
IRRIGATION REVENUE REPORT
OF THE
BOMBAY PRESIDENCY,
EXCLUDING SIND.
1912-1913.

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Assistant Secretary to Government, Public Works Department, Irrigation and Railways.

IRRIGATION REVENUE REPORT

OF THE

BOMBAY PRESIDENCY,

EXCLUDING SIND.

1912-1913.

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IRRIGATION REVENUE REPORT

BOMBAY PRESIDENCY, EXCLUDING SIND,

1912-1913.

PART I.

COMPRISING FIRST CLASS IRRIGATION WORKS FOR WHICH
CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

GENERAL REMARKS.

The following list includes all the works in operation
(41 in number) :—

| Collectorate. | Number. | Names of Works. | Area of four months' crops which could be irrigated in normal years with a duty at the head of the Canal of 120 acres for the monsoon season and 120 acres for the rabi season per cusec. | Whether Supply is reliable or dependent on local rain. | Storage Works completed or proposed. | Remarks. |
|--------------------------|---------|---|---|--|--|--|
| MAJOR WORKS. | | | | | | |
| <i>Protective Works.</i> | | | | | | |
| Ahmednagar | 1 | Pravara River Works—Pravara Right Bank Canal. | 18,000 for completed canal. | Dependent on local rain. | Storage work at Lake Arthur Hill in progress. | Ghát catchment. |
| Násik | 2 | Girna Left Bank Canal. | Information not available. | Reliable | Chankápur Tank completed. | Do. |
| Do. | 3 | Godavari Right and Left Bank Canals. | 15,310 | Do. | Lake Beale completed. | Do. |
| Ahmednagar | | Godavari Right Bank Canal. | 33,510. These are projected figures subject to alteration. | | | |
| Poona | 4 | Nira Canal including Shetphal Tank. | 100,000 | Do. | Lake Whiting completed. | Do. |
| Sholápur | 5 | Mhaswad Tank | 17,975 | Dependent on local rain. | Completed | Deccan catchment. |
| <i>Productive Works.</i> | | | | | | |
| Ahmedabad | 9 | Háthmati Canal and Khári Cut. | 21,000 | Dependent on local rain. | No storage work; Bokh Reservoir and Chan'ola Tank completed. | Forest and hilly catchment. Supply depends chiefly on the flow in the Háthmati and Khári Rivers, contents of the Bokh Reservoir and the Chandola Tank. |
| West Khandesh | 10 | Lower Pánjhra River Works. | 8,173 | Pánjhra River supply not reliable. | Mukti Tank completed. | Ghát catchment for one part and Deccan catchment for the rest. |
| Násik | 11 | Kadwa River Works. { Pálkhed Canal. Ojhar Tánbat Canal. Wadáli Canal. | 7,228 | Reliable | Wághad Tank completed. | Ghát catchment. |
| | | | 550 | | | |
| | | | 970 | | | |
| Ahmednagar | 12 | Pravara River Works—Lákh Canal. | 582 | Reliable for monsoon rabi. | Storage work at Lake Arthur Hill in progress. | Ghát catchment. |
| Poona | 13 | Mutha Canals including Mátoba Tank. | 49,000 | Reliable | Lake Fife completed. | Ghát catchment. |
| Sholápur | 14 | Ekruk Tank | 13,070 | Dependent on local rain. | Completed | Deccan catchment. |
| Sátára | 15 | Krishna Canal | 6,412 | Reliable | Proposed | Ghát catchment. |

| Collectorate | Number. | Names of Works. | Area of four months' crops which could be irrigated in normal years with a duty at the head of the Canal of 121 acres for the monsoon season and 120 acres for the rabi season per cuasec. | Whether Supply is reliable or dependent on local rain. | Storage Works completed or proposed. | Remarks. |
|----------------|---------|--|--|--|--|---|
| | | MINOR WORKS AND NAVIGATION. | Acres. | | | |
| Kaira | 16 | Wangroli Tank | 3,000 | Dependent on local rain. | Completed | Ordinary catchment on sloping ground. |
| | 17 | Tránza-Nagránna Tank | 800 | Do. | Do. | Tránza Tank has no independent catchment. Nagránna Tank has a catchment of 1-50 sq. miles. Both are fed by the Matar Drainage channel which is not at all reliable. |
| | 18 | Savli Tank | 2,000 | Do. | Do. | Ordinary catchment on sloping ground. |
| | 19 | Seiat do. | 2,000 | Do. | Do. | Ordinary catchment on flat ground. |
| East Khándesh. | 20 | Hartála do. | 978 | Do. | Do. | Deccan catchment. |
| | 21 | Mhasva do. | 3,256 | Do. | Do. | Do. |
| | 22 | Jámda Canals | 42,000 | Girna River supply not reliable. | Storage Tanks on the Girna, the Manad and the Pánjan Rivers under contemplation. Water is issued from the Chaukápúr Tank when available. | Ghát catchment for a small part and for the rest Deccan catchment. |
| Násik | 23 | Parsul Tank | 3,400 | Dependent on local rain. | Completed | Deccan catchment. |
| Ahmednagar | 24 | Pravara River Works—Pravara Left Bank Canal. | 6,852 | Do. | Storage work at Lake Arthur Hill in progress. | Ghát catchment. |
| | 25 | Bhátodi Tank | 1,461 | Do. | Completed | Deccan catchment. |
| Poona | 26 | Kásurdi do. | 150 | Do. | Do. | Do. |
| | 27 | Shirsuphal do. | 1,350 | Do. | Do. | Do. |
| | 28 | Bhádálvádi do. | 1,800 | Do. | Do. | Do. |
| Sholápur | 29 | Koregaon do. | 416 | Do. | Do. | Hilly catchment. |
| | 30 | Ashti do. | 3,382 | Do. | Do. | Deccan catchment. |
| | 31 | Pathri do. | 3,094 | Do. | Do. | Do. |
| Sátára | 32 | Rewári Canal | 439 | Do. | Nil | Do. |
| | 33 | Upper Mán River Works. | 873 | Do. | Pingli Tank completed. | Do. |
| | 34 | Yerla River Irrigation Works. | 1,152 | Do. | Nehr do. | Do. |
| | 35 | Chikhli Canal | 355 | Do. | Nil | Do. |
| Bijápur | 36 | Maini Tank | 455 | Do. | Completed | Do. Supply from catchment is good. |
| | 37 | Muchkundi Tank | 750 | Do. | Do. | Deccan catchment. |
| Belgaum | 38 | Gadikeri do. | 418 | Do. | Do. | Supply reliable. |
| | 39 | Gokák Canal, 1st Section. | 10,857 | Reliable | Rabi Storage only | Ghát catchment. |
| Dhárwar | 40 | Dámbal Tank | 531 | Dependent on local rain. | Completed | Deccan catchment. |
| | 41 | Medleri do. | 231 | Do. | Do. | Do. |
| | 42 | Asundi do. | 303 | Do. | Do. | Do. |
| | 43 | Madag do. | 1,418 | Do. | Do. | Ghát and forest catchment—reliable. |
| | 44 | Mavinkop do. | 617 | Do. | Do. | Forest catchment reliable. |

Nos. 6, 7, 8, 45 and 46—Máládevi, Budhibal, Nira Right Bank Canal, Victoria Tank and the Dharma Canal Improvements are not included as the works were not in operation in the year under report. No. 43—Gokák Canal, 2nd Section—is in abeyance.

The old Dharma Canal, which is a Second Class Work, will be found described on page 42 of this Report.

Interest Account.

2. The Interest Account to end of the year stands as follows :—

| | Amount. | | | | Amount. | | |
|---|-------------------|-------------------|-------------|---|-------------------|-------------------|-------------|
| | Protective Works. | Productive Works. | Total. | | Protective Works. | Productive Works. | Total. |
| | Rs. | Rs. | Rs. | | Rs. | Rs. | Rs. |
| Total Interest charges to end of 1911-12 | 95,04,177 | 1,59,57,026 | 2,54,61,203 | Net Revenue realized to end of 1911-12 | 28,03,868 | 65,55,661 | 93,59,529 |
| Do. during 1912-13 | 7,34,959 | 4,34,410 | 11,69,369 | Do. during 1912-13 | 4,62,230 | 3,26,520 | 7,88,750 |
| | | | | | 32,66,148 | 68,82,181 | 1,01,48,329 |
| | | | | Balance net Interest charges to end of 1912-13 | 69,72,987 | 95,06,853 | 1,64,79,840 |
| Total end of 1912-13 | 1,02,39,135 | 1,63,91,436 | 2,66,30,571 | Total ... | 1,02,39,135 | 1,63,91,436 | 2,66,30,571 |

3. The gross revenue realised from all sources during the year, after deducting refunds of revenue (Rs. 3,691), was Rs. 14,13,527, of which Rs. 14,01,709 were direct and Rs. 11,818 indirect receipts. The net revenue actually realized was Rs. 9,04,428. The gross revenue shows an increase of Rs. 37,426, while the net revenue shows a decrease of Rs. 3,626.

4. The gross area under command was 12,23,014 acres and the area irrigable at present is 4,24,534 acres.

5. The financial results of the year by main heads were as follows :—

| | Area irrigated. | Revenue realised. | | | Working expenses. | Net Revenue. |
|--|-----------------|-------------------|------------------------|-----------|-------------------|--------------|
| | | Direct Receipts. | Share of Land Revenue. | Total. | | |
| | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. |
| <i>Class I.—Works for which Capital and Revenue Accounts are kept.</i> | | | | | | |
| Major Works. { Protective Works. | 1,11,556 | 6,59,208 | ... | 6,59,208 | 1,96,928 | 4,62,280 |
| { Productive Works. | 40,037 | 5,37,603 | 4,109 | 5,41,712 | 2,15,192 | 3,26,520 |
| Total ... | 1,51,593 | 11,96,811 | 4,109 | 12,00,920 | 4,12,120 | 7,88,800 |
| Minor Works | 48,862 | 2,04,898 | 7,709 | 2,12,607 | 96,979 | 1,15,628 |
| Total, Class I ... | 2,00,455 | 14,01,709 | 11,818 | 14,13,527 | 5,09,099 | 9,04,428 |

The area shown as irrigated includes 3,090 acres on which a consolidated land and water assessment has been and is proposed to be levied. This is derived from old works on which expenditure on improvements only has been incurred.

6. The figures showing areas irrigated, revenue assessed and realised, and working expenses, as compared with former years, are as follows :—

Areas irrigated.

| Years. | Area irrigated. | Revenue. | | Working Expenses. |
|-----------------------|-----------------|-------------|--------------|-------------------|
| | | Assessment. | Realization. | |
| | | Rs. | Rs. | |
| 1902-1903 | 99,290 | 7,73,444 | 7,46,315 | 3,33,847 |
| 1903-1904 | 87,819 | 7,78,638 | 8,63,048 | 3,08,124 |
| 1904-1905 | 131,905 | 8,45,905 | 6,65,237 | 3,56,124 |
| 1905-1906 | 105,716 | 8,93,325 | 8,47,811 | 3,57,670 |
| 1906-1907 | 108,787 | 9,47,167 | 8,58,820 | 3,67,062 |
| 1907-1908 | 130,808 | 10,87,554 | 11,01,106 | 3,80,332 |
| 1908-1909 | 142,928 | 10,99,014 | 10,67,329 | 3,89,423 |
| 1909-1910 | 145,155 | 11,22,916 | 12,55,165 | 4,16,046 |
| 1910-1911 | 123,356 | 10,95,369 | 12,51,247 | 4,38,524 |
| 1911-1912 | 142,934 | 12,31,017 | 13,76,101 | 4,63,047 |
| Average for ten years | 121,870 | 9,97,435 | 10,03,218 | 3,82,120 |
| 1912-1913 | 197,365 | 15,83,168 | 14,13,527 | 5,09,099 |

The increase of 54,431 acres in the total area irrigated as compared with the previous year was distributed over the several classes of works as follows :—

| | Acres. |
|------------------|----------|
| Protective Works | + 41,857 |
| Productive „ | + 4,508 |
| Minor „ | + 8,066 |
| Total | + 54,431 |

The variations in the areas irrigated may be remarked upon as follows :—

Central Division.

The Protective Works and the Minor Works show an increase of 41,857 and 2,554 acres respectively over the areas irrigated in the preceding year. This was due to the extension of irrigation under the Godavari and the Pravara Canals and to the heavy demands for irrigation owing to scanty rainfall.

The Productive Works irrigated 4,336 acres less than in the preceding year. The decreases under the Ekruk Tank, Palkhed Canal and the Lower Panjhra River Works are chiefly responsible for this deficiency. The Ekruk Tank stood at a low level to begin with, and the replenishment it received was very insufficient. Consequently rabi irrigation under the tank had to be disallowed, in order to allow of the requisite reserve of storage for the Sholapur Water Works and the Mills. The favourable rainfall in the Násik and West Khándesh Districts caused a diminution in the demand for canal water.

Southern Division.

As compared with the previous year, the total area irrigated shows a decrease of 2,996 acres. The decrease was both in the kharif and rabi seasons, and is the net result of increases and decreases on several works.

The increase in the kharif area in the case of the Yerla River Irrigation Works was due to large demand for water on account of failure of rain during the season; in the case of the Gokák Canal, the increase resulted from the fact that lands submerged under the tank were cultivated by a large number of original holders under the concession granted by Government Resolution No. 25-W.I.—318, dated 18th February 1898.

There was decrease of area during both the seasons in the case of the Krishna Canal, the Upper Man River Works and the Madag Tank. During the kharif season the irrigation was less under the Rewári and the Chikhli Canals and the Mayni, the Dambal and the Medleri Tanks, and it was less during the rabi season on the Yerla River Irrigation Works and the Gokák

Canal. The copious and timely rainfall and the consequent less demand for water account for the decreases in the case of the Krishna, the Rewári, the Chikhli and the Gokák Canals, the Yerla River Irrigation Works and the Mayni, the Medleri and the Madag Tanks, while in the case of the Upper Mán River Works and the Dambal Tank, the decreases were due to scanty supply of water.

Northern Division.

The rainfall of the year, though above the average, was irregular, and in the beginning of September the monsoon was practically over. As the rain stopped earlier than usual, there was a great deficiency of water for irrigation in October and November 1912. The total area irrigated by both the Háthmathi and Khári Cut Canals was 12,217 acres. The areas irrigated respectively by the Wángroli, Tránza-Nagráma, Sávli and Saiat Tanks were 2,210; 664; 2,902; and 1,422 acres. In the previous year, however, the failure of rain was much more complete, and the only irrigation was 1,473 acres on the Háthmathi Canal and 588 acres under the Wángroli Tank.

Collections of Revenue. 7. The state of the collections was as follows:—

| | | | | Rs. |
|---|-----|-----|-----------|------------------|
| Balance of demands unrealized at the commencement of the year | ... | ... | ... | 1,11,313 |
| | | | | Rs. |
| Demands of the year— | | | | |
| Rabi, 1911-12 | ... | ... | ... | 2,92,746 |
| Kharif, 1912-13 | ... | ... | ... | 8,84,418 |
| Miscellaneous receipts | ... | ... | ... | 2,91,825 |
| | | | | <u>14,68,989</u> |
| | | | Total | 15,80,302 |
| Remissions | ... | ... | ... | <u>—4,193</u> |
| | | | Net Total | 15,76,109 |
| Amount unrealized at the close of the year | ... | ... | ... | <u>1,70,709</u> |
| Actual receipts of the year | ... | ... | ... | 14,05,400 |
| Add— | | | | |
| Share of Land Revenue | ... | ... | ... | 11,818 |
| | | | | <u>14,17,218</u> |
| Deduct— | | | | |
| Refunds of Revenue | ... | ... | ... | 3,691 |
| Revenue realized as per paras. 3, 5 and 6 | ... | ... | ... | <u>14,13,527</u> |

The remissions and refunds together amount to Rs. —502. The amount unrealized at the close of the year, *viz.*, Rs. 1,70,709 is considerably more than that at the close of the last year; the total is made up as follows:—

| | | | | Rs. |
|--|-----|-----|-------|-----------------|
| 1 Háthmathi Canal, including Khári Cut | ... | ... | ... | 48,815 |
| 2 Godávari Canal | ... | ... | ... | 47,649 |
| 3 Mutha Canals, including Matoba Tank | ... | ... | ... | 41,062 |
| 4 Sávli Tank | ... | ... | ... | 8,544 |
| 5 Krishna Canal | ... | ... | ... | 5,646 |
| 6 Pravara River Canal | ... | ... | ... | 4,947 |
| 7 Wángroli Tank | ... | ... | ... | 4,631 |
| 8 Saiat Tank | ... | ... | ... | 2,173 |
| 9 Pravara Left Bank Canal | ... | ... | ... | 1,905 |
| 10 Tránza-Nagrámma Tank | ... | ... | ... | 1,295 |
| 11 Nira Canal, including Shetphal Tank | ... | ... | ... | 1,127 |
| 12 Lower Pánjhra River Works | ... | ... | ... | 864 |
| 13 Parsul Tank | ... | ... | ... | 699 |
| 14 Jámda Canals | ... | ... | ... | 645 |
| 15 Kádva River Works | ... | ... | ... | 596 |
| 16 Other Works | ... | ... | ... | 111 |
| | | | Total | <u>1,70,709</u> |

The remarks made by the Superintending Engineers regarding the amounts outstanding are given below :

Superintending Engineer, Central Division.

The unrealised balance of revenue at the close of the year was Rs. 44,911 as detailed below, as compared with Rs. 45,158 in the previous year :—

| | | | | Rs. |
|-------------------------------------|-----|-----|-----|--------|
| Mutha Canals including Matoba Tank | ... | ... | ... | 23,032 |
| Godávari Canals | ... | ... | ... | 7,445 |
| Pravara Right Bank Canal | ... | ... | ... | 4,947 |
| Pravara Left Bank Canal | ... | ... | ... | 1,970 |
| Nira Canal, including Shetphal Tank | ... | ... | ... | 1,497 |
| Bhatodi Tank | ... | ... | ... | 920 |
| Other Works | ... | ... | ... | 5,100 |
| | | | | 44,911 |

Of this the sum of Rs. 23,716 has been recovered since the close of the year and steps are being taken in the Civil Department to recover the balance.

Superintending Engineer, Southern Division.

The amount unrealised at the close of the year, viz., Rs. 6,034, is less than that at the close of the previous year by Rs. 11,905 and is made up as follows :—

| | | | | Rs. |
|-----------------------|-----|-----|-----|-----------------|
| Krishna Canal | ... | ... | ... | 5,130 |
| Upper Mán River Works | ... | ... | ... | 123 |
| Chikhli Canal | ... | ... | ... | 61 |
| Gokák Canal | ... | ... | ... | 390 |
| Asundi Tank | ... | ... | ... | 17 |
| Madag Tank | ... | ... | ... | 313 |
| | | | | Total ... 6,034 |

The unrealised balances in all the works were considerably reduced. The balance in the case of the Krishna Canal is still large and the Collector of Sátára is being requested to effect recoveries as early as possible.

Superintending Engineer, Northern Division.

The outstanding balances could not be recovered owing to the failure of rains in the latter part of the season ; but they are likely to be recovered during 1913-14.

8. The total working expenses for the year amounted to Rs. 5,03,099 against Rs. 4,68,047 in the previous year, showing an increase of Rs. 41,052 distributed as follows :—

| | | | 1911-12. | 1912-13. | Difference. |
|----------------------------|-----|--------------------|-----------------|-----------------|-----------------|
| | | | Rs. | Rs. | Rs. |
| Major Works— | | | | | |
| Protective Works | ... | ... | 1,49,046 | 1,96,928 | + 47,882 |
| Productive Works | ... | ... | 2,23,004 | 2,15,192 | - 7,812 |
| | | Total | 3,72,050 | 4,12,120 | + 40,070 |
| Minor Works and Navigation | ... | ... | 95,997 | 96,979 | + 982 |
| | | Grand Total | 4,68,047 | 5,03,099 | + 41,052 |

The increases and decreases are explained by the Superintending Engineers as follows :—

Superintending Engineer, Central Division.

The total working expenses amounted to Rs. 4,16,650 against Rs. 3,55,437 in the previous year, showing an increase of Rs. 61,213 distributed as under :—

| | | | | 1911-1912. | 1912-1913. | Difference. |
|----------------------------|-----|-----|--------------------|-----------------|-----------------|----------------|
| | | | | Rs. | Rs. | Rs. |
| Major Works— | | | | | | |
| Protective Works | ... | ... | ... | 1,49,046 | 1,96,928 | +47,882 |
| Productive Works | ... | ... | ... | 1,67,611 | 1,72,022 | +4,411 |
| | | | Total | 3,16,657 | 3,68,950 | +52,293 |
| Minor Works and Navigation | ... | ... | ... | 38,780 | 47,700 | +3,920 |
| | | | Grand Total | 3,55,437 | 4,16,650 | +61,213 |

The increase under works is chiefly made up of increases on the Nira Left Bank Canal (Rs. 5,516) and on the Ekruk Tank (Rs. 3,627). The work on the former consisted of several improvements sanctioned by Government for improving the land affected by salt. The increase on the Ekruk Tank was due to the provision of artesian pipes and to the expenditure incurred in making preliminary arrangements for starting work on an Inspection Bungalow at Dongaon.

Towards the increase under repairs—

| | | | | Rs. |
|---------------------------------|-----|-----|-----|--------|
| The Godávari Canals contributed | ... | ... | ... | 15,526 |
| Mutha Canals | ... | ... | ... | 13,961 |
| Nira Canal | ... | ... | ... | 5,851 |
| Chankápur Tank | ... | ... | ... | 4,756 |

The increase under the Godavari Canals was due to the additional lengths of canal brought under operation. The increase on the Chankápur Tank was due to additional repair works on the Girna Left Bank Canal, which has been brought under operation since 1909-10.

Superintending Engineer, Southern Division.

The total working expenses for the year amounted to Rs. 43,573 against Rs. 56,715 of the previous year and Rs. 52,244, the average of the past three years. The expenditure on the Yerla River Irrigation Works, the Chikhli Canal, the Gokák Canal and the Medleri and the Madag Tanks was greater than that of the previous year. The increase, except in the case of the last two tanks, is negligible. Steps are being taken to reduce the expenditure on the Medleri and Madag Tanks.

9. The following table contrasts the charges under the principal heads with those of the two previous years :—

| | | | | 1910-1911. | 1911-1912. | 1912-1913. |
|--------------------|-----|-----|---|-----------------|-----------------|-----------------|
| | | | | Rs. | Rs. | Rs. |
| Works | ... | ... | ... | 19,353 | 28,381 | 40,009 |
| Repairs | ... | ... | ... | 1,71,147 | 1,85,186 | 2,22,273 |
| Establishment | ... | ... | ... | 1,60,335 | 1,61,604 | 1,55,775 |
| Tools and Plant | ... | ... | ... | 13,013 | 11,611 | 11,294 |
| | | | Total in the Public Works Department | 3,63,908 | 3,86,782 | 4,29,351 |
| Collection Charges | ... | ... | ... | 52,161 | 58,230 | 57,432 |
| Indirect Charges | ... | ... | ... | 22,455 | 23,035 | 22,316 |
| | | | Total | 4,38,524 | 4,68,047 | 5,01,099 |

The establishment charges, divided between "Direction and Accounts" and "Executive," compare as follows with those for the previous year:—

| | | | 1911-1912. | 1912-1913. | Difference. |
|------------------------|-----|-----|------------|------------|-------------|
| | | | Rs. | Rs. | Rs. |
| Direction and Accounts | ... | ... | 12,136 | 11,294 | —842 |
| Executive | ... | ... | 1,49,468 | 1,44,481 | —4,987 |
| Total | ... | ... | 1,61,604 | 1,55,775 | —5,829 |

10. The following table gives the details of the working expenses of some of the principal works:—

| Name of Works. | Average incidence of water-rate per acre. | Cost of measurement. | | Working expenses total in the Public Works Department excluding indirect charges. | |
|---|---|------------------------|-----------|---|---------------------|
| | | Total cost. | Per acre. | Per mile of main canal. | Per acre irrigated. |
| | | Rs. | Rs. a. p. | Rs. | Rs. |
| <i>Canals.</i> | | | | | |
| Nira Canal, including Shetphal Tank ... | 9-66 | 1,403 | 0 0 5 | 892-60 | 1-71 |
| Háthmati and Khári Cut Canals ... | ... | Figures not available. | | | |
| Kádwa River Works ... | 6-68 | ..... | 0 1 11 | 296-60 | 3-34 |
| Lákh Canal ... | 1-72 | ..... | 0 0 9 | 103-96 | 0-79 |
| Mutha Canals, including Mátoba Tank... | 15-36 | 656 | { 0 0 7 } | 518-66 | 3-49 |
| Krishna Canal ... | 7-56 | 768 | 0 3 4 | 135-73 | 2-37 |
| Jámda Canals ... | 2-40 | ..... | 0 0 10 | 313-00 | 2-50 |
| Pravara Left Bank Canal ... | 2-56 | ..... | 0 1 2 | 340-68 | 0-80 |
| Gokák Canal, 1st Section ... | 4-32 | 1,095 | 0 2 0 | 266-71 | 1-54 |
| Upper Mán River Works ... | 4-08 | 273 | 0 5 10. | 113-60 | 2-63 |
| Revári Canal ... | 4-65 | 271 | 0 4 4 | 178-27 | 1-93 |
| Chikhli do. ... | 5-53 | 95 | 0 5 10 | 122-61 | 3-08 |
| Yerla River Irrigation Works. | 4-12 | 662 | 0 2 4 | 206-90 | 1-54 |
| <i>Tanks.</i> | | | | | |
| Mhaswad Tank... | 5-24 | ..... | 0 0 9 | 250-72 | 1-67 |
| Ekruk do. ... | 8-44 | ..... | 0 1 0 | 359-64 | 6-55 |
| Bhátodi do. ... | 4-80 | ..... | ..... | 608-00 | 7-60 |
| Maini do. ... | 3-99 | 365 | 0 3 9 | 284-64 | 1-68 |

11. The gross assessed revenue, direct and indirect, as shown in Statements IV-C and II-E accompanying the Irrigation Administration Report for 1912-1913 was Rs. 15,83,168. If Rs. 47,601, being the difference between the value at normal rates of water issued from the Mutha Canals and the value of water supplied at special reduced rates or gratuitously for water-supply to various institutions in the Poona City, be added to the above amount, the total assessed revenue, both direct and indirect, of the year will be Rs. 16,30,769.

The details of the gross assessment were as follows :—

| | Direct Revenue. | | | Indirect Revenue. | Total. |
|----------------------|-----------------|-----------------|-----------|-------------------|-----------|
| | Water-rates. | Other receipts. | Total. | | |
| | Rs. | Rs. | Rs. | Rs. | Rs. |
| Major Works— | | | | | |
| Protective Works ... | 7,85,494 | 11,673 | 7,97,167 | ... | 7,97,167 |
| Productive Works ... | 3,22,073 | 2,36,449 | 5,58,522 | 4,109 | 5,62,631 |
| Total ... | 11,07,567 | 2,48,122 | 13,55,689 | 4,109 | 13,59,798 |
| Minor Works ... | 1,71,958 | 43,703 | 2,15,661 | 7,709 | 2,23,370 |
| Grand Total ... | 12,79,525 | 2,91,825 | 15,71,350 | 11,818 | 15,83,168 |

12. The net assessed revenue of the year, after deducting working expenses, including indirect and all other charges, and neglecting the items amounting to Rs. 47,601 referred to in the preceding paragraph, was Rs. 10,74,069 as compared with Rs. 8,62,970 in 1911-12.

13. The water-rates in force during the year are shown in Statement I-F accompanying the Irrigation Administration Report for 1912-13, in the remarks column of which the orders sanctioning them are quoted.

14. The average water-rates per acre of land actually irrigated were :—

| | 1911-12. | 1912-13. |
|----------------------|----------|----------|
| | Rs. | Rs. |
| Protective Works ... | 7.90 | 7.04 |
| Productive Works ... | 10.71 | 8.04 |
| Minor Works ... | 3.85 | 3.52 |

15. The water-rate assessments and other receipts compare with those of the previous year as under :—

| | 1911-12. | 1912-13. |
|---------------------------|-----------|-----------|
| | Rs. | Rs. |
| Water-rates ... | 10,63,980 | 12,79,525 |
| Other Receipts— | | |
| Plantations ... | 13,311 | 8,951 |
| Water-power ... | 14,151 | 14,818 |
| Water-supply to towns ... | 1,57,799 | 1,72,662 |
| Miscellaneous ... | 69,285 | 95,899 |
| Total ... | 2,54,546 | 2,91,825 |
| Share of land-revenue ... | 12,491 | 11,818 |
| Total ... | 2,67,037 | 3,03,643 |
| Grand Total ... | 13,31,017 | 15,83,168 |

The above comparison shows increases under water-rates, miscellaneous receipts and water-power and water-supply to towns and decreases under plantations and share of land-revenue.

The increase under water-rates was due to the increased area irrigated and that under "water-supply to towns" to the increased amounts paid by the Poona City Municipality. The decrease under plantation was on the Pravara Left Bank Canal and calls for no special remarks.

16. The principal crop acreages irrigated during 1911-12 and 1912-13 were as follows:—

| Crop acreages. | 1911-12. | 1912-13. | Increase or decrease. |
|----------------------|----------|----------|-----------------------|
| | Acres. | Acres. | Acres. |
| Gardens and Orchards | 2,419 | 2,706 | +287 |
| Sugarcane | 19,021 | 15,210 | -3,811 |
| Wheat | 23,913 | 33,991 | +10,078 |
| Rice | 2,685 | 16,172 | +13,587 |
| Maize | 3,356 | 5,738 | +2,382 |
| Jowári | 35,914 | 45,921 | +10,007 |
| Báji | 15,666 | 22,238 | +6,572 |
| Gram, etc. | 8,043 | 13,630 | +5,587 |
| Groundnut | 10,175 | 16,105 | +5,930 |
| Condiments | 4,816 | 3,697 | -1,119 |
| Cotton | 3,486 | 1,392 | -2,094 |
| Fodder | 388 | 4,172 | +3,784 |

The total estimated value of crops is shown as Rs. 1,23,54,219 against Rs. 1,13,95,618 in the previous year and Rs. 94,34,926 for the year 1910-11. But these estimated crop values must be regarded as only roughly approximate, there being no uniform method of estimating them.

17. In Statement I-E accompanying the Irrigation Administration Report for 1912-13, the duty of water on each work, as well as the bases on which the duties were calculated, etc., are shown. The results vary with the nature of the crops irrigated, perennial crops requiring much more water than cereals. To obtain a correct comparative result it is necessary to consider the area of each class of crop grown under the canals concerned. Statement G affords means for such a comparison.

DETAILED REPORTS BY LOCAL OFFICERS.

GUJARAT IRRIGATION DISTRICT.

MAJOR WORKS.

Works without storage and dependent on local rain.

The area irrigated, net assessment, average water-rate and working expenses under the Háthmati and Khári Cut Canals compare with the average of those of the three preceding years as under :—

| Year. | Kharif. | | Rabi. | | Total. | | Average water-rate assessed per acre. | Working expenses. |
|------------------------|---------|--------|--------|-------|--------|--------|---------------------------------------|-------------------|
| | Acres. | Rs. | Acres. | Rs. | Acres. | Rs. | | |
| Average of 3 years ... | 10,297 | 58,026 | 4,555 | 8,912 | 14,852 | 66,938 | 3-62 | 41,390 |
| 1912-13 ... | 10,079 | 32,407 | 2,138 | 3,397 | 12,217 | 35,804 | 2-93 | 34,947 |

The Háthmati Canal was run full only on the 17th July when a small flood came down the Háthmati river, and it stopped flowing in December. The Bokh Reservoir filled to its F. S. L. this year.

The miscellaneous revenue realised was Rs. 2,593 against Rs. 3,808 in the previous year. The decrease is attributable to the sale of a smaller number of babul trees, fewer pods and less grass, etc.

The remissions of Rs. 13,392 in the kharif and Rs. 506 in the rabi season were granted owing to the partial failure of the crops on account of the deficiency of supply.

The gross revenue which amounted to Rs. 38,397 exceeded the working expenses by Rs. 3,450.

The rainfall gauged at Ahmednagar at the head of the Háthmati Canal was 24-89 and 0-19 inches respectively in the kharif and rabi seasons, while at Raipur, at the head of the Khári Cut Canal, it was 35-49 and 0-20 inches respectively.

MINOR WORKS AND NAVIGATION.

Works with storage tanks dependent on local rain.

The area irrigated, net assessment and working expenses under the Tranza-Nagrama, Wangroli, Savli, and Saiat tanks compare with the average of those of the previous three years as under :—

| Tanks. | Year. | Kharif. | | Rabi. | | Total. | | Working expenses. |
|----------------|-----------------------|---------|-------|--------|-------|--------|-------|-------------------|
| | | Acres. | Rs. | Acres. | Rs. | Acres. | Rs. | |
| Tranza-Nagrama | Average of 3 years... | ... | ... | ... | ... | ... | ... | 2,992 |
| | 1912-13 | 438 | 1,285 | 226 | 439 | 664 | 1,724 | 2,197 |
| Wangroli | Average of 3 years... | 273 | 858 | 157 | 447 | 430 | 1,305 | 7,430 |
| | 1912-13 | 1,372 | 5,125 | 837 | 1,945 | 2,209 | 7,070 | 4,557 |
| Savli | Average of 3 years... | 579 | 2,331 | 429 | 487 | 1,008 | 2,818 | 3,660 |
| | 1912-13 | 1,762 | 7,014 | 1,140 | 2,259 | 2,902 | 9,303 | 3,683 |
| Saiat | Average of 2 years... | 197 | 767 | 11 | 43 | 208 | 810 | 3,928 |
| | 1912-13 | 775 | 2,922 | 647 | 1,783 | 1,422 | 4,705 | 3,686 |

(16) WANGROLI TANK.

This tank filled almost up to F. S. L., and the supply available was fully utilized for irrigating the kharif and rabi crops.

The miscellaneous revenue amounted to Rs. 253-6-0 against Rs. 93 in the previous year, due to the irrigation of a larger area in the tank bed.

No remissions were granted.

The rainfall gauged in the tank catchment was 34.71 and 0.35 inches respectively in the kharif and rabi seasons.

(17) TRANZA-NAGRAMA TANKS.

These tanks filled almost up to F. S. L.

The miscellaneous revenue amounted to Rs. 486, against Rs. 26 in the previous year. The increase was due to the sale of babul trees, and the right of cultivation of the land in the tank beds to a greater extent than usual.

No remissions were granted.

The rainfall gauged in the Nagrama Tank catchment was 44.42 and 0.06 inches respectively in the kharif and rabi seasons.

(18) SAVLI TANK.

This tank was full up to its provisional F. S. L., *i. e.*, 5 feet below the proper F. S. L., and the supply available was fully utilized for irrigating the kharif and rabi crops.

The miscellaneous revenue amounted to Rs. 548 against Rs. 53 in the previous year due to the irrigation of a larger area in the tank bed.

No remissions were granted.

The rainfall gauged in the tank catchment was 31.69 and nil inches respectively in the kharif and rabi seasons.

(19) SAIAT TANK.

This tank very nearly filled and the water was fully utilized for both the kharif and rabi crops.

The miscellaneous revenue amounted to Rs. 154 against Rs. 3 in the previous year due to the irrigation of a larger area in the tank bed.

No remissions were granted.

The rainfall gauged in the tank catchment was 29.08 inches and nil respectively in the kharif and rabi seasons.

POONA IRRIGATION DISTRICT.

Works with Ghat Storage.

(4)—NIRA CANAL AND SHETPHAL TANK.

The rainfall at Bhatghar during the year (January to December 1912) was 48.99 inches against 26.81 inches during 1911-12 and an average of 34.06 for the past three years. The rainfall at stations along the canal and at Shetphal Tank was fairly good as shown in the following statement :—

| Station. | Rain during 1912. | Average rainfall during the past 3 years. |
|-----------------|-------------------|---|
| Pimpra | 16.25 | 15.31 |
| Barámati | 13.58 | 21.45 |
| Nimbgaon | 14.77 | 18.11 |
| Shetphal | 14.55 | 17.87 |

The level of water in Lake Whiting on the 31st March 1913 was 65.50 which compares very favourably with the levels on the corresponding dates of the previous 3 years, namely 57.90 in 1912, 61.40 in 1911, and 57.80 in 1910.

The Lake began to receive replenishment from the 20th of June when there was a 39.80 feet depth of water, the corresponding contents being 406 million cubic feet.

As the weather conditions in the catchment appeared uncertain, only a few undersluices were opened now and then, after 2nd July, to pass the flood discharge, but they could not be kept continuously open owing to low rainfall. They were finally closed on the 15th July, when the depth was 45.40 feet.

The Lake then took only 5 days to fill to the crest of the weir, *i.e.*, 75 feet above the sill of the undersluices, and the overflow commenced on the 20th July.

The regular draw-off for the canal commenced on 11th November, when the water level in the Lake was 82.90 feet.

The following table gives the average discharge at the head of the Nira Canal for each month:—

| Month. | Discharge in cusecs. | Month. | Discharge in cusecs. |
|-------------|----------------------|-------------------------------|----------------------|
| April 1912 | 136 | January 1913 | 223 |
| May " | 124 | February " | 167 |
| June " | 216 | March " | 161 |
| July " | 349 | | |
| August " | 377 | | |
| September " | 349 | Total | 3,110 |
| October " | 357 | | |
| November " | 319 | Monthly average at canal head | 259 |
| December " | 332 | | |

The Shetphal Tank reached its lowest level, namely, 8.30, on 16th June 1912 after which it received replenishment from the Nira Canal. The greatest depth of water 36.50 was reached on the 26th October 1912. The supply was satisfactory during the Rabi season, and the level on 31st March 1913 was 26.10.

The areas of irrigated crops and the assessment thereon during the year under report are the largest on record. They are compared with the figures for the past 3 years in the subjoined table:—

| Year. | Kharif. | Rabi. | Total. | Water-rate assessment. |
|-----------------------|---------|--------|--------|------------------------|
| | Acres. | Acres. | Acres. | Rs. |
| <i>Nira Canal.</i> | | | | |
| 1909-10 | 21,715 | 19,931 | 41,646 | 2,97,333 |
| 1910-11 | 17,393 | 18,341 | 35,734 | 2,66,477 |
| 1911-12 | 27,129 | 9,314 | 36,443 | 3,79,816 |
| 1912-13 | 22,592 | 25,384 | 47,976 | 4,64,174 |
| <i>Shetphal Tank.</i> | | | | |
| 1909-10 | 1,756 | 786 | 2,492 | 18,113 |
| 1910-11 | 1,396 | 832 | 2,228 | 18,694 |
| 1911-12 | 2,303 | 475 | 2,784 | 38,824 |
| 1912-13 | 1,966 | 2,457 | 4,423 | 42,105 |

The total area under sugarcane was 7,949 against 9,439 of the previous year. In the year 1911-12 the sugarcane area was abnormally high owing to surplus water being then available for new plantations outside blocks. The area in 1910-11 was 7,541 acres and is approximately the same as in 1912-13.

The total area irrigated during the year under report far exceeds the figures in the past and the large increase is due partly to increased storage consequent on favourable rainfall and partly to efficient management in the distribution of water. The Rabi season was more favourable than the Kharif.

The total culturable area under command of the Nira Canal including the Shetphal Tank is 227,670 acres, of which 10·8 per cent. were irrigated in the Kharif season and 12·2 per cent. in the Rabi season, the corresponding percentages for the previous year being 12·93 and 4·29 respectively.

The gross assessed revenue amounted to Rs. 5,10,752, of which Rs. 5,06,279 was from water-rates and Rs. 4,473 from other sources, the corresponding figures for the previous year being Rs. 4,22,718, 4,18,640 and 4,078 respectively.

The total working expenses amounted to Rs. 1,20,072 against Rs. 1,04,256 in the previous year. The rate of maintenance and administration, etc., was thus Rs. 2·29 per acre irrigated and compares favourably with Rs. 2·65 in the previous year.

The revenue derived this year is the highest on record and is partly due to enhanced rates and partly to the vigilant measures taken to economise water.

The cost for measuring the irrigated area amounted to Rs. 1,403 which works out to 5 pies per acre.

(13) MUTHA CANALS INCLUDING MATOBA TANK.

The rainfall at Lake Fife during the year was 39 inches 53 cents against 20 inches 92 cents of the previous year, the average for the past 3 years being 30·39.

The rainfall at the 5 representative stations—two in the catchment of the Lake and two on the Right Bank Canal and one on the Matoba Tank, is compared with the average for the past 3 years in the following table:—

| Stations. | Rainfall 1912-13. | Average of 3 years past. |
|-------------------------------|----------------------|--------------------------------|
| Mussa | 127·08 | 101·34 |
| Mutha | 85·89 | 62·11 |
| Poona Sassoon Hospital | 26·69 | 22·72 |
| Kedgaon | 13·13 | 12·85 |
| Matoba Tank | 12·44 | 11·66 |

On the 31st of March 1913 there was 22·54 feet of water in the Lake above the sill of the canal sluices.

The lowest water level in the Lake was 6·69 feet on the 20th of June 1912. The replenishment commenced on the same date and the Lake overflowed on the 22nd July. The highest level reached was 34·50. The regular draw-off commenced on 3rd December. On 1st April 1913 the level stood at 22·42 against 17·47 on the same date of the previous year.

The Matoba Tank was dry up to 27th June 1912 when it received its first replenishment. The highest level reached was 25·25 above the sill level on the 19th August against 27·35 of the previous year. The tank again became dry on 9th February 1913.

The area irrigated from the Mutha Canals during the year under report was 10,474 acres against 11,192 acres in the previous year. Of this, 9,788 acres were irrigated during the Kharif and 686 during the Rabi season. The area of sugarcane was 3,970 against 4,943 in the previous year, the total area under perennial during the two years being 5,186 and 6,075 acres

respectively. The area irrigated under Matoba was 1,652 acres during the Kharif and 936 during the Rabi, against 1,631 and 1,206 acres respectively in the previous year, the area under perennial being 358.

The total assessed revenue from the Mutha Canals and Matoba Tank combined was Rs. 3,70,752 made up of Rs. 2,00,652 from irrigation and Rs. 1,70,100 from other sources. The latter figure includes Rs. 1,60,172 from the Poona Water Supply. The corresponding figures for the previous year were Rs. 3,74,649 and 2,21,516 and 1,53,133 respectively.

The actual cost of measuring crops amounted to Rs. 656, the average rate per acre coming to 10 pies against 1 anna in the previous year.

The working expenses, excluding the charges on account of the Poona Water Supply amounted to Rs. 48,842 which gives a rate of 3.74 per acre against 4.50 of the previous year. The total working expenses, including Poona Water Supply, amounted to Rs. 1,23,409 against 1,17,261 of the previous year.

The assessed revenue from water supply to the Poona City and Cantonment amounted to Rs. 1,60,172 against 1,38,125 of the previous year. The average daily supply of filtered water delivered into the mains from the water works was 1,228,201 gallons.

Water was supplied either gratis or at reduced rates to certain charitable and other institutions in the Poona Cantonment and suburbs in accordance with Government orders, the loss of revenue thus caused being Rs. 6,273.

Storage works dependent on local rain.

The subjoined table gives a comparison of rainfall, irrigated areas and the financial results of the year with the average figures for the previous 3 years for the Kasurdi, Shirsuphal and Bhadalvadi Tanks:—

| Particulars. | Kasurdi. | | Shirsuphal. | | Bhadalvadi. | | Remarks. |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| | During the year 1912-13. | Average of past 3 years. | During the year 1912-13. | Average of past 3 years. | During the year 1912-13. | Average of past 3 years. | |
| Rainfall | 13.23 | 14.97 | 9.24 | 14.51 | 7.27 | 16.73 | fresh silt cross sections were taken since the figures were last reported. Hence the alterations in the figures of contents. |
| Full supply capacity above sill of outlet ... M.c.ft. | 9.14 | | 356.64 | | 196.76 | | |
| Storage at highest level reached during the year ... M.c.ft. | 9.14 | | 36.19 | | 118.81 | | |
| Irrigated area—Kharif ... Acres. | 11 | 57 | 58 | 301 | 622 | 274 | |
| Do. Rabi | 46 | 45 | 489 | 672 | 503 | 1,348 | |
| Total .. Acres. | 57 | 102 | 547 | 973 | 1,125 | 1,620 | |
| Gross assessed Revenue | Rs. 640 | Rs. 509 | Rs. 4,672 | Rs. 3,208 | Rs. 5,112 | Rs. 3,873 | |
| Working expenses | 564 | 624 | 1,908 | 2,223 | 2,791 | 2,782 | |
| Net assessed Revenue | 76 | —115 | 2,764 | 980 | 2,321 | 1,091 | |

(26) KASURDI TANK.

The tank was dry upto the 13th July when it received its first replenishment. The supply rose and fell in the tank until it overflowed on the 7th October. It kept its full supply level up to 28th October and became empty on the 26th December.

(27) SHIRSUPHAL TANK.

The tank was dry up to 11th June 1912 when it began to receive replenishment, but the greatest depth was only 1.40 in July and the tank became dry on the 20th August. Another rise of 1.80 ft. occurred in October. The tank finally dried up on the 10th December 1912.

(28) BHADALVA'DI TANK.

The tank was dry up to 27th May 1912 when it received its first replenishment. The level rose up to 16th June when it was 19.62 above the sill of outlet. The tank was dry again from 21st September to 4th October. On 9th October the water rose to 26.70 above the sill of the outlet. The tank became dry finally at the end of the Rabi season. The actual depth of water in the tank was comparatively small as the silt is now 14.5 feet above sill of outlets.

SHOLA'PUR DISTRICT.

Storage Works with Deccan Catchment.

(5) MHASWAD TANK.

At the commencement of the year the water in the tank stood at 10.31 feet above the sill of outlet, the contents being 726.55 million cubic feet. The level gradually fell to 1.85 feet corresponding to 89.35 million cubic feet of storage on the 15th September. Thereafter the water rose gradually and with some fluctuations reached the maximum of 12.30 feet above sill of outlet on the 17th October 1912, the contents being 938.63 million cubic feet. The waste weir is 24 feet above sill. The tank ran dry on the 10th March 1913. The average rainfall gauged at the five stations in the catchment of 480 square miles from the 1st June 1912 to the 31st October 1912 was 10.71 inches and the replenishment received was 1,279 million cubic feet, the proportion of run off to the rainfall over the catchment being 10.71 per cent.* or $\frac{1}{9}$.

The total area irrigated during the year was 9,802 acres against the average of 7,524 acres of the preceding triennium. The increase of 2,278 acres was due to the scarcity of rain and the consequent increased demand for canal water.

The gross assessed revenue from all sources amounted to Rs. 54,885 against the average of Rs. 41,721 of the preceding three years. The increase of Rs. 13,164 is due to the increase in the area irrigated as well as to enhanced rates.

The working expenses amounted to Rs. 20,806 against Rs. 17,876, the average of the preceding triennium.

The rabi lease system was introduced on this tank in 1911 but some of the cultivators who then entered into leases probably through sheer necessity are now endeavouring to be freed from them again. Where the tank supply is precarious, as in this case, the lease system is at best a one-sided arrangement for the cultivators.

(14) EKRUK TANK.

The water level at the beginning of the year stood 26.72 feet above the lowest sill of outlet representing a storage of 1344.23 million cubic feet. It fell to 21.90 feet by the 10th July 1912 and then rose gradually to 24.72 feet (the storage then being 1209.19 million cubic feet) by the 13th August 1912. On the 31st March 1913 the level was 16.85 feet and the storage 583.05 million cubic feet. The waste weir is 38.25 feet above outlet sill.

The mean rainfall gauged at the five stations in the catchment of 159 square miles was from 1st June 1912 to 31st October 1912, 15.77 inches. The total replenishment received was 606.76 million cubic feet, the proportion of run off to rainfall being 10.42 per cent.

* This figure though the same as that of rainfall is correct.

The total area irrigated during the year was 2,634 acres against 4,510 acres, the preceding three years' average. The whole of the decrease is under rabi and is due to there not being water available after reserving the storage required for the Sholápur Water Works and the Mills.

The gross assessed revenue amounted to Rs. 79,660 against Rs. 62,884, the average of the previous three years. This increase in spite of the great decrease in the irrigated area, was due to the recently enhanced rates for irrigation and the non-irrigational supply.

The working expenses amounted to Rs. 19,812 against Rs. 15,185, the average of the preceding triennium. The increase is due to the following works :—

The provision of pipes in the Dam.

Special repairs to the perennial canal miles 19 to 23.

The expenditure incurred on the proposed Inspection bungalow at Dongaon.

(29) KOREGAON TANK.

This tank was dry at the beginning of the year and received its first replenishment on the 17th September 1912, the level ultimately rising to not more than 2.25 feet above the sill of outlet representing a storage of 12.79 million cubic feet by the 25th of October. The tank ran dry again on the 26th December 1912. The small storage available was utilized for rabi irrigation.

The rainfall gauged at Koregaon from June 1912 to 31st October 1912 was 10.62 inches which gave a replenishment of 19.38 million cubic feet, the proportion of run-off to the rainfall in the catchment of 4.40 square miles being 17.85 per cent.

The area irrigated was 40 acres against 659 acres, the average of the preceding triennium. The large decrease is due to the very poor replenishment received.

The gross assessed revenue was Rs. 235 against the average of 2,641 in the preceding three years.

The working expenses amounted to Rs. 2,839 against Rs. 2,116, the average of the previous triennium. The increase is due to the expenditure incurred on certain unusual items such as the provision of Artesian pipes and the extension of the iron trough channel over the tank dam to prevent danger from slips.

(30) ASHTI TANK.

The tank level was at the beginning of the year 14.70 feet above the sill of outlet, representing a volume of 655.23 million cubic feet. It gradually fell till it became 0.37 feet on the 31st March 1913, the corresponding contents being 9.09 million cubic feet. The maximum F. S. L. reached being only 22 feet above outlet sill, the waste weir did not overflow.

The mean rainfall gauged at the two stations in the catchment which has an area of 92 square miles was 10.35 inches giving replenishment of 65.00 million cubic feet, the proportion of run-off to the total rainfall on the catchment being 2.94 per cent.

The area irrigated was 3,763 acres against 3,019 acres, the average of the previous three years. The increase is due to the heavy demands for irrigation due to the scanty rainfall.

The gross assessed revenue amounted to Rs. 26,983 against the average of Rs. 14,838 of the preceding three years. The increase is accounted for both by the increased irrigation and by the recent enhancement of rates.

The working expenses amounted to Rs. 8,250 against Rs. 7,103 the previous three years' average. The increase is due to the expenditure incurred on the following works:—

The construction of a new distributary at Tungat.

Widening the superpassage for the waste weir channel over the Right Bank Canal which had been damaged the previous year.

(31) PATHRI TANK.

At the beginning of the year the water level in the tank was 25.56 feet above the sill of the outlet, the equivalent storage being 237.13 million cubic feet. It gradually fell to 22.86 feet (corresponding volume 184.54 million cubic feet) on the 2nd July 1912 and subsequently rose to a height of 24.86 feet (storage of 222.71 million cubic feet) on 11th August 1912. The lowest level during the year, was 7.75 feet on the 31st March 1913 (storage 31.39 million cubic feet). The waste weir did not overflow.

The mean rainfall gauged at the two stations in the catchment of 27.5 square miles was 10.74 inches which gave a total replenishment of 34.24 million cubic feet, the proportion of run-off to rainfall being 4.99 per cent.

The area irrigated was 1,593 acres against 1,086 acres, the previous three years' average. The increase is mainly due to the fact that use of canal water was largely resorted to owing to the scarcity of rain and partly to the extension of irrigation.

The total gross assessed revenue amounted to Rs. 7,154 against Rs. 4,580, the average of the previous triennium. The increase is due to increased irrigation and enhancement of rates.

The working expenses amounted to Rs. 2,395 against Rs. 2,903, the average of the preceding three years.

AHMEDNAGAR DISTRICT.

Works with storage tanks dependent on local rain.

(25) BHATODI TANK.

The tank is on the Mehekari River. It is a small tank with a capacity at F. S. L. of 92.7 million cubic feet and depends solely on local rains for its supply, which generally suffices for the monsoon and a part of the rabi season.

The tank was empty until 29th June 1912, when it received its first replenishment, the water rising to R. L. 83.80. The highest level of water in the tank during the year was 86.95, viz., 17 feet above the outlet sill (R. L. 70.00) or 13 feet below the top of dam (R. L. 100.00) on the 15th August 1912. Water did not top the waste weir during the year. The tank was dry on the 25th September 1912 but was again replenished on the 6th October 1912 when the water level rose to R. L. 80.60. It was again dry on the 3rd January 1913.

The area irrigated during the year, gross assessment from all sources and working expenses under the Bhatodi Tank are given below in comparison with the average of the three preceding years.

| Name of Tank. | Area irrigated. | | | | | | Gross assessment from all sources. | | Working expenses. | | Rainfall. | |
|---------------|------------------------------|----------|------------------------------|----------|------------------------------|----------|------------------------------------|----------|------------------------------|----------|------------------------------|----------|
| | Kharif. | | Rabi. | | Total. | | Average of the past 3 years. | 1912-13. | Average of the past 3 years. | 1912-13. | Average of the past 3 years. | 1912-13. |
| | Average of the past 3 years. | 1912-13. | Average of the past 3 years. | 1912-13. | Average of the past 3 years. | 1912-13. | | | | | | |
| Bhatodi | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Inches. | Inches. |
| | 383 | 260 | 892 | 100 | 1,245 | 360 | 8,338 | 3,490 | 3,864 | 2,998 | 22.90 | 12.90 |

This district was famine-stricken in the year 1912-13. The total rainfall of the year was only 12.90 inches against an average of 22.90. The storage in the Bhatodi Tank was so very scanty that it could not meet the requirements of the irrigators. The demand also was greater than usual owing to the scanty rainfall.

PRAVARA CANALS DISTRICT.

There are altogether 5 canals in operation in this district falling under the several heads detailed below :—

(a) Canals supplied by Ghát River with storage works.

(3) GODAVARI RIGHT BANK CANAL.

This canal forms part of the Godavari Irrigation Project and is fed from the storage reservoir at Darna in addition to the river supply. A length of 60 miles of the canal was brought into operation during the year under report, and the construction of the last 9 miles of the canal is now being started. The whole length of the canal as per project will be in operation from the monsoon of 1915.

The following table shows the area irrigated, water-rates assessed and the gross assessed revenue, etc., on this canal during the year as compared with the averages of the past two years :—

| Area irrigated. | | Assessment. | | Gross assessed revenue. | | Working expenses. | | Rainfall. | |
|-----------------|--------------------------|-------------|--------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----------|--------------------------|
| 1912-13. | Average of past 2 years. | 1912-13. | Average of past 2 years. | 1912-13. | Average of past 2 years. | 1912-13. | Average of past 2 years. | 1912-13. | Average of past 2 years. |
| Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Inches. | Inches. |
| 34,331 | 9,503 | 1,83,048 | 42,066 | 1,83,407 | 42,090 | 39,358 | 6,833 | 15.51 | 9.05 |

(3) GODAVARI LEFT BANK CANAL.

The first 20 miles of the canal were brought into partial operation for the first time during the year. Although there was ample supply of water in the canal, the demand was small, owing to good and timely rainfall in the Násik District in which this length is situated. Eighty-one acres of rabi were however given out on six year leases. This small area is disappointing but there is every prospect of there being a keen demand for water during the rabi season of 1913-14. Works on the whole length of the canal, viz., 48 miles are practically complete and it is hoped that water will flow to mile 34 by next rabi season while the whole length will be in full working order during the year 1914-15.

The subjoined table exhibits the areas irrigated, the water-rates assessed, the gross revenue assessment, etc., on this canal during the year :—

| Area irrigated. | Assessment. | Gross assessed Revenue. | Working expenses. | Rainfall. | Remarks. |
|-----------------|-------------|-------------------------|---|-----------|---|
| 1912-13. | 1912-13. | 1912-13. | 1912-13. | 1912-13. | |
| Acres. | Rs. | Rs. | | Inches. | |
| 81 | 455 | 455 | Included in the figures for the Right Bank Canal. | 15.51 | The canal was opened for irrigation during 1912-13. |

(b) Canals supplied by Ghat rivers without storage works.

Both the existing Pravara (Ojhar) Left Bank Canal and the new Pravara (Ojhar) Right Bank Canal come under this heading at present, as they draw their supply from the Pravara River and flow only so long as the river supply is sufficient. These canals, however, will, in the near future, be converted into perennial canals when the construction of the masonry dam at Bhandardara (Lake Arthur Hill) is completed.

(24) PRAVARA LEFT BANK CANAL.

The canal works (widening and extending the existing canal) are making good progress and will probably be completed within a couple of years.

In order to facilitate the construction of masonry works which are on the old canal alignment, the existing canal will be closed as soon as the kharif season of 1913-14 is over. The water available will however be utilized by the Pravara Right Bank Canal. The canal will be reopened for kharif irrigation in June 1914. The gross revenue realised on this canal during the year is the highest on record.

The following table shows the area irrigated, assessment levied, etc., on this canal during the year as compared with the average of the past three years :—

| Area irrigated. | | Assessment. | | Gross assessed revenue. | | Working expenses. | | Rainfall. | |
|-----------------|--------------------------|-------------|--------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----------|--------------------------|
| 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. |
| Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Inches. | Inches. |
| 8,051 | 5,049 | 20,620 | 11,982 | 22,085 | 13,820 | 7,829 | 7,413 | 6.31 | 19.85 |

(1) PRAVARA RIGHT BANK CANAL.

The distributaries and water courses on this canal are now practically completed with the exception of the Rahuri and tail distributaries, construction of which is in hand and making good progress.

Rabi irrigation was for the first time undertaken on this canal during the year. Water was also issued for hot weather crops grown in the foregoing hot weather season. The area irrigated during the last rabi season is 6,878 acres and the revenue realised from this, Rs. 21,604. Considering the supply in the canal, which was very meagre, the results obtained are undoubtedly very gratifying.

The undermentioned table shows the areas irrigated, the water-rates assessed and the gross assessed revenue during the year 1912-13 in comparison with the average of those of the past three years :—

| Area irrigated. | | Assessment. | | Gross assessed Revenue. | | Working expenses. | | Rainfall. | |
|-----------------|--------------------------|-------------|--------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----------|--------------------------|
| 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. |
| Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Inches. | Inches. |
| 11,696 | 952 | 30,187 | 1,439 | 30,696 | 1,848 | 5,196 | 1,834 | 6.31 | 19.85 |

Works without storage but on a river with Ghat catchment.

(12) LAKH CANAL.

The areas irrigated, the amounts of assessment, and gross assessed revenue, etc., during the year as compared with the average of those of the past three years, are as shown below :—

| Area irrigated. | | Assessment. | | Gross assessed revenue. | | Working expenses. | | Rainfall. | |
|-----------------|--------------------------|-------------|--------------------------|-------------------------|--------------------------|-------------------|--------------------------|-----------|--------------------------|
| 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. | 1912-13. | Average of past 3 years. |
| Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Inches. | Inches. |
| 3,037 | 829 | 5,217 | 1,479 | 5,679 | 2,156 | 2,662 | 3,923 | 8.89 | 23.96 |

The canal has a poor supply and bad alignment. It will be abandoned on completion of the work of widening and extension of the existing Pravara Left Bank Canal which is in progress.

The figures of areas irrigated and the assessment levied during the year 1912-13 are compared with those for 1911-12 in the following statement as the variations are not slight :—

| Serial No. | Name of Canal. | Area irrigated. | | | | | | Assessment. | | | | | |
|------------|---|-----------------|----------|----------|----------|----------|----------|-------------|----------|----------|----------|----------|----------|
| | | Kharif. | | Rabi. | | Total. | | Kharif. | | Rabi. | | Total. | |
| | | 1912-13. | 1911-12. | 1912-13. | 1911-12. | 1912-13. | 1911-12. | 1912-13. | 1911-12. | 1912-13. | 1911-12. | 1912-13. | 1911-12. |
| | 42.—MAJOR WORKS— WORKING EXPENSES. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| | <i>Productive Public Works.</i> | | | | | | | | | | | | |
| 1 | Lakh Canal | 1,081 | 579 | 1,956 | 977 | 3,037 | 1,556 | 913 | 925 | 4,304 | 1,969 | 5,217 | 2,887 |
| | <i>35 Protective Irrigation Works.</i> | | | | | | | | | | | | |
| 2 | Pravara Right Bank Canal | 4,818 | 2,482 | 6,873 | ... | 11,696 | 2,482 | 8,583 | 3,887 | 21,604 | ... | 30,187 | 3,687 |
| 3 | Godavari Right Bank Canal | 6,467 | 1,853 | 27,864 | 14,680 | 34,331 | 16,444 | 47,699 | 4,463 | 1,35,315 | 69,458 | 1,53,049 | 73,947 |
| 4 | Godavari Left Bank Canal | ... | ... | 81 | ... | 81 | ... | ... | ... | 456 | ... | 455 | ... |
| | 43.—MINOR WORKS AND NAVIGATION. | | | | | | | | | | | | |
| 5 | Pravara Left Bank Canal. | 5,019 | 3,263 | 8,032 | 3,233 | 8,051 | 6,490 | 10,830 | 7,132 | 9,700 | 10,351 | 20,420 | 17,513 |

Increase in areas in both seasons on the Lakh Canal was due to scarcity of rainfall during the year under report, and the consequent greater demand for canal water in both the kharif and rabi seasons.

Increase in the area of kharif on the Pravara Right Bank Canal during the year is also due to the above causes. Water was given for the first time for rabi this year and hence the area irrigated during the season cannot be compared with that of the past year.

Increase in the area irrigated under the command of the Godavari Right Bank Canal is due to the extension of irrigation operations during the year under report and to scanty rainfall; also to the fact that irrigation is being better known and appreciated.

Water was first admitted into the Godavari Left Bank Canal during the last rabi season and hence no comparison with previous years is possible.

The supply of water in the kharif season was adequate and hence there was an increase in the area irrigated during this season under the Pravara Left Bank Canal. As the quantity of water available at the Ojhar weir during the

last rabi season was inadequate, water was available for irrigation in the first 12 miles of this canal only, after the end of December, for rabi irrigation, to which fact is due the slight decrease in the area irrigated during the rabi season.

The increase in the revenue from 4 of the 5 canals was as stated above, due to a very brisk demand for water owing to failure of rains. On the Lakh and Pravara Left and Right Bank Canals, much better value was also obtained from the canal produce by auction sales of babul trees which had to be removed for the widening of the canal.

The Pravara River above the Lakh Canal weir was dry from 13th April 1912 to 30th idem and again from 11th May to 4th June 1912. The supply was sufficient to meet all requirements under the Pravara Left and Right Bank and Lakh Canals during the kharif season but was insufficient during the rabi season and rotation had to be strictly enforced.

NASIK AND AHMEDNAGAR IRRIGATION DISTRICT.

Works with Ghdt Storage.

(11) KADWA RIVER WORKS.

At the commencement of the year there was 25·30 feet of water in the Tank which is equivalent to 136·17 million cubic feet. Source of supply Waghad Tank. After the first small replenishment was received on the 27th May 1912, when the water level rose 3 feet, it fell to R. L. 90·80 or 10·80 feet above sill level by the 26th June 1912, which was the lowest level reached during the year, the contents then being 28·81 million cubic feet. The true replenishment commenced on the 27th June 1912 and the tank overflowed on the 20th July 1912. The maximum depth over the waste weir was 7·10 feet on the 21st July 1912 and the overflow continued for 42 days. The waste weir gates were closed on the 1st September 1912, water being stored to 3·80 feet below full supply level giving a storage of 487·95 million cubic feet or 22·85 millions less than during the previous year. The stored supply was more than sufficient for the area under irrigation during the rabi and hot weather season of 1913-14. The draw-off commenced on the 2nd November 1912. On the 31st March 1913, the water in the tank was 45·70 feet above sill level, representing a volume of 281·65 million cubic feet.

The mean rainfall gauged at the two stations in the catchment of 29 square miles from 1st June to 31st December 1912 was 70·65 inches or 22·49 inches more than in the previous year.

The subjoined table compares the area irrigated with the average figures for the previous three years :—

| | Kharif. | | Rabi. | | Total. | |
|------------------------|----------|------------------------------|----------|------------------------------|----------|------------------------------|
| | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Palkhed Canal ... | 1,274 | 1,094 | 882 | 1,356 | 2,156 | 2,450 |
| Ojhar Tambat Canal ... | 264 | 323 | 274 | 452 | 538 | 775 |
| Wadali Canal ... | 92 | 186 | 79 | 346 | 171 | 532 |
| Total ... | 1,630 | 1,603 | 1,235 | 2,154 | 2,865 | 3,757 |

The six years' lease system for rabi was introduced and an area of 1,700 acres was secured.

The subjoined table compares the water-rate assessment, gross assessed revenue, and the working expenses of the year with the average figures for the previous three years :—

| Canal. | Assessment. | | | | | | Gross assessed revenue. | | Working expenses. | |
|---------------------|-------------|------------------------------|----------|------------------------------|----------|------------------------------|-------------------------|------------------------------|-------------------|------------------------------|
| | Kharif. | | Rabi. | | Total. | | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | | | | |
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | |
| Waghad | ... | ... | ... | ... | ... | ... | 521 | 168 | 2,725 | 6,635 |
| Palkhed | 10,937 | 9,389 | 4,249 | 5,703 | 15,186 | 15,092 | 18,276 | 16,209 | 6,887 | 9,231 |
| Ojhar Tambat | 1,696 | 2,722 | 1,384 | 1,963 | 3,080 | 4,685 | 3,486 | 4,783 | 1,093 | 1,531 |
| Wadali | 517 | 882 | 847 | 1,555 | 864 | 2,437 | 868 | 2,510 | 1,000 | 1,515 |

(2) CHANKAPUR TANK.

Girna Left Bank Canal.

The tank has been used since 1909-10. Water was stored to R. L. 164.80, i. e., 5.80 feet higher than last year. The tank was drawn on from 21st November 1912 for irrigation on the Girna Left Bank Canal and for increasing the supply to the existing bandhárás on the river and augmenting the supply to the Jamda Canals in East Khándesh District.

The following table compares the areas irrigated with the average figures for the previous three years :—

| Kharif. | | Rabi. | | Total. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1,470 | 967 | 1,777 | 1,364 | 3,247 | 2,831 |

The six years' lease system for rabi was introduced and an area of 1,433 acres secured.

The rabi area irrigated in excess of the kayam bágáyat area by the Patna, Dábhádi, Mahál Patna and Chandanpuri bandhárás on the Girna River was 36 acres.

The subjoined table compares the water-rate assessment and the gross assessed revenue of the year with the average figures for the previous three years :—

| Kharif. | | Rabi. | | Total. | | Gross assessed revenue. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|-------------------------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 4,880 | 1,147 | 9,315 | 4,645 | 14,195 | 5,792 | 14,440 | 6,131 |

The working expenses, direct and indirect, amounted to Rs. 11,496 against Rs. 6,359, the average of the previous three years.

Storage Works with Deccan Catchment.

(23) PARSUL TANK.

The tank was dry up to 28th June 1912 when it received its first replenishment. Water flowed over the waste weir continuously from 25th July to 2nd September 1912. The water level fell to R. L. 1,864.58 by the 21st November 1912. On account of the rainfall of 4.50 inches on 22nd November 1912, the water level rose to R. L. 1,874.38, *i. e.*, 33 feet above the sill of the outlet sluice, and there was 22.20 feet of water on the 31st March 1913. The water-supply was more than sufficient for irrigation during the kharif and rabi seasons.

The following table compares the irrigated areas with the average figures for the previous three years:—

| Kharif. | | Rabi. | | Total. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 368 | 483 | 712 | 656 | 1,080 | 1,139 |

The six years' lease system for rabi was introduced and an area of 592 acres was secured.

The subjoined table compares the water-rate assessment and gross assessed revenue of the year with the average figures for the previous three years:—

| Kharif. | | Rabi. | | Total. | | Gross assessed Revenue. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|-------------------------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 925 | 620 | 3,933 | 2,728 | 4,858 | 3,348 | 4,907 | 3,553 |

The working expenses, direct and indirect, amounted to Rs. 1,068 against Rs. 1,513 the average of the previous three years.

EAST KHA'NDESH DISTRICT.

Works without storage but on a river with ghat catchment.

(22) JAMDA CANALS.

The discharge of the river Girna which feeds the Jamda Canals was only 17.15 cusecs at the Jamda Bandhára at the beginning of the year. This supply was supplemented by water from the Chankapur storage tank in the Násik District, firstly in April and May 1912 and then again from March 1913.

The river was in flood on the 16th June 1912. Owing to the failure of the late rains, the discharge was as low as 9.39 cusecs by about the 8th of November and was quite insufficient for the requirements of the canal. Very strict attention to the distribution of water by rotation was in consequence necessary early in the season.

The prospects of irrigation looked very gloomy about this time, but the situation was saved by the late rain which fell at the end of November. The supply was supplemented by water from the Chankapur Tank in March.

The subjoined statement shows the area irrigated during the year compared with the average of the preceding three years and the corresponding assessments and working expenses. It also shows the realizations made during the year and the outstandings:—

| Areas irrigated. | | | | | | Assessment. | | | | | | Gross assessed Revenue. | | Realizations. | | | Working expenses, direct and indirect. | | | | |
|------------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------------------|---------------------------------------|---------------|---------------------------------|--------|--|----------|---------------------------------------|-----------|-----------|
| Kharif. | | Rabi. | | Total. | | Kharif. | | Rabi. | | Total. | | | | | | | | | | | |
| 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | Water-rate. | Miscellaneous Revenue Receipts. | Total. | Outstanding. | 1912-13. | Average of the three preceding years. | Decrease. | Increase. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 3,036 | 693 | 1,850 | 1,469 | 4,885 | 2,104 | 7,594 | 3,278 | 4,133 | 3,322 | 11,727 | 5,500 | 14,939 | 6,991 | 11,464 | 3,211 | 14,675 | 645 | 13,367 | 7,064 | ... | 6,303 |

The increases in the area and assessments under kharif were mainly attributable to the fact that the rainfall though favourable during the sowing season, failed entirely later on, with the result that there was a rush for canal water in August and September.

The rainfall was well below (about two-thirds of) the average of the last 42 years.

The increase in the working expenses is chiefly due to expenditure incurred for the proper working of the canals.

Storage works dependent on Local rain.

(20) HARTALA TANK.

The tank was empty at the beginning of the year. It received replenishment on 10th July 1912 but the storage only reached 15.15 million cubic feet against the maximum supply of 134.9 million cubic feet. The supply was fully utilised in saving the monsoon crops.

(21) MHASWA TANK.

On 1st April 1912 the Mhaswa Tank was also dry, and continued so till the 27th June 1912 when it received replenishment. The maximum storage reached was 113.06 million cubic feet against the full supply storage of 153.5.

The following table shows the rainfall and tank storage:—

| Tank. | Rainfall June to October. | Full supply storage. | Maximum storage reached during the year. | Storage on 31st October 1912. |
|-------------|---------------------------|----------------------|--|-------------------------------|
| | Inches. | M. cft. | M. cft. | M. cft. |
| Hartala ... | 16.38 | 134.9 | 15.15 | 2.77 |
| Mhaswa ... | 13.25 | 153.5 | 113.6 | 66.25 |

The working expenses, direct and indirect, amounted to Rs. 11,496 against Rs. 6,359, the average of the previous three years.

Storage Works with Deccan Catchment.

(23) PARSUL TANK.

The tank was dry up to 28th June 1912 when it received its first replenishment. Water flowed over the waste weir continuously from 25th July to 2nd September 1912. The water level fell to R. L. 1,864.58 by the 21st November 1912. On account of the rainfall of 4.50 inches on 22nd November 1912, the water level rose to R. L. 1,874.38, *i. e.*, 33 feet above the sill of the outlet sluice, and there was 22.20 feet of water on the 31st March 1913. The water-supply was more than sufficient for irrigation during the kharif and rabi seasons.

The following table compares the irrigated areas with the average figures for the previous three years :—

| Kharif. | | Rabi. | | Total. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 368 | 483 | 712 | 656 | 1,080 | 1,139 |

The six years' lease system for rabi was introduced and an area of 592 acres was secured.

The subjoined table compares the water-rate assessment and gross assessed revenue of the year with the average figures for the previous three years :—

| Kharif. | | Rabi. | | Total. | | Gross assessed Revenue. | |
|----------|------------------------------|----------|------------------------------|----------|------------------------------|-------------------------|------------------------------|
| 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. | 1912-13. | Average of past three years. |
| Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 925 | 620 | 3,933 | 2,728 | 4,858 | 3,348 | 4,907 | 3,553 |

The working expenses, direct and indirect, amounted to Rs. 1,068 against Rs. 1,513 the average of the previous three years.

EAST KHA'NDESH DISTRICT.

| Works without storage but on a river with ghat catchment.

(22) JAMDA CANALS.

The discharge of the river Girna which feeds the Jamda Canals was only 17.15 cusecs at the Jamda Bandhara at the beginning of the year. This supply was supplemented by water from the Chankapur storage tank in the Nasik District, firstly in April and May 1912 and then again from March 1913.

The river was in flood on the 16th June 1912. Owing to the failure of the late rains, the discharge was as low as 9.30 cusecs by about the 8th of November and was quite insufficient for the requirements of the canal. Very strict attention to the distribution of water by rotation was in consequence necessary early in the season.

The prospects of irrigation looked very gloomy about this time, but the situation was saved by the late rain which fell at the end of November. The supply was supplemented by water from the Chankapur Tank in March.

The subjoined statement shows the area irrigated during the year compared with the average of the preceding three years and the corresponding assessments and working expenses. It also shows the realizations made during the year and the outstandings:—

| Areas irrigated. | | | | | | Assessment. | | | | | | Gross assessed Revenue. | | Realizations. | | | Working expenses, direct and indirect. | | | | |
|------------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------------------|---------------------------------------|---------------|---------------------------------|--------|--|----------|---------------------------------------|-----------|-----------|
| Kharif. | | Rabi. | | Total. | | Kharif. | | Rabi. | | Total. | | | | | | | | | | | |
| 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | 1912-13. | Average of the three preceding years. | Water-rate. | Miscellaneous Revenue Receipts. | Total. | Outstanding. | 1912-13. | Average of the three preceding years. | Decrease. | Increase. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 9,035 | 638 | 1,850 | 1,466 | 4,885 | 2,104 | 7,594 | 3,273 | 4,133 | 3,323 | 11,727 | 5,500 | 14,839 | 6,991 | 11,401 | 3,211 | 14,675 | 645 | 13,327 | 7,084 | ... | 6,303 |

The increases in the area and assessments under kharif were mainly attributable to the fact that the rainfall though favourable during the sowing season, failed entirely later on, with the result that there was a rush for canal water in August and September.

The rainfall was well below (about two-thirds of) the average of the last 12 years.

The increase in the working expenses is chiefly due to expenditure incurred for the proper working of the canals.

Storage works dependent on Local rain.

(20) HARTALA TANK.

The tank was empty at the beginning of the year. It received replenishment on 10th July 1912 but the storage only reached 15.15 million cubic feet against the maximum supply of 134.9 million cubic feet. The supply was fully utilised in saving the monsoon crops.

(21) MHASWA TANK.

On 1st April 1912 the Mhaswa Tank was also dry, and continued so till the 27th June 1912 when it received replenishment. The maximum storage reached was 113.06 million cubic feet against the full supply storage of 153.5.

The following table shows the rainfall and tank storage:—

| Tank. | Rainfall June to October. | Full supply storage. | Maximum storage reached during the year. | Storage on 31st October 1912. |
|-------------|---------------------------|----------------------|--|-------------------------------|
| | Inches. | M. cft. | M. cft. | M. cft. |
| Hartala ... | 16.38 | 134.9 | 15.15 | 2.77 |
| Mhaswa ... | 13.25 | 153.5 | 113.6 | 66.25 |

The area irrigated during the year, compared with the average of the preceding three years and corresponding assessment and working expenses, are given in the following statement, which also shows the realizations of the year and the outstandings :—

| 1 | Area irrigated. | | | | | | Assessment. | | | | | | Gross assessed revenue. | | Realizations. | | | Working expenses. | | | | |
|---------|-----------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|-------------------------|---------------------------------------|---------------|-------------------------|--------|-------------------|----------|---------------------------------------|------------|-----------|
| | Kharif. | | Rabi. | | Total. | | Kharif. | | Rabi. | | Total. | | | | | | | | | | | |
| | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | 1012-13. | Average of the three preceding years. | Water rates. | Miscellaneous Receipts. | Total. | Outstanding. | 1012-13. | Average of the three preceding years. | Decreases. | Increase. |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| Hartala | 91 | 37 | 25 | 14 | 119 | 51 | 103 | 39 | 53 | 31 | 156 | 70 | 1,276 | 886 | 103 | 1,100 | 1,223 | ... | Rs. 2.1 | Rs. 4.6 | Rs. 165 | Rs. ... |
| Mhaswa | 374 | 173 | 632 | 232 | 1,036 | 465 | 598 | 238 | 1,360 | 564 | 1,758 | 622 | 3,456 | 3,084 | 333 | 727 | 1,065 | 274 | 3,410 | 9.7 | ... | 2,443 |

The increase in the total area irrigated under the Hartala and Mhaswa Tanks is due to the failure of the late rains which caused a great demand for tank water. The cultivators took advantage of the three days' rain which fell at the end of November to sow rabi crops which were also brought to maturity by the tank water. Consequently the area irrigated in both seasons was double or treble the average of the past three years under both tanks.

The increase under working expenses is due to the execution of certain improvements which were quite necessary.

The value of crops irrigated during the year under three works, viz., the Jamda Canals and the Hartala and Mhaswa Tanks is estimated at Rs. 1,95,256 against Rs. 64,611 in the previous year.

Special observations were made on the Jamda Canals in the village of Kolgaon and on the Mhaswa Tank in the villages of Hirapur and Utrud during the rabi season to determine the duty of water as actually consumed for maturing the wheat crop and bamboo seeds. The results are as given below :—

| Name of village. | Survey No. | Crop irrigated. | Area irrigated. | No. of waterings given. | Total quantity of water given. | Total quantity of water used per acre. | *Duty of water in acres per cubic ft. per second discharge running during rabi season 15th October to 14th February. |
|-------------------------------|------------|-----------------|-----------------|-------------------------|--------------------------------|--|--|
| <i>Jamda Left Bank Canal.</i> | | | | | | | Acres. |
| Kolgaon | 81 | Wheat ... | 0 30 | 3 | 14,436 | 19,248 | 135 |
| <i>Mhaswa Tank.</i> | | | | | | | |
| Hirapur | 53 | Bamboo seed. | 0 18 | 1 | 9,504 | 21,120 | 123 |
| Utrud | 21 | Wheat ... | 1 13 | 3 | 29,269 | 22,009 | 118 |

* By 30 days' rotation system.

WEST KHANDESH DISTRICT.

Work depending on river supply from Ghat catchment supplemented by a Tank with a local storage.

(10) LOWER PANJHRA RIVER WORKS.

These works are mainly fed by the Panjhra River supply which is supplemented by the Mukti Tank storage when the river supply decreases.

Source of water-supply.

The storage in the above tank at the commencement of the year was 2.23 million cubic feet only, which was exhausted very shortly afterwards and the tank became empty on the 9th April 1912. It remained so till the 28th of June 1912 when it received replenishment after a rainfall of 1.70 inches in its catchment basin and thus held 17.65 million cubic feet of water above the sill of outlet. The highest storage reached during the months of July and August 1912 was 63.78 million cubic feet on the 10th August 1912. Thereafter, owing to deficiency of rainfall in the months of August, September and October, the storage gradually went down to 35.59 million cubic feet of water. But owing to the sudden and copious rainfall on the 21st and 22nd November 1912 it received further replenishment and the maximum storage reached during the year amounted to 81.25 million cubic feet against the full supply storage of 342.42 million cubic feet. The water fell below sill level on the 19th March 1913. These particulars show that the tank did not even half fill. The supply stored was by economical distribution made to suffice for the requirements of the irrigators under Patasthal and Jirayat lands, the rotation system being resorted to in the rabi season of the year.

Although the year's rainfall was three times greater than that of the previous year still it was much less than that in the years 1909 and 1910 which led to an increase in the areas of dry crop land of this year over those of 1909-1910.

The following table shows the area irrigated during the year, assessment and the working expenses as compared with those of the previous three years. Realizations made and outstandings during the year are also included in the table:—

| | Area irrigated. | | | | | | | | | | | | Assessment. | | | | | |
|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|----------|----------|----------|----------|----------|
| | Kharif. | | | | Rabi. | | | | Total. | | | | Kharif. | | | | Rabi. | |
| | 1909-10. | 1910-11. | 1911-12. | 1912-13. | 1909-10. | 1910-11. | 1911-12. | 1912-13. | 1909-10. | 1910-11. | 1911-12. | 1912-13. | 1909-10. | 1910-11. | 1911-12. | 1912-13. | 1909-10. | 1910-11. |
| LOWER PANJHRA RIVER WORKS. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| Mukti Tank. | | | | | | | | | | | | | | | | | | |
| Patasthal land ... | 1,408 | 1,379 | 1,474 | 1,121 | 399 | 424 | 337 | 692 | 1,807 | 1,803 | 1,811 | 1,513 | 6,023 | 5,961 | 5,964 | 6,221 | 2,339 | 2,308 |
| Jirayat land ... | 221 | 123 | 1,433 | 345 | 438 | 389 | 334 | 547 | 709 | 505 | 1,767 | 892 | 972 | 503 | 2,911 | 1,364 | 992 | 1,122 |
| Total ... | 1,629 | 1,502 | 2,907 | 1,466 | 837 | 808 | 671 | 1,239 | 2,516 | 2,308 | 3,578 | 2,705 | 6,994 | 6,472 | 8,675 | 7,585 | 3,322 | 3,510 |

| | Assessment—continued. | | | | | | Revenue from other sources. | | | | Realizations. | | | Out-standings. | Working expenses. | | | | |
|----------------------------|-----------------------|----------|----------|----------|----------|----------|-----------------------------|----------|----------|----------|---------------|------------------------|--------|----------------|-------------------|----------|----------|----------|--------|
| | Rabi—contd. | | Total. | | | | | | | | Water rates. | Miscellaneous Revenue. | Total. | | | | | | |
| | 1911-12. | 1912-13. | 1909-10. | 1910-11. | 1911-12. | 1912-13. | 1909-10. | 1910-11. | 1911-12. | 1912-13. | | | | | 1909-10. | 1910-11. | 1911-12. | 1912-13. | |
| LOWER PANJHRA RIVER WORKS. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | |
| Mukti Tank. | | | | | | | | | | | | | | | | | | | |
| Patasthal Land ... | 2,338 | 2,131 | 8,352 | 8,352 | 8,352 | 8,352 | — | — | — | — | 10,583 | 3,349 | 13,831 | 327 | 6,151 | 4,557 | 6,622 | 14,934 | |
| Jirayat Land ... | 1,470 | 2,756 | 1,904 | 1,630 | 4,311 | 4,120 | — | — | — | — | 2,719 | 1,033 | 3,752 | 513 | | | | | |
| Total ... | 3,789 | 4,687 | 10,316 | 9,982 | 12,663 | 12,472 | 891 | 1,184 | 625 | 1,028 | 13,302 | 4,281 | 17,583 | 870 | | 8,151 | 4,557 | 6,622 | 14,934 |

From the above table it will be observed that there was no perceptible difference in the total areas of patasthal land fixed under the survey settlement. The total area under dry crops was 97 per cent. less than that in the previous year. The decrease was due to want of demand for monsoon crops in the first half of the rainy season owing to seasonable rainfall. Owing to partial failure of rainfall in the latter part of the kharif season, there was not sufficient moisture in the ground to sow rabi crops independently of canal water, and this led to the increase of the rabi areas grown on canal water.

The revenue from the water rates levied on the areas under Mamul Bagayat is fixed under the settlement.

The decrease in the water-rates on dry-crop land is due to less kharif irrigation as explained above; but in the revenue from other sources there is an increase of 95 per cent. The increase is chiefly due to unexpectedly good realizations from the sale of grass in the tank basin.

Steps are being taken by the Revenue Department to recover the unrealized balances.

The increase in the working expenses is due to extra repairs and improvements to certain important channels under the Lower Panjhra River Works having been undertaken.

SATARA DISTRICT.

(15) KRISHNA CANAL.

(Supply : River with Ghat Catchment.)

The rainfall gauged at Retre Budruk was the highest on record for the past 30 years.

| Year. | Kharif. | Rabi. | Total. |
|--------------------------------------|---------|-------|--------|
| 1911-1912 | 10.35 | 5.65 | 16.00 |
| 1912-1913 | 29.13 | 9.65 | 38.78 |
| Average of previous ten years | ... | ... | 20.41 |

To increase the storage capacity of the pool above Khodsi weir, the existing sloping and rounded crest has been remodelled to a flat section to facilitate the fixing of falling shutters, and it is also proposed to buttress the down stream side of the weir, which, at present, is not strong enough to resist the extra stresses developed by heading up to the extent of 4 feet by means of automatic shutters. An expenditure of Rs. 31,000 was incurred during the year on these improvements.

The supply in the river as gauged in April 1912 was only 19 cusecs and it increased to 380 cusecs in May and to 806 cusecs in June. The discharge reached its maximum in August when it measured 8,627 cusecs. The supply decreased steadily during the following months until it was 47 cusecs in March 1913.

The area irrigated during the year was 3,517 acres and assessment Rs. 26,585, against 5,415 acres and Rs. 57,613 in the previous year, and 4,757 acres and Rs. 49,337, the average of the previous three years. The decrease in the area and assessment is due to copious and timely rainfall and consequently less demand for water. The average water-rate per acre was 7.56 as compared with 10.64 of last year and 10.52, the average of the previous three years.

The working expenses, including direct and indirect charges, amounted to Rs. 8,348 or to Rs. 2.37 per acre against 2.58 of the previous year and 2.65 the average of the previous three years.

Deducting working expenses, the net profit of the year was Rs. 18,968 compared with Rs. 45,097 of last year and Rs. 39,406, the average of the previous three years.

(32) REWARI CANAL.

(Deccan Catchment.)

The rainfall was much greater than usual :—

| Year. | | Kharif. | Rabi. | Total. |
|-----------------------------------|--------|---------|---------|---------|
| | | Inches. | Inches. | Inches. |
| 1911-12 | ... .. | 9·85 | 4·11 | 13·96 |
| 1912-13 | ... .. | 19·70 | 9·80 | 29·00 |
| Average of previous ten years ... | | ... | ... | 21·29 |

The area irrigated was 1,005 acres and the assessment Rs. 4,633 against 693 acres and Rs. 3,220 of last year and 1,053 acres and Rs. 4,319, the averages of the previous three years. Although there was a decrease of 225 acres in the kharif area irrigated, it was more than made up by the increase in the rabi area on account of the large demand under rabi cultivation and the ample supply of water in the river.

The working expenses, direct and indirect, amounted to Rs. 1,945 against Rs. 1,985 of last year and Rs. 1,991, the average of the previous three years. The rate per acre irrigated was 1·93 compared with 2·86 of last year and 2·04 the average of the previous three years.

The operations of the year show a net profit of Rs. 2,853 as compared with Rs. 1,936 of last year and Rs. 2,751 the average of the previous three years.

(33) UPPER MAN RIVER WORKS.

(Deccan Catchment.)

The rainfall gauged at Gondwla was the same as that of the previous year but considerably less than the average.

| Year. | | Kharif. | Rabi. | Total. |
|-----------------------------------|--------|---------|---------|---------|
| | | Inches. | Inches. | Inches. |
| 1911-12 | ... .. | 10·68 | 2·42 | 13·10 |
| 1912-13 | ... .. | 7·40 | 5·73 | 13·13 |
| Average of previous ten years ... | | ... | ... | 16·64 |

The supply in the Pingli tank during the hot weather and a greater part of the monsoon was either very scanty or nil owing to want of rain. A very small replenishment of 12 million cubic feet was received in the tank on 31st May 1912, raising the water to 2,352·89, making 26 million cubic feet, but the tank was empty on 15th August 1912. On 20th September 1912, a replenishment of 20 million cubic feet came and with subsequent increase and decrease in levels the water rose to 2,360·79 equivalent to 75 million cubic feet on 14th October 1912, the highest level of the year, and less than half the full supply. This water irrigated 688 acres of rabi crops, and the tank was empty again on 29th December 1912.

The total area irrigated was 739 acres and the assessment Rs. 3,016 as compared with 1,352 acres and Rs. 5,801 of last year and 1,046 acres and Rs. 4,239, the averages of the previous three years. The decrease was due to the scanty supply in the tank.

The working expenses, including direct and indirect charges, amounted to Rs. 1,988 against Rs. 3,887 of last year and Rs. 4,117, the average of the previous three years. The rate per acre irrigated was Rs. 2·69 compared with Rs. 2·87 of last year and Rs. 4·31, the average rate for the previous three years.

The operations of the year showed a net profit of Rs. 1,918 as compared with Rs. 1,998 of last year and Rs. 528, the average of the previous three years.

(34) YERLA RIVER IRRIGATION WORKS.

(Deccan Catchment.)

The rainfall gauged at Khatgun was slightly more than usual.

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-12 | 21.64 | 3.40 | 25.04 |
| 1912-13 | 18.40 | 7.67 | 26.07 |
| Average of previous ten years ... | ... | ... | 22.76 |

On 1st April 1912, the level of water in the Nehr tank was at R. L. 2,653.86 equivalent to a storage of 198 million cubic feet. It continued to fall till 29th May 1912, when the tank received replenishments, ultimately overflowing on 20th September 1912, and continued brimful till 10th October 1912. The storage left on 31st March 1913 was 313 million cubic feet.

The area irrigated and the assessment were, respectively, 4,469 acres and Rs. 18,410 against 4,591 acres and Rs. 19,819 of last year, and 4,020 acres and Rs. 16,278, the average figures of the previous three years. The kharif area was greater but the rabi area somewhat less than the previous years due to timely rainfall in the rabi season.

The working expenses, including direct and indirect charges, amounted to Rs. 6,896 against Rs. 6,442 of last year and Rs. 6,714, the average of the past three years. The rate per acre irrigated was Rs. 1.54 as compared, with Rs. 1.40 of last year and Rs. 1.69, the average of the previous three years.

The result of the year's operations was a net profit of Rs. 13,137, as compared with Rs. 13,955 of last year and Rs. 10,973 the average of past three years.

(35) CHIKHLI CANAL.

(Deccan Catchment.)

The rainfall gauged at Chikhli was more than double the previous year's and exceeded the average.

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-12 | 9.60 | 1.65 | 11.25 |
| 1912-13 | 14.66 | 8.76 | 23.42 |
| Average of previous ten years ... | ... | ... | 18.73 |

The area irrigated and the assessment were 258 acres and Rs. 1,374 respectively against 212 acres and Rs. 1,312 of last year and 234 acres and Rs. 1,302, the average figures for the previous three years.

The working expenses, including direct and indirect charges, amounted to Rs. 797 against Rs. 642 of last year and Rs. 898, the average of the previous three years. The rate per acre irrigated was Rs. 3.08 as compared with Rs. 3.02 of last year and Rs. 3.93, the average of the past three years.

The operations of the year showed a net profit of Rs. 592 against Rs. 752 of last year and Rs. 716, the average of the previous three years.

(36) MAINI TANK.

(Deccan Catchment.)

The rainfall gauged at Maini was more than double that in the previous year and exceeded the average.

| Year. | | Kharif. | Rabi. | Total. |
|-----------------------------------|--------|---------|---------|---------|
| | | Inches. | Inches. | Inches. |
| 1911-12 | ... .. | 12.25 | 1.28 | 13.53 |
| 1912-13 | ... .. | 24.54 | 5.62 | 30.16 |
| Average of previous ten years ... | | ... | ... | 18.80 |

On 13th April 1912, the tank was practically dry. But it filled during the year.

The area irrigated was 1,560 acres and the assessment Rs. 6,227 against 1,464 acres and Rs. 7,413 of last year and 1,561 acres and Rs. 6,826, the average figures for the previous three years. Of the 1,560 acres irrigated, 343 were kharif and 1,217 rabi. The decrease in the area and assessment of kharif season was due to timely and sufficient rainfall in the kharif season. The increase in the rabi area was due to the ample supply in the tank.

The working expenses, direct and indirect, amounted to Rs. 2,633 against Rs. 3,099 of last year and Rs. 3,029, the average of the previous three years. The rate per acre irrigated was Rs. 1.63 as compared with Rs. 2.11 of last year and Rs. 1.95, the average of the previous three years.

The result of the year's operations was a net profit of Rs. 3,634 against Rs. 4,359 of last year and Rs. 4,086, the average of the previous three years.

BIJA'PUR DISTRICT.

(37) MUCHKUNDI TANK.

(Deccan Catchment.)

The rainfall of the year was a little more than usual :—

| Year. | | Kharif. | Rabi. | Total. |
|-----------------------------------|--------|---------|---------|----------|
| | | Inches. | Inches. | Inches.] |
| 1911-1912 | ... .. | 13.42 | 2.51 | 15.93 |
| 1912-1913 | ... .. | 13.44 | 3.99 | 17.43 |
| Average of previous ten years ... |  | ..... | ..... | 15.97 |

The tank was practically dry from April to August 1912, and what little replenishment flowed into the tank in September 1912 remained below sluice level. In October 1912 it rose to R. L. 1,787.68, *i. e.*, 1.74 feet above the outlet sill, after which it began to fall and went below sluice level on 15th November 1912.

There was no irrigation during the year and no revenue on account of water-rates was realised.

The working expenses of the year amounted to Rs. 282 against Rs. 317 of last year and Rs. 346, the average of the previous three years.

The result of the year's operations was a net profit of Rs. 1,027, due to receipts from other canal produce, as compared with Rs. 1,291 of last year and Rs. 918, the average of the previous three years.

DHARWAR IRRIGATION DISTRICT.

(40) DAMBAL TANK.

(Deccan Catchment.)

The rainfall was considerably more than three times as great as that of the previous year and exceeded the average :—

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-1912 | 5.61 | 0.97 | 6.58 |
| 1912-1913 | 12.96 | 7.78 | 20.74 |
| Average of previous ten years ... | ..... | ..... | 16.31 |

The tank was dry up to 31st May 1912. It received small replenishments in June and again became dry on 7th September. It received good replenishments in the latter part of September and the beginning of October, when the water level rose up to the waste weir crest. On 13th March 1913, the water level was 5.66 feet above the silted bed of the tank.

The area irrigated and water-rate assessment were respectively 7 acres and Rs. 34 against 153 acres and Rs. 264 of last year and 125 acres and Rs. 316, the average figures of the previous three years. The decrease was due to the absence of water in the kharif season and the copious rainfall in the rabi season.

The area of irrigated lands at consolidated rates was 144 acres and the irrigation share of the revenue was Rs. 916 giving an average water-rate of 6.36 per acre.

The working expenses amounted to Rs. 958 against Rs. 1,674 of last year and Rs. 1,241, the average of the previous three years.

The operations of the year resulted in a net profit of Rs. 797, as compared with last year's deficit of Rs. 221 and Rs. 732 the average profit for the previous three years.

(41) MEDLERI TANK.

(Deccan Catchment.)

The rainfall was nearly double that of the last year and more than the average :—

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-1912 | 5.36 | 4.75 | 10.11 |
| 1912-1913 | 15.73 | 3.80 | 19.03 |
| Average of previous ten years ... | ..... | ..... | 14.25 |

The level of water in the tank was below the sill of out-lets on 5th April 1912 and the maximum level reached during the year was 11.35 feet over the sill on 23rd September 1912. On 31st March 1913, it was only 0.90 feet above the sill. The tank had a fairly good supply of water throughout the year.

The area irrigated and water-rate assessment were respectively 53 acres and Rs. 239 against 43 acres and Rs. 383 of last year and 74 acres and

Rs. 660, the average figures of the previous three years. The fall in the revenue without a corresponding decrease in the area irrigated, was due to the fact that the cultivators would not renew their Pân gardens on account of the precarious supply of water.

The working expenses amounted to Rs. 1,157 against Rs. 1,013 of last year and Rs. 951, the average of the previous three years.

The operations of the year showed a net deficit of Rs. 900 as compared with last year's deficit of Rs. 630 and Rs. 291, the average deficit of the previous three years.

(42) ASUNDI TANK.

(Deccan Catchment.)

The rainfall was more than double that for the last year and higher than the average :—

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-1912 | 8.65 | 2.91 | 11.56 |
| 1912-1913 | 20.35 | 3.52 | 24.47 |
| Average of previous ten years ... | ..... | ..... | 20.01 |

The tank was dry on the 1st April 1912. It received good replenishments in April and overflowed on the 28th of that month. In July the flood rose to 1.10 feet above the crest of the weir. On 31st March 1913 the water level was 3.50 feet above the silted bed of the tank. The tank had a good supply of water throughout the year.

The area irrigated and the water-rate assessment were respectively 111 acres and Rs. 536 against 17 acres and Rs. 89 of previous year and 65 acres and Rs. 312, the average figures of the previous three years. The increase in area irrigated was due to the good supply of water in the tank.

The area of land assessed at consolidated rates was 185 acres and the irrigation share of revenue was Rs. 632 or an average of Rs. 3.42 per acre.

The working expenses amounted to Rs. 1,328 against Rs. 7,088 of last year and Rs. 3,323, the average of the previous three years, both of which were high on account of the expenditure of Rs. 3,840 incurred in 1911-12 on special repairs to the tank due to a slip.

The year's operations resulted in a net deficit of Rs. 139 as compared with Rs. 6,336 the deficit of last year, and Rs. 2,345 the average deficit of the previous three years.

(43) MADAG TANK.

(Ghat Catchment.)

The rainfall gauged was higher than usual :—

| Year. | Kharif. | Rabi. | Total. |
|-----------------------------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1911-1912 | 18.75 | 6.00 | 24.75 |
| 1912-1913 | 25.05 | 7.55 | 32.60 |
| Average of previous ten years ... | ..... | ..... | 25.09 |

On 1st April 1912 the tank had 1.34 feet of water above the sill of outlet. In the next two months the tank filled and the maximum depth of flood above crest of waste weir was 10.59 feet on the 26th July 1912. Water was flowing over the waste weir from 11th July 1912 to 11th February 1913. The level of water on 31st March 1913 was 2.14 feet above the sill of outlet. The supply of water was good throughout the year.

The area irrigated and the water-rate assessment were respectively 594 acres and Rs. 2,286 against 663 acres and Rs. 2,478 of last year and 646 acres and Rs. 2,400, the average figures of the previous three years. The heavy rainfall was the cause of the decrease in irrigation, partly by reducing the demand for water, and partly by saturating the ground so that the garlic crop could not be grown.

The working expenses amounted to Rs. 2,358 against Rs. 1,632 of last year and Rs. 1,795, the average of the previous three years. The increase is due to the expenditure of Rs. 521 incurred on preparation of register of lands taken up for the canal.

The operations of the year resulted in a net profit of Rs. 88 as compared with Rs. 1,091 of last year and Rs. 553 the average of the previous three years.

(44) MAVINKOP TANK.

(Forest Catchment.)

The tank had no water above the sill of outlet till 17th July 1912 when it received some replenishments and filled and overflowed on 2nd August 1912 and remained practically full till 25th of that month when the draw-off commenced. It again filled and overflowed on 1st October and remained so till 2nd November. The tank had a good supply of water for the rice crops under it, and remissions were, therefore, unnecessary.

The whole of the area which was 571 acres is assessed at consolidated rates, the irrigation share of which is Rs. 2,259.

The working expenses amounted to Rs. 793 against Rs. 1,376 of last year and Rs. 1,170 the average of the previous three years.

The operations of the year showed a net profit of Rs. 1,461 as compared with last year's deficit of Rs. 1,376 and Rs. 329 the average profit of the previous three years.

BELGAUM DISTRICT.

(38) GADDIKERI TANK.

(Ghat Catchment.)

The management of this tank is in the hands of the Revenue Department.

The area irrigated during the year was 377 acres and the irrigation share of the consolidated assessment amounted to Rs. 2,061.

The working expenses were Rs. 333 against Rs. 336 of last year and Rs. 507, the average of the previous three years.

The result of the year's operations was a net profit of Rs. 1,728 as compared with Rs. 1,725 of last year and Rs. 1,557 the average of the previous three years.

(39) GOKAK CANAL, FIRST SECTION AND STORAGE WORKS.

The rainfall gauged at Dhupdal was nearly double that of the previous year and much greater than the average:—

| Year. | | | | Khurif. | Rabi. | Total. |
|-------------------------------|-----|-----|-----|---------|---------|---------|
| | | | | Inches. | Inches. | Inches. |
| 1911-1912 | ... | ... | ... | 9.04 | 4.65 | 13.69 |
| 1912-1913 | ... | ... | ... | 20.80 | 6.17 | 26.97 |
| Average of previous ten years |  |  |  | ..... | ..... | 19.90 |

The Dhupdal reservoir reached its lowest level, *i. e.*, zero level, on the evening of 17th June 1912. But it began to fill the next day and overflowed on the 23rd June. The maximum flood of the year occurred on the 23rd July when the water level rose to 5.83 feet above the permanent weir crest (R. L. 2008.03). The flood discharge is estimated at 1,44,314 cubic feet per second, which is equal to a run-off of 0.207 inches per hour from the whole catchment area (1,080 square miles)—the greatest flood recorded since the construction of the weir.

The weir crest was, as usual, temporarily raised to a height of 2 feet at a cost of Rs. 1,784, and an additional storage of 256 million cubic feet was thus secured, which was useful for rabi irrigation and the demands of the Gokak Mills Company.

The area irrigated during the year and the assessment thereon were 8,935 acres and Rs. 33,553 respectively against 9,641 acres and Rs. 44,223 of last year and 8,336 acres and Rs. 38,115, the averages of the previous three years. The decrease from the figures of the last year is due to less demand for water for rabi crops on account of copious and timely rainfall. The average of the water rate per acre was Rs. 4.32 as compared with Rs. 4.59 of last year and 4.59, the average of the previous three years. The decrease is due to the large area of low-rated crops having been cultivated during the year.

The area irrigated by the canal amounted to 47 per cent. of the culturable area under command.

An additional area of 611 acres was watered from the tank and river direct.

The total assessed revenue of the year was distributed as follows:—

| | Rs. |
|-----------------------|---------------|
| 1 Water-rate | 38,556 |
| 2 Sales of water | 319 |
| 3 Plantations | 422 |
| 4 Other Canal produce | 1,914 |
| 5 Water power | 14,313 |
| 6 Rents of buildings | 23 |
| 7 Miscellaneous | 1,331 |
| | <u>56,878</u> |

The working expenses amounted to Rs. 13,752 against Rs. 13,253 of last year and Rs. 13,805 the average of the previous three years. The rate per acre was Rs. 1.54 against Rs. 1.37 of last year and Rs. 1.70, the average of the previous three years.

The result of the year's operations was a net profit of Rs. 43,126 as compared with Rs. 47,633 of last year and Rs. 40,272, the average of the previous three years.

PART II.

COMPRISING SECOND CLASS IRRIGATION WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT AND AGRICULTURAL WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

GENERAL REMARKS.

The following table gives a general comparison of the figures for works for which only Revenue Accounts are kept for the year under report, with those for 1911-1912:—

| | | | 1911-12. | 1912-13. | Increase. | Decrease. |
|------------------|-----|-----|----------|----------|-----------|-----------|
| | | | Acres. | Acres. | Acres. | Acres. |
| Area irrigated | ... | ... | 140,720 | 148,444 | 7,724 | ... |
| | | | Rs. | Rs. | Rs. | Rs. |
| Revenue Receipts | ... | ... | 4,60,858 | 5,13,833 | 52,975 | ... |
| Expenditure | ... | ... | 4,37,344 | 3,94,390 | ... | 42,954 |

2. The details of expenditure on this class of works for the two years compare as below:—

| | | | Expenditure. | | Comparison. | |
|-----------------------------|-------|-----|--------------|----------|-------------|-----------|
| | | | 1911-12. | 1912-13. | Increase. | Decrease. |
| | | | Rs. | Rs. | Rs. | Rs. |
| Extensions and Improvements | ... | ... | 62,861 | 64,272 | 1,411 | ... |
| Maintenance and Repairs | ... | ... | 1,99,519 | 1,81,980 | ... | 17,539 |
| Establishment | ... | ... | 1,21,709 | 90,216 | ... | 31,493 |
| Tools and Plant | ... | ... | 7,283 | 6,916 | ... | 367 |
| | Total | ... | 3,91,372 | 3,43,384 | 1,411 | 49,399 |
| Share of Collection Charges | ... | ... | 45,972 | 51,006 | 5,034 | ... |
| | Total | ... | 4,37,344 | 3,94,390 | 6,445 | 49,399 |

3. The following table shows the areas irrigated in the different districts in the Deccan and Gujarát, and the consolidated revenue assessed during the year 1912-13, in respect of irrigation works for which only Revenue Accounts are kept:—

| Collectorates. | Number of Works. | Area irrigated. | Revenue. | | | Remarks. |
|----------------|------------------|-----------------|-------------------|-------------|----------|---|
| | | | Irrigation share. | Land share. | Total. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | Rs. | Rs. | Rs. | |
| Ahmedabad (a) | 73 | 8,800 | 25,753 | 25,471 | 51,224 | (a) Works in charge of Gujarát Irrigation District. |
| Kaira | 9 | 9,004 | 15,077 | 18,144 | 33,221 | |
| Panch Maháls | 1 | 174 | 949 | 223 | 1,172 | |
| Surať | 302 | 13,857 | 81,652 | 1,35,819 | 1,67,471 | |
| Broach | 27 | 808 | 1,393 | 5,170 | 6,513 | |
| West Khándesh | 76 | 9,071 | 54,738 | 14,759 | 69,497 | |
| East Khándesh | 3 | 577 | 3,328 | 1,381 | 4,709 | |
| Násik (b) | 293 | 22,886 | 1,48,910 | 42,897 | 1,91,807 | (b) Works in charge of Násik and Ahmednagar Irrigation Districts. |
| Ahmednagar | 2 | 145 | 352 | 134 | 486 | |
| Poona | 3 | 514 | 2,857 | 1,015 | 3,872 | |
| Sátára | 1 | 105 | 660 | 442 | 1,102 | |
| Belgaum | 67 | 9,916 | 33,053 | 8,266 | 41,319 | |
| Duárwár | 469 | 64,091 | 1,78,347 | 4,585 | 2,22,932 | |
| Fijápur | 15 | 1,291 | 5,626 | 831 | 6,457 | |
| Ratnágiri | 4 | 1,205 | 3,183 | 2,679 | 5,862 | |
| Kánara | ... | ..... | ..... | ..... | ..... |  |
| Total | 1,344 | 148,444 | 5,06,878 | 3,01,766 | 8,07,644 | |

4. The actual expenditure and receipts for the year 1912-13 on all the Irrigation Works in the Deccan and Gujarát for which only Revenue Accounts are kept, were as follows :—

| Collectorate. | Expenditure. | | | | | | | | Actual Receipts. | | | | | | |
|-------------------|------------------------------|--------------------------|----------------|--------|------------------|----------|------------------------------|--------------|------------------------------|----------------|------------------------|--------------------------------|--|-------------------------|------------------------------|
| | Direct Charges. | | | | | | | | Direct Receipts. | | | Indirect Receipts. | | | |
| | Extensions and Improvements. | Maintenance and Repairs. | Establishment. | | Tools and Plant. | Total. | Share of Collection Charges. | Grand Total. | Water Rates from Irrigation. | Miscellaneous. | Total Direct Receipts. | Share of Consolidated Revenue. | Grand Total, Direct and Indirect Receipts. | Less Refund of Revenue. | Gross Receipts less Refunds. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| Ahmedabad ... | 6,110 | 46,803 | | | | | 2,575 | | | | | 25,753 | | | |
| Kaira ... | 40,126 | 13,054 | 4,719 | 31,151 | 2,206 | 1,63,180 | 1,641 | 1,57,500 | 908 | 2,049 | 3,047 | 15,077 | 44,828 | | 44,828 |
| Panch Mahals ... | 6,020 | ... | | | | | 95 | | | 2 | 2 | 949 | | | |
| Surat ... | 91 | 15,891 | | | | | 3,165 | | | | | 31,652 | 33,005 | | 33,005 |
| Broach ... | ... | 920 | 760 | 2,873 | 129 | 20,654 | 139 | 23,958 | ... | 50 | 50 | 1,393 | | | |
| West Khándesh ... | ... | 2,306 | 104 | 413 | -20 | 2,303 | 5,474 | 8,277 | ... | 3 | 3 | 54,733 | 54,741 | | 54,741 |
| East Khándesh ... | ... | 132 | 6 | 70 | 2 | 210 | 333 | 543 | ... | ... | ... | 3,328 | 3,328 | | 3,328 |
| Násik ... | 10,331 | 33,449 | 1,902 | 3,279 | 2,527 | 51,548 | 14,894 | 66,442 | 27 | 83 | 110 | 1,48,910 | 1,49,020 | | 1,49,020 |
| Ahmednagar ... | 271 | ... | ... | ... | ... | 271 | 35 | 306 | ... | ... | ... | 352 | 352 | | 352 |
| Poona ... | ... | 230 | 10 | 83 | 3 | 326 | 376 | 701 | 894 | ... | 894 | 2,857 | 3,751 | | 3,751 |
| Sátara ... | ... | ... | ... | ... | ... | ... | 66 | 66 | ... | ... | ... | 660 | 660 | | 660 |
| Belgaum ... | ... | 16,854 | 728 | 2,453 | 389 | 20,434 | 3,305 | 23,739 | ... | 67 | 67 | 33,053 | 33,120 | | 33,120 |
| Dhárwár ... | 1,300 | 51,366 | 2,334 | 36,057 | 1,655 | 92,712 | 18,023 | 1,10,740 | 765 | 2,873 | 3,638 | 1,78,317 | 1,81,935 | | 1,81,935 |
| Bijápore ... | 23 | 853 | 39 | 147 | 13 | 1,075 | 593 | 1,638 | ... | 144 | 144 | 5,628 | 5,770 | | 5,770 |
| Ratnágiri ... | ... | 132 | 6 | 23 | 2 | 162 | 315 | 490 | ... | ... | ... | 3,183 | 3,183 | | 3,183 |
| Kánara ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | | ... |
| Total ... | 64,272 | 1,81,980 | 10,669 | 79,548 | 6,918 | 3,43,384 | 51,006 | 3,94,390 | 2,684 | 5,271 | 7,955 | 5,05,878 | 5,13,833 | | 5,13,833 |

DETAILED REPORTS BY DISTRICT OFFICERS.

WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.

GUJARAT IRRIGATION AND SURAT AND BROACH DISTRICTS.

There were small floods in the Khári river at Raipur on the 10th and 25th to 30th July, and 10th and 29th August 1912. As the rainfall at the source of the Khári River was deficient, the absorption in its bed was very great. The water was diverted into the Khári Cut Canal and then thrown into the Khári River below Bidaj for irrigation under the Khári Sluices. By adopting this course, the rice crop over a large area was saved. The Gobláj Tank and the Bherai Reservoir were filled with water during the flood time and the supply available was partly utilized for irrigation in the villages of Gobláj, Dathal, Bherai, Pansoli and Naika. The sluices were maintained at a cost of Rs. 2,498. Rs. 4,533 were spent on improvements to the sluices, construction of a bank on the right side of the Goblaj Saran, a head regulator on the Kanera branch, additions and alterations to the store-shed at Naika, maintenance and repairs to the Goblaj tank and Bherai Reservoir and the clearance of the Gha-bajaria weeds from the bed of the Khári river.

The remissions granted by the Collector owing to the deficient water supply and the consequent failure of the rice crop amounted to Rs. 19,912.

The following table compares the areas irrigated and the assessment levied with the average of the previous ten years :—

| | Average of 10 years ending 1911-1912. | | Average for 3 years ending 1911-1912. | | 1912-1913. | |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|------------|---------------------------------------|
| | Area. | * Revenue after deducting remissions. | Area. | * Revenue after deducting remissions. | Area. | * Revenue after deducting remissions. |
| | Acres. | Rs. | Acres. | Rs. | Acres. | Rs. |
| I.—Irrigation above the Kalambandi villages | 795 | 3,300 | 795 | 3,498 | 786 | 2,569 |
| II.—Irrigation from tanks fed by the river Khári | 198 | 675 | 198 | 598 | 198 | 622 |
| III.—Irrigation below the Kalambandi villages | 641 | 3,120 | 641 | 2,948 | ... | ..... |
| IV.—Irrigation from the Khári sluices proper (i.e., Kalambandi vil- lages) | 6,996 | 26,185 | 6,886 | 32,653 | 6,827 | 25,005 |
| Total ... | 8,630 | 33,280 | 8,520 | 39,697 | 7,811 | 23,136 |

* Note.—The revenue is consolidated and exclusive of Inámdárs' shares.

The assessment rates under the Khári sluices proper, i.e., of the "Kalambandi" villages being consolidated, the average rates per acre for land and water respectively were as under :—

| | Land share. | | | Irrigation share. | | | Total consolidated. | | |
|------------------------|-------------|----|----|-------------------|----|----|---------------------|----|----|
| | Rs. | a. | p. | Rs. | a. | p. | Rs. | a. | p. |
| Government land | 3 | 3 | 1 | 2 | 13 | 7 | 6 | 0 | 8 |
| Alienated land | 0 | 8 | 1 | 1 | 0 | 2 | 1 | 8 | 3 |

During the year, 164 old tanks, viz., 65 in Ahmedabad (inclusive of 22 Tálukdári), 69 in Kaira, 14 in Panch Maháls and 16 in the Surat and Broach Districts were either repaired or improved at a total cost of Rs. 1,33,920, while Rs. 4,483 were spent on surveys and preparation of plans and estimates for a number of similar tanks in the Ahmedabad, Kaira and Panch Maháls and Surat and Broach Districts.

The area irrigated and the revenue derived from the old irrigation tanks are as under :—

| District. | Area Irrigated. | Net consolidated assessment. | Irrigation share. | Land share. |
|---------------------|-----------------|------------------------------|-------------------|-------------|
| | Acres. | Rs. | Rs. | Rs. |
| Ahmedabad | 8,900 | 51,224 | 25,753 | 25,471 |
| Kaira | 3,794 | 10,109 | 2,723 | 7,886 |
| Panch Mahals | 174 | 1,172 | 949 | 223 |
| Surat | 13,857 | 1,67,471 | 31,652 | 1,35,819 |
| Broach | 808 | 6,513 | 1,393 | 5,120 |
| Total | 27,433 | 2,38,489 | 62,470 | 1,74,019 |

POONA IRRIGATION DISTRICT.

The following table gives the area irrigated, the consolidated assessed revenue and the irrigation share thereof, for the six irrigation works in the Poona Collectorate for which only Revenue Accounts are kept, for the year 1912-13 :—

| Name of work. | Area irrigated. | Revenue. | | | Remarks. |
|---------------------------------|-----------------|-------------------|-------------|-----------|----------|
| | | Irrigation share. | Land share. | Total. | |
| | A. g. | Rs. a. p. | Rs. a. p. | Rs. a. p. | |
| Dam at Kasur | 25 28 | 127 6 0 | ..... | 127 6 0 | |
| Dam at Vadaj | 150 33 | 517 10 0 | ..... | 517 10 0 | |
| Dam at Agar | 53 18 | 432 0 0 | 89 0 0 | 521 0 0 | |
| Dam at Náráyangaon | 427 17 | 2,403 2 0 | 917 1 0 | 3,320 3 0 | |
| Tank at Pátas ... .. | ... | ..... | ..... | ..... |  |
| Vadhana Tank and Channel | 35 5 | 22 4 0 | 8 10 0 | 30 14 0 | |
| Total | 692 21 | 3,502 6 0 | 1,014 11 0 | 4,517 1 0 | |

A description of these works is given in the Revenue Report for the year 1881-82.

In addition to the above, a consolidated enhanced revenue of Rs. 225 was received on account of percolation water from the Mutha Canal at Shivane Warje and Kondva Dhavade, the irrigation share being Rs. 41-10-0.

A sum of Rs. 230 only was expended on repairs to the Bandhára at Náráyangaon.

AHMEDNAGAR DISTRICT.

There are two second class works in the Akola Táluka called the Savargaon and Gardani Bandháras. The area irrigated and the gross assessed revenue from these works during 1912-13 are compared with the averages for the past five years in the following statement :—

| | | During 1912-13. | Average of the past 5 years. |
|----------------------------|--------|-----------------|------------------------------|
| Area irrigated ... | Acres. | 145 | 145 |
| Gross assessed revenue ... | Rs. | 486 | 482 |

NÁSIK AND AHMEDNAGAR IRRIGATION DISTRICT.

The area irrigated and the consolidated revenue assessed on lands irrigated by bandháras in the Násik Collectorate for which only Revenue Accounts are kept were as below :—

| Area irrigated. | Irrigation share. | Land share. | Net consolidated assessment. |
|------------------|-------------------|---------------|------------------------------|
| Acres. 28,887 | Rs. 1,48,910 | Rs. 42,897 | Rs. 1,91,807 |

Remissions amounting to Rs. 27,947 were granted by the Revenue Department on account of short supply in certain cases.

The expenditure during the year on these works was Rs. 43,730.

The following statement shows the average area irrigated during the past five years and the revenue assessed on these works :—

| | Area irrigated. | Irrigation share of Revenue. |
|--|------------------|------------------------------|
| Average of five years ending 1911-12 ... | Acres. 31,043 | Rs. 1,46,733 |

EAST KHA'NDESH DISTRICT.

The area irrigated and the revenue derived from each of the old second class irrigation works for which only Revenue Accounts are kept are shown below :—

| Number. | Name of work. | Area irrigated. | Irrigation share. | Land share. | Total. | Remarks. |
|---------|---------------------|-----------------|-------------------|-------------|--------|----------|
| | | Acres. | Rs. | Rs. | Rs. | |
| 1 | Patonda Channel ... | 132 | 796 | 316 | 1,112 | |
| 2 | Toli do. ... | 70 | 558 | 153 | 711 | |
| 3 | Amalner do. ... | 375 | 1,974 | 912 | 2,886 | |
| | Total ... | 577 | 3,328 | 1,381 | 4,709 | |

The revenue exclusive of the land share was the same as in the previous year.

The outlay on these works was Rs. 204, as detailed below, against Rs. 1,430 in the previous year :—

| | | |
|---------------------------------|-----|-----|
| | | Rs. |
| Extensions and Improvements ... | ... | ... |
| Maintenance and Repairs ... | ... | 132 |
| Establishment ... | ... | 70 |
| Tools and Plant ... | ... | 2 |

WEST KHA'NDESH DISTRICT.

The following table gives a comparison of the figures of area irrigated and consolidated revenue assessed during the year 1912-13 with those of the

previous three years in respect of irrigation works for which only Revenue Accounts are kept :—

| Years. | Area irrigated. | Revenue. | | | Remarks. |
|----------------|-----------------|-------------------|-------------|--------|----------|
| | | Irrigation share. | Land share. | Total. | |
| | Acres. | Rs. | Rs. | Rs. | |
| 1909-10 | 8,748 | 54,655 | 11,647 | 66,302 | |
| 1910-11 | 9,800 | 58,767 | 14,389 | 73,156 | |
| 1911-12 | 9,846 | 60,804 | 14,181 | 74,985 | |
| 1912-13 | 9,071 | 54,788 | 14,759 | 69,497 | |

These figures are exclusive of old irrigation on the Lower Panjhra River Works.

Remissions amounting to Rs. 5,982 were granted during the year by the Revenue Department.

The outlay incurred on this class of works during the year 1912-13 compares with the outlay of previous three years as detailed below :—

| | | Expenditure. | | | |
|-----------------------------|-----|--------------|----------|----------|----------|
| | | 1909-10. | 1910-11. | 1911-12. | 1912-13. |
| | | Rs. | Rs. | Rs. | Rs. |
| Extensions and Improvements | ... | 1,213 | 490 | 535 | Nil. |
| Maintenance and Repairs | ... | 5,247 | 11,103 | 4,385 | 2,319 |
| Establishment | ... | 1,501 | 2,026 | 857 | 520 |
| Tools and Plant | ... | 49 | 174 | -46 | 35 |
| Total | ... | 8,010 | 13,793 | 5,731 | 2,874 |

The flow in the streams which feed these works was better than in the previous three years but not so good as in the years 1909-10 and 1910-11.

SHA'HA'DA CHANNEL.

The Sháháda Channel, one of the second class works, has been transferred to Public Works Department for management since 1909. It irrigates 865 acres of kayam bágáyat lands in addition to about 500 acres of jiráyat lands. Seasonal rates as on the Lower Panjhra River Works are made applicable to jiráyat lands under the channel since the beginning of the rabi season of 1912-13.

Since the transfer of this channel to this Department, the jiráyat lands, as shown below, were irrigated in addition to the kayam bágáyat lands :—

| Years. | Area irrigated in acres. |
|----------------|--------------------------|
| 1909-10 | 253 |
| 1910-11 | 249 |
| 1911-12 | 818 |
| 1912-13 | 525 |

SA'TARA DISTRICT.

There is only one second class work in this district, viz. :—the Boregaon Dam, which served 105 acres with a consolidated assessment of Rs. 1,102 of which the irrigation share was Rs. 660.

BIJA'PUR DISTRICT.

There are altogether 16 second class works maintained by the Public Works Department. The lands irrigated by these works are assessed at consolidated rates. The total area irrigated during the year was 1,291 acres assessed at Rs. 6,587 out of which Rs. 130 were remitted; thus the net assessment amounted to Rs. 6,457 out of which Rs. 5,626 represented the irrigation share.

DHARWAR IRRIGATION DISTRICT.

The work of improvements to Dharma Canal, which was commenced in January 1910 was in progress during the year under report, the expenditure incurred to end of the year being Rs. 68,344 against the estimated amount of Rs. 88,912.

The expenditure during the year on repairs to 130 tanks in the Dhárwár and Kánára Collectorates, which were either completed or in progress, was Rs. 48,425, which is inclusive of the amount of Rs. 5,244 spent on surveys and preparation of projects for repairs. In addition to this, a sum of Rs. 2,208 was spent on water distribution and maintenance and repairs to Dharma and Naregal Canals and Rs. 733 on repairs to Irrigation Rest-houses. The total expenditure was therefore Rs. 51,366.

The area under command of the large second class tanks in the Dhárwár Collectorate irrigating more than 50 acres each and assessed at consolidated rates is 66,997 acres. During the year under report 64,091 acres were irrigated against 63,411 acres of the previous year and the consolidated assessment was Rs. 2,23,849 out of which remissions were granted by the Collector to the extent of Rs. 917 on account of failure of crops last year. The net consolidated assessment was thus Rs. 2,22,932 of which the irrigation share amounted to Rs. 1,78,347.

In addition to the above, the following sums represent revenue realised from Miscellaneous sources

| | | Rs. | a. | p. |
|--------------------------------------|-----------------------------|-----|-------|------|
| By Revenue Department. | (i) Water-rates | ... | 515 | 13 4 |
| | <i>Other Canal Produce.</i> | | | |
| | (ii) Sales of grass, etc. | ... | 1,163 | 4 4 |
| By Public Works Department ... (iii) | | ... | 1,081 | 9 0 |
| By Forest Department ... (iv) | | ... | 628 | 4 7 |
| | Total Rs. | ... | 3,388 | 15 3 |

BELGAUM DISTRICT.

The total number of second class tanks irrigating over 50 acres each in his district is 67 with an irrigated area of 9,916 acres paying a consolidated assessment of Rs. 41,319, of which the irrigation share is Rs. 33,053.

A sum of Rs. 16,854 was spent during the year on repairs to second class tanks. The details are as given below :—

| | Rs. |
|---|------------|
| (a) Repairs to 23 tanks, each irrigating 50 acres and above | ... 10,991 |
| (b) Repairs to 19 tanks, each irrigating below 50 acres | ... 3,397 |
| (c) Surveying 30 tanks | ... 1,806 |
| (d) Compensation for fresh land taken up owing to extensions and alterations to tanks | ... 660 |
| Total Rs. | ... 16,854 |

RATNA'GIRI DISTRICT.

There are four irrigation works in the Ratnágiri Collectorate which irrigated 1,205 acres during the year. The consolidated assessment and irrigation share were Rs. 5,862 and Rs. 3,183, respectively.

WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

AGRICULTURAL WORKS.

SURAT AND BROACH DISTRICT.

There was no change during the year in the financial results of the several drainage channels.

KOLA'BA DISTRICT.

The only irrigation work in the Kolába District is the masonry dam at Borvi. Ordinary repairs to this dam were carried out at a cost of Rs. 36.

POONA IRRIGATION DISTRICT.

KHAMGAON TANK.

This partially completed tank was dry till 26th June 1912 when it received its first replenishment. The tank did not fill during the year, the greatest depth reached being 10 feet on the 15th October against the full supply depth of 16.75. No water could be issued for irrigation during the kharif season. During the rabi 54 acres were irrigated against 40 last year, the gross assessed revenue being Rs. 218. The tank became dry at the end of the rabi season.

SHOLA'PUR DISTRICT.

WADSHIVNE TANK.

The tank was practically dry at the beginning of the year. On the 29th May 1912 it received replenishment, *viz.*, 22.21 million cubic feet representing a depth of 5.00 feet over the sill of outlet. The maximum depth attained was only 5.30 feet on the 15th October 1912, the contents being 24.26 million cubic feet. The tank again ran dry on the 19th February, 1913. The mean rainfall gauged at the two stations in the catchment of 16 square miles was 13.97 inches which gave a total replenishment of 24.27 million cubic feet, the proportion of run-off to rainfall being 4.69 per cent.

With such poor storage no regular irrigation was possible. However, two waterings were given to 14 acres of kharif and to 122 acres of rabi crops.

The gross assessed revenue amounted to Rs. 871 against Rs. 1,714, the average of the preceding triennium.

The expenditure incurred on maintenance and repairs and certain additions and alterations amounted in the aggregate to Rs. 1,509.

WEST KHA'NDESH DISTRICT.

TALWADA TANK.

The rainfall gauged on the tank dam was more than double that of the previous year and compares as follows with the previous three years:—

| Years. | Kharif. | Rabi. | Total. |
|----------------|---------|---------|---------|
| | Inches. | Inches. | Inches. |
| 1909-10 | 13.82 | 1.89 | 15.71 |
| 1910-11 | 25.66 | ..... | 25.66 |
| 1911-12 | 6.76 | ..... | 6.76 |
| 1912-13 | 17.55 | 1.82 | 18.87 |

The tank was dry up to 28th June 1912 when it received replenishment of 2.60 million cubic feet after a rainfall of 1.15 inches Tank supply. in the catchment basin. The maximum storage reached was 59.21 million cubic feet. The storage at the end of the year was 27.98 million cubic feet.

The area irrigated during the year was 53 acres as compared with 83 acres in 1911 and 37 acres in 1910, the gross assessed revenue being Rs. 420 against Rs. 441 and Rs. 37, the corresponding figures of the previous two years.

The value of crops irrigated was estimated at Rs. 2,080.

The outlay incurred was Rs. 157 against Rs. 143 and Rs. 219 of the previous two years.

The tank has received a good replenishment during the last two years and the necessity for opening canals for the distribution of the water to intending irrigators is keenly felt.

*Revenue Report of Irrigation Works in
the Bombay Presidency, excluding
Sind for 1912-13—Review of*

No. W. I.—4275.

PUBLIC WORKS DEPARTMENT.

Bombay Castle, 9th April 1914.

Letter from the Superintending Engineer, Northern Division, No. 6672, dated 18th September 1913.

Submits the Irrigation Revenue Report for his Division for 1912-13 in 2 parts, together with the Descriptive Account required as per Government Circular Memorandum No. W. I.—2931, dated 16th November 1906 and other statements.

Letter from the Superintending Engineer, Southern Division, No. 4295, dated 27th September 1913.

Submits the Irrigation Revenue Report for his Division for 1912-13, together with certain statements. Makes remarks.

Letter from the Superintending Engineer, Northern Division, No. 7180, dated 9th October 1913.

With reference to Government memorandum No. 9893-I, dated 1st October 1913, submits a revised table of second class works in Gujarat Irrigation District, comparing the areas irrigated and assessment levied during 1912-13 with the average of previous ten and three years, and makes remarks.

Letter from the Superintending Engineer, Central Division, No. 8383, dated 10th November 1913.

Submits Parts I and II of the Irrigation Revenue Report for his Division for 1912-13, and states that General Remarks will follow.

Letter from the Accountant General, Bombay, No. Bk.—1971, dated 11th November 1913.

Forwards certain statistical statements in connection with the Irrigation Revenue Report for 1912-13.

Memorandum from the Superintending Engineer, Central Division, No. 8694, dated 26th November 1913.

Submits General Remarks and the Descriptive Account of Irrigation Works in his Division for 1912-13.

Letter from the Superintending Engineer, Southern Division, No. 5359, dated 6th December 1913.

In continuation of his No. 4295, dated 27th September 1913, forwards a popular Descriptive Account of Irrigation Works in his Division for 1912-13.

RESOLUTION.—The Irrigation Works dealt with in this report are divided into three classes namely :—

(1) First Class Works (in Part I), being those for which Capital and Revenue Accounts are kept.

(2) Second Class Works (in Part II), being those for which only Revenue Accounts are kept. They are small but very numerous tanks, bandharas and channels, and

(3) Agricultural Works (also in Part II), being those for which neither Capital nor Revenue Accounts are kept. These are generally very small works.

2. The entire capital outlay on the first class irrigation works upto the end of the year 1912-13 was Rs. 4,53,13,946 and the net revenue (assessed) was Rs. 10,74,069. The Capital expenditure both direct and indirect, in the last year alone was Rs. 27,69,591 and of this figure, nearly 26 lakhs were spent on the new Protective Irrigation Projects, *viz.*, the Godavari, Pravara and Nira Right Bank Canals. Good progress continued to be made with the Godavari and Pravara Canals, and on the former system, a total length of 60 miles of the

Right Bank Canal and 20 miles of the Left Bank Canal were brought into operation during the year. A good start was also made with the Nira Right Bank Canal ; this project was sanctioned during the year, and its cost is estimated at Rs. 2,57,72,499.

3. In the Southern Division, the area of irrigation showed a small decrease of 3,000 acres, but in the other Divisions there was an increase amounting to 57,000 acres. The contributory causes were the irregularity in the rainfall, and the extension of irrigation under the Godavari and Pravara systems. The increase on these systems was 28,000 acres. The total area of irrigation was 197,365 acres.

4. With the increase of irrigation there was a rise in the gross assessed revenue which amounted to Rs. 15,83,168 against 13,31,017 of the previous year, and Rs. 9,97,435, the average of the previous 10 years. The growth of revenue is satisfactory, though the average rate of assessment figures out to 8.02 Rs. only per acre compared with 9.3 Rs. of last year.

5. The unrealized balance at the close of the year was Rs. 1,70,709 which is more than the previous year's figure by Rs. 59,840. The excess was entirely due to the difficulty experienced in the Northern Division in effecting the recovery of revenue owing to the failure of the rains in the latter part of the season, but it is hoped that the sum will be paid during 1915-14.

6. There will continue to be an increase in working expenses as long as new lengths of canal come into operation annually. Thus an increase of Rs. 41,052 has been recorded this year, of which the Godavari Canals were responsible for Rs. 15,526. The total charge for the year was Rs. 5,09,099.

7. The resulting net revenue for the year was—

| | Rs. |
|--|-----------|
| (I) On the basis of assessment | 10,74,069 |
| (II) On the basis of realizations | 9,04,428 |

as compared with Rs. 8,62,970 and 9,08,054 respectively during the previous year.

8. The policy of Government in the last ten years has been to make liberal annual grants for expenditure on the improvement and maintenance of the second class irrigation works. The annual expenditure during this period has been on the average 4.4 lakhs rupees, and a large number of works have been put into good working order.

The revenue, which has averaged 4.9 lakhs rupees during the last 10 years, was realized from the 1,344 works shown in the list in Part II, and represents the irrigation share, on these works only, of the consolidated assessment and direct receipts from sale of water and produce. The area irrigated by these works in the year under review was 148,444 acres, an increase of 7,724 acres on the previous year's figure.

9. The Irrigation Officers and all officers concerned with the distribution of water are thanked for the management of the works.

10. Copies of the report and of this review should be forwarded to the Government of India. Copies should also be sent to the Secretary of State for India.

E. M. DUGGAN,
Under Secretary to Government,
Irrigation and Railways.

To
The Revenue Department, Secretariat.
The Financial Department, Secretariat.
The Commissioner in Sind.

The Commissioner, N. D.
The Commissioner, C. D.
The Commissioner, S. D.
The Director of Agriculture.
The Settlement Commissioner and Director of Land Records.
The Chief Engineer in Sind.
All Superintending Engineers of Divisions.
The Accountant General, Bombay.
All Executive Engineers having charge of Irrigation Works.
The Government of India
The Under Secretary of State for India } (By letter.)

Class A.

Exd. C. S. P.

No. _____ of 1914.

Copy forwarded for information and guidance to