



Government of Maharashtra

WATER RESOURCES DEPARTMENT



WATER YEAR BOOK 2009-2010-2011



**DATA ANALYSIS CIRCLE
NASHIK**

**HYDROMETEOROLOGICAL
DATA PROCESSING DIVISION, NASHIK**

CHIEF ENGINEER, PLANNING & HYDROLOGY PROJECT (SW), NASHIK

JALVIDNYAN BHAVAN, CDO-MERI Campus, Dindori Raod, Nashik – 422 004 (INDIA). Tel. 0253-2532964
E-Mail: cehp.nashik@mahahp.org eehdpd.nashik@mahahp.org, Web: www.mahahp.gov.in

INDEX

Sr. No.	Description	Page No.
1	Introduction	1
2	Hydrology Review	3
3	Discharges at Gage Discharge Sites for various Basins	29
4	Interpretation of Various Statistics presented in the water year book	88
5	Water quality Monitoring	89
6	Data Dissemination	94
7	Annexure A- Data Request Form	97
8	Annexure B – Sample Outputs	98

1. INTRODUCTION

Water plays crucial role in the socio-economic development of the country. Safe drinking water is required for very large and growing population. Water has also become a major constraining factor for the growth of the agricultural and industrial sectors. In contrast, flooding frequently threaten populations and civil structures.

The Hydrological Information System provides information about Hydrological and Hydro meteorological parameters that vary with respect to time and space. The information is useful to the decision/policy makers, designers and researchers.

Earlier, Water Resources Department (GOM) was collecting the Hydrological Information System (HIS) Data and was recording manually in the form of registers for the use of Water Resources Department only. In 1995 National Hydrology Project was established in collaboration with Ministry of Water Resources, Government of India, CWC, CGWB, National Institute of Hydrology (Roorkee), CWPRS (Pune), CPCB, India Meteorological Department, with nine states i.e. Maharashtra, Orissa, Tamilnadu, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Gujrat, Karnataka & Kerala to develop sustainable HIS with following characteristics.

- Demand driven i.e. output is as per the users needs.
- Use of standardized equipments and adequate procedures for data Collection and processing.
- Computerized, comprehensive and easily accessible database.
- Proper infrastructure to ensure sustainability.

Under this Project since 1995, Hydrology Project (SW) Water Resources Department, Maharashtra State has started to collect the data on these lines and entering it in electronic mode. Three softwares are used for data entry, validation and data dissemination.

1. SWDES (Surface Water Data Entry System) for data entry and primary validation
2. HYMOS (Hydrological Modeling System) for secondary validation
3. WISDOM (Water Information System Data Online Management) for data storage and dissemination

The finally validated data is then given to Hydrological Data Users Group (HDUG) members online/ offline with nominal cost.

The idea of preparing and publishing water year book is to communicate the intended data users, the kind of meteorological and hydrological scenario in the basins of the state during the hydrological year under consideration. A list of stations is attached herewith (Annexure A). The intended users can have this data from data bank as per the procedure laid down. Analysis of data is illustrated basin wise and basin is the unit for presentation of this data for Maharashtra State.

This water year book contains following information of the Maharashtra State.

1. Extreme rainfall events
2. District wise average rainfall.
3. Basin wise annual Isohyets.
4. Discharges at Gauge Discharge sites

2. HYDROLOGICAL REVIEW

2.1 Basins of Maharashtra and network :

There are five river basins in Maharashtra namely Godavari, Krishna, Tapi, Narmada and West Flowing Rivers basin south of Tapi.

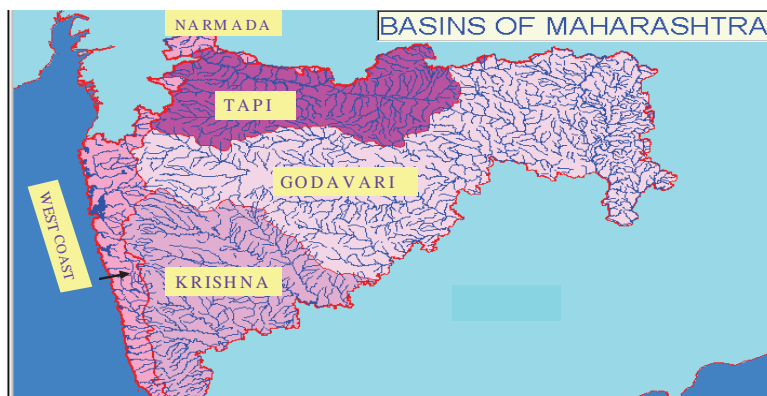


Fig 2.1 Map showing Major River Basins in Maharashtra

Table 2.1 Network of Hydrology Project: Maharashtra (HP)

S. N.	Name of Basin	ARG	SRG	FCS	GD
1	Godavari	78	94	29	73
2	Tapi	29	34	12	27
3	Narmada	-	3	-	-
4	Krishna	25	88	20	50
5	West Flowing Rivers South of Tapi	30	57	6	60
	Total	162	276	67	210

Table 2.2 Network of Hydrology Project: Maharashtra (NHP)

Sr. No.	Name of Basin	ARG	SRG	FCS	GD
1	Godavari	82	176	40	26
2	Tapi	6	14	1	14
3	Narmada	-	-	-	-
4	Krishna	6	40	25	4
5	West Flowing Rivers South of Tapi	84	135	20	10
	Total	178	365	86	54

2.2 Maximum Rainfall in Basins:

After analysing the daily rainfall data, it is observed that the maximum daily rainfall is not same as that of the previous years. Also it is observed that the maximum daily rainfall is not occurring on same station. It varies with respect to the location and period. It is also observed that yearly maximum rainfall and maximum daily rainfall is not occurring on the same station. The comparison is shown in the table given below.

Table 2.3 Comparison of Annual Maximum Rainfall and Maximum Daily Rainfall for year 2009

Sr. No.	Basin	Maximum Daily rainfall in mm		Annual Maximum Rainfall in mm	
		Station	Rainfall	Station	Rainfall
1	Lower Godavari	Kurkheda	340	Gothangaon Bori	1564
2	Upper Godavari	Karajkhed	170	Bhavalibk	1522
3	Krishna	Mahabaleshwar	480	Kitwade	6640
4	Narmada	Toranmal	65	Tornamal	938.80
5	Tapi	Semadoh	196.4	Semadoh	1525
6	West Flowing Rivers South of Tapi	Walawal	408	Amboli	5355

Table 2.4 Comparison of annual Maximum Rainfall and Maximum Daily Rainfall for year 2010

Sr. No.	Basin	Maximum Daily rainfall in mm		Annual Maximum Rainfall in mm	
		Station	Rainfall	Station	Rainfall
1	Lower Godavari	Bhamaragad	393	Bhamaragad	2694
2	Upper Godavari	Shevali	200	Bhawali	2466
3	Krishna	Mahabaleshwar	295.50	Kolik	5323
4	Narmada	Toranmal	85.0	Toranmal	1596.10
5	Tapi	Malkatar	210.0	Tarubanda	1689.0
6	West Flowing Rivers South of Tapi	Shivdav	300.0	Amboli	6701.5

Table 2.5 Comparison of Annual Maximum Rainfall and Maximum Daily Rainfall for year 2011

Sr. No.	Basin	Maximum Daily rainfall in mm		Annual Maximum Rainfall in mm	
		Station	Rainfall	Station	Rainfall
1	Lower Godavari	Warudbagaji	175.40	Hardoli	1665.20
2	Upper Godavari	Zari	296	Dongarpada	2797
3	Krishna	Kitwade	409.40	Kitwade	8162.5
4	Narmada	Sisa	80.0	Sisa	386.0
5	Tapi	Semadoh	303.0	Tarubanda	2737.0
6	West Flowing Rivers South of Tapi	Malgund	386.0	Amboli	7701.50

2.3 Following table shows comparison of average annual rainfall of Maharashtra occurred in 2009, 2010 & 2011

Year	Average Rainfall in mm
2009	1057.68
2010	1454.18
2011	1262.21

2.4 District wise yearly average rainfall:

District wise yearly average rainfall for year 2009, 2010 and 2011 over Maharashtra is shown in following table. Maximum average rainfall occurred at Sindhudurga district for year 2009, 2010 and 2011. Minimum average rainfall occurred at Nanded district for year 2009 and at Dhule district for year 2010 and 2011.

Table 2.6: District wise average Rainfall for year 2009,2010,2011:

Sr. No.	Name of District	Average Rainfall in mm (Year 2009)	Average Rainfall in mm (Year 2010)	Average Rainfall in mm (Year 2011)
1	Akola	616.4	887.97	393.47
2	Amarawati	671.4	986.86	949.57
3	Aurangabad	830.0	814.59	573.39
4	Beed	695.3	922.04	655.89
5	Bhandara	563.8	1472.10	1144.39
6	Buldhana	1030.7	958.19	456.16
7	Chandrapur	710.1	1652.58	1044.07
8	Dhule	689.8	618.63	378.53
9	Gadchiroli	539.0	1976.62	1172.27
10	Gondia	974.0	1644.68	1256.22
11	Hingoli	1127.2	1019.15	811.20495
12	Jalana	653.40	964.89	654.41
13	Jalgaon	599.3	759.922	469.2
14	Kolhapur	494.8	2469.57	2892.39
15	Latur	2484.6	936.10	775.68
16	A'Nagar	557.9	715.35	500.34
17	Nagpur	882.1	1257.23	1038.09
18	Nanded	470.7	1204.48	804.13
19	Nandurbar	722.4	876.89	529.08
20	Nashik	755.8	1059.66	1006.85
21	Osmanabad	660.6	1012.37	577.18
22	Parabhani	641.5	1049.14	812.54
23	Pune	1309.2	1266.36	1145.78
24	Raigad	2460.5	3220.51	3803.38
25	Ratnagiri	3275.4	4125.65	4613.00
26	Sangli	901.2	831.07	753.18
27	Satara	1643.3	1552.96	1454.23
28	Sindhudurga	3714.8	4637.62	4948.04
29	Solapur	604.6	733.89	405.23
30	Thane	2056.8	2758.47	2948.45
31	Wardha	662.2	1287.13	1060.19
32	Washim	490.1	1138.15	739.75
33	Yeotmal	586.3	1177.14	886.87

Table 2.7: Rainfall in scarcity zone for year 2009 :

Sr. No.	Name of District	Rainfall in mm Year 2009
1	Ahamadnagar	616.4
2	Akola	671.4
3	Aurangabad	695.3
4	Beed	563.8
5	Buldhana	710.1
6	Chandrapur	689.8
7	Dhule	539.0
8	Hingoli	653.4
9	Jalana	599.3
10	Jalgaon	494.8
11	Latur	557.9
12	Nanded	470.7
13	Nandurbar	722.4
14	Osmanabad	660.6
15	Parbhani	641.5
16	Solapur	604.6
17	Vardha	662.2
18	Vashim	490.1
19	Yavatmal	586.3

Table 2.8: Rainfall in scarcity zone for year 2010:

Sr. No.	Name of District	Rainfall in mm Year 2010
1	Ahamadnagar	500.30
2	Dhule	378.50
3	Solapur	405.20

Table 2.9: Rainfall in scarcity zone for year 2011 :

Sr. No.	Name of District	Rainfall in mm Year 2011
1	Ahamadnagar	500.30
2	Akola	393.50
3	Aurangabad	573.40
4	Beed	655.9
5	Buldhana	456.20
6	Dhule	378.50
7	Jalana	654.40
8	Jalgaon	469.20
9	Nandurbar	529.10
10	Osmanabad	577.20
11	Solapur	405.20
12	Vashim	439.70

Comparison of Rainfall in scarcity zone i.e. rainfall < 750mm shows that in year 2009, 19 districts were in scarcity zone; in year 2010, 3 districts were in scarcity zone and in year 2011, 12 districts were in scarcity zone. Districts, A'Nagar, Dhule and Solapur are consistently in scarcity zone.

2.5 Basin wise annual rainfall:

Following figures shows isohyets maps of Maharashtra and the 5 major basins in it for year 2009, 2010 and 2011.

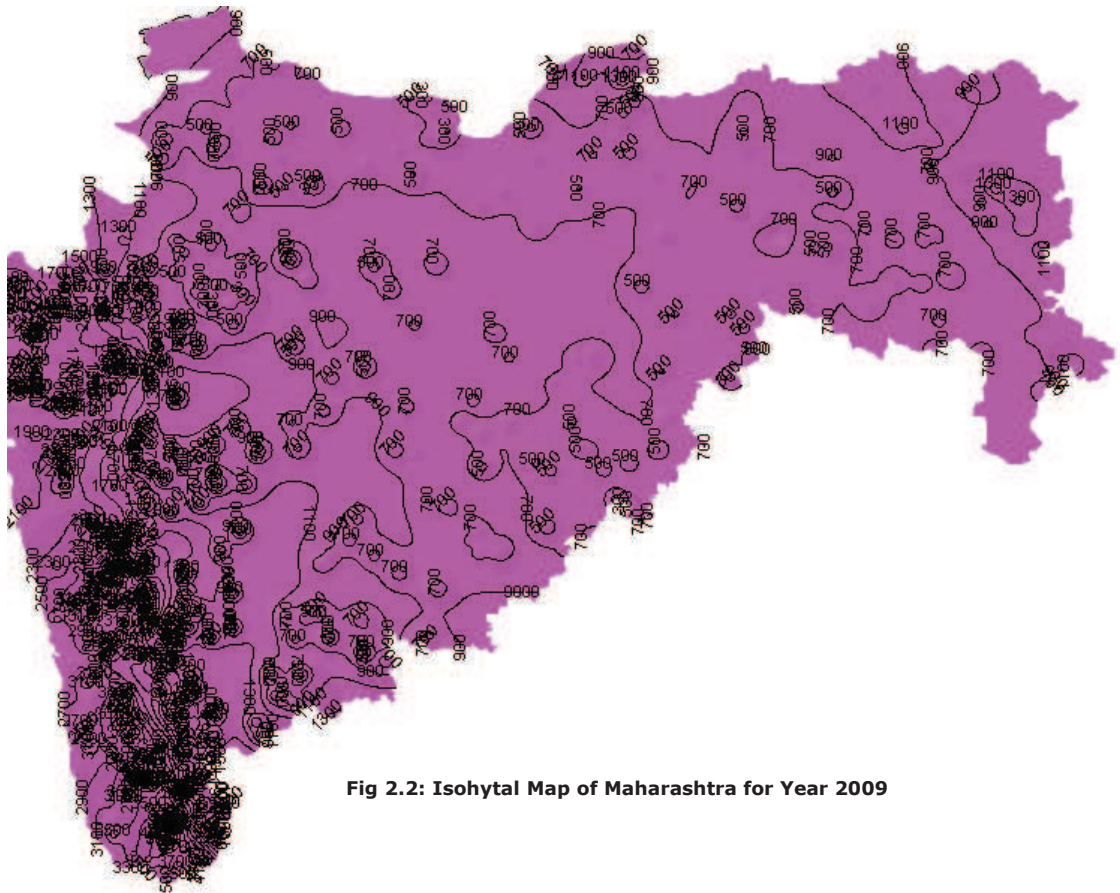
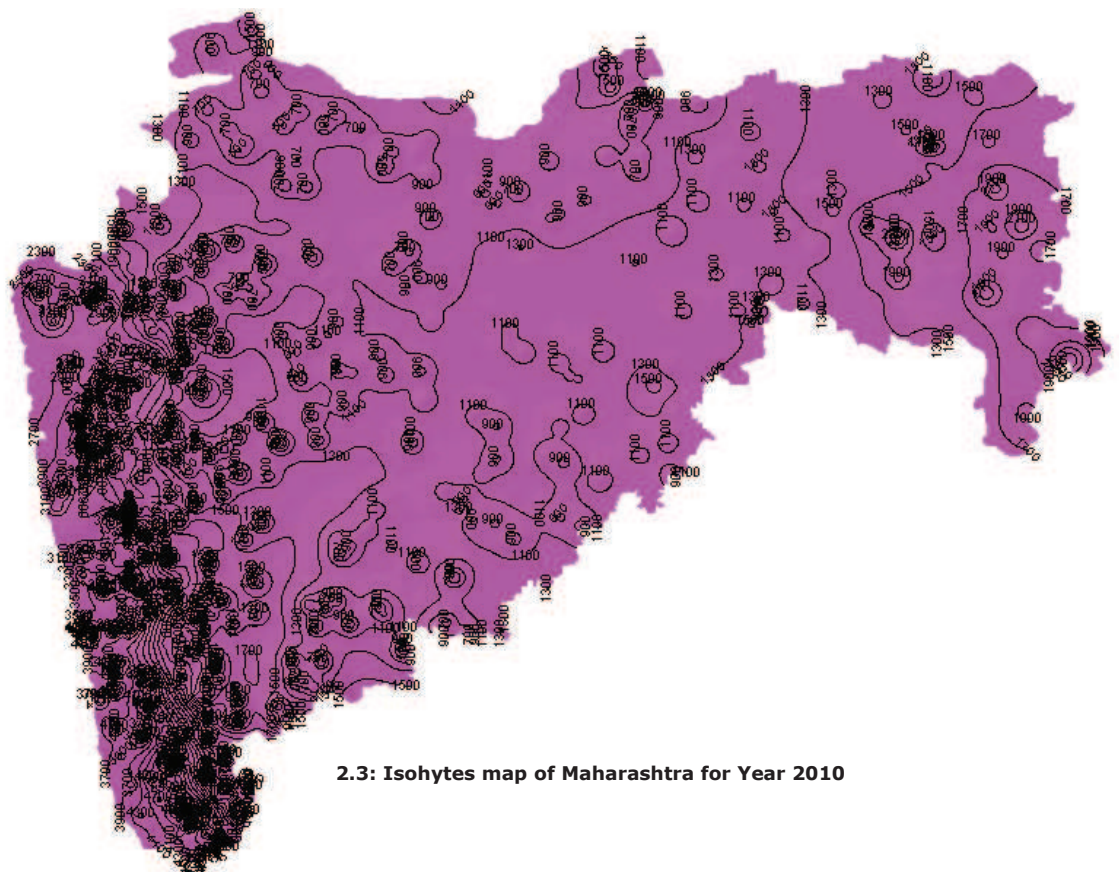


Fig 2.2: Isohytal Map of Maharashtra for Year 2009



2.3: Isohytes map of Maharashtra for Year 2010

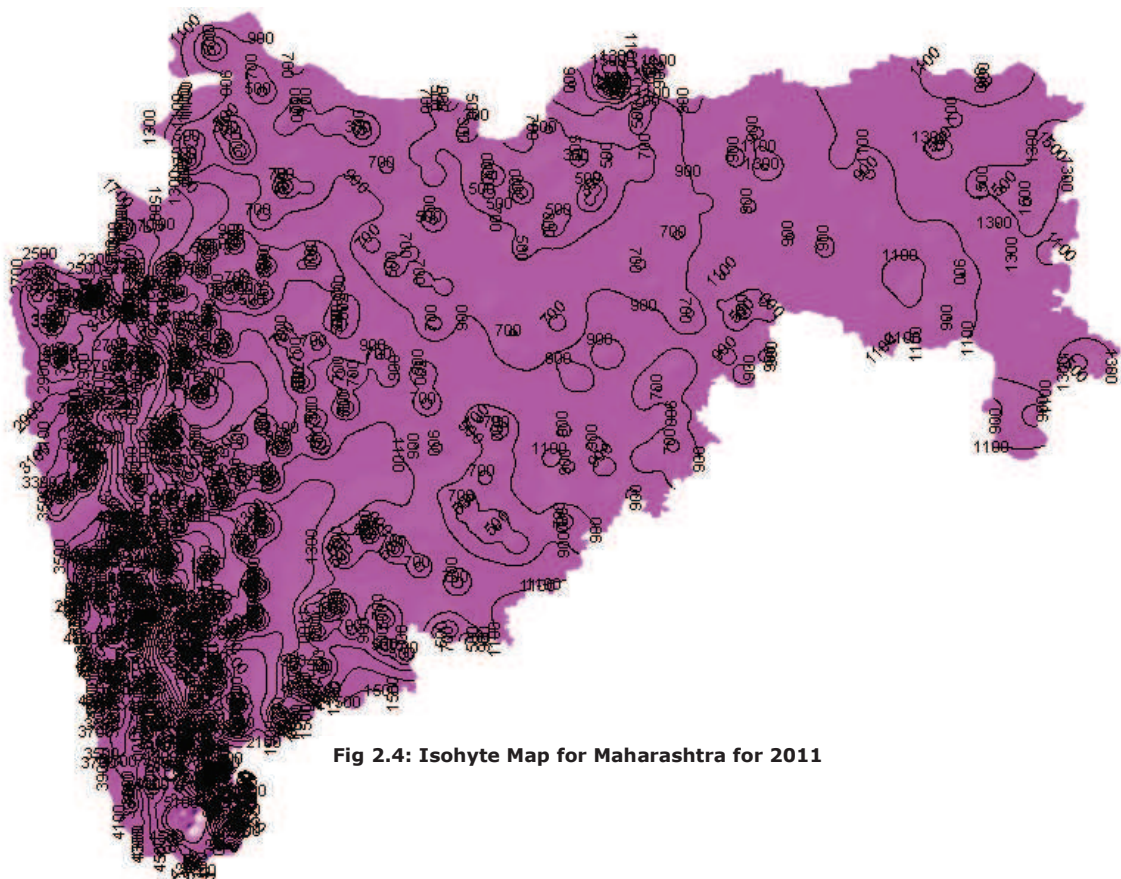


Fig 2.4: Isohyte Map for Maharashtra for 2011

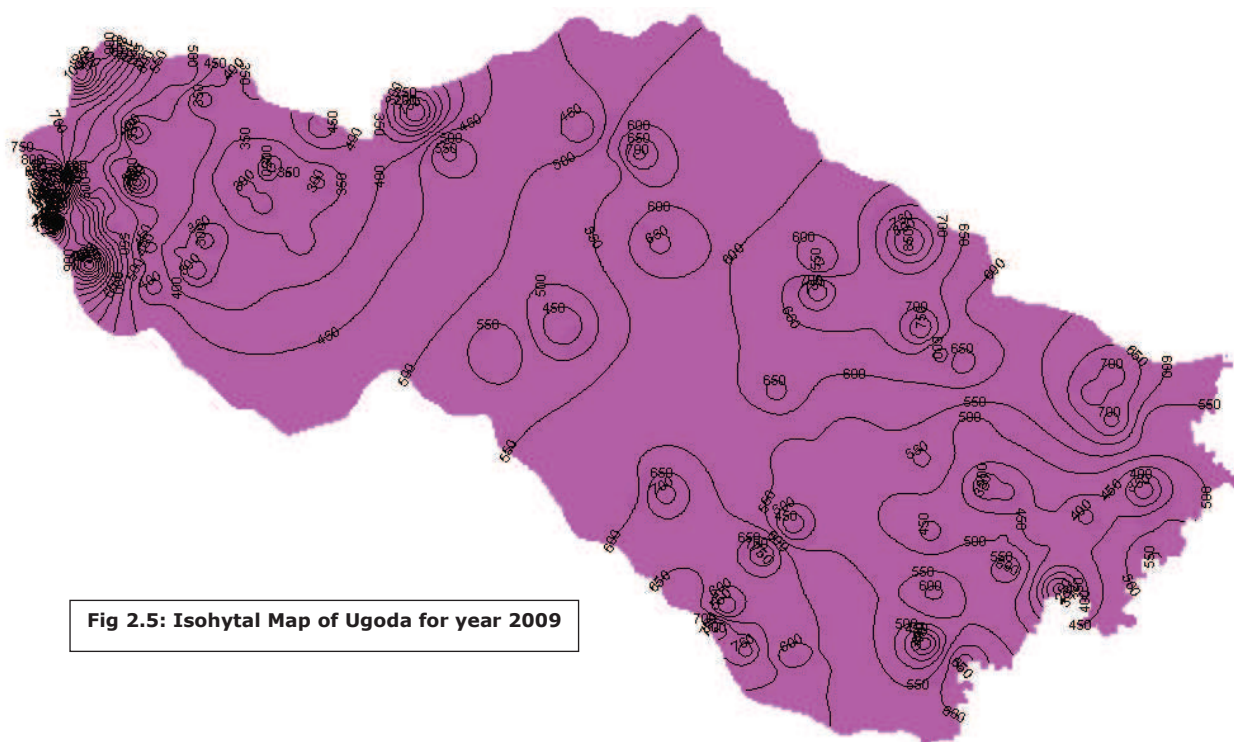


Fig 2.5: Isohytal Map of Ugoda for year 2009

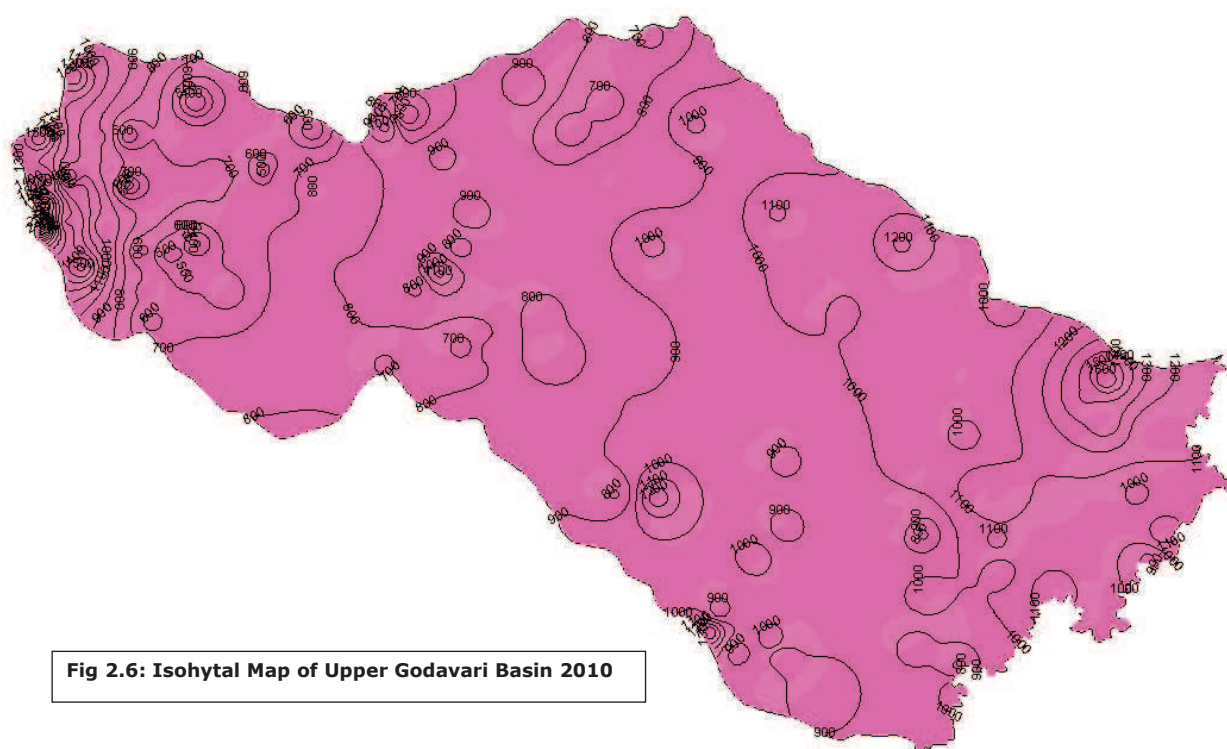


Fig 2.6: Isohytal Map of Upper Godavari Basin 2010

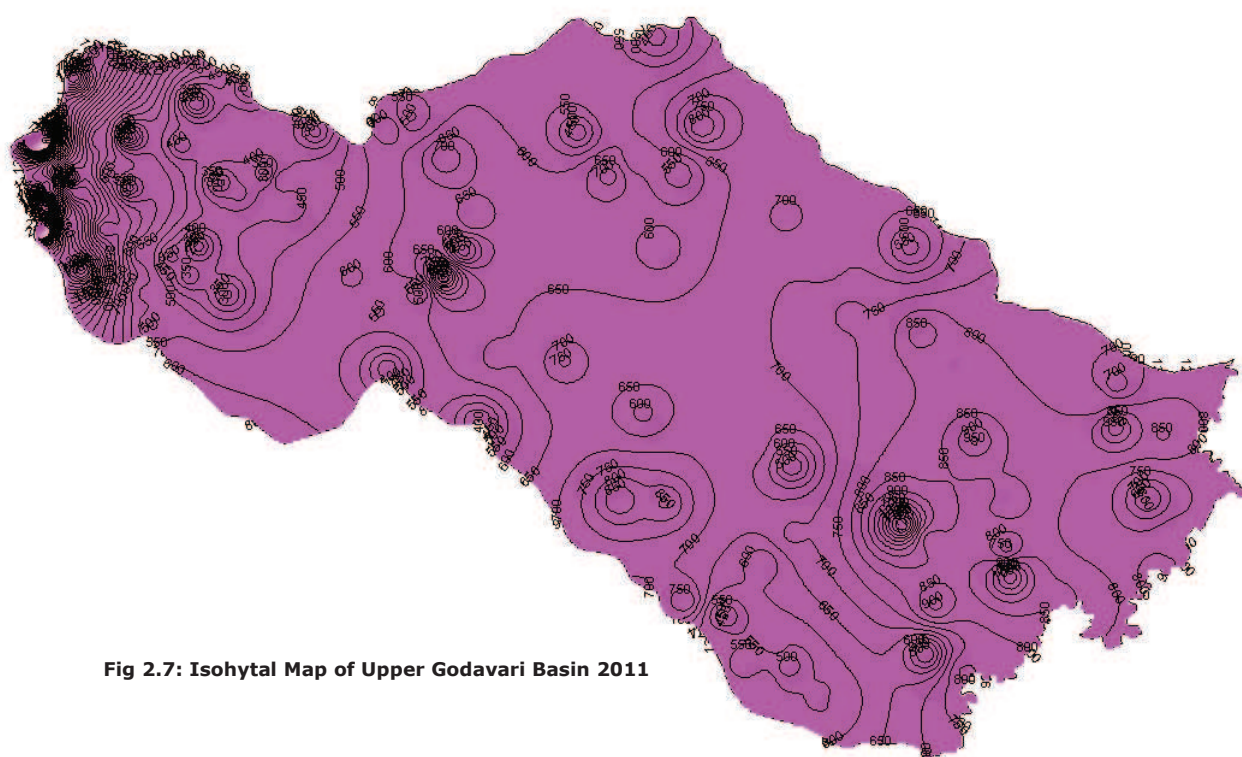


Fig 2.7: Isohytal Map of Upper Godavari Basin 2011

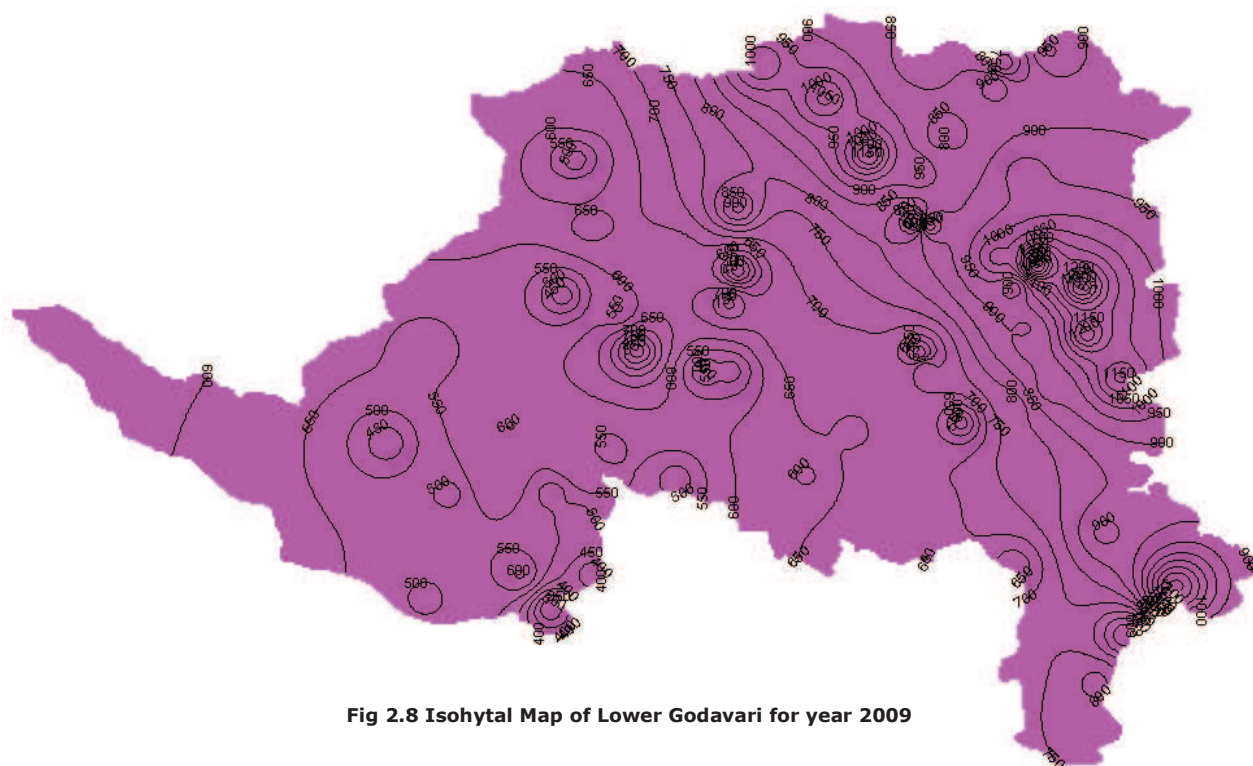


Fig 2.8 Isohytal Map of Lower Godavari for year 2009

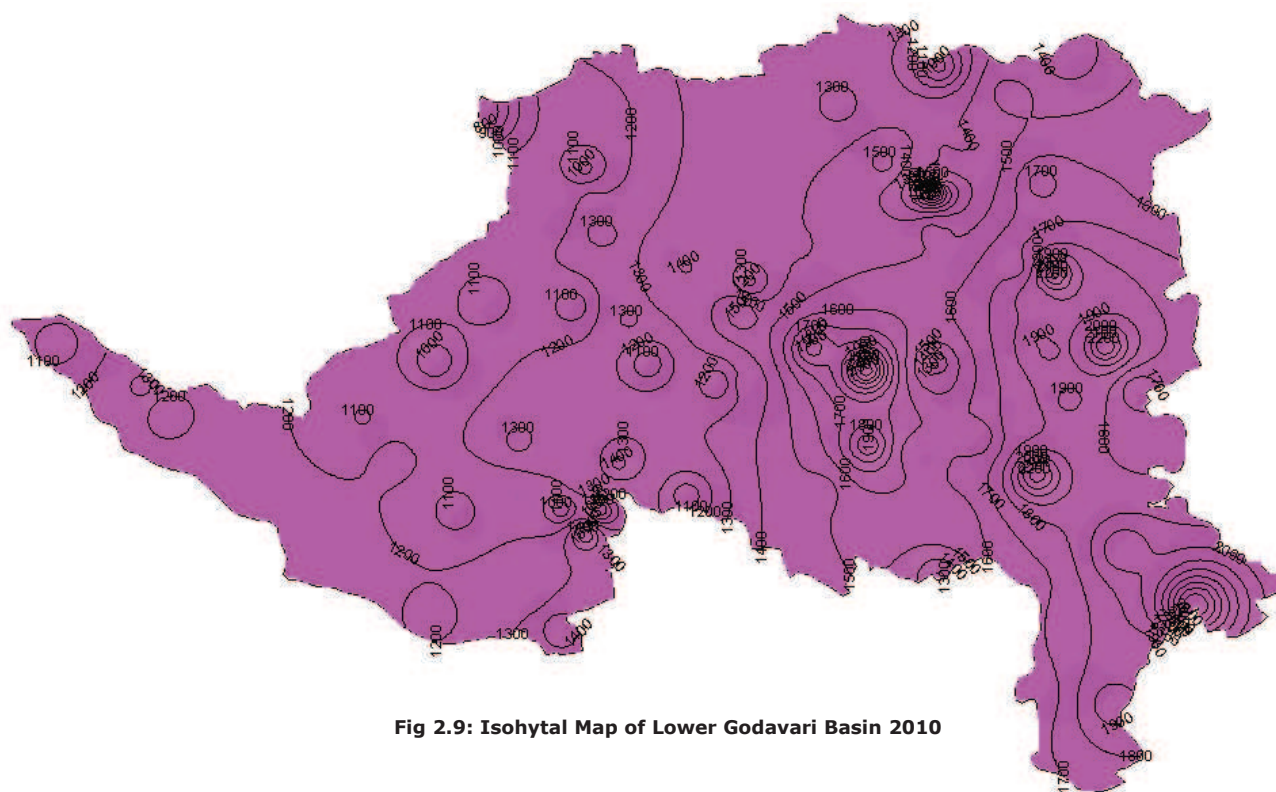


Fig 2.9: Isohytal Map of Lower Godavari Basin 2010

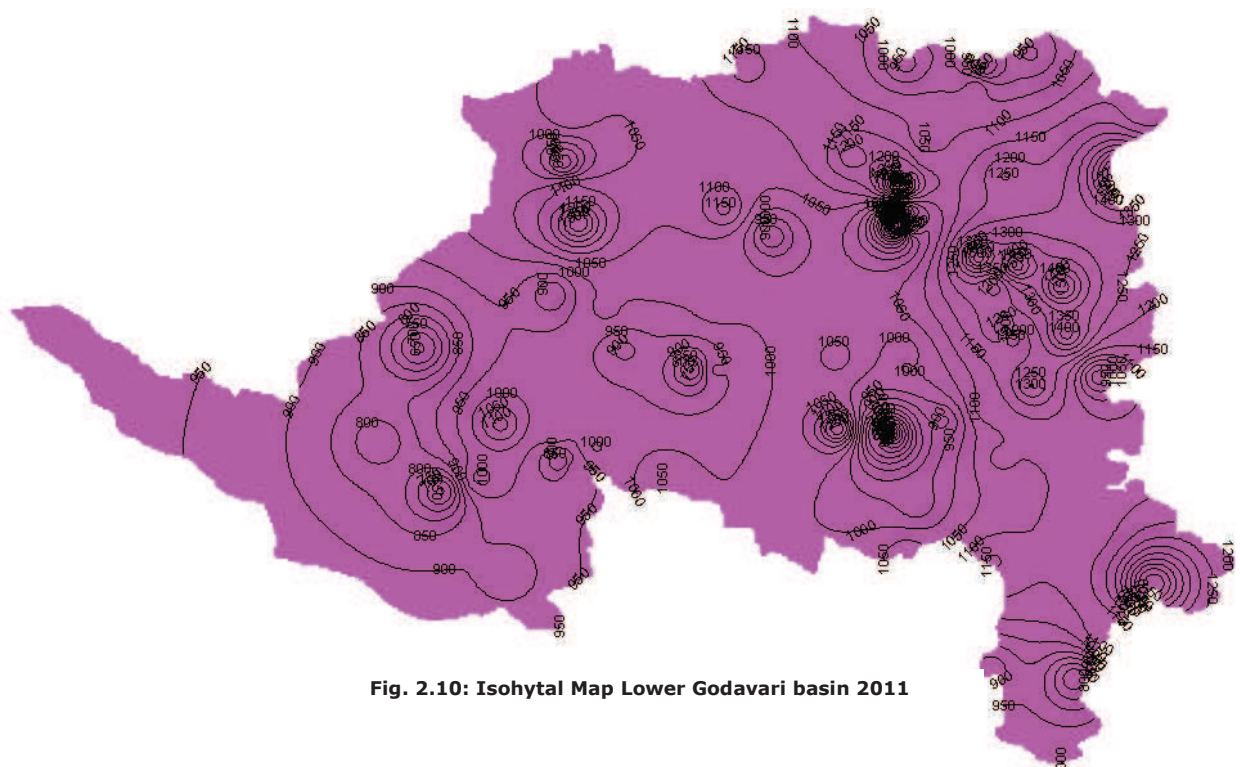


Fig. 2.10: Isohytal Map Lower Godavari basin 2011



Fig 2.19: Isohytal Map of Tapi Basin 2009



Fig 2.20: Isohytal Map of Tapi Basin 2010



Fig 2.21: Isohytal Map of Tapi 2011

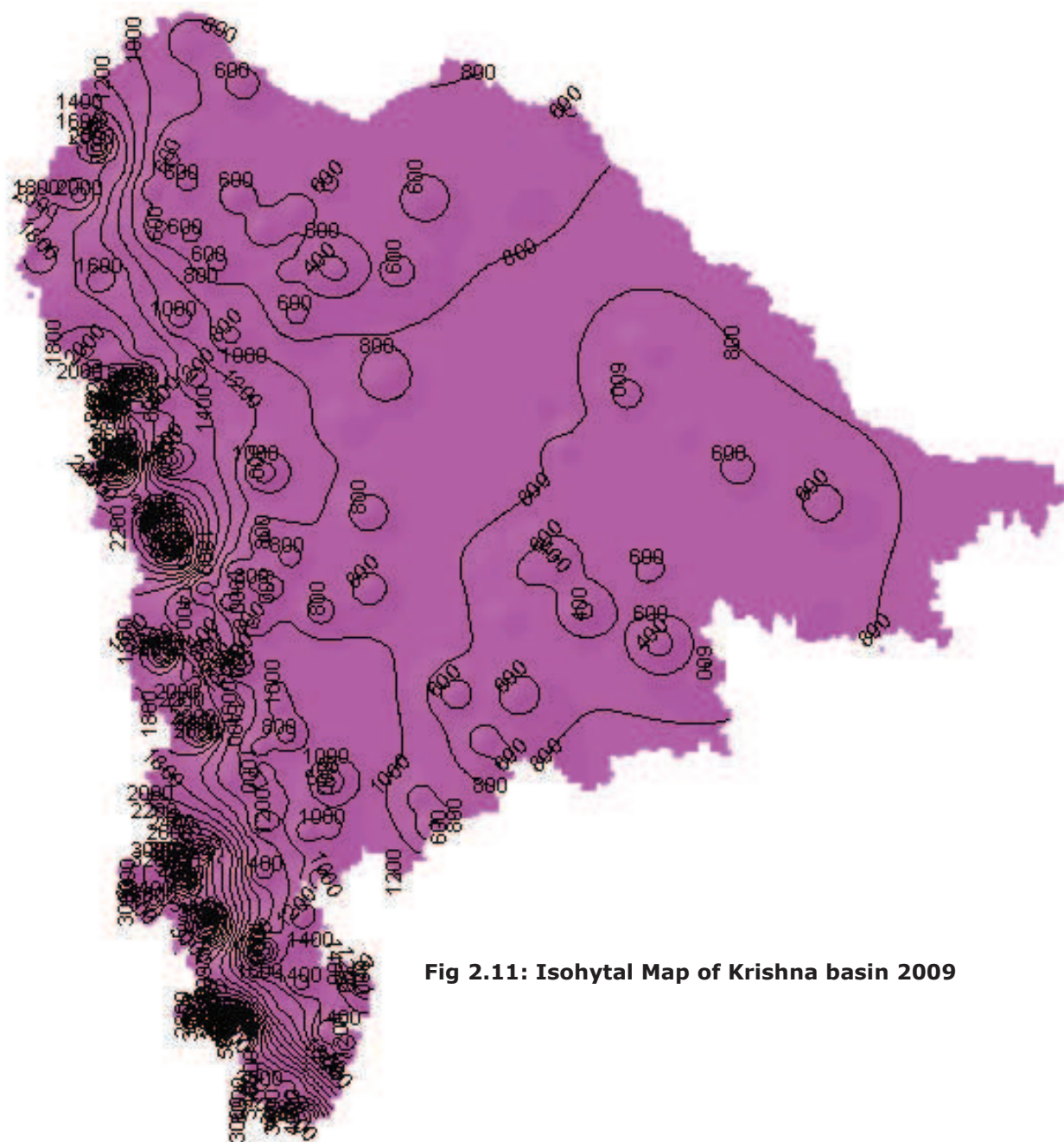


Fig 2.11: Isohytal Map of Krishna basin 2009

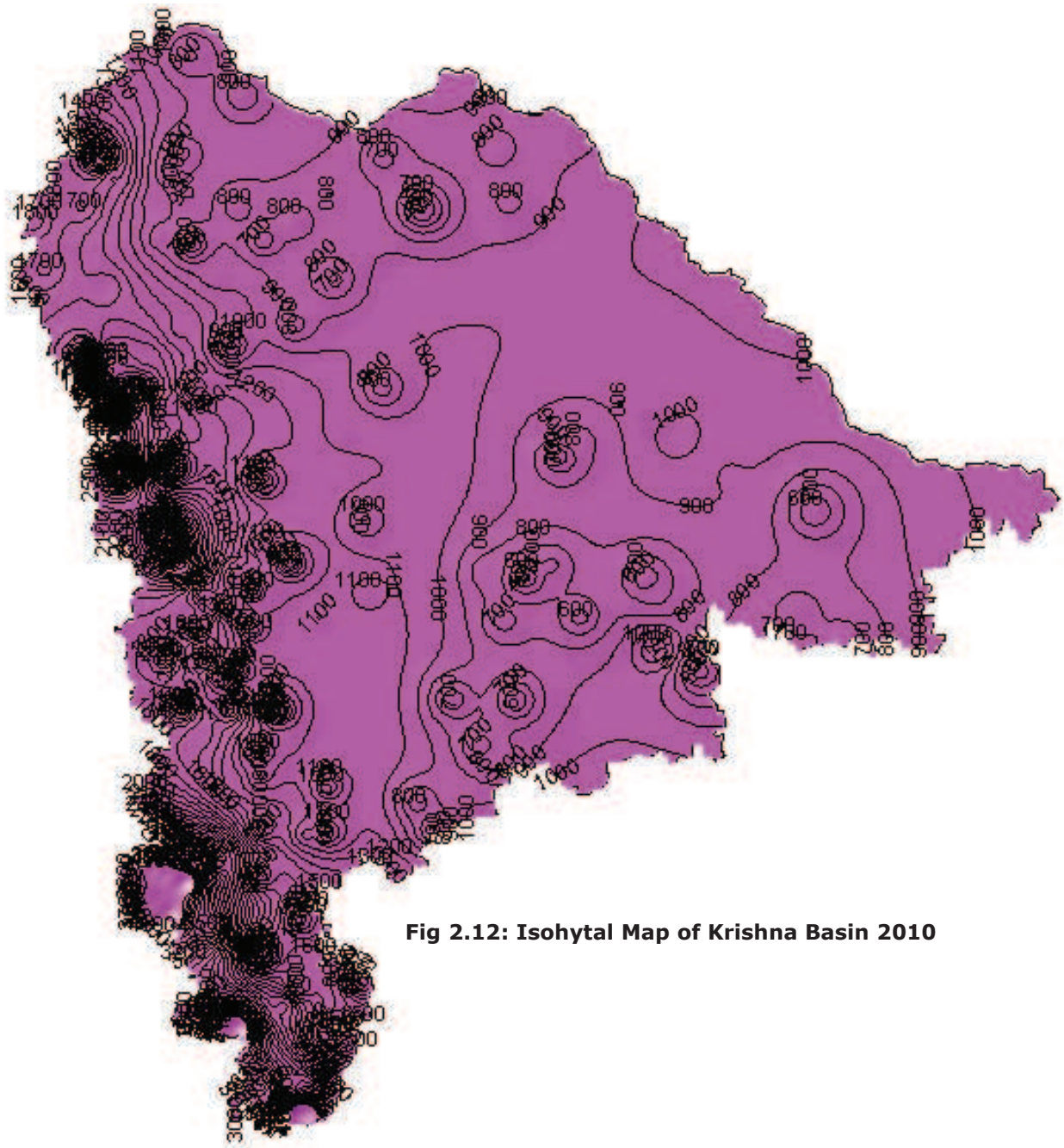


Fig 2.12: Isohytal Map of Krishna Basin 2010

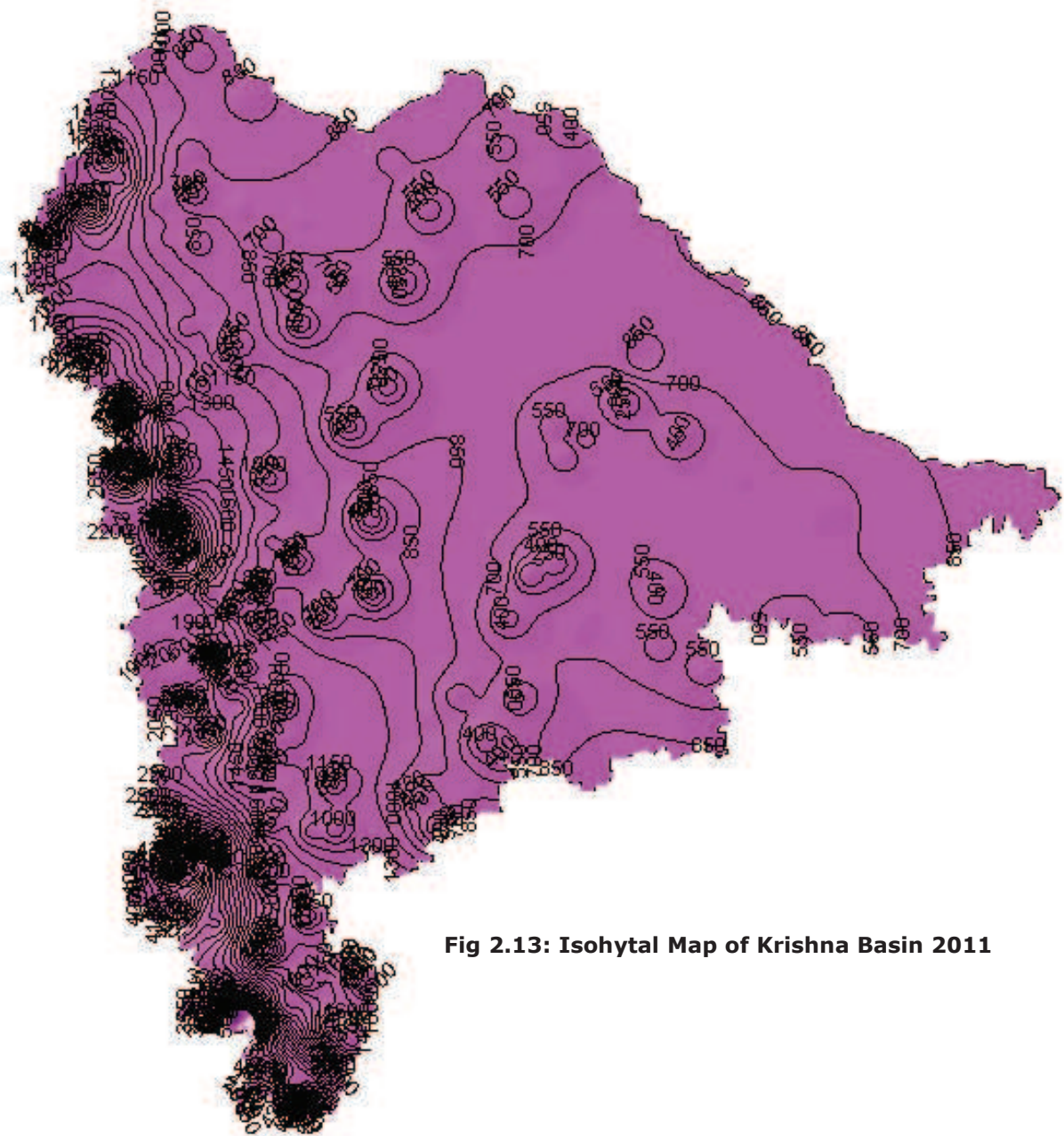
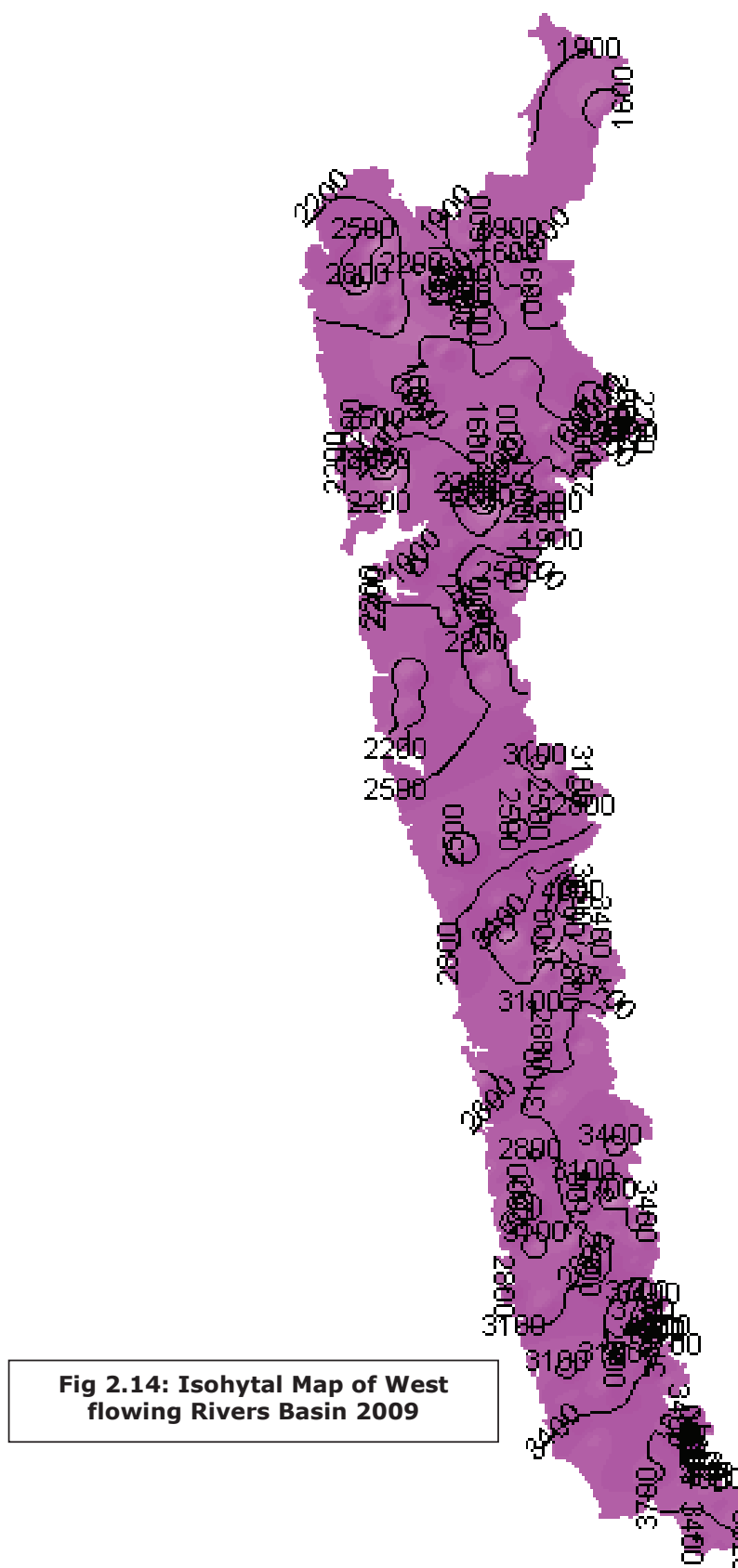


Fig 2.13: Isohytal Map of Krishna Basin 2011



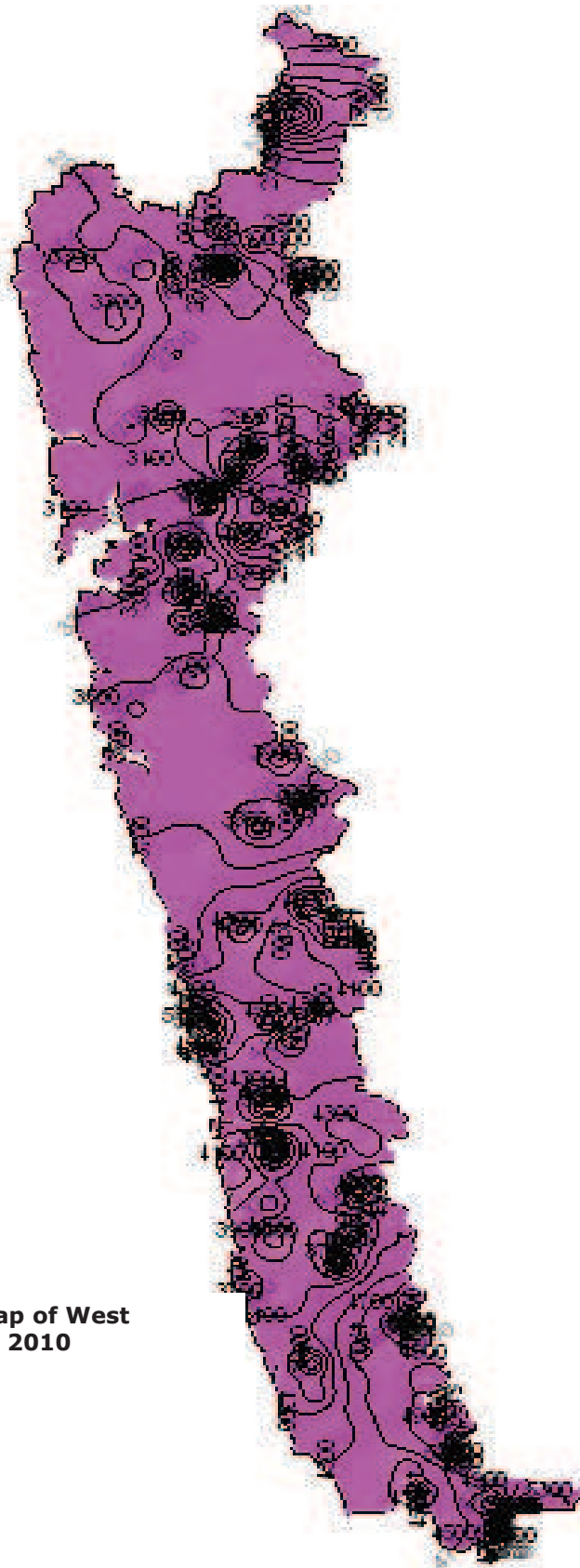


Fig2.15: Isohytal Map of West Flowing River Basin 2010

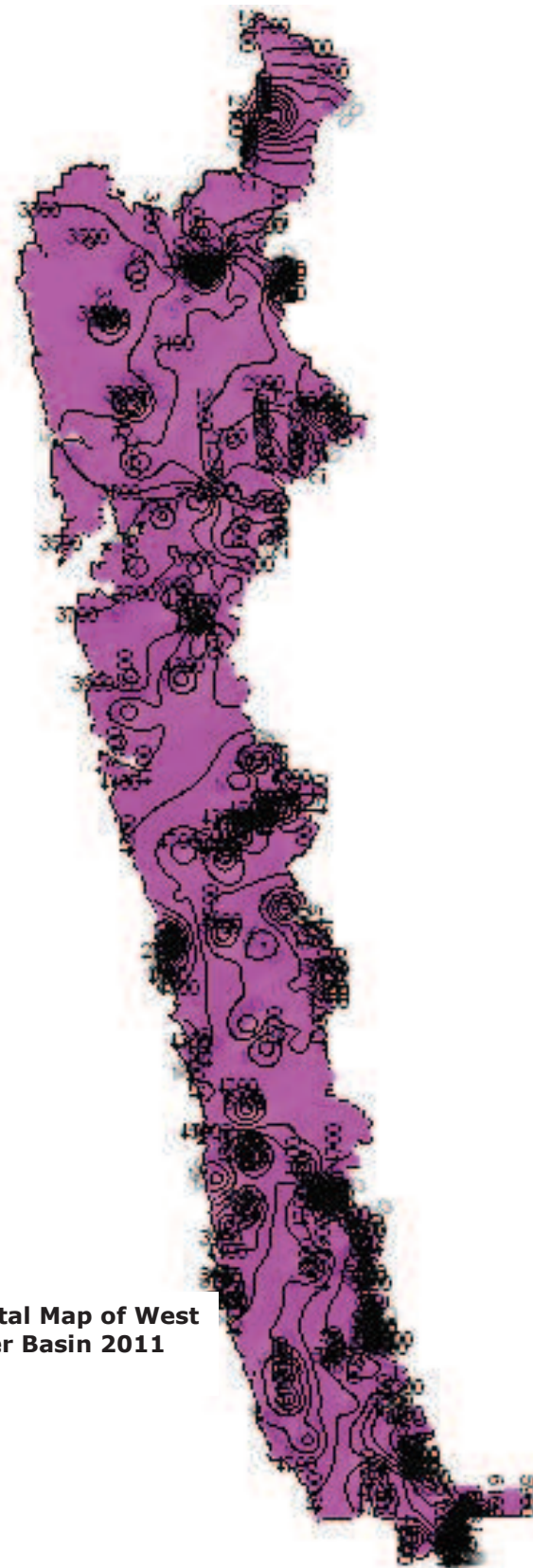


Fig 2.16: Isohytal Map of West Flowing River Basin 2011

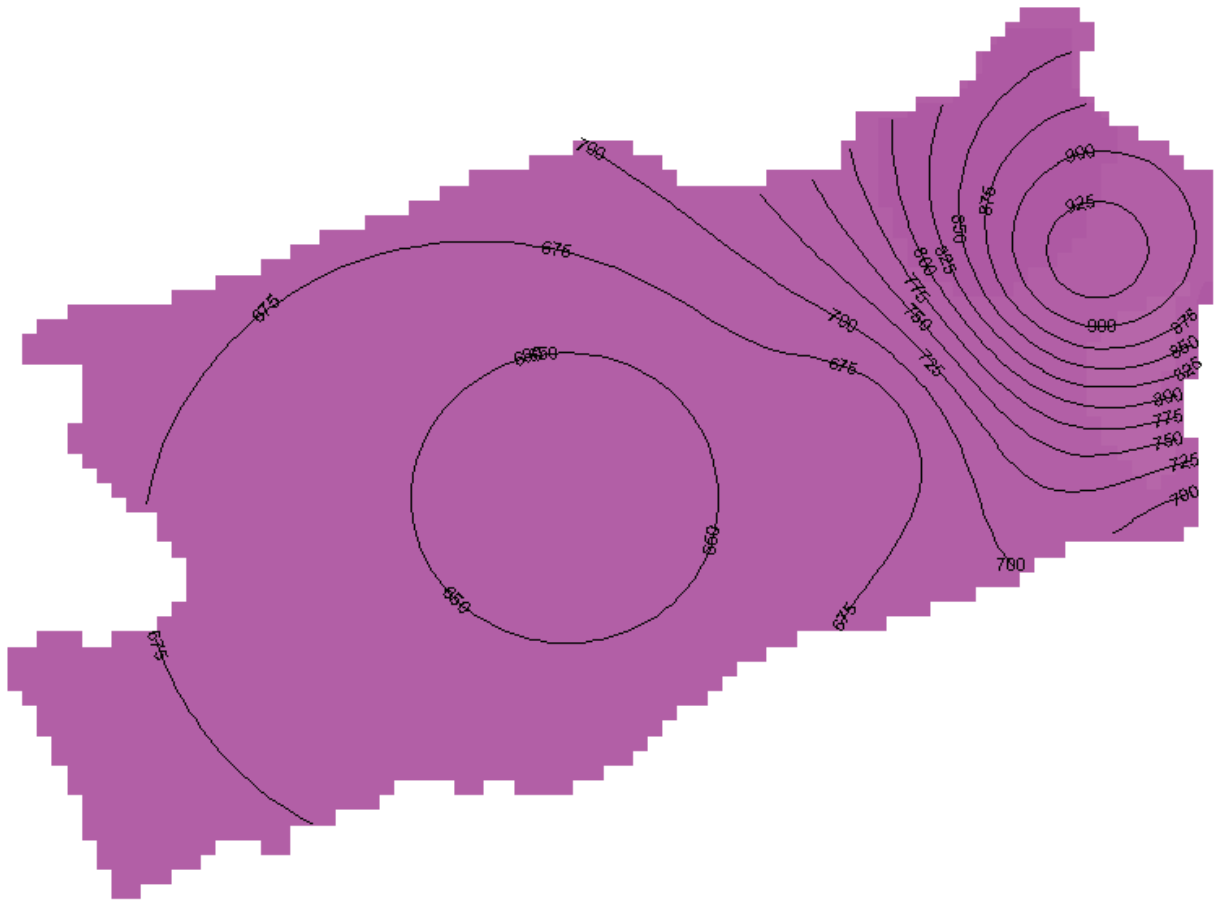


Fig 2.17: Isohytal Map of Narmada Bain for Year 2009

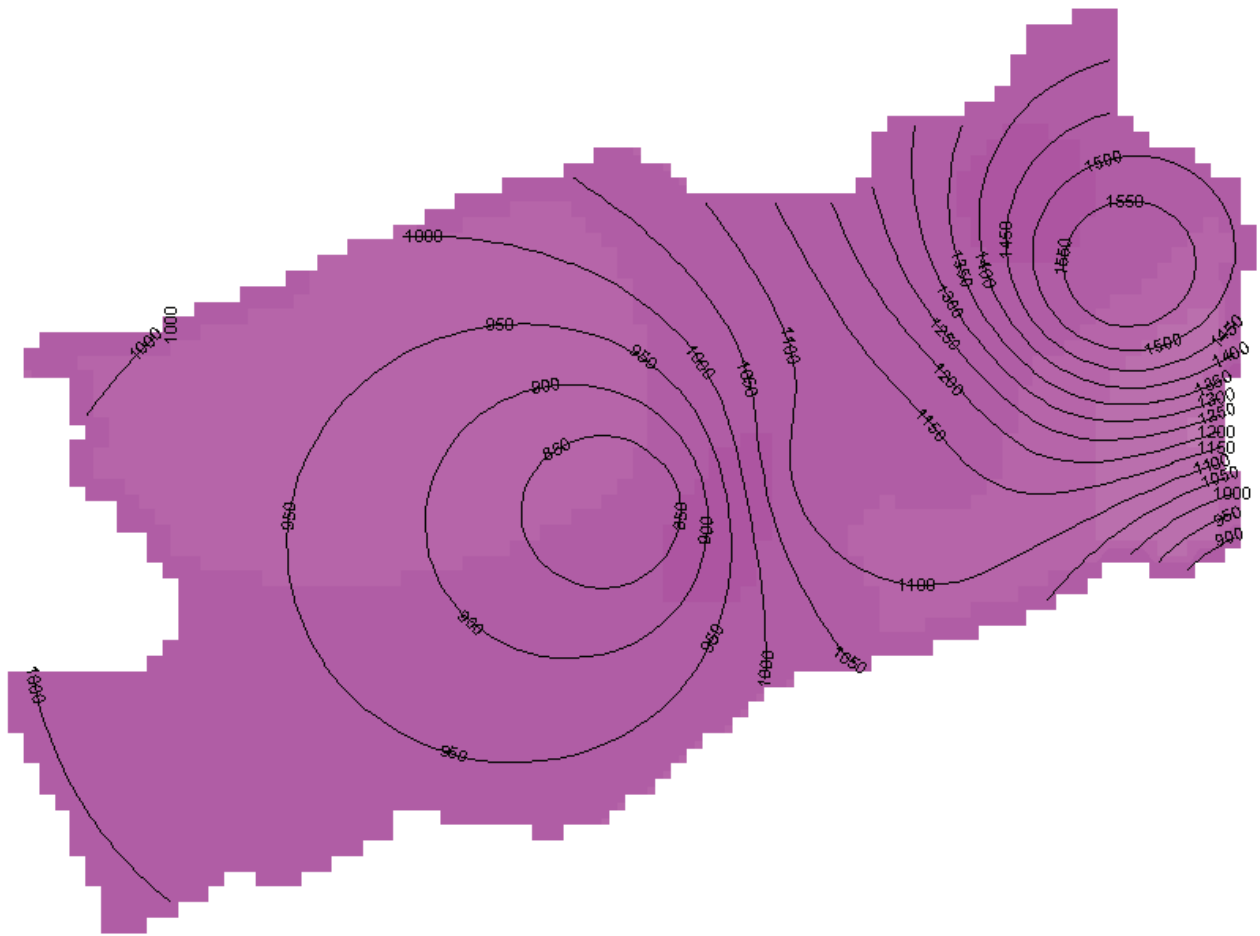


Fig 2.18: Isohytal Map of Narmada Basin 2010

3. Discharges at GD sites in various basins in Maharashtra

Maharashtra is divided into five major river basins namely Godavari, Krishna, Tapi, WFR south of Tapi and Narmada. Hydrometeorological network is spread all over the Maharashtra. There are 263 Gauge Discharge stations under the control of Hydrology Project (SW) Maharashtra.

3.1 Discharges at GD sites in Lower Godavari basin:

The catchment area of Lower Godavari Basin in Maharashtra is 81097 sqkm. There are 55 Gauge discharge stations in this catchment. Following table shows 10 years discharges for GD stations in this catchment.

NANDGUR, Area 515 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	7.04	3.92	50.30	46.98	17.89	126.12
2000	9.50	77.24	53.02	5.64	0.94	146.35
2001	42.01	12.27	122.99	14.24	4.23	195.74
2002	23.46	3.20	54.54	14.69	0.00	95.89
2003	4.14	59.18	53.85	26.76	0.00	143.94
2004	0.00	11.03	29.46	13.51	0.00	53.99
2005	28.71	73.63	123.51	62.38	35.43	323.67
2006	10.16	67.32	68.06	12.40	8.80	166.72
2007	84.76	77.62	99.34	86.65	42.02	390.38
2008	0.47	10.00	9.10	8.28	0.48	28.34
2009	7.04	3.92	50.30	46.98	17.89	126.12
2010	28.74	115.79	269.11	246.60	42.97	703.21
2011	0.43	0.35	36.29	89.13	3.94	130.12

Anantwadi, Area 1629sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	18.03	80.38	667.80	250.24	347.44	1363.89
2000	91.92	383.84	124.38	106.84	56.87	763.84
2001	162.39	103.71	460.36	31.16	99.16	856.78
2002	220.02	26.35	415.65	416.72	76.99	1155.73
2003	10.69	257.36	161.27	21.89	0.00	451.22
2004	1.35	515.45	197.22	131.82	70.43	916.27
2005	0.00	76.30	1913.64	235.70	28.05	2253.69
2006	2.55	31.97	16.05	41.34	10.11	102.03
2007	0.00	26.97	51.73	60.05	8.51	147.25
2008	17.31	4.28	0.63	23.10	0.00	45.32
2009	18.03	80.38	667.80	250.24	347.44	1363.89
2010	0.18	149.13	371.95	0.00	37.69	558.94
2011	11.12	35.71	110.39	133.72	2.54	293.47

Armori, Area 1455.21sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	7.30	35.72	186.93	292.73	28.88	551.55
2000	6.50	438.50	55.36	24.46	7.19	532.01
2001	66.37	49.74	252.04	17.49	16.32	401.96
2002	58.90	21.52	261.65	91.67	27.92	461.64
2003	0.00	88.62	108.88	83.51	22.68	303.69
2004	0.16	41.65	103.09	20.81	9.90	175.59
2005	6.04	77.23	206.18	239.16	26.56	555.18
2006	0.00	91.37	235.67	134.88	11.44	473.36
2007	84.28	208.82	509.33	102.78	13.19	918.41
2008	1.46	42.95	97.96	27.15	20.02	189.53
2009	0.00	151.67	58.70	36.46	30.46	277.29
2010	6.17	189.91	237.09	508.42	43.13	984.71
2011	97.95	167.16	466.69	44.23	44.23	820.25

Bamni, Area 857.70 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	144.14	226.75	296.48	184.91	83.80	936.09
2000	0.00	119.54	219.58	64.21	2.53	405.86
2001	0.00	165.58	400.48	30.66	19.55	616.28
2002	65.55	85.56	292.06	116.26	0.00	559.42
2003	0.00	151.85	307.11	109.97	71.70	640.63
2004	8.99	43.94	368.79	103.56	2.60	527.88
2005	75.29	169.84	216.35	181.28	83.19	725.95
2006	39.13	553.05	531.09	336.42	93.74	1553.44
2007	131.55	467.23	723.01	451.81	288.90	2062.49
2008	0.00	247.44	366.75	77.66	0.00	691.85
2009	0.00	353.64	602.00	180.64	226.55	1362.83
2010	31.16	327.67	981.70	867.74	175.63	2383.90
2011	0.00	135.45	331.23	521.35	94.81	1082.85

Chichghat, Area 12645 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	60.03	252.98	1037.91	3082.56	1153.24	5586.71
2000	71.49	894.81	357.04	131.54	0.00	1454.88
2001	410.40	536.85	739.36	6.13	137.57	1830.31
2002	137.66	168.51	564.34	285.15	0.00	1155.66
2003	40.25	1169.61	725.09	577.43	108.33	2620.70
2004	0.00	132.94	450.49	106.15	0.00	689.58
2005	57.73	668.82	799.92	1689.20	173.42	3389.09
2006	3.18	421.88	1443.90	1446.92	190.86	3506.74
2007	34.02	1013.96	1032.78	1029.68	437.39	3547.83
2008	0.00	175.17	477.05	81.69	0.00	733.91
2009	0.00	698.81	276.18	342.63	113.72	1431.34
2010	0.00	384.34	783.75	918.86	206.57	2293.52
2011	0.00	0.00	0.00	0.00	0.00	0.00

Damrench , Area 36317 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
2000	927.91	5660.32	4031.30	2776.74	820.49	14216.76
2001	5378.00	14195.21	24032.90	4627.34	2409.64	50643.09
2002	921.00	1804.06	10796.47	6762.50	1407.59	21691.62
2003	183.84	7325.34	10754.47	0.00	0.00	18263.65
2004	3536.63	3047.60	10488.61	3385.20	2181.16	22639.20
2005	240.06	6158.09	8614.51	9672.44	2748.59	27433.68
2006	0.00	8236.59	16060.31	10792.01	4791.20	39880.11
2007	748.48	7240.52	10724.68	9883.11	5741.58	34338.36
2008	197.80	3201.90	11490.45	6344.61	876.33	22111.09
2009	256.17	4144.92	4654.76	2879.80	590.38	12526.03
2010	423.16	5157.67	9585.67	9127.69	3202.81	27497.00
2011	37.00	868.36	4707.69	8046.82	1171.65	14831.53

Gadbori, Area 1061 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	7.27	39.89	233.99	127.25	68.65	477.05
2000	0.00	395.82	169.83	18.89	2.22	586.76
2001	68.23	7.91	297.38	11.73	0.00	385.24
2002	10.31	9.06	105.59	97.26	4.26	226.48
2003	0.00	129.94	151.41	55.16	16.82	353.33
2004	0.00	10.29	151.66	23.46	0.00	185.41
2005	8.84	229.17	255.26	92.24	63.83	649.35
2006	5.67	117.52	249.55	157.23	24.26	554.23
2007	110.87	289.02	244.34	180.53	48.20	872.97
2008	0.00	57.05	79.21	18.11	0.11	154.48
2009	0.00	24.52	56.08	13.47	2.22	96.28
2010	5.96	201.96	373.12	37.85	19.63	638.52
2011	0.00	0.00	119.71	218.98	0.00	338.69

GhotangaonBori, Area 998.94 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999						
2000	2.36	163.62	33.64	0.00	0.00	199.62
2001	26.06	59.34	173.85	8.43	0.35	268.03
2002	22.12	9.17	66.65	47.62	0.00	145.57
2003	0.00	22.15	43.33	30.62	1.93	98.03
2004	0.00	24.68	0.00	17.67	0.00	42.35
2005	47.18	75.13	85.00	111.70	34.04	353.06
2006	3.21	100.16	190.10	111.81	3.95	409.22
2007	57.16	75.24	297.65	117.53	30.96	578.55
2008	12.11	28.11	65.51	26.70	21.50	153.93
2009	0.00	42.84	34.85	12.52	0.00	90.22
2010	0.00	55.64	44.94	125.14	25.80	251.52
2011	0.00	23.29	44.95	131.28	7.26	206.77

Hamdapur , Area 2297sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	5.37	64.24	162.54	63.86	32.87	328.88
2000	28.20	186.56	75.27	30.21	26.74	346.96
2001	19.77	11.73	54.28	19.88	0.00	105.67
2002	13.34	0.81	24.67	21.15	0.00	59.97
2003	0.00	17.51	55.07	36.80	14.36	123.74
2004	20.05	5.81	19.01	0.00	0.00	44.87
2005	7.84	49.60	132.16	80.25	30.36	300.20
2006	0.00	25.28	72.81	76.82	0.95	175.86
2007	0.00	106.70	218.39	80.94	43.67	449.71
2008	0.00	20.64	68.58	37.21	1.48	127.91
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	35.52	159.09	142.79	60.02	397.43
2011	0.00	0.00	107.26	142.06	13.07	262.39

Hingangaht, Area 4109sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	77.24	139.07	476.88	361.51	254.94	1309.64
2000	100.46	902.73	326.01	73.07	61.12	1463.40
2001	346.13	115.62	485.21	153.62	96.56	1197.14
2002	126.22	52.64	92.66	136.90	3.29	411.72
2003	0.00	156.23	218.29	102.46	16.85	493.83
2004	0.00	43.78	152.76	0.00	0.00	196.54
2005	25.35	209.97	307.20	368.62	61.64	972.78
2006	0.00	106.64	221.75	233.36	0.00	561.75
2007	0.00	284.29	582.65	289.68	28.86	1185.49
2008	0.00	101.92	145.21	83.51	0.00	330.65
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	14.03	181.67	627.68	616.04	35.19	1474.62
2011	0.00	65.62	159.44	428.06	0.00	653.12

Kardha, Area 22538.00sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	262.05	993.07	3119.04	6469.07	1880.21	12723.45
2000	428.59	2495.94	2045.62	922.79	547.75	6440.69
2001	560.80	2662.24	4507.90	680.10	527.45	8938.50
2002	323.81	183.26	4585.72	1743.09	454.18	7290.05
2003	106.67	3584.27	2345.49	3769.56	1312.95	11118.94
2004	224.41	505.91	1939.28	914.17	839.27	4423.03
2005	45.07	1004.88	4136.85	4799.77	665.75	10652.32
2006	0.00	695.34	6963.83	3823.90	365.19	11848.26
2007	72.02	1093.67	1483.59	2042.92	885.30	5577.51
2008	21.08	570.96	3456.05	1050.07	494.22	5592.38
2009	0.00	1284.06	586.09	397.01	72.04	2339.20
2010	11.77	1133.57	1617.29	2425.39	169.95	5357.97
2011	7.33	675.43	1302.05	2331.02	42.34	4358.17

Khadka, Area 4484sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	314.40	191.19	657.21	395.20	268.61	1826.61
2000	129.46	799.00	331.65	113.77	35.72	1409.60
2001	233.98	31.60	610.96	61.84	177.22	1115.60
2002	468.95	122.97	962.62	1107.75	132.41	2794.69
2003	11.14	414.52	446.54	202.93	50.26	1125.40
2004	20.15	35.72	33.82	0.00	0.00	89.69
2005	10.83	728.92	335.03	120.87	53.39	1249.04
2006	81.78	290.91	1671.28	398.76	0.00	2442.72
2007	11.95	155.29	111.35	322.19	46.51	647.28
2008	0.00	20.43	80.11	61.63	10.18	172.34
2009	64.07	38.92	31.94	28.50	0.00	163.42
2010	4.66	447.47	838.53	530.43	59.43	1880.53
2011	0.00	97.64	225.64	271.89	67.86	663.02

KolgaonGod, Area 23046sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	722.19	695.28	1921.42	1606.56	967.97	5913.41
2000	320.23	1647.01	1207.94	465.56	90.07	3730.81
2001	1565.07	125.35	3982.90	335.95	940.31	6949.58
2002	72.16	423.99	1394.32	2128.86	474.86	4494.20
2003	22.35	2732.99	1778.18	321.58	201.32	5056.42
2004	0.00	16.50	260.55	41.76	18.56	337.37
2005	88.87	2141.78	1984.84	601.15	341.36	5158.00
2006	0.00	1417.19	6148.07	773.30	0.00	8338.57
2007	75.69	409.57	467.48	921.56	212.68	2086.98
2008	12.63	56.44	835.86	201.18	71.57	1177.68
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	7.11	2497.23	4057.59	1947.24	249.27	8758.45
2011	0.00	575.81	1320.54	982.36	93.12	2971.84

KoliBk, Area 2698sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	146.87	84.21	305.79	228.45	160.35	925.66
2000	52.22	418.12	142.67	60.20	11.52	684.73
2001	178.33	20.33	297.54	38.69	69.16	604.05
2002	207.40	155.36	466.23	455.26	56.98	1341.23
2003	0.00	131.72	130.55	31.28	12.58	306.14
2004	0.00	3.15	26.98	2.07	6.60	38.79
2005	9.64	354.79	358.56	265.43	262.72	1251.14
2006	48.17	248.81	1289.03	148.40	0.00	1734.41
2007	0.00	42.16	70.48	139.26	47.74	299.64
2008	0.00	0.00	0.00	0.00	0.00	0.00
2009	8.11	23.07	17.47	10.24	0.00	58.89
2010	0.00	43.92	98.28	51.50	13.84	207.55
2011	0.40	104.30	63.78	89.96	1.70	260.15

Mahagaon, Area 100395sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	5416.28	4406.65	19735.45	19135.09	8555.97	57249.45
2000	1305.98	22625.17	12861.81	4596.67	990.26	42379.89
2001	10358.20	9609.84	26570.35	3836.12	2678.36	53052.87
2002	5911.76	3463.70	14649.27	10287.16	1780.04	36091.94
2003	0.00	9054.08	9469.09	6539.70	2975.83	28038.69
2004	824.90	765.82	7498.59	2171.57	881.05	12141.92
2005	541.23	11916.62	14932.09	11722.57	4714.55	43827.06
2006	94.34	8557.72	20288.72	11013.05	3431.69	43385.51
2007	673.52	9475.58	10940.40	10191.16	4134.09	35414.75
2008	16.75	4896.99	15835.53	6961.71	2507.09	30218.07
2009	27.66	9653.62	6763.66	7489.61	2035.29	25969.84
2010	326.50	15682.87	26718.19	27129.87	6082.30	75939.73
2011	1139.69	7757.30	12480.39	18388.83	6329.94	46096.15

Mandvi Vain, Area 20440.00sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	155.22	787.40	1130.66	65.66	152.18	2291.13
2000	368.16	128.09	3230.59	1524.85	283.86	5535.55
2001	111.50	1988.08	1811.51	2334.46	503.65	6749.19
2002	143.18	267.95	895.93	165.23	87.22	1559.51
2003	49.59	8.93	2366.55	2559.33	548.67	5533.07
2004	0.00	736.34	4310.74	1897.63	170.91	7115.63
2005	23.43	813.85	892.98	1224.36	315.64	3270.27
2006	87.03	582.75	2026.63	473.89	240.58	3410.88
2007	0.00	1461.37	834.27	596.91	179.44	3071.99
2008	25.74	1265.19	1901.06	2126.00	257.61	5575.60
2009	95.43	849.97	1750.01	2846.48	166.00	5707.89
2010						
2011						

Murli, Area 8334sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	131.18	262.31	590.00	500.23	425.39	1909.10
2000	34.51	157.40	249.92	71.71	23.18	536.71
2001	69.04	24.54	333.94	53.79	433.97	915.27
2002	456.39	37.40	750.46	1072.91	133.57	2450.73
2003	1.54	342.04	328.62	128.52	63.41	864.13
2004	9.54	35.13	39.89	52.15	28.95	165.65
2005	17.18	1137.39	275.49	122.17	64.23	1616.46
2006	17.14	122.69	2364.55	327.55	0.00	2831.93
2007	17.04	48.12	96.45	205.59	31.79	398.98
2008	0.00	13.27	88.78	271.57	31.27	404.89
2009	2.66	31.74	18.61	85.95	0.00	138.96
2010	0.00	637.36	1109.15	906.66	175.75	2828.92
2011	50.98	92.86	485.01	393.88	73.84	1096.57

Nandura, Area 2472sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	24.85	126.38	189.07	191.09	47.10	578.50
2000	14.53	370.67	19.49	7.76	5.68	418.12
2001	517.98	17.82	181.80	37.80	19.22	774.62
2002	116.43	38.95	81.17	122.35	74.51	433.41
2003	0.00	71.65	68.07	18.52	0.00	158.24
2004	0.00	1.93	7.36	0.00	0.00	9.29
2005	26.31	238.18	282.66	90.76	59.10	697.00
2006	0.00	174.07	427.99	205.08	116.59	923.73
2007	0.00	109.70	143.28	212.38	17.25	482.62
2008	5.60	14.48	0.89	0.49	0	21.45
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	206.62	0.00	206.62
2011	0.00	0.00	90.11	227.65	0.00	317.76

Parsewada, Area 146sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	18.40	87.21	134.82	100.60	29.99	371.02
2000	63.90	713.02	155.22	68.05	7.97	1008.17
2001	63.44	140.71	196.18	15.94	4.57	420.84
2002	72.52	1.89	170.85	40.07	0.63	285.96
2003	0.00	112.44	73.79	6.33	8.08	200.64
2004	0.00	4.92	18.00	1.07	0.44	24.43
2005	0.00	125.35	158.05	236.60	5.28	525.27
2006						
2007	3.73	50.55	171.01	79.27	9.43	313.99
2008	2.64	9.96	263.77	20.29	7.02	303.67
2009	0.00	28.46	17.64	14.59	11.56	72.25
2010	0.89	107.34	249.12	258.35	11.69	627.39
2011	2.14	2.21	145.31	147.38	9.11	306.14

Petta, Area 1474sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	157.48	214.64	4.53	409.27	142.04	927.96
2000	123.34	619.39	337.68	136.14	55.28	1271.83
2001	658.37	472.23	1214.14	122.13	75.89	2542.77
2002	32.69	16.74	338.13	162.95	11.34	561.84
2003	75.68	12.89	639.88	12.75	0.00	741.21
2004	0.00	106.01	274.80	79.27	0.00	460.07
2005	26.14	270.41	405.83	376.96	213.77	1293.11
2006	0.00	456.41	373.04	224.74	98.60	1152.79
2007	12.99	263.48	334.98	110.37	49.95	771.77
2008	14.04	57.61	223.04	101.09	46.49	442.27
2009	0.00	423.00	338.74	180.74	124.80	1067.29
2010	0.00	1180.81	1675.36	959.12	172.99	3988.28
2011	23.58	211.06	143.81	845.58	73.49	1297.53

Pipriya, Area 607sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	6.75	25.32	17.62	5.23	54.92
2000	0.21	18.89	16.98	3.14	0.00	39.23
2001	12.82	14.77	27.76	7.75	8.13	71.23
2002	6.74	10.68	36.55	10.04	0.00	64.02
2003	0.00	30.57	47.00	46.75	22.62	146.93
2004	18.65	20.24	76.21	19.89	9.71	144.70
2005	0.00	15.36	58.55	52.95	0.00	126.87
2006	0.00	31.90	37.78	71.60	48.58	189.86
2007	2.41	46.55	49.21	36.81	18.18	153.17
2008	0.00	55.12	61.26	42.84	31.06	190.28
2009	0.00	23.20	26.08	26.72	11.04	87.05
2010	0.00	32.42	33.47	35.81	29.37	131.06
2011	0.00	29.17	32.58	64.66	38.75	165.15

Saiphal, Area 17108sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1712.69	900.28	2720.42	2113.77	2057.19	9504.35
2000	497.41	1942.21	1699.59	754.26	377.89	5271.35
2001	335.84	6.16	1218.65	21.05	386.53	1968.23
2002	1133.64	273.22	2363.69	1863.96	242.49	5877.01
2003	7.01	1185.85	1115.23	275.96	156.92	2740.97
2004	0.00	6.38	165.94	106.81	38.76	317.89
2005	21.40	2962.86	1085.86	285.29	143.43	4498.84
2006	181.60	851.52	7718.55	1180.48	0.00	9932.15
2007	40.94	274.09	267.40	907.02	159.88	1649.33
2008	2.84	46.82	245.01	396.49	108.69	799.85
2009	25.55	175.39	62.02	188.22	27.95	479.13
2010	15.19	1031.69	1996.56	1387.51	415.47	4846.42
2011	64.88	374.56	892.23	824.22	143.45	2299.34

Shivni, Area 1810.53sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	3.40	31.92	178.24	360.86	0.00	574.43
2000	0.00	274.28	106.83	11.08	0.00	392.19
2001	183.98	293.53	690.01	0.00	0.00	1167.52
2002	58.56	0.00	290.86	19.71	0.00	369.13
2003	0.00	135.43	91.85	70.39	0.00	297.67
2004	0.00	0.00	179.97	14.18	0.00	194.15
2005	38.80	187.57	388.65	2615.41	0.00	3230.43
2006	57.05	321.66	707.56	181.81	1.90	1269.97
2007	107.98	339.53	341.58	228.66	53.10	1070.85
2008	0.00	4.11	11.13	0.00	0.00	15.24
2009	0.00	28.19	48.98	0.00	0.00	77.17
2010	0.00	380.15	681.05	425.59	0.00	1486.78
2011	0.00	188.87	471.51	754.48	0.00	1414.87

Sitekasa, Area 1370sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	1.49	0.00	94.62	0.00	96.10
2000	0.00	3.52	6.23	2.63	0.00	12.38
2001	8.19	34.85	268.47	14.79	4.29	330.59
2002	NA	NA	NA	NA	NA	NA
2003	8.92	242.83	134.14	171.40	65.59	622.88
2004	3.23	0.00	0.00	0.00	0.00	3.23
2005	0.00	80.61	101.21	206.40	20.08	408.30
2006	0.00	0.00	150.04	0.00	0.00	150.04
2007	17.62	82.97	84.98	88.44	5.39	279.40
2008	NA	NA	NA	NA	NA	NA
2009	0.00	146.99	123.50	98.65	19.72	388.86
2010	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	69.83	114.88	47.15	5.24	237.11

Temburdoh, Area 5105sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	90.77	212.84	711.19	1643.65	669.08	3327.53
2000	36.55	84.83	96.21	23.10	12.15	252.84
2001	85.16	125.71	265.09	69.21	76.40	621.57
2002	42.99	25.48	228.44	196.58	33.30	526.78
2003	50.48	573.92	366.71	255.50	112.18	1358.79
2004	5.92	43.71	232.28	57.10	12.97	351.97
2005	15.29	349.64	236.05	653.08	68.90	1322.96
2006	0.00	148.41	1137.05	974.74	88.77	2348.97
2007	45.08	592.87	601.96	611.18	97.57	1948.67
2008	5.34	30.34	69.15	81.14	3.34	189.30
2009	0.00	801.61	86.61	329.51	36.32	1254.06
2010	7.81	205.02	482.05	402.35	6.35	1103.58
2011	2.95	95.27	291.03	744.94	7.46	1141.65

Bhamaragad, Area 5953sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	429.29	946.29	2930.31	2483.72	856.46	7646.07
2000	25.37	1785.10	1578.17	910.80	184.18	4483.63
2001	1776.98	4175.08	6040.21	911.28	279.71	13183.25
2002	107.21	165.81	2007.14	1114.44	158.03	3552.63
2003	23.87	1082.93	1564.69	901.59	670.94	4244.03
2004	308.37	274.72	1870.17	374.16	149.04	2976.47
2005	41.02	606.30	1096.37	1414.06	220.15	3377.90
2006	0.00	1407.67	2401.85	1148.47	514.72	5472.71
2007	109.79	648.92	1650.82	856.89	397.94	3664.35
2008	40.38	505.27	1397.98	493.71	56.53	2493.87
2009	0.00	539.98	776.14	424.86	223.77	1964.74
2010	24.38	815.51	2120.00	2059.12	444.64	5463.66
2011	140.18	524.44	889.64	1657.31	429.31	3640.88

Bhimkunda, Area 754.4sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	90.45	82.05	208.27	379.51	128.35	888.63
2000	13.35	154.88	161.83	139.23	83.45	552.74
2001	668.61	269.24	472.23	80.27	63.39	1553.74
2002	45.46	62.15	387.06	56.73	24.18	575.59
2003	0.00	313.54	406.53	266.71	111.64	1098.41
2004	35.10	35.34	169.29	36.96	0.00	276.69
2005	24.60	224.70	150.03	298.99	0.00	698.32
2006	25.69	265.16	252.19	130.62	28.15	701.81
2007	73.42	62.19	79.31	112.72	47.91	375.55
2008	7.24	79.22	184.27	81.98	2.43	355.14
2009	0.00	117.59	74.88	21.94	4.28	218.69
2010	0.00	354.52	330.79	619.11	46.20	1350.61
2011	0.00	172.14	195.47	198.63	67.92	634.16

Bori, Area 950sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	141.21	65.37	624.36	278.79	29.75	1139.49
2000	20.36	167.38	160.86	46.16	2.36	397.12
2001	165.24	109.51	710.20	44.89	47.99	1077.83
2002	289.90	9.74	559.70	229.75	3.97	1093.06
2003	11.22	354.38	286.52	0.00	0.00	652.12
2004	18.25	25.29	354.26	29.89	4.34	432.03
2005	5.40	359.16	403.85	464.92	48.87	1282.20
2006	23.79	164.67	688.70	116.57	13.97	1007.70
2007	0.19	150.73	417.25	158.87	20.48	747.52
2008	5.43	64.77	210.62	53.27	7.66	341.75
2009	30.02	94.76	74.90	39.41	32.79	271.86
2010	0.00	186.67	333.36	392.49	38.53	951.06
2011	26.59	46.73	175.67	319.45	28.78	597.21

Dechali, Area 476sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	30.92	284.71	238.37	150.37	85.59	789.96
2000	42.93	130.92	275.47	28.68	2.57	480.56
2001	125.65	159.00	32.50	12.01	1.17	330.33
2002	0.00	0.00	95.55	28.17	2.64	126.36
2003	0.00	132.66	36.79	0.00	0.00	169.45
2004	0.00	2.86	145.09	2.99	0.43	151.37
2005	2.93	25.31	24.28	82.40	0.00	134.92
2006	0.00	12.26	146.62	0.00	0.00	158.88
2007	3.01	30.33	25.24	53.15	31.91	143.64
2008	NA	NA	NA	NA	NA	NA
2009	0.00	49.30	34.18	70.90	10.34	164.72
2010	6.84	65.92	143.31	157.89	21.34	395.30
2011	5.64	5.83	70.05	109.16	17.56	208.25

Deori, Area 16068.00sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	190.91	768.43	2326.62	5290.05	1236.26	9812.27
2000	107.10	1731.51	1427.45	326.84	133.93	3726.83
2001	293.87	1614.04	2061.04	237.79	290.96	4497.70
2002	265.57	150.53	3835.07	1281.85	150.48	5683.50
2003	82.14	2140.18	1954.78	2531.78	377.57	7086.45
2004	192.44	512.91	1328.79	321.42	228.81	2584.37
2005	26.83	1061.43	3319.68	3834.19	389.10	8631.25
2006	379.08	1454.18	5885.49	2565.92	600.06	10884.73
2007	118.22	1312.32	1555.15	1850.89	522.96	5359.55
2008	NA	NA	NA	NA	NA	NA
2009	NA	1463.60	1111.54	861.21	293.32	3729.67
2010	101.37	1653.30	2413.95	2663.04	474.05	7305.71
2011	86.87	1236.25	2297.97	2970.71	289.23	6881.03

Kamthikhairi Area 4825sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	0.00	279.35	0.17	279.53
2000	93.26	29.27	13.82	9.75	9.41	155.50
2001	13.85	0.00	14.00	0.00	0.00	27.84
2002	6.51	0.00	27.87	40.37	17.60	92.35
2003	19.76	79.63	35.74	156.64	44.99	336.77
2004	47.98	14.74	21.42	0.00	0.00	84.13
2005	13.47	86.20	283.13	619.35	94.91	1097.07
2006	9.10	83.35	487.94	986.58	17.19	1584.15
2007	0.00	99.82	62.04	45.42	39.37	246.65
2008	0.00	65.59	29.57	12.44	0.00	107.60
2009	0.00	0.00	0.00	279.35	0.17	279.53
2010	0.00	58.77	66.75	170.95	0.00	296.47
2011	345.20	23.99	0.00	355.66	0.00	724.85

Lakhandur Area 2575sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	12.88	70.61	459.99	662.58	136.76	1342.83
2000	2.80	511.55	171.35	57.68	4.97	748.36
2001	152.36	134.34	441.09	0.87	0.00	728.67
2002	274.41	22.10	755.17	294.60	16.25	1362.53
2003	0.00	501.60	229.82	370.05	64.28	1165.75
2004	0.00	31.46	175.25	16.89	0.10	223.71
2005	7.56	238.02	469.22	689.41	70.02	1474.24
2006	0.00	0.00	579.25	251.50	0.00	830.75
2007	34.44	288.37	413.93	185.13	52.97	974.84
2008	7.84	55.48	277.12	53.42	10.88	404.74
2009	0.00	207.84	91.97	53.37	10.56	363.74
2010	1.20	364.90	428.14	612.41	39.84	1446.49
2011	0.00	93.53	253.94	514.38	21.44	883.29

Mathani Area 12259sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	118.00	194.79	725.59	3250.72	1216.76	5505.86
2000	129.53	380.16	188.57	60.17	0.00	758.42
2001	274.90	188.22	457.20	62.93	105.26	1088.51
2002	168.81	232.81	452.24	385.09	139.66	1378.60
2003	38.57	849.17	524.99	546.12	258.85	2217.71
2004	0.00	94.68	337.39	111.46	0.00	543.53
2005	86.70	709.95	612.11	1404.54	234.02	3047.32
2006	0.00	265.14	1027.94	1378.35	151.42	2822.84
2007	83.17	735.78	920.79	748.71	244.75	2733.18
2008	59.99	141.83	235.56	179.96	30.83	648.17
2009	0.00	955.02	253.26	487.45	140.67	1836.39
2010	8.68	339.45	859.15	753.02	124.48	2084.77
2011	151.22	208.95	560.92	1032.28	83.28	2036.66

Sirpur Area 10239.65sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	270.49	346.32	505.46	873.24	433.44	2428.95
2000	83.71	231.18	118.04	50.21	6.73	489.88
2001	458.31	26.55	332.96	47.06	43.08	907.96
2002	360.57	23.93	159.20	236.28	56.52	836.49
2003	0.00	210.55	242.57	145.18	65.68	663.97
2004	0.00	100.02	340.07	44.00	5.14	489.23
2005	91.74	783.03	1158.50	640.77	271.25	2945.30
2006	26.54	481.81	1020.28	816.61	354.45	2699.69
2007	86.38	959.33	1214.86	1096.23	313.01	3669.81
2008	84.45	146.89	270.41	182.29	131.87	815.91
2009	5.08	167.65	62.85	57.23	0.00	292.81
2010	42.29	197.70	883.95	967.76	151.98	2243.68
2011	87.05	149.90	834.37	1277.08	140.81	2489.21

Dhaba Area 45795sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
2002	11745.36	6901.83	14309.21	14400.57	6134.41	53491.39
2003	4401.74	12762.84	13306.33	7891.66	6805.17	45167.75
2004	4932.58	5974.06	7724.86	5923.67	5493.83	30049.00
2005	3232.87	11372.81	11031.02	6240.64	5108.33	36985.67
2006	526.82	2532.55	6456.55	3460.03	2225.63	15201.58
2007	674.50	2364.95	2510.03	2632.32	1089.94	9271.72
2008	577.09	896.72	1561.98	1102.31	694.14	4832.23
2009	54.10	657.54	706.07	768.91	499.42	2686.05
2010	240.75	1562.29	3895.05	4044.26	1439.11	11181.46
2011	321.97	466.64	681.19	1819.65	729.06	4018.51

Mangdatola Area 783.82sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	11.04	36.20	75.71	129.37	42.71	295.04
2000	1.99	220.56	118.12	13.90	0.70	355.27
2001	79.47	154.81	951.95	11.66	26.35	1224.23
2002	1.75	9.05	30.89	31.66	0.00	73.35
2003	0.00	23.68	34.77	16.83	1.59	76.87
2004	0.56	9.32	104.29	4.62	0.17	118.97
2005	9.96	55.34	74.40	46.63	3.51	189.84
2006	1.78	145.39	310.79	224.13	3.10	685.19
2007	37.76	128.64	314.46	236.58	102.88	820.31
2008	6.98	41.49	211.83	48.63	0.00	308.93
2009	0.00	40.36	166.16	60.61	26.24	293.38
2010	0.00	96.10	300.89	502.66	0.00	899.65
2011	0.00	65.00	204.00	220.38	0.00	489.38

Mahalgaon Area 2315 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	3.35	5.33	49.89	102.59	33.68	194.83
2000	8.17	27.62	19.65	0.86	0.00	56.30
2001	14.46	15.66	95.65	7.80	18.69	152.26
2002	48.57	14.77	243.85	141.18	71.88	520.24
2003	0.00	240.41	202.88	219.14	123.03	785.46
2004	0.00	12.83	70.77	50.94	0.00	134.54
2005	0.00	239.53	297.60	371.50	142.31	1050.95
2006	0.00	28.87	389.04	288.25	75.16	781.33
2007	0.00	104.40	150.49	193.64	63.74	512.27
2008	NA	NA	NA	NA	NA	NA
2009	0.00	168.42	111.72	97.97	29.94	408.04
2010	0.00	80.30	115.84	221.53	35.30	452.97
2011	0.00	19.20	98.34	238.59	15.34	371.47

Soitdindora Area 17776sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	207.02	461.14	894.69	1181.19	626.66	3370.70
2000	236.83	2281.86	637.41	72.23	0.00	3228.32
2001	1005.53	261.61	1017.70	357.92	148.78	2791.54
2002	967.22	301.97	660.29	630.40	25.76	2585.64
2003	28.76	728.34	734.70	475.01	360.20	2327.00
2004	0.00	88.74	753.87	170.85	0.00	1013.46
2005	183.79	1145.68	1677.23	1311.87	860.13	5178.71
2006	352.26	3768.97	5061.54	2129.10	639.88	11951.75
2007	245.90	1561.25	2428.61	1662.61	219.88	6118.25
2008	0.00	223.17	537.70	242.14	0.00	1003.02
2009	0.00	40.43	132.34	180.42	0.00	353.18
2010	73.15	831.55	2409.40	2534.44	46.26	5894.82
2011	0.00	32.70	841.22	1856.61	0.00	2730.53

Takali Area 1366sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1.11	0.14	19.15	8.72	7.51	36.63
2000	1.68	193.81	113.86	21.44	3.07	333.86
2001	9.85	2.49	29.70	1.84	1.64	45.52
2002	362.53	3.94	427.22	12.03	0.00	805.72
2003	0.00	166.80	146.66	55.47	42.80	411.73
2004	15.23	585.24	118.68	48.33	41.68	809.18
2005	6.67	344.45	1329.81	111.35	60.40	1852.69
2006	0.00	96.12	90.18	191.90	39.42	417.62
2007	0.00	19.75	134.96	120.20	65.79	340.70
2008	12.82	37.89	43.25	31.02	0.00	124.98
2009	1.11	0.14	19.15	8.72	7.51	36.63
2010	0.00	88.99	222.95	498.49	1.49	811.91
2011	0.00	80.21	115.20	129.42	12.63	337.46

Wadsachicholi Area 38172sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	289.20	925.65	4446.32	8092.61	2733.17	16486.95
2000	331.17	4661.32	2365.57	955.32	11.78	8325.17
2001	1106.59	2355.50	4574.41	480.14	792.44	9309.07
2002	1014.75	300.43	5277.04	2448.67	796.96	9837.85
2003	102.82	4624.00	3703.07	4320.32	1320.08	14070.29
2004	302.08	583.98	2614.58	558.01	296.62	4355.26
2005	168.24	2693.83	5481.91	6370.42	1011.92	15726.32
2006	2.78	1559.84	7000.82	4939.70	567.39	14070.53
2007	134.55	2839.01	3722.29	3158.58	995.23	10849.65
2008	52.43	1285.22	4161.68	1053.52	424.58	6977.43
2009	7.19	2891.74	1570.55	1500.34	458.35	6428.18
2010	116.39	2807.55	4584.10	5781.21	878.96	14168.21
2011	502.36	2009.62	4849.29	5959.46	701.45	14022.19

Wagholibuti Area 43798.53sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	376.93	1255.13	5267.06	7586.65	3197.17	17682.94
2000	279.55	5109.39	1772.16	678.13	231.24	8070.46
2001	1788.73	3101.48	5668.54	1192.03	1392.83	13143.61
2002	1225.16	448.54	5710.97	2691.25	550.19	10626.11
2003	29.07	5027.25	4482.15	4545.03	1448.91	15532.41
2004	290.88	663.16	3477.44	614.99	306.07	5352.54
2005	269.72	3283.74	6471.84	8196.64	1675.39	19897.33
2006	4.54	2186.45	7441.62	5075.08	484.89	15192.58
2007	252.04	3152.87	5366.72	3141.29	908.37	12821.29
2008	192.92	3896.33	2174.16	2159.16	838.62	9261.19
2009	107.55	3192.76	5816.77	10697.61	1275.75	21090.43
2010	517.56	1593.94	4197.73	7343.00	263.36	13915.58
2011	376.93	1255.13	5267.06	7586.65	3197.17	17682.94

Warudbagaji Area 6338sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	138.37	222.57	209.26	279.05	204.56	1053.79
2000	0.00	39.40	44.03	17.63	0.00	101.06
2001	40.79	43.08	64.38	45.08	43.01	236.34
2002	108.02	14.21	30.65	51.16	20.55	224.58
2003	0.00	56.20	59.87	50.02	22.92	189.01
2004	0.00	27.80	98.93	0.00	0.00	126.73
2005	0.00	93.60	112.48	105.77	36.07	347.91
2006	0.00	101.77	42.94	2057.78	0.00	2202.48
2007	0.00	371.31	324.88	241.90	8.28	946.37
2008	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	377.55	269.39	128.14	775.08
2011	0.00	10.41	428.35	500.56	0.00	939.33

3.2 Discharges at GD sites in Upper Godavari basin:

The catchment area of Upper Godavari Basin in Maharashtra is 71812 sqkm. There are 43 Gauge discharge stations in this catchment. Following table shows 10 years discharges for GD stations in this catchment.

Aurad (Sh) , Area 3145.00sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.96	1.24	10.98	46.74	59.92
2000	0.00	1.87	280.37	34.68	2.90	319.81
2001	0.00	0.00	11.96	9.46	30.49	51.91
2002	0.00	0.00	2.18	3.06	3.43	8.67
2003	0.00	7.46	9.95	15.13	0.00	32.53
2004	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00	0.00
2006	9.00	17.23	25.95	33.83	77.01	163.02
2007	0.00	0.00	4.52	45.16	35.94	85.62
2008	0.00	0.00	4.10	130.51	198.11	332.72
2009	0.72	0.75	0.78	0.74	2.70	5.69
2010	0.00	29.50	141.50	33.71	51.60	256.31
2011	0.00	85.64	37.83	4.48	56.29	184.24

Diksal Par , Area 193.15 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	18.03	80.38	667.80	250.24	347.44	1363.89
2000	91.92	383.84	124.38	106.84	56.87	763.84
2001	162.39	103.71	460.36	31.16	99.16	856.78
2002	0.00	14.47	49.81	15.46	0.00	79.75
2003	0.00	35.17	31.37	18.44	2.23	87.22
2004	0.00	0.00	198.29	49.96	31.46	279.71
2005	351.77	453.66	335.03	224.15	8.81	1373.41
2006	0.00	325.61	640.11	153.86	60.45	1180.03
2007	29.59	99.34	126.58	54.71	15.07	325.29
2008	16.75	38.86	185.70	137.94	37.53	416.78
2009	3.83	37.40	14.92	22.54	5.48	84.16
2010	0.00	0.00	0.00	0.00	0.00	0.00
2011	1.83	33.86	40.60	29.09	3.68	109.06

Jaffrabad, Area 2782.77 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	10.10	13.32	5.45	10.29	39.16
2000	16.65	37.49	13.06	8.98	0.00	76.18
2001	0.00	0.00	0.00	0.00	16.73	16.73
2002	91.74	0.00	170.13	186.16	0.00	448.04
2003	0.00	22.27	19.13	26.35	5.70	73.45
2004	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	3.75	1.75	13.86	0.03	19.38
2006	0.00	0.00	222.84	126.51	50.84	400.19
2007	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	0.88	4.26	81.56	2.07	88.77
2009	0.00	18.52	23.16	44.07	0.00	85.75
2010	5.03	3.16	88.55	91.69	0.00	188.43
2011	0.00	5.65	10.75	24.08	0.00	40.49

Kesrali, Area 2480.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	8.23	35.25	42.39	84.98	170.85
2000	0.00	0.00	132.52	7.21	0.00	139.73
2001	0.00	0.00	97.87	10.92	124.29	233.08
2002	0.00	0.00	13.98	15.63	0.00	29.61
2003	0.00	26.39	0.00	0.00	15.67	42.06
2004	0.00	0.00	0.00	7.12	0.00	7.12
2005	0.00	29.82	4.70	51.16	30.59	116.28
2006	0.00	0.00	85.95	29.74	11.66	127.35
2007	0.00	0.00	5.49	23.53	3.89	32.90
2008	1.07	4.16	14.50	30.12	4.07	53.92
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	11.31	84.32	95.34	41.95	232.92
2011	0.00	0.00	0.00	0.00	0.00	0.00

Kopargaon, Area 7095.69 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	175.91	138.46	0.00	314.37
2000	0.00	139.22	79.24	17.61	103.46	339.53
2001	0.00	0.02	504.93	112.59	0.00	617.53
2002	0.00	410.96	343.03	202.25	281.15	1237.39
2003	0.00	0.00	1469.33	261.50	791.21	2522.05
2004	154.36	974.79	720.71	1118.81	60.55	3029.23
2005	7.67	625.48	3498.15	344.57	144.41	4620.28
2006	6.25	600.90	670.96	453.02	8.07	1739.20
2007	0.00	35.26	700.79	1524.25	134.97	2395.27
2008	0.00	124.09	0.00	0.00	0.00	124.09
2009	13.85	51.79	253.61	133.28	40.66	493.20
2010	0.00	2.84	194.18	154.04	0.00	351.06

Limboti , Area 4696.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	110.37	2.26	0.00	112.63
2000	19.12	0.00	55.63	2.59	114.73	192.07
2001	0.63	0.00	3.20	13.17	0.16	17.16
2002	0.00	15.63	14.80	16.02	0.78	47.22
2003	0.00	1.94	10.40	9.81	1.54	23.70
2004	0.00	4.17	10.70	92.81	87.19	194.88
2005	0.00	0.00	33.50	9.44	6.66	49.60
2006	0.00	0.09	1.57	9.11	2.03	12.81
2007	0.38	0.39	0.39	3.61	2.02	6.79
2008	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00

Mahaldevi, Area 449.92 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	93.42	144.46	51.49	34.21	323.58
2000	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	57.59	97.23	16.11	28.37	199.30
2002	0.00	0.00	144.44	34.39	8.47	187.30
2003	0.50	67.61	78.65	64.61	20.03	231.39
2004	0.00	0.00	529.48	146.25	358.53	1034.26
2005	218.34	793.26	395.48	1027.16	0.00	2434.24
2006	0.00	0.00	0.00	0.00	0.00	0.00
2007	36.86	186.48	227.29	174.86	27.46	652.96
2008	4.45	14.88	122.28	134.55	9.86	286.02
2009	22.83	19.21	36.72	4.75	4.66	88.17
2010	15.83	13.80	46.20	83.06	26.40	185.28
2011	160.55	74.46	215.90	263.19	143.59	857.69

Nagamthan, Area 9399.47 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	291.75	197.73	0.00	939.86	1429.33
2000	22.78	95.21	41.82	0.00	0.00	159.81
2001	0.00	254.97	165.53	0.00	0.00	420.50
2002	0.00	16.66	453.54	18.79	0.00	489.00
2003	0.00	245.31	610.05	919.82	753.51	2528.68
2004	0.00	0.00	1835.31	509.02	537.39	2881.72
2005	158.61	1259.02	1228.41	1209.76	0.00	3855.81
2006	0.00	759.83	1486.64	780.70	383.45	3410.62
2007	3.82	634.04	718.97	901.86	436.24	2694.94
2008	0.00	16.63	1151.46	2169.87	222.08	3560.05
2009	0.00	214.83	0.00	0.00	0.00	214.83
2010	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	251.61	266.78	0.00	518.39

Nanded Nagapur , Area 53000.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	50.20	190.80	591.73	536.04	1368.77
2000	68.01	272.51	2392.89	109.34	0.00	2842.75
2001	0.00	0.00	514.27	30.08	1463.40	2007.75
2002	570.93	18.12	821.35	1273.44	164.39	2848.23
2003	0.00	501.12	343.35	175.34	104.86	1124.66
2004	0.00	0.00	124.00	192.23	160.78	477.00
2005	0.00	825.81	1093.32	3119.13	1063.98	6102.23
2006	52.10	73.58	9007.09	2182.51	1554.96	12870.23
2007	0.00	0.00	187.35	1682.34	179.93	2049.62
2008	0.00	0.00	0.00	1591.67	983.15	2574.82
2009	0.00	0.00	254.26	470.96	1598.75	2323.96
2010	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00

Nashik, Area 727.23 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	2.24	37.35	0.00	43.65	83.24
2000	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	15.91	10.36	0.00	26.27
2003	0.03	22.74	9.55	5.64	0.52	38.47
2004	0.00	0.00	438.25	105.75	17.95	561.94
2005	23.26	223.57	224.94	305.15	21.52	798.44
2006	0.00	108.58	690.08	36.91	34.76	870.33
2007	20.50	68.58	80.41	45.73	7.95	223.16
2008	0.18	0.19	77.51	217.19	0.31	295.38
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	15.90	15.90	18.92	34.18	16.43	101.34
2011	0.00	0.00	0.00	0.00	0.00	0.00

Newasa , Area 6556.04 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	4.63	11.09	28.76	44.47
2000	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	323.91	504.24	334.24	1162.40
2005	7.76	60.05	415.60	940.13	311.25	1734.80
2006	0.00	82.30	527.53	300.02	136.36	1046.22
2007	25.95	117.53	175.97	322.80	13.09	655.33
2008	0.00	0.00	67.31	608.12	308.20	983.64
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	61.73	0.00	61.73
2011	0.00	34.39	57.03	138.84	0.00	230.26

Potanandgaon , Area 7795.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00
2002	381.69	85.58	563.57	1324.77	66.21	2421.83
2003	0.00	123.64	147.34	57.99	6.23	335.20
2004	7.34	47.83	7.91	171.70	91.23	326.00
2005	0.00	1866.11	212.69	614.93	250.55	2944.28
2006	152.75	304.91	2188.50	811.32	138.70	3596.18
2007	0.00	0.00	0.00	0.00	0.00	0.00
2008	5.63	6.02	5.79	51.84	6.56	75.84
2009	0.00	0.00	85.96	53.32	2.29	141.57
2010	0.00	318.38	655.75	577.43	0.00	1551.56
2011	944.52	975.57	975.36	943.98	974.53	4813.95

Raheri , Area 5868.91 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00
2002	69.11	0.00	141.63	233.58	0.00	444.32
2003	0.00	213.18	596.76	474.15	1.79	1285.88
2004	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	7.88	17.15	25.73	0.00	50.76
2006	0.00	0.00	1852.81	297.37	100.68	2250.86
2007	0.00	7.44	12.49	43.22	5.84	68.99
2008	0.00	0.00	0.00	118.54	0.00	118.54
2009	0.00	0.00	0.00	23.88	0.00	23.88
2010	0.87	35.10	416.34	165.63	0.00	617.95
2011	0.00	6.18	57.87	91.70	0.00	155.75

Rajewadigod , Area 4696.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	50.60	0.00	120.29	20.25	191.14
2001	0.00	335.82	32.08	175.30	7.73	550.93
2002	56.24	6.67	466.97	238.17	92.23	860.29
2003	1.50	3.28	0.78	9.92	0.00	15.49
2004	0.00	0.00	0.00	72.92	0.00	72.92
2005	0.00	0.00	5.79	29.44	0.00	35.23
2006	0.00	47.10	252.87	134.11	5.48	439.56
2007	0.00	0.00	38.13	20.88	0.00	59.00

Samangaon(B) , Area 1730.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.26	322.19	121.49	42.05	44.47	530.46
2000	0.00	2.82	74.69	77.90	36.84	192.24
2001	0.00	124.77	79.61	7.29	20.65	232.31
2002	0.00	2.39	438.35	34.64	9.79	485.17
2003	1.75	479.03	190.02	99.65	26.26	796.72
2004	0.00	0.00	1911.98	142.16	149.38	2203.52
2005	80.30	1436.03	0.00	0.00	0.00	1516.34
2006	0.00	133.83	405.44	81.35	34.71	655.33
2007	9.33	39.09	64.34	41.62	6.19	160.57
2008	10.05	13.46	238.59	195.46	14.08	471.64
2009	0.00	81.33	0.00	0.00	0.00	81.33
2010	0.00	28.37	280.69	74.42	0.00	383.48
2011	22.91	8.76	203.37	98.89	0.00	333.93

Sangamner (Waghapur) , Area 1470.32 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	33.27	73.33	6.62	22.95	136.17
2000	0.00	15.60	19.55	14.94	15.92	66.02
2001	3.75	136.51	49.68	7.05	20.67	217.67
2002	0.00	4.60	26.92	12.91	0.00	44.44
2003	0.03	166.75	132.13	177.26	54.36	530.53
2004	0.00	0.00	143.22	9.48	44.63	197.32
2005	98.80	260.69	250.74	220.58	0.00	830.81
2006	0.00	0.00	0.00	0.00	0.00	0.00
2007	11.14	39.35	94.48	61.16	5.40	211.53
2008	2.60	58.05	318.49	401.84	59.64	840.62
2009	13.79	11.61	23.64	3.33	2.48	54.85
2010	15.56	6.97	11.10	71.50	2.62	107.74
2011	57.91	7.02	134.46	139.01	15.96	354.36

Sundgi , Area 1460.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	26.99	26.61	32.64	86.24
2000	6.05	35.57	311.41	9.26	11.75	374.04
2001	37.91	0.00	54.89	0.00	132.80	225.60
2002	0.00	0.00	36.39	65.15	0.00	101.55
2003	0.00	58.63	152.49	55.44	16.76	283.32
2004	0.00	50.83	97.47	148.90	0.00	297.19
2005	0.00	142.65	87.92	154.67	103.82	489.06
2006	0.00	9.07	89.90	41.98	13.69	154.64
2007	0.00	0.00	0.00	30.14	0.00	30.14
2008	0.00	0.00	10.60	8.47	0.00	19.07
2009	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	6.74	139.51	37.61	10.22	194.08
2011	0.00	46.44	90.54	17.76	0.00	154.74

Takli , Area 6571.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	0.00	0.00	101.83	373.56	475.39
2000	0.00	0.00	992.74	95.60	6.01	1094.35
2001	0.06	1.81	8.29	2.39	3.64	16.18
2002	0.00	0.00	1.88	3.08	0.92	5.88
2003	0.00	0.00	39.58	20.96	0.00	60.54
2004	0.00	25.20	28.26	17.15	0.00	70.61
2005	0.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	33.41	33.41
2008	0.00	0.00	0.00	697.17	51.82	748.98
2009	5.53	5.72	11.54	22.39	9.11	54.29
2010	0.00	251.75	1152.94	949.24	149.03	2502.95
2011	0.37	98.74	391.42	203.65	14.62	708.80

Usthale , Area 111.96 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0.00	18.01	16.73	11.41	11.61	57.76
2000	0.00	0.00	12.13	6.72	0.58	19.43
2001	0.00	3.29	38.74	8.18	3.71	53.93
2002	0.00	0.00	46.97	21.92	0.00	68.90
2003	0.00	36.72	27.15	21.51	0.93	86.29
2004	0.00	0.00	142.46	45.77	10.67	198.89
2005	19.58	263.17	221.55	133.17	3.26	640.73
2006	3.47	83.23	260.82	53.73	19.52	420.77
2007	14.75	46.99	124.99	46.24	6.77	239.73
2008	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	74.05	17.87	21.58	7.86	121.36
2010	0.00	39.01	86.59	37.30	2.15	165.05
2011	2.53	32.65	71.36	45.45	9.03	161.03

Zari , Area 5700.00 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	32.48	49.86	45.26	302.43	205.48	635.52
2000	49.51	60.19	667.41	45.24	4.49	826.86
2001	11.76	45.49	72.86	33.18	439.61	602.90
2002	114.12	11.06	219.46	161.73	2.97	509.34
2003	0.00	49.61	63.16	13.67	2.73	129.18
2004	0.00	32.40	2.75	69.56	79.78	184.49
2005	0.00	374.20	27.45	227.94	91.03	720.63
2006	17.19	4.40	735.96	287.44	72.49	1117.48
2007	0.00	0.00	36.10	44.70	8.12	88.93
2008	0.24	1.21	0.68	97.87	4.99	104.99
2009	0.00	6.50	78.02	68.71	45.90	199.14
2010	0.00	91.25	327.49	227.87	66.42	713.03
2011	0.00	14.06	53.46	49.67	0.00	117.18

3.3 Discharges at GD sites in Tapi basin:

The catchment area of Tapi Basin in Maharashtra is 55101.54 sqkm. There are 28 Gauge discharge stations in this catchment. Following table shows 10 years discharges for GD stations in this catchment.

Morchida, Area 1124 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
2001	0.000	16.870	2.956	0.000	0.000	19.825
2002	125.056	16.092	125.614	135.305	33.118	435.184
2003	79.569	121.126	204.479	90.839	0.000	496.013
2004	6.937	94.789	130.685	27.632	0.000	260.044
2005	3.095	3.198	3.198	55.335	5.888	70.713
2006	0.000	138.337	287.681	34.609	45.831	506.459
2007	0.000	60.614	36.572	30.802	1.897	129.884
2008	0.000	2.982	2.991	17.278	0.000	23.251
2009	0.000	27.194	1.807	25.245	0.000	54.247
2010	0.000	15.327	56.547	89.057	0.000	160.930
2011	0.000	40.281	116.680	138.287	0.000	295.248

Suple, Area 157sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
2000	0.000	0.000	30.548	43.750	0.000	74.298
2001	0.000	0.000	0.000	0.000	0.000	0.000
2002	0.000	69.838	259.618	195.183	68.917	593.555
2003	26.331	225.605	191.023	135.950	83.226	662.135
2004	37.374	60.548	436.306	76.072	0.000	610.300
2005	62.445	206.227	170.090	144.895	62.300	645.956
2006	0.000	150.464	255.994	87.532	110.090	604.080
2007	2.578	2.364	0.000	97.255	15.112	117.309
2008	0.000	18.422	164.812	132.538	138.236	454.008
2009	0.000	73.029	36.822	60.261	70.538	240.650
2010	0.000	12.102	106.255	85.877	53.369	257.603
2011	0.000	47.889	179.834	135.725	0.000	363.447

Daryapur, Area 1309sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	3.889	26.087	74.974	15.090	24.044	144.085
2000	8.754	84.661	7.104	7.151	2.428	110.098
2001	47.006	35.495	94.420	33.600	49.326	259.846
2002	27.648	26.997	48.309	47.607	3.336	153.896
2003	0.000	24.923	9.717	13.192	0.000	47.832
2004	3.213	4.626	25.824	3.722	0.000	37.385
2005	4.369	6.635	61.156	24.949	5.567	102.676
2006	0.115	12.199	96.943	39.196	53.183	201.637
2007	35.541	462.421	117.790	61.409	7.945	685.106
2008	1.254	0.545	0.007	4.994	0.000	6.799
2009	0.000	9.779	0.744	2.416	0.000	12.939
2010	0.000	23.250	20.650	17.889	3.818	65.607
2011	0.000	2.295	39.153	42.751	0.000	84.199

Saragkheda, Area 55485 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	973.519	969.729	2718.343	1607.149	1798.500	8067.239
2000	460.465	1626.493	240.383	88.729	0.000	2416.070
2001	339.936	36.105	693.261	5.064	399.501	1473.867
2002	1099.372	30.664	1711.222	4579.476	27.039	7447.772
2003	144.314	988.431	1421.270	1240.993	328.757	4123.766
2004	164.840	176.512	1314.533	143.550	0.000	1799.435
2005	0.000	422.012	1917.749	1016.454	32.255	3388.470
2006	13.473	1875.163	9123.931	2709.706	37.458	13759.732
2007	0.000	4498.384	2632.310	1879.608	97.271	9107.574
2008	0.000	41.015	501.697	329.254	0.000	871.965
2009	0.000	652.794	108.441	504.844	0.000	1266.079
2010	0.000	1068.059	2578.428	1911.710	0.000	5558.198
2011	0.00	734.029	2526.681	2122.077	0.000	5382.787

Aurangpur, Area 1418 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1.507	20.428	117.175	28.178	18.562	185.851
2000	9.267	140.045	7.631	4.311	0.424	161.678
2001	85.902	1.332	54.863	7.194	3.820	153.110
2002	49.508	2.373	10.898	31.366	1.959	96.104
2003	4.630	28.265	1.501	4.966	1.469	40.831
2004	0.000	4.142	7.348	1.541	0.000	13.031
2005	0.366	4.942	44.965	23.076	0.819	74.168
2006	0.000	14.091	91.937	0.000	22.596	128.624
2007	256.168	419.705	270.181	61.227	0.008	1007.288
2008	2.783	8.838	15.467	8.430	0.000	35.518
2009	0.911	35.751	5.656	7.761	3.694	53.773
2010	4.743	57.638	101.545	45.826	13.310	223.063
2011	9.058	30.146	46.752	31.106	6.183	123.245

Bhusawal , Area 29871 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1269.017	5.915	3758.847	2515.920	2190.362	9740.061
2000	609.375	1879.871	848.458	62.228	0.000	3399.932
2001	1272.069	160.680	3513.209	76.167	811.430	5833.555
2002	0.000	18.058	2505.222	4095.771	0.000	6619.051
2003	502.382	2958.550	2757.753	3057.536	1490.211	10766.432
2004	0.000	189.189	2082.484	288.443	0.000	2560.117
2005	1139.726	1833.124	2457.135	1633.207	1177.717	8240.910
2006	0.000	1759.712	5400.713	1556.686	477.972	9195.083
2007	0.000	4156.866	2164.779	1368.780	27.484	7717.909
2008	0.000	123.527	868.740	616.184	0.000	1608.451
2009	0.000	1299.682	283.295	449.580	114.907	2147.464
2010	0.000	1233.058	2051.685	2179.942	0.000	5464.685
2011	57.702	949.479	2072.929	1383.753	33.563	4497.425

Khariya, Area 5945 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	426.144	884.674	1963.329	1170.099	1314.404	5758.651
2000	150.551	991.630	1036.913	736.613	305.581	3221.289
2001	372.951	591.495	2550.329	492.782	506.397	4513.954
2002	752.085	318.812	1269.832	2096.869	350.990	4788.587
2003	213.618	569.273	307.186	949.888	894.195	2934.159
2004	291.614	410.953	2731.566	480.020	0.000	3914.153
2005	234.522	1360.675	1199.546	1146.871	444.350	4385.964
2006	0.000	559.031	1193.940	686.247	95.297	2534.516
2007	0.000	2266.178	1165.771	933.897	91.213	4457.058
2008	12.417	265.286	747.816	336.908	180.990	1543.417
2009	0.000	874.982	370.104	449.353	253.199	1947.637
2010	23.377	582.169	1239.083	984.047	207.271	3035.948
2011	107.737	614.765	1247.905	846.009	224.439	3040.855

Manasgaon, Area 12016 sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	483.036	514.997	1051.859	664.802	787.560	3502.253
2000	558.157	768.940	540.084	507.224	482.773	2857.178
2001	659.823	450.042	623.839	437.874	804.808	2976.386
2002	558.333	446.131	1001.164	1322.411	465.794	3793.833
2003	12.315	496.109	586.738	430.311	491.367	2016.840
2004	237.769	478.593	510.776	404.418	0.000	1631.557
2005	377.292	479.368	786.099	589.596	483.137	2715.491
2006	0.000	631.160	1475.732	615.477	745.911	3468.279
2007	291.718	11010.860	5667.798	3366.320	513.827	20850.523
2008	5.454	8.014	20.048	128.786	17.786	180.088
2009	0.000	237.568	116.627	79.440	25.500	459.135
2010	5.637	524.118	1439.890	791.444	61.689	2822.779
2011	12.339	55.974	271.551	273.306	14.790	627.960

Sukwad , Area 51916sqkm						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1029.748	775.587	2929.686	1906.307	1957.011	8598.338
2000	0.000	0.000	0.000	0.000	0.000	0.000
2001	435.815	191.473	2448.106	174.197	682.996	3932.587
2002	0.000	0.000	2000.938	5103.057	6.947	7110.942
2003	68.990	1028.328	1966.278	1340.975	160.604	4565.175
2004	0.000	33.029	1292.380	58.774	0.000	1384.182
2005	10.610	294.637	1242.794	792.846	21.837	2362.723
2006	0.258	1738.167	10919.233	1637.303	564.401	14859.362
2007	0.000	5365.612	2096.023	1013.679	17.074	8492.388
2008	0.000	11.570	407.839	292.960	0.000	712.368
2009	0.000	518.537	0.571	0.000	0.000	519.108
2010	0.000	494.595	1490.774	1472.120	0.000	3457.489
2011	0.000	187.426	1360.886	1261.672	0.000	2809.984

3.4 Discharges at GD sites in Krishna basin:

The catchment area of Krishna Basin in Maharashtra is 68397 sq km. There are 50 Gauge discharge stations in this catchment. Following table shows 12 years discharges for 41 GD stations in Krishna basin..

Ambeghar (K) , Area 249.44 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	52.05973	243.599	79.0688	26.72	24.0238	425.471
2000	1.313304	168.899	95.962	60.7775	25.2057	352.158
2001	2.658182	154.917	176.452	31.328	10.8894	376.245
2002	6.129148	50.6565	245.46	37.4188	0.07957	339.744
2003	19.26916	69.4493	93.9041	48.0322	2.34433	232.999
2004	25.83421	73.22	514.55	24.5933	10.8976	649.095
2005	36.76752	254.961	417.852	196.502	18.7559	924.839
2006	14.25214	321.482	457.972	55.3029	6.93956	855.949
2007	23.74436	99.8029	176.229	54.6309	0.11426	354.522
2008	0	13.8787	165.07	64.0642	0	243.013
2009	0	95.7461	0.31096	0	25.0112	121.068
2010	0	45.5556	36.7816	18.6344	5.11178	106.083

Askheda , Area 242.00 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	25.9865	75.74338	28.48861	15.47438	10.40621	156.0991
2000	0	39.22188	23.04865	13.8147	0	76.08524
2001	4.703358	73.94116	59.59637	19.74803	0.211172	158.2001
2002	24.264	30.28037	96.55442	26.45531	0	177.5541
2003	16.91272	67.33117	44.89049	24.26899	0	153.4034
2004	0	16.81402	217.1452	9.2199	1.339851	244.519
2005	10.05907	224.165	152.567	94.67021	4.29893	485.7602
2006	1.119163	104.8859	267.7838	37.12382	1.427602	412.3403
2007	0	32.22557	106.2261	41.84556	2.658648	182.9559
2008	0	0.492048	125.2657	71.07714	20.6048	217.4396
2009	0.797904	9.023504	0.772848	1.909008	0.283824	12.78709
2010	0	11.10662	14.54384	22.66552	13.48663	61.80262

Bandalgi , Area 12237.44 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	14.43361	9.312	1.309249	27.80552	86.54774	139.4085
2000	62.7012	93.18	389.8198	140.8288	65.94121	752.473
2001	0	0	0	21.03923	167.0363	188.0755
2002	10.46455	0	13.39871	1.82304	0	25.68631
2003	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2004	23.02942	10.97	10.99222	151.2163	148.452	344.6551
2005	0	124.7	602.2536	224.6551	69.3415	1020.951
2006	26.10673	5.943	80.98283	386.0425	236.4542	735.5297
2007	0	35.73	75.21497	396.2011	61.80743	568.9564
2008	0	0	3.961367	1076.964	275.8627	1356.788
2009	43.53575	0	45.83798	100.2731	634.3946	824.0414
2010	50.58236	141.7359	1186.099	1016.418	114.1434	2508.979

Barur Takli , Area 33726.48 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	73.15986	746.8614	486.9765	96.36322	750.2363	2153.597
2000	92.68525	48.59745	77.94309	41.07734	10.29669	270.5998
2001	0	0	0	129.9232	673.5919	803.5152
2002	0	0	15.78819	0	11.23752	27.02571
2003	1.839456	11.08814	0.257904	15.75317	0	28.93867
2004	3.536352	7.51464	900.8168	360.2066	550.3751	1822.449
2005	0	1046.53	5148.46	3394.371	268.0837	9857.445
2006	18.39805	701.6414	8578.806	1980.198	717.7032	11996.75
2007	187.4439	1143.478	1666.597	1876.907	175.2032	5049.629
2008	0	0	34.87495	2447.282	277.3246	2759.481
2009	0	46.23228	211.4772	1192.462	1830.442	3280.613
2010	0	0	274.4274	688.0284	793.4133	1755.869

Budhwad (V) , Area 151.919 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	7.242115	78.71936	34.68976	15.24807	10.91742	146.8167
2000	0	46.6256	33.40412	7.418502	1.346187	88.79441
2001	8.100907	33.75616	30.05314	1.848411	0	73.75862
2002	11.34426	14.8069	41.65754	10.52828	0	78.33698
2003	20.35629	15.78817	13.10793	11.41791	1.906001	62.57631
2004	6.82906	8.97283	78.51607	3.172313	0	97.49027
2005	23.34306	111.2933	68.1926	62.23369	0.632033	265.6947
2006	6.283837	71.83705	141.5915	12.41554	7.364783	239.4928
2007	0.924363	28.96129	37.27425	16.66761	0	83.8275
2008	0	4.589845	61.96413	30.61659	0	97.17056
2009	0	38.97488	0	0	14.10646	53.08133
2010	0	12.08791	20.35059	10.43039	0.156396	43.02529

Ambale (A) , Area 130.28 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	35.73097	138.024	63.4888	14.0487	23.0015	274.294
2000	13.58487	99.1383	50.5014	35.9373	12.3283	211.49
2001	11.31121	103.19	66.1453	11.8322	12.2232	204.702
2002	24.10579	56.3271	137.916	21.9377	9.43325	249.72
2003	22.20756	83.3994	40.1815	18.1382	3.38364	167.31
2004	55.47976	25.873	223.497	11.341	6.61646	322.807
2005	46.47507	247.734	211.611	107.467	13.8861	627.173
2006	35.72528	306.982	276.43	24.9966	8.71563	652.85
2007	76.39832	222.174	148.234	41.5257	8.50756	496.84
2008	3.552758	170.715	173.139	71.3965	27.2993	446.103
2009	0	169.528	66.4999	31.9221	36.1537	304.103
2010	5.08357	49.8988	68.9237	37.5276	12.7979	174.232

Devikavathe , Area 46706.50 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	117.7973	648.81	503.7473	133.2718	882.0014	2285.63
2000	304.969	83.342	326.6882	116.2205	49.27246	880.4926
2001	0	0	0	1015.699	1018.669	2034.368
2002	25.12945	0	51.13125	3.26478	38.43977	117.9652
2003	0	0	0	30.39315	0	30.39315
2004	62.68854	18.815	717.7569	571.167	763.5933	2134.021
2005	0	994.03	5694.776	3493.975	472.4724	10655.26
2006	45.73851	558.79	8435.533	2135.458	863.8273	12039.34
2007	290.7918	1131.7	1621.293	2062.591	221.507	5327.883
2008	0	0	140.9398	3213.105	622.1046	3976.149
2009	0	117.37	341.0502	972.5651	2241.433	3672.417
2010	45.48567	388.218	1342.772	1637.193	1702.187	5115.855

Late , Area 3043.52 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0	202.0225	43.40701	28.81016	192.3361	466.5757
2000	0	3.467076	0	0.039164	0	3.506241
2001	0	41.12939	0	0	0	41.12939
2002	0	0	93.73838	1.988778	0	95.72716
2003	0	0	30.4121	0	0	30.4121
2004	0	0	967.4415	55.33187	6.061328	1028.835
2005	0	276.2695	1150.283	776.9199	4.389156	2207.861
2006	81.12875	539.5269	240.0657	331.5228	79.82794	1272.072

Nighoje , Area 832.30 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	55.15125	291.6	109.0786	60.07592	58.20174	574.1242
2000	9.208408	195.5	113.3864	43.98326	14.33109	376.3732
2001	49.11492	190.4	141.6995	33.45112	35.17357	449.8287
2002	67.42354	112.8	244.3408	69.0096	0.737582	494.297
2003	55.25743	140.6	132.7565	85.32772	2.954314	416.9287
2004	47.7515	75.19	443.2321	51.16212	9.968616	627.3004
2005	143.4203	565.7	455.1949	276.6443	59.09106	1500.006
2006	14.4294	487.4	690.0778	133.7683	39.64831	1365.299
2007	61.81152	315.6	296.9754	101.3501	15.33671	791.1177
2008	0	145.3	460.705	231.4587	1.907687	839.4116
2009	0	255.6	67.42943	50.08494	72.87514	446.0183
2010	15.70641	135.67	137.4305	88.46055	0.714888	377.9824

Pargaon , Area 6251.00 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	216.6399	1035.4	479.6812	172.1045	323.9271	2227.751
2000	140.7529	468.84	250.722	175.9896	95.81293	1132.118
2001	87.12325	579.9	417.9623	123.6552	177.3306	1385.967
2002	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2003	67.56981	517.82	411.6684	227.8956	18.13312	1243.088
2004	110.4293	160.39	1866.486	383.2069	177.9231	2698.438
2005	248.4282	2221.8	2752.435	1638.49	253.8205	7115.014
2006	75.81924	1930.6	4138.87	681.3568	298.1917	7124.803
2007	185.3105	1266.9	1274.019	705.8864	101.1024	3533.195
2008	0	184.18	1542.466	1227.346	145.528	3099.515
2009	0	753.53	135.8779	135.7629	172.6944	1197.863
2010	0	315.1113	445.3903	474.7915	204.9278	1440.221

Paud , Area 473.64 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	13.8612	87.9	47.6857	19.57984	16.74246	185.8147
2000	0	43.6	35.49144	24.74922	0	103.8626
2001	10.2736	96.4	47.62696	6.569009	0	160.8491
2002	20.21383	30.1	92.21135	26.15801	0	168.728
2003	16.91852	75	49.63015	23.83763	0	165.3434
2004	8.307137	19.8	213.9041	20.64719	7.817291	270.4722
2005	29.41867	152	213.8279	117.6758	11.79528	524.2225
2006	4.486208	151	278.0402	18.73854	6.992321	459.4137
2007	0	61	56.14175	25.03761	0	142.1685
2008	0	23.3	275.7408	128.5095	0	427.5525
2009	0	102	22.34072	0	6.122018	130.7022
2010	0	36.32136	50.16019	33.98855	1.037396	121.5075

Pimple Gurav , Area 506.70 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	56.37053	174.41	43.4933	53.2039	51.0794	378.559
2000	30.39754	63.422	35.3029	31.4049	23.786	184.3136
2001	3.599028	71.582	88.494	37.3997	12.5728	213.6473
2002	41.75581	29.552	111.708	72.3517	0	255.3682
2003	8.578633	66.229	48.8094	27.779	0	151.3959
2004	18.66751	36.351	303.992	12.5131	0	371.5228
2005	68.5917	393.57	256.453	190.195	31.99	940.7986
2006	12.32833	298.07	456.651	94.2716	60.8197	922.1427
2007	0	140.78	106.181	71.6835	1.61933	320.2587
2008	0	29.922	229.832	157.556	16.0394	433.349
2009	0	121.3	12.6858	34.9035	47.6268	216.5163
2010	0	59.7629	83.9138	63.4999	18.6239	225.8005

Rakshewadi , Area 3208.00 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	101.8252	527.07	231.8866	61.10826	102.7191	1024.604
2000	0	325.28	164.7827	75.44242	35.34967	600.8596
2001	42.80966	375.34	234.8287	39.36334	80.58519	772.9286
2002	140.7796	158.76	513.8846	156.0695	0	969.4922
2003	43.8338	232.98	202.5431	93.78858	0	573.1433
2004	73.82361	60.47	989.07	143.7918	59.40747	1326.563
2005	125.5725	1159.6	1286.867	811.4454	176.6775	3560.151
2006	52.29134	774.61	1834.941	478.3187	108.4216	3248.587

Sakhar , Area 182.57 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	10.11064	39.90194	24.63571	9.763727	12.80084	97.21286
2000	0	22.02934	15.81438	12.41814	2.79204	53.0539
2001	5.150907	40.6659	20.64525	6.788672	4.218432	77.46915
2002	4.368865	13.06079	33.6423	4.881709	0	55.95367
2003	6.350163	25.39257	21.01135	16.31864	1.425527	70.49825
2004	11.74848	11.18875	67.39741	0.33141	0	90.66605
2005	22.66105	71.37725	47.62982	38.035	0.416229	180.1194
2006	5.49609	83.82145	65.94785	17.91766	10.74522	183.9283
2007	17.0597	58.09755	31.77385	10.9605	0	117.8916
2008	0	10.51453	24.13	9.938428	0	44.58295
2009	0	64.30654	17.11296	14.76267	7.562874	103.745
2010	2.434853	34.40585	30.01269	20.12986	4.11459	91.09784

Sidhewadi (Solapur) , Area 4691.96 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	0	0	3.05424	2.560032	105.8084	111.4226
2000	0	0	4.142811	39.22825	4.968864	48.33993
2001	0	0	0	8.073134	97.66457	105.7377
2002	0.458784	0	3.087714	2.729284	5.010778	11.28656
2004	3.766111	6.5098	0	0	15.84056	26.11645
2005	0	9.0664	11.32726	0	0	20.39367
2007	17.50732	0	99.84583	75.46483	7.714488	200.5325
2008	0	0	0	45.99909	0	45.99909
2009	0	0	3.972463	168.5121	659.5907	832.0753
2010	0	0	5.326543	68.11003	147.3923	220.8288

Umbre (K) , Area 525.82 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	30.47176	156.4182	67.07571	39.18205	54.48793	347.6357
2000	5.04731	73.35346	36.70782	29.17152	10.41014	154.6902
2001	11.07655	175.0341	83.65607	26.00651	26.63359	322.4069
2002	6.827162	38.41431	138.5318	30.57562	3.310187	217.6591
2003	35.65994	122.1952	65.14845	33.17833	3.31788	259.4998
2004	50.00372	26.11278	355.6463	20.09788	15.78429	467.645
2005	104.9458	326.6985	249.8283	216.4387	19.08768	916.999
2006	17.4886	426.4637	397.5985	57.28712	18.11308	916.9509
2007	0	299.2812	166.5302	65.65558	14.47707	545.9441
2008	0	75.06627	181.102	101.6662	14.50995	372.3444
2009	0	273.6725	46.32254	48.21924	27.09791	395.3122
2010	1.668558	141.8289	133.2951	88.36353	41.74445	406.9005

Velhe , Area 41.78 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	13.06523	69.772	36.25587	17.36209	13.02401	149.4794
2000	2.887968	58.971	25.21228	11.63813	0	98.70916
2001	0	62.505	38.43976	9.769006	4.086469	114.8005
2002	0	26.26	65.75266	3.451214	0	95.46346
2003	12.80465	49.357	40.39693	27.67243	5.105252	135.3364
2004	10.13639	30.822	80.43258	7.105058	13.1089	141.6049
2005	11.71596	85.497	88.46047	93.53094	8.281461	287.4863
2006	4.515291	84.835	82.10972	19.7005	1.90037	193.0613
2007	5.653289	67.567	46.8955	23.11343	2.987868	146.2172
2008	0	13.904	50.56772	11.64093	0	76.11307
2009	0	46.436	13.3259	12.83197	8.861711	81.45521
2010	0	23.47453	30.05944	21.65111	2.047112	77.2322

Wegre Muthe , Area 91.15 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	22.21258	104.2	50.9665	13.53802	11.77027	202.7238
2000	0.58752	67.11	43.73914	23.73926	0.081216	135.2523
2001	6.599232	81.64	73.30693	25.57354	0.73872	187.8578
2002	2.929824	12.39	66.27744	27.35078	0.498528	109.4498
2003	11.9327	57.63	43.4255	18.74102	2.649888	134.3831
2004	7.549813	14.14	149.3636	30.68212	13.56612	215.3065
2005	23.25328	118.1	154.2825	79.91298	18.30342	393.8732
2006	1.571975	162.4	206.171	35.37516	6.389401	411.9073
2008	0	20.47	91.22743	51.38885	6.241043	169.3248
2009	0	59.53	33.69399	31.42715	9.016445	133.6713
2010	0	21.45908	36.84835	19.2098	0	77.51723

Aamdabad , Area 1540.46 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	8.647344	42.94	26.02792	40.37625	53.93928	171.9331
2000	16.73102	15.17	9.648599	6.816833	0	48.36959
2001	0	28.56	29.56173	0	0	58.12112
2002	0	0	43.36006	77.36189	0	120.7219
2004	0	0	209.7356	98.88679	74.66685	383.2892
2005	0	222.4	568.8104	350.4256	61.99963	1203.614
2006	11.53616	300.1	875.0411	253.7682	59.96251	1500.441
2007	0	102.2	198.3002	115.2311	25.89816	441.6474
2008	0	0	53.17154	170.4945	58.79068	282.4567
2009	0	8.589	8.738928	15.45724	5.833667	38.61886
2010	38.14057	3.213163	9.432841	22.36056	5.302486	78.44962

Khamgaon , Area 2610.00 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	93.72309	537.2	227.0063	84.03066	188.2243	1130.147
2000	93.83161	205.9	163.6229	149.5186	94.66226	707.5688
2001	23.7847	264.4	270.7831	150.5787	182.9824	892.5062
2002	83.99263	101.5	342.0476	183.504	112.1082	823.1442
2003	62.14749	291.8	272.0974	220.3451	143.2091	989.6108
2004	88.16584	171.9	1333.113	214.9575	176.8527	1984.993
2005	177.4852	1395	2123.205	1121.679	164.4289	4981.35
2006	118.7858	1470	3197.291	257.5672	150.0108	5193.25
2007	100.2221	708	631.5327	303.6398	78.39584	1821.83
2008	0	174.9	1109.044	713.3831	160.5092	2157.823
2009	0	585.6	171.1235	158.0645	211.4741	1126.243
2010	0	120.3329	306.9634	239.3779	178.4093	845.0835

Ajara Ramtirth, Area 244.57 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	135.5092	520.356	162.927	52.2198	21.0727	892.084
2000	72.62642	355.758	252.297	92.4329	4.76393	777.878
2001	22.61773	284.826	217.871	35.7429	23.945	585.003
2002	57.40118	161.032	331.29	65.539	7.01323	622.276
2003	67.79983	236.067	180.72	77.5964	12.5227	574.706
2004	156.0438	174.936	391.659	60.4626	25.6102	808.711
2005	94.29506	406.677	402.372	191.983	31.9194	1127.25
2006	121.0392	559.944	438.64	115.349	33.396	1268.37
2007	118.1693	395.161	370.045	138.094	19.8496	1041.32
2008	135.4669	131.488	239.54	69.8636	0.46562	576.824
2009	0	421.117	72.8391	55.6363	50.8906	600.483
2010	27.3606	272.74	158.853	118.008	44.172	621.133
2011	N.A.	N.A	N.A	N.A	N.A	N.A

Belwade, Area 117.24 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	48.25035	155.023	55.7451	21.0092	26.5401	306.567
2000	2.696883	77.6092	56.0302	31.8324	7.08533	175.254
2001	10.09708	92.2957	69.8935	21.3339	10.1963	203.816
2002	36.58187	64.7803	103.349	25.5683	4.39924	234.679
2003	27.37564	97.4787	73.7934	36.3834	12.1949	247.226
2004	68.19197	66.0284	202.526	28.0281	12.0865	376.861
2005	80.80457	237.447	172.26	99.1729	18.5102	608.195
2006	27.14403	272.633	213.741	35.083	7.24085	555.842
2007	79.08931	212.04	170.859	62.1511	12.5979	536.737
2008	15.37663	95.4962	198.894	61.2938	19.2698	390.33
2009	0	186.026	53.4091	25.6032	15.3863	280.425
2010	9.52485	83.0827	85.8723	51.9366	50.0121	280.428

Gudhe, Area 229.92 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	20.52266	116.724	45.2242	8.15899	18.6399	209.27
2000	0	59.3795	39.7949	38.6205	24.4393	162.234
2001	4.376728	102.047	61.2538	22.1129	19.6168	209.407
2002	12.62259	54.5352	111.141	28.3952	7.10749	213.802
2003	13.51092	76.2214	44.3445	22.3456	4.82071	161.243
2004	81.67899	39.0104	181.812	31.0428	14.8213	348.365
2005	72.44048	270.509	222	103.707	44.4902	713.147
2006	18.06948	290.418	258.76	49.7762	19.9739	636.997
2007	69.91685	201.647	153.575	59.2446	18.4482	502.832
2008	7.204147	49.3981	144.201	61.6761	59.8114	322.29
2009	0	174.82	54.6594	46.4612	39.1652	315.106
2010	5.7716	88.9081	79.039	52.1776	50.2979	276.194

Jambre Umgaon, Area 26.43 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	20.05875	84.9175	30.7372	5.85728	2.39044	143.961
2000	9.542811	59.483	46.9646	21.5423	2.44911	139.982
2001	14.82492	63.3287	44.2015	7.86655	0	130.222
2002	17.04192	33.9476	61.7853	6.95662	0	119.731
2003	24.90184	55.1921	28.2177	9.80725	0	118.119
2004	30.55445	32.4076	79.5678	7.69725	0	150.227
2005	22.79356	85.5146	80.655	41.3934	0.316	230.673
2006	15.26783	121.844	91.6974	32.4285	1.43694	262.675
2007	44.68629	82.4887	76.8881	42.872	9.05928	255.994
2008	17.90528	36.0047	77.0829	10.4024	0	141.395
2009	0.273829	102.392	20.5985	17.345	13.7524	154.362
2010	5.43746	50.9656	35.1064	26.2302	9.3449	295.199

Kadal, Area 869.98 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	179.7574	751.347	271.868	75.7375	0	1278.71
2000	29.54099	452.273	288.33	150.596	61.3989	982.139
2001	36.98589	385.45	323.217	22.3201	0	767.973
2002	56.14501	188.578	483.888	78.036	0	806.647
2003	106.264	295.466	227.38	82.9161	0	712.027
2004	187.7043	193.941	599.408	48.3132	0	1029.37
2005	114.8187	690.421	747.261	387.245	54.6066	1994.35
2006	145.4243	718.507	729.871	162.228	57.571	1813.6
2007	122.7288	551.856	529.31	210.017	31.1943	1445.11
2008	85.83227	207.243	591.355	249.76	47.4419	1181.63
2009	0	581.877	111.089	137.163	240.637	1070.77
2010	52.7689	430.501	273.984	252.54	177.324	1187.12

Kagal (NH4) , Area 642.71 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	94.04381	335.636	287.518	100.44	103.918	921.556
2000	62.87055	183.899	56.363	63.1954	59.4123	425.74
2001	27.13818	101.714	94.7462	30.7967	0	254.395
2002	28.29896	46.302	208.709	18.8237	0	302.134
2003	55.16699	87.0561	59.8922	22.9614	0	225.077
2004	44.78567	31.1431	310.436	77.9292	21.923	486.217
2005	40.95211	453.009	729.689	254.245	24.6913	1502.59
2006	152.7022	387.914	877.437	87.5756	52.3931	1558.02
2007	142.7733	270.794	284.564	148.436	20.0603	866.627
2008	49.45559	57.8489	543.992	196.828	29.3192	877.444
2009	64.01795	272.508	40.2787	55.2663	78.1411	510.212
2010	94.479	218.878	191.769	144.826	68.3974	718.35

Mandukli , Area 107.01 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	102.3894	314.391	114.635	53.2151	23.007	607.637
2000	38.3495	171.679	134.524	48.2286	13.0755	405.856
2001	20.48152	165.116	184.761	36.1258	16.5673	423.052
2002	35.3817	123.768	237.893	49.6943	0	446.738
2003	37.33105	140.576	153.914	62.4588	11.4041	405.683
2004	61.16208	101.846	290.068	44.8581	9.71982	507.655
2005	35.47554	287.042	314.752	173.57	9.72111	820.561
2006	41.53367	303.123	336.591	85.4288	26.7048	793.382
2007	101.2721	172.734	223.025	107.021	46.8279	650.88
2008	38.21208	102.746	255.044	135.283	14.8691	546.155
2009	11.40628	194.283	76.2227	69.4611	43.851	395.224
2010	15.8548	187.184	147.199	91.5247	37.9958	479.759

Mhaisal , Area 12740.59 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	916.7783	5484.65	2267.92	212.831	1229.3	10111.5
2000	0	1633.78	800.526	666.884	299.091	3400.28
2001	39.84571	1633.25	1248.17	326.389	526.2	3773.86
2002	248.34	798.609	2398.69	446.519	0	3892.16
2003	419.3571	1425.26	1100.08	368.233	0.21991	3313.16
2004	1445.865	712.06	7305.73	654.555	369.243	10487.5
2005	559.4552	6091.84	11493.5	4430.95	903.487	23479.3
2006	384.4058	6081.47	11308.8	1401.85	499.686	19676.2
2007	343.5447	6042.12	3747.5	1926.9	221.782	12281.8
2008	0	753.021	4098.32	2037.08	642.18	7530.6
2009	0	2775.19	875.091	984.919	1023.12	5658.33
2010	339.084	1783.08	1781.63	1548.12	934.057	6385.97

Nadgadwadi , Area 557.92 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	147.1156	630.67	196.932	34.7143	0	1009.43
2000	24.62544	259.393	185.611	110.961	74.1578	654.748
2001	46.1628	250.333	216.499	20.7777	0	533.772
2002	34.50972	72.9365	244.09	35.4609	0	386.997
2003	85.23708	181.38	110.032	44.7956	1.69664	423.141
2004	164.6685	107.406	372.345	33.0979	9.98507	687.502
2005	75.41259	473.886	413.575	258.866	47.0751	1268.81
2006	107.7432	671.616	534.301	159.537	56.8969	1530.09
2007	146.4012	587.03	433.591	176.875	47.349	1391.25
2008	93.2377	175.171	473.177	157.337	14.4063	913.329
2009	0	637.339	110.981	91.7345	105.503	945.558
2010	21.764	261.712	182.816	200.165	137	803.457

Nitwade, Area 600.30 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	283.6843	1056.42	371.883	84.9461	79.4457	1876.38
2000	52.05456	610.994	407.482	232.106	67.2795	1369.92
2001	67.43992	666.062	620.358	103.627	57.1222	1514.61
2002	158.5459	397.332	830.395	143.187	0	1529.46
2003	125.69	555.882	506.378	224.067	14.1562	1426.17
2004	390.6648	422.926	1116.38	177.157	70.3252	2177.45
2005	145.7599	998.715	1261.13	638.248	109.924	3153.77
2006	286.2311	1236.79	1333.9	359.244	108.517	3324.68
2007	214.5328	736.254	659.662	297.612	41.9213	1949.98
2008	0	355.764	914.045	456.143	60.2301	1786.18
2009	11.64188	920.71	270.205	248.224	165.546	1616.33
2010	64.9623	674.817	555.484	350.529	79.1779	1724.97

Parali, Area 99.85 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	59.54558	124.774	40.538	16.1888	25.8157	266.862
2000	0	47.6353	21.9372	33.0712	12.3311	114.975
2001	1.052771	82.9838	43.1513	10.8705	7.97794	146.036
2002	2.898154	25.7385	76.8884	7.08945	1.46928	114.084
2003	0.504948	36.7116	20.2685	8.0371	2.90319	68.4254
2004	27.0113	12.9595	102.53	5.453	2.01194	149.966
2005	33.90075	111.262	112.913	59.0822	9.60002	326.759
2006	11.26639	281.684	245.454	33.7848	14.2185	586.407
2007	36.92593	234.741	113.584	42.5539	7.06897	434.874
2008	0	17.5136	133.09	42.9197	26.1053	219.629
2009	0	64.3195	59.2807	18.5658	27.3764	169.542
2010	0	7.65187	15.8268	37.8179	43.1927	104.489

Patryachiwadi , Area 162.94 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	92.66141	335.578	128.434	47.5121	24.0421	628.227
2000	23.52059	229.297	137.071	52.0363	10.8693	452.794
2001	27.2257	203.88	146.776	13.0908	0	390.973
2002	47.08213	139.79	284.54	40.9173	0	512.33
2003	35.50249	176.996	158.416	57.1204	0	428.035
2004	81.91346	112.545	329.078	28.242	5.16244	556.942
2005	37.36881	299.445	336.537	155.734	12.2413	841.327
2006	28.47344	359.017	330.613	53.9331	5.6419	777.679
2007	83.72748	201.234	213.03	90.8416	21.7215	610.554
2008	61.94112	166.79	301.858	118.161	0.68026	649.431
2009	0	271.493	81.82	76.6736	58.1472	488.134
2010	4.89351	215.604	160.879	83.6107	18.3575	483.345

Sarud , Area 362.64 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	133.5793	580.3635	230.8711	61.77261	91.20203	1097.789
2000	0	295.233	227.2689	109.3198	39.27965	671.1013
2001	43.79671	320.1905	269.317	62.08013	64.32039	759.7048
2002	55.73861	183.7308	389.9554	105.6525	0.187943	735.2653
2003	133.9038	280.1279	237.0355	90.91215	17.53886	759.5183
2004	207.8515	201.5453	596.9846	83.09663	31.40974	1120.888
2005	87.47326	574.3317	696.3975	360.0101	23.88136	1742.094
2006	114.1465	779.1789	789.4517	150.0934	45.63576	1878.506
2007	124.3192	452.1878	433.1305	196.4571	38.78358	1244.878
2008	61.3498	175.2665	484.3305	251.7045	111.304	1083.955
2009	66.58	405.5871	271.8097	166.8106	58.68315	969.4705

Shigaon, Area 1806.45 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	253.0002	1178.72	546.421	97.4633	332.96	2408.57
2000	0	476.984	330.687	223.011	85.186	1115.87
2001	101.8302	554.43	548.205	186.312	217.651	1608.43
2002	120.3083	275.333	755.315	266.479	73.9957	1491.43
2003	233.2705	521.39	453.93	232.697	3.07628	1444.36
2004	416.4878	277.91	1538.98	200.674	50.8271	2484.88
2005	161.1262	1447.91	2279.44	1092.73	138.749	5119.96
2006	66.64119	2033.95	2571.1	404.069	156.657	5232.42
2007	331.6632	1741.84	1377.63	753.875	166.96	4371.97
2008	0	455.882	1757.16	860.54	119.885	3193.47
2009	0	1235.53	252.394	387.746	273.733	2149.4
2010	186.747	1060.87	838.975	601.801	180.179	2868.57

Shivade , Area 3261.03 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	158.2778	733.665	284.651	124.492	395.9	1696.99
2000	56.97094	287.456	120.226	135.889	92.18	692.722
2001	12.22825	252.953	149.584	208.67	100.099	723.534
2002	81.3901	141.305	370.538	138.973	140.116	872.322
2003	49.19616	223.195	129.554	55.82	0	457.765
2004	252.2554	102.458	1047.44	125.738	83.6196	1611.51
2005	179.5076	1045.25	1362.27	801.328	200.139	3588.49
2006	112.2973	1505.19	1934.1	381.365	147.178	4080.13
2007	278.9169	1391.83	803.959	437.158	71.9965	2983.86
2008	0	152.197	563.501	377.25	195.972	1288.92
2009	0	406.423	241.239	183.641	257.879	1089.18
2010	115.818	223.026	252.87	275.628	220.053	1087.4

Surul , Area 111.94 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	52.93481	179.81	56.30607	15.90593	44.32562	349.2824
2000	1.330785	103.0707	47.84022	36.04576	14.19926	202.4867
2001	11.59207	58.81837	39.99026	14.63099	9.692041	134.7237
2002	40.82819	44.293	85.89974	42.94914	9.389028	223.3591
2003	67.56103	77.07994	48.97695	27.60361	8.869703	230.0912
2004	40.83826	32.37884	151.6516	17.08474	5.824833	247.7783
2005	59.12038	174.5342	157.8911	89.95173	18.21678	499.7142
2006	42.3181	199.2666	172.1687	45.53372	19.4551	478.7422
2007	104.0235	149.5403	107.8925	41.43517	22.35579	425.2473
2008	23.3729	58.23017	99.24258	54.96616	26.78339	262.5952
2009	0	85.44532	40.09241	57.78562	35.59676	218.9201
2010	21.33581	92.30026	50.83886	47.19249	38.96349	250.6309

Tarewadi , Area 326.71 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	165.2586	699.726	215.509	64.5184	38.1887	1183.2
2000	51.19323	329.551	238.89	106.655	35.7849	762.074
2001	55.89315	344.223	296.822	25.4883	0	722.426
2002	75.31786	167.761	364.746	55.5389	0	663.363
2003	55.60379	250.017	185.114	63.1551	0	553.89
2004	170.1145	189.823	511.999	43.4096	7.75118	923.097
2005	87.17639	574.467	541.927	272.795	45.7505	1522.12
2006	113.9572	758.938	619.979	114.02	26.2745	1633.17
2007	134.4312	516.512	449.441	160.126	35.4933	1296
2008	107.2177	333.33	747.494	218.035	6.86381	1412.94
2009	0	956.845	354.496	283.512	108.827	1703.68
2010	82.0104	644.993	416.857	418.51	251.894	1814.26

Wadange (RT), Area 1940.34 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	741.537	2577.95	1060.13	267.466	269.628	4916.72
2000	161.8676	1359.95	812.881	441.896	132.261	2908.86
2001	238.1335	1296.16	1282.18	113.406	0	2929.88
2002	293.8301	760.571	1944.57	260.974	0	3259.95
2003	296.021	1018.71	892.819	391.174	0	2598.72
2004	616.1498	677.45	2334.59	330.448	75.1687	4033.8
2005	225.3874	2021.26	2863.06	1099.83	48.7609	6258.3
2006	362.7548	2552.18	3173.23	613.867	115.802	6817.83
2007	475.7988	2179.71	1890.22	885.57	158.338	5589.64
2008	332.1511	869.134	2210.97	1083.09	151.722	4647.07
2009	10.47183	2044.52	582.342	538.192	398.12	3573.64
2010	248.795	1368.54	1241.3	788.825	321.601	3969.06

Ichalkaranji , Area 2374.74 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	706.9333	2774.58	1080.43	377.532	508.464	5447.94
2000	121.0086	1419.53	959.254	509.726	197.318	3206.83
2001	173.8517	1445.02	1475.14	237.994	132.46	3464.47
2002	256.3636	803.936	1954.12	278.545	0	3292.97
2003	303.1364	1165.62	1081.1	426.734	0	2976.58
2004	880.1922	783.519	3097.1	394.552	154.871	5310.23
2005	253.4061	2488.87	3920.68	1584.94	98.0595	8345.95
2006	486.6955	3030.11	3826.9	842.193	155.942	8341.84
2007	519.5676	2584.88	2128.61	1052.35	97.3414	6382.75
2008	0	885.486	2242.06	1142.45	130.823	4400.82
2009	0	2079.61	530.143	624.3	665.302	3899.36
2010	228.758	1492.61	1476.19	969.137	374.04	4540.73

Khadekewada , Area 295.64 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	9.055048	107.463	31.3775	9.00141	60.3665	217.263
2000	0	32.3802	18.1913	16.46	14.8187	81.8502
2001	0	16.9043	28.433	2.85339	0	48.1907
2002	2.291062	6.09853	61.6422	8.26501	0	78.2968
2003	13.72035	11.7462	13.0607	6.20763	0	44.7348
2004	9.494643	11.8607	94.5959	19.7041	2.73742	138.393
2005	8.442245	148.018	157.61	72.0148	15.7743	401.86
2006	17.71554	107.438	230.363	40.6627	8.54533	404.725
2007	19.47847	75.0272	105.642	19.2461	2.5466	221.94
2008	0	7.27505	147.136	45.1651	10.2697	209.846
2009	0.187909	79.1544	13.0124	16.2849	26.0277	134.667
2010	11.9822	59.4551	29.9198	24.2686	35.8149	161.441

Bubnal , Area 15391.71 sq km						
Year	June	July	August	September	October	Monsoon Total in Mm3
1999	1324.121	5639.61	2899.19	471.601	1502.83	11837.4
2000	339.7541	2657.49	1513.43	1188.27	603.137	6302.09
2001	262.7883	2661.94	2488.17	678.699	785.414	6877.01
2002	416.188	1495.89	3402.33	763.359	337.887	6415.66
2003	657.8636	2241.61	1851.5	718.294	0	5469.26
2004	1695.063	1033.16	7148.05	1010.44	711.917	11598.6
2005	492.9099	5540.39	10027.7	4318.81	745.821	21125.6
2006	517.5859	7071.59	10462.4	1881.12	533.174	20465.8
2007	346.409	7416.81	5035.83	2712.8	387.768	15899.6
2008	0	1586.21	5704.1	2985.38	662.815	10938.5
2009	0	4557.55	1828.87	2147.34	2072.63	10606.4
2010	548.9	2985.46	3138.78	2760.32	1967.98	11401.4

5.5 Discharges at GD sites in West Flowing River basin:

The catchment area of West Flowing River basin in Maharashtra is 18062.29 sqkm. There are 70 Gauge discharge stations in this catchment. Following table shows 10 years discharges for GD stations in this catchment.

ALMAN, Area 647.51 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	26.23	211.63	103.34	74.10	76.00	491.30
2000	6.16	146.75	121.19	31.16	11.62	316.88
2001	43.21	174.57	121.09	32.92	17.27	389.06
2002	142.56	39.12	296.48	116.04	5.92	600.12
2003	30.56	304.92	275.41	162.78	12.18	785.85
2004	3.76	135.94	974.95	38.48	8.46	1161.59
2006	30.62	480.75	1039.68	204.97	56.59	1812.60
2008	41.17	170.63	486.62	361.92	1.41	1061.75
2009	0.00	149.51	10.35	29.58	21.80	211.24
2010	19.67	166.36	347.29	144.26	2.66	680.25

ANDHARI, Area 330.84 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	12.65	346.40	99.88	48.71	61.22	568.87
2000	23.57	513.30	139.20	49.41	44.48	769.96
2001	224.14	393.21	209.71	29.94	25.06	882.07
2002	996.51	291.57	68.49	63.78	6.36	1426.70
2003	383.09	805.12	325.33	254.34	30.91	1798.78
2004	55.82	221.60	719.94	75.60	34.38	1107.36
2008	1.17	187.45	747.88	209.43	9.18	1155.11
2009	1.88	316.57	79.23	74.18	15.27	487.13
2010	14.12	526.94	532.65	201.90	36.74	1312.36

ASGA, Area 6.65 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	4.75	10.07	1.46	1.47	1.52	19.26
2000	0.73	3.23	3.58	0.93	1.29	9.76
2001	1.22	4.21	3.65	2.06	0.57	11.71
2002	1.72	3.39	5.57	2.16	3.01	15.85
2003	1.39	7.09	5.28	2.49	0.89	17.14
2004	3.48	4.52	7.39	1.55	1.30	18.23
2005	2.77	12.44	8.13	7.50	1.01	31.85
2006	3.65	8.21	7.74	5.27	3.75	28.62
2007	3.93	4.87	9.49	6.67	1.42	26.39
2009	0.03	11.45	2.65	7.19	2.60	23.92
2010	2.00	18.92	5.69	4.88	2.60	34.08

AWALEGAON, Area 67.32 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	38.40	90.27	24.05	24.19	22.81	199.71
2000	19.34	75.40	43.71	23.56	14.37	176.38
2001	15.92	53.88	51.35	16.92	20.68	158.75
2002	25.85	37.98	62.52	21.31	11.29	158.96
2003	11.24	63.14	51.80	18.22	12.07	156.47
2006	56.75	96.41	91.49	61.26	36.31	342.23
2007	42.80	59.24	77.60	42.69	13.69	236.02
2008	23.75	44.23	108.21	72.07	9.00	257.25
2009	2.08	116.81	31.57	51.66	33.57	235.69
2010	27.19	134.38	76.45	44.45	22.24	304.71

BHAVE, Area 45.62 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	23.68	67.05	55.33	58.91	43.50	248.46
2000	65.97	97.09	83.53	68.46	36.00	351.06
2001	10.12	117.58	99.99	72.11	61.36	361.16
2002	40.06	107.87	130.55	36.38	0.49	315.34
2003	55.75	88.22	85.92	57.13	16.13	303.16
2004	39.49	87.75	168.57	80.20	0.00	376.01
2005	36.89	141.66	138.57	105.70	42.20	465.02
2006	26.82	152.19	153.30	102.56	25.08	459.94
2007	62.17	94.57	96.74	80.18	66.51	400.16
2008	47.40	85.46	120.35	70.07	22.71	345.99
2009	0.00	104.48	60.54	66.11	38.46	269.59
2010	14.42	63.28	55.59	53.73	53.65	240.67

BIRWADI, Area 338.80 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	246.70	826.66	319.72	175.29	114.62	1682.99
2000	190.88	509.82	251.21	76.05	48.98	1076.94
2001	78.94	718.61	518.54	116.83	68.69	1501.61
2002	273.80	857.33	1303.54	296.68	16.62	2747.97
2003	256.71	476.50	381.66	166.26	18.33	1299.45
2004	163.29	481.39	881.20	104.58	4.81	1635.28
2005	225.51	891.25	476.12	432.18	19.31	2044.37
2006	91.23	1027.60	806.23	157.80	32.55	2115.42
2007	424.50	563.84	558.32	249.54	44.63	1840.82
2008	222.63	379.20	694.89	278.73	18.21	1593.67
2009	0.71	643.83	168.17	146.00	143.87	1102.58
2010	38.77	546.46	387.08	238.01	74.53	1284.85

BURMALI, Area 61.74 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	19.63	73.75	23.41	31.44	15.65	163.88
2000	3.88	56.38	62.94	20.14	17.57	160.90
2001	1.92	61.06	34.98	43.40	19.85	161.21
2002	21.99	16.65	62.46	39.77	0.96	141.82
2005	14.81	73.30	38.84	30.44	1.09	158.48
2006	43.01	141.66	122.84	47.10	26.84	381.46
2007	28.39	27.79	35.75	16.25	1.15	109.33
2008	26.73	50.88	80.58	78.14	0.98	237.32
2009	5.34	57.88	18.60	41.60	35.41	158.82
2010	1.49	68.71	60.46	41.23	3.61	175.50

CHATAV, Area 116.09 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	103.36	327.95	84.16	28.08	14.15	557.70
2000	10.07	74.68	41.60	10.00	3.43	139.77
2001	30.67	148.06	97.21	35.18	18.47	329.59
2002	89.75	235.92	352.60	109.53	7.89	795.69
2003	113.34	271.73	245.59	105.14	31.98	767.78
2004	178.45	251.46	382.52	74.66	19.34	906.44
2005	54.25	246.13	171.16	214.20	26.56	712.29
2007	200.05	288.15	328.84	196.59	60.17	1073.79
2008	336.80	488.20	697.00	428.80	157.21	2108.01
2009	65.57	589.20	349.85	315.90	194.15	1514.68
2010	162.88	631.72	452.37	342.81	176.85	1766.63

CHINCHARA, Area 593.09 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	56.03	284.34	174.75	161.64	160.84	837.60
2000	214.63	365.68	292.17	154.25	79.23	1105.96
2002	191.61	167.28	376.39	124.86	25.23	885.36
2003	178.08	406.28	391.31	250.46	75.15	1301.27
2004	31.04	222.34	631.62	106.09	40.26	1031.35
2005	150.45	361.26	397.24	265.05	88.83	1262.83
2008	161.24	396.10	574.26	285.03	36.46	1453.08
2009	0	482.08	140.07	112.21	109.10	843.46
2010	51.81	411.13	432.27	218.54	45.78	1159.52

DUKANWADI, Area 130.40 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	75.35	232.15	70.34	51.76	26.61	456.21
2000	45.26	187.08	165.56	46.51	26.01	470.42
2001	25.45	132.49	112.50	34.54	28.75	333.73
2002	33.21	91.89	160.55	39.27	25.81	350.72
2003	31.98	153.92	122.02	38.51	12.82	359.26
2006	54.74	194.09	160.38	68.93	25.72	503.86
2007	94.18	208.41	244.23	119.91	28.82	695.55
2008	58.74	91.57	209.14	119.85	18.05	497.35
2009	1.12	272.71	74.10	78.07	72.00	497.99
2010	27.70	273.07	166.51	124.44	60.10	651.82

GADHI, Area 125.22 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	27.85	109.45	44.74	51.01	27.83	260.88
2000	45.57	281.52	169.34	49.14	15.70	561.27
2001	117.74	150.66	113.18	33.13	28.14	442.85
2002	34.78	75.09	148.01	38.58	1.21	297.66
2003	50.78	159.08	105.07	56.85	9.77	381.55
2004	3.78	117.87	224.31	37.18	6.35	389.49
2005	14.31	186.77	106.92	84.42	0.00	392.42
2006	39.03	195.70	171.20	37.52	0.00	443.45
2007	24.90	78.19	57.91	23.54	2.40	186.93
2008	4.57	82.08	72.58	44.21	2.97	206.42
2009	0.00	68.99	5.37	23.03	9.95	107.34
2010	9.52	96.21	87.14	25.54	0.69	219.10

GAHELI, Area 636.96 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	3.00	526.25	329.72	147.61	181.91	1188.49
2000	18.15	318.34	131.13	78.92	35.90	582.43
2001	72.58	337.82	309.76	99.19	65.03	884.37
2002	602.04	168.29	333.10	101.89	2.79	1208.12
2003	65.38	217.91	236.76	152.77	29.20	702.03
2004	71.15	289.37	963.04	23.62	6.56	1353.74
2007	40.20	194.75	373.30	134.57	5.69	748.52
2008	Station closed					

GHONSARI (L), Area 48.29 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	39.29	78.05	31.76	24.47	19.31	192.88
2000	10.64	48.52	31.95	13.58	9.09	113.79
2001	6.56	61.90	54.46	18.00	12.86	153.79
2002	23.92	38.63	64.38	26.53	13.45	166.91
2003	14.66	51.67	43.72	20.75	7.96	138.76
2004	25.64	42.11	57.51	25.81	12.08	163.13
2006	20.72	60.79	55.53	22.27	9.54	168.86
2007	12.75	31.46	46.68	25.15	3.21	119.25
2009	2.05	60.80	21.78	23.65	21.17	129.45
2010	5.32	62.59	40.87	28.95	15.14	152.87

HET, Area 28.77 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	14.36	43.02	11.06	6.60	4.69	79.73
2000	5.26	17.75	13.51	2.65	2.46	41.63
2001	1.43	15.75	16.94	2.67	3.37	40.16
2002	4.90	15.32	22.89	4.45	0.59	48.16
2003	7.08	30.67	23.58	8.50	2.24	72.08
2004	14.53	27.96	44.26	11.01	3.50	101.25
2006	14.82	52.31	49.77	21.50	5.15	143.56
2009	0.51	45.81	19.38	22.78	10.41	98.89
2010	4.36	61.01	42.49	24.68	7.39	139.94

KAKEWADI, Area 13.95 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	3.96	5.47	0.88	0.91	1.23	12.44
2000	5.87	12.01	10.22	3.01	3.40	34.50
2001	0.51	4.62	4.53	1.35	1.04	12.06
2002	2.35	5.64	5.65	1.22	0.25	15.11
2003	1.14	5.65	3.44	1.10	0.75	12.08
2004	2.62	4.70	4.63	1.72	0.29	13.96
2005	0.00	0.00	0.00	0.00	0.00	0.00
2006	5.55	6.19	6.22	5.02	2.78	25.76
2007	7.28	3.27	5.24	3.21	0.24	19.24
2008	2.17	2.78	6.92	2.82	0.06	14.76
2009	0.00	7.18	1.69	4.58	2.37	15.82
2010	0.96	8.26	3.27	1.60	0.65	14.73

KALAMB, Area 110.85 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	0.60	275.11	85.01	69.31	43.74	473.77
2000	19.07	185.28	132.25	42.31	13.26	392.16
2001	8.91	162.64	123.23	24.58	18.29	337.65
2002	73.99	80.17	174.51	76.82	2.99	408.49
2003	55.17	172.29	107.82	84.63	13.46	433.37
2004	4.74	76.56	247.86	35.54	0.00	364.71
2005	33.57	248.62	152.28	107.64	1.84	543.94
2006	19.49	197.05	262.65	48.27	22.14	549.60
2007	5.59	107.49	124.28	48.30	4.46	290.12
2008	17.15	61.31	197.27	67.97	0.00	343.70
2009	0.00	115.83	25.48	35.74	17.52	194.56
2010	WL only					

KAMAN, Area 12.44 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
2000	3.74	65.83	22.26	10.51	3.30	105.65
2005	17.25	38.77	24.48	39.47	8.21	128.19
2006	5.42	26.60	56.21	23.11	10.96	122.30
2007	11.39	33.70	99.78	76.37	12.44	233.69
2008	7.24	72.01	99.24	83.94	5.61	268.03

KAMARLI, Area 79.10 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	13.89	128.84	33.86	25.72	18.41	220.72
2000	17.78	178.30	92.35	10.33	4.07	302.82
2001	12.17	69.66	46.72	13.69	11.90	154.14
2002	3.42	13.71	84.48	27.76	2.22	131.59
2003	4.09	57.06	52.90	31.76	4.36	150.17
2004	1.21	8.62	126.53	9.46	0.00	145.82
2006	5.32	84.39	90.84	19.85	6.62	207.02
2007	3.43	12.48	112.00	34.17	0.00	162.08
2008	stn closed					

KANGULE, Area 379.28 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	117.07	656.44	122.19	107.11	76.33	1079.13
2000	109.70	418.85	214.33	40.55	42.99	826.42
2001	24.14	459.30	211.40	44.03	22.13	761.00
2002	152.31	253.13	421.58	136.85	1.96	965.84
2003	170.04	227.78	198.34	64.07	8.78	669.02
2004	117.26	260.63	418.65	43.22	4.53	844.28
2005	155.27	665.78	337.41	255.14	7.82	1421.42
2006	83.20	619.44	427.50	108.78	40.63	1279.54
2007	298.34	258.43	286.37	144.50	10.01	997.65
2008	171.42	272.15	634.81	216.70	9.44	1304.52
2009	0.00	1807.63	473.69	370.95	199.90	2852.17
2010	33.17	498.26	256.42	159.14	34.01	981.00

KANPOLI, Area 31.35 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
2000	4.66	44.43	19.45	10.81	3.65	83.00
2001	23.69	26.12	29.72	17.87	11.37	108.77
2002	6.45	11.11	22.60	8.01	0.59	48.77
2003	14.42	25.05	16.81	11.13	3.99	71.41
2004	1.06	20.97	37.34	5.26	0.44	65.07
2005	0.00	37.24	14.21	23.28	0.62	75.34
2006	7.33	17.32	40.55	7.34	0.00	72.53
2007	4.25	14.41	22.39	35.45	9.92	86.41
2008	3.00	3.54	6.50	4.25	0.60	17.90
2009	0.00	5.11	7.49	10.66	13.71	36.97

KARALGAON, Area 402.65 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	70.74	473.98	85.42	55.08	85.43	770.65
2000	21.56	453.71	174.51	52.12	22.97	724.87
2001	195.16	408.60	176.40	58.16	46.90	885.22
2002	393.16	51.24	277.36	47.01	4.74	773.51
2003	73.38	657.70	234.40	113.85	20.94	1100.27
2004	28.47	181.99	588.26	19.07	6.53	824.30
2005	514.80	716.69	456.83	566.14	27.85	2282.31
2006	29.33	583.98	584.50	150.51	32.65	1380.98
2008	112.86	433.73	602.43	233.33	10.01	1392.36
2009	3.92	408.54	63.44	84.80	69.63	630.33
2010	11.77	352.94	374.11	226.19	11.06	976.06

KHADADI, Area 7.62 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	2.21	7.39	3.28	2.14	3.80	18.82
2000	2.55	7.12	4.60	2.81	0.89	17.97
2001	0.00	0.00	0.00	0.00	0.00	0.00
2002	4.26	3.56	6.45	2.10	0.32	16.69
2003	3.46	9.13	7.17	6.38	0.91	27.04
2004	2.22	5.73	13.94	2.05	1.13	25.07
2005	6.86	3.63	5.28	5.23	0.29	21.29
2006	1.77	11.71	6.57	0.00	0.00	20.05
2007	0.33	3.32	4.83	2.88	0.15	11.53
2008	0.45	3.81	4.79	2.58	0.32	11.95
2009	0.00	3.59	1.15	1.09	0.31	6.15
2010	0.029	1.935	2.149	1.159	0.053	5.32

KHADKHAD, Area 17.46 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	4.24	23.00	5.29	3.90	4.90	41.33
2000	2.77	19.50	12.49	5.18	1.65	41.60
2001	15.64	20.72	18.16	6.67	5.89	67.07
2002	18.08	8.23	8.75	3.79	0.73	39.58
2003	11.57	33.84	32.03	20.45	8.74	106.64
2004	2.99	21.05	41.54	11.08	3.59	80.25
2005	5.92	12.27	17.89	32.94	11.54	80.57
2006	4.41	41.09	50.04	33.23	11.90	140.67
2007	4.08	24.30	37.41	13.27	0.64	79.70
2008	1.92	13.71	32.68	19.59	1.60	69.50
2009	stn closed					

KHAPARI, Area 227.30 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	48.38	260.07	124.40	106.27	120.32	659.44
2000	57.11	211.74	161.52	82.79	58.21	571.38
2001	51.73	242.79	179.86	60.21	76.85	611.45
2002	75.04	96.40	232.77	71.44	8.55	484.20
2003	60.91	181.25	176.18	160.34	45.38	624.06
2004	26.76	152.39	415.07	125.67	4.78	724.68
2005	82.45	417.93	289.24	264.75	48.74	1103.11
2006	32.58	305.81	479.31	157.18	74.42	1049.31
2007	15.72	152.54	260.24	168.42	27.96	624.88
2008	48.58	158.88	373.15	185.70	19.64	785.95
2009	0.00	157.15	131.42	142.19	63.77	494.54
2010	WL only					

KOCHARA, Area 203.76 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	80.72	207.22	107.07	125.85	71.26	592.11
2000	49.18	299.76	142.26	55.16	41.29	587.66
2001	27.95	135.50	126.38	50.22	35.60	375.65
2002	140.72	73.06	188.15	110.94	33.01	545.89
2003	76.37	135.18	133.58	103.63	37.97	486.73
2004	21.08	109.84	272.85	52.27	0.00	456.05
2005	128.04	324.66	229.03	171.31	13.93	866.97
2006	28.17	304.56	384.41	100.04	71.09	888.26
2007	20.26	216.24	250.91	147.36	15.95	650.72
2008	71.27	190.48	312.56	261.53	49.92	885.77
2009	0.07	139.14	59.96	74.73	38.17	312.06
2010	42.26	104.51	114.95	83.84	0.00	345.56

KOKARE, Area 84.43 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	25.36	94.81	20.22	17.17	14.11	171.67
2000	24.47	108.80	54.26	15.65	5.47	208.64
2001	5.89	90.53	57.45	14.51	4.96	173.34
2002	14.71	53.67	93.42	28.85	0.25	190.89
2003	42.39	81.04	58.22	17.14	0.42	199.21
2004	14.94	77.04	174.34	15.15	0.00	281.47
2005	40.02	177.94	88.88	61.73	3.37	371.95
2006	42.59	147.99	106.31	19.61	11.88	328.38
2007	67.95	68.45	72.15	36.02	3.50	248.07
2008	40.18	54.28	99.25	37.51	4.49	235.71
2009	1.01	78.87	16.49	14.79	7.16	118.33
2010	1.75	81.59	56.27	33.01	8.72	181.34

KOLHARE, Area 306.04 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	172.06	895.07	202.41	261.73	138.73	1670.00
2000	120.54	1480.29	346.54	116.11	50.28	2113.75
2001	199.71	426.94	405.59	90.23	85.51	1207.97
2002	325.71	229.65	504.54	151.99	23.96	1235.85
2003	318.54	442.95	272.59	174.84	58.88	1267.81
2004	17.13	283.68	720.57	73.15	8.24	1102.77
2005	117.12	855.13	593.72	504.61	15.18	2085.75
2007	221.42	510.21	509.39	194.25	97.68	1532.95
2009	111.14	756.35	242.57	296.53	377.24	1783.82
2010	196.75	567.61	487.20	330.66	93.19	1675.41

KOTHURDE, Area 33.87 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	16.93	52.93	17.30	14.33	6.92	108.41
2000	13.90	46.79	23.24	8.38	2.35	94.65
2001	2.32	31.30	24.89	7.47	3.30	69.28
2002	3.97	31.70	26.99	0.41	0.00	63.07
2003	14.85	1.26	0.00	0.00	0.00	16.11
2008	16.01	19.03	42.62	15.24	3.27	96.17
2009	0.00	64.11	20.00	22.44	11.25	117.80
2010	5.62	34.33	30.41	15.93	4.57	90.86

KUMBHARKHANI, Area 143.53 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	182.42	421.20	163.36	116.91	81.04	964.93
2000	24.22	140.26	118.29	26.24	15.69	324.70
2001	36.36	191.53	203.51	77.11	43.09	551.60
2002	24.98	73.40	88.15	37.14	1.53	225.21
2003	52.56	201.19	160.21	46.36	17.18	477.49
2004	126.26	199.91	265.33	69.03	30.27	690.80
2005	48.46	213.40	161.74	121.88	9.23	554.70
2007	138.08	233.01	262.11	130.58	11.47	775.25
2008	341.40	531.46	667.69	525.17	258.79	2324.51
2009	13.55	200.86	79.05	81.54	30.90	405.89
2010	9.17	179.99	109.83	85.98	17.27	402.25

LATWAN, Area 13.71 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	8.24	24.81	5.39	3.86	2.70	45.00
2000	1.43	6.71	2.71	0.19	0.09	11.13
2001	0.73	5.33	4.68	0.63	0.32	11.70
2002	4.78	5.69	13.05	3.81	0.20	27.53
2003	14.02	21.46	13.77	8.03	1.77	59.04
2004	9.85	20.74	24.65	10.96	3.95	70.16
2005	stn closed					

MAHAN, Area 29.96 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	26.29	141.00	24.63	53.40	18.28	263.59
2000	10.64	100.83	76.08	10.67	3.95	202.17
2001	6.55	25.07	7.81	10.93	1.68	52.04
2002	6.87	1.39	0.00	0.00	0.00	8.26
2006	29.47	173.34	50.89	37.44	26.78	317.92
2007	4.09	54.88	68.93	64.65	7.51	200.05
2008	33.39	47.40	57.18	36.62	5.11	179.71
2009	0.00	51.23	20.35	27.81	13.27	112.66
2010	9.43	16.86	21.51	30.09	8.45	86.35

MANGHAR, Area 25.84 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	5.48	28.12	7.74	5.79	2.68	49.82
2000	8.70	53.62	21.05	10.33	10.03	103.74
2001	9.32	14.30	13.87	6.51	3.31	47.32
2002	1.78	1.75	13.22	2.20	0.19	19.13
2003	9.45	22.56	14.07	25.14	4.06	75.28
2004	0.12	8.49	18.90	1.72	0.19	29.42
2005	0.00	34.03	22.89	37.06	1.92	95.90
2006	16.45	34.58	31.14	5.78	2.82	90.77
2009	0.00	12.82	15.65	22.50	0.00	50.97
2010	stn closed					

MIRVANE, Area 6.18 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	4.87	8.76	1.32	1.51	1.12	17.57
2000	0.87	6.46	4.11	0.11	0.13	11.69
2001	0.96	6.26	7.23	2.22	1.49	18.16
2002	4.25	6.55	6.51	3.42	0.64	21.38
2003	7.10	14.95	7.75	2.91	1.19	33.91
2004	3.86	8.05	7.50	2.37	0.55	22.33
2007	7.21	9.94	9.31	7.12	1.38	34.96
2008	2.94	5.18	8.16	4.77	1.18	22.23
2009	0.07	13.44	3.69	5.27	3.23	25.70
2010	2.83	15.71	8.34	6.91	2.52	36.31

NALDHE, Area 94.41 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	0.44	77.07	38.08	35.15	32.08	182.83
2000	13.17	92.09	53.94	24.54	11.25	195.00
2001	12.34	89.14	71.50	16.41	8.81	198.19
2002	22.20	52.63	134.84	46.58	0.00	256.25
2003	34.79	98.45	66.02	40.27	12.57	252.09
2005	36.65	171.72	116.36	130.50	9.27	464.50
2006	19.89	134.45	158.95	59.24	41.92	414.45
2007	26.83	93.57	103.22	45.83	1.20	270.65
2008	24.81	57.67	114.44	64.82	8.57	270.30
2009	0.00	81.61	25.71	24.88	15.14	147.34
2010	30.00	90.35	60.87	41.46	11.03	233.72

PALI, Area 308.82 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	120.62	349.75	180.66	166.15	114.19	931.36
2000	9.17	304.22	273.16	26.61	20.45	633.62
2001	25.08	256.10	149.77	18.70	11.13	460.79
2002	66.00	55.39	272.63	61.93	0.72	456.67
2003	77.44	187.57	214.12	100.80	4.51	584.44
2004	7.27	159.85	491.92	23.37	0.00	682.41
2005	82.94	624.90	288.30	181.16	1.44	1178.75
2006	69.64	462.77	443.82	73.17	48.32	1097.72
2007	149.80	238.63	219.70	85.24	5.47	698.84
2008	107.98	181.21	450.06	195.70	7.34	942.29
2009	0.00	357.70	45.63	85.42	52.56	541.32
2010	5.36	239.30	234.49	120.47	20.30	619.93

PARALIVAIT, Area 136.03 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	14.34	115.42	38.93	25.70	31.25	225.65
2000	8.29	80.25	37.38	12.40	15.03	153.34
2001	34.03	93.24	57.84	29.09	5.12	219.31
2002	71.33	37.02	117.98	42.51	2.59	271.43
2003	72.21	89.75	117.77	67.58	14.55	361.86
2004	16.79	129.49	363.71	28.12	12.58	550.70
2005	175.04	140.10	116.78	144.91	10.61	587.44
2006	23.07	196.13	256.92	104.68	63.86	644.66
2007	stn closed					

PASTEWARDI, Area 49.52 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	24.36	83.08	22.54	13.14	6.40	149.51
2000	1.32	33.17	29.61	6.60	3.90	74.61
2001	4.24	30.33	24.42	4.66	2.35	66.00
2002	8.01	22.76	42.22	13.39	2.03	88.41
2003	13.31	37.15	32.07	10.70	2.02	95.24
2004	36.39	51.86	82.18	19.21	9.26	198.89
2006	39.60	128.67	101.34	22.86	12.05	304.52
2007	36.64	54.74	86.00	41.42	4.36	223.16
2008	19.47	33.11	71.36	41.13	3.09	168.16
2009	0.00	76.99	17.52	28.71	14.93	138.14
2010	8.08	11.88	42.17	26.87	4.65	93.64

PAWARWADI, Area 40.98 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	26.58	61.96	11.73	11.33	14.77	126.37
2000	2.65	16.73	13.50	2.80	10.07	45.74
2001	16.07	42.46	38.90	16.55	11.20	125.18
2002	11.28	16.94	34.01	10.17	4.82	77.23
2003	6.74	35.82	25.24	10.14	2.38	80.32
2005	5.59	49.00	27.42	31.13	4.34	117.47
2007	17.08	25.70	39.68	24.72	6.07	113.25
2008	16.59	22.21	43.64	35.61	6.82	124.87
2009	0.61	49.87	11.19	23.32	21.10	106.08
2010	11.99	71.88	19.88	24.93	10.58	139.27

PISE, Area 844.51 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	149.31	359.62	231.03	269.76	191.72	1201.45
2000	80.61	448.20	301.64	120.95	63.02	1014.42
2001	110.07	344.73	422.75	111.91	83.49	1072.96
2002	263.11	89.25	355.73	207.61	18.77	934.47
2003	125.99	327.96	406.06	311.03	48.15	1219.18
2004	54.05	240.64	843.47	103.97	39.48	1281.61
2005	192.80	515.06	352.42	617.05	11.05	1688.39
2006	87.97	707.15	980.38	201.77	80.58	2057.85
2007	92.71	281.21	377.75	320.24	31.73	1103.64
2009	23.28	378.58	118.41	119.35	87.89	727.51
2010	46.08	359.03	355.13	328.98	35.21	1124.43

POYNAR, Area 30.77 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	18.05	32.77	9.22	9.47	6.89	76.39
2000	8.16	30.96	17.56	3.27	4.05	64.00
2001	1.58	16.30	17.37	3.97	1.04	40.26
2002	8.26	12.61	15.57	5.79	1.38	43.62
2003	13.64	41.65	25.53	11.58	6.05	98.45
2004	17.38	36.24	39.13	10.15	4.37	107.27
2007	26.97	30.88	27.58	16.56	1.37	103.36
2008	16.22	22.26	34.27	11.39	2.31	86.45
2009	0.00	28.23	8.56	13.25	5.64	55.68
2010	4.53	46.48	17.19	18.18	5.42	91.80

RAIPATAN, Area 91.08 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	74.52	179.13	54.68	31.69	29.13	369.14
2000	42.85	74.88	70.51	19.27	22.17	229.66
2001	24.64	97.76	68.95	15.20	11.29	217.84
2002	46.87	68.22	101.16	23.26	7.59	247.10
2003	22.03	97.68	80.36	36.29	13.55	249.92
2007	73.57	122.20	163.37	108.01	57.78	524.93
2008	59.01	83.44	154.22	105.86	19.73	422.25
2009	1.71	135.23	53.56	60.34	38.46	289.29
2010	16.40	149.98	100.61	69.17	29.54	365.69

SAIVAN, Area 519.56 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	131.47	318.39	290.11	105.97	46.98	892.92
2000	95.77	613.20	320.02	154.32	97.05	1280.36
2001	88.33	559.33	486.09	115.19	21.22	1270.16
2002	486.69	231.34	621.78	151.92	5.40	1497.13
2003	217.04	323.46	342.42	166.08	25.49	1074.48
2004	6.08	338.95	607.97	15.59	4.64	973.23
2005	284.09	566.17	361.79	510.94	26.59	1749.57
2006	72.10	617.31	699.54	81.22	46.03	1516.20
2008	153.02	387.20	433.26	153.89	4.49	1131.86
2009	0.00	292.84	17.54	50.86	42.21	403.46
2010	4.20	318.01	359.19	159.63	1.56	842.58

SAJGAON, Area 28.53 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
2002	17.40	19.35	30.45	15.74	7.16	90.10
2006	28.46	160.37	151.58	92.96	54.17	487.55
2007	62.79	107.62	79.84	30.82	0.00	281.07
2008	26.47	56.44	99.18	56.80	12.92	251.82
2009	0.00	113.31	27.36	36.03	16.60	193.30
2010	11.49	87.72	76.34	42.13	9.11	226.79

SALINDE, Area 84.91 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
2000	2.07	129.67	115.76	12.08	12.05	271.63
2001	9.79	39.30	14.98	11.90	1.60	77.58
2005	14.42	186.56	107.88	62.04	8.33	379.23
2006	19.22	81.95	99.53	21.69	14.79	237.18
2007	32.74	55.06	56.72	38.27	6.66	189.45
2008	48.66	61.33	89.89	51.00	11.09	261.98
2009	0.00	86.57	5.60	25.34	14.08	131.59
2010	1.91	82.27	72.75	38.44	2.70	198.07

SANGULWADI, Area 50.28 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	31.42	57.65	21.73	15.62	9.24	135.66
2000	16.10	64.16	50.58	9.08	7.04	146.96
2001	7.99	54.64	48.30	8.58	8.11	127.62
2002	22.74	45.47	84.41	18.72	1.00	172.33
2003	13.80	68.13	55.35	16.94	2.45	156.66
2004	26.00	60.55	71.61	27.71	5.14	191.01
2005	11.41	81.37	61.07	39.31	4.55	197.70
2006	26.76	86.58	78.74	30.66	10.03	232.77
2007	42.52	48.11	77.93	42.44	2.56	213.56
2008	18.47	40.59	85.88	65.78	2.21	212.94
2009	0.36	92.15	25.21	30.32	14.26	162.31
2010	10.72	106.15	66.71	35.54	24.78	243.91

SARAMBALA, Area 70.98 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	54.37	125.76	33.54	16.14	8.91	238.73
2000	28.89	80.02	68.65	25.65	13.03	216.25
2001	7.96	65.51	64.37	10.44	6.57	154.85
2002	18.71	39.64	71.02	16.07	4.90	150.34
2003	20.33	84.71	82.19	32.86	7.91	228.00
2005	24.36	122.34	95.08	79.70	25.23	346.71
2006	39.11	114.36	95.12	58.39	34.89	341.86
2007	53.26	103.11	123.60	75.37	28.56	383.90
2008	29.86	55.30	126.58	61.98	20.09	293.81
2009	13.39	151.17	59.66	64.97	54.31	343.50
2010	18.92	146.70	116.88	85.81	60.59	428.91

SHEMBAVANE, Area 15.97 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	9.08	22.97	6.74	5.56	3.32	47.68
2000	6.47	21.32	10.31	3.57	2.01	43.69
2001	2.03	9.14	10.90	3.32	2.71	28.10
2002	4.76	13.10	17.03	3.50	0.50	38.88
2003	1.50	13.88	8.20	3.93	2.14	29.65
2004	6.79	13.15	15.76	7.42	4.15	47.27
2005	2.76	19.98	12.81	9.23	3.20	47.98
2007	9.54	12.24	13.90	12.81	10.30	58.79
2008	1.18	8.64	19.29	15.43	3.26	47.80
2009	4.68	28.55	7.79	16.70	12.58	70.30
2010	3.24	48.94	23.37	16.20	15.04	106.78

SHINDYAPADA, Area 31.32 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	15.23	98.66	55.33	30.23	63.63	263.08
2000	10.00	37.15	28.62	20.52	21.62	117.91
2001	10.45	23.20	19.67	9.68	9.70	72.69
2002	23.24	17.41	22.97	11.50	1.55	76.66
2003	10.22	34.38	30.56	22.52	8.43	106.12
2004	10.34	30.54	65.39	16.86	2.58	125.72
2005	36.00	46.27	50.46	54.68	14.03	201.45
2006	8.77	66.24	89.99	48.12	34.65	247.77
2007	16.94	49.50	47.65	47.19	13.79	175.07
2008	6.01	27.90	42.09	20.13	8.94	105.08
2009	5.50	48.18	28.96	32.06	27.70	142.40
2010	4.14	39.32	46.68	38.47	20.41	149.02

SHIRSHINGI, Area 36.83 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	41.72	123.44	32.88	25.78	10.56	234.37
2000	13.99	46.19	51.23	25.01	32.88	169.30
2001	15.05	66.90	44.92	17.80	24.90	169.57
2002	24.42	63.48	74.52	10.89	4.69	178.00
2003	31.23	73.83	79.98	26.52	14.80	226.37
2005	101.85	300.44	248.64	172.27	70.89	894.09
2006	99.62	235.37	191.64	107.74	66.45	700.83
2008	36.96	66.07	129.14	51.53	12.78	296.49
2009	23.59	86.27	35.87	23.82	17.52	187.07
2010	5.72	81.11	31.72	15.77	7.10	141.42

SHIVDAV, Area 247.51 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	240.43	520.35	153.57	108.18	60.09	1082.61
2000	87.03	313.90	266.19	53.82	50.50	771.44
2001	48.11	317.17	228.28	39.38	19.42	652.37
2002	84.40	210.89	348.08	91.20	27.10	761.68
2003	42.65	268.54	236.82	76.97	33.41	658.40
2004	112.27	259.88	343.23	83.84	13.19	812.41
2006	167.31	432.16	421.67	149.54	65.36	1236.04
2007	161.80	219.94	368.35	169.76	9.50	929.34
2008	123.60	200.31	452.95	230.73	27.48	1035.06
2009	0.00	367.39	43.28	120.09	81.56	612.32
2010	43.93	481.44	269.61	175.31	67.82	1038.11

SUDKOLI, Area 37.42 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	8.24	53.52	18.63	10.05	3.83	94.28
2000	18.82	47.06	28.10	7.93	3.04	104.94
2001	2.52	26.83	11.40	3.75	0.32	44.82
2002	2.28	3.66	16.95	4.86	0.05	27.79
2003	8.34	24.32	11.65	7.06	0.58	51.96
2004	6.85	31.24	46.79	10.59	0.00	95.47
2005	11.49	40.64	26.10	30.10	3.12	111.43
2006	12.03	31.58	23.56	10.90	4.33	82.39
2007	17.98	21.04	25.62	15.47	1.40	81.53
2008	4.11	13.02	18.84	12.56	0.17	48.69
2009	0.00	16.39	3.71	8.97	3.08	32.15
2010	6.54	27.74	28.50	22.03	5.37	90.18

TITWALA, Area 1040.84 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	257.14	926.58	455.53	576.14	317.35	2532.74
2000	36.04	791.17	605.64	186.27	56.66	1675.77
2001	114.39	791.67	703.69	171.87	140.42	1922.04
2002	395.45	289.30	877.68	268.47	4.22	1835.12
2003	201.64	664.82	559.42	312.68	38.96	1777.52
2004	24.26	477.93	1349.44	174.73	16.05	2042.41
2005	353.31	891.26	586.48	603.06	114.66	2548.77
2006	77.59	1002.97	1356.01	335.95	96.80	2869.33
2008	96.55	490.01	1123.25	575.51	22.12	2307.45
2009	0.00	613.95	233.63	369.73	145.95	1363.26
2010	77.09	617.11	738.28	528.25	28.81	1989.54

TUKSAI, Area 35.30 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	7.32	36.27	15.36	17.03	11.21	87.18
2000	2.64	51.74	23.35	4.48	3.55	85.75
2001	8.24	40.92	24.71	2.29	2.45	78.61
2002	19.28	15.90	59.37	15.54	0.07	110.17
2003	12.45	31.84	37.93	18.32	2.16	102.70
2004	0.77	18.42	39.83	1.04	0.00	60.07
2008	17.67	35.18	15.83	16.35	0.37	85.39
2009	0.00	26.31	0.81	1.71	3.65	32.49
2010	0.81	14.96	10.49	2.73	0.31	29.30

TURADE, Area 317.57 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	179.29	566.75	113.05	142.22	71.71	1073.02
2000	117.67	448.44	267.02	40.30	29.25	902.69
2001	166.50	249.31	281.03	68.07	41.28	806.18
2002	38.10	150.67	397.42	88.54	16.19	690.92
2003	103.97	268.80	210.72	119.58	15.13	718.20
2004	19.73	220.35	437.88	55.52	0.00	733.47
2005	39.82	544.07	249.61	212.79	2.76	1049.04
2006	74.51	488.74	455.40	84.82	54.61	1158.08
2007	116.43	251.22	375.68	102.77	0.00	846.10
2009	0.54	342.83	58.54	102.48	60.75	565.15
2010	24.60	248.11	188.28	93.39	23.05	577.42

VIRDI, Area 35.43 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	23.41	53.67	11.17	8.92	5.38	102.56
2000	13.08	31.65	22.61	4.66	9.37	81.37
2001	14.47	36.53	31.85	13.28	12.43	108.57
2002	10.77	19.03	29.38	5.21	2.38	66.78
2003	11.54	37.64	26.52	6.78	3.10	85.59
2004	14.73	23.87	29.54	8.02	7.80	83.95
2006	26.51	46.35	61.81	23.72	16.32	174.71
2007	35.01	43.31	58.74	35.30	10.77	183.12
2008	32.22	39.73	75.71	10.00	9.47	167.13
2009	0.94	33.08	9.71	12.34	2.31	58.37
2010	3.22	56.68	28.71	17.78	6.88	113.27

WADI, Area 138.26 sqkm						
Year	June	July	August	September	October	Manson Total in Mm3
1999	51.58	102.58	23.01	53.03	25.88	256.08
2000	22.16	100.99	26.81	19.53	14.02	183.51
2001	25.92	110.21	76.11	26.46	17.30	256.00
2002	30.51	43.21	116.24	27.74	1.67	219.37
2003	41.74	106.29	92.34	61.19	5.78	307.34
2004	7.47	84.78	136.76	26.79	0.00	255.80
2005	56.47	229.49	96.76	119.74	0.72	503.19
2006	23.84	194.40	155.46	40.53	12.79	427.02
2007	55.80	90.52	98.79	39.76	0.14	285.01
2009	0.00	69.96	18.11	46.41	0.46	134.93
2010	43.86	133.90	87.89	49.38	0.00	315.03

4. Interpretation Of Various Statistics Presented In The Water Yearbook

Some important terms used in interpretation of various statistics are explained as follows:

4.1 Daily rainfall –Time frame of daily rainfall refers to:

All rainfall observations are made at 0830 hrs IST daily. The quantity of rainfall recorded at 0830 hrs is the rainfall of the preceding 24 hours ending at 0830 hrs of the observation day (Today's date). In other words, the rainfall of the day is the total rainfall collected in the rain gauge from 0830 hrs IST of previous day to 0830 hrs IST of the day and is recorded (entered) against today's date.

4.2 Mean Daily Runoff –The mean daily runoff is computed as follows:

To facilitate comparison between rainfall and runoff, it is usual practice to express values of rainfall and runoff in similar terms. Both may be expressed as a total volume over a specified period (in metre cube, thousand metre cube (TCM), or million metre cube (Mcum). Alternatively, discharge may be expressed as a depth in millimetres over the catchment. Volume is simply the rate in metre cube /sec (Cumecs), multiplied by the duration of the specified period in seconds, i.e. for daily volumes in cubic metres with respect to daily mean flow Q_d in cumecs following equation may be used:

$$V_d (m^3) = (24 \times 60 \times 60 \text{ seconds}) Q_d (\text{cumecs}) = 86400 Q_d (m^3)$$

Runoff depth (R_d) is the volume expressed as depth over the specified catchment area with a constant to convert units to millimeters; i.e. for daily runoff:

$$\begin{aligned} R_d(\text{mm}) &= \frac{V_d(m^3) \cdot 10^3}{\text{area}(\text{km}^2) \cdot 10^6} \\ &= \frac{V_d(m^3)}{\text{area}(\text{km}^2) \cdot 10^3} \\ &= \frac{86.4 Q_d (\text{Cumecs})}{\text{area}(\text{km}^2)} \end{aligned}$$

5. Water Quality Monitoring In Maharashtra

5.1 Introduction

The Water Quality Monitoring is carried out by various agencies in the Maharashtra State viz Central Water Commission (SW), Central Pollution Control Board, Groundwater Surveys & Development Agency (GW), Hydrology Project (SW), Maharashtra Pollution Control Board, Central Ground Water Board (GW), Directorate of Irrigation Research & Development (DIRD). Hydrology Project takes care of surface water quality through sampling stations spread over the State throughout the year. DIRD monitors dug wells in the command area of major and medium Irrigation Projects. Ground Water Surveys & Development Agency also monitors the dug wells as well as ground water levels of the State intermittently.

Agency wise Water Quality Monitoring Details:

Sr. No.	Monitoring Agency	Water Quality Monitoring Sites
(A)	State	
1.	Water Resources Department, Hydrology Project (SW)	127
2.	Groundwater Surveys & Development Agency (GW)	1871
(B)	Central	
3.	Central Pollution Control Board (CPCB) (SW) through Maharashtra Pollution Control Board (MPCB)	48
4.	Central Water Commission (SW)	12
5.	Central Pollution Control Board (CPCB) (GW) through Maharashtra Pollution Control Board (MPCB)	25
6.	Central Ground Water Board (CGWB, NHNS) (GW)	803
	Total no. of stations for surface water	187
	Total no. of stations for ground water	2699

5.2 Hydrology Project and HIS

Hydrology Project (SW) aims at establishing a Hydrological Information System (HIS) in the state and the HIS includes Water Quality Monitoring of Surface Water. The basic objectives for WQ Monitoring are:

- Monitoring for establishing baseline water quality.
- Observing trend in water quality changes.
- Calculating flux of water constituents of interest.
- Control and management of water pollution.

Distribution of 127 WQ sampling locations is done amongst 5 Level-II laboratories located at different places i.e. Pune-25, Nashik-25, Nagpur-25, Aurangabad-20, and Kolhapur-32.

The WQ Sampling location category & frequency of sampling designed for SW, Maharashtra:-

WQ Sampling Location Category	Sampling Frequency upto first 3 years	After 3 years monitoring
Baseline - 50 no.	Monthly One Sample	Break for 3 years
Trend - 65 no.	Fortnightly One Sample	After classification as 'Trend' monthly one sample
Flux - 09 no.	Fortnightly One Sample	After classification as 'Flux' fortnightly one sample
Trend / Flux – 03 no.	Fortnightly One Sample	After classification as 'Trend/Flux' fortnightly one sample.

Statement showing Frequency of Sampling & Parameters to be analyzed

Station	Sampling Frequency	Test Parameters	Remark
Baseline	Once in a month first 3 years	30 parameters for 1st sample 20 Parameters for remaining Sample	After 3 years monitoring break for 3 years
Baseline after 3 years break and classification as	Once in 2 months	30 parameters for 1st sample 20 Parameters for	One year monitoring again break for 3

baseline stations		remaining Sample	years.
Trend	Twice a month	--do--	Initially 3 year monitoring
Trend (after classification as trend)	Once in a month	-- do --	Continuous monitoring
Flux	Twice a month	-- do --	Initially 3 year monitoring
Flux (after classification as Flux)	Twice a month	-- do --	Continuous monitoring with flow measurements
Reservoir and lakes (treated as Trend)	Twice a month	32 parameters for 1st samples. 22 parameters for remaining sample	Continuous monitoring

Note: - The parameters to be analyzed as mentioned above are minimal requirement. This is not however restricted. Additional parameters shall be analyzed as per the requirement or on the basis of geographical location of stations or certain circumstances.

List of Parameters

Sr. No.	Parameter 32	Parameter 30	Parameter 22	Parameter 20
1	Colour	Colour	Colour	Colour
2	Odour	Odour	Odour	Odour
3	Temperature	Temperature	Temperature	Temperature
4	pH	pH	pH	pH
5	Electric Conductivity	Electric Conductivity	Electric Conductivity	Electric Conductivity
6	Dissolved Oxygen	Dissolved Oxygen	Dissolved Oxygen	Dissolved Oxygen
7	Turbidity	Turbidity	Total Solids	Total Solids
8	Total Solids	Total Solids	Dissolved Solids	Dissolved Solids
9	Dissolved Solids	Dissolved Solids	NO ₂	NO ₂
10	Suspended Solids	Suspended Solids	NO ₃	NO ₃
11	NH ₃ -N	NH ₃ -N	B.O.D.	B.O.D.
12	NO ₂	NO ₂	C.O.D.	C.O.D.
13	NO ₃	NO ₃	Total Coliforms	Total Coliforms
14	Total Phosphorous	Total Phosphorous	Faecal Coliforms	Faecal Coliforms
15	B.O.D.	B.O.D.	Turbidity	Turbidity
16	C.O.D.	C.O.D.	NH ₃ -N	NH ₃ -N
17	Potassium K ⁺	Potassium K ⁺	Total Phosphorous	Total Phosphorous
18	Sodium (Na)	Sodium (Na)	Chloride (Cl)	Chloride (Cl)
19	Calcium (Ca)	Calcium (Ca)	Alkalinity	Alkalinity
20	Magnesium	Magnesium	Sodium	Sodium
21	Carbonate (CO ₃)	Carbonate (CO ₃)	Total Kjeldhal Nitrogen	

22	Bi-Carbonate (H CO ₃)	Bi-Carbonate (H CO ₃)	Chlorophyll	
23	Chloride (Cl)	Chloride (Cl)		
24	Sulphate (SO ₄)	Sulphate (SO ₄)		
25	Fluoride	Fluoride		
26	Boron	Boron		
27	Total Coliforms	Total Coliforms		
28	Faecal Coliforms	Faecal Coliforms		
29	Alkalinity	Alkalinity		
30	Total hardness	Total hardness		
31	Total Kjeldhal Nitrogen			
32	Chlorophyll			

It is also decided to monitor water quality testing of reservoirs, lakes considering separate issue & frequency of sampling for such locations are considered twice in a month continuously & parameters are to be analyzed 32 for the first sample in the water year (June to May) and 30 parameters for rest of the samples.

6. Data Dissemination

6.1 Introduction

In the set up of the Hydrological Information System, the first question to be addressed is the type of information to be provided. This determines the layout of the observation network (parameters, network density, observation frequency, equipment, etc.) and the data available in the databases. The type of information to be provided requires an analysis of the potential hydrological data users. The Central and State Government agencies, which support the Hydrological Information System, are the major users of the generated information. There are sources of other governmental, non-governmental and private agencies also, which make good use of this information. It is obvious that the hydrological data needs of the users also change over time. Therefore, it is very important to identify the potential data users and regularly analyse their data needs. Normally, it is expected that the hydrological information service agencies satisfy most of the genuine data needs of the potential users in particular and society at large. For ensuring an optimal use of the public resources spent for maintaining such a Hydrological Information Service, it is therefore very essential to have a proper balance between the data needs of various users and mandate of various services supporting the hydrological information system. To ensure that the HIS output remains at all times '**demand driven**' each state/agency has to constitute a **Hydrological Data Users Group** (HDUG). These HDUGs must represent all potential users within the State or intended to be covered by an agency.

Hydrological Data Users Group is a State or National Level Representative Group of current & potential large scale and repeat users of HIS data who have a stake in water resources utilization, assessment & management.

Purpose

- 1) To provide a common platform for discussion between hydrology data users & data provider.
- 2) To create awareness amongst users about Hydrological Information System (HIS) data & educate them.
- 3) To understand, analyze & update information on the changing needs of data users.
- 4) To review & recommend addition /deletion in the data collection networks related to HIS, if appropriate.

Stage discharge data is measured on GD stations. Hourly & Daily rainfall is measured on ARG & SRG stations respectively. On FCS station climatic parameters namely minimum & Maximum temperature, dry & wet bulb temperature, humidity, pan evaporation, wind direction & wind velocity, pan water temperature are measured. On water quality sampling stations water samples are collected and tested in the laboratory for turbidity, BOD, COD, PH etc.

All these data is observed either daily, twice daily or hourly & entered into computer using SWDES software. This data is then validated

using HYMOS software & after final validation, it is ready for dissemination.

Table 5.1 The extent of data availability

Sr. No.	Data Type	No. of stations	Data Availability
1	Rainfall	506	Since 1976
2	River gauge	210	Since 1980
3	Climatic	67	Since 1980
4	Water Quality	127	Since 1999

6.2 The user can request for the data as below

The HDUG member can request the data by filling the request form. (Please see Annexure-B). Data is made available online/offline through any available media such as E-mail, Floppy, CD, Tape or hard copy against payment for the required data. Catalogue services are being launched on central NIC server, shortly and will be available on Internet.

The registration form may be downloaded from our website

<http://www.mahahp.org>

6.3 The pricing of data from date 27/06/2005

1	ARG Data.....	Rs.225 /Station/Year
2	SRG Data.....	Rs.225 /Station/Year
3	FCS Data.....	Rs.225 /Station/parameter/Year
4	GD Data.....	Rs.600 /Station/Year
5	Sedimentation Data.....	Rs.600 /Station/Year
6	W.Q.Data	Rs.240 /Station/ parameter/Year

Discounts: -

- 1 For Research or Academic purpose, 25 % of above sanctioned rates will be charged.
- 2 Individual students having no grants for research from any source, data will be supplied free of cost.
- 3 For individual farmers, 50 % of above sanctioned rates will be charged.
- 4 For Private organisations, double of the above sanctioned rates will be charged as the data is used for commercial purpose.

6.4. The members of HDUG can be

- 1 Government Institutions.
- 2 Voluntary Non Government Organizations.
- 3 Universities, Educational & Research Institutions
- 4 Associations - Farmers, Water users, Industrial
- 5 Individuals engaged in Operational Research & Development
- 6 All Professional Bodies
- 7 Consulting Representatives

Annexure : A**Ref: No. :****Date:** / / 200**DATA REQUEST FORM**

The Superintending Engineer,
Data Analysis Circle,
Hydrology Project (SW)
Nashik- 422 004

Sub: Data Request Form**Sir,**

The DRF is submitted herewith for the following data.

						Period					
						From	To				
1											
2											
3											
4											
5											
6											
Name:				Organization:							
Phone Number:				Email:							
Postal Address:											
Media for Dissemination *		Floppy / Hard Copy / CD / DAT Cartridge									
Format for Dissemination *		MS Access / MS Excel / CSV									
Purpose of Data *		Academic / Research / Design of Water Resource Structures / Design of Roads, Rail, Bridges etc / Navigational Purpose / Hydro Power Potential / Irrigation Management / Sedimentation / Water Quality / Other (Specify)									
Communication method for password of protected file. *		Telephone / E-Mail / Post									

* Tick ✓ Whichever is applicable

Terms and Conditions:

I / We agreed hereby to abide by the following conditions in respect of the data requested:

1. The data will be used strictly for the said purpose for which the data has been asked for.
2. The data will not be supplied to any governmental/non-governmental or public sector undertaking without the prior concurrence/fresh permission from the owner agency.
3. The data will not be published in any form without the prior permission of the owner agency.
4. The data shall not be used for commercial purpose.
5. The data will not be put on Internet or NIC Net.
6. Any inference drawn based on these data will be the sole responsibility of the Users and the Owner agency will not be responsible for any kind of loss or damage in any form occurring due to the use of data.

Please send the Demand note of data pricing at the above address by Post / Email.

Signature
Name

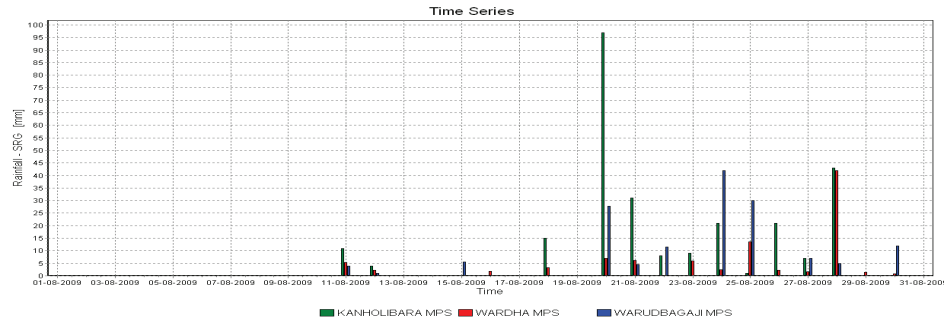
For Office Use:
HDUG Reg. No

Joining Date:

Category:

Annexure : B

Sample Daily Rainfall of Year 2009



Date	KANHOLIBARA	WARDHA	WARUDBAGAJI
01/08/2009	0	0	0
02/08/2009	0	0	0
03/08/2009	0	0	0
04/08/2009	0	0	0
05/08/2009	0	0	0
06/08/2009	0	0	0
07/08/2009	0	0	0
08/08/2009	0	0	0
09/08/2009	0	0	0
10/08/2009	0	0	0
11/08/2009	11	5.4	4
12/08/2009	4	2.2	1
13/08/2009	0	0	0
14/08/2009	0	0	0
15/08/2009	0	0	5.5
16/08/2009	0	1.8	0
17/08/2009	0	0	0
18/08/2009	15	3.2	0
19/08/2009	0	0	0
20/08/2009	97	7	27.7
21/08/2009	31	6.2	4.5
22/08/2009	8	0	11.6
23/08/2009	9	6	0
24/08/2009	21	2.4	42
25/08/2009	1	13.5	30
26/08/2009	21	2.2	0
27/08/2009	7	1.6	7
28/08/2009	43	42	5
29/08/2009	0	1.5	0
30/08/2009	0	0.8	12
31/08/2009	0	0	0

Twice Daily Climatic Data, Sept 2009

Station Code : Warudbagaji

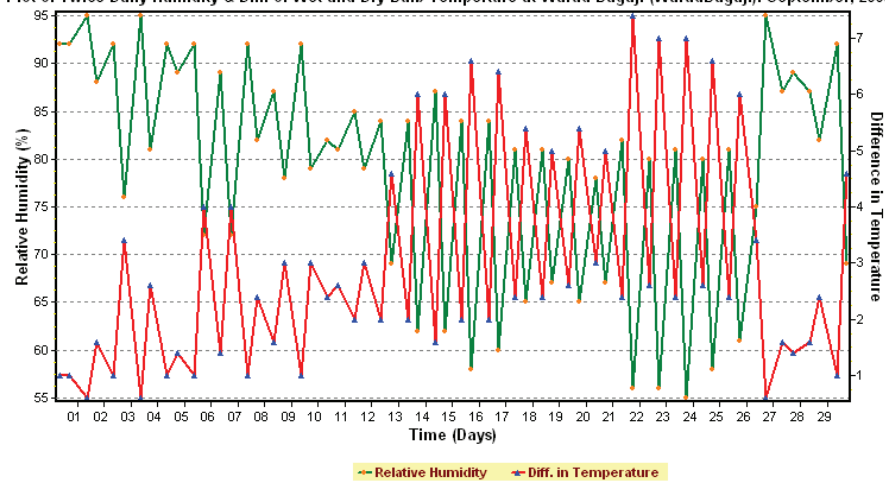
Station Name : Warudbagaji

Local river Vardha

Sub-Division : SDDPC,Vardha

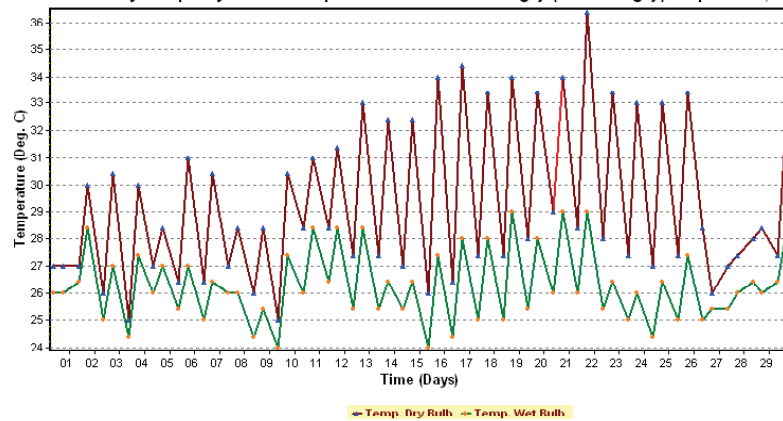
Hour	Min Temp	Max Temp	Temp Dry Bulb	Temp Wet Bulb	Relative Humidity	Inst Wind Speed	Av Wind Speed	Wind Direction	Rainfall	Pan Evaporation	Temp Pan Water
08:30	19	28	27	26	92	2	3.52	W	7	1.5	28
17:30	19	31.4	27	26	92	2	7.92	N	2.5	3	32
08:30	19	28	27	26.4	95	2	5.28	W	0	1.5	28
17:30	23	31.4	30	28.4	88	2	5.68	NW	0	2.5	32
08:30	17.4	30.4	26	25	92	2	4.14	SW	82	2	27
17:30	22	31.4	30.4	27	76	2	5.93	NW	0	2.5	36
08:30	17	30	25	24.4	95	2	3.83	W	0	1.5	28.4
17:30	22.4	31.4	30	27.4	81	2	7.71	W	0	2.5	36
08:30	19	30.4	27	26	92	2	3.44	NW	0	1.5	29
17:30	20.4	31	28.4	27	89	2	6.63	N	0	2.5	32
08:30	18.4	29.4	26.4	25.4	92	2	3.3	N	0	1.5	27.4
17:30	23.4	32	31	27	72	2	5.03	W	0	2.5	36
08:30	19.4	31	26.4	25	89	2	3.14	NW	0	1.5	28.4
17:30	23	32.4	30.4	26.4	72	4	10.8	NW	0	2.5	36
08:30	19	31	27	26	92	6	7.7	SW	0	1.5	28
17:30	20.4	31.4	28.4	26	82	6	20.68	W	0	2.5	32
08:30	18	28.4	26	24.4	87	8	14.26	SW	0	1.5	27
17:30	20.4	29	28.4	25.4	78	6	16.82	SW	0	2.5	28
08:30	17	28.4	25	24	92	6	11.92	SW	0	1.5	26
17:30	21	32.4	30.4	27.4	79	2	7.07	S	0	2.5	33.4
08:30	19.4	31.4	28.4	26	82	2	5.15	W	0	1.5	27.4
17:30	22.4	34.4	31	28.4	81	2	6.01	E	0	2.5	35
08:30	20	31.4	28.4	26.4	85	2	2.56	N	0	1.5	27.4
17:30	24	35	31.4	28.4	79	2	3.36	E	0	3	36
08:30	19	30.4	27.4	25.4	84	2	2.52	NW	0	1.5	28.4
17:30	26	36	33	28.4	69	2	5.06	N	0	3	36
08:30	19.4	31.4	27.4	25.4	84	2	3.16	N	0	1.5	28.4
17:30	25	34.8	32.4	26.4	62	2	6.75	NW	0	3	36.4
08:30	19	31.4	27	25.4	87	2	4.67	W	0	1.5	28
17:30	25	35	32.4	26.4	62	2	6.35	NE	0	3	36.4
08:30	18	30	26	24	84	2	4.3	NW	0	1.5	27
17:30	26.4	35	34	27.4	58	2	6.72	SW	0	2.5	37
08:30	18	29.4	26.4	24.4	84	2	4.2	NE	0	1.5	27.4
17:30	27.4	36	34.4	28	60	2	5.68	W	0	2.5	38
08:30	19.4	33	27.4	25	81	2	4.16	NE	0	1.5	28
17:30	26	35	33.4	28	65	2	5.24	S	0	2.5	38
08:30	19	33.4	27.4	25	81	2	3.27	W	0	1.5	28
17:30	28	37	34	29	67	2	3.92	SW	0	2.5	38
08:30	20	34.4	28	25.4	80	2	2.48	NE	0	1.5	29
17:30	26	37	33.4	28	65	2	5.72	N	0	2.5	37.4
08:30	21	36	29	26	78	2	3.8	W	0	1.5	29
17:30	26.4	37	34	29	67	2	3.84	N	0	2.5	36
08:30	20.4	34	28.4	26	82	2	2.41	N	0	1.5	28.4
17:30	29.4	38.4	36.4	29	56	2	3.15	NE	0	2.5	38.4
08:30	20	35.4	28	25.4	80	2	2.21	W	0	1.5	29
17:30	27	36.4	33.4	26.4	56	1	5.32	NE	0	2.5	35
08:30	20	32	27.4	25	81	2	3.66	N	0	1.5	28
17:30	26	36.4	33	26	55	2	7.16	S	0	2.5	35
08:30	19	33	27	24.4	80	2	4.68	SW	0	1.5	27.4
17:30	26	36	33	26.4	58	2	8.86	W	0	2.5	36.4
08:30	19.4	33	27.4	25	81	4	6.6	N	0	1.5	28
17:30	26	35	33.4	27.4	61	2	6.46	NW	0	2.5	36.4
08:30	20.4	34.4	28.4	25	75	2	4.48	NW	0	1.5	27.4
17:30	18	34	26	25.4	95	2	7.58	N	7.4	2.5	29.4
08:30	17	28	27	25.4	87	4	5.93	W	6.8	1.5	27
17:30	19	31	27.4	26	89	2	2.81	NE	6	2.5	32.4
08:30	19	29	28	26.4	87	4	4.98	N	6	1.5	28.4
17:30	20	29.4	28.4	26	82	4	8.87	S	3.4	2.4	31.4
08:30	19	29	27.4	26.4	92	2	3.4	W	10.8	1.5	25.4
17:30	26	33.4	33	28.4	69	4	8.61	NE	1	2.5	26.4
08:30	20.4	31	27.4	26	89	2	4.22	N	1	1.5	27.4
17:30	25.4	35	33.4	28	65	4	10.98	NW	0	2.5	35

Plot of Twice Daily Humidity & Diff. of Wet and Dry Bulb Temperature at Warud Bagaji (WarudBagaji): September, 2009



ertaining to previous da

Plot of Twice Daily Temp. Dry Bulb & Temp. Wet Bulb at Warud Bagaji (WarudBagaji): September, 2009



Plot of Twice Daily Wind Direction at Warud Bagaji (WarudBagaji): September, 2009

