

# **APPENDICES**



## APPENDICES

### APPENDIX I

#### Statement showing introduction of selected irrigation projects/need for and evolution of projects

(Refer paragraph 1.3)

Sr. No.	Name of the Project	Description
1.	Andhali Medium Irrigation Project	This project was constructed on Man River near Andhali village in Man Taluka of Satara district to benefit the drought prone area of western region of Maharashtra through irrigation of 1498 hectares ( <i>ha</i> ) of agriculture land. The project consisted of 2040 metre long earthen dam with water storage capacity of 9.27 Mm <sup>3</sup> . The projected IP was 2321.9 <i>ha</i> (1498 x 1.55 <i>i.e.</i> area to be irrigated x crop intensity) with crop intensity of 155 <i>per cent</i> (kharif 88 <i>per cent</i> , two seasons 12 <i>per cent</i> and rabi 55 <i>per cent</i> ) and it was expected to cater to the requirement of irrigation through kharif and rabi seasons. The project estimated to cost ₹ 1.15 crore was approved by GoM in April 1977.
2.	Pimpalgaon (Dhale) Medium Irrigation Project	This project was constructed on Sira nalla in Barshi taluka, Solapur district to benefit the drought prone area of western region of Maharashtra through irrigation of 2400 <i>ha</i> of agriculture land in six villages <sup>1</sup> of Barshi taluka. The project consisted of an earthen dam with ogee <sup>2</sup> type waste weir on Sira nalla (a distributary of Bhogwati river) with projected IP of 3384 <i>ha</i> (2400 x 1.41) with crop intensity of 141 <i>per cent</i> (kharif 100 <i>per cent</i> and rabi 41 <i>per cent</i> ) and it was expected to cater to the requirement of irrigation through kharif and rabi seasons. Initially the project estimated to cost ₹ 10.01 crore was approved by GoM in June 1994.
3	Purna Medium Irrigation Project	This project was constructed on Purna river in village Vishroli Chandur Bazar taluka in Amravati district, which had very fertile alluvial land and needed assured supply of water to increase the food production. It was designed to provide irrigation to 6275 <i>ha</i> of agriculture land with an IP of 10040 <i>ha</i> (6275 x 160 <i>per cent</i> ) having crop intensity of 160 <i>per cent</i> (kharif 60 <i>per cent</i> , rabi 60 <i>per cent</i> and two seasons 40 <i>per cent</i> ), so as to cater to the requirement of irrigation through kharif and rabi seasons. Initially the project estimated to cost ₹ 36.45 crore was approved by GoM in July 1994.
4.	Haranghat Lift Irrigation Scheme	This project was constructed near village Pathri of Saoli Taluka, Chandrapur district to feed the existing Asolamendha tank, which was constructed in 1918 across Pathri river a tributary of Mul River in Wainganga basin. The tank was never filled to its full capacity 67.01 Mm <sup>3</sup> since its construction hence this project was proposed to irrigate 3651 <i>ha</i> of agriculture land in eight villages of Mul taluka under the command area of the canal from 29.43 km to 33.75 km.

<sup>1</sup> Irle- 314 *ha*, Pangaon- 692 *ha*, Pimpalgaon (pan)- 104 *ha*, Sakat- 347 *ha*, Undegaon- 852 *ha* and Yavali- 91 *ha*.

<sup>2</sup> Ogee type dam - A dam without gates with a spillway for releasing water from the dams. Water is released prior to over flow of dam through spillway for irrigation.

## Performance Audit on Outcomes in Surface Irrigation

Sr. No.	Name of the Project	Description
		The project was designed to lift the water from Wainganga river and fill up the existing Asolamendha main canal throughout the year to irrigate 3651 <i>ha</i> of agriculture land in eight villages of Mul tehsil through its existing canal system from 29.43 km to 33.75 km. Initially, the project estimated to cost ₹ 12.19 crore was approved by the GoM in February 1996.
5.	Sondyatola, Lift Irrigation Scheme	The project was constructed on the downstream of Bawanthadi project <sup>3</sup> , at village Ghannor in Tumsar taluka, Bhandara district. It involved lifting of water from Bawanthadi river and feeding existing Chandpur Tank constructed in 1905, the command area of which was deprived of irrigation due to low yield from its own catchments as the tank never filled to its designed capacity since its construction. Hence, the farmers could not grow rabi crops as they were not assured of irrigation. It was proposed to lift 65.30 Mm <sup>3</sup> of water to irrigate 9025 <i>ha</i> of agriculture land with IP of 11732.50 <i>ha</i> (9025 x 1.3) having crop intensity of 130 <i>per cent</i> , to cater to the requirement of irrigation through all the seasons by the command area farmers. Initially the project estimated to cost ₹ 13.33 crore was approved by GoM in May 1995.
6.	Wagholibuti, Lift Irrigation Scheme	The project was constructed near village Wagholi, Saoli taluka, Chandrapur district, on the right bank of Wainganga, a perennial river. It involved lifting of water from Wainganga river and feeding existing Asolamendha tank constructed in 1918 across Pathri river a tributary of Mul River in Wainganga basin, the command area of which was deprived of irrigation due to water not reaching the tail portion, as the tank was never filled to its designed capacity of 67.01 Mm <sup>3</sup> since its construction. Hence, the farmers were dependent upon rain water and the rainfall was not evenly distributed during kharif crops as a result the area faced dry spells. There was negligible cultivation in rabi and hot weather also, for want of assured irrigation facility. In order to fulfil the continuous demand of local people for assured irrigation it was proposed to lift 24.42 Mm <sup>3</sup> water annually from Wainganga river to irrigate 3441 <i>ha</i> of agriculture land with IP of 5505 <i>ha</i> (3441 x 1.6) having crop intensity of 160 <i>per cent</i> , to cater to the requirement of irrigation through all the seasons by the command area farmers in 20 villages <sup>4</sup> of Saoli taluka, Chandrapur district. The water availability was determined on the basis of monthly discharge data of Wainganga river for the period from 1969-70 to 1990-91 at river gauging station, Ashti on the downstream of project. The existing distribution system of the tank was to be used with some renovation and extension work for supplying water. Initially, the project estimated to cost ₹ 9.50 crore was approved by GoM in November 1993.

<sup>3</sup> An inter-state project (with Madhya Pradesh) across Bawanthadi river.

<sup>4</sup> Bhansi, Chak Upri, Chorkhal, Donalamal, Jam (Bhuj), Jam Keroda Rait, Kadholi, Kajalwahi, Kapsi, Keroda, Kondekhal, Petgaon Chak, Petgaon (Nilsani), Petgaonmal, Samda, Sirsichak, Sonapur, Upri, Vyahad (Bhuj) and Wagholi.

## APPENDIX II

## Seasons wise irrigation done in respect of selected projects

(Refer paragraph 2.2.3)

Name of the Project	Year	Kharif (in ha)	Rabi (in ha)	Hot weather (in ha)	Total (in ha)	Remarks
Andhali	2014-15	101.00	100.00	0.00	201.00	Surface irrigation was not provided in any of the seasons through the canal system of the project. The irrigation data furnished by the GoM was of irrigation through the lifting of water from the dam by the farmers by making their own arrangement.
	2015-16	60.00	10.00	3.00	73.00	
	2016-17	0.00	0.00	0.00	0.00	
	2017-18	100.00	195.00	100.00	395.00	
	2018-19	0.00	0.00	0.00	0.00	
	2019-20	0.00	169.00	282.00	451.00	
	2020-21	0.00	170.00	174.00	344.00	
Pimpalgaon (Dhale)	2014-15	342.00	524.00	234.00	1100.00	Surface irrigation was not provided in any of the seasons through the canal system of the project. The irrigation data furnished by the GoM was of irrigation through the lifting of water from the dam by the farmers by making their own arrangement.
	2015-16	0.00	0.00	0.00	0.00	
	2016-17	0.00	536.00	694.00	1230.00	
	2017-18	293.00	452.00	510.00	1255.00	
	2018-19	240.00	0.00	0.00	240.00	
	2019-20	0.00	609.30	350.00	959.30	
	2020-21	250.53	588.98	459.86	1299.37	
Purna	2014-15	1243.00	1167.00	318.00	2728.00	Project was designed for providing irrigation in kharif and rabi seasons. The command area of the project comes under assured rainfall zone and hence the irrigation in kharif seasons was less.
	2015-16	1087.00	1496.00	206.00	2789.00	
	2016-17	814.00	2001.00	423.00	3238.00	
	2017-18	225.00	1798.00	326.00	2349.00	
	2018-19	1010.00	110.00	149.00	1269.00	
	2019-20	Not available	Not available	Not available	1690.00	
	2020-21	Not available	Not available	Not available	1166.00	
Haranghat LIS	2014-15	2437.00	0.00	0.00	2437.00	Irrigation in rabi and hot weather seasons was not provided through canal.
	2015-16	2432.00	0.00	0.00	2432.00	
	2016-17	2425.00	0.00	0.00	2425.00	
	2017-18	2425.00	0.00	0.00	2425.00	

**Performance Audit on Outcomes in Surface Irrigation**

Name of the Project	Year	Kharif (in ha)	Rabi (in ha)	Hot weather (in ha)	Total (in ha)	Remarks
	2018-19	2454.00	0.00	0.00	2454.00	
	2019-20	2412.00	0.00	0.00	2412.00	
	2020-21	2424.00	0.00	0.00	2424.00	
Sondyatola LIS	2014-15	8077.00	347.00	763.00	9187.00	Irrigation data submitted by the GoM is inclusive of all means of irrigation viz. canal, ponds, well, river etc.
	2015-16	7956.00	291.00	435.00	8682.00	
	2016-17	7824.00	245.00	747.00	8816.00	
	2017-18	8047.00	268.00	410.00	8725.00	
	2018-19	7974.00	161.00	417.00	8552.00	
	2019-20	7964.00	84.00	2374.00	10422.00	
	2020-21	7974.00	90.00	2609.00	10673.00	
Wagholibuti LIS	2014-15	2281.00	0.00	0.00	2281.00	Irrigation in rabi and hot weather seasons was not provided.
	2015-16	2168.00	0.00	0.00	2168.00	
	2016-17	2158.00	0.00	0.00	2158.00	
	2017-18	2703.00	0.00	0.00	2703.00	
	2018-19	2280.00	0.00	0.00	2280.00	
	2019-20	2281.00	0.00	0.00	2281.00	
	2020-21	2246.00	0.00	0.00	2246.00	

**APPENDIX III**

**Statement showing suggested cropping pattern of the projects**

(Refer paragraph 2.2.4)

Sr. No.	Name of the season/Crop	Projected area under crops (ha) (per cent of Irrigable Command Area)	Sr. No.	Name of the season/Crop	Projected area under crops (ha) (per cent of Irrigable Command Area)
<b>1. Andhali</b>			<b>2. Pimpalgaon (Dhale)</b>		
A)	<b>Two Seasons</b>		A)	<b>Two Seasonal</b>	
1	Chillies	104.86 (7%)	1	Chilies	120 (5%)
2	Cotton	74.90 (5%)	2	L.S. Cotton	120 (5%)
B)	<b>Kharif Season</b>		B)	<b>Kharif (Irrigated)</b>	
3	Hy. Bajari	224.70 (15%)	3	Hy. Jowar	360 (15%)
4	Groundnut	149.80 (10%)	4	Kharif Bajri	240 (10%)
5	Pulses (UI)	299.60 (20%)	5	Groundnut	240 (10%)
6	Green Manure	74.90 (5%)	6	Sunflower	240 (10%)
7	Vegetables	29.96 (2%)	7	Vegetable	120 (5%)
8	Onions	74.90 (5%)	<b>Kharif (un-irrigated)</b>		
9	Hy. Jowar	89.88 (6%)	8	Pulses	240 (10%)
10	Hy Maize	74.90 (5%)	9	Bajri	120 (5%)
11	Groundnut (UI)	299.60 (20%)	10	Kharif Hy. Jowar	360 (15%)
<b>Total (A+B)</b>		<b>1498.00 (100%)</b>	11	Kadwal	240 (10%)
C)	<b>Rabi Season</b>		<b>Total (A+B)</b>		<b>2400 (100%)</b>
12	Wheat	104.86 (7%)	C)	<b>Follow on Crops</b>	
13	Hy. Maize	119.84 (8%)	12	Hy. Wheat	240 (10%)
14	Hy. Jowar	149.80 (10%)	13	Rabi vegetables	120 (5%)
15	Vegetables	74.90 (5%)	14	Hy. Jowar	264 (11%)
16	Onions	74.90 (5%)	15	Gram	240 (10%)
17	Fodder	149.80 (10%)	16	Sunflower	120 (5%)
18	Gram, Bajari	149.80 (10%)	<b>Total (C)</b>		<b>984 (41%)</b>
<b>Total (C)</b>		<b>823.90 (55%)</b>	<b>Grand Total (A+B+C)</b>		
<b>Grand Total (A+B+C)</b>		<b>2321.90 (155%)</b>	<b>3384 (141%)</b>		
<b>3. Purna</b>			<b>4. Haranghat</b>		
A)	<b>Two Seasonal</b>		A)	<b>Kharif</b>	
1	L S Cotton	1882.5 (30%)	1	H.Y. Paddy	2190.6 (60%)
2	Chillies	627.5 (10%)	2	L.Y. Paddy	182.55 (5%)
<b>Total (A)</b>		<b>2510 (40%)</b>	3	Groundnut	73.02 (2%)
B)	<b>Kharif</b>		4	Kharif Vegetables (Two Seasonal)	109.53 (3%)
3	HY Jowar	941.25 (15%)	5	Chilies	182.55 (5%)
4	Paddy drilled	941.25 (15%)	6	Sugarcane	73.02 (2%)
5	Groundnut	313.75 (5%)	7	Horticulture Crops	109.53 (3%)
6	Pulses	1568.75 (25%)	8	Kharif Pulses	547.65 (15%)
<b>Total (B)</b>		<b>3765 (60%)</b>	9	Green Manuring Crops	182.55 (5%)
<b>Total (A+B)</b>		<b>6275 (100%)</b>	<b>Total (A)</b>		<b>3651.00 (100%)</b>

**Performance Audit on Outcomes in Surface Irrigation**

Sr. No.	Name of the season/Crop	Projected area under crops (ha) (per cent of Irrigable Command Area)
<b>C) Follow on crops</b>		
7	Wheat	627.5 (10%)
8	Gram	1255 (20%)
9	Oil seeds	941.25 (15%)
10	Vegetables	941.25 (15%)
<b>Total (C)</b>		<b>3765 (60%)</b>
<b>Total (A+B+C)</b>		<b>10040 (160%)</b>
<b>5. Sondyatola</b>		
<b>A) Perennial Crops</b>		
1	Sugarcane	180.5 (2%)
<b>B) Kharif</b>		
2	Paddy	7220 (80%)
3	Vegetables	902.5 (10%)
4	Pulses	722.00 (8%)
<b>TOTAL (A +B)</b>		<b>9025.00 (100%)</b>
<b>C) Rabi</b>		
5	Wheat	902.50 (10%)
6	Sunflower	270.75 (3%)
7	Vegetables	631.75 (7%)
8	Gram	902.50 (10%)
<b>TOTAL (C)</b>		<b>2707.50 (30%)</b>
<b>TOTAL (A + B+C)</b>		<b>11732.50 (130%)</b>

Sr. No.	Name of the season/Crop	Projected area under crops (ha) (per cent of Irrigable Command Area)
<b>B) Follow on Crops</b>		
10	Wheat after Green Manuring crops	1095.3 (30%)
11	Rabi Hy. Jowar	182.55 (5%)
12	Rabi vegetable	182.55 (5%)
13	Gram after paddy	182.55 (5%)
14	Vatana Pulses	292.08 (8%)
15	Summer Paddy	182.55 (5%)
16	Green fodder	73.02 (2%)
<b>Total (B)</b>		<b>2190.6 (60%)</b>
<b>Total (A+B)</b>		<b>5841.60 (160%)</b>
<b>6. Wagholibuti</b>		
<b>A) Perennial Crops</b>		
1	Sugarcane	69 (2%)
2	Horticulture Crops	103 (3%)
<b>B) Two seasoned Crops</b>		
3	Chillies	172 (5%)
<b>C) Kharif Seasonal</b>		
4	H.Y. Paddy	2065 (60%)
5	L.Y. Paddy	172 (5%)
6	Groundnut	69 (2%)
7	Kharif Vegetables	103 (3%)
<b>D) Kharif Seasonal (Un-irrigated)</b>		
8	Pulses	516 (15%)
9	Green Manuring Crops	172 (5%)
<b>TOTAL (A+B+C+D)</b>		<b>3441 (100%)</b>
<b>E) Rabi Crops</b>		
10	Wheat after green manuring	1032 (30%)
11	Hy. Jawar after paddy	172 (5%)
12	Rabi Vegetables after paddy	172 (5%)
13	Gram after paddy	172 (5%)
14	Utana pulses (U.T.)	275 (8%)
<b>TOTAL (E)</b>		<b>1823 (53%)</b>
<b>F) Hot weather Crops</b>		
15	Summer paddy after Kharif paddy	172 (5%)
16	Green fodder	69 (2%)
<b>TOTAL (F)</b>		<b>241 (7%)</b>
<b>TOTAL (A+B+C+D+E+F)</b>		<b>5505 (160%)</b>