
CHAPTER V

DEVELOPMENT OF IRRIGATION IN SHOLAPUR DISTRICT

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In the last chapter the pattern of crops in Sholapur District was studied. Besides it may also be noted that Sholapur District has always been suffering due to lack of rainfall and also lack of drinking water facilities. Agriculture in Sholapur District mainly depends upon rainfall as 91.5 percent of the total cultivated area is under dry farming. It can also be stated that compared to surrounding districts of Sangli, Pune, Satara, Osmanabad, the Co-operative movement has also lagged behind, because of lack of irrigation development. Hence in this chapter the Irrigation Development undertaken by various agencies is examined.

IRRIGATION AND POWER DEPARTMENT:

Organisations:

The Executive Engineer is responsible to the Superintending Engineer for the execution and management of all the works in his division. The Sub-Divisional Officer is responsible to the Executive Engineer and are placed

in charge of the Sub-divisions for management and execution of works within their Sub-divisions. Overseers work under the Sub-Divisional Officers.

All the irrigation works in Sholapur District are administered by the Executive Engineer, Sholapur Irrigation Division, Sholapur. All the minor irrigation schemes that irrigate up to about 101 hectares (250 acres) are the responsibility of the Zilla Parishad. The various activities pertaining to irrigation consist of management of the existing irrigation works, construction of medium and minor irrigation works and investigation of various minor irrigation works. There are four Sub-Divisions which look after the works in Sholapur District.

The Irrigation Sub-Division, Sholapur looks after the management and maintenance of five existing tanks,

Of the six tanks, four are in Sangola taluka, one in Mohol and one in Mangalwedha taluka. This Sub-division also looks after the construction of medium works and the investigation, construction and maintenance of minor irrigation works in Sangola, Pandharpur, Malshiras and Mangalwedha talukas.

The Irrigation Sub-Division, Karmala, looks after the management and maintenance of five existing tanks, out of which four are in Karmala taluka and one in Madha taluka. It also looks after the construction of medium works and the investigation, construction and maintenance of minor irrigation works in Karmala, Mohol and Madha talukas.

The Padwalkarwadi Project Sub-Division, Mangalwedha, looks after the construction of Padwalkarwadi Project only.

Out of the above sixteen tanks, the Ekruk Tank provides water supply to the Sholapur city and cotton mills in Sholapur city. After the completion of the Bhima water supply scheme, some additional water can be utilised for irrigation purpose.

A sizeable amount of Rs.39.35 crores has been provided in the District Plan for the completion of Major irrigation works, viz., Bhima Project and medium irrigation work of Hingani (Pangaon) in Barshi taluka. The construction programme during the Fifth Plan was as under:

Sr. No.	Description	Amount (Rs. in lakhs)
1)	Dam & Spill way including gate installation.	5,00
2)	Land acquisition, railway diversion & rehabilitation.	16,00
3)	Other charges under E.H.W.	1,00
4)	Main Canal.	1,480
5)	Distributaries.	320
		4,000

It was proposed to complete the project by the end of the Fifth Plan and on completion 1,11,791 hectares of land would come under irrigation.

The Hingani (Pangaon) Project in the Barshi taluka had been started in the Fourth Plan, the anticipated expenditure that will be incurred during the Fifth Plan period, was Rs.43.90 lakhs, as against the total estimated cost of Rs.167.97 lakhs. It was proposed to complete the project in the Fifth Plan period for which an amount of Rs.120 lakhs had been set apart in the District Plan. On the completion of this project an area of 8,720 hectares in Barshi taluka would come under irrigation.

IRRIGATION:

The problem of irrigation has been an important one in regard to the Sholapur district. Since long an excellent description of the irrigation facilities available in the district has been given by the old Sholapur Gazetteer.

WATER WORKS:

Sholapur has seven water works of which three: one Koregaon, Ashti and Ekruk lakes supply tillage water and four at Sholapur, Barshi, Karmala and Pandharpur supply drinking water. Of the three tillage water works the Koregaon lake is an old work improved and the Ashti and Ekruk lake are new works.

KOREGAON LAKE:

The Koregaon lake lies thirteen miles north-east of Barshi and is formed by throwing two earthen dams across two separate villages. The larger dam on the west is 995 feet long and seventy-one feet high in the centre, and the smaller dam on the south-east is 300 feet long with a maximum height of twelve feet. The drainage area is 4.4 square miles. The original depth of the lake near the dam seems to have been fifty feet, but several centuries of silt have lessened its depth, and reduced its storage capacity. Between 1855 and 1858, under the orders of the

Collector, the full supply level was raised nine feet which led to the building of the smaller dam. As the dams were of inferior materials, the increased head of water in the lake caused great leakage - - - . In 1864 and 1865, steps were taken to stop the leakage. These repairs included the entire re-building of the front of the larger dam for a depth of thirty feet that is to below low water level, and the making of a puddle trench, twelve feet deep and three feet wide along the whole length of the smaller dam. In September, 1870, the smaller dam was breached, and the efficiency of the work was greatly impaired ----. The lake till then had a depth of fourteen feet from outlet to full supply, an available capacity of 81,298,115 cubic feet, and a full supply area of 8,793,017 (square feet or 202 acres) - - -. In 1982-83, the lake watered $84\frac{1}{2}$ acres in the village of Koregaon which paid 17-88. (Rs.174) for water rate of the $84\frac{1}{2}$ watered acres, nineteen grew ground-nut eight turmeric, $7\frac{1}{4}$ sugarcane, thirty-five Jawari, thirteen wheat and $2\frac{1}{4}$ gram.

ASHTI LAKE:

The Ashti lake lies in the Madha Sub-division twelve miles North-East of the large town of Pandharpur. The lake is formed by throwing across the Ashti stream, a feeder of the Bhima, an earthen dam 12,709 feet long, with a greatest

height of 57.75 feet. From this lake two canals are led. The left bank canal, which is $11\frac{1}{2}$ miles long, commands 12,258 acres; the right bank canal, which is ten miles long, commands 5,624 acres. The land commanded is chiefly in the Pandharpur Sub-Division. The lake supply is sufficient to water 10,809 acres in regular rotation, thus raising the arable area under command from four to nine percent of the whole cultivated area. The dam is entirely of earth. In addition a concrete wall, five feet thick, has been built at the river crossing, founded on rock, running well into the banks on both sides. The concrete wall is under the centre of the dam. The exposed portions of the dam are guarded from wear by a mixture of crumbly trap and earth. The whole dam was built in six inch layers, well watered and rammed. A waste weir, with crest at 232 and 80½ feet wide, is formed by cutting through a saddle on the right bank of the lake. The discharging capacity is 48,000 cubic feet a second, equal to a run-off 0.80 of an inch the hour from the drainage area of ninety-two square miles. The height to which such a flood would rise is seven feet above the crest of weir and five feet below the top of the dam. All flood water is passed under the canals by adeducts, or above them by over-passages which also serve as accommodation bridges during the dry weather. The outlet and regulating works for the left bank canal include a head wall, through which the water is discharged into a tunnel,

by which it is passed under the dam into a discharging basin, constructed at the head of the canal. The head wall is of coarse rubble mason. The length at bottom is eighteen feet and the breadth $16\frac{1}{2}$ feet. The height of the wall is 33.5 feet, and the reduced level at top is 241 or three feet below the formation level of the dam. The head works of the right bank canal are almost the same as those of the left bank canal, but as the required discharge is only one-third of what is necessary for the left bank canal, all parts of the work are of a smaller size. The lake was completed on the 31st of July 1881, at a cost of 33,499 (Rs. 3,34,990). The dam was begun on the 1st of December, 1976 as a famine relief work. The work was finally closed as a famine relief on the 30th of November, 1977.

ERUK LAKE:

The Eruk lake, the largest artificial lake in the Bombay Presidency, lies five miles north-east of Sholapur. The scheme was prepared in 1863 and sanctioned in 1866. It comprises a reservoir formed by an eastern dam 7,200 feet long and seventy two feet in greatest height and three canals. The dam is thrown across the valley of the Adhila, a feeder of the Sina, which has a drainage area of 160 square miles above the lake. The lake is sixty feet deep when full and holds 3,350 million of cubic feet. The area of water surface is 4,640 acres or $7\frac{1}{4}$ square miles. Two waste weirs together 750 feet long, are provided for the escape of flood water

after the lake is full of the canals, one on each bank, is at a high level, designed for four months' watering, and the third on the left bank is at a low level, designed for a 12 month's discharge. Of the two high level canals the right bank canal is eighteen miles long which discharges sixty cubic feet a second and commands 565 acres and the left bank canal is four miles long, which discharges twenty-five cubic feet a second, and commands 956 acres. The low level left bank canal is twenty-six miles long, which discharges seventy cubic feet a second and commands 10,601 gross acres.

The canals are bridged and regulated throughout and can be lengthened so as to command larger area. The low level canal flow close past the town of Sholapur. The work was begun in 1866, and the dam was closed in December, 1869. Some water was supplied to the Kharif or rain crop of 1871-72. At the end of 1876-77 the work was completed, except the masonry heads to distributaries of the last two miles of the low level canals and the last twelve miles of the high level right bank canal. By the end of 1881-82 all the works connected with the Ekruk lake were completed at a total cost of about

121,262 (Rs.12,12,620). In 1982-83, of 15,320 acres, the arable area under command, 1,306 acres were watered and paid 525 (Rs.5,240) for water rates - - -. Besides tillage water, the Ekruk lake supplied drinking water to the town of Sholapur.

WELLS:

Besides from the Koregaon, Ashti and Ekruk lakes Bagayat or Garden land is watered either by throwing dams across streams or by wells. From the dams, land is watered at the latest till the end of March. Wells are rarely sunk in Malran or high level lands. According to the 1882, returns, Sholapur had ten rivers, the Bhima, Sina, Man, Bhogavati, Apanpa, Becki, Chandani, Korna, Nil and Sira, 818 streams, 214 reservoirs and 17,472 wells. Of the 17,472 wells, 4,812 are used for drinking and washing and 12,660 for watering, 4712 are with steps and 12,760 are without steps*

Agricultural activities in the Sholapur district are still dependent on the Vagaries of monsoon. Irrigation aims at making good the deficiencies of rainfall thereby bringing more land under the plough which otherwise remains uncultivated for want of water and also increasing the double cropped area. In brief, the object of irrigation is to augment farm produce. Irrigation thus occupies an important place in the development of agriculture. Naturally irrigation facilities of permanent nature are necessary to reach any measure of stability in the agricultural production. At present the main sources of water supply in the district are wells, Bandharas, tanks and canals. Lift irrigation from rivers and wells through the installation of electric pumping sets and oil-engines has also benefited agriculture in the district.

* Gasetter of the Bombay Presidency, Sholapur District, Vol. XX, 1884, pp. 222-28.

There was no major irrigation work taken up in the past in the district. Only medium and minor works such as Bandharas, Tanks and wells provided irrigation facilities in the district. The completion of the Mira Right Bank Canal in 1937-38, however, was one of the most important land-marks in the economy of the district. It ushered in an era of agrarian prosperity in the areas benefited by it. The Shina project was another land-mark which has been instrumental in revolutionising the structure of the agrarian economy in parts of the district.

MAJOR IRRIGATION WORKS :

The following is the brief account of the major irrigation works in the district.

1) Nira Right Bank Canal:

The Nira Right Bank Canal system fed by Bhatghar dam in Pune district was put into operation in 1937-38. This canal has a length of 95 miles passing through Sholapur and Satara district. This canal system now provides irrigation facilities to the Malshiras taluka and irrigates about 50,000 acres in the district. The proportion of the area irrigated to the net area sown in Malshiras taluka is higher than other talukas in the district, due to this facility. The important crops irrigated by this system are sugarcane, cotton and wheat.

2) Shina Irrigation Project:

It is another important major irrigation project in Sholapur district. This project consists of two parts, viz.

(1) Pawana in Pune district and (2) Ujani in Sholapur district, with canals on each bank to create irrigation potential of 1,66,750 hectares in Pune and an equal potential in Sholapur district. The Ujani dam is located at Ujani in Madha taluka in the district, just half a mile upstream of the bridge on Bhima river on Pune-Sholapur road. The work of this dam was started in 1969. Originally this project was estimated to cost about Rs.40, crores. The latest estimated cost of the project is Rs.62.69 crores and the potential of 1,67,750 hectares would be created on completion of the project. An expenditure of Rs.21.16 lakhs was likely to be incurred by 1973-74, i.e. last year of the Fourth Plan. This project envisages storage at Ujani with canals on the left and right banks. The dam involves diversion of railway line, costing about Rs.5.60 crores. By the end of the Fourth Five Year Plan, the following works ^{were to} ~~would~~ be completed:

- 1) Pawana dam completed with installation of crest gates,
- 2) Ujani dam main dam would be under construction, and;
- 3) Left bank canal construction upto forty kilometre length.

An outlay of Rs.40 crores has been proposed on this project during the Fifth Five Year Plan period. It is proposed to complete the entire Bhima project and a part of the canal work during the Fifth Plan. The remaining canals may be completed during the subsequent period. The Ujani project is expected to be completed in 1981.

3) Sina Kolegaoni

It is a new major irrigation project taken-up during the Fifth Plan. It envisages construction of an earthen dam on Sina river, near village Ningaon in Karmala taluka. It is estimated to store 5.24 T.M.C. of water. The project will benefited Karmala, Barshi and Mohol talukas in Sholapur district, and Parando taluka of Osmanabad district. The estimated cost of this project is Rs.910 lakhs and the outlay proposed for Fifth Plan is 100 lakhs. It will create an irrigation potential of 1,34,500 hectares.

Medium Projects:

Besides the above major irrigation projects, a large area is irrigated by medium projects.

Table No. I gives the location and area irrigated by the medium projects in Sholapur district.

Table Nos. II and III shows the irrigation works under execution and those already sanctioned in Sholapur district.

Table No. I: Area Irrigated by Irrigation Works in
Sholapur District During 1968-69.

<u>Sr. No.</u>	<u>Name of the Tank</u>	<u>Location (Taluka)</u>	<u>Estimated Cost (Rs. in Lakhs)</u>	<u>Benefited Area (In Acres)</u>
1)	Ekruk.	North Solapur	14.21	8,000
2)	Hotgi.	South Sholapur.	6.59	1,600
3)	Pathri.	Barshi.	6.73	1,600
4)	Koregaon.	Barshi.	Not known	1,050
5)	Vairag.	Barshi	7.31	890
6)	Buddheshal.	Sangola.	90.50	10,500
7)	Chincholi.	Sangola.	16.21	1,800
8)	Gherdi.	Sangola.	1.81	1,700
9)	Javale.	Sangola.	1.09	530
10)	Ashti.	Mohol.	8.29	8,000
11)	Talasangli.	Mangalwedha.	Not known	600
12)	Mangi.	Karmala.	66.19	7,700
13)	Madshivane.	Karmala.	4.01	1,760
14)	Sangavi.	Karmala.	4.93	1,050
15)	Parwadi.	Karmala.	8.47	1,500
16)	Sapatane	Madha.	11.74	1,800
17)	Padawalkarwadi.	Mangalwedha.	23.78	869

Table No. II: Irrigation Works Under Execution in Sholapur District During 1968-69:

Sr. No.	Name of the Tank.	Location (Taluka)	Estimated (Cost, Rs.)	Estimated Area benefiting on completion (Area in Acres).
1)	Junoni.	Sangola.	4,41,714	282
2)	Ashkadani.	Sangola.	11,90,801	490
3)	Rampur.	South Solapur.	9,96,073	1,005
4)	Kari.	Barshi.	9,86,630	455
5)	Gulorgi.	Akkalkot.	16,69,000	1,021
6)	Padawalkarwadi.	Mangalwedha	21,50,000	370
7)	Hingani (Pangaon)	Barshi.	1,67,77,000	13,900

Table No. III: Irrigation Works Already Sanctioned in Sholapur District:

Sr. No.	Name of the Work	Location (Taluka)	Estimated Cost (Rs).	Estimated Area benefiting on completion (Area in Acres)
1)	Hingani.	Karmala.	14,44,540	990
2)	Veet.	Karmala.	19,06,987	650
3)	Kondhej.	Karmala.	15,86,895	690
4)	Huljanti.	Mangalwedha.	9,73,619	455

MINOR IRRIGATION WORKS:

All minor irrigation schemes that irrigate upto 101.17 hectares (250 acres) are under the administrative charge of the Zilla Parishad. The Zilla Parishad is empowered to take

up minor irrigation works costing upto Rs.5 lakhs. It has however, been found that projects for irrigation cannot be undertaken within the above, mentioned financial limit by the Government. Naturally, the policy of Sholapur Zilla Parishad has been to construct percolation tanks and Bandharas, which help in increasing the water level in the wells in their vicinity due to the rise of sub-soil water. The Zilla Parishad has so far taken up ten percolation tanks, out of which two were completed during 1967-68 and 1968-69. There are about fifty proposals for the construction of percolation tanks in the district which are under investigation.

Table No.IV shows the minor irrigation works under Sholapur Zilla Parishad which are in progress in the district.

CO-OPERATIVE LIFE IRRIGATION SCHEME:

The sources of irrigation in the district are mainly rivers, wells, tanks and Bandharas. Water is lifted from the rivers, wells, tanks etc., and used for irrigation purpose. Formerly water was lifted by leather Mota or Iron Mota. This system is still prevalent in some parts of the district, where it is not possible to install Electric pumping sets and where the agriculturists cannot afford to purchase oil-engines. The Co-operative lift irrigation societies therefore, have been formed as an alternative to provide irrigation facilities. This has helped in bringing larger area

**Table No. IV: Minor Irrigation Works in Progress Under
Zilla Parishad, Sholapur.**

Sr. No.	Name of the Work	Taluka	Area Irrigated (In Acres)	Estimated Cost (Rs.)	Expenditure upto 31st March, 1970 since commencement
1	2	3	4	5	6

BANDHARA AT:

1)	Ambejawalge.	Barshi.	200	79,303	28,606
2)	Kavhe.	Barshi	245	87,367	30,186
3)	Koudgaon.	Barshi	200	87,630	41,856
4)	Bhose.	Karmala.	100	21,927	14,608
5)	Darfal.	Madha.	240	73,833	82,310
6)	Hangirage.	Sangola.	240	64,000	14,137
7)	Maki (Gherdi)	Sangola.	250	91,410	12,159
8)					

PERCOLATIONAL TANK AT:

8)	Goudgaon.	Barsi.	170	4,26,094	2,64,576
9)	Garwad.	Malshiras.	75	1,48,220	54,103
10)	Mandrup.	S. Sholapur.	114	1,73,880	1,32,997
11)	Vyadhal.	Karmala.	200	1,49,510	1,25,420
12)	Khomnal.	Mangalwedha.	75	33,063	24,430
13)	Boramani	S. Sholapur.	110	1,58,825	92,121
14)	Tolnur.	Akkalkot.	200	1,57,150	56,482
15)	Pandhari.	Barshi	200	4,92,993	55,467
16)	Malegaon.	Barshi	200	4,99,697	46,614
17)	Dindur.	S. Sholapur	240	4,96,066	3,069
18)	Kanti (Mk.)	Mohol	150	3,13,445	591
19)	Lotewadi.	Sangola.	150	1,85,560	2,962

LIFT IRRIGATION SCHEMS AT:

20)	Vadapur.	S. Sholapur.	400	2,65,466	78,119
21)	Fathari.	N. Sholapur.	125	98,167	81,489
22)	Aljapur.	Karmala.	400	1,07,300	62,609

Continued...

1	2	3	4	5	6
23)	Potegaon.	Karmala.	150	95,061	55,065
24)	Borgaon.	Karmala.	150	70,205	11,931
25)	Sindhed.	Akkalkot.	700	2,12,958	1,34,820
26)	Kolibet.	Akkalkot.	300	2,18,730	1,15,605
27)	Alage.	Akkalkot.	800	2,47,710	58,681
28)	Sidhapur.	Mangalwedha	870	2,35,502	1,41,068
29)	Sultanpur.	Madha.	630	1,72,600	75,503
30)	Pehe.	Pandharpur.	280	1,31,240	87,724
31)	Marhed.	Mohol.	900	4,15,221	1,27,221
32)	Kadala s.	Sangola.	200	62,905	31,241
33)	Gunjegaon.	S-Sholapur	100	90,530	14,579
34)	Vadakbal.	S. Sholapur.	100	95,123	16,107
35)	Sadapur.	S. Sholapur.	150	1,62,919	36,666
36)	Hattur.	S-Sholapur.	150	1,72,716	29,131
37)	Pakani.	N. Sholapur.	100	1,28,121	23,202
38)	Hirgi.	N. Sholapur.	100	1,27,805	29,834
39)	Kini.	Akkalkot	125	96,173	24,527
40)	Rampur.	Akkalkot	125	1,42,808	22,678
41)	Bramhapur.	Mangalwedha	125	1,54,436	10,182

under irrigation, reduce the cost of irrigation per acre, raise more ~~irrigation~~ crop a year and make farming more profitable.

The Sholapur Zilla Parishad has taken up twenty-three lift irrigation schemes in the district, the details of which are given in Table No.IV, with the two big rivers, viz. the Bhima and the Sina, and small rivers like the Man, the Bori and the Harna, lately a few lift irrigation schemes have been taken up in the Co-operative sector. The Zilla Parishad has undertaken 23 such schemes for implementation, out of which 7 have been completed. The details are given in Table No.IV.

The Bhima river traverses about 180 miles in Sholapur district and has a minimum discharge of fifty cusecs. Besides, the Bhima, the Sina and the Bori are suitable for the lift irrigation. A major lift irrigation scheme is located at Tandulwadi in South Sholapur taluka. It irrigated about 4,000 acres. Generally, in such schemes, area irrigated varies between 125 acres and 1,500 acres. These schemes are found more in South Sholapur, North Sholapur and Akkalkot talukas. More schemes have been proposed throughout the district and some of the Co-operative sugar factories have undertaken to finance some lift irrigation schemes.