
**FINAL REPORT OF THE SECOND REGULAR
SETTLEMENT OF THE MIANWALI
DISTRICT.**



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FINAL REPORT
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SECOND REGULAR SETTLEMENT
OF THE
MIANWALI DISTRICT.

BY
HARI KISHAN KAUL,
Settlement Officer.

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SETTLEMENT REPORT

OF THE

MIANWALI DISTRICT.

CHAPTER I.—GENERAL DESCRIPTION OF THE DISTRICT.

1. The Mianwali District is the most north-westerly of the districts of the Multan Division and has an area of 7,797 square miles of which 7,086 square miles are Cis-Indus, only the Isa Khel Tahsil with an area of 711 square miles lying west of that river. The total length of the District from the north of the Bhangi Khel hills down to the south of the Leiah Thal is 180 miles. Its breadth across the Mianwali Isa Khel Tahsils is about 50 miles, but it attains to a width of some 70 miles in the Bhakkar Tahsil which stretches eastwards to within a few miles of the Jhelum river. On the creation of the new North-West Frontier Province in 1901, the two Tahsils, Mianwali and Isa Khel, forming a Sub-Division of the old Bannu District and the two Tahsils, Bhakkar and Leiah, also a Sub-Division of the old Dera Ismail Khan District, were excluded from that Province and formed into a new District called Mianwali. (*Vide* Punjab Government Notification No. 995, dated 17th October 1901), with its head-quarters at Mianwali. The Bhakkar Leiah Tahsils were again constituted into a Sub-Division of the new District. The Tahsils have been left intact with the exception of 12 villages known as Sadat Miani which formed a projection of the Bhakkar Tahsil right in front of the area included in the Mianwali Tahsil and have been transferred to the latter Tahsil by Punjab Government Notification No. 50, dated 18th December 1903.

The district is bounded on the north by the Attock and Kohat Districts, on the west by Banau, Dera Ismail Khan and Dera Ghazi Khan, and on the south by the Sinawan Tahsil of the Muzaffargarh District, while the Jhang, Shahpur and Attock Districts adjoin it on the east.

2. The Indus which runs north and south throughout the length of the District is at the extreme north, hemmed in by the Bhangi Khel hills on the one side and the low hills of the Khudri tract on the other. But at Kalabagh where it emerges from the hills it spreads out and thence forward it has a wide valley. It separates the northern Tahsils of Mianwali and Isa Khel, one from the other, and so, down to the southern limit of the Isa Khel Tahsil, the whole of the valley lies within the District. South of the Isa Khel Tahsil, the river flows along the western boundary of the Mianwali, Bhakkar and Leiah Tahsils. The central portion of the valley is cut up largely by the ever-changing main streams of the river and is subject to destructive floods. But the lands adjoining the high bank, particularly on the east are fairly secure and are served by an elaborate system of cuts and embankments which force the flood water up to bits which cannot receive the spill water in the ordinary course. Indeed the water in a few places reaches the low-lying portions of the uplands which adjoin the high bank. Throughout the District, therefore, the River forms an important feature. The uplands are divided into four large natural divisions each having characteristics of its own.

- (1) The hilly tract of Bhangi Khel lying at the extreme north like a horn wedged into the Kohat and Attock Districts, consists of a succession of barren hills formed of crumbling sandstone with patches of cultivation along the beds of ravines and on flat hill sides and hill tops. The central hills which rise to a height of over 4,500 feet above the sea level are clad with dwarfed vegetation. Numerous little hamlets are scattered about the hills wherever there is cultivation.

- (2) The rough uneven ravine eaten country of the Awans very appropriately called Khudri (rough country) lies east of the Dhak range which is the connecting link between the salt range ending at Sakesar and the Bhangi Khel hills from which it is cut off by the narrow channel of the Indus. This tract consists of three parts, (a) the Parbat or hill area lying west and south; (b) the Thal or the central flat piece which has an admixture of sand and is quite easy to plough up; and (c) the Khudri or rough country proper where cultivation is confined to depressions in low hills or to flat stretches of culturable land lying on top of rocks.
- (3) The remaining portion of the two northern Tahsils is the plain lying on either side of the river, encircled by hills, the Dhak section of the Salt range on the east, the Khattak Niazi or Maidani range on the north and west and the Paniala and Khisor hills on the south-west. The Maidani range forms a sort of bow on the north-west of the Isa Khel Tahsil and with the hills at the south of that Tahsil forms a natural barrier between that Tahsil and the North-West Frontier Province. Cultivation in this tract depends very largely on drainage water descending from the hills. The Kurram river enters the Isa Khel Tahsil at its south-west corner through the Tang pass and flows due east until it joins the Indus. A part of the plain some 10 miles long by 10 miles broad lying immediately north of the river is irrigated by small canals taken out of it.
- (4) The great sandy desert lying in the Bhakkar and Leiah Tahsils and at the extreme south of the Mianwali Tahsil is called the Thal. The tract has a gradual slope from north to south and is full of sand-hills large and small formed in some places into a regular succession of ridges with flat stretches of land called Laks intervening. The whole area is covered with scrub and grass of various kinds which with a good rainfall affords splendid grazing for cattle. Cultivation is generally confined to wells sunk in the level "Laks" and every well is marked with a few trees planted and preserved. Jand (*Prosopis Spiciger*), Jal (*Salvadora Oleoides*) and Kari (Leafless Caper) also grow spontaneously and are plentiful in certain favoured parts. Barani cultivation is being introduced to a considerable extent in the northern half of the Thal, in the flat pieces of land.

3. The valley of the Indus lying between its two high banks is from 9 to 14 miles broad and its total length from Kalabagh down to Shikhaniwala may be taken roughly as 164 miles. The tract is wonderfully flat and the soil is generally rich and productive. Cultivation depends upon the moisture received from the river floods assisted where possible by wells and Jhallars. In the eastern half of the tract which is flooded by means of Ghandis erected in the creeks, and which is according to the present position of the main stream of the river protected from destructive floods, the number of wells is larger, particularly in the Southern Tahsils, and Jhallars are put up on creeks which supply water generally throughout the winter. The favourite crop of this tract is wheat and a little barley is also grown. Bajra is sown on higher pieces of land which escape being over-flooded. Peas are sown largely on low-lying lands specially in the Bhakkar and Leiah Tahsils. Jamaun or Ussun (*Eruca Sativa*) is sown on the more sandy lands and in the Mianwali Tahsil also grows wild with successive showers of rain in the winter.

4. The Bhangi Khel is a wild mountainous tract some 18 miles long by 10 miles broad. It is the home of the Bangish, a Bhangi Khel section of Khattaks. It is difficult of access, being approached by a meandering pass forming the bed of a hill torrent called the Lun (salt) Wala Wahan, which runs up to about the middle of the tract. Beyond it there is a stiff climb to the northern half which begins with a plateau. The land along the larger hill torrents and in

some places in the upper half is quite productive. Cultivation is naturally difficult and scanty, and the people cannot possibly live on agriculture alone. Military service is their mainstay, and those who cannot leave their homes subsist largely on their flocks and by selling grass and fuel in the market of Kalabagh. With the exception of a small area irrigated from a perennial stream cultivation depends entirely on local rainfall. The main crops are Bajra in autumn and wheat in spring. The eastern half of the tract is reserved for grazing.

5. The Khudri also known as Pakhar or Awankari has peculiarities of its own. With the exception of the flat central tract which is much the same as sandy land across the Dhak range, the soil is rough and stony, but the drainage water from the hills to the west and south supplies plenty of water to embanked lands adjoining the hills. The surface drainage of the rough country in the Talagang Tahsil also flows down into this tract during the rains and supplies water to a considerable area. Land lying low among the hillocks is also provided with catch dams for arresting the flow of water. Bajra is an important crop in this tract, but wheat covers a still larger area, and gram is raised only on the sandy or shallow lands called Maira. The village sites are surrounded by a number of wells which irrigate small areas of highly manured land, but beyond vegetables, onions or tobacco, no high class crops are grown; Jowar, Bajra and wheat being sown on wells just as much as on other lands.

6. The uplands of the Mianwali and Isa Khel Tahsils lying on either side of the river have a gradual slope from the foot of the hills where the deposit of centuries of hill-washing has created a deep and stiff stratum of heavy clay, down towards the river. The land lying at the foot of the hills is undulating, and where a number of hill torrents run close to one another, the valleys of each too are separated by a small dorsal ridge. In Isa Khel, the land has been frightfully cut up by some of the hill torrents and considerable areas have been rendered unfit for cultivation. The soil becomes somewhat lighter as the high bank is approached. On the Mianwali side the distance between the river and the hill increases as we go south, and about the middle of the Tahsil the increasing proportion of sand makes itself visible in patches which go on spreading along the bank of the river until towards the south of the Tahsil the whole tract becomes more or less sandy and merges gradually into the Thal of Khushab and Bhakkar. Throughout the tract, water is scarce except during the rains. Wells are few and far between and are constructed more for drinking purposes than for agriculture. Near the hills, the spring level is too low to admit of successful sinking of ordinary wells. The drinking water is, therefore, obtained either from the springs in the hills or from ponds which fill up during the rains. Cultivation in the tract, therefore, mostly depends either on hill torrents or on local rainfall. The lands adjoining the hills and called Mohar require plenty of moisture for ploughing and for raising a successful crop. The favourite crops here are Jowar, Bajra and Wheat. On the lighter lands removed from the hills gram can be raised with very little trouble and Moth is equally easy to grow in summer. Wheat and Bajra also grow on these lands with much less moisture provided that rain falls at short intervals. Jamaun (*Eruca Sativa*) is sown on sandy lands, but in years of good rainfall it springs up wild in large quantities, and if circumstances are favourable yields considerable produce.

7. The Thal is more an abode of graziers, being an excellent breeding ground for camels, than a grain producing tract. Wells are dotted about the waterless expanse at considerable intervals except around large and old village sites where they lie in clusters. Cultivation in the tract depends mainly on wells. Some Kharif is raised in the way of Jowar and Bajra and a little cotton is also sown where possible for home consumption. Rabi is the principal harvest raised on the wells. Turnips are sown as fodder for the well bullocks and are also eaten by the cultivators. Wheat takes up 60 per cent. of the total area of Chahi crops. The Barani crops grown are mostly Moth in summer and gram in winter, but owing to scanty and precarious rainfall, the profits

Barani cultivation are looked upon as a windfall. In the northern half of the Thal, the rainfall is heavier and there is more flat ground. Barani cultivation is therefore spreading in that part. A strip of the Thal some 3 to 15 miles broad adjoining the high bank of the river and known in the Bhakkar and Leiah Tahsils as Dagger and Jandi respectively has less sand hills and is more wooded.

8. With the exception of the riverain tract which is fed by the Indus, the Chahi cultivation in the Thal which depends on the wells and the Nahri tract irrigated by the Kurram, the whole district relies upon the bounties of the sky for a successful harvest. Rain supplies the required moisture in one form or another to all Barani lands, and a timely shower greatly assists all other classes of cultivation. The average rainfall of the decade ending September 1906 is given below by Tahsils—

RAINFALL.	AVERAGE FOR YEARS 1896-97 TO 1905-06.				
	Isa Khel.	Mianwali.	Bhakkar.	Leiah.	District.
For the summer months April to September.	6.94	8.11	4.84	5.28	6.29
For the winter months October to March.	3.70	4.16	2.23	2.22	3.08
For the whole year	10.64	12.27	7.07	7.50	9.37

In the northern Tahsils of Mianwali and Isa Khel the rainfall is heavy enough to enable successful Barani cultivation. The comparatively larger rainfall of the summer is responsible for the success of Bajra in the submontane villages. The winter rains are lighter but the fields are usually prepared for Rabi after the summer rains, and with far less evaporation in the winter, the rainfall if timely is quite sufficient to meet the requirements. The amount of rain that falls every year is however a very variable quantity. While in some year there is more rain than is needed, in others there is none to speak of. In the southern Tahsils the rainfall is not heavy enough to enable the growing of Barani crops except on the very light sandy soil. But the scrub and grasses of the Thal flourish on even the small quantity of rain, when it does fall.

CHAPTER II.—PAST FISCAL HISTORY.

9. Very little is known of the exact system or pitch of assessment in the Mianwali-Isa Khel Tahsils in times preceding the annexation, except that the Land Revenue demand consisted generally of $\frac{1}{4}$ th (although a good deal less was taken) of the gross produce commuted into cash, together with small cesses such as Nazrana (Rs. 2 to Rs. 5 per plough) and Kamiana (a house tax on all non-agriculturists). The outturn was generally estimated by appraisement. Equally little is known of the systems of assessment in the old days in the two southern Tahsils, except certain facts connected with the administration of Diwan Sawan Mal. During the Saddozai rule which preceded that of the Sikhs, a cash assessment was apparently levied in the Thal according to the capacity of each well, while in the riverain tract the ancient rule seems to have been to take 8 annas per *path* (25 to 30 maunds) of produce which was increased by Nawab Muhammad Khan Saddozai to $\frac{1}{3}$ th Batai and subsequently to $\frac{1}{2}$ th or even more. The wells paid a fixed Jama of Rs. 5 to Rs. 10 each. Under the Sikh rule this tract was included in the Province of Multan of which Diwan Sawan Mal was the famous Governor. He changed a cash assessment in the Thal on the basis that an

that an ordinary well should pay Rs. 5 at *khari* and Rs. 7 at *rabi*. The system was called "Sat, Panj, Bárán." In good seasons, fees such as *nazar mukaddam* or *shukardáná* were imposed. The cattle paid a tax called "Tirni Rásán" and the camels paid "Tirni Shutrán." On the riverain lands, the produce was weighed, and the Government share was given back to the cultivator at a price fixed by himself. Zabtiana and other cesses were levied where necessary, in order to make the demand a full one. Tobacco, cotton, and sugar were assessed at Zabti (cash) rates. On the whole, Diwan Sawan Mal's assessment, though still remembered by people as mild and acceptable, could not have been a light one. An intimate knowledge of local conditions and the extreme elasticity of the demand obviously accounted for the popularity of the system notwithstanding the fullness of the assessment.

10. From the annexation till 1853-54, the revenue was collected in the Isakhel Tahsil by appraisalment of the produce, while in Mianwali, Mr. Bowring, Extra Assistant Resident, introduced cash assessments in 1848, fixing the demand at over a lakh of rupees. Captain Hollings made the first Summary Settlement of Bhakkar and Leiah Tahsils in 1850 basing the assessment on average collections of the past three years. The assessment fixed by him was—

	Land Revenue.	Tirni.	TOTAL.
	Rs.	Rs.	Rs.
Bhakkar	70,609	25,336	95,945
Leiah	1,09,909	18,587	1,28,496

Major Nicolson made the first Summary Settlement of the Isakhel Tahsil in 1853-54 while Mr. D. Sinson, Deputy Commissioner of Leiah, effected the first Summary Settlement of the Mianwali Tahsil, west of the Salt range and the second Summary Settlement of the Bhakkar and Leiah Tahsils from 1853 to 1855. The second Summary Settlement of Isakhel was made in 1857-58 by Major Coxe and the Mianwali Tahsil, west of the Salt range, was resettled a second time by Captains Parsons and Smyly in 1860-61, the portion of the tahsil east of the Salt range being resettled by Mr. Cowan, Extra Assistant Commissioner, in 1863-64. The third Summary Settlement of the Bhakkar and Leiah Tahsils was conducted by Captain Mackenzie in 1862. The demand fixed at each of the Summary Settlement is shown below by Tahsils :—

1ST SUMMARY SETTLEMENT.				2ND SUMMARY SETTLEMENT.				3RD SUMMARY SETTLEMENT.	
Isakhel.	Mianwali.	Bhakkar.	Leiah.	Isakhel.	Mianwali.	Bhakkar.	Leiah.	Bhakkar.	Leiah.
35,915	1,26,641	95,945	1,28,496	37,761	1,37,148	1,12,139	1,22,793	95,117	95,763

The second and third Summary Settlements of the Bhakkar and Leiah Tahsils were contemporaneous with the first and second Summary Settlements of the two northern tahsils respectively. The figures will show that the revenue of the northern tahsils improved from the first to the second Settlement, but that the assessment of the Bhakkar Tahsil, which was unduly raised at the second Summary Settlement, had to be reduced even lower than the Jama of the first Settlement, while in the Leiah Tahsil the Jama assessed at the first Settlement was excessive and had to be reduced at the second Settlement which in its turn broke down, and a further reduction of 29 per cent. had to be made at the third Summary Settlement. The total revenue of the whole district, as now constituted, amounted to Rs. 364,434 before the first Regular Settlement.

11. The first Regular Settlement was effected from 1872 to 1878 by Mr. Thorburn in the two northern tahsils which formed part of the old Bannu District and by Mr. Tucker in the two southern tahsils which were included in the old Dera Ismail Khan District. The tahsils were divided into assessment circles and rates were proposed by soils. The assessment (including the Tirni or grazing Jama) of the tract above the high bank of the river was fixed, but the riverain lands were placed under a fluctuating system of assessment. The Sailab area was to be assessed from year to year throughout the Mianwali and Isakhel riverain at the following rates per acre of cultivation, i.e., the area sown with either the autumn or the spring crops:—

The first Regular Settlement.

					Rs. A. P.
On Nau baramad, Nau abad-ta-do-sal, Banjar					
nautor-ta-do-sal and true Kalri lands					0 12 0
On all other cultivation					... 1 4 0

The well-irrigated lands were not assessed to any additional rate. A grazing assessment was to be imposed on the waste lands in the riverain tract from year to year at an uniform rate of Rs. 3-2 per 100 acres, provided that the waste lands of a village equalled or exceeded the area under cultivation in that village. Kanah (saccharum munja), Kundar (the bulrush) and Kanh (saccharum spontaneum) whenever preserved were to be assessed at full cultivation rates. The system introduced in the Bhakkar Leiah Tahsils was slightly different. Instead of an uniform Sailab rate for the whole tract, a rate was fixed for each village, the average for the Bhakkar Tahsil being—

					Rs. A. P.
Pakka	...	...	...	...	0 14 0
Kacha and Bet	...	...	...	...	0 11 0

and for the Leiah Tahsil—

Pakka	...	...	...	...	0 13 0
Kacha and Bet	...	...	...	...	0 12 0

per acre of cultivation. The wells were assessed to a lump sum called Abiana (which was fixed) similarly to the Muzaffargarh District. Lands irrigated by Jhalars paid a higher assessment than Sailab, at rates fixed for each village. The grazing assessment was imposed from year to year on the waste area at Rs. 3-8 per 100 acres. The rates at which the lands lying above the high banks were assessed in the four tahsils are given by assessment circles in Appendix I. There were date trees in the Bhakkar and Leiah Tahsils which were assessed to a fixed revenue of Rs. 682 in Bhakkar and Rs. 884 in Leiah. The change introduced in the system of assessment of the riverain tract was most beneficial. The total assessments announced by Messrs. Thorburn and Tucker for each tahsil at last Settlement are noted below:—

Tahsil.	LAND REVENUE.		GRAZING REVENUE.		Fixed date revenue.	TOTAL.
	Fixed.	Fluctuating.	Fixed.	Fluctuating.		
Isakhel	37,168	18,030	...	1,149	...	56,347
Mianwali	64,955	48,788	3,675	896	...	1,18,314
Bhakkar	17,972	73,743	14,092	3,993	682	1,10,482
Loiah	39,390	68,734	10,585	5,122	884	1,24,715
Total	1,59,485	2,09,295	28,352	11,160	1,566	4,09,858

12. The fixed assessments of Mr. Thorburn in the Mianwali and Isakhel Tahsils were fair ones, but the extension of cultivation considerably lightened the weight of the demand. Owing, however, to the extremely variable nature of cultivation suspensions amounting to Rs. 74,817 in Mianwali and Rs. 38,946 in Isakhel had to be granted during the currency of the Settlement, although the greater part of the suspended revenue was recovered from time to time in good years, the total remissions amounting to Rs. 18,461 in Mianwali and Rs. 5,628 in Isakhel. The rates fixed for the riverain tract of the two tahsils were, however, very full, and would have told heavily on the Kacha villages, had it not been for the introduction, with the sanction of the Financial Commissioner, of the system of allowing remissions of revenue on account of failure of crops. On the whole, therefore, the Kacha did not fare badly either. In the southern tahsils, the riverain tract was assessed at admittedly light rates (paragraph 9 of Settlement Commissioner's review of the Indus Valley Assessment Report), and the assessment therefore worked quite satisfactorily on the whole. The assessment fixed by Mr. Tucker for the Bhakkar-Leiah Thal worked well for a few years, but a cycle of bad seasons commencing with 1886 resulted in its complete break-down. Steps were taken to introduce fluctuation, and eventually in 1892 the Financial Commissioner drew up a set of instructions authorizing the remission of the revenue of a well or share of a well which was abandoned and the re-imposition of the same jama when the well was again brought under cultivation. These instructions were acted upon, but in effect, the revenue not collected under these rules remained under suspension. The grazing assessment was also heavy and inelastic, and portions of the demand had to be suspended from time to time. The total suspended revenue stood at—

Bhakkar	Rs. 74,922	} Rs. 2,05,246 besides
Leiah	„ 1,80,324	

Rs. 11,976 remitted from time to time, and the former sum had to be struck off the demand at the introduction of the new assessment.

CHAPTER III.—PROGRESS SINCE LAST SETTLEMENT.

13. The total area of the district is 4,989,774 or close on 5 million acres, of which rather more than 18 per cent. is unculturable, consisting mostly of hills, sand or river bed. Over 16 per cent. of the area is included in Government Rakhs. The waste area available for cultivation represents 56 per cent. of the total. Only 14 per cent. of the total area is cultivated. The small proportion of cultivation is due to the space taken up by the hills and by the extensive grazing waste in the Thal. The whole area of the Thal excluding cultivation has been returned as culturable waste for purposes of assessment of grazing fees, although some of the larger sandhills are incapable of growing any crops whatever. The total cultivated area registered at last Settlement was 475,173 acres, the corresponding figure now being 708,815 (see Appendix II). The cultivated area would thus appear to have increased 41 per cent. But for reasons given in paragraph 17 of the Assessment Report of the Mianwali and Isakhel Tahsils, the comparison is not correct. The “cultivated area” in its present significance is a wider term than it was at last Settlement. The average sown area of a period of $\frac{5 \text{ in Bhakkar Leiah}}{10 \text{ in Mianwali Isakhel}}$ years preceding reassessment was 623,450 acres, which gives an increase of 31 per cent. over the cultivated (which was the same as sown) area of last Settlement. In this case the increase shown is not large enough, because the sown area of last Settlement covered three harvests. The true increase of cultivation may therefore be estimated between 31 and 41 per cent., or say 36 per cent. The average cropped area given in Appendix II to this report is that upon which the assessments were based, i.e., for the decade 1896-97 to 1905-06 in Mianwali and Isakhel, and the 5 years 1895-96 to 1899-00 and 1896-97 to 1900-01 respectively in the Indus Valley and Thal Tract of the Bhakkar and Leiah Tahsils. The total for the district is 529,140 acres, i.e., nearly 75 per cent. of the area recorded as cultivated.

14. In the table below the area under crops at last Settlement is compared with the average area of matured crops during the five years 1901-02 to 1905-06:—

Crop.	AREA UNDER CROPS AT LAST SETTLEMENT.		AVERAGE AREA MATURED.	
	(Figures taken from Tahsil Note-books.)		Area.	Percentage.
	Area.	Percentage.		
Jowar	7,581	1·59	23,059	4·46
Bajra	98,179	20·56	85,425	16·54
Moth	3,279	·69	16,327	3·16
Mung	2,594	·54	4,565	·88
Mash	302	·06	5,676	1·10
Til	1,451	·30	9,187	1·78
Sugarcane	50	·01	76	·01
Chillies	11	...	53	·01
Cotton	10,714	2·24	3,946	·76
Wheat	275,877	57·15	207,544	40·14
Barley	18,120	3·80	29,479	5·70
Gram	16,185	3·39	50,517	9·77
Massar	2,890	50	3,910	·76
Peas (Mattar)	15,115	3·17	16,044	3·10
Sarshaf	783	1·28	...	...
Taramira	9,618	2·01	15,163	2·93
Melon	215	·04	5,531	1·07
Tobacco	578	·12	578	·11
Fruits	77	·02	153	·03
Vegetables	578	·12	887	·17
Water Melons (Tarbuz)	2,788	·59	2,617	·50
Fodder	8,632	1·81	22,479	4·35
Other	66	·01	13,784	2·67
Total	477,463	100	516,989	100

The important variations in cropping are these. The percentage of wheat to the total cropped area has decreased from 57 to 40 while that of barley and gram has increased from 3·3 and 3·4 to 5·7 and 9·8, respectively. The decrease in wheat is due partly to the erosion of some excellent wheat-growing lands in the riverain tract, and partly to the introduction of gram as a paying crop on the sandy soil of the uplands. Barley is sown more extensively on newly formed riverain lands. Allowing for the exaggeration of figures of last Settlement and adding Kharaba to the present figures the area under Bajra appears to have remained constant, but the improvement made by other crops has reduced its percentage. Jowar is becoming more popular chiefly as a fodder

crop. Moth like gram is sown on the newly broken up Barani lands of the Thal. Cotton has actually lost ground. This is not a cotton-growing district, and the increasing attention paid to other crops has resulted in neglect of cotton. It is grown where possible for home consumption. Other Kharif crops are now grown in larger quantities in the securer portions of the riverain tract. The proportion of fodder crops has increased owing to the larger requirements of cattle. The water melons entered in the table do not include those raised on waste lands in the Thal, which have been excluded from registration.

Taking the crops by harvests the Kharif has somewhat gained at the expense of Rabi, as the following figures will show :—

				Last Settlement	Average of 5 years 1901-02 to 1905-06.
Kharif	...	...	...	27 per cent.	31 per cent.
Rabi	...	...	...	73 per cent.	69 per cent.

15. The prices adopted at last Settlement were based on an average of figures obtained from different sources for a number of years, but the conclusions of both Mr. Thorburn and Mr. Tucker were influenced by a succession of years of unusually low prices. The figures sanctioned for adoption in the present Settlement by Financial Commissioner's letter No. 5217, dated 1st September 1900 for Bhakkar and Leiah, and by Settlement Commissioner's letter No. 3265, dated 25th August 1905 for Mianwali and Isakhel, were discussed in the Indus Valley and Mianwali-Isakhel Assessment Reports. The prices are compared below in annas per maund.—

Tahsil.	Detail.	STAPLE.												
		Wheat.	Barley.	Gram.	Peas.	Massar.	Sarsaf.	Tara Mira.	Bajra.	Jowar.	Moth.	Mung.	Mash.	Til.
Isakhel	Last Settlement ...	18, 19 and 21	11 and 13	18 and 21	8	11 and 16	21	16	16	13	18	32	21, 26 and 32	64
	Now ...	28	18	22	22	23	40	31	24	20	26	34	34	60
Mianwali	Last Settlement ...	18 and 19	11 and 13	16	11	16	32	21	16	13	13	20	23	32
	Now ...	30	19	22	22	23	40	31	24	20	26	34	34	60
Bhakkar-Leiah	Last Settlement ...	18	14	16	14	...	32	22	16	14	16	32	...	48
	Now ...	27	18	21	16	16	49	32	26	22	26	40	32	53

Calculating the rise of prices in the manner suggested in paragraph 876 of the Settlement Manual, the result is a rise of 57 per cent. in Mianwali, 30 per cent. in Isakhel and 43 per cent. in Bhakkar-Leiah. It was, however, recognized in the assessment reports and the orders passed thereon that this increase was exaggerated, and the percentage of increase accepted was 20 in all the four tahsils (*vide* paragraph 92 of Punjab Government Review No. 149, dated 22nd November 1907 of the Mianwali-Isakhel Assessment Report and paragraph 5 of Mr. Wilson's Review No. 2647, dated 25th September 1902 of the Indus Valley Assessment Report). For the purpose of judging the pitch of the new assessment, it should therefore be assumed that prices have risen 20 per cent. throughout the district.

16. The means of export of the surplus produce of the district have been revolutionized since last Settlement. The Sindh-Sagar Railway built in 1886 and the Mari-Attock branch completed in 1892 traverse the whole district, from end to end. At last Settlement all export traffic was carried on mainly by river with Sukkar. There was a metalled mail cart road between Bhakkar and Jhang which was also used largely for traffic. This road, though still maintained by the

District Board, is now used merely as a feeder road. All surplus produce is now exported by rail except from the Isakhel tahsil which still sends a certain amount of grain down to Sukkar by boat. A considerable quantity of grain and other goods find their way across the river to Kundian and Kalur Kot from the Marwat tahsil of Bannu, to Darya Khan from Dera Ismail Khan and to other Railway stations from villages on the opposite side. The salt dug out of the Kalabagh salt pits is mostly booked by train at the Mari Railway station.

17. The results of the cattle enumeration of February 1904 are compared below with the figures of last Settlement:—

		Bulls and bullocks.	Cows.	Male buffalo.	Cow buffalo.	Young stock.	Camel.	Total.	Goat.	Sheep.	Total.	Plough.
Last Settlement	...	227,785					14,277	242,062	416,275		416,275	51,651
Now	... ..	124,806	86,361	1,915	18,393	64,554	43,473	339,002	306,744	501,131	807,875	57,382

For want of details under each head it is not possible to compare the figures for each class of cattle. Taking them collectively there has been a general increase of live stock. Goats and sheep have doubled themselves and other cattle have increased nearly 40 per cent. There has been an increase in the number of camels, but it is nothing like what it would appear to be from the figures. The enumeration of Powanda camels in the Leiah tahsil in 1904 has swelled the figures to three times those of last Settlement. The increase of cattle has been proportionate to the increase in cultivation, and the system of grazing assessments introduced at last Settlement which made the rearing of large flocks of goats and sheep easy, accounts for the enormous increase in their numbers.

Calculating the profits from agricultural stock in the manner explained in detail in paragraph 71 of the Assessment Report of Tahsil Sinawan, the total income to owners of cattle, &c., would amount to over 7 lakhs of rupees. This figure is somewhat exaggerated owing to the inclusion of Powanda camels. Most of the camels and the majority of goats and sheep, however, belong to graziers who do not own land. But of this total sum, nearly 2 lakhs of rupees are added from this source to the income of land-owners.

18. The population of the district as ascertained at the last four censuses is given in the following table:—

Census,		1868.	1881.	1891.	1901.	INCREASE PER CENT. OVER EACH PRECEDING CENSUS.		
						1881.	1891.	1901.
Population	... ..	3,23,667	3,65,621	4,00,477	4,24,588	13	9.5	6

A census was taken in the winter of 1876-77 in the Bhakkar and Leiah tahsils, but as no Settlement census took place in the Bannu district, the Bhakkar-Leiah figures have not been given. It will be seen that there has been a steady development of population since 1868. The census of 1881 came after 13 years and was obviously effected with greater care than the preceding one. The increase of population shown was therefore large. At the census of 1891, the increase was somewhat smaller, but even that was probably somewhat more than normal owing to the enumeration of gangs of labourers at work on the Mari-Attock Railway which was then under construction. The last census on the contrary, was taken at a time when a number of peasants and tenants had migrated temporarily from Isakhel to Marwat to take up work as tenants owing to failure of rains in 1900-01. The increase according to this census was nearer the normal

although it might have been slightly larger, but for the circumstances above alluded to. The density of population is compared below by tracts :—

	Bhangi Khel.		Khudri.		Riverain tract.		Hill encircled plain.		Thal.		Total.	
	Total area.	Cultivated area.	Total area.	Cultivated area.	Total area.	Cultivated area.	Total area.	Cultivated area.	Total area.	Cultivated area.	Total area.	Cultivated area.
<i>Incidence of population per square mile.</i>												
Last Settlement, 1868 ...	32	4.2	43	216	130	423	66	524	10	515	42	436
Now, (1901) ...	33	443	58	217	172	386	93	381	11	504	54	383

With reference to the total area, the density of population has increased most in the riverain tracts, but the extension of cultivation has been comparatively larger. The population of the Thal is very sparse indeed ; but with regard to the cultivation it is the most thickly populated tract. This is only natural, because the cultivation is mostly Chahi, and well cultivation needs a large number of cultivators. The Bhangi Khel comes next with its extensive hill area, but limited cultivation consisting of very small holdings belonging to a large number of owners. The population of the uplands of Mianwali and Isakhel (the hill-encircled plain) and the Khudri tract is fairly dense for tracts like these where cultivation depends solely on rainfall and is neither very careful nor economic.

With regard to tribes, the district is divided into distinct blocks. The Bhangi Khel and the villages adjoining the hills in the north and west of Isakhel belong mostly to Khataks. The Khudri is owned mostly by Awans. The Niazi Pathans hold the hill-encircled plain and the greater part of the riverian tract in Mianwali and Isakhel. The Bhakkar-Leiah tahsils are full of Jats with a sprinkling of Biluches. Sayyads own a few villages here and there and a group of villages at the south-west end of the Mianwali tahsil. Hindus exist in almost every village, and in the Thal they hold considerable land in proprietary right. In several villages they have been landowners for several generations and are said to have settled there either in Sikh times or even earlier. The following table shows the percentage of the population of each tribe :—

	Jat.	Baloch.	Sayed.	Pathan.	Awan.	Other Musal- mans.	Hindus.	TOTAL.
Population ...	1,52,860	27,295	9,515	46,818	23,449	1,12,068	52,583	4,24,588
Percentage ...	36	7	2	11	5	27	12	100

19. The percentage of area cultivated by owners and tenants of each class Cultivating occupancy. is compared below :—

By owners.		By OCCUPANCY TENANTS.		By TENANTS-AT-WILL PAYING			
				Cash rent.		Rent in kind.	
Last Settlement.	Now.	Last Settlement.	Now.	Last Settlement.	Now.	Last Settlement.	Now.
72.1	50.7	11.9	12.3	6.2	5.2	9.8	31.8

The percentage of area cultivated by owners has fallen from 72 to 51, while that of area with tenants-at-will paying Batai has risen about as much. There can be no doubt, but that with the extension of cultivation the owners have to resort more and more to tenants-at-will. But the comparison is not reliable owing to the fact that co-sharers cultivating part of a joint holding were, at last Settlement, returned as owners in possession, while they are now treated as tenants-at-will under the whole proprietary body. The slight increase in the area under occupancy tenants is remarkable. Ordinarily the area with occupancy rights does not increase. Here, however, the peculiar tenures in the riverain tract and Thal of Bhakkar and Leiah enabled the acquisition of occupancy rights in newly broken up lands under certain conditions. The extent of such acquisitions of tenant's right is, however, very small. The tenants paying cash rent are those who pay land revenue with or without a small amount as Malikana. The rents paid by this class cannot therefore form a basis of assessment.

Transfers—Value of land.

20. The following table shows the area sold since last Settlement :—

	To SAHUKARS.		To OTHERS.		TOTAL.	
	Total.	Cultivated.	Total.	Cultivated.	Total.	Cultivated.
Area in acres	79,063	36,125	1,67,230	62,452	2,46,293	98,577
Percentage	1·6	5·1	3·3	8·8	4·9	13·9

Nearly 5 per cent of the land has passed hands by sale since last Settlement, but this includes a larger proportion (14 per cent.) of the cultivated area. This is only natural, as there never is much demand for other than cultivated land. In the Assessment Report for the Mianwali-Isakhel tahsils, details of transfers to members of agricultural tribes and others were given, but similar statistics are not available for the Bhakkar-Leiah tahsils. For all practical purposes, however, the transfers to Sahukars represent the transfer to others than members of agricultural tribes. The other purchasers of land all belong to agricultural tribes with the exception of menials (Kamins) who are few and far between. It will be noticed that transfers to agricultural tribes are twice as large with reference to total area as those to Sahukars, but that the Sahukars have taken a larger proportion of cultivation. The percentage of total area held by Hindus has risen from 2·1 to 2·8, which appears correct, considering that against their acquisitions of 1·6 per cent., they have sold some of the land held by them at last Settlement. These percentages have, however, been worked excluding the Thal Shamilat. Adding the proportion of the Shamilat to which they are entitled, they own 8·6 per cent. of the total area. The mortgages outstanding at last Settlement are compared below with those ascertained at re-measurement :—

		HELD IN MORTGAGE BY					
		Sahukars.		Others.		Total.	
		Total.	Cultivated.	Total.	Cultivated.	Total.	Cultivated.
Last Settlement ...	{ Area ...	85,202	14,697	160,136	63,770	245,338	78,467
	{ Percentage ...	1·7	3·1	3·3	13·4	5	16·5
Now	{ Area ...	144,535	68,211	162,682	65,323	307,217	133,534
	{ Percentage ...	2·9	9·6	3·3	9·2	6·2	18·8

The total area mortgaged to sahuikars has increased from 1·7 to 2·9 per cent., but notwithstanding the large increase in cultivation the percentage of cultivated area held by them in mortgage has risen from 3·1 to 9·6. This is due to the tendency of the sahuikar to take more cultivated than uncultivated land on mortgage. The mortgages to other tribes have on the other hand increased but little, redemptions nearly equalling fresh mortgages. The increase in cultivation on the whole has therefore resulted in reducing the percentage of cultivated area mortgaged to them from 13·4 to 9·2. The area held on mortgage is shared about equally by sahuikars and others, the latter having a slightly larger percentage of the total area while the former possess a somewhat higher proportion of cultivation. The percentage of area held under mortgage on the whole is not large, being over 6 per cent. of the total and rather less than 19 per cent. of the cultivation against 5 per cent. and 16·5 per cent. respectively at last Settlement.

The Alienation of Land Act has had a salutary effect in checking the sales and mortgages to money-lenders. Forms of mortgages permitted by the Act are beginning gradually to be adopted. In this district, however, the proportion of zamindars capable of acquiring land by purchase or mortgage has always been large and lands are redeemed as freely as they are mortgaged. The market for transferable land has not therefore been unduly restricted. The rise in the value of land since last Settlement is indicated in the table below :—

MIANWALI AND ISA KHEL TAHSILS.					BHAKKAR AND LEIAH TAHSILS.				
Period.	Mortgage value per acre.		Price per acre.		Period.	Mortgage value per acre.		Price per acre.	
	Cultivated.	Total.	Cultivated.	Total.		Cultivated.	Total.	Cultivated.	Total.
Before last Settlement	24	7	...	...	Before last Settlement	22	8	...	...
1877-78 to 1885-86	34	13	44	16	1878-79 to 1879-80	25	8	20	8
1886-87 to 1890-91	35	16	43	15	1880-81 to 1884-85	22	10	19	11
1891-92 to 1895-96	38	16	47	18	1885-86 to 1889-90	33	15	31	19
1896-97 to 1900-01	35	16	74	31	1890-91 to 1894-95	34	19	43	27
1901-02 to 1905-06	36	18	58	15	1895-96 to 1899-1900	37	22	57	27

The figures of the northern and southern tahsils have been given separately with regard to the different periods for which they were available. The value of land has risen steadily in respect of both mortgages and sales. In the earlier days, the sahuikars in advancing money on mortgages went up to the sale price or even higher. In the quinquennial period preceding the passing of the Alienation of Land Act, there was an artificial rise in the price of land which could not be maintained. In the two northern tahsils, where figures for the last quinquennial period are available for reference, the price has gone down from Rs. 74 to Rs. 58 per acre of cultivation. Nevertheless it is higher than the average of the period 1891-92 to 1895-96 (Rs. 47). The mortgage value has not varied much. It would, therefore, appear that the Alienation of Land Act has not reduced the price of land to any appreciable extent. The indebtedness of the landowning classes is due to the usual causes of thriftlessness, litigation, losses of cattle in bad years, and the necessity of borrowing in years of drought. Considering how large a portion of the district depends wholly on local rainfall, it is a matter of surprise why successive years of drought have not led to more indebtedness, particularly in tracts which were hitherto under fixed assessment. But the peasant of this district, though desperately fond of litigation and keen on taking an extra wife each time he has a surplus to his credit, is thrifty enough to pay off his debts in a year of plenty and to start again with a clear balance sheet.

CHAPTER IV.—REVISION OF THE RECORDS.

21. A special revision of the records of rights was authorized by Punjab Government Notification No. 158, dated 6th October 1898, in the Bhakkar-Leiah tahsils, then forming part of the Dera Ismail Khan district, and by Punjab Government Notification No. 2191 S., dated 28th September 1903, in the Mianwali and Isa Khel tahsils. The whole district has been re-measured on the square system with the following exceptions:—

(1) The maps of the hilly tract of Bhangi Khel where cultivation had not varied much since last Settlement have been amended. The measurements of last Settlement were found fairly correct where cultivation was concerned.

(2) Similarly maps of four Khudri villages lying east of the river where square laying was impossible owing to the rough nature of the ground, and cultivation was confined to level pieces of land along the beds of ravines or to flat bits lying on top of or between hillocks, were only amended. The maps were however, not so very accurate here, and considering all the trouble which had to be taken on the *Tarmim* (correction of maps), it would perhaps have been just as well to have measured the villages anew by plane-table.

(3) The hills stretching across the Mianwali tahsil and those encircling the Isa Khel tahsil on the north, west and south were measured by plane-table, the triangles being linked on to the square systems so as to obtain continuous maps of entire villages.

(4) Unlike the Mianwali Thal which has plenty of barani cultivation and has been completely re-measured, the Bhakkar-Leiah Thal was, when the Settlement of the southern tahsils was commenced in 1902 under the late Captain Crosthwaite, considered to be too dreary and extensive a tract to require re-measurement. A revenue survey of the tract had been made in 1873 to 1879, and the wells which then existed were plotted on the survey maps. Cultivation in this tract depending mainly on well irrigation, what was needed primarily was to fix the position of the patches of well cultivation lying miles apart from one another. It was decided to make use of the survey maps. The wells with the areas attached to them were measured separately on maps of 40 karams=1" scale: a tracing of the survey map, (scale 4"=1 mile, or 240 karams=1") was taken for each village and a reduction of the map of each well was fitted into its proper place with reference to the positions of wells indicated on the survey map. New wells were fixed with reference to the positions of the neighbouring wells. Besides the well cultivation there was a certain amount of barani land mostly in the Bhakkar tahsil sown with light crops purely on local rainfall. These patches were also measured up each independently of the other, and maps containing numbers of these isolated fields were prepared on the scale of 40 karams=1". The positions of these fields were fixed on the collective village map, (scale 240 karams=1") between the wells by means of plane-table. The measurements were completed in 1898-99. The village maps, though on a small scale, were quite good enough for the Leiah tahsil where there is no barani cultivation to speak of, and where considerable space (often several miles) intervenes between every two wells. But in the Bhakkar tahsil where the barani cultivation was not a negligible quantity and where the very lenient system of assessment of barani cultivation introduced in Kharif 1903, gave a great impetus to the extension of that class of cultivation, crop inspection became impossible in a short time, and in the winter of 1906 it was found that it was neither possible for the patwari to follow the small scale village map on the ground nor practicable to bring the extended cultivation on to the map and thus keep it up to date. Besides, the people had, during the interval, discovered some gross errors in the position of barani fields, and these cases began to give trouble both to Civil Courts and to Revenue Officers, neither of them knowing how to settle them. With the permission of Government conveyed in Senior Secretary to the Financial Commissioner's endorsement No. 469 S., dated 10th October 1907, a re-measurement of the northern part of the Thal containing most of the barani cultivation was undertaken in October 1907. Twenty villages (with a total area of 339,749 acres) have been completely re-measured on the square system, the field maps being prepared on the scale of 80 karams=1". The

maps of 23 villages have been enlarged by scale from 240 karams = 1" to 80 karams = 1". Of these, maps of 6 villages (covering a total area of 258,321 acres) have been amended and brought up to date as regards the growing barani cultivation. With these enlarged maps, it will be possible to do the crop inspections properly. Complete re-measurement was avoided where possible and in cases where the 240 karams = 1" maps were fairly accurate with regard to the position of the fields, it was deemed sufficient to enlarge the map and show the additional barani cultivation on it in the same way as is done at a quadrennial attestation. These amended maps should serve all practical purposes for a long time if the barani cultivation is not extended further. If, however, it keeps on spreading as it has done during the past few years, it will very soon be found that the fields plotted on the maps overlap one another while there will be plenty of space left on the ground between them. When that stage is reached in a village, it will be necessary for the Deputy Commissioner to have the village re-measured on the square system. In re-measuring the Thal villages the khatauni was not touched, all attestations made under the late Captain Crosthwaite being presumed as correct. The field book was also not amended except when it was absolutely necessary to do so. The fields previously measured were reproduced on the new maps in exactly the same dimensions, all additional cultivation being shown in red and marked with separate field numbers on the system of quadrennial attestation. The most difficult part of the work was that of fixing in their proper places the barani fields which were plotted wrongly on the maps of 1898. This was done by Settlement Naib-Tahsildars after personal inspection of each such field and all disputes were decided by me on the spot.

The re-measurement of the riverain tract of the Mianwali and Isa Khel tahsils was attended with many difficulties. At last Settlement measurements appear to have been confined to cultivated lands, the area under the river and the unculturable sand having been plotted on the field maps with reference to previous thakbast (village boundary) and other maps. During the past 30 years almost all the lands cultivated at last Settlement were eroded by the river and the old beds of the streams silted up. In short the aspect of the whole tract was changed. Boundaries of villages were laid down from time to time in accordance with the Settlement maps, directions of lines projecting towards the river and the positions of trijunctions being fixed mostly by guess work. The result was that village boundaries were established in wrong places and people took possession of land in places which differed very considerably from those indicated on the Settlement maps. Moreover when the whole distance from high bank to high bank was measured up on the square system, it was found that the Settlement maps could fit into the distance as little as the maps of individual fields and villages agreed with the limits of possession. Luckily, however, a condition was recorded in the administration paper of every village in the kacha to the effect that on land being thrown up by the river, possession must follow the Settlement map and that possession taken up by co-sharers would have to be changed when a regular demarcation of boundaries according to Settlement maps took place, till when all possession would be temporary. This enabled a re-laying of the boundaries of all the riverain villages. But unfortunately all trijunctions erected at last Settlement had been washed away, and within a tract of some 50 by 14 miles there was not a single permanent mark with reference to which the boundaries could be laid down. The Revenue Survey of 1878 had, however, followed on the measurements made at last settlement and all trijunctions were plotted on the survey 4" = 1 mile sheets. Advantage was taken of this fact, and the whole of the riverain tract being spread over with squares (each village or group of villages having its own base line) the services of three traversers were borrowed from the Survey Department, and they were asked to run three traverses one along each high bank and the third in the middle of the riverain tract connecting the three traverses at several points. These traverses were run along the corners of squares and all the base line pillars were also taken up. On either high bank the traverses were linked on to pakka trijunctions and G. T. stations. All these details were shown by the Survey Department on a tracing of the original survey sheets in the Head Office, Calcutta. Reductions of the Settlement thakbast maps were made by pentagraph to 4" = 1 mile scale. On comparing these

with the tracing received from the Survey Department it was found that the distances between trijunctions agreed where the whole area was under cultivation at last Settlement. But there was considerable difference where the river or a large strip of sand intervened between two trijunctions. It was clear that the distance between two trijunctions existing on the ground given on the survey maps was infinitely more reliable than that shown on the thakbast maps, where actual field measurement had not taken place. The positions of trijunctions shown on the survey sheets were therefore adopted for the purpose of laying down the correct boundaries of the villages, except where they had been departed from expressly at last Settlement. The positions were fixed on bank paper sheets printed over with squares (obtained from the Survey Department) with reference to the square system of each village; and between the trijunctions, the boundary line was delineated according to the reduced thakbast maps. All this work was done by me personally. From the bank paper sheets the boundary lines were transferred by scale to the musavis, and the boundary marked down on the ground with reference to the squares. The boundaries of villages having thus been fixed in their proper places all the fields within each village were reproduced on the new maps from the Settlement maps, mistakes of Settlement maps being corrected by distributing rateably over all fields which had not been actually measured at last Settlement, the difference between the distance of two trijunctions as shown in the Settlement map and that indicated in the survey sheets. This process has been known as paimana-kat, and involved an immense amount of labour. The boundaries of these fields were then marked down on the ground and the zamindars were advised to alter their possession in accordance with this demarcation. The village and the field boundaries in the whole riverain tract having thus been revolutionized, few people believed that possession would follow the new maps without endless litigation. The general confidence of the people in the proceedings, however, led to an immediate change in possession, and although thousands of applications were filed by the people with a view to satisfy themselves that they had not been losers, yet the prompt and satisfactory decisions of the questions raised inspired still further confidence, and possession was completely changed throughout the tract with the exception of a few villages where the differences not being considerable, the existing possession was, by the consent of all concerned, taken as the measure of right and of one village (Attock Paniala Kacha) where the zamindars preferred to retain their existing possession in spite of the knowledge that the correct field boundaries did not coincide with it. The set of the river being towards the lands of this village and the chances being that the whole of it might be washed away one of these days, the people preferred to go on as at present till the evil day arrived.

The whole of the Indus Valley tract of the Bhakkar and Leiah Tahsils was measured on one system of squares, a base line having been marked down by the Survey Department throughout the length of the two tahsils just above the left high bank of the river. The portion of the Thal adjoining the high bank (i. e., the portion of the Daggar and Jandi Thal lying close to the larger villages) was also measured on the same square system.

The measures of area used throughout the district are acres, kanals, marlas and karams, a karam being equal to $5\frac{1}{2}$ feet.

22. There were 458 villages (including rakhs) at last Settlement in the four tahsils which now make up the Mianwali district. Of these one Ara Kharwadu was transferred to the Dera Ghazi Khan district, five rakhs in Leiah which were really portions of large rakhs have been amalgamated with them, one village named Hasan Suhia was thrown into its parent village of Suhia Kalan in the same tahsil and two villages Khuddozai and Sumbalabad in the Isa Khel tahsil have been combined into one, while in the Mianwali and Isa Khel tahsils the separation of 69 new villages was sanctioned by the Financial Commissioner's letters named in the margin. There are, therefore, 519 villages now in the whole district. Of these 47 are rakhs belonging to Government.

Financial Commissioner's letter No. 5784, dated 28th September 1905.

Financial Commissioner's No. 513, dated 30th August 1906.

Financial Commissioner's No. 897, dated 9th February 1907.

23. The total area of the district is 4,989,174 acres against 4,919,653 acres at last Settlement. The increase is due partly to the addition in the Isa Khel Tahsil of hill areas on the north and west which were excluded at last Settlement from measurement. But most of the difference occurs in the Bhakkar Thal. The new maps of the Thal prepared under the late Captain Crosthwaite being reproductions of the revenue survey maps of 1873—1879. The total area in the new Record of Rights was taken from the Survey data. These figures are larger than the areas ascertained by field measurements at last Settlement and have caused a large increase in the total area of the district. The total number of fields is 846,184 according to new measurements against 588,871 recorded at last Settlement. The increase is only a natural consequence of the spread of cultivation.

24. With slight differences of arrangement in the northern and southern tahsils, the following papers have been put together in the new Standing Record of Rights :—

1. Robkar Ibtadai (preliminary proceedings).
2. Shajra Kishtwar (field map) with index map and index *Musavis* (mapping sheets).
3. Shajra Nasab (genealogical tree).
4. Land Jamabandi with index of fields.
5. Date Jamabandi, only in Bhakkar-Leiah Tahsils.
6. Jamabandi Tirni (grazing), only in Bhakkar-Leiah Tahsils.
7. Fehrist Muafiat wa Pension (list of revenue assignments and pensions).
8. Naksha Haquq Chahat (statement of rights in wells).
9. Naksha Haquq Abpashi or Riway Abpashi (statement of rights in irrigation from other sources).
10. Wajib-ul-arz (the statement of customs).
11. Order of Collector determining the assessment.
12. Order of distribution of assessment (with list showing area and assessment of joint wells in the Thal).
13. Mutation sheets.

In the Mianwali and Isa/Khel Tahsils, the order suggested in paragraph 286 of the Settlement Manual has been followed. Most of the field maps of newly measured villages have been placed in tin boxes under the record racks in the District Revenue Record Room. But the accommodation was limited, and there was not room for keeping patent mapping sheet almirahs either. Some of the sheets have therefore had to be placed in chambers closed with glazed shutters. The amended maps prepared on the old system have been kept in leather covers. For the Patwaris' copies of all the maps which have been prepared on tracing cloth, tin nalkas (cases) have been supplied to the Patwaris. The Shajra Nasab (genealogical tree) has been placed in separate covers except where it was small enough to be bound up with the Jamabandi. The draft of the Wajib-ul-arz (chittha) has been filed with the Misl Paimaish (measurement file). In the Bhakkar and Leiah Tahsils, a separate paper named List of Village Cesses, (Section 145 of Land Revenue Act) was inserted after the Wajib-ul-arz, but it was left blank in every case. The measurement file consisting of the Khataunis (holding slips), the connected statements, the Partial-ki-kitab (inspection book) as been placed in the Revenue Record Room. In the Bhakkar and Leiah Tahsils, the field books were made over to the Patwaris, but in the Mianwali and

Isa Khel Tahsils they have been deposited in the Tahsil Offices as the Patwaris have no constant use for them, and in view of the extensive alterations made in the field boundaries of the riverain tract they are likely to help the Patwaris in their tendencies to incite people to unnecessary disputes. After 2 or 3 years when matters have settled down, they can, if necessary, be given to the Patwaris. The papers connected with the remeasurement of the Bhakkar Thal have also been filed in the Revenue Record Room.

25. The field maps of the Mianwali and Isa Khel Tahsils prepared at last Settlement on the scale of 60 karams = 1" were quite correct where cultivation was concerned, but numerous mistakes were discovered even in the uplands in areas which were not cultivated at last Settlement. In the riverain tract, large errors had crept into areas under the river bed. The maps of the other two tahsils are said to have been more generally correct. The changes caused by the river in the riverain tract and the enormous extension of cultivation and the consequent partition of lands in the uplands of the two northern tahsils necessitated a remeasurement of almost the whole of the district as explained in paragraph 21. The new maps have been prepared generally on English mapping sheets on the scale of 40 karams = 1". The maps which have been amended are on the scale of 60 karams = 1", and the village maps of the Bhakkar and Leiah Thal are on the 240 karams = 1" scale, except in villages of the Bhakkar Thal which have been remeasured or of which the maps have been enlarged; the scale used there being 80 karams = 1". The quality of mapping sheets used had for some time been the subject of much disappointment. An experiment was therefore made with mapping sheets made and printed with squares at Lahore on paper purchased at Sialkot. The sheets proved a great success, but the idea had to be abandoned as the cost of these mapping sheets came to about twice as much as the English mapping sheets. The paper of the mapping sheets used is so brittle that by the time they reach the District Office some of them are rent into tatters. It is a pity that for all the time and trouble spent on them they should not be of a more durable material. The Patwari's copy of the maps has been prepared on tracing cloth in rolls of full breadth stretching right across the village boundaries. A third set of maps on cloth has been prepared and supplied to the Patwaris for purposes of crop inspection.

The distances between trijunctions as ascertained by remeasurement were compared with those shown on the survey maps with the following result:—

TAHSIL.				NUMBER OF TRIJUNCTION WITH								Total number of trijunctions.
				No difference.	Difference less than					5 per cent.	Difference more than 5 per cent.	
					1 per cent.	1·5 per cent.	2 per cent.	3 per cent.	4 per cent.			
Mianwali	...	...	...	151	87	1	...	4	1	...	2	246
Isa Khel	...	...	...	120	113	7	1	2	...	...	7	250
Bhakkar	...	...	...	24	140	61	47	18	8	4	23	325
Leiah	...	...	...	31	233	95	48	23	4	5	21	460
Total	...			326	573	164	96	47	13	9	53	1,281

In the Mianwali and Isa Khel tahsils the differences are generally slight. In the two cases in Mianwali where the difference exceeds 5 per cent., the position of one of the trijunctions had been changed by Mr. Thorburn's decision at last Settlement. In the Isa Khel tahsil, the inclusion of hill areas which were left out partly from the Revenue Survey has caused a difference of over 5 per cent. in seven villages. In the other seven cases of difference exceeding 2 per cent., in the two tahsils, the distances were checked repeatedly before the maps were passed. As regards the differences in the Bhakkar and Leiah tahsils, it is not possible to offer an explanation in the absence of the officers and staff who completed the measurements more than five years ago.

From the field maps an index map on the scale of 4"=1 mile was prepared by scale and has been placed with the field map of each village, a copy of it on tracing cloth being supplied to the patwari. The index maps of the whole district (excepting the Bhakkar Leiah Thal for which the boundaries shown in the survey sheets have been adopted for the village maps and consequently a collective map only meant waste of tracing cloth) have been put together into collective (mujmili) maps by tahsils. A copy has been sent to the Survey Department and another copy retained in the District Office. From these maps reductions by pentagraph have been made to the scales of 1"=1 mile (the Bhakkar Leiah Thal being also included in it) and 1"=2 miles by tahsils; and a collective map of the district has been prepared on the scale of 1"=4 miles. The district map and the 2 miles=1" tahsil maps have been printed, 100 copies on paper and 25 on cloth of each being struck off and kept in the District Office for the use of the district and tahsil officials. Maps of assessment circles on tracing cloth on the scale of 1"=2 miles have been placed with the Parganah (abstract village) note-books. Maps showing hill torrent and canal irrigation by villages have also been prepared on the 4"=1 mile scale from the index maps, in connection with the Riway-i-abpashi (statement of irrigation rights) and placed in the District Revenue Record Room, a copy on tracing cloth being supplied to the patwaris. For hill torrents and the Kurram canals which irrigate more villages than one, collective maps have been prepared in the Isa Khel tahsil. The originals have been deposited in the District Revenue Record Room, and a copy kept in the Tahsil Office for reference.

There is no department in this district to which it was necessary to supply copies of the field maps. The Deputy Commissioner who is in charge of the hill torrent and riverain flooding has taken copies of the abpashi (irrigation) maps prepared for villages and collective maps prepared for each hill torrent or canal on the scale of 240 karams=1".

26. A complete genealogical tree of superior and inferior proprietors was prepared at last Settlement. This was attested at the time of remeasurement and brought up to date. The new genealogical tree prepared contains a record of four generations or more upwards beginning from the existing owners and containing at least one ancestor included in the last Settlement record (the names of such persons being in the Mianwali and Isa Khel tahsils enclosed in a green square). The present document has thus been connected with the old genealogical tree without the unnecessary trouble of reproducing the old table. In the Mianwali and Isa Khel tahsils a shajra nasab (genealogical tree) has also been prepared for the occupancy tenants with a view to assist the courts in deciding questions relating to inheritance of occupancy right.

27. The jamabandi forming part of the new Record of Rights is in all four tahsils a copy of the khataunis attested at the spot; and instead of being the Record of Rights for any particular year throughout a tahsil is what may be called the measurement (paimaish) jamabandi, representing the state of affairs at the time of final attestation of the khatauni of each village. A detailed jamabandi was prepared in the Bhakkar-Leiah tahsils in 1897-98 and in the Mianwali-Isa Khel tahsils in 1902-03 just before the commencement of Settlement operations in each set of tahsils. The Khataunis (holding slips) prepared at measurement were attested with reference to this jamabandi, the Settlement record and the genealogical tree brought up to date. When the khatauni had been completely attested by the Naib-Tahsildar and Tahsildar the jamabandi

was prepared from it without any alterations in ownership or possession. All changes which had occurred by the time having been incorporated in the Khatauni, no necessity was felt of preparing a later jamabandi for the sake of the few mutations which came subsequently to light. The jamabandis of the southern tahsils were completed by the end of 1902-03. Quadrennial attestations of the records began in these tahsils from 1904-05, detailed jamabandis of one-fourth the total number of villages being prepared every year. Detailed jamabandis have therefore been prepared for three-fourths of the villages since the year 1903-04 when the new assessment came into operation and jamabandis of the remaining villages will be prepared this hot weather. Detailed jamabandis of the Bhakkar Thal villages, which have been remeasured, or of which the maps have been brought up to date, will anyhow have to be prepared this season. This work will require much care. The completion of measurements of a part of the Bhakkar Thal in one winter being in itself not an easy task, I could not possibly have the jamabandi prepared under my own supervision. The number of villages in the Bhakkar-Leiah Tahsils is 323 of which 70 are divided into two estates each one lying on each side of the high bank of the river. A separate jamabandi was prepared for each estate. The estates above the high bank have nothing in common with those lying below it, and as each set has been placed under a different system of assessment, so for all particular purposes they are separate villages. The only difference is that they have one name and have been assigned to one topographical number in the records.

In the northern tahsils, the size of some of the mauzas (villages) was enormous. In some cases there was no connection between different parts of a village, in others the village maps merely indicated administrative limits including lands belonging to residents of different villages and entered in the Jamabandis of those villages, while in some the process of partition, the assertion of individual rights and the building of hamlets by individuals or groups of landowners had created independent blocks. In all such cases it was simply impossible for one patwari to carry on the work of one whole village and the appointment of more patwaris than one resulted in endless trouble to the zamindars and unavoidable inconvenience in the work of the patwaris themselves. Proposals were therefore made to split up these estates into 2, 3, 4, 5, 6 or 7 each and sanctioned by the Financial Commissioner's letters Nos. 5784, 2317 and 817, dated 28th September 1905, 30th August 1906 and 9th February 1906 respectively. Each part has now been made into a separate village. In some cases as many as 5 patwaris have now been appointed to the new villages formed out of one parent village. From the point of view of work it would have been an utter impossibility to have 5 patwaris in one village, if the separation of villages have not taken place. The unusually large size of the original villages and the necessity for carefully comparing the papers of newly formed villages, with those of the parent village, however, greatly complicated the work of attestation and completion of the measurement file. Several very heavy partitions were also effected during the course of the Settlement, such as that of the village Wanbhachran with a total area of about a hundred thousand acres. The complicated tenures peculiar to these tahsils which need not be described here also made the work of attestation a very difficult one, and the ala milkiyat (superior proprietary rights) held on innumerable minute shares made it extremely tedious. The Taja Khels of Mochh (Mianwali) held superior proprietary rights in 19 of the Kacha villages, their shares being the same everywhere. The result was that the death of one of them necessitated mutation of names in 19 villages although his share of the ala malikiyat due was often worth only an anna or so. With the consent of all of them the ala milkiyat was partitioned, a certain number of the ala maliks being given the rights in each village to the exclusion of the others. This has greatly simplified matters. Not the least important of the changes effected in the jamabandis is the abolition in many of the villages of the system of grouping by warhis or families. The warhis nothing like a patti, i.e., it is not a group of owners possessing land within specified limits. But it means the members of one family descended from a common ancestor much nearer than the ancestor after whom the clan or sub-clan is known. All land belonging to members of the family was said to belong to the warhi, and any one purchasing land from one of the members also became a member of the warhi. Free inter-marriage and transfers between the warhis had resulted in one man appearing in

half-a-dozen or a dozen Warhis, and the communal tie of the Warhi remained only as a mere form. The system of Warhis resulted in names appearing time after time in the genealogical tree and one person's holding being split up into a dozen in the Jamabandi. The people themselves preferred their holdings being brought together. The system of Warhis was therefore abolished except in villages where there was common land belonging to Warhis, and the system had to be maintained. In most of the villages, therefore, each family now appears only once in the genealogical tree, and all land belonging to one owner is brought together in one holding in the Jamabandi.

28. There are a few water-mills in the northern tahsils. It has not been considered necessary to prepare a separate record for these. A holding or holdings have been added at the end of the Jamabandi of the village showing the owner of the land, the field in which the water-mill is situated and the person to whom the water-mill belongs.

29. The work of deciding mutation cases was particularly heavy during the Settlement, as will be seen from the following table:—

BHAKKAR-LEIAH TAHSILS.						MIANWALI-ISA KHEL TAHSILS.					
Year.					Mutations attested.	Year.					Mutations attested.
1898-99	...	...	...	...	21,391	1903-04	...	...	...	...	6,506
1899-1900	...	...	...	...	20,687	1904-05	...	...	...	...	10,623
1900-01	...	...	...	...	30,926	1905-06	...	...	...	...	25,014
1901-02	...	...	...	...	27,829	1906-07	...	...	...	...	18,937

Altogether some 161,913 cases were disposed of during the progress of remeasurements. In the Mianwali-Isa Khel Tahsils the work was specially heavy, the number going up very high in individual cases, *e.g.*, to 4,855 in Bhangi Khel (Isa Khel) and 3,157 in Mochh (Mianwali). Some of the cases were very complicated and by no means easy to decide.

In the southern tahsils numerous cases connected with the acquisition of proprietary and other rights under the *Wajib-ul-arz* in consequence of breaking up of land or of continued possession had to be decided before the record of rights was prepared. During the recent remeasurement of some of the Bhakkar Thal villages care was taken not to alter the entries of the Settlement record relating to rights or to areas, all additions to Barani cultivation being noted in the Khasra Girdawari for incorporation in the next Jamabandi. The record of rights Jamabandi has therefore remained practically untouched.

30. In the Bhakkar-Leiah Tahsils, where date trees are numerous and have been assessed to revenue a date Jamabandi has been prepared in addition to the land Jamabandi. The date Jamabandi which was prepared at last Settlement was not kept up to date, and consequently a careful attestation of the rights in the trees had to be made. Two enumerations of date trees were made, one in 1899 and the other in 1901, and the results of the second enumeration were put down in the Jamabandi, which also gives the name of the owner of trees, the number of the field on which the trees stand and the revenue assessed thereon. The form used in the record of rights has been slightly altered for future use.

31. A Tirni Jamabandi was prepared in the Bhakkar-Leiah Tahsils for every village, showing the owners of cattle, the number of cattle (with description) owned by each, and the grazing Jama paid by each cattle-owner in the year in which the Jamabandi was prepared. This record was needed in

some of the Thal villages where according to the conditions of Wajib-ul-arz the graziers are entitled to a share in the common waste land at the time of partition. It is unnecessary to prepare these Jamabandis in future as the cattle enumeration lists, which are prepared from year to year, contain all the information and will, under instruction laid down in Dastur-ul-aml, be preserved till partition of the common lands.

32. A Riway-i-abpashi or statements of rights in irrigation by other sources than wells was prepared at last Settlement for all hill torrents and for the Kurram Canals in the northern tahsils. This statement has been revised and brought up to date. A collective statement has been drawn up for each of 5 hill torrents and the Kurram Canal in the Isa Khel Tahsil and a similar record prepared for the source or sources of irrigation of each village in both tahsils. The latter has been filed with the record of rights and the former kept in the Revenue Record Room separately. No collective records for hill torrents have been prepared in Mianwali as the torrents do not flood one village after another in that tahsil. Maps showing hill torrent and canal irrigation have been prepared in duplicate on the 4"=1 mile scale, one copy being filed in the Revenue Record Room and the other being given to the Patwari. A collective map has also been prepared for each hill torrent or canal in the Isa Khel Tahsil and placed with the Riway-i-abpashi of that source of irrigation in the Revenue Record Room, one copy being supplied to the tahsil for being kept in the tahsil office.

33. The new Wajib-ul-arz, or village administration paper as it is called, is a statement of customs prevailing in a village in regard to matters detailed in Land Revenue Rule 203. In preparing the new administration paper, the old Wajib-ul-arz has been copied, omitting portions which related to subjects expressly provided for by law and making necessary alterations in order to bring the statement into accord with actual usage.

The Wajib-ul-arz bound up with the Record of Rights of the Bhakkar-Leiah Tahsils was found in several cases to be incomplete or to contain matter which had neither been copied from the old Wajib-ul-arz nor inserted after proper attestation. Indeed there was no record of a proper attestation of the Wajib-ul-arz having been made. A revision of the new Wajib-ul-arz was therefore sanctioned in Financial Commissioner's endorsement No. 469 S., dated 10th October 1907, and the administration paper of all the villages in the two tahsils has been re-attested and re-written, the document bound up with the Record of Rights being taken out and destroyed and replaced by the properly attested one.

In respect of common lands in the Bhakkar-Leiah Thal, Mr. Hailey, Assistant Settlement Officer, arranged for execution of agreements under the Sindh Sagar Doab Colonization Act, I of 1902, to surrender the waste lands in the event of construction of the projected Sindh Sagar Canal. The agreements were executed throughout the Thal except in the villages named in the margin.

The restrictions created by the agreements have been incorporated in the Wajib-ul-arz.

The question whether similar agreements should be taken in the Mianwali Thal was decided in the negative in Punjab Government letter No. 654, dated 27th June 1907.

In the southern tahsils the Malba (village expenses) cess has been fixed at rates varying from Rs. 2 to 5 per cent. of land revenue, except in the 5 villages of the Leiah Tahsil noted in the margin where a due in kind is collected from the common heap for village expenses. In the northern tahsils the village communities consisting mostly of Niazi Pathans and Awans are not entertaining as a class, and the lambardars are neither expected nor willing to render the hospitality common in other parts of the Punjab. The

Subajuni, Gorchha, Mehr Imam Shah in Bhakkar,
Khuni Kalru and Suha Khurd, Suha Kalan, Nur-Khi-
rani Jam Rid, Wanjhera, Kotla Kazi, Vairer, Khawas
Khel, Jesal, Gat, Samtia, Saidu, Ahmadyar Rid, Sadiq
Rid, Ali Dasti, Hamun Kalru and Bahadur Gamun in
Leiah. In Tinda Thal Bhakkar owners of two-thirds
of the lands did not come forward to sign the agreement.

Dad Shah Fakiranwala.
Dad Shah Jandanwala.
Bet Bakhshinda.
Baluch Khan.
Bet Balu.

village expenses are therefore not large and the rate has been fixed at Re. 1 or Rs. 2 per cent. of land revenue. It may be noted that even this small contribution to village expenses is generally resented by the Zamindars. In 6 villages no provision for Malba has been made. One of these belongs to a single individual, three belong to the Khawanin of Isa Khel and the remaining two are the Bhangi Khel villages, where every occupant of a house is expected to render hospitality to any one who happens to go to his door.

The customs relating to irrigation are important in this district owing to the system of Ghandis (dams) and water channels by which the river water in the riverain tract and the hill torrent and Kurram Canal water in the uplands of Mianwali and Isa Khel is laid on to cultivated lands. In several cases there was a recorded custom for the supply of free labour for constructing and maintaining Ghandis (dams) and other works. Conditions to this effect have now been recorded in the Wajib-ul-arz of every village in the riverain tract and in every village above the high bank which receives hill torrent or canal water. The rights of Government in gold-washings from the river, in saltpetre, petroleum, etc., have been duly recorded in villages where such articles are produced.

With reference to paragraphs 155 to 157 of Mr. Thorburn's Settlement Report of the Bannu District, a condition was recorded in the Wajib-ul-arz of the Kacha villages in the Mianwali and Isa Khel Tahsils prohibiting the felling of recorded Shisham (sissoo) trees on private lands without permission. Mr. Thorburn estimated that all recorded Shisham trees would be cut down in 15 or 20 years, when of course the provision would cease to be in force. The recorded trees have long disappeared having either been cut away or eroded by the river. No tree less than 12 years old was recorded in the Settlement Khasra, and there is not a tree in the Kacha now which can have existed for 42 years. But notwithstanding the disappearance of the recorded trees, the condition has continued to be in force and permission of the Deputy Commissioner has hitherto been obtained by any one who wanted to cut a tree grown by himself on his own land. This practice was not warranted by any rule and was very vexatious. The provision above referred to has now been omitted from the Wajib-ul-arz.

34. The boundaries of the district with other districts are permanent. Demarcation of boundaries. The only portion of the boundary which was left undecided at last Settlement was that along the Maidani range north and west of the Isa Khel Tahsil. The whole hill area was therefore left unmeasured. It was decided subsequently in the Barak Settlement that the crest of the Surghar, the lower of the two Lowaghar ranges, was to be the boundary between the Kohat District and the Isa Khel Tahsil, and the line has accordingly been demarcated in the presence of officials of the Kohat District on the north, the only dispute remaining to be settled is about the northern boundary of village Chapri. The Deputy Commissioner of Kohat has not yet agreed to the line proposed by me. Correspondence is in progress, my last letter on the subject, No. 178, dated 27th February 1908, has not been replied yet. Meanwhile the records of Chapri have been completed with reference to my proposal, subject of course to any alteration which may be necessary according to the final decision. On the west, the boundary with the Marwat Tahsil has been fixed along the crest of the hills. The following hill areas have been included in the Records of villages to which they adjoined. Tola Mangli 3,843, Kotki 1,058, Chapri 5,284, Chashmia 5,639, Malla Khel 5,451, Karandi 2,278, Sultan Khel Gharbi 5,051, Mitha Khatak 3,659, Khanuwala 727, Kaluanwala 188, Bhor 1,060 and Sarkia 802 acres. The line with village Malli Khel of Dera Ismail Khan which was also under dispute has been decided on. The only other disputes which have arisen with the neighbouring districts are with the Shahpur District in villages Musa Khel, Chhidru and Wan Bhachran. There was really no dispute as regards Wan Bhachran and I have decided the case. As regards disputes between the other two villages and village Golewal of Shahpur, I have arrived at a decision which has been incorporated provisionally into the Records of the District, the file being sent to the Deputy Commissioner, Shahpur, for expression of opinion.

Several complicated boundary disputes inside the district have had to be decided besides the laying down of boundaries in the Mianwali-Isa Khel Kacha mentioned in paragraph 21.

The boundaries of the railway line have been compared throughout the district with the Railway Department and discrepancies reconciled. The Public Works Department have also compared their maps of the Government buildings with the field maps prepared by the Patwaris.

CHAPTER V.—THE NEW ASSESSMENT.

A.—THE AMOUNT OF THE ASSESSMENT.

35. A general re-assessment of the Dera Ismail Khan District then including the Bhakkar and Leiah Tahsils was authorized by Punjab Government Orders for re-assessment. Notification No. 159, dated 6th October 1898, and a re-assessment of the Mianwali and Isa Khel Tahsils was undertaken under the authority of Punjab Government Notification No. 2190, dated 28th September 1903. The instructions contained in Mr. Douie's Settlement Manual have been followed in carrying out the work of re-assessment and revision of records.

36. The assessment circles into which each tahsil was divided for assessment purposes at this Settlement are named in the following table, and the circles which corresponded to them at last Settlement are also noted :—

Tahsil.	Assessment circle at this Settlement.	Corresponding Assessment circles at last Settlement.
Mianwali	Pakka	Mohar, Kacha-pakka, Thal Kacha
	Kacha	Kacha-pakka, Thal Kacha.
	Khudri	Pakhar.
Isa Khel	Bhangi Khel	Bhangi Khel.
	Pakka	Mohar, Dauda, Pakka-kacha.
	Kacha	Kacha, Pakka-kacha.
	Nabri	Nabri.
Bhakkar	Thal	Thal.
	Indus Valley... ..	Daggar, Pakka.
	...	Pakka.
	...	Kacha, Bet.
Leiah	Thal	Thal.
	Indus Valley... ..	Pakka Leiah, Pakka Karor, Pakka Kot Sultan.
	...	Pakka Leiah, Pakka Karor, Pakka Kot Sultan.
	...	Kacha Leiah, Kacha Karor, Kacha Kot Su'tan.

The assessment circles were sanctioned for the Bhakkar and Leiah Tahsils in Financial Commissioner's letter No. 5217, dated 10th September 1900, to the Settlement Commissioner, Punjab, and for the Mianwali-Isa Khel Tahsils in Settlement Commissioner's letters Nos. 3262 and 2762, dated 25th August 1905 and 1st August 1906, respectively. In the Mianwali-Isa Khel Tahsils, the Khudri (Pakhar) and Bhangi Khel Circles have remained intact. The latter circle depends entirely upon local rainfall and hill drainage, a little land in one place being irrigated by a perennial hill stream. The former has besides similar resources a few wells clustered round village sites and benefits from surface drainage of rough country in the Talagang Tahsil of the Attock District. The limits of the Nabri Circle of Isa Khel irrigated from Kurram Canals have only been slightly altered.

Leaving the above circles out, the whole of the tract above either high bank of the river has been called the Pakka Circle while the whole area lying

within the high banks has been included in the Kacha Circle. A few of the Kacha villages which extended well above the high bank have been excluded from the Pakka Circle although the upland portions thereof have been assessed similarly to the Pakka. The Pakka Circles are dependent on rain assisted by hill torrents bringing down rain water from the adjoining hills. Wells are rare and are built primarily to supply drinking water except in a strip of land adjoining the river near Kalabagh or in the southern portion of the Mianwali Pakka. The excessive depth of spring level makes the construction and working of well a practical impossibility. The Kacha Circles thrive on river floods. Wells are constructed on lands considered safe for the time from erosion, but their number is small. The Bhakkar and Leiah Tahsils were dealt with by tracts, the whole area above the high bank being called the Thal tract, and that below it the Indus valley. The former was divided into two parts: (1) The Thal Kalan Circle in each tahsil comprising the eastern and main portion of the sandy Thal; and (2) the Daggar in Bhakkar and Jandi in Leiah, being the western portion of the Thal which adjoined the high bank of the river. The latter tract was divided in each tahsil into (1) the Pakka or the securer portion adjoining the high bank and (2) the Kacha or the more insecure part which is more exposed to the action of the river.

In the Thal cultivation is mainly Chahi except in the northern half where there are plenty of Barani lands. The Daggar Jandi portion is more wooded and wells lie closer together there than in the Thal Kalan. The Indus valley is similar to the Kacha of Mianwali and Isa Khel with this difference that the Pakka portion has a much larger number of wells and depends more on artificial flooding by means of embankments, etc.

37. The classes of soils sanctioned for adoption in the Assessment Report by Senior Secretary to Financial Commissioner's letter No. 1240, dated 6th July 1899, for Bhakkar and Leiah, and No. 312 S, dated 18th August 1904, for Mianwali and Isa Khel Tahsils, were:—

Classification of soils.

Chahi.—Land irrigated by wells only.

Sailab.—Land receiving moisture from the river.

Chahi Sailab.—Sailab land irrigated by well or by lift from river or a creek.

Nahri.—Land irrigated from a canal.

Nahri Sailab.—Sailab land irrigated from a canal.

Abi.—Land irrigated from perennial hill-streams.

Barani.—Land depending on local rain only.

In the northern tahsils Barani cultivation being of different kinds the class was sub-divided into—

Kasledar.—Land which receives the drainage water of higher lying waste, besides its own rainfall.

Naledar.—Land which receives hill torrent water.

Maira.—Level land consisting of any admixture of good loam and sand depending upon its own rainfall.

Tibba.—Sandhills containing a slight quantity of clay and fit for growing only water-melons or gram.

Sam or Hail.—Level and rich loamy soil in the hills, receiving drainage water from the surrounding hillocks.

Dog or Rakkar.—Clayey soil with a sub-soil of gravel or stone.

Guyan.—Stiff poor pebbly soil on a slope.

Gor or Gár.—Stiff poor soil full of stones, hardly culturable with profits.

Chahi and Barani lands occur in all the four tahsils, in tracts above the high bank, Sailab and Chahi Sailab are confined to the riverain tract, Nahri and Nahri Sailab are peculiar to the Isa Khel Tahsil, and there is a little Abi in both the northern tahsils. Of the sub-classes of Barani Sam, Dog, Guyan and Gor are terms used in the Bhangi Khel. Hail is met with in the Khudri, Naledar and Kasledar are found in the Pakka Circles of the Mianwali and

Isa Khel Tahsils and Maira and Tibba exist in all tahsils. This classification has been observed in registering land in the Record of Rights. For the purpose of assessment in the northern tahsils Naledar and Hail have been similarly treated, and no distinction has been made between Kasledar, Maira or other sub-classes of Barani. In the Revenue Returns to be prepared hereafter the only distinction that will be observed in respect of Barani will be between Naledar and Hail on the one hand and Barani (meaning other Barani) on the other. The classes in the southern tahsils will be only Chahi, Sailab, Chahi Sailab and Barani.

38. For the purpose of calculating the profits of the landlord of which the State could claim a share, it was necessary to find the area on which crops were matured on an average of years. The cropped area of one year could not, owing to the extreme variability of successful cultivation in a tract depending almost entirely on local rainfall or river floods, form a correct criterion for judging the paying capacity of lands during the next 20 or 30 years. The average area of matured crops during the following periods was therefore taken as the basis of calculation of assessments:—

Tahsil.	Period.
Mianwali and Isa Khel	10 years, 1896-97 to 1905-06.
Bhakkar and Leiah Thal	5 years, 1896-97 to 1900-01.
„ Indus Valley	5 years 1895-96 to 1899-1900.

The reasons why these were considered to be representative periods were given in the Assessment Reports. The average of the area under matured crops during the periods mentioned above was—

	Isa Khel.	Mianwali.	Bhakkar.	Leiah.	Total District.
Area	76,275	168,343	165,759	154,167	564,544

39. The crops which failed to mature were under the general rules registered as Kharaba during the periods above referred to, but for various reasons the crop statistics were not reliable in this respect. In the Barani uplands of the Mianwali and Isa Khel Tahsils the extent of failure in bad years is very large. But although the Patwaris could not, owing to the immense increase of cultivation, cope with the crop inspection work and had to content themselves in several cases with sitting in one place and registering crops of miles around, yet in consequence of the fixed assessment of the tracts they did not mind allowing Kharaba liberally not with regard to the actual condition of crops in each field, but with reference to their general impression of the crops of large blocks. The percentage of failure recorded therefore varied from 4 to 61 giving an average of about 25 per cent., which was considered a fair estimate. In the Bhakkar-Leiah Thal cultivation being mainly Chahi and fairly secure, no Kharaba was recorded except in the Barani cultivation. In the Nahri tract of Isa Khel, the percentage of Kharaba allowed appeared inadequate, and was raised from 4·7 to 10. In the riverain tracts where the revenue fluctuated with the area under crops, the Patwaris were very reluctant to return crops as failed unless the crops on a whole field were destroyed or failed to spring up. Indeed in the southern tahsil this was the rule. For reasons given in the Assessment Reports, it was considered necessary to raise the percentage of failure in the riverain tracts as follows:—

Tahsil.	Sailab.	Chahi Sailab
Mianwali	from 5·7 p. c. to 15 p. c.	...
Isa Khel	„ 6·9 p. c. „ 15 p. c.	...
Bhakkar } Pakka	„ 7 p. c. „ 10 p. c.	from 3 p. c. to 2·5 p. c.
Leiah } Kacha	„ 1·0 p. c. „ 15 p. c.	„ 1·2 p. c. „ 2·5 p. c.

The allowance for under estimate of Kharaba was however deducted by the late Captain Crosthwaite out of the net assets as will be noticed further on. The areas arrived at after a proper deduction for Kharaba are given in the following table :—

Tahsil.	Average area sown.	Average area of matured crops recorded.	Average area of matured crops after proper deduction of Kharaba.	PERCENTAGE OF FAILED AREA TO AREA SOWN.	
				According to returns.	After proper Kharaba deductions.
Mianwali	209,948	168,343	163,211	19.8	22.3
Isa Khel	90,907	76,275	74,078	16.1	18.5
Bhakkar	167,480	165,759	147,931	1.0	11.7
Leiah	155,115	154,167	144,360	0.6	6.9
District	623,450	564,544	529,580	9.5	15.1

40. In the Mianwali-Isa Khel Tahsils the landlord is supposed to take his full share of wheat, straw and Jowar and Bajra stalks as well as of green crops used up as fodder. But in practice he gets very little of the straw while a certain amount of green wheat and barley are consumed by the well and plough bullocks and such crops as peas, Mash, Moth and Chari are always used up by the cultivators, bullocks and cattle. It was decided for reasons explained in the Assessment Report to neglect the share of straw and stalks taken by the landlord and as a set-off, to make no allowance for the green crops used up as fodder. In the Bhakkar-Leiah Tahsils, Mr. Hailey, dealing with the Thal tract allowed for the feed of well bullocks all turnips and Rabi crops classed as 'others', besides Jowar $\frac{1}{6}$, Bajra $\frac{1}{4}$, wheat and barley $\frac{1}{6}$ th in the Thal Kalan and Jowar $\frac{3}{4}$, Bajra $\frac{1}{6}$, wheat and barley $\frac{1}{6}$ in Jandi and Daggar. The straw and stalks are a negligible quantity in the Thal and were left out of account. The late Captain Crosthwaite in his Assessment Report of the Indus Valley tract allowed all turnips, carrots, Sarshaf, Jowar, Chari, Sanwak, peas, Sinji, Methra, China as fodder crops in addition to 4 per cent. of the wheat in respect of well lands, for Sailab lands he allowed 10 per cent. of Jowar, 20 per cent. of turnips, and recognized that a slightly lower rent was invariably paid in respect of fodder crops compared with the customary rent rate for other crops. On the other hand he valued wheat straw at 2 annas per maund and included the usual share thereof in the owners' assets. The allowance thus made amounted to 5.7 per cent. of the sown area in the whole district.

41. The outturns per acre at which the yield of crops was to be worked out were arrived at after a comparison of the results of crop experiments made during the three years in the southern tahsils and $2\frac{1}{2}$ years in the northern tahsils preceding re-assessment with the rates of yield assumed at last Settlement and those adopted at the assessment of the neighbouring tahsils. In the Indus valley tract of Bhakkar-Leiah, the late Captain Crosthwaite also examined the accounts of Sahukars, Zamindars and Jagirdars who realised the revenue in kind. In the Mianwali Tahsil, I had the advantage of practically managing for three years the estate of 3 minors who are wards of the Civil Court. A schedule of outturns assumed for each crop, on each class of soil in each assessment circle, is printed as Appendix III to this report with reference to the Financial Commissioner's Circular letter No. 358, dated 17th January 1899. The outturns of the more important crops are noted below :—

Crop.				Percentage total cropped area.	Ohahi.	Chahi Sailab.	Sailab.	Barani.	Nabri.
				Acres.	Mds.	Mds.	Mds.	Mds.	Mds.
Bajra	...	...	...	17	7 to 8	5 to 7	$3\frac{1}{2}$ to $4\frac{1}{2}$	2 to 7	4
Wheat	...	...	...	40	6 to 9	8	6	2 to 8	5
Barley	...	...	...	6	7 to 10	7 to 9	6 to $6\frac{1}{2}$	$4\frac{1}{2}$ to $7\frac{1}{2}$	6
Gram	...	...	...	10	5 to 6	5 to 6	5	2 to $5\frac{1}{2}$	5

The very low outturns are of the Bhangi Khel Circle.

42. The village menials who assist the agriculturists throughout the year and particularly at harvest time have to be paid out of the common heap before the landlord and tenant divide the produce on the threshing floor. The most important menials are the Lohar (blacksmith) and the Tarkhan (carpenter). The Lailhar (reaper) is also indispensable at harvest time. The potter is engaged where there is well cultivation and is an unimportant menial in the northern tahsils. A certain due is always paid to the priest. The other menials employed in the northern tahsils do not deserve special notice. In the southern tahsils, the potter is more important and the Dubir (weighman), Ponah (thresher and chaff shifter) are also generally employed while the Kotwal (Lambardar's assistant), Karawa (crop watcher) and Mohana (ferry man) have also to be paid in the Indus Valley and the Mochi in the Thal. The number of menials paid and the rates at which they are remunerated vary from village to village and even within one and the same village. The percentage of the gross produce which has been deducted on account of menials' dues is 11 in Mianwali, 10 in Isa Khel, 11 in the Indus Valley, and 13 in the Thal tract of the Bhakkar and Leiah Tahsils. The deduction made amounts to 11 per cent. of the gross produce of the whole district. In addition to the above mentioned menials, a labourer called Kasha is entertained for the purpose of laying water on to the fields in the canal irrigated tract of Isa Khel. His due varies from 4 to 7 per cent. of the produce of Nahri lands.

43. After making the necessary deduction from the corrected area of matured crop on account of fodder the yield was ascertained at the rates of outturn assumed (see paragraph 41) and in the northern tahsils menials' dues were deducted from the produce thus obtained (see paragraph 42). This left the net produce divisible between the landlord and tenant (assuming that all the land was cultivated by tenants) and it was commuted into cash at the prices sanctioned for adoption (see paragraph 15). In the southern tahsils menials' dues were deducted after the produce had been converted into cash and Mr. Hailey made the allowance for fodder out of the value of produce instead of the area under crop. These slight differences in procedure, however, did not affect the results. The total value of divisible produce for the whole district obtained in the above manner was Rs. 41,35,712.

44. In paragraph 19 it has been noticed that about 32 per cent. of the cultivated area is worked by tenants-at-will paying *batai*. The profits of 51 per cent. of the area cultivated by owners themselves must also be judged by the standard of tenants-at-will. The rent paid by occupancy tenants can form no criterion. The rent in kind paid by the tenants-at-will is therefore the best standard for estimating the owners' profits from land. The rent rates ascertained in the Assessment Reports give an average of 37·8 or 38 per cent. of the divisible produce against the similar rate of 35 per cent. at last Settlement. The rise is due to extension of cultivation in tracts with a high rent rate. There are superior proprietors in all the four tahsils but most of them get from the inferior proprietors with whom the assessment is made, a percentage of land revenue in cash which is extremely small and the area on which *Khutti* (superior proprietary due) is paid to them in kind from the common heap is insignificant compared with the total area. No deduction was therefore made from the landlords' share on this account in the northern tahsils or in the Bhakkar and Leiah Thal. In the Indus Valley no deduction was made either. On the contrary, a small addition of about 4 pies per acre was made to the owners' share, on the understanding that the superior proprietors who received the dues were themselves inferior proprietors of some lands. Expenses connected with the maintenance of wells amounting to Rs. 3 per well were deducted from the owners' assets in the Mianwali-Isa Khel Tahsils and an allowance of Re. 0-2-0 and Re. 0-1-6 per acre of Chahi Sailab crops was made by the late Captain Crosthwaite in the Pakka and Kacha Circles respectively of the Indus Valley, and he also deducted at this stage the allowance for under-estimation of Kharaba (see paragraph 39). Applying the rent rate to the total value of divisible produce and making the necessary additions and

deductions, the net assets of the landlords amount in the whole district to Rs. 15,18,226, detailed as follows :—

Isa Khel.	Mianwali.	Bhakkar.	Leiah.	District.
Rs. 2,30,348	Rs. 5,44,254	Rs. 3,82,580	Rs. 3,61,044	Rs. 15,18,221

45. The half net assets of the landlord thus amounted to Rs. 7,59,113
 The total value of produce is estimated
 Half assets and other standards. at Rs. 45,96,338, and one-sixth of this
 would be Rs. 7,66,056. Applying the rates fixed at last Settlement to the present
 cultivation and taking an increase on account of rise of prices the demand would
 be—

	Acres.	Estimated demand.
		Rs.
Cultivated area... ..	708,815	6,60,084
Sown area	623,450	5,80,588

The above are the three standards by which the assessment which could be taken had to be judged. A comparison of the net exports by Railway will be made further on with the surplus produce of the district, but as the river forms a means of export of the greater part of the produce of one of the tahsils and some grain from the other tahsils also finds its way down by river while much grain comes in from the Bannu, Dera Ismail Khan and Dera Ghazi Khan Districts to the Railway stations, the results of that comparison could not form a reliable basis for judging the new assessments.

46. The land revenue assessed at this Settlement aggregates Rs. 5,22,497 for the district. With slight differences
 The land revenue sanctioned, and its pitch, this is the amount sanctioned in the
 Assessment Reports. The percentage of half net assets and of increase over the previous demand taken in each tahsil is noted below—

Tahsil.	Percentage of half net assets taken.	Increase on pre- sent demand p. c.
Mianwali	63	33
Isa Khel	65	27
Bhakkar	71	19
Leiah	79	20
District	69	24

The new demand represents 11 per cent. of the gross produce of the district, is 69 per cent. of the half net assets to which Government is entitled and involves an increase of only 24 per cent. against an increase of 36 per cent. in the cultivation (see paragraph 13) and a rise of 20 per cent. (see paragraph 15) in prices. Of the total demand, fixed assessments amount to Rs. 42,586 only (of which Rs. 3,222 on account of Barani land in the Bhakkar Thal were lumped together with the grazing Jama of that tract) the rest of it being recoverable by one form or another of fluctuating assessment. The half assets rates for each class of soil in each assessment circle are given in Appendix IV. The rates now sanctioned are detailed similarly in Appendix V and the new assessments are compared with half net assets, the previous demand and the assessment at sanctioned rates in Appendix VI.

The increase of assessment, it will be noticed, is very moderate particularly in view of the fact that nearly the whole district has been placed under fluctuating assessment.

B—METHODS OF ASSESSMENT OF REVENUE.

47. After full consideration of the conditions of the various parts of the district, the whole district has been given a fluctuating assessment with the exception of the billy tracts of Khudri and Bhangi Khel, a few other villages in the Isa Khel Tahsil and the Powah of the towns of Bhakkar and Leiah. The following four systems have been adopted for the assessment of cultivated lands:—

Systems of assessment.

(1) Fixed assessment, (2) Fluctuating assessment by crop rates, (3) Fluctuating assessment by all round rates, and (4) the Thal system of fluctuating assessment.

48. Of the tracts previously under fixed assessment the system has been maintained in (1) the whole of the Khudri Circle of Tahsil Mianwali, (2) the whole of the Bhangi Khel Circle, (3) the village of Kalabagh in the Pakka Circle, and (4) the villages of Sarkia, Kas Umar Khan Pakka, Masit, Bhut and Gidrawala in the Nahri Circle of the Isa Khel Tahsil, (5) the Powah of the town of Bhakkar in the Bhakkar Tahsil and (6) the gardens in the Powah of Leiah in the Leiah Tahsil. In cases, Nos. 1 to 5, the Jama has been fixed for the term of Settlement, and reductions, suspensions and remissions of revenue will be allowed under the rules given in Parts 'A', 'B' and 'C' respectively, of Appendix VII. As regards No. 6 the gardens lie in the Indus Valley tract and receive the advantage of river spill in addition to well irrigation. The Jama on these gardens has been fixed after deducting therefrom the revenue which the land under the gardens will pay at the fluctuating Sailab rate for gardens fixed for the village. In addition to the fixed Jama, the land under the gardens will therefore be assessed at the ordinary Sailab crop rates. Remissions will be granted out of the fixed revenue for injury done to the fruit trees under the rules given in Appendix VII D. The total land revenue demand fixed in the above manner amounts to Rs. 39,364 in the whole district. A sum of Rs. 3,222 fixed on the Barani cultivation of the Bhakkar Thal and the villages of Tibba Mehrban Shah and Tibba Gaman Shah since transferred to the Mianwali Tahsil has under the orders of Government been thrown into the grazing Jama of that circle as will be explained further on and has been treated as part of the grazing assessment.

Fixed Assessment.

49. The old system of fluctuating assessment prevailing in riverain tracts has been modified. The area of matured crops (excluding Kharaba) will now be assessed every harvest to a rate fixed for each crop throughout an assessment circle or in a group of villages. The crops have been classed as follows with reference to their productiveness:—

Fluctuating assessment by crop rates.

Class I.—Sugarcane, chillies, fruits, vegetables including spices, tobacco and wheat.

Class II.—All crops not included in classes I and III.

Class III.—Jowar, Massar, peas, water-melons (in Mianwali and Isa Khel Tahsils) and fodder including carrots, turnips, China, Samukha, etc., (water-melons have been placed in class II in the Bhakkar and Leiah Tahsils).

Rates have been fixed by classes and vary from Re. 1-10-0 to Re. 1-2-0 per acre on the 1st class crops. The rate on class II crops is Re. 0-14-0 per acre throughout the southern tahsils and Re. 0-14-0 or one rupee per acre in the Mianwali and Isa Khel Tahsils, while class III crops have to pay uniform rates of 6 annas and 8 annas per acre in all the riverain villages of the southern and northern tahsils, respectively.

The Sailab crops assisted by well or Jhallar irrigation have not been assessed to any additional rate in the northern tahsil except in the case of a few wells lying in two villages and adjoining the town of Mianwali. In the southern tahsils the richer wells have been assessed to an additional rate varying from 2 to 8 annas per acre of matured first class crops. The 2nd and 3rd class crops on these wells and all the crops on the other wells will be exempt from additional assessment. The rates fixed for a village and the additional rate

fixed for a well cannot be raised during the currency of the Settlement, but the Collector may lower them with the sanction of the Commissioner if he finds that the land or well has permanently deteriorated owing to the action of the river. This system will apply to (1) the whole of the riverain portion of the Kach Circles of the Mianwali and Isa Khel Tahsils, the riverain portions of the villages of Daud Khel Pakka and Mochh Pakka in the Pakka Circle of the Mianwali Tahsil and the riverain portion of one village Khuddozai in the Pakka Circle of the Isa Khel Tahsil and (2) the whole of the Indus Valley in the Bhakkar and Leiah Tahsils and small portion of 13 villages of the Leiah Thal.

The total fluctuating land revenue assessed under this system is estimated at Rs. 3,31,264 per annum. The incidence on Sailab crops is Re. 1-3-5 per acre in Mianwali, Re. 1-2-0 in Isa Khel and Re. 1-1-8 in the Bhakkar and Leiah Tahsils.

50. The uplands of the Mianwali and Isa Khel Tahsils though suited to a fluctuating assessment did not require the complication of crop rates as they are not subject to wholesale variations in the productive capacity of lands like the riverain tract. An all round rate per acre of matured crops of whatever class or kind has therefore been fixed for every village with reference to its paying capacity, (1) for all Barani lands and (2) for all Nahri lands (where there is Nahri cultivation). The rate will be applied to the area under matured crops in each harvest. An additional rate which has also been fixed for every village will be charged on all Barani land which is flooded from Hill torrents (Naledar) or on land irrigated from permanent hill streams (Abi) during the harvest and crops irrigated from wells will pay the all round Barani rate together with the additional rate fixed in each village for well cultivation. Watermelons raised on sandhills and waste lands are not to be treated as a crop.

The all round rates fixed vary from Re. 1-2-0 to Re. 0-8-0 per acre and the additional rates on Chahi, Abi and Naledar crops from 2 to 10 annas per acre.

The system of assessment has been introduced in (1) the whole of the Pakka Circles with the exception of Kalabagh (Isa Khel), (2) the upland portions of the Kacha Circles, (3) villages Isa Khel Sheikh Mahmud, Chorauwala, Vial Sheikh Bahadur, Sarwar Khel, Khagglanwala and Dhullianwala, of the Nahri Circle and (4) parts of such villages of the Isa Khel Kacha to which canal irrigation has been extended, viz. Kacha Nur Zaman Shah, Kazi Wala, Kalu Khel, Gajranwala, Attak Paniala Kacha, Kundal Kacha, Kas Umar Khan Kacha and Ban Mahi.

The total assessment of the tract placed under this system is estimated at Rs. 1,23,603 per annum. If any of the lands placed under the system of assessment are eroded by the river, they will on being thrown up by the river and brought under cultivation be assessed at the crop rates fixed for the adjoining Kacha village. If hill torrent water is laid on to lands in villages for which no additional rate has been fixed, an additional assessment at the average rate of 4 annas per acre of matured crops (sanctioned for the tract) will be charged. Similarly if a new well is constructed in a village for which no chahi rate has been fixed, the exemption from revenue will be calculated at the average additional rate of 4 annas per acre sanctioned for the Pakka Circles.

51. The Thal system of assessment introduced at the recent settlement of the Muzaffargarh District has been adopted in the whole of the Thal tract of the Bhakkar and Leiah Tahsils and in the Thal portion of two villages named Tibba Gaman Shah and Tibba Moharban Shah originally assessed with the Bhakkar Thal but now included in the Mianwali Kacha. Two wells included in the riverain villages of Kunnal and Sarishta but situated above the high bank of the river have also been treated similarly to the Thal. This system is a compromise between the fixed and fluctuating systems of assessment and is peculiarly suited to the conditions of the tract and the intelligence of the inhabitants. Owing to the capricious nature of the rainfall on which so much depends in the Thal, the tract cannot stand a fixed assessment. On the contrary the people are too ignorant to understand an annual field to field assessment and too

poor and thrifless to bear the worry of an ordinary fluctuating assessment. The course adopted is this. The Jama of every undivided well and of every holding in a divided well, whether under cultivation or not has been fixed, and the owner thereof informed that he will have to pay the fixed assessment whenever he sows half an acre or more of land in a holding or an acre or more in an undivided well, in one year, except of course when the assessment remains in abeyance under a certificate of exemption. The land attached to joint wells is held in clearly defined shares, i.e., in fourths or thirds or halves. In respect of joint wells, therefore only that much of the assessment will be recoverable in a year, which corresponds to the share under cultivation. The crops sown on a well are invariably helped to maturity, and so no regard will be paid to failure of Chahi crops, thus eliminating one source of worry in fluctuating assessments. Detailed rules for the working of the system are given in Part E of Appendix VII. The total Jama assessed under this system is Rs. 57,821, which is calculated to give a revenue of Rs. 27,027 on the cultivated wells and holdings on an average of five years.

52. There are no date trees in the Mianwali and Isa Khel Tahsils. In the southern tahsils they are found in large numbers round the wells in the Indus Valley adjoining the high bank, and some trees are also found on wells just above the high bank and included in the Thal. The dates have been assessed at rates varying from 9 pies to 1 anna per female tree to a total sum of Rs. 3,050 in the Indus Valley and of Rs. 131 in the Thal. The total assessment on date trees in the whole district therefore is Rs. 3,181. The Jama assessed on date trees at last Settlement amounted to Rs. 1,566. No date Jama has been assessed on villages, where the female trees were not numerous enough to give a Jama of Rs. 10. The Jama is fixed, but remissions will have to be granted if any trees assessed to revenue are carried away or brought down by the river or one of its creeks. In the old Wajib-ul-arz of the date growing villages of the Bhakkar Tahsil, there was a condition to the effect that Government was entitled to half the price of all date trees cut and no landowner was allowed to cut down a tree without the permission of the Tahsildar or the District Officer. This condition was most vexatious and brought less than one rupee a year to Government. In my letter No. 487, dated 25th May 1908, I recommended that Government should relinquish the above mentioned right, and the Financial Commissioner has sanctioned the proposal in his Senior Secretary's letter No. 81 S., dated the 15th June 1908.

53. With the exception of the Bhangi Khel and the Isa Khel uplands, a grazing assessment was imposed at last Settlement on village grazing lands in the whole district. In the riverain tract, the waste area was assessed annually at Rs. 3-2-0 per hundred acres in the northern tahsils and at Rs. 3-8-0 per hundred acres in the southern tahsils. In the northern tahsils, however, waste lands on which Kunder and Kanah grasses were preserved were assessed at the full cultivation rate of Re. 1-4-0 per acre. The grazing assessment of the other tracts was fixed. In the Mianwali Tahsil the grazing Jama of the Khudri Circle which has the advantage of hill grazing has been raised from Rs. 460 to Rs. 600, and has been fixed again for term of Settlement. The grazing Jama of Rs. 2,975 assessed at last Settlement on the Pakka Circle of Mianwali has been remitted altogether. In the Isa Khel Tahsil no grazing Jama has been assessed except in the Kacha, although considerable hill areas excluded from measurement at the last Settlement have been included in the submontane villages. The grazing Jama of the Mianwali Isa Khel Kacha (with the exception of the Sadat Mianai villages transferred from Bhakkar which are treated similarly to that tahsil) has been fixed at rates varying from Rs. 2-8-0 to Rs. 4 per hundred acres of waste, no revenue being taken from villages when the grazing land cannot in any year give Rs. 20 at the rate fixed for them. The Jama will be subject to modification owing to alluvial action in accordance with rules given in Part F of Appendix VII. The grazing Jama of the tract will thus fluctuate from year to year. In the Indus Valley of the southern tahsils, the rate of Rs. 3-8-0 per hundred acres of waste has been maintained for the assessment of the grazing Jama every year. In the Thal tract the grazing Jama of Rs. 24,677 assessed at last Settlement was reduced to Rs. 17,481. But a sum

of Rs. 3,222 assessed on Barani lands in the Thal was lumped together with the grazing assessment, making a total fixed Jama of Rs. 20,703 recoverable from the Barani lands as well as the cattle. The Barani lands are to be assessed to 4 annas per acre of crops every harvest, and the amount so recovered is to be credited towards the grazing assessment in each village, the balance being recovered from the cattle. The owners of all villages where there is Barani cultivation have agreed to combine the two Jamas with reference to paragraph 5 of Punjab Government Review of the Thal Assessment Report No. 136 S., dated 26th May 1903. The collective demand on account of grazing assessment is therefore to be treated as the maximum demand out of which the Collector can, subject to the control of the Commissioner, remit in a year of drought or murrain such portion of it as he thinks necessary in each village. The villages of Tibba Gaman Shah and Tibba Meharban Shah now included in the Mianwali Tahsil were assessed similarly to the Thal and are under the same system of grazing assessment. The total grazing assessment of the district (including the Barani of the Thal tract). is—fixed Rs. 21,303, fluctuating Rs. 10,584, total Rs. 31,887.

54. There are nine water-mills in the Mianwali and Isa Khel Tahsils which have been assessed to a fluctuating revenue of Rs. 5 each per annum to be paid whenever a water-mill is at work. Any water-mills started in future will also be assessed at the same rate.

Total revenue from all sources.

55. The total revenue from all sources is given below:—

		Rs.	Rs.
Land revenue ...	{ Fixed ...	39,364	5,21,258
	{ Fluctuating ...	4,81,894	
Revenue on dates (fixed) ...	...	...	3,181
Revenue on grazing land including Barani ...	{ Fixed ...	21,303	31,887
	{ Fluctuating ...	10,584	
Revenue on water mills ...	(Fluctuating) ...	...	45
Total ...	{ Fixed ...	63,848	5,56,371
	{ Fluctuating ...	4,92,523	

The total revenue is compared in Appendix VIII with the Settlement Jama, the demand preceding new assessment and the demand by sanctioned rates. The increase of total revenue over the demand preceding re-assessment amounts to Rs. 97,124, or slightly over 21 per cent., of which Rs. 54,867 are contributed by the northern and Rs. 42,257 by the southern tahsils.

56. In the forecast of the Dera Ismail Khan Settlement an increase of Rs. 75,000 was estimated in the Khalsa demand of the whole district. The demand was expected to rise Rs. 30,522 in Bhakkar and Rs. 25,442 in Leiah (Punjab Government letter No. 158, dated 30th August 1897). Similarly the increase expected in the Mianwali and Isa Khel Tahsils was Rs. 45,000 and 23,000, respectively (see Punjab Government letter No. 486 S., dated 16th June 1900). Until the decision of the case relating to Inams, it is not possible to correctly estimate the total assigned revenue, but roughly speaking the increased in the Khalsa demand will be Rs. 43,972 in the Bhakkar and Leiah Tahsils against an estimate of Rs. 55,964 and Rs. 50,630 in the Mianwali and Isa Khel Tahsils against a forecast of Rs. 68,000, giving a total increase of Rs. 94,602 for the district against a forecast of Rs. 1,27,964. It will be seen that the expectations were not fully realized either in the southern or the northern tahsils. Nevertheless the increase taken is substantial. Of the total demand (including assigned revenue) of Rs. 5,56,371 all but Rs. 63,848 is fluctuating. The variations in the uplands of the northern tahsils are likely to be large. The total demand of the district may be expected ordinarily to vary from Rs. 4,00,000 to Rs. 7,00,000 per annum.

C.— INTERNAL DISTRIBUTION OF REVENUE.

57. In the northern tahsils, a particularly careful crop inspection was made in Kharif 1907 with a view to Distribution of fixed land revenue on villages and holdings. ascertaining the correct cultivated area and making sure of its classification in villages which were likely to be placed under fixed assessment. In determining the village Jamas I made use of these latest figures. I fixed the Jamas with reference to the amounts given in my inspection notes, in the light of the half assets calculated for the villages, the crop rate Jama (at sanctioned crop rates), the soil rate Jama on new cultivated area and the demand by applying the Settlement rates to present cultivation making an addition on account of rise of prices. The village Jama having been determined, I announced the soil rates at which I thought the demand ought to be distributed over the cultivated area, and these rates were accepted in all cases. The distribution lists were prepared accordingly and announced by the Extra Assistant Settlement Officer, and after the objections had been decided were sanctioned by me. The demand of the Powah of Bhakkar and Leiah was distributed by the late Captain Crosthwaite at lump sums proposed by a committee of Hindu owners for each well. In Leiah I made the necessary alterations to ensure the uniform treatment of Sailab lands under and about the gardens (see paragraph 48).

58. In the riverain tracts, villages of similar quality were grouped together and assessed at the same rates. Gradation of villages placed under fluctuating assessment by crop rates and all round rates. The villages lying near the high bank have generally been placed in the highest groups, and those situated near the main streams and exposed to destructive floods or having a large proportion of sandy or salt infected land have been leniently dealt with. The question as to which of the wells in the Indus Valley (Bhakkar and Leiah) should be assessed to an additional Chahi rate was determined by the late Captain Crosthwaite, and a few wells near the town of Mianwali, which were similarly treated, were selected by me.

In the tracts placed under the system of fluctuating assessment by all round rates, all the guides adopted in case of fixed assessment were kept in view, and the rate for each village was determined on its merits. At the same time the rate was compared with that proposed to be assessed on the neighbouring villages, and its pitch was regulated as far as possible with regard to the relative productiveness of lands in the neighbouring villages. In this way a net work of carefully adjusted rates by villages was spread from one end of the tract to the other before I began to announce the village Jamas. In dealing with villages separately, it was found that a large number of them lay in regular groups and could be assessed at the same or very nearly identical rates. The rates were graduated from the submontane villages with stiff heavy soil to the villages with lighter Kasledar lands and then to the light Maira (sandy) villages. The additional rate on Chahi was kept high in towns or large villages growing plenty of vegetables and finding a ready sale for them in the market. The additional rate on Naledar lands was fixed with due regard to the quantity of water and silt brought down by the hill torrent in each case.

59. The distribution of assessments over the Thal wells and holdings was done under the late Captain Crosthwaite's orders, but the staff which had done the work committed several mistakes which began to come gradually to light. It was a pity that Mr. Hailey, who had taken such pains over his Assessment Report of the Thal, had left the district before the orders were received, and was not available for carrying out the distribution of the assessments. When the charge of the Bhakkar Leiah Tahsils was made over to me, I looked into these mistakes and found they were general, and that the result of the well and holding Jamas announced under my predecessor would be an average collection of Rs. 24,753 on wells and holdings under cultivation during the five years which formed the basis of the calculations made in the Assessment Report, while the orders were that the Jamas should be so framed as to give on an average of five years a sum of Rs. 26,700. The chief mistake made was that wrong areas were taken and the Jama was wrongly calculated. A report was submitted on the subject, and under the orders of Government, conveyed in Financial

Commissioner's endorsement No. 469-S., dated 10th October 1907, I undertook a revision of the distribution throughout the Thal. Besides putting right the grosser mistakes, I redistributed the revenue of wells and holdings in accordance with the rules sanctioned in such a manner as to obtain the sanctioned demand. I obtained the correct areas and the correct figures as regards wells and holdings in use and out of use in each year, and with a few exceptions applied to these areas the rates which my predecessor had fixed for each circle, well or village. The result was that the assessments had to be pushed up considerably on the whole, although the poorer wells got the relief they needed. The village Jamas had also to be altered. I announced the Jama of all the villages and all the wells and holdings in the Thal in October last. The total Chahi Jama of the Thal has been fixed in such a manner as to give an average recoverable demand of Rs. 27,027 per annum against the sanctioned figure of Rs. 26,700.

60. The grazing Jama of the Khudri Circle which is fixed has, at the request of the owners, been distributed on all landowners rateably to the land revenue payable by them. There are no graziers in this tract independent of the landowners, and consequently the procedure adopted was the best suited. The grazing Jama of the riverain villages which fluctuates from year to year is made up by charging the cattle at rates put down in the Wajib-ul-arz of each village usually in the following ratio:—1 buffalo=2 cows=8 sheep or goats. In the Bhakkar-Leiah Thal the grazing demand of every village had been fixed at the uniform rate sanctioned for the circle. Mr. Hailey had, however, contemplated a differentiation between good and bad village, and I was authorized to redistribute the grazing Jama as well. I reduced the Jama of villages which were distinctly over-assessed, but it appeared very hard to raise the grazing Jama of the other villages which had been announced four years ago. In the Bhakkar Thal villages the revenue assessed on Barani lands at 4 annas per acre is credited towards the grazing Jama. The balance in these villages and the whole grazing Jama in the others is recovered from the cattle by a tax per head, the profit and loss being, with a few exceptions, shared with reference to the number of cattle. The demand is a maximum one, and part of it can be remitted when in bad years it is found that the grazing Jama cannot be made up without charging the cattle at rates higher than those put down in the Dastur-ul-aml.

D.—OTHER MATTERS CONNECTED WITH THE ASSESSMENT.

61. In villages placed under fixed assessment the proportion of the total annual demand to be paid in each harvest has been determined for each village. In tracts under fluctuating assessment the revenue assessed on the crops of each harvest will be recovered during that harvest. For the convenience of revenue payers as well as for facility of collection, it has been arranged that if the demand of any village for the Kharif harvest falls short of Rs. 20, no recoveries will be made in that harvest, the demand being collected in the next Rabi together with the demand of that harvest. The grazing Jama of the riverain tracts will be recovered during the Rabi. In the Thal the well Jamas will be recoverable in the Rabi, while the grazing assessment will, except in villages of which a part lies in the riverain tract, be paid in the Kharif. The revenue on water-mills and dates will be collected in the Rabi. The dates on which instalments of revenue will be paid throughout the district will, according to proposals made in my letter No. 110, dated 4th February 1908, be these:—(orders of Government are awaited)

Kharif	...	...	...	...	{ 15th December.
					{ 15th January.
Rabi	...	...	...	...	{ 15th June.
					{ 15th July.

The dates will be the same as in the adjoining Muzaffargarh District. In the Bhakkar and Leiah Tahsils the revenue has been collected on these dates since the first Regular Settlement. The dates fixed for the Kharif instalments at last Settlement for the Mianwali and Isa Khel Tahsils were also the same

in the Rabi, however, revenue has so far been collected on 1st July and 1st August in the northern tahsils, but the dates have been fixed a fortnight earlier in each case, as the necessity for delaying the collection of revenue so long has ceased to exist.

Cesses.

62. The cesses chargeable in addition to land revenue are—

					Per cent.		
					Rs.	a.	p.
Local rate	8	9 6
Lambardari	5	0 0
Total					...	13	9 6

The local rate has been reduced for this district to Rs. 8-9-6 per cent. of land revenue by Punjab Government Notification No. 87, dated 2nd April 1906. The Patwari cess was abolished and the recovery of $2\frac{1}{2}$ per cent. on the annual value (or 5 per cent. on land revenue) of lands as the village officer's (Lambardars) cess authorized by Punjab Government Notification No. 104 of the same date.

63. The only cases in which assessments have been deferred are those of newly constructed or repaired wells and masonry Jhallars. Except in the riverain tract the wells are not assisted by any other means of irrigation, and the whole assessment of lands irrigated from a well is to be held in abeyance during the term of exemption. In tracts placed under fixed assessment the amount to be recovered from the well lands after the expiry of the term has been determined. In the case of fluctuating assessments the revenue assessable from harvest to harvest will remain irrecoverable. In the riverain tracts the amount to be assessed on Sailab lands irrigated from wells at the additional Chahi Sailab rate, if any, will remain in abeyance together with one-fourth the revenue assessable on all Chahi Sailab crops at the Sailab rates during the period of exemption. The term of exemption will be regulated by the general rules given in paragraph 502 of Mr. Douie's Settlement Manual. Detailed instructions for the working of the rules have been included in the Dastur-ul-aml. There are 878 wells and Jhallars now under exemption. Of these, 38 with a deferred assessment of Rs. 117 lie in tracts under fixed assessment, 280 with a total Jama of Rs. 2,757 in the Thal, 89 with an estimated Jama of Rs. 812 in the uplands of the northern tahsils and 471 with a probable Jama of Rs. 3,449 in the riverain tracts under fluctuating assessment. The total assessment deferred for various terms is Rs. 7,135.

64. The areas placed under fixed assessment have, with reference to paragraph 552 of the Settlement Manual, been classified into Secure and Insecure.

The villages of Massan Nikki, Banni Afghawan and Pihai in the Khudri Circle of the Mianwali Tahsil, the Bhangi Khel Circle, village Kalabagh in the Pakka Circle, and villages Kas Umar Khan Pakka and Giddaranwala in the Nahri Circle of the Isa Khel Tahsil and the Powah of Bhakkar and Leiah towns have been classed as Secure. The remaining 11 proprietary villages of the Khudri Circle and the villages of Sarkia, Masit and Bhut in the Nahri Circle of Isa Khel have been treated as Insecure; so also has the grazing assessment of the Bhakkar and Leiah Thal and of the two villages transferred from Bhakkar to the Mianwali Tahsil. The grazing assessment of the Thal villages is to be treated as the maximum demand, and remissions can be granted by the Collector out of it in bad years subject to the control of the Commissioner (see Appendix VII B). For the Insecure villages under fixed assessment the following danger rates have been noted :—

Class of soil.					Rate per acre of matured crops.		
					Rs.	a.	p.
Chahi, Abi, Naledar and Hail	...	...	...	...	2	0	0
Other Barani	...	...	...	...	1	8	0
Nahri	...	...	...	...	2	0	0

The manner in which these rates are to be made use of for the purpose of determining the amount of suspension, if any, necessary in a bad harvest is laid down in the rules submitted with my letter No. 199, dated 6th March 1908, and given in Part B of Appendix VII.

65. The revenue assigned in Jagirs and Mafis at last Settlement and now is compared below—

Class of assignment.					Last Settlement.	Now.
					Rs.	Rs.
Perpetual	...	...	...	...	22,072	29,448
For life, during maintenance of institutions or for term of Settlement					10,024	2,746
Total					32,096	32,194

The value of the Jagirs, most of which are perpetual, has increased. The assignments of the other kinds are all petty Mafis, and several of them have been resumed under the terms of the grants. The assignments held in perpetuity, for life or during maintenance of institutions had not to be reported on.

The continuance of Mafis aggregating Rs. 285 and held for the last Settlement has been sanctioned by the Financial Commissioner in his Senior Secretary's letter No. 3258, dated 29th May 1908, for the term of the new Settlement, and 10 new Mafis of the total value of Rs. 105 per annum for the maintenance of religious and charitable institutions have been proposed in my letter No. 545, dated 1st June 1908, also for the term of the new Settlement. Orders on the reference are awaited. Besides these assignments, the Inams held in the four tahsils have been dealt with in separate references, but no orders have yet been received on the subject. The above figures do not therefore include the Zaildars or other Inams. The important Jagirs are those of the Malik (chief) of Kalabagh in the Mianwali and Isa Khel Tahsils, of Faizullah Khan and Karam Dad Khan in the Isa Khel Tahsil, of the Nakhdom of Bilot and the Sadat Miani Sayyads in the Sadat villages of the Mianwali Tahsil and of Nawab Hafiz Abdullah Khan, C.I.E., and Nawab Allah Dad Khan of Dera Ismail Khan in the Bhakkar Tahsil. The Khawarin of Isa Khel receive a cash allowance from the treasury in perpetuity in lieu of $\frac{1}{4}$ th of land revenue of certain villages in the Isa Khel Tahsil, $\frac{1}{4}$ th of alum proceeds at Kotki and a fixed sum by way of compensation for not receiving water dues on a canal in kind. The whole allowance is called the Hashtam. A separate report has been submitted on the subject in my letter to Commissioner, Multan, No. 513, dated 30th May 1908. This item has not been included in the above figures. There are some assignments peculiar to this district. Some notables were granted what are called Choudhries' Mafis which have been declared to be assignments during the pleasure of Government, i.e., in perpetuity. Tirni Mafis are enjoyed by the Khawarin and some other notables of the Isa Khel Tahsil in lieu of the privilege of grazing camels without payment of Tirni to the camel Tirni contractor. The question of continuance of these Mafis has been submitted for orders with my letter No. 549, dated 1st June 1908, to the Settlement Commissioner, Punjab. In the Bhakkar-Leiah Tahsils, petty Mafis of Tirni amounting in some cases to 2 annas are enjoyed for life and are being gradually resumed. In paragraph 79 of the Thal Assessment Report it was proposed to continue old Mafis and grant new ones to wells on the Bhakkar, Jhang and other roads in the Thal for growing trees, the total amount thus assigned aggregating Rs. 1,000. With reference to paragraph 8 of the Punjab Government Review, a report regarding the desirability of continuing some of the old Mafis was submitted with my letter No. 204, dated 7th March 1908, to the Settlement Commissioner. These figures have also not been included in the above total.

Owing to the creation of a new district at Mianwali, the Mafi registers were in a most incomplete state. The files regarding revision of Mafis in the Bhakkar-Leiah Tahsils were transferred to me without the connected English

correspondence, and there was great difficulty in tracing out the letters conveying sanction to the grants both in the northern and southern tahsils. Some papers had to be obtained from Bannu, others from Dera Ismail Khan, and letters which could not be traced in either district office had to be obtained from Commissioner, Multan or the Financial Commissioner's office. The work has been a very tedious and irksome one, but new registers have now been opened, although they cannot be completed until the receipt of orders of higher authorities on all the references sent up.

CHAPTER VI.—MISCELLANEOUS.

66. The new assessments were introduced in the Bhakkar and Leiah Tahsils with effect from Kharif 1903, and the revised assessments were announced in the Mianwali and Isa Khel Tahsils from Kharif 1907. The Record of Rights having been carefully overhauled and the greater part of the district having been placed under fluctuating assessment, an early revision of the Settlement will not be necessary. If the Settlement is given a good start and the revenue staff trained well to keep the records up to date, and if quadrennial attestations are carefully made, it should not be necessary to resettle the district for 30 years unless, of course, the Indus Canal is constructed, in which case the agricultural conditions would be completely changed. The only contingency to be provided for is that in some of the villages of the Bhakkar Thal, which have not been remeasured, the extension of Barani cultivation may make the present maps unfit for use and necessitate remeasurement. The work will, however, be simple, and can be done when necessary under the supervision of the Deputy Commissioner. I, therefore, propose that the Settlement should be sanctioned for 30 years for the southern tahsils and for 28 years for the northern tahsils, so that the term may expire in the southern tahsils in Rabi 1933 and in the northern tahsils in Rabi 1935, leaving an interval of two years to the future Settlement Officer for dealing with the latter tract. The condition should, however, be that the term would expire with the Rabi in which the projected Indus Canal (if it is constructed earlier) begins to irrigate lands in any of the tahsils.

67. An attempt to compare the surplus produce with the exports by rail was made in the Mianwali-Isa Khel Assessment Report (paragraph 83), but the materials then available were faulty. Complete returns have since been obtained from the Railway Department, and it is possible to make a more useful comparison now. The surplus produce of the Mianwali, Bhakkar and Leiah Tahsils is almost entirely exported by rail. But it is not possible to ascertain the export from the Isa Khel Tahsil, as some of it finds its way across the river to Railway stations, and the greater part of it goes to Sukkar by boat along with the grain coming in from the Marwat Tahsil of Bannu. No comparison of the surplus produce of the Isa Khel Tahsil has therefore been attempted. The gross produce of the other three tahsils has been worked out in Appendix IX A on an average of three years (1903-04, 1905-06) for which the Railway figures are available, and leaving out cotton and sugar (which are insignificant) amounts to 2,293,095 maunds. The population of the three tahsils was 360,364 at the last census, of which 20,641 were infants under two years who do not consume any solid food. In the Mianwali and Isa Khel Assessment Report I calculated the consumption of food on the assumption that each person needed 6 maunds of grain per annum. In this district, however, turnips, raw and boiled, form a very substantial part of the agriculturists' meal, and in the Thal, which is included in the present calculations, water-melons form the main food of the peasants and graziers for months. *Pithu* (fruit of the Jal tree—*Salvadora oleoides*)—*dulla* (fruit of the Kari, leafless caper) and *shangar* (fruit of the Jand—*prosopis spicigera*) afford additional food in the Thal. Dates are greatly relied on in the Bhakkar-Leiah Tahsils in the date season, and mangoes are a favourite food in summer for the towns-folk, while melons are sown in increasing quantities everywhere and sought after. The area under melons, etc., is—

	Acres.						
Melons	4,635
Turnips and carrots	14,486
Water-melons	8,513

It should be remembered that water-melons grown on waste lands and sandhills in the Thal are not registered. The proportion of food supplied by the above articles is thus considerable. On page 138 of the new Jhelum Gazetteer the average food of a family of five persons is estimated at 1,050 seers, or slightly over 5 maunds per head. Considering all the additional articles of food available in the district I have placed the average consumption of food at 5 maunds per head per annum. Leaving out the infants, the 339,725 persons would require 1,698,615 maunds of food grains. I have worked out the expenditure on seed at the rates given in paragraph 83 of the Mianwali-Isa Khel Assessment Report. Further enquiries have shown that only one-tenth of the milch cows and buffaloes are fed on gram and other grains, and supposing that one-third of the total number of cows and buffaloes give milk an allowance of one seer a day or 9 maunds a year for $\frac{1}{30}$ th of the total number is sufficient. The majority of the Zamindars do not feed their horses on gram. An allowance of 9 maunds per annum has therefore been made for only half the horses.

The total local requirements would therefore be—

Food.	Seed.	Grain for horses.	Grain for cattle.	Total.
Mds.	Mds.	Mds.	Mds.	Mds.
1,698,615	241,773	26,505	31,419	1,998,312

This leaves a surplus of 294,783 maunds of grain of all sorts for exports. The outward and inward traffic on Railway stations of this district is given in Appendix IX-B. The net exports amount to 605,375 maunds. It has to be noted that the export from the stations of Mari and Kalurkot consists mostly of grain coming in from the Isa Khel and Marwat Tahsils, and that a substantial part of the exports from Darya Khan, Bhakkar, Karor, Leiah and Kot Sultan consists of grain coming over from the Dera Ismail Khan and Dera Ghazi Khan Districts across the river. With reference to the export from stations which do not get any grain from the opposite side the quantity received from other districts may be estimated roughly at a little over three lakhs of maunds, leaving a net export of about three lakhs of maunds from the three tahsils under consideration against a surplus of 295,000 maunds. Probably the surplus was somewhat larger as in the year 1903-04 there was a great deal of successful wild Jamaun (*Eruca sativa*) which, under the instructions then in force, was not registered as a crop, and yet yielded a very considerable amount of produce.

The comparison shows that the district is by no means over-populated, that it exports more than enough grain to meet the charge on account of land revenue, and that the outturns assumed in the Assessment Reports were fairly correct.

68. New village note-books were started by Patwaris in the Bhakkar-Leiah Tahsils from Kharif 1903, and corresponding bilingual note-books and Circle and Tahsil note-books were opened in those tahsils from the same harvest. New note-books for the Patwaris of the other two tahsils have been received and are being opened with effect from Kharif 1907. Arrangements have been made to open bilingual village and other note-books also from the same harvest. Pargana (abstract village) note-books have been prepared for all the four tahsils, and the Settlement Officer's inspection notes have been placed on them. These note-books not having been kept up in the Bhakkar-Leiah Tahsils from 1901-02, all the pargana note-books have been started from Kharif 1907. The areas forming the basis of assessment and the assessment (imposed in case of fixed Jama) or rates (fixed in case of fluctuating Jama) have been recorded in case of each village.

69. A Dastur-ul-aml has been drawn up in two parts, consisting of (1) an abstract of the methods of assessment introduced in the district, and (2) instructions to the revenue staff regarding crop inspection, preparation of records and

assessments, to enable the proper carrying out of the systems of assessment sanctioned. The instructions are intended to supplement the general rules which are issued under the authority of the Financial Commissioner from time to time. The English edition has been sent up to the Settlement Commissioner and been approved of in his letter No. 1723, dated 18th May 1908, and a vernacular translation has been prepared for use in the district. Both editions will be printed as soon as the Financial Commissioner's sanction has been received to some of the rules, which are under his consideration.

70. The tribal customs were attested at last Settlement by tahsils in vernacular, and a printed copy of the questions and answers was attached to the Record of Rights of each village. Abstracts thereof were given in the Settlement Reports of the Bannu and Dera Ismail Khan Districts for the northern and southern tahsils respectively. The customs have now been attested by tribes for the whole district. The procedure adopted was to summon the leading men of each tribe from all parts of the district at one time, to put to them the questions suggested in Sir Lewis Tupper's Customary Law and to record their answers in vernacular, with examples which were quoted by them or abstracted from attested mutation sheets. The replies of different tribes have been placed together in a convenient form in one book for the whole district, and copies of it have been supplied to the District Judge, the Divisional Judge, and the Chief Court, one copy being retained in the district revenue record room. An English abstract of the customs, with introductory remarks, has been compiled into a Code of Customary Law in the district and is being printed.

71. During the progress of the Settlement of the Mianwali and Isa Khel Tahsils, 99 officials went through a course of Settlement training, including 8 Assistant Commissioners, one Tahsildar candidate, 22 Naib-Tahsildar candidates and 68 Kanungo candidates. There is no record to show how many candidates were trained in the Bhakkar and Leiah Tahsils when measurement work was going on in these tahsils.

72. A Village Directory has been prepared for the district in accordance with the instructions laid down in paragraph 4 of Revised Revenue Circular No. 62, but it could not be completed for want of information regarding the Zaildari arrangements, on which orders of Government are awaited. It has been made over to the Deputy Commissioner, who has been requested to complete it and submit it to the Director of Land Records on receipt of Government orders on the Zaildari Scheme.

73. No Zaildars were appointed at last Settlement in the northern tahsils. In the southern tahsils, however, the system of Zaildars was introduced by Mr. Tucker, and Zaildars have so far been remunerated by a deduction of 1 per cent. out of the land revenue demand of the villages within their circles. In my letter No. 135, dated 13th February 1908, to the Commissioner, Multan Division, the appointment of Zaildars in the northern tahsils has been proposed and certain alterations in the Zaildari arrangements of the southern tahsils have been suggested in my letter No. 515, dated 12th October 1907. It is proposed to remunerate the Zaildars by a system of graded Inams, the rates of pay being—

Per annum.									
Rs.									
1st grade	...	...	...	...	...	...	...	...	200
2nd grade	...	...	...	...	...	...	...	...	150
3rd grade	...	...	...	...	...	...	...	...	100

Sanction of Government is awaited.

74. Proposals relating to Inams in the northern and southern tahsils were submitted with my letters Nos. 135 and 515, dated 13th February 1908 and 12th October 1907, respectively, but they have not been sanctioned yet by Government.

75. In consequence of separation of estates mentioned in paragraph 27 it was necessary to redistribute the Lambardaris in the newly constituted villages in the northern tahsils. The work entailed much labour and care, as it was necessary to confine each Lambardar's charge to one or two villages out of a number to keep him in villages where most of his former Asamis (revenue-payers) had lands, and also to see that no one should lose in his emoluments. The work was, however, accomplished to the general satisfaction of all concerned, and in every case the Lambardars made statements accepting the new arrangements. In some of the larger villages the number of Lambardars was excessive, and the result was that it was impossible to fix the responsibility for any work on any one of them or to get any work done by them. Musa Khel, Kundian Mochh, and Kamar Mashani were typical instances. The redistribution of Lambardars has reduced the evil to a considerable extent, and the responsibility has in each case been fixed on fewer Lambardars. Nevertheless, the necessity of further reducing the number was obvious, and a scheme for the gradual reduction of Lambardars has been prepared for all the four tahsils, under paragraph 6 of Revised Revenue Circular No. 26. But the Commissioner of the Division is, on principle, opposed to any reduction in the posts of Lambardars. The scheme has therefore been sent to the Deputy Commissioner, who has been asked to submit it for the approval of the Financial Commissioner, through the Commissioner, if the latter officer is inclined to entertain the proposals. Otherwise the scheme will remain in the District Office for reference by the Deputy Commissioner when vacancies occur, and he will frame his proposals in each case after taking my remarks into consideration.

76. In consideration of the increased cultivation and of the additional work thrown on the Patwaris by the fluctuating assessments, the number of Patwaris has been raised from 45 to 63 in Bhakkar, from 48 to 63 in Leiah, by Senior Secretary to Financial Commissioner's letter No. 3791, dated 14th June 1905; from 51 to 81 in Mianwali and from 25 to 42 in Isa Khel, by Punjab Government letter No. 129, dated 30th October 1907. Of the total number of 249, there are 57 first grade, 113 second grade and 57 third grade Patwaris and 22 Assistant Patwaris. The pay has been fixed at Rs. 14 per mensem for the first grade, Rs. 12 per mensem for the second, Rs. 10 per mensem for the third, and Rs. 8 per mensem for the Assistant Patwaris. The former rate of the first grade Patwari's pay being Rs. 15, the old first grade Patwaris will continue to draw Rs. 15 per mensem till they vacate office.

The number of Field Kanungos has also been increased from 11 to 20 in the whole district, and the Deputy Commissioner has been permitted to entertain with the Commissioner's sanction during the period of any crop inspection, additional Kanungos up to the number of 10 in the Mianwali and Isa Khel Tahsils for not more than 2 months at a time (Punjab Government letter No. 154, dated 8th February 1906, and No. 60, dated 15th March 1908). It was necessary to provide for the additional staff in the northern tahsils, as the increased supervising staff, though sufficient for an average year, could not cope with the work in good years when the area under crops would be very extensive, or in bad years when failure of rain after successful sowings would result in excessive failure of crops. It may not be necessary to employ any additional staff in some years, while in others only a few men would be needed, but every now and then there is bound to be a harvest in which the permanent and additional staff would have to work all they could to finish the crop inspection within the prescribed time. For the successful working of fluctuating assessments it is very necessary that the tahsil officers should examine a considerable portion of every description of work done by the Patwaris, and with this view the strength of the Naib-Tahsildar staff has been increased by one in each of the southern tahsils (see Financial Commissioner's letter No. 1983, dated 24th March 1905) and proposals for the addition of one Naib-Tahsildar to each of the northern tahsils have been submitted with my letter No. 40, dated 15th January 1908, to the Settlement Commissioner. It should be remembered that the Tahsildars and Naib-Tahsildars must not content themselves with merely checking crop inspection work and attesting mutations. The Tahsildar with his two assistants in each tahsil ought to be able to thoroughly examine the work of distribution of

fluctuating assessments, the amendment of field maps and the preparation of detailed Jamabandis at quadrennial attestations.

77. Proposals regarding the lease of the Thal Rakhs in the Bhakkar-Leiah Tahsils were made in paragraph 77 of the Assessment Report of the Thal tract. Under the orders passed in the Punjab Government Review, the Rakhs should have been leased for a total sum of Rs. 9,004. A report has been submitted in my letter No. 334, dated 9th April 1908, regarding the manner in which the orders of Government have been carried out, and suggesting that the present demand which is Rs. 8,270 may be raised to Rs. 8,790. Lessees for each Rakh have been nominated and the shares determined. The lease to be granted will be renewed from year to year for the term of Settlement, subject to conditions detailed in the form of lease which has been submitted for approval. Orders are awaited. The demand will be a maximum one, the Collector having the power, subject to the control of the Commissioner, to remit, in years of drought or murrain, such portion of the demand as he thinks necessary in each village. Similar proposals for the Thal Rakhs in the Mianwali Tahsil have been sent up with my letter No. 541, dated 1st June 1908, proposing a total demand of Rs. 5,215 for the tahsil.

78. No Tirni is charged on camels in the Mianwali Tahsil. In the Bhakkar-Leiah Thal, the right of charging Camel Tirni. Tirni on camels is leased by Dags, there being 12 Dags in the Bhakkar Tahsil, and the Leiah Tahsil being treated as one Dag. The conditions of the Dag leases are similar to those of the Thal Rakhs. The total demand of Rs. 9,650 sanctioned in the Thal Assessment Report is not being realized now. A report has been sent up on the subject in my letter No. 443, dated 12th May 1908. In the uplands of the Isa Khel Tahsil (excepting Bhangi Khel and Kalabagh) camel Tirni has been leased from year to year, the average income of the past 20 years being Rs. 1,450 per annum. In my letter No. 549, dated 1st June 1908, I have proposed that either this camel Tirni should be abolished in Isa Khel or a similar system introduced in the Mianwali Tahsil where no separate camel Tirni has been paid so far, the camels being assessed to Tirni, in whichever village they grazed, and the amount due to Government on account of camel Tirni being included in the general grazing assessment of the villages. Camels have all along paid Re. 1 per head. The fee for she-camels has been reduced from Re. 1-8-0 to Re. 1-4-0 in Bhakkar-Leiah, and it has been proposed to reduce it from Rs. 2-4-0 to Re. 1-0-0 in Isa Khel.

79. Proposals regarding cultivating leases of Government lands held in Rakhs in the riverain tracts have been Government lands. sent up with my letter No. 538, dated 1st June 1908, to Commissioner, Multan. There are a certain number of wells belonging to Government in the Bhakkar-Leiah Thal and a few isolated plots of confiscated land which are managed by the Deputy Commissioner.

A complete register showing Government land in each village has been prepared for the whole district by tahsils. With the exception of the Thal wells and small plots of confiscated land above referred to, the Government lands consist of (1) Government Rakhs (forests) in the Thal and the riverain tracts, and (2) roads, encamping grounds, site of bungalows, etc.

A Record of Rights was prepared at last Settlement for each Rakh and has been revised again at this Settlement. The forests are neither Reserved nor Protected, and are known as unclassified forests. No proposals to have them protected under Section 28 of Act VII of 1878 have been made, as similar proposals submitted in respect of Rakhs in the Muzaffargarh District were, after a good deal of correspondence, dropped as unnecessary under Senior Secretary to Financial Commissioner's letter No. 4227, dated 17th July 1907, to Commissioner, Multan. The waste land in Thal Rakhs cannot be given on cultivating leases (paragraph 62 A (1) of Revenue Circular 56). Proposals regarding the treatment of Government lands in the riverain tracts other than those already held on leases have been submitted to the Commissioner, Multan, through the Deputy Commissioner.

80. Parcha Bahis have been printed in the form approved by the Settlement Commissioner. They are now being written up by the Patwaris, and will be distributed to all landowners and occupancy tenants under the supervision of the Revenue Assistant.

81. The flooding of the portions of the riverain tract removed from the main stream is effected by a system of embankments called Ghandis or Sadds and erected in natural creeks or artificial channels. This work as well as that of the control and distribution of hill torrent water in the more important Wahans (channels) is managed by an Abpashi (irrigation) Department consisting of a Tahsildar assisted by two Naib-Tahsildars, two Kanungos and two Sub-overseers, and working under the orders of the Deputy Commissioner. The irrigation from the Kurram Canals is under the charge of the Tahsildar at Isa Khel. The system of Kurram irrigation is very complicated. Attempts have been made to simplify it, but vested rights have so far stood as obstacles in the way of substantial progress. Up to date records of irrigation rights and customs have been prepared, and in all villages where no condition regarding the supply of free labour for the construction and maintenance of Ghandis, etc., existed in the old Settlement Record, the people have now agreed to such a condition being put down. These records will form the basis of the Deputy Commissioner's work in the Abpashi (irrigation) Department under the Minor Canals Act. There is a great deal to be done in this respect, and the Kurram irrigation needs careful handling until the present complicated and variegated system of clearances, etc., is brought on a simple and uniform footing.

82. In assessing the contribution to be paid by Jagirdars towards the cost of the Settlement, all assignments of the annual value of less than Rs. 300, *i.e.*, amounting to less than Rs. 150 of revenue a year, have been left out. The share of the expenditure to be paid by the other Jagirdars aggregates to Rs. 7,323, and proposals have been submitted in my letter No. 535, dated 1st June 1908, to the Settlement Commissioner, Punjab, for sanction to recover the amount from the said Jagirdars.

83. The Settlement of the Bhakkar-Leiah Tahsils commenced in October 1898 under the late Captain Crosthwaite, Settlement Officer of Dera Ismail Khan; and Mr. Hailey, Assistant Settlement Officer, was placed in charge of measurements and assessment work of the Thal portion of the two tahsils. He wrote the Assessment Report of the Thal tract in 1902, Captain Crosthwaite sending up the report for the Indus Valley tract of the two tahsils. The new assessments were introduced from Kharif 1903 and the establishment had left by April 1904. The Settlement had, however, not been wound up when the sad and untimely death of the late Captain Crosthwaite in June 1905 necessitated the appointment of some one to finish up the work. The charge of these two tahsils was transferred to me in October 1905. Meanwhile the Settlement of the Mianwali and Isa Khel Tahsils was started under me on 16th October 1903. It was estimated to last three years; but considering the immense area to be measured, the limited establishment, the complicated tenures of the tract and the unusual work which had to be done in relaying the boundaries of villages and fields throughout the riverain tract and in separating large villages into several estates the term was found much too short. Nothing short of four years could have sufficed. From October 1905 I had also to devote attention to work in Bhakkar and Leiah. It took me a long time to get to know the tahsils, and not a single Settlement official having been left in the tahsils who could tell me how things had been done and where papers could be found, it was extremely difficult to pick up the threads of unfinished work. Besides the Lambardari, Zaildari, Inam, assignment and other unimportant but troublesome pieces of work made over to me, I had to decide a large number of old undisposed of cases and had to reassess the whole of the Thal and revise the internal distribution of revenue in that tract. I had to send up the detailed village assessment statements and reports on leases of Rakhs and camel Tirni. Besides this I had to get the upper half of the Bhakkar Thal remeasured on the square system, and maps of most of the

remaining villages of that Thal had to be enlarged and amended. All this measurement and mapping work was done from October to March last. The Wajib-ul-arz of both the Bhakkar and Leiah Tahsils had also to be re-attested and several corrections had to be made in the Record of Rights. These things have had to be done simultaneously with the work in the Mianwali-Isa Khel Tahsils, and work in all the four tahsils has just been completed. The Settlement of the Mianwali-Isa Khel Tahsils has thus lasted four years and 7½ months, and that of the Bhakkar-Leiah Tahsils has dragged on for close on 10 years. The Settlement of the northern tahsils has cost about Rs. 2,70,000, and that of the southern tahsils rather less than Rs. 2,50,000 (for exact figures see Appendix X). The total cost of the Settlement of the four tahsils is nearly Rs. 5,19,000. Against this sum should be set Rs. 7,323 to be recovered from Jagirdars as their contribution to the cost of the Settlement and Rs. 24,382 on account of excess collection of mutation fees during the years of Settlement over the normal income. The net expenditure therefore has been about Rs. 4,87,000. The increase in the Khalea revenue being estimated at Rs. 94,602, the outlay will be repaid in a little over five years.

84. In the Bhakkar and Leiah Tahsils, Mr. Hailey, Assistant Settlement Officer, supervised the measurements in the Thal and wrote the Assessment Report on that tract. His work was commended and acknowledged in the reviews of that report. It is a pity, however, that he had to leave before the receipt of orders on the report, and the intimate knowledge of the Thal which he had gained could not be utilized for the important work of distribution of assessments. He also arranged for the execution of agreements under the Sindh-Sagar Doab Colonization Act, a task attended with numerous difficulties. Khan Bahadur Ghulam Ahmad Khan, Extra Assistant Settlement Officer, Dera Ismail Khan, supervised the commencement of measurements in the Bhakkar-Leiah Tahsils. On his transfer to Kashmir (where he died later) M. Feroz Din took his place and looked after measurements in the Kacha and the completion of work in the two tahsils generally. He left towards the close of Settlement operations and was succeeded by Chaudhri Muhammad Din. Not having seen much of their work I am not in a position to offer an opinion about it. Of the Settlement Tahsildars Lala Ram Chand (since dead) was at Bhakkar for a considerable time and Chaudhri Ali Bakhsh remained in charge of the Leiah Tahsil for the latter half of the period of active Settlement work. The latter officer has retired from service. From what I have seen of the Bhakkar-Leiah work, I consider the measurements and records of the latter tahsil far more satisfactory than those of the former. In the Mianwali-Isa Khel Tahsils I did not get a good start. The Kanungos, with a few exceptions, were quite new men, some of them having had only one year's training in measurement. The Settlement Naib-Tahsildars were all beginners, except M. Ram Singh, and had to be trained. The Settlement Tahsildar at Mianwali, M. Hakim Singh, proved a failure. The Extra Assistant Settlement Officer Bakhshi Ghazanfar Ali, intelligent as he was, did not somehow or other take interest in the work and very soon applied for transfer. I was, however, lucky to get in his place Mirza Sultan Ahmad, an officer with the experience of three Settlements. I am much obliged to him for all the hard work he did in supervising measurements and Revision of Records. Though having a somewhat weak constitution, yet he was untiring in energy. An able writer experienced in revenue work, a hard rider regardless of inclemencies of weather, an honest and impartial officer with a mind free of bias possessing plenty of tact, he was as sound in his work as he was popular with the people. His Wajib-ul-arz attestations were carefully done, and he had an immense amount of work to dispose of in connection with heavy partition cases. In connection with relaying of field boundaries in the Kacha (Paimana Kat) he had to deal with thousands of applications filed by people with a view to satisfy themselves of the correctness of new maps. All this work he had to do in addition to Takkavi, Income-tax and other miscellaneous work under the Deputy Commissioner. The Takkavi work alone kept him going at times for days and days when sums like a hundred thousand rupees had to be disbursed in one harvest. When the Bhakkar-Leiah Tahsils were added to my charge, it was arranged, at the request of the Deputy Commissioner, that Mirza Sultan Ahmad should continue to do the double duty of Extra Assistant Settlement Officer and Revenue Assistant for the Mianwali-

Isa Khel Tahsils, and that Diwan Kanhya Lal should discharge similar functions in Bhakkar and Leiah. In Diwan Kanhya Lal again, I got an active and energetic assistant, thoroughly straight and reliable. He revised the Wajib-ul-arz of the two tahsils in addition to his ordinary Judicial work and helped me in supervising the Bhakkar Thal measurements and in disposing of other questions connected with the Settlement of these tahsils. I am thankful to him for having done all this at much personal inconvenience and without the incentive of a Settlement allowance. Mirza Sultan Ahmad very nearly shattered his health last winter, and for private family reasons he wanted to get nearer his home. I arranged his transfer to Jallundur, although I was very sorry to lose the advantage of his services. Lala Rang Ram, Extra Assistant Commissioner, relieved him in the beginning of January. He had been in the district as second Extra Assistant Commissioner, Bhakkar, for a time, during the course of this Settlement and with his life-long Settlement experience set to work straightaway like a horse. He has done yooman's service in distributing fixed assessments, attesting Riway-i-abpashi (statement of rights relating to irrigation), having the Record of Rights completed and generally in winding up the Settlement. My acknowledgments are due to him, and I am glad that the blank caused by Mirza Sultan Ahmad's departure was so well filled by him, and that I am leaving such an able, impartial, strong and trustworthy Revenue Assistant in the northern tahsils to run the Settlement. Of the Settlement Tahsildars, M. Muhammad Umar did uniformly good work in the Isa Khel Tahsil. He has been transferred to Rohtak and given a year's extension in service. Chaudhri Faiz Bakhsh succeeded M. Hakim Singh in Mianwali and managed his tahsil very well. He has worked very hard, and his work has been generally careful and thorough. From 1st January 1908 he has been appointed to officiate as Tahsildar of the Mianwali Tahsil and has had to work extra hard in winding up the Settlement. He is honest and painstaking. The Tahsildars and Naib-Tahsildars of the district were not given any Settlement work except Lala Sada Rang, Tahsildar of Isa Khel, whom, in consequence of his experience of Settlement work, I placed in charge of a part of the Isa Khel Tahsil ever since his transfer to Isa Khel in the beginning of 1906. He has discharged his duties ably in addition to his own work and rendered invaluable service in preparing the irrigation Record (Riway-i-abpashi) of all hill torrents and Kurram Canals in the whole tahsil. Lala Dharam Jas, Tahsildar of Bhakkar, and Lala Dina Nath, Tahsildar of Leiah, assisted me in redistributing the Thal assessments, and the former gave me great help in organizing and supervising the re-measurement of the Bhakkar Thal. His local knowledge also came very useful to me in preparing the Customary Law of the District. The work of the following Naib-Tahsildars deserves special notice. M. Ram Singh, Settlement Naib-Tahsildar, was a very experienced Settlement official, and did his work in a most efficient and thorough manner. He was transferred early in 1907. M. Sher Ali Khan is an invaluable officer, very hardworking and tactful, who knows his work thoroughly well and can always be relied upon. I am arranging to leave him in the district as a Naib-Tahsildar. Lala Karam Chand was another very useful and reliable officer who did a great deal of careful and hard work. He has been specially selected for the post of Oetroi Superintendent, Rawalpindi. Malik Fateh Khan, Nun, and M. Abdul Majid Khan were young men of good family and education. Both were intelligent, active and industrious and did plenty of hard work, the former in Isa Khel and the latter in the unwelcome hills of Bhangi Khel. They are both acting now as Inspectors of Co-operative Credit Societies. Pandit Iqbal Narain, a graduate, belongs to a good family and is honest, willing and most energetic. He received his training in this Settlement and has repaid his obligation to the Settlement by doing much hard and useful work, particularly in the Bhakkar Thal where he had a very extensive charge and had to be constantly cantering across the Thal from one end to another. He was specially selected for re-measurement work in the Bhakkar Thal and recalled from Gurdaspur where he had been transferred previously. It was only due to the untiring zeal and energy of M. Sher Ali Khan and P. Iqbal Narain that the Thal measurements were finished in 6 months and they deserve great credit for the way in which they handled the delicate questions relating to wrong positions of fields on the previous maps. The post of my Head Clerk has been held by Mr. S. C. Singha, who was promoted to Superintendent, Vernacular Office, Mianwali; L. Kishan Chand, who was transferred to Delhi in the same capacity, and lately by Lala Sukhu Ram. Each has done good work in

his time, but the hardest work has fallen on Lala Sukhu Ram who has proved himself quite equal to it. He is careful, painstaking and up to any amount of hard work and has had the advantage of acting as Head Clerk in the Dera Ismail Khan Settlement for a considerable time. My Reader Mirza Muhammad Ali has been most invaluable to me. Besides managing the vernacular office work for which his growing knowledge of rules and procedure makes him peculiarly fit, he has helped me throughout in my assessment work. His thoroughness and extreme carefulness in figures has been of incalculable assistance to me, and I am thankful to him for all the extreme hard work he has done for me. He has been enlisted as a candidate for the post of Superintendent, Vernacular Office, in the Division.

The Kanungo staff took some time to train, but some of the men turned out very well, and in the latter half on the Settlement did all they could to make it a success.

HARI KISHAN, KAUL,

Settlement Officer.

20th May 1908.



GLOSSARY OF VERNACULAR TERMS.

Vernacular.	English meaning.
Ala Malik	Superior proprietor.
Bájra	Spiked millet.
Bárání	Dependent solely on rain.
Batái	Division of produce.
Chábi	Irrigated from well.
Chari	Great millet used as fodder.
China	Panicum miliaceum.
Dastur-ul-aml	Code of instructions.
Ghandi	Dam.
Jama	Land revenue.
Jhallar	Persian wheel.
Jowár	Great millet.
Kahcha	Riverain portion.
Kana	Saccharum munja.
Karam	A lineal measure equal to 5½ feet.
Kharába	Failure of crops.
Kharif	Autumn harvest.
Khasra girdáwari	Register of crop inspection.
Khatauni	Holding slip.
Khawanin	Plural of Khan.
Kundar	The bulrush.
Lak	Flat stretch of land lying between sandhills.
Mafi	Assignment.
Maira	Light sandy land.
Makhdam	Title of holiness.
Malba	Cess for village expenses.
Málikána	Proprietary due.
Másh	A pulse (Phaseolus radiatus).
Massar	Lentil.
Methra	Fenugreek.
Mochi	Cobbler.
Moth	A pulse (Phaseolus acontifolius).
Mung	A pulse (Phaseolus Mungo).
Parcha Bahi	A book given to landowners and occupancy tenants giving detail of land and land revenue.
Powinda	Pathan traders who bring camels down for grazing.
Powah	Vicinity of a town.
Rabi	Spring harvest.
Rakh	Forest.
Sahukár	Money-lender.
Samukha	A cereal (Oplisminum frumentaceum).
Sanwak	A cereal (Panicum colonum).
Sarshaf	Rapeseed.
Senji	A grass (Melilotus parviflora).
Shamilat	Village common.
Tarámíra (Jamaun)	Eruca sativa.
Thakbást	Map showing village boundaries.
Til	Sesamum.
Warhi	Family group.
Zabtiana	A cash cess levied on valuable crops under native rule.
Zamindár	Landowner.



APPENDICES.

सत्यमेव जयते

APPENDIX I.

STATEMENT SHOWING ASSESSMENT RATE PER ACRE SANCTIONED AT LAST SETTLEMENT.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
CLASS OF SOIL.	MIANWALI.						ISARHEL.						BHAKKAR.					LUDIAN.		
	Kacha.	Pakka Kacha.	Kacha Thal.	Thal.	Mohar.	Pakhar.	Rhangri Khel.	Mohar.	Danda.	Kacha.	Nahri.	Kacha Pakka.	Pakka.	Kacha.	Bel.	Daggar.	Thal Kalan.	Pakka.	Kacha.	Thal.
Chahi	Rs. a. p. 2 0 0	Rs. a. p. 2 0 0	Rs. a. p. 0 14 0	Rs. a. p. 0 13 0	Rs. a. p. 0 14 0	Rs. a. p. 2 0 0	Rs. a. p. 0 8 0	Rs. a. p. 0 1 0	Rs. a. p. 4 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 14 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 12 3	Rs. a. p. 0 10 10	Rs. a. p. 0 12 0	Rs. a. p. 0 0 0	Rs. a. p. 0 10 0
Naledar	Rs. a. p. 0 14 0	Rs. a. p. 0 14 0	Rs. a. p. 0 14 0	Rs. a. p. 0 13 0	Rs. a. p. 0 14 0	Rs. a. p. 0 14 0	Rs. a. p. 0 8 0	Rs. a. p. 0 1 0	Rs. a. p. 4 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 12 0	Rs. a. p. 0 1 0	Rs. a. p. 0 14 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 12 3	Rs. a. p. 0 10 10	Rs. a. p. 0 12 0	Rs. a. p. 0 0 0	Rs. a. p. 0 10 0
Kaledar	Rs. a. p. 0 12 0	Rs. a. p. 0 12 0	Rs. a. p. 0 12 0	Rs. a. p. 0 11 0	Rs. a. p. 0 9 0	Rs. a. p. 0 13 0	Rs. a. p. 0 2 0	Rs. a. p. 0 13 0	Rs. a. p. 0 13 0	Rs. a. p. 0 0 0	Rs. a. p. 0 8 0	Rs. a. p. 0 13 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0
Maira	Rs. a. p. 0 8 0	Rs. a. p. 0 8 0	Rs. a. p. 0 6 0	Rs. a. p. 0 4 0	Rs. a. p. 0 6 0	Rs. a. p. 0 8 0	Rs. a. p. 0 1 0	Rs. a. p. 0 6 0	Rs. a. p. 0 6 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 2 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0
Tibba Ret or Rakkar	Rs. a. p. 0 0 0	Rs. a. p. 0 2 0	Rs. a. p. 0 2 0	Rs. a. p. 0 2 0	Rs. a. p. 0 0 0	Rs. a. p. 0 6 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 2 8	Rs. a. p. 0 4 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0
Nahri	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 1 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 12 0	Rs. a. p. 0 8 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0
ailab	Rs. a. p. 1 4 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 1 4 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 14 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 11 0	Rs. a. p. 0 0 0	Rs. a. p. 0 13 0	Rs. a. p. 0 12 0	Rs. a. p. 0 0 0
lahi-Sailab	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 0 0 0	Rs. a. p. 1 8 0	Rs. a. p. 0 1 4 0	Rs. a. p. 0 1 4 0	Rs. a. p. 0 1 4 0	Rs. a. p. 0 0 0	Rs. a. p. 1 4 0	Rs. a. p. 1 4 0	Rs. a. p. 0 0 0

APPENDIX II.

STATEMENT SHOWING POPULATION, AREA AND REVENUE BY TAHSILS.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
NAME OF TAHSIL.	POPULATION.				AREA IN ACRES.										AVERAGE AREA OF MATURED CROPS ON WHICH ASSESSMENTS WERE BASED.										REVENUE.			
	Census of				Cultivated with detail of soils.																							
	1868.	1881.	1901.	1901.	Total.	Chabi.	Chabi Saliab.	Nabli.	Abi.	Saliab.	Naladar and Hail.	Other Barani.	Total.	Chabi.	Chabi Saliab.	Nabli.	Abi.	Saliab.	Naladar and Hail.	Other Barani.	Total.	1st Summary Settlement.	2nd Summary Settlement.	3rd Summary Settlement.	1st Regular Settlement.	2nd Regular Settlement.		
Mianwali	87,637	95,780	109,546	119,074	981,645	2,213	1,341	...	319	78,459	44,358	131,980	258,059	2,000	1,381	...	327	56,355	23,195	89,066	174,384	123,641	137,146	...	1,18,312	173,911		
Lakhal	47,061	59,546	63,894	61,224	455,171	561	84	16,899	96	14,495	31,275	35,220	98,327	743	47	12,463	127	12,652	20,577	23,468	74,078	35,915	37,761	...	56,347	75,525		
Lisah	95,353	103,255	113,493	122,078	1,546,873	26,961	51,057	...	...	87,287	...	617	105,922	31,388	41,357	...	...	69,509	...	422	142,676	128,496	122,793	95,763	124,715	156,520
Bhakkar	93,596	107,040	113,590	118,612	2,006,085	15,074	15,917	...	...	120,578	...	25,038	185,607	13,198	13,809	...	...	90,210	...	11,794	139,002	*95,945	112,139	195,117	110,482	150,415
Total of District	323,667	365,621	400,477	424,588	4,989,774	44,809	64,390	16,899	415	399,819	75,633	192,814	708,815	47,391	56,591	16,463	454	239,726	43,772	124,740	529,149	383,997	409,841	...	409,856	585,371		

* Includes Rs. 5,822 assessed on Sadat Miani villages now transferred to Mianwali Tahsil.

† Do. Rs. 8,475 ditto
† Do. Rs. 3,577 ditto

APPENDIX

STATEMENT SHOWING BY ASSESSMENT CIRCLES THE ESTIMATED AVERAGE OUTTURN PER

Crop.	Soil.	LEIAH.				BHAKKAR.			
		Assessment Circle.				Assessment Circle.			
		Pakka.	Kacha.	Jandi.	Thal Kalan.	Pakka.	Kacha.	Taggar.	Thal Kalan.
JOWAR.	Chahi Sailab	...	...	...	...	...	...	...	...
	Sailab	180	180	...	...	180	180	...	...
	Chahi	...	...	220	200	...	...	220	200
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
BAJRA.	Chahi Sailab	200	200	...	...	200	200	...	...
	Sailab	140	140	...	...	140	140	...	...
	Chahi	280	280	280	200	280	280	240	200
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
MOH.	Chahi Sailab	180	180	...	...	180	180	...	...
	Sailab	160	160	...	...	160	160	...	...
	Chahi	...	...	240	240	...	...	240	240
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
MUNG.	Chahi Sailab	160	160	...	...	160	160	...	...
	Sailab	160	160	...	...	160	160	...	...
	Chahi	...	...	...	...	...	...	...	...
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
MAH.	Chahi Sailab	180	...	...	...	180	...	...	...
	Sailab	160	160	...	...	160	160	...	...
	Chahi	...	...	...	...	...	...	...	...
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
TIL.	Chahi Sailab	120	120	...	...	120	120	...	...
	Sailab	100	100	...	...	100	100	...	...
	Chahi	...	...	...	...	...	...	...	...
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
COTTON.	Chahi Sailab	130	130	...	...	130	130	...	...
	Sailab	100	100	...	...	100	100	...	...
	Chahi	...	...	120	120	...	...	120	120
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
WHEAT.	Chahi Sailab	320	320	...	...	320	320	...	...
	Sailab	240	240	...	...	240	240	...	...
	Chahi	...	...	240	240	...	...	240	240
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...
BARLEY.	Chahi Sailab	280	280	...	...	280	280	...	...
	Sailab	240	240	...	...	240	240	...	...
	Chahi	...	...	280	300	...	...	280	300
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	160	160	...	...	160	160
GRAM.	Chahi Sailab	200	200	...	...	200	200	...	...
	Sailab	200	200	...	...	200	200	...	...
	Chahi	...	...	240	240	...	...	240	240
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	80	80	...	...	80	80
MASSAR.	Chahi Sailab	200	...	...	...	200	...	...	...
	Sailab	160	160	...	...	160	160	...	...
	Chahi	...	...	...	...	...	...	...	...
	Nabri	...	...	...	...	...	...	...	...
	Abi	...	...	...	...	...	...	...	...

III.

ACRE IN SERS OF ALL PRINCIPAL CROPS ON EACH CLASS OF SOIL IN THE MIANWALI DISTRICT.

MIANWALI.			ISAKHEL.			
Assessment Circle.			Assessment Circle.			
Khudri.	Pakka.	Kacha.	Bhangi Khel.	Pakka.	Nahri.	Kacha.
...	...	200	...	...	...	200
...	...	180	...	...	...	180
200	200	200	...	200	...	200
...	...	...	...	160	160	160
200	200	...	160	...	...	...
180	180	180	120	180	180	180
...	...	280	...	...	...	280
...	...	180	...	...	...	180
320	320	320	...	320	...	320
...	...	...	...	160	160	160
320	320	...	...	...	...	...
Nalidar & hail 280	Nalidar 280	Nalidar & hail 280	Sum and 200	Nalidar 280	Nalidar 280	Nalidar 280
Kaslidar 200	Kaslidar 200	Kaslidar 200	Nalidar 150	Kaslidar 200	Kaslidar 200	Kaslidar 200
Other 120	Maira 160	Maira 160	Other 80	Maira 160	Maira 160	Maira 160
...	...	160	...	...	...	...
...	...	160	...	...	...	160
...	160	...	...	...	...	...
...	160	...	...	...	160	...
160	160	160	80	160	160	160
...
...	...	160	...	...	...	160
...	...	...	...	160	...	...
160	160	160	80	160	160	160
...
...	...	160	...	...	...	160
...	...	...	...	160	...	160
...
...	...	80	...	...	...	80
...	...	80	...	...	...	80
...	...	...	...	...	...	80
80	80	80	40	80	80	80
...	...	200	...	...	...	200
...	...	120	...	...	...	120
200	200	200	...	200	...	200
...	...	...	...	120	120	120
120	120	120	60	120	120	120
...	...	320	...	...	...	320
...	...	240	...	...	...	240
...	...	320	...	320	...	320
...	...	...	...	200	200	200
...	...	...	...	320	...	...
380	320	...	200	300	300	300
Hail & nalidar 320	Nalidar 300	Kaslidar 300	Sum and 200	Nalidar 300	Nalidar 300	Nalidar 300
Kaslidar 220	Kaslidar 220	Kaslidar 220	Nalidar 180	Kaslidar 220	Kaslidar 220	Kaslidar 220
Maira 160	Maira 160	Maira 160	Other 80	Maira 160	Maira 160	Maira 160
Rakkar & gar 120	...	...	...	...	...	...
...	...	360	...	...	...	360
...	...	280	...	...	...	280
...	...	360	...	360	...	360
...	...	...	...	240	240	240
400	360	...	...	...	...	...
...	...	...	240	...	...	...
400	...	...	180	300	300	300
270	260	260	...	...	...	...
...	...	240	...	...	...	...
...	...	200	...	...	...	200
...	240	...	...	240	...	...
...	...	...	...	...	200	200
...	240	...	...	...	...	...
200	220	220	120	220	220	220
...
...	...	160	...	...	...	160
...
...	160	...	...	...	...	...
...	...	...	...	160	...	...

APPENDIX

STATEMENT SHOWING BY ASSESSMENT CIRCLES THE ESTIMATED AVERAGE OUTTURN PER

Crop.	Soil	LEIAH.				BHAKKAR.			
		Assessment Circle.				Assessment Circle.			
		Pakka.	Kacha.	Jandi.	Thal Kalan.	Pakka.	Kacha.	Taggar.	Thal Kalan.
PEAS.	Chahi Sailab Sailab Barani	160	160	...	...	160	180	...	...
SARSHAF.	Chahi Sailab Sailab Chahi Nahri Barani	...	...	160	180	...	...	160	160
TAMARA.	Chahi Sailab Sailab Chahi Nahri Barani	120 120	120 120	...	...	120 120	120 120	...	160 160
TABACCO.	Chahi Sailab Sailab Chahi Nahri	200	200	...	...	200	200	...	...
MELON.	Chahi Sailab Sailab Chahi Nahri Abi Barani	Rs. 8 Rs. 8	Rs. 8 Rs. 8	...	...	Rs. 8 Rs. 8	Rs. 8 Rs. 8	...	...
TURNIP.	Chahi Sailab Sailab Chahi Barani	...	...	...	...	...	...	...	...
FODDER.	Chahi Sailab Sailab Chahi Nahri Abi Barani	Rs. 10	Rs. 10	...	...	Rs. 10	Rs. 10	...	...
FRUITS.	Chahi Sailab Sailab Chahi Nahri	Rs. 20 Rs. 20	Rs. 20 Rs. 20	...	...	Rs. 20 Rs. 20	Rs. 20 Rs. 20	...	...
VEGETABLE.	Chahi Sailab Sailab Chahi Nahri Abi Barani	Rs. 15 Rs. 15	Rs. 15 Rs. 15	...	...	Rs. 15 Rs. 15	Rs. 15 Rs. 15	...	...
SUGAR-CANE.	Chahi Sailab Chahi	Rs. 35	Rs. 35	...	...	Rs. 35	Rs. 35	...	...

[illegible]

APPENDIX IV.

STATEMENT SHOWING THE ESTIMATED HALF NET ASSETS RATES PER ACRE OF MATURED CROPS FOR
EACH CLASS OF SOIL IN EACH ASSESSMENT CIRCLE.

1	2	3	4	5	6	7	8
Tahsil.	Name of Assessment Circle.	Chabi.	Chahi Sailab.	Nabri.	Abi.	Sailab.	Barani.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
ISAKHER.	Bhangi Khel ... ..	...	...	...	1 3 7	...	0 12 8
	Pakka	2 1 8	...	1 7 8	2 15 3	...	1 9 1
	Nabri ... ..	...	...	1 7 6	...	...	1 12 1
	Kacha	1 13 4	1 12 11	1 7 4	...	1 14 2	1 14 2
MIANWALI.	Khudri	1 12 2	...	...	2 0 5	...	1 4 8
	akka	1 15 0	...	...	2 10 9	...	1 9 4
	Kacha	2 6 6	2 1 3	...	...	2 0 9	1 9 3
BHAKSAR.	Daggar	0 13 11	...	...	...	...	0 6 3
	Thal Kalan	0 12 5	...	...	...	...	0 5 9
	Pakka ... ..	...	1 5 8	...	...	1 3 9	...
	Kacha ... ..	...	1 5 1	...	...	1 4 4	...
LEIAR.	Jandi	0 12 10	...	...	...	...	0 2 9
	Thal Kalan	0 12 5	...	...	...	...	0 5 9
	Pakka ... ..	...	1 5 8	...	...	1 3 9	...
	Kacha ... ..	...	1 5 1	...	...	1 4 4	...

STATEMENT SHOWING ASSESSMENT RATES SANCTIONED.

[illegible]

APPENDIX VI.

STATEMENT SHOWING COMPARISON OF NEW LAND REVENUE, &c., &c.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Tahsil.	Half not assets.	Assessment of last settlement.	Assessment of the year preceding the new assessment.	Assessment by sanctioned rate.	REVENUE IMPOSED.			Percentage of new assessment on half net assets.	INCREASE OR DECREASE PER CENT. OF NEW ASSESSMENT COMPARED WITH			INCIDENCE PER ACRE.		REMARKS.
					Fixed.	Fluctuating.	Total.		That of last settlement.	That of the year preceding the new assessment.	That by sanctioned rate.	On cultivated.	On crops.	
Isakhel	1,15,174	55,198	58,926	74,756	8,689	66,078	74,747	64.9	35.42	26.85	-01	0 12 2	1 0 2	
Mianwali	2,72,127	1,13,743	1,29,244	1,69,588	30,139	1,41,382	1,71,521	63.0	50.80	32.71	+1.1	0 10 7	0 15 9	
Bhakkar	1,91,290	91,715	1,13,944	1,34,193	3,720	1,31,380	1,35,100	70.6	47.30	18.57	+0.7	0 11 1	0 15 8	
Leiah	1,80,522	1,08,124	1,19,479	1,43,960	58	1,43,054	1,43,112	79.3	32.36	19.78	-5	0 13 10	1 0 0	
Total	7,59,113	3,68,780	4,21,593	5,22,497	42,566	4,81,894	5,24,480	69.1	42.22	24.40	+0.6	0 11 10	0 15 10	

APPENDIX VII.

- (A). Rules for reduction of revenue on wells when they become unfit for use.
- (B). Rules for reduction of fixed land revenue other than that assessed on wells.
- (C). Rules for suspension and remission of revenue in the insecure tracts of the Mianwali District.
- (D). Rules for reduction of jama on gardens in the Leiah Tahsil.
- (E). Rules for collection of Chahi jama assessed on wells in the Thal Tract of the Bhakkar and Leiah Tahsils.
- (F). Rules to regulate modifications in the grazing assessment of the Kacha Circles of the Mianwali and Isakhel Tahsils.



A. Rules for reduction of revenue on wells in the Mianwali District when they fall out of use, (Sanctioned in Senior Secretary to Financial Commissioner's letter No. 2532, dated 24th April 1908.

1. No such rules have been framed for the assessment circles in which well irrigation is non-existent, viz. :—

<i>Tahsil.</i>					<i>Circle.</i>
Isakhel	...	...	...	...	Bhangi Khel.
Do.	...	...	...	...	Nahri.

2. No such rules are required in the following circles except for the small tract called Powah in the Bhakkar Tahsil and the village of Kalabagh in the Isakhel Tahsil which are under fixed assessment, as the revenue is collected on all classes of land, including land irrigated from wells, by means of a rate on the area of matured crops, and the assessment of a well is thus automatically remitted when it ceases to be worked :—

<i>Tahsil.</i>					<i>Circle.</i>
All four Tahsil	...	...	...	...	{ Pakka.
					{ Kacha.

3. The following rules are in force in the circles named below :—

<i>Tahsil.</i>					<i>Circle.</i>
Leiah	...	...	...	...	Thal Kalan.
Do.	...	...	...	...	Jhandi Thal.
Bhakkar	...	...	...	...	Thal Kalan.
Do.	...	...	...	...	Daggar Thal.

Rules for collection of land revenue assessed on wells in the Thal.

(I). No assessment will be levied on a well which has not been worked during the year or (except in the Powah or Dhaha) on which the total area under crop in the year is less than one acre.

(II). When a well is held in defined shares and the land attached to the well is divided according to those shares, no assessment will be levied on any share in the well holding which has not been cultivated during the year or (except in the Powah or Dhaha) on which the total area under crop in the year is less than half an acre. When no part of a share has been cultivated as Chahi and, but a part of it is cultivated as Barani land, no assessment shall be levied by Government, but it shall be treated as if it were Barani land for the purposes of the village baohh.

(III). When a well and the land attached to it are held jointly, the Settlement Officer will fix the area to be considered as representing the area under cultivation when the well is fully at work, and whenever an area equal to $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, or $\frac{3}{4}$ of that area remains uncultivated, a corresponding fraction of the assessment fixed for the well at settlement shall be remitted.

IV. When wells are partitioned after settlement the officer making the partition shall in his final order distribute the revenue of the well over the shares, and the collection of revenue will then be made under Rule 2.

V. Every well or share of a well at work during the year shall (unless protected by a certificate of exemption) be charged the assessment imposed on it at settlement; and if no assessment was imposed on it at settlement, the assessment shall be calculated at the rate of Rs. 9 in the Thal Kalan, Rs. 10 in the Daggar and Rs. 11 in the Jandi Circle for the well when fully at work.

VI. The demand on wells shall be framed for the whole year after the Rabi harvest and realised with the Rabi instalment.

4. In the only remaining circle of the district, viz. :—

<i>Tahsil.</i>	<i>Circle.</i>
Mianwali	Khudri.

and in the Powah tract and in the village of Kalabagh referred to in paragraph 2 above, no portion of the fixed land revenue assessed on a well shall be remitted, unless the well ceases to be fit for use, in which case the Deputy Commissioner shall remit the whole of the demand assessed on the land irrigated from it. If the well is subsequently repaired or replaced by a new one, the whole of the said demand shall be reimposed on the expiry of the period of exemption allowed in the certificate of exemption which will be granted by the Deputy Commissioner under the operation of the rules for the protection of new and repaired wells.

B.—Rules for reduction of fixed land revenue other than that assessed on wells.

1. When land subject to fixed assessment is eroded by the Kurram river (in the Nahri Circle of Isakhel) the jama assessed on that land shall be remitted by the Collector, any portion of the land which is subsequently reclaimed from the river and brought under cultivation being assessed to a fluctuating revenue at the rate fixed for the adjoining Nahri village.

Settlement Officer's letter No. 201, dated 8th March 1908, to the Settlement Commissioner, Punjab.

II. When land subject to fixed assessment is eroded by Bhandars or Ghaps (ravines caused by the flow of rain or hill torrent water over land) the jama assessed on that land shall be remitted by the Collector, but the whole or part thereof may be re-imposed if the land or a part thereof is subsequently brought under cultivation.

III. When land subject to fixed assessment is rendered unfit for cultivation by Kallar (excessive out crop of salt) the assessment thereof may be remitted by the Collector, provided that no such remission shall be granted within two years of the harvest in which the land was last sown.

IV. If land of which the assessment has been remitted as above again becomes cultivated, the full amount assessed therein at settlement shall be re-imposed.

C.—Rules for suspension and remission of revenue in the insecure tracts of the Mianwali District.

The insecure tracts fall under two heads:—

Settlement Officer's letter No. 199, dated 6th March 1908, to the Settlement Commissioner, Punjab.

(1). Grazing assessment in the Bhakkar and Loiah Thal and the two villages of Mianwali which have been transferred from Bhakkar and (2) the Khudri Circle with the exception of 4 villages, namely, Massan, Nikki, Banni Afghanan and Pihai, and the villages of Sarkia, Masit and Bhut in the Nahri Circle.

As regards (1), the rule sanctioned by Government is that "Instead of suspending the revenue in bad years and trying to realize it when good years come round, the Collector should be empowered, subject to the control of the Commissioner, to remit in a year of drought or murrain such portion of the maximum demand as he thinks necessary in each village, *i. e.*, there should be remissions and no suspensions" (paragraph 11 of Mr. Wilson's review of the Assessment Report of the Bhakkar-Leiah Thal tract and paragraph 5 of Punjab Government letter No. 136 S., dated 26th May 1903). The following rules should apply to villages under head (2):—

The following will be the danger rates in the Khudri Circle (Mianwali) and Nahri Circle (Isakhel):—

Class of soil.					Rate per acre of matured crops.		
					Rs.	a.	p.
Chahi, Abi, Naledar & Hail	...	...	...	...	2	0	0
Other Barani	...	...	...	...	1	8	0
Nahri	...	...	...	...	2	0	0

2. When the danger rate applied to the area of matured crops of any particular insecure village in any harvest gives the demand fixed for that harvest or more, no suspension will be necessary.

3. When the danger rate applied to the area of matured crops in a harvest in any village falls short of the demand fixed for that harvest, the question of suspending the whole or a part of the demand should be considered. For this purpose the danger rate should be applied not to the cropped area of that harvest alone, but to the total cropped area of that harvest and the preceding one. If the resultant does not fall short of the demand for the two harvests, no suspension need be given; but—

(a) if the total cropped area of the two harvests multiplied by the danger rate gives a sum less than the total demand of the two harvests, but not less than 75 % of it, $\frac{1}{4}$ th of the demand of the harvest should be suspended;

(b) if the sum is less than 75%, but not less than 50 % of the demand of the two harvests, $\frac{1}{2}$ the demand of that harvest should be suspended;

(c) if the sum calculated as above is less than half the demand of the two harvests, the whole demand of the harvest should be suspended.

4. For the recovery of arrears of suspended revenue, the revenue under suspension should be treated as part of the demand of the current harvest.

5. The above rules should be taken only as guides for the inspecting officer who should, however, make his proposals after considering all other matters referred to in paragraph 16 (iii) of Revenue Circular 31. The question of cutturn of crops will, however, have been considered in arriving at the area of matured crops.

6. For the convenience of the Revenue Assistant and the Collector, a statement in the annexed form should be prepared every harvest for the insecure villages and sent up by the Patwari after the submission of the crop abstract.

7. No remissions will ordinarily be necessary, as a very good year generally follows on 2 or 3 bad years, and the past experience has shown that in the good years, it is possible to collect all the outstanding arrears. A longer period of drought may, however, necessitate remissions under the ordinary rules.

D.—Rules for reduction of Jama of Gardens in the Leiah Tahsil.

Settlement Officer's letter No. 201, dated 6th March 1908, to the Settlement Commissioner, Punjab. I. When a garden containing fruit trees which have been assessed separately to land revenue is completely destroyed, the revenue imposed thereon at settlement may be completely remitted, and when it is partially destroyed and the profits have been much reduced, a partial remission of the assessment may be granted.

II. Proposals under Rule I shall be submitted by the Deputy Commissioner through the Commissioner for the consideration of the Financial Commissioner and the orders of Government. The reduction of assessment will be sanctioned by Government as a matter of course if the Commissioner and Financial Commissioner are satisfied that it is necessary.

E.—Rules for the collection of Chahi Jama assessed on wells in the Thal tract of the Bhakkar and Leiah Tahsils.

Punjab Government letter No. 136-S., dated 26th May 1903, paragraph 4. (1) No assessment will be levied on a well which has not been worked during the year or (except in the Powah or Dhaha) on which the total area under crop in the year is less than one acre.

NOTE.—Powah or Dhaha comprises the villages of Karor, Lohanch, Sumra and Jam Rid in Tahsil Leiah. A well in the Powah will not be exempted from assessment unless it is wholly out of work and no Chahi crops whatever are grown on it during the year.

(2) When a well is held in defined shares and the land attached to the well is divided according to those shares, no assessment will be levied on any share in the well-holding which has not been cultivated during the year, or (except in the Powah or Dhaha) on which the total area under crop in the year is less than half an acre. When no part of the share has been cultivated as Chahi, but a part of it is cultivated as Barani land, no assessment shall be levied by Government, but it shall be treated as if it were Barani land for the purposes of the village bachh.

NOTE.—The Barani cultivation shall not be taken into account in judging whether a well or holding is or is not in use under Rules 1 and 2.

(3) When a well and the land attached to it are held jointly, the Settlement Officer will fix the area to be considered as representing the area under cultivation when the well is fully at work, and whenever an area equal to $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ or $\frac{3}{8}$ of that area remains uncultivated, a corresponding fraction of the assessment fixed for the well at settlement shall be remitted.

NOTE.—If less than $\frac{1}{4}$ th of the area remains uncultivated, no remission need be granted. If more than $\frac{1}{4}$ th but not more than $\frac{1}{2}$ th is uncultivated $\frac{1}{2}$ rd of the jama will be remitted unless the area sown is less than one acre, when no part of the jama of the well will be recoverable. The area under crop which should represent the full working capacity of a joint well has been fixed for every well and shown in a list attached to every Settlement Record. Copies of these lists have also been supplied to the Sadar Kanungo for purposes of checking the returns.

(4) When wells are partitioned after settlement, the officer making the partition shall in his final order distribute the revenue of the well over the shares, and the collection of revenue will then be made under Rule 2.

NOTE.—Similarly wells partitioned temporarily owing to mortgage, etc., and becoming joint thereafter, will be dealt with under Rules 1 and 3.

(5) Every well or share of a well at work during the year shall (unless protected by a certificate of exemption) be charged the assessment imposed on it at settlement, and if no assessment was imposed on it at settlement, the assessment shall be calculated at the rate of Rs. 9 in the Thal Kalan, Rs. 10 in the Daggar, and Rs. 11 in the Jandi Circle, for the well when fully at work.

NOTE.—The sown area on which remissions will be given under Rule 3 will in such cases be, Jandi 18 acres, Thal Kalan and Daggar 16 acres.

(6) The demand on wells shall be framed for the whole year after the Rabi harvest and realized with the Rabi instalment.

GENERAL NOTE.—If the land attached to a well or holding assessed at settlement is cultivated with the help of some other well, it shall, for the purposes of assessment under the above rules, be treated as cultivated in the same way as if it were irrigated from the well to which it is attached.

F.—Rules to regulate modification in the grazing assessments of the Kacha Circles of the Mianwali and Isakhel Tahsils.

Rules.

Settlement Commissioner's letter No. 421, dated 4th February 1908. 1. The grazing jama announced will be fixed and recoverable from year to year unless altered under the next following rules:—

2. When the waste area increases or decreases by 10 per cent. or more, the grazing jama will be altered accordingly, provided that the difference in the jama amounts to not less than Rs. 10.

3. In villages where the grazing assessment on the waste area at the rate fixed for the village worked out to less than Rs. 20, no grazing jama has been assessed. A grazing jama will, however, be imposed if the waste area increases sufficiently to be assessable to Rs. 20 or more, and will thereafter be governed by Rule 2.

4. In villages assessed to grazing revenue when the jama decreases below Rs. 20 it will be remitted altogether until it can be re-imposed under Rule 3.

APPENDIX VIII.

STATEMENT SHOWING REVENUE FROM ALL SOURCES.

Sl. No.	Name of Tahsil.	LAST SETTLEMENT.				REVENUE DEMAND PRECEDING THE NEW ASSESSMENT.					DEMAND BY SANCTIONED REVENUE RATES.					NOW IMPOSED.					PER CENT. INCREASE OR DECREASE COMPARED WITH				
		Land revenue.	Grazing land revenue.	Dates revenue.	Total.	Land revenue.	Grazing land revenue.	Dates revenue.	Water-mills revenue.	Total.	Land revenue.	(Grazing land revenue.	Dates revenue.	Water-mills revenue.	Total.	Land Revenue.	Revenue on grazing land.	Fluctuating.	Fixed.	Dates revenue (fixed).	Revenue on water-mills (fluctuating.	Total.	Last settlement.	Demand preceding new assessment.	Demand by sanctioned revenue rates.
1	Isakhel	55,198	1,149	...	56,347	58,926	1,165	...	60,091	74,753	696	...	20	75,472	8,669	60,076	758	...	...	20	75,525	344	256	-67
2	Mianwali	1,13,743	4,571	...	1,18,314	1,23,267	5,176	...	1,34,472	1,03,588	2,325	...	23	1,71,938	30,139	1,41,352	652	1,713	...	25	1,73,911	470	293	+37	
3	Bhakkar	91,715	18,085	682	1,10,482	1,15,538	13,226	784	1,29,548	1,34,193	14,593	733	...	1,49,519	3,720	1,31,380	10,875	3,409	971	...	1,50,415	361	161	+6	
4	Zeish	1,08,124	15,707	864	1,24,715	1,19,563	14,769	799	1,35,130	1,43,900	11,796	1,781	...	1,57,537	58	1,43,054	6,554	4,644	2,210	...	1,56,520	255	158	-6	
5	Total	3,68,780	30,512	1,506	4,00,858	4,23,294	34,337	1,583	33	4,59,247	5,22,497	29,410	2,514	45	5,54,466	42,583	4,81,894	18,081	20,584	2,181	45	5,56,371	357	211	+6

* Includes Rs. 3,222 assessed on Barani cultivation in Thal tract and lumped together with Grazing land assessment.

STATEMENT SHOWING GROSS PRODUCE OF THE AVERAGE CROPPED AREA IN THE MIANWALI, BAKKAR AND LEJAH TAHSILS AND THE QUANTITY OF SEED SOWN.

[illegible]

APPENDIX IX B.

STATEMENT SHOWING AVERAGE OUTWARD AND INWARD TRAFFIC OF THE THREE YEARS OCTOBER 1903
TO SEPTEMBER 1906 REGISTERED AT THE RAILWAY STATIONS IN THE MIANWALI DISTRICT.

1	2				3	4	5	6	7	8	9	10
Number.	NAME OF RAILWAY STATION.				WHEAT.		GRAM AND PULSES.		JOWAR AND BAJRA.		OTHER GRAINS.	
					Outward.	Inward.	Outward.	Inward.	Outward.	Inward.	Outward.	Inward.
1	Masnan	...	...	...	9,814	51	4,833	47	36	142	122	453
2	Daud Khel	...	...	...	1,480	3	420	11	74	53	450	71
3	Mari	...	...	...	12,191	463	4,803	1,019	742	174	793	1,323
4	Paikhel	...	...	...	14,366	16	2,355	56	385	5	2,592	164
5	Samandwala	...	...	...	...	...	...	...	...	...	317	...
6	Mianwali	...	...	...	11,111	6,178	44,880	764	5,951	127	25,320	6,127
7	Kundian	...	...	...	1,385	1,696	4,085	390	95	79	3,562	1,562
8	Wan Bhachran	...	...	...	7,482	4,081	23,339	131	1,498	23	6,220	364
9	Alluwalli	...	...	...	238	85	1,439	14	...	19	286	72
10	Piplan	...	...	...	3,764	1,607	5,797	4,223	78	79	2,178	229
11	Kalur Kot	...	...	...	1,44,346	10,680	21,702	1,241	170	447	678	8,174
12	Shah Alam	...	...	...	4,512	1,767	13	51	...	1	114	116
13	Panj Garain	...	...	...	1,273	91	105	146	4	49	16	106
14	Darya Khan	...	...	...	30,797	1,614	8,507	5,145	1,251	279	3,497	11,980
15	Bhakkar	...	...	...	66,026	1,224	2,639	2,196	245	150	886	8,622
16	Behl	...	...	...	17,568	160	1,099	202	...	8	788	709
17	Karor	...	...	...	48,607	238	1,461	451	140	18	714	1,298
18	Daratta	...	...	...	117	104	64	181	1	1	11	196
19	Leiah	...	...	...	88,314	464	2,703	4,568	1,012	76	6,203	25,607
20	Kot Sultan	...	...	...	30,902	292	190	386	2,874	39	289	726
TOTAL					4,94,163	30,814	1,30,484	21,202	14,258	1,762	65,035	34,767

APPENDIX X.

**Rules for suspension and remission of revenue in the insecure tracts of the
Mianwali District.**

The insecure tracts fall under two heads:—

- (1). Grazing assessment in the Bhakkar and Leiah Thal and the two villages of Mianwali which have been transferred from Bhakkar, and
- (2). The Khudri Circle with the exception of 4 villages, namely Massan, Nikki, Banni and Pihai and the villages of Sarkia, Masit and Bhut in the Nahri Circle.

As regards (1), the rule sanctioned by Government is that "instead of suspending the revenue in bad years, and trying to realize it when good years come round, the Collector should be empowered, subject to the control of the Commissioner, to remit in a year of drought or murrain, such portion of the maximum demand as he thinks necessary in each village, i.e., there should be remissions and no suspensions" (para. 11 of Mr. Wilson's Review of the Assessment Report of the Bhakkar Leiah Thal tract and para. 5 of Punjab Government letter No. 136 S., dated 26th May 1903).

The following rules should apply to villages falling under head (2).

I. The following will be the danger rates in the Khudri Circle (Mianwali) and Nahri Circle (Isa Khel):—

Class of soil.	Rate per acre of matured crops.		
	Rs.	a.	p.
Chahi, Abi, Naledar and Hail	2	0	0
Other barani	1	8	0
Nahri	2	0	0

II. When the danger rate applied to the area of matured crops of any particular insecure village in any harvest gives the demand fixed for that harvestor more, no suspension will be necessary.

III. When the danger rate applied to the area of matured crops in a harvest in any village falls short of the demand fixed for that harvest, the question of suspending the whole or a part of the demand should be considered. For this purpose the danger rate should be applied not to the cropped area of that harvest alone, but to the total cropped area of that harvest and the preceding one. If the resultant does not fall short of the demand for the two harvests, no suspension need be given. But—

- (a) if the total cropped area of the two harvests multiplied by the danger rates gives a sum less than the total demand of the two harvests but not less than 75 per cent. of it, one-fourth of the demand of the harvest should be suspended;
- (b) if the sum is less than 75 per cent. but not less than 50 per cent. of the demand of the two harvests, half of the demand of that harvest should be suspended; and
- (c) if the sum calculated as above is less than half the demand of the two harvests, the whole demand of the harvest should be suspended.

IV. For the recovery of arrears of suspended revenue, the revenue under suspension should be treated as part of the demand of the current harvest.

V. The above rules should be taken only as guides for the inspecting officer who should however make his proposals after considering all other matters referred to in para. 16 (iii) of Revenue Circular 31. The question of outturn of crops will however have been considered in arriving at the area of matured crops.

VI. For the convenience of the Revenue Assistant and the Collector a statement in the annexed form should be prepared every harvest for the insecure villages and sent up by the patwari after the submission of the crop abstract.

VII. No remissions will ordinarily be necessary as a very good year generally follows in two or three bad years, and the past experience has shown that in the good years it is possible to collect all the outstanding arrears. A longer period of drought may however necessitate remissions under the ordinary rules.

VILLAGE

-No.

ASSESSMENT CIRCLE

TAHSIL

DISTRICT MIANWALI.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Harvest.	Class.	AREA UNDER MATURED CROPS (IN ACRES).		Dangor rate per acre.	Revenue by dangor rate.	PRESENT DEMAND.			Area of matured crops of preceding harvest.	Total area of two harvests.	Dangor rate jama of two harvests.	Total demand of two harvests.	Percentage of column 12 on 13.	Percentage of suspension under rule.	Demand to be suspended.	REMARKS.
						For the current harvest.	Harvest.	Suspended revenue.								
				Ra. a. p.												
	Chahi, Abi, Naledar and Hail			2 0 0												
	Other Barani	..	..	1 8 0												
		..	..	2 0 0												

M A P
OF THE
MIANWALI DISTRICT

SHOWING ASSESSMENT CIRCLES

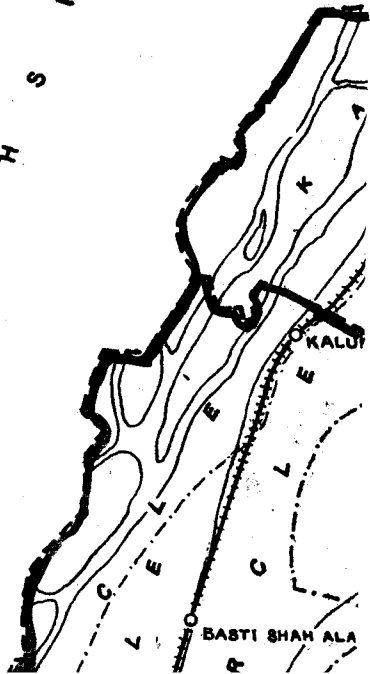
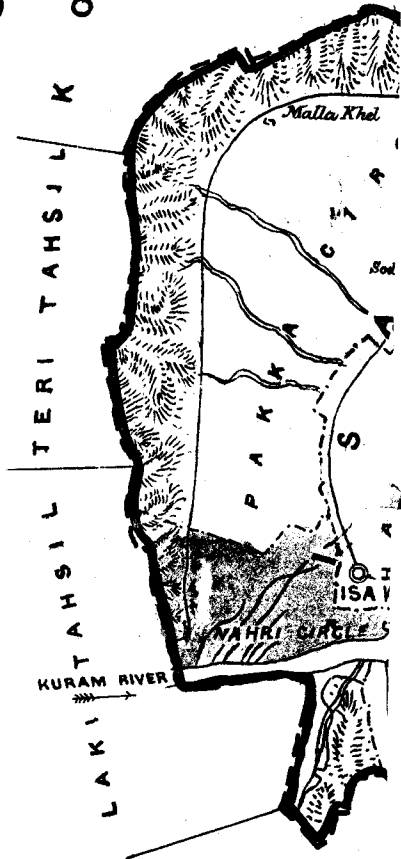
Scale 1 inch = 8 Miles

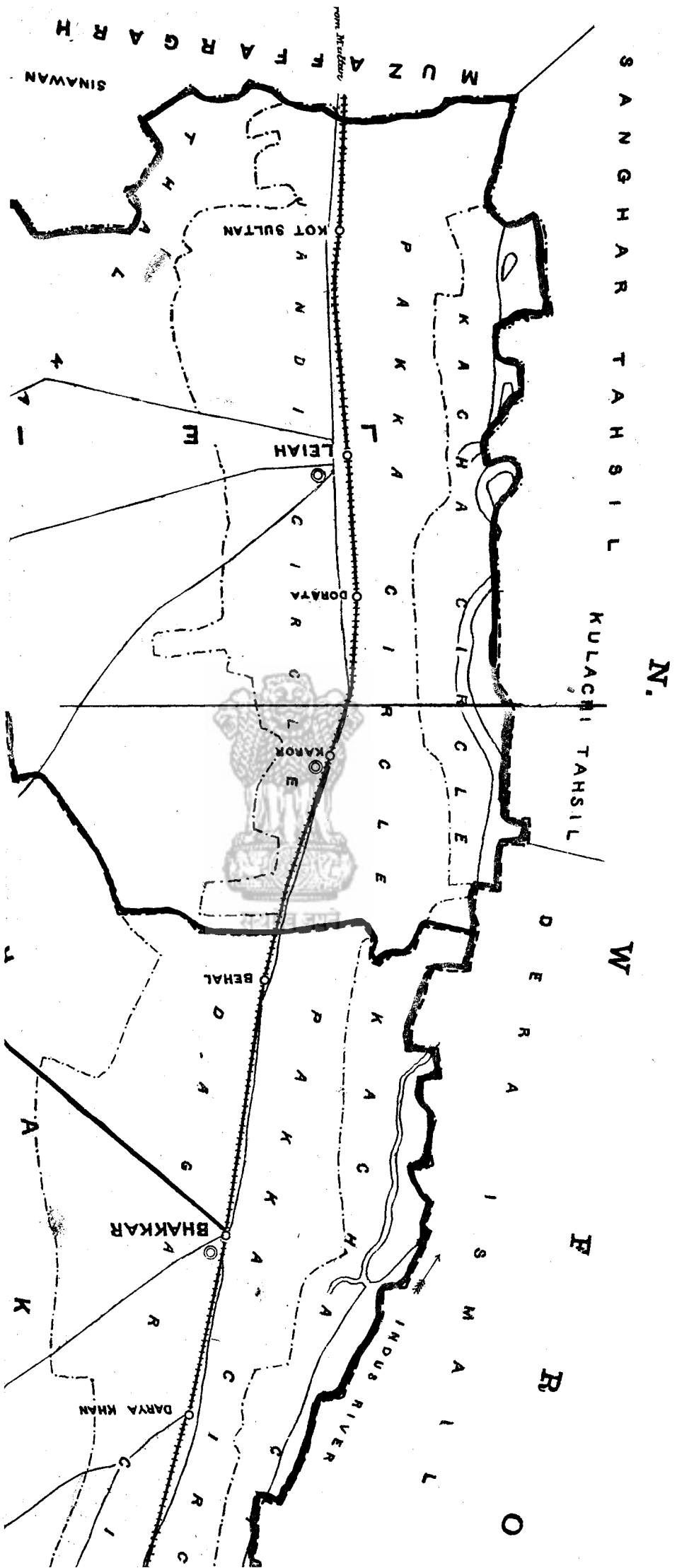


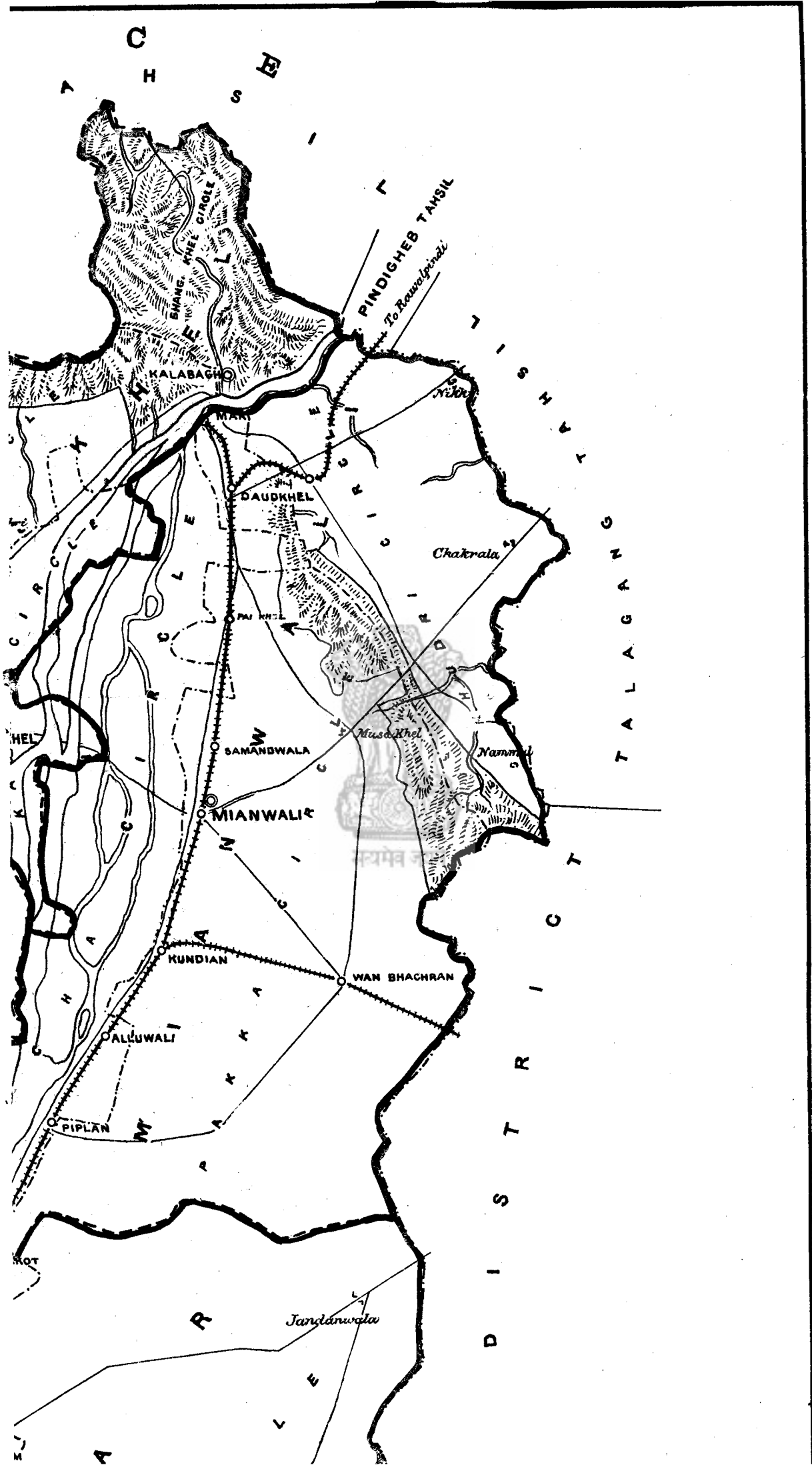
REFERENCES	
District Boundary	
Tahsil do	
River	
Metalled Road	
Un-metalled Road	
Railway Line	
Hills	
Town	
Wahan	
Canals	

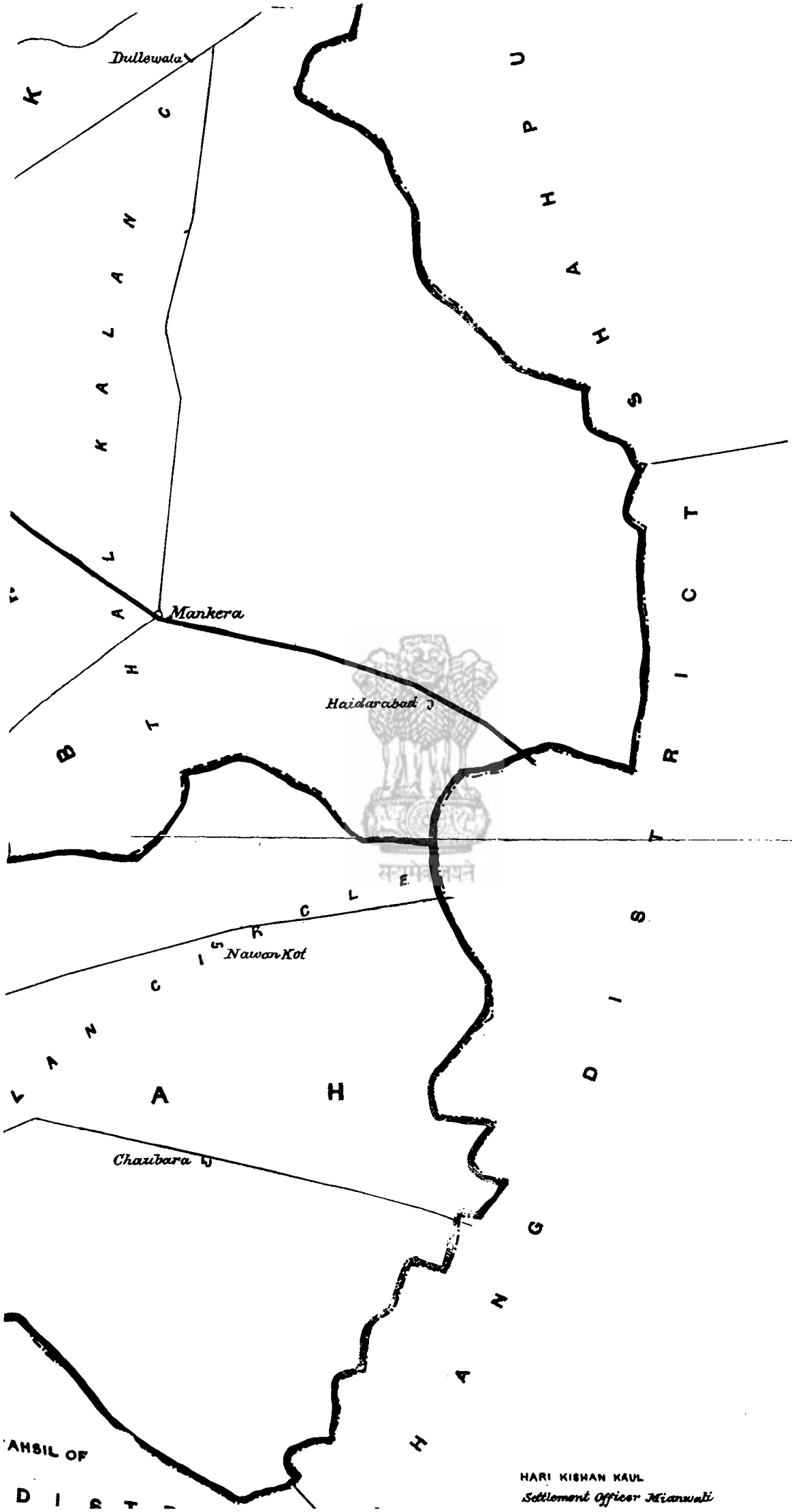
ASSESSMENT CIRCLES

Bhangri Khel	
Khudri	
Pakka	
Kacha	
Nahri	
Thal Kalan	
Duggar	
Jandi	









AHBIL OF
DIST -

HARI KISHAN KAUL
Settlement Officer Mianwali