655	34,849	50,504
4	Do. Toj Raj Wah ...	12,784	36,573	49,357
5	Do. New Fall Raj Wah ...	5,683	25,520	31,203
6	Do. Branch do. ...	452	21,869	22,321
7	Do. Bugti Raj Wah ...	209	...	209
8	Do. Ahmed Raj Wah ...	809	8,031	8,840
9	Do. New Manjhi Raj Wah ...	...	1,220	1,220
10	Do. Old do. ...	810	...	810
11	Do. Tharu Raj Wah ...	973	165	1,138
12	New Frontier Raj Wah ...	12,495	66,092	78,587
13	New Thariri do. ...	3,019	8,879	11,898
14	New Adio Wah ...	28,912	74,947	1,03,859
15	Distributaries of Frontier Raj Wah ...	6,814	10,041	16,855
16	Do. Kandhkot Raj Wah ...	3,997	16,623	20,620
17	Do. Branch do. ...	...	657	657
	<b>TOTAL ...</b>	<b>2,14,554</b>	<b>6,00,877</b>	<b>8,15,431</b>

The excavation of Thariri Raj Wah, and the extension of the Fall Raj Wah, along with the re-modelling of the Desert Canal, gave a larger supply to the following dehs :—Thariri, Haidarpur, Fateh Khan Sabayo, Bhangar, Misripur, Garhi Hasan, Abdulah Jakhrani, Rap Mirdad, Fajo Khoso and Biti.

The following dehs in Kandhkot have largely improved their supply owing to the excavation of the Frontier Raj Wah, and its distributaries, as also, owing to the new fall at the 19th mile of the Desert Canal, *viz.* :—Rasaldar, Balochabad, Malguzar, Baburwari, Alamabad, Hirapur and Sanhri, which have an excellent supply.

That of the following dehs has also improved owing to the improvement of Fall Raj Wah and Branch Fall Raj Wah, *viz.* :—Kajli, Chil, Jafarabad, Shah Ghasi, Lashari, Karti, Hajano, Salighani, Kot Dothi and Gazi.

The improvement of Toj Raj Wah and its branches has benefitted the following dehs :—Rahmatabad, Maro, Kuan Wah, Jagirabad, Mari, Tangwani, Saawan Gabol, Gahno Khoso, Ghariri, Daulatpur, Drabhani and Malukan.

The Kandhkot Raj Wah has given a larger supply to Akhero, Suhranipur, and Burli (Matihar). Machko, Malhir, Kandhkot and Chiman had only a nominal supply before, yet have still a very inadequate supply.

The improvement and extension of the Tangwani branch has improved the supply of dehs Lalao (part), Nindeji-Dhori and Suhiani.

The improvement of the Nasir branch has given a larger supply to Jamal, Beghu and Gurdo, but it is still insufficient.

In Kashmor Taluka, the Adio Wah has been able to irrigate Kashmor Pako, Lain Purani, Kathgarh, and parts of Daro Jundo, Kinjhar, Gulanpur and Karimabad, which could get no water formerly from the Desert Canal. The supply of dehs Mahar, Machhi and Toj has depreciated owing to their transfer to the Adio, while parts of Karimabad, Gulanpur, Chachar and Daro Jundo, which formerly received a moderately good supply from the Desert, have had their supply curtailed by transfer to the Adio.

The new fall at the 19th mile of the Desert Canal has given a larger supply to dehs Bakshapur, part of Shahalipur, Kumb, Muhammadani and part of Belo.

The changes in the Kandhkot Raj Wah have seriously affected dehs Kumbri and part of Shahalipur. The other dehs in the division have still a precarious supply.

36. The inundation of 1895-96, 1899-1900 and 1902-03 was either abnormally low, short lived, or indifferent, and, under the orders of the Commissioner in Sind, the operation of the Fallow Rules in those years was suspended. The year 1902-03 was of exceptional drought. The remissions, however, on account of dryage have been heavy in those years, as well as in 1896-97, when the inundation was only fair. In 1894-95, 1897-98, 1900-01, and 1901-02, the inundation was favourable, while that of 1903-04 was exceptionally high. In 1898-99, it was moderate.

37. In 1894-95, the total number of wells throughout the division was 294. Out of these, 118 were for drinking purposes, and the rest for irrigational. At present, there are 572 wells, of which 141 are for drinking purposes and 431 for irrigational, giving an increase of 278. The details are given in Appendix XI, from which it will appear that some wells, originally intended for domestic purposes, are also used now for cultivation in the Kandhkot Taluka. People in Thul Taluka do not show any interest in well irrigation, while in Kashmor there are not many opportunities for digging wells as the underground water in that taluka is generally brackish. But in Kandhkot there are patches of high land which cannot be cultivated except by means of wells. People, therefore, are more ready to incur the expense. Of late, they have been encouraged considerably to dig wells, and in any area which cannot



be irrigated otherwise they are given 10 acres of land free of *malkano* after they have constructed a well.

Well irrigation is seldom used for kharif crops, probably because it requires a larger supply than rabi, which wells cannot afford. Wheat, barley, tobacco and vegetables are the only crops usually raised on well water. The usual average depth of wells is about 25 feet, but in some places, usually in the *kacha*, water can be found at 18 to 20 feet. They contain water from 5 feet to 12. In the *kacha*, however, they contain 10 to 12 feet. The wells on the lands watered by the Desert and Adio Wahs are generally brackish, while those on the other canals are sweet.

38. Before the introduction of the current Settlements in these talukas, the lands were held under a system of leases originated by General John Jacob. A concise account of the Revenue system of this period is given in paragraphs 22 and 23 of Mr. Seymour's report for the Kashmir Taluka, forwarded to Government with the Commissioner's letter No. 2894, dated the 25th July 1893, to which reference is requested.

39. The first Irrigational Settlement in the 80 villages (and not 79 as shown in the Government Resolution) on the Begari in Thul was introduced from 1885-86 under Government Resolution No. 4575, dated the 6th June 1885, but no guarantee was given for any fixed period; the Settlement in the remaining 65 villages was sanctioned under Government Resolution No. 4398 of the 30th June 1891. But the introduction of the same was postponed, *vide* Government Resolution No. 3438 of the 14th April 1892, until the year 1893-94, when it came into operation. In accordance with these two Settlements, the villages of the then taluka were divided into two groups, and the following rates of assessment were levied :—

Name of Cultivation.				1st Group.	2nd Group.
<i>I Kharif.</i>				Rs. a. p.	Rs. a. p.
1.	Garden	...	...	3 8 0	3 4 0
2.	Rice	...	...	3 4 0	3 0 0
3.	Other Flow and Lift aided by Flow	...	...	2 8 0	2 4 0
4.	Lift	...	...	2 4 0	2 0 0
<i>II Rabi.</i>					
1.	Artificial and Natural Inundation (Bosi, Sailabi.)			2 12 0	2 12 0
2.	Do. aided by Lift	...	...	3 8 0	3 8 0
3.	Lift	...	...	3 4 0	3 4 0
4.	Barani	...	...	1 8 0	1 8 0
5.	Dubari	...	...	0 4 0	0 4 0

The following dehs on the unprotected side of the Band were also surveyed and settled, *viz* :—Keti, Bilhini, Dari, Wahidpur, Bakshpur, Gulabpur, Faridabad, Bindi and Khambhri.

The *kacha* unsurveyed lands paid the following rates :—

				Rs. a. p.
Drill sown	...	...	...	3 0 0
Do. aided by Lift	...	...	...	3 8 0
All land sown broadcast	...	...	...	1 8 0
Do. aided by Lift	...	...	...	3 0 0
Simko	...	...	...	0 8 0

Under their Resolution No. 842, dated the 4th February 1887, the Government were pleased to fix maximum rates for the *kacha* as follow:—

Kharif and Peshras ... .. Rs. 3 0 0

*Rabi.*

			Rs.	a.	p.
Wheat and Barley	...	...	3	0	0
Other Crops ploughed	...	...	2	12	0
Unploughed land	...	...	1	8	0

Mr. Giles, the then Deputy Commissioner of the Frontier District, in his No. 2253, dated the 6th July 1887, next recommended that the 9 dehs above-mentioned be treated as *kacha* dehs, and that the rates be lowered. This proposal was sanctioned under Government Resolution No. 270 of the 14th January 1888, and the following rates were adopted for cultivation in the *kacha*:—

			Rs.	a.	p.
Kharif and Peshras	...	...	2	12	0
Land sown with Wheat and Barley	...	...	2	12	0
Lands ploughed and sown with other Crops.	...	...	2	12	0
Lands unploughed	...	...	1	8	0
Simko	...	...	0	8	0

Thereafter, the 9 dehs above described, together with dehs Arain, Teghani, Dhandhi and Jangin on the protected side, were transferred to Kashmir Taluka under Government Resolution No. 4362, dated the 17th June 1889. The 9 dehs above referred to paid the new *kacha* rates sanctioned, while the 4 dehs just mentioned paid their Thul rates.

Under Government Resolution No. 6522 of the 9th September 1893, a 10-years' guarantee was given to the portion of the taluka settled in 1885-86. This guarantee expired in 1894-95, but Government were pleased under their Resolution No. 188, dated the 10th January 1895, to extend the period of guarantee so as to allow of the taluka being taken up as a whole for purposes of the next revision. This guarantee was again extended by one year under Government Resolution No. 4321 of the 22nd June 1901. A further extension was granted for one year by Government Resolution No. 135, dated the 10th January 1903.

The Kashmir Taluka, besides the 13 dehs which were transferred to it from Thul, as above described, also got 4 dehs more, constituting the tapa of Miani, from Ghotki Taluka of the Shikarpur District, under Government Resolution No. 4057 of the 4th June 1889, viz:—(1) Miani, (2) Khahi Wadi, (3) Makhan Belo and (4) Belo Gublo (Government reserved forest). A portion of these dehs was surveyed and settled before the transfer, and they brought their own rates to Kashmir, which were—

*Kharif.*

			Rs.	a.	p.
Rice	...	...	4	0	0
Other Flow and Lift aided by Flow	...	...	3	8	0
Lift	...	...	3	0	0

*Rabi.*

Artificial and Natural Inundation	...	...	3	8	0
Do. aided by Lift	...	...	4	4	0
Lift	...	...	4	0	0

*Kacha.*

Kharif and Peshras	...	...	2	0	0
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*Rabi.*

Wheat and Barley	...	...	3	0	0
Other Crops ploughed	...	...	2	8	0
Do. unploughed	...	...	1	8	0
Simko	...	...	0	8	0



But these rates were cancelled, apparently on the authority of Government Resolution No. 270 of the 14th January 1888, and the fresh rates sanctioned under that Resolution for Thul and Kashmor were levied from these 4 Ghotki dehs also. As explained by Mr. Seymour in paragraph 47 of his report, no special sanction appears to have been obtained for expressly cancelling the Ghotki rates. After the transfer of dehs from Thul and Ghotki, therefore, all of them, as well as the dehs constituting the Kashmor *kacha*, paid the new rates sanctioned under Government Resolution No. 270 of the 14th January 1888.

40. On the introduction of the first Settlement (Mr. Seymour's) into Kashmor Taluka, the following rates were levied under Government Resolution No. 8134, dated the 6th November 1893, in the *kacha* thus constituted, *viz.* :—

			Rs.	a.	p.
Kharif and Peshras	...	...	...	2 12	0
<i>Rabi.</i>					
Wheat and Barley	...	...	...	3 0	0
Other Crops ploughed	...	...	...	2 12	0
Do. unploughed	...	...	...	1 8	0
Simko	...	...	...	0 8	0

*I.e.*, 4 annas were raised on wheat and barley over the rates sanctioned under Government Resolution No. 270 above referred to, while the other rates remained unchanged.

As for the surveyed portion of the taluka, two groups were formed with rates as follow :—

Kind of Irrigation.			1st Group.	2nd Group.
<i>Kharif.</i>			Rs. a.	Rs. a.
Gardens	...	...	3 4	3 0
Rice	...	...	3 0	3 0
Other Flow and Lift aided by Flow...	...	...	2 4	2 2
Lift	...	...	2 2	1 14
Barani	...	...	1 8	1 8
<i>Rabi.</i>				
Artificial and Natural Inundation	...	...	2 10	2 10
Do. aided by Lift	...	...	3 8	3 4
Lift	...	...	3 4	3 0
Dubari	...	...	0 4	0 4

It will, then, be observed that the 4 dehs of Arain, Teghani, Dhandhi and Jangin were placed in Thul in Group II. On the introduction of the Settlement into Kashmor, these dehs were re-settled, before their term of guarantee had expired, and were again placed in Group II. But the rates for Kashmor, 2nd group, were lower than the 2nd group of Thul, the difference being 4 annas in garden, 2 annas in other flow and lift aided by flow, 2 annas in lift, 2 annas in natural and artificial inundation, 4 annas in natural and artificial inundation aided by lift, and 4 annas in lift irrigation. I cannot account for the re-settling of these dehs before the expiration of the guarantee, nor for the lowering of the rates, as no reasons have been assigned by Mr. Seymour in his report.

The Settlement in Kashmor having been introduced in 1894-95, the 10-years' guarantee expired in 1903-04. Under Government Resolution No. 135 of the 10th January 1903, however, one year's extension was granted, which will expire at the end of 1904-05, and the revised Settlement will, therefore, if sanctioned, come into operation with effect from 1905-06.

41. The re-modelling of the Desert Canal, and the consequent extension of cultivation in Kashmor, necessitated a further change in the extent and limit of Thul and Kashmor Talukas. Under Government Resolution No. 262 of the 14th January 1901, the new Kandhkot Taluka was sanctioned, to which 52 dehs were transferred from Kashmor and 35 from Thul, making a total of 87, as already stated. This taluka was started from the 1st August 1900 with the following dehs :—

## FROM THUL.

*Group II.*

1. Shergarh.
2. Gurdo.
3. Karampur.
4. Sanbri.
5. Jafarabad.
6. Shah Ghasi.
7. Lashari.
8. Gazi.
9. Karti.
10. Tangwani.
11. Drabhani.
12. Chil.
13. Hajano.
14. Salghani.
15. Kot Dothi.
16. Hirapur.
17. Bijarani.
18. Unhar.
19. Lalao.
20. Son Wah.
21. Sheran.
22. Nindeji Dhor.
23. Nar.
24. Duniapur.
25. Baragh.
26. Gulwali.
27. Manjhi.
28. Jhalo.
29. Hazaro.
30. Jamal.
31. Khariro.
32. Beghu.
33. Saifal Wah.
34. Kureshi.
35. Suhlani.

## FROM KASHMOR.

*Group I.*

1. Lahri Dombki.
2. Rasaldar.
3. Balochabad.
4. Maiguzar.
5. Baburwari.
6. Alamabad.
7. Chil.
8. Mari.
9. Kajli.

## FROM KASHMOR—contd.

*Group I—contd.*

10. Rahmatabad.
11. Maro.
12. Khan Wah.
13. Jagirabad.
14. Marri.

*Group II.*

15. Machko.
16. Ghoraghat.
17. Malhir.
18. Akhero.
19. Suhranipur.
20. Malukan.
21. Daulatpur.
22. Ghariri.
23. Drabhani.
24. Chiman.
25. Burdi.
26. Wakro.
27. Kandhkot.
28. Haibat Pako.
29. Dadar.
30. Khair Wah.
31. Draho.
32. Kundhar.
33. Jangin.
34. Makhwani.
35. Dhandhi.
36. Ghauspur.
37. Shah Muhammad Jilani.
38. Manghi.
39. Teghani.
40. Arain.

*Kacha.*

41. Bilhini.
42. Ket.
43. Dari.
44. Wahidpur.
45. Bakshpur.
46. Gulabpur.
47. Khambhri.
48. Faridabad.
49. Bindi.
50. Haibat Khacho.
51. Jafarabad.
52. Belo Ket Sadhuja.  
(Government forest).



It will be seen from the above list that there are two dehs of the name of Chil and two more under the name of Drabhani. So long as these dehs were situate in different talukas, there was no room for any confusion. But on the re-constitution of the talukas, all these four dehs were transferred to the new taluka of Kandhkot. This rendered it necessary to alter the names of two of them, and accordingly the names of Chil and Drabhani from Thul were, under Government Resolution No. 382 of the 13th February 1901, altered to Gahno Khoso and Sanwan Gabol, respectively.

It will also be noticed that certain dehs transferred to Kandhkot belonged to Groups I and II of Kashmor, while others to Group II of Thul; and as all these three have separate rates assigned to them, practically there are now three groups in the taluka, though they are not so designated; but two separate classes are retained under Group II. No inconvenience has, however, resulted as the rates are different.

### Thul.

42. The following table will show the occupied and cultivated areas, demands, alienations, remissions, revenue for collection, collections and balances outstanding during the period 1893-94 to 1902-03:—

Year.	Total occupied Area.			Total occupied cultivated Area, including uncultivated portions, fallow-expired and twice-cropped Land.			Demand.	Alienations.	Remissions.	Revenue for Collection.	Collections.	BALANCES outstanding.
	Occupied Area.	Jagir Laud.	TOTAL.	Occupied Area.	Jagir Laud.	TOTAL.						
1	2	3	4	5	6	7	8	9	10	11	12	13
	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1893-1894 ...	2,01,803 38	592 30	2,02,396 28	78,227 14	74 22	78,301 36	1,74,240 2 0	1,245 6 0	21,394 15 0	1,51,599 10 0	1,41,265 14 0	10,333 12 0
1894-1895 ...	2,03,597 2	592 30	2,04,189 32	91,801 31	250 10	92,142 10	2,05,222 1 8	1,262 4 8	6,239 5 0	1,97,720 8 0	1,84,494 0 0	13,226 8 0
1895-1896 ...	2,07,127 28	584 18	2,07,712 6	82,305 30	242 33	82,548 23	1,86,276 6 0	1,227 2 0	7,465 7 0	1,77,553 13 0	1,76,860 5 0	993 8 0
1896-1897 ...	2,14,313 38	584 18	2,14,898 16	1,03,634 24	181 26	1,03,816 9	2,37,826 0 0	1,243 13 0	13,190 3 0	2,23,392 0 0	2,20,397 4 0	2,994 12 0
1897-1898 ...	2,22,968 23	584 18	2,23,553 1	1,04,497 6	213 17	1,04,700 23	2,34,502 1 0	1,227 2 0	8,894 5 0	2,24,390 10 0	2,17,619 14 0	6,760 12 0
TOTAL ...	10,51,581 0	2,938 34	10,54,520 3	4,60,546 25	962 36	4,61,509 21	10,38,086 10 8	6,205 14 8	57,215 3 0	9,74,646 9 0	9,40,337 5 0	34,309 4 0
AVERAGE ...	2,10,316 10	587 31	2,10,904 1	92,109 11	192 23	92,301 34	2,07,613 5 4	1,241 2 11	11,442 13 5	1,94,929 5 0	1,88,067 7 5	6,861 13 7
1898-1899 ...	2,26,159 17	77 29	2,26,237 6	1,07,627 17	53 10	1,07,680 27	2,40,739 3 0	187 11 0	16,208 5 0	2,24,343 3 0	2,12,500 3 0	11,843 0 0
1899-1900 ...	2,29,171 19	77 29	2,29,249 8	1,06,190 20	69 18	1,06,268 38	2,33,790 10 0	171 0 0	10,016 5 0	2,23,703 5 0	2,21,706 6 0	903 15 0
1900-1901 ...	2,33,048 33	77 29	2,33,126 22	1,27,884 20	77 29	1,27,962 9	2,89,277 5 0	171 0 0	5,126 9 0	2,83,979 12 0	2,73,840 12 9	10,138 15 2
1901-1902 ...	2,29,904 30	77 29	2,29,982 19	1,09,038 15	107 29	1,09,146 4	2,41,634 15 0	171 0 0	13,843 10 0	2,27,620 5 0	2,20,387 8 6	7,232 12 6
1902-1903 ...	2,34,250 24	77 29	2,34,328 13	1,03,164 3	43 9	1,03,217 12	2,30,981 6 0	171 0 0	22,854 10 0	2,07,955 12 0	1,97,787 14 0	10,167 14 7
TOTAL ...	11,51,535 3	388 25	11,51,923 28	5,54,113 35	361 15	5,54,475 10	12,36,423 7 0	871 11 0	68,949 7 0	11,66,002 5 0	11,26,312 12 3	40,289 8 9
AVERAGE ...	2,30,307 1	77 29	2,30,384 30	1,10,822 31	72 11	1,10,895 2	2,47,284 11 0	174 5 5	13,789 14 2	2,33,320 7 5	2,25,262 8 10	8,057 14 7
GRAND TOTAL ...	22,03,116 12	3,327 10	22,06,443 31	10,14,060 18	1,324 11	10,15,384 29	22,74,490 1 8	7,077 9 8	1,26,163 10 0	21,41,248 14 0	20,66,650 1 3	74,598 12 9
AVERAGE ...	2,20,311 25	332 30	2,20,644 15	1,01,466 2	132 17	1,01,598 10	2,27,449 0 12	707 12 2	12,616 5 10	2,14,124 14 2	2,06,665 0 1	7,459 14 1

The above figures show a steady increase with slight variations from 1896-97, which might be attributed to the improvement of the Unhar Wah. The year 1900-01 shows a rather abnormal increase, which is due to an exceptionally favourable inundation. In 1902-03, the inundation being very low, although the cultivated area was large, yet the remissions were the largest, being Rs. 22,854-10. The fluctuation is also, perhaps, due to fallows. The re-modelling of the Desert Canal has also contributed to the increase on the last named canal. Comparing cultivation in the year 1902-03 to that in 1893-94, it will be found that the area has almost doubled.

The total balance of Land Revenue shown in the above statement at the end of 1902-03 is Rs. 74,598-12-9. The Mukhtiarkar has supplied the following further figures:—

Amount of arrears struck off on account of poverty of khatadars during the above period, including Miscellaneous Land Revenue ... Rs. 33,494 12 0

Amount of arrears, including Miscellaneous Land Revenue, outstanding at the end of 1902-03 ... Rs. 18,304 0 9

These figures cannot, however, be compared with the above figures of Rs. 74,598-12-9, because they do not include Miscellaneous Land Revenue, nor can the amount of recoveries during the 10 years, excluding Miscellaneous Land Revenue, be obtained. Yet, I submit, that the amounts struck off and the net balance of arrears outstanding give a fair idea of the results of the current Settlement in the taluka.

Columns 5 and 6 of the above table show the total area, including uncultivated portions of Survey Numbers, time-expired fallows, and land twice-cropped, details of which are given in the subjoined table:—

TABLE II: THUL TALUKA.

Year.	Rayatwari Cultivated Area.							Jagir Cultivated Area.						
	Actual Cultivated Area.	Uncultivated Portions of Survey Numbers.	Fallow-expired.	Twice-cropped Land.	Uncultivated Portions of twice-cropped Land.	TOTAL.	TOTAL of Cultivated Area and twice-cropped Land, Columns 2 and 5.	Actual Cultivated Area.	Uncultivated Portions of Survey Numbers.	Fallow-expired.	Twice-cropped Land.	Uncultivated Portions of Survey Numbers.	TOTAL.	TOTAL Cultivated Area, including twice-cropped Land, Columns 9 and 12.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.
1893-1894 ...	71,791 10	1,534 26	2,127 34	2,255 16	518 8	78,227 14	74,043 28	57 10	17 12	...	...	...	74 22	57 10
1894-1895 ...	82,853 38	1,388 35	4,542 39	2,462 25	643 14	91,891 31	85,316 23	179 17	17 37	...	53 5	...	250 19	232 23
1895-1896 ...	77,883 26	1,074 39	1,175 21	1,963 10	208 14	82,305 20	79,846 36	211 34	30 39	...	...	...	242 33	211 34
1896-1897 ...	97,788 19	1,204 6	3 1 10	4,022 38	297 11	1,01,634 24	1,01,811 17	189 19	1 6	...	...	...	181 25	180 19
1897-1898 ...	98,100 9	1,205 18	2,471 30	2,326 33	381 36	1,01,487 6	1,00,427 2	209 7	4 10	...	...	...	213 17	209 7
TOTAL ...	4,28,417 22	6,409 4	10,639 34	13,031 2	2,049 3	4,60,546 25	4,41,448 24	838 7	71 24	...	53 5	...	962 36	891 12
AVERAGE ...	85,683 20	1,281 33	2,127 39	2,606 8	402 83	92,109 13	88,289 28	167 25	14 13	...	10 25	...	192 23	178 10
1898-1899 ...	93,152 19	1,567 3	7,560 1	2,126 39	420 35	1,07,827 17	98,279 18	53 10	...	...	...	...	53 10	53 10
1899-1900 ...	1,00,357 21	2,440 31	185 15	2,786 2	429 31	1,09,199 20	1,03,143 23	69 18	...	...	...	...	69 18	69 18
1900-1901 ...	1,18,642 5	1,050 27	1,753 37	5,036 32	500 39	1,27,884 20	1,23,708 37	77 29	...	...	...	...	77 29	77 29
1901-1902 ...	1,00,247 17	1,752 14	1,269 8	5,036 25	672 31	1,01,038 15	1,05,344 2	77 29	...	...	30 0	...	107 29	107 29
1902-1903 ...	97,186 13	2,262 22	...	3,266 38	448 10	1,01,164 3	1,00,463 11	53 9	...	...	...	...	53 9	53 9
TOTAL ...	5,12,585 35	9,043 17	10,768 21	18,343 16	2,472 28	5,54,113 35	5,30,929 11	331 15	...	...	30 0	...	361 15	361 15
AVERAGE ...	1,02,517 7	1,988 28	2,153 28	3,668 27	494 21	1,10,822 31	1,03,185 34	66 11	...	...	6 0	...	72 11	72 11
GRAND TOTAL ...	9,41,003 17	16,352 21	21,408 15	31,374 18	4,521 29	10,14,660 20	9,72,377 35	1,169 22	71 24	...	83 5	...	1,324 11	1,252 27
AVERAGE ...	94,100 14	1,635 10	2,140 33	3,137 18	452 7	1,01,466 2	97,237 32	116 38	7 6	...	8 12	...	132 17	125 11

The following table gives the details of remissions due to all causes during the 10 years 1893-1894 to 1902-1903:—

TABLE III.

Year.	Drought.	Excess of Water.	Fallow-expired. Assessment remitted.	Locusts.	Irregularity of Rain (Boundary Mark).	Frost and Adverse Winds.	Insects and insufficient Water.	Insects and unfavourable Winds.	Khas (that does not give Seed).	Assessment remitted on unauthorized Cultivation.	Unfavourable Winds and insufficient Water.	TOTAL.
	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
1893-1894 ...	17,649 11	...	3,538 1	...	...	...	...	...	...	207 3	...	21,394 15
1894-1895 ...	4,387 11	388 3	886 8	676 15	...	...	...	...	...	...	...	6,239 5
1895-1896 ...	5,258 15	...	1,043 11	1,177 8	10 5	...	...	...	...	...	...	7,495 7
1896-1897 ...	7,535 15	...	...	5,837 12	26 8	...	...	...	...	...	...	13,190 3
1897-1898 ...	...	...	669 6	6,616 6	195 5	1,413 4	...	...	...	...	...	8,894 5
1898-1899 ...	510 2	...	5,400 9	...	...	9,790 5	501 5	...	...	...	...	16,208 5
1899-1900 ...	4,011 14	...	108 1	...	...	3,104 0	3,512 11	151 5	...	...	38 6	10,016 5
1900-1901 ...	...	61 3	988 13	703 11	...	...	3,372 14	...	...	...	...	5,126 9
1901-1902 ...	955 1	...	331 10	12,448 13	...	...	...	...	109 2	...	...	13,843 10
1902-1903 ...	15,207 5	...	...	6,714 0	...	915 13	...	...	...	17 8	...	22,854 10
TOTAL ...	55,426 10	449 6	12,951 11	39,975 1	222 2	15,229 6	7,386 14	151 5	108 2	224 11	38 6	1,26,163 10



# KANDHKOT.

The following three tables give the same details as for Thul Taluka for 9 years:—

TABLE I: KANDHKOT TALUKA.

Year.	TOTAL OCCUPIED AREA.			TOTAL OCCUPIED CULTIVATED AREA, INCLUDING UNCULTIVATED PORTIONS, FALLOW-EXPIRED AND TWICE-CROPPED LAND.			Demand.	Alienations.	Remissions.	Revenue for Collection.	Actual Collections.	Balances outstanding.
	Occupied Area.	Jagir Land.	TOTAL.	Occupied Area.	Jagir Land.	TOTAL.						
1	2	3	4	5	6	7	8	9	10	11	12	13
	A. g.	A. g.	A. g.	A. g.	A. g.	A. g.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1894-1895 ...	1,85,000 5	5,831 29	1,90,831 34	67,964 10	1,803 0	69,767 10	1,66,995 15 8	12,905 10 8	6,684 12 0	1,47,405 9 0	1,24,086 0 9	23,319 8 3
1895-1896 ...	1,82,248 31	5,831 29	1,88,080 20	64,167 31	1,616 14	65,784 5	1,59,361 0 0	12,870 4 0	20,121 10 0	1,26,369 2 0	1,18,648 11 0	7,720 7 0
1896-1897 ...	1,86,438 15	5,849 29	1,92,288 4	75,326 34	1,825 25	77,152 19	1,82,404 1 0	12,895 3 0	19,084 12 0	1,50,424 2 0	1,38,281 0 0	12,143 2 0
1897-1898 ...	1,92,548 20	5,849 29	1,98,398 9	86,269 17	2,469 20	88,738 37	2,06,547 15 0	12,911 14 0	11,510 9 0	1,82,125 8 0	1,60,348 7 0	21,777 1 0
TOTAL ...	7,46,235 31	23,362 36	7,69,598 27	2,93,728 12	7,714 19	3,01,442 31	7,15,308 15 8	51,582 15 8	57,401 11 0	6,06,324 5 0	5,41,364 2 9	64,960 2 3
AVERAGE...	1,86,558 38	5,840 29	1,92,399 27	73,432 3	1,928 25	75,360 28	1,78,827 3 11	12,895 1 11	14,350 6 9	1,51,581 1 3	1,35,341 0 8	16,240 0 7
1898-1899 ...	1,90,562 28	5,849 29	1,96,412 17	88,421 29	2,379 0	90,800 29	2,07,965 9 0	12,911 14 0	21,572 0 0	1,73,481 11 0	1,57,046 6 0	16,435 5 0
1899-1900 ...	1,88,377 37	5,849 29	1,94,227 26	82,806 14	3,351 10	86,157 24	1,95,980 6 0	12,928 9 0	17,715 10 0	1,65,336 3 0	1,60,231 2 9	5,105 0 3
1900-1901 ...	2,00,090 8	5,849 27	2,05,939 35	98,894 20	3,060 26	1,01,955 6	2,33,969 9 0	12,895 3 0	16,096 10 0	2,04,077 12 0	1,88,638 9 10	15,439 2 2
1901-1902 ...	2,03,537 24	5,849 27	2,09,387 11	93,470 28	2,065 21	95,536 9	2,18,331 13 0	12,928 9 0	29,757 11 0	1,75,645 9 0	1,55,585 3 0	20,060 6 0
1902-1903 ...	2,06,127 19	5,849 27	2,11,977 6	94,382 15	3,296 5	97,678 20	2,24,113 14 0	12,895 3 0	61,810 4 0	1,43,403 7 0	1,33,741 6 9	15,667 0 3
TOTAL ...	9,88,695 36	29,248 19	10,17,944 15	4,57,975 26	14,152 22	4,72,128 8	10,80,361 3 0	64,559 6 0	1,47,852 3 0	8,67,949 10 0	7,95,242 12 4	72,706 13 8
AVERAGE ...	1,97,739 7	5,849 28	2,03,588 35	91,595 5	2,830 20	94,425 25	2,16,072 3 9	12,911 14 0	29,570 7 0	1,73,589 14 9	1,59,048 8 10	14,541 5 11
GRAND TOTAL.	17,34,931 27	52,611 15	17,87,543 2	7,51,703 38	21,867 1	7,73,570 39	17,95,670 2 8	1,16,142 5 8	2,05,253 14 0	14,74,273 15 0	13,96,606 15 1	1,37,666 15 11
AVERAGE ...	1,92,770 8	5,845 28	1,98,615 36	83,522 26	2,429 26	85,952 12	1,99,518 14 6	12,904 11 4	22,805 15 9	1,63,808 3 5	1,48,511 14 1	15,296 5 4

My remarks against the similar table for Thul apply to this taluka also.

For this taluka, also, I regret I have not been able to get a satisfactory explanation in regard to the total outstanding balance of Rs. 1,37,666-15-11. The following figures have, however, been supplied to me :—

Amount of arrears struck off on account of poverty of khatadars, including Miscellaneous Land Revenue ... Rs. 21,520 1 0

Amount of arrears, including Miscellaneous Land Revenue, outstanding at the end of 1902-1903 ... Rs. 38,220 11 7

TABLE II: KANDHKOT TALUKA.

Year.	RAYATWARI CULTIVATED AREA.							JAGIR CULTIVATED AREA.						
	Actual Cultivated Area.	Uncultivated Portions of Survey Numbers.	Fallow expired.	Twice-cropped Land.	Uncultivated Portions of twice-cropped Survey Numbers.	TOTAL.	Total of Cultivated Area, including twice-cropped Land, Columns 2 and 5.	Actual Cultivated Area.	Uncultivated Portions of Survey Numbers.	Fallow-expired.	Twice-cropped Land.	Uncultivated Portions of Survey Numbers.	TOTAL.	Total Cultivated Area, including twice-cropped Land, Columns 9 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.	A. G.
1894-1895 ...	61,728 36	4,103 24	474 4	1,257 15	400 11	67,964 10	62,066 11	1,017 7	785 33	...	...	...	1,803 0	1,017 7
1895-1896 ...	60,497 21	2,969 4	199 15	226 29	254 37	64,167 31	60,724 15	1,616 14	...	...	...	...	1,616 14	1,616 14
1896-1897 ...	71,903 7	2,378 21	205 15	656 5	183 26	75,326 34	72,569 12	1,825 25	...	...	...	...	1,825 25	1,825 25
1897-1898 ...	82,649 12	2,113 20	650 32	700 14	185 19	86,260 17	83,346 26	1,479 30	989 30	...	...	...	2,469 20	1,479 30
TOTAL ...	276,779 1	11,584 20	1,529 26	2,840 23	994 13	293,728 12	279,619 24	5,938 36	1,775 23	...	...	...	7,714 19	5,938 36
AVERAGE ...	69,194 30	2,896 7	382 17	710 6	248 23	73,432 3	69,904 36	1,484 29	443 36	...	...	...	1,928 25	1,484 29
1898-1899 ...	71,735 0	2,294 0	10,674 37	621 31	96 1	78,421 29	75,356 31	1,192 35	1,186 5	...	...	...	2,379 0	1,192 35
1899-1900 ...	78,946 12	3,152 15	31 35	553 33	121 39	82,806 14	79,500 5	2,542 37	808 13	...	...	...	3,851 10	2,542 37
1900-1901 ...	92,151 3	2,709 9	2,474 13	1,290 8	269 27	98,894 20	93,441 11	2,729 1	313 25	...	27 0	...	3,100 26	2,747 1
1901-1902 ...	86,594 17	2,448 19	690 38	2,752 0	384 36	93,470 28	89,346 17	2,067 13	...	8 8	...	...	2,065 21	2,065 21
1902-1903 ...	87,712 7	4,211 1	...	2,064 30	394 17	94,382 15	89,776 37	3,264 9	5 15	...	26 21	...	3,296 5	3,296 30
TOTAL ...	420,138 39	15,215 2	14,072 3	7,282 22	1,267 0	457,975 26	427,421 21	11,777 15	2,313 18	...	61 29	...	14,152 22	11,639 4
AVERAGE ...	84,027 32	3,043 0	2,814 17	1,456 20	253 16	91,595 5	85,484 12	2,355 19	462 27	...	12 14	...	2,839 20	2,367 33
GRAND TOTAL ...	696,918 0	26,799 31	15,801 29	10,123 5	2,261 13	751,703 38	707,061 5	17,716 11	4,089 1	...	61 29	...	21,967 1	17,779 0
AVERAGE ...	77,435 13	2,847 30	1,733 21	1,124 32	251 10	83,522 26	78,560 5	1,968 19	454 13	...	6 34	...	2,429 26	1,975 13

TABLE III.

Year.	Drought.	Excess of Water.	Erosion by River.	Assessment remitted on unauthorised Cultivation under S. 61, L. R. Code, vide G. R. No. 1625 of 30th March 1890.	Produce destroyed by Fire.	Assessment remitted on Land taken up for public purposes.	Fallow-expired Assessment remitted.	Locusts and Insects.	Rain Torrents.	Frost and unfavourable Winds.	Assessment remitted on unauthorised Cultivation.	Irregularity of Boundary Mark.	Uncultivated Numbers erroneously assessed and afterwards remitted.	TOTAL.
	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
1894-1895 ...	2,768 9	2,377 1	119 2	...	1,148 5	173 14	22 3	...	...	...	...	75 10	...	6,684 12
1895-1896 ...	19,962 9	31 4	...	11 10	...	6 10	107 9	...	...	...	...	...	...	20,121 13
1896-1897 ...	18,697 1	...	...	...	...	...	...	...	...	...	...	...	...	19,084 12
1897-1898 ...	1,436 16	...	...	...	...	...	77 3	8,328 9	1,068 3	...	...	...	...	11,510 9
1898-1899 ...	4,734 13	...	...	...	...	...	14,248 4	1,339 3	...	1,172 7	77 5	...	...	21,572 0
1899-1900 ...	17,403 1	...	...	...	...	...	...	39 12	...	218 12	54 1	...	...	17,715 10
1900-1901 ...	3,820 3	640 5	12 3	7,204 9	...	...	5,249 12	...	...	69 10	...	...	...	16,996 10
1901-1902 ...	3,338 4	...	23 6	...	...	...	1,444 1	24,886 15	...	...	65 1	...	...	26,757 12
1902-1903 ...	22,288 2	...	30 8	...	...	...	...	2,212 0	...	14,261 5	...	...	18 5	61,810 4
TOTAL ...	94,451 4	3,048 10	185 3	7,216 3	1,148 5	180 8	21,149 0	60,181 14	1,668 3	15,722 2	196 7	87 14	18 5	2,05,253 14

# KASHMOR.

The following three tables give the required details in regard to Kashmir