

RAINFALL, AGRICULTURAL SITUATION, SATELLITE BASED CROP ASSESSMENT, MOISTURE INDEX, ARIDITY INDEX ANOMALY, RESERVOIR LEVELS, MINOR IRRIGATION, GROUNDWATER LEVELS, SEISMIC ACTIVITY, ASSESSMENT OF FLOODS & DROUGHT IN KARNATAKA – 2020

1. ANNUAL RAINFALL

1.1. Introduction :

The State receives an Annual normal rainfall of **1153 mm** out of which the **Pre-Monsoon season** contributes about **10%**, the **South-West Monsoon** season contributes about **74%** and the **North-East Monsoon** season contributes to about **16%**. The spatial and temporal distribution of rainfall varies significantly across the State, i.e., from West to East. Udupi District which lies in the extreme western part of the State receives maximum annual rainfall of **4,535 mm** and Chitradurga District which lies in the eastern part of the State receives minimum annual rainfall of **540 mm**.

During **2020**, the State as a whole recorded **1301 mm** of rainfall as against the Normal Annual rainfall of **1153 mm** with a departure from Normal being (+) **13%**. Thus the Annual rainfall over the State during 2020 is considered as **Normal**.

During the **Pre-Monsoon season 2020**, the State has recorded **120 mm** of rainfall as against the Normal rainfall of **120 mm** showing (0)% departure from Normal. Therefore, the Pre-Monsoon rainfall is considered as **Normal** in the State. Among the 30 Districts, **28** Districts recorded **Normal to Excess** rainfall and **2** Districts recorded **Deficit** rainfall.

During the **South-West Monsoon season 2020**, the State has recorded **991mm** of rainfall as against the Normal rainfall of **852mm** showing (+) **16%** departure from Normal. Thus, the South-West Monsoon rainfall is considered as **Normal** in the State. Among the 30 Districts, **30** Districts recorded **Normal to Large Excess** rainfall.

During the **North-East Monsoon season 2020**, the State has recorded **190 mm** of rainfall as against the Normal rainfall of **182 mm** showing (+) **13%** departure from Normal. Thus, the North-East Monsoon rainfall is considered as **Normal** in the State. Among the 30 Districts, **26** Districts recorded **Normal to Excess** rainfall and **4** Districts recorded **Deficit** rainfall.

The report provides the details on rainfall distribution pattern, agriculture status, Satellite based vegetation status assessment over the State, Status of Reservoir levels, Groundwater levels & fluctuations, Seismic activity in the State and the response of the Government to the Flood & Drought condition in the State.

1.2 Annual Rainfall in the State during 2020

During 2020, the State received a total rainfall of **1,301 mm** (Avg. Wt %) out of which the **Pre-Monsoon season** contributed **9% (120 mm)**, the **South-West Monsoon** season contributed **76% (991 mm)** and the **North-East Monsoon** season contributed **15% (190 mm)** to the Annual rainfall of the State.

Rainfall distribution during different seasons of 2020 in different met divisions of the State is as below:

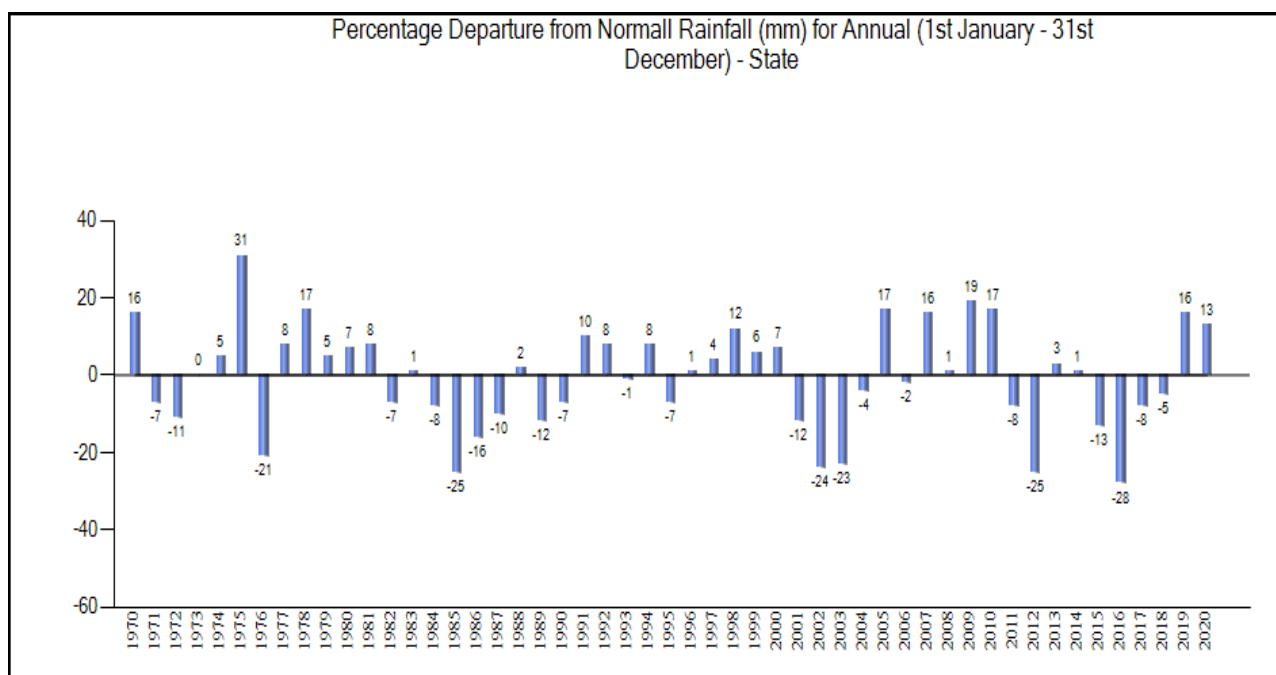
Region/ State	Pre-Monsoon			South-West			North -East			Annual		
	Normal (mm)	Actual (mm)	Dep (%)	Normal (mm)	Actual (mm)	Dep (%)	Normal (mm)	Actual (mm)	Dep (%)	Normal (mm)	Actual (mm)	Dep (%)
1.SIK	143	168	17	369	514	39	202	198	-2	714	879	23
2.NIK	83	81	-2	479	651	36	140	151	8	702	883	26
3.MALNAD	168	183	9	1556	1473	-5	226	208	-8	1950	1864	-4
4.COASTAL	158	149	-6	3101	3467	12	259	330	27	3518	3946	12
STATE	120	120	0	852	991	16	182	190	4	1153	1301	13

The comparison of Zone-wise rainfall pattern during 2020 with the rainfall of the last 4 years is as follows:

Region/State	Normal (mm)	2016		2017		2018		2019		2020	
		Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)
1.SIK	714	494	-33	888	20	687	-7	828	12	879	23
2.NIK	702	553	-28	641	-16	469	-39	746	-3	883	26
3.MALNAD	1950	1255	-34	1541	-20	2303	20	2302	20	1864	-4
4.COASTAL	3518	2614	-24	2924	-15	3603	4	4359	26	3946	12
STATE	1153	833	-28	1063	-8	1094	-5	1337	16	1301	13

The percentage departure of rainfall from Normal during 2019 is (+) **13%** which is **bad** when compared to the rainfall of the last year.

The percentage departure of Annual rainfall from Normal for the State as a whole since 1970 is given in the following Figure 1.1:



The above figure shows that the percentage departure of Annual rainfall for the State since 1971. The Rainfall recorded during 2019 is (+) **13% more** than the Normal which is **less** than the preceding year.

District wise rainfall pattern during the Year 2020 is given in the following Table.

Sl. No.	District	Normal (mm)	Actual (mm)	Departure (%)
1	Chitradurga	540	769	42
2	Kalaburagi	770	1068	39
3	Koppala	614	849	38
4	Kolar	735	983	34
5	Ballari	614	814	33
6	Chikkaballapura	736	962	31
7	Yadgir	719	925	29
8	Bengaluru Urban	846	1082	28
9	Bagalkote	582	739	27
10	Raichur	654	826	26
11	Davanagere	659	826	25
12	Dharwad	787	987	25
13	Bidar	838	1049	25
14	Vijayapura	591	737	25
15	Tumakuru	669	828	24
16	Uttara Kannada	2936	3538	20
17	Belagavi	826	994	20
18	Bengaluru Rural	798	956	20
19	Gadag	624	734	18
20	Mandya	699	820	17
21	Ramanagara	840	959	14
22	Udupi	4535	5159	14
23	Chamarajanagara	787	883	12
24	Hassan	1142	1162	2
25	Mysuru	837	822	-2
26	Dakshina Kannada	4006	3917	-2
27	Chikkamagaluru	1833	1754	-4
28	Haveri	800	764	-4
29	Kodagu	2729	2541	-7
30	Shivamogga	2325	2122	-9
	STATE	1153	1301	13

Large Excess ($\geq 60\%$)	Nil
Excess (+20 to +59%)	18 Districts
Normal (-19 to +19%)	12 Districts
Deficient (-20 to -59%)	Nil
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

The data shows that the Annual rainfall during 2020 was **Excess** in **18** Districts and **Normal** in **12** Districts. During the preceding year (2019) the Annual rainfall was **Excess** in **9** Districts, **Normal** in **17** Districts and **Deficit** in **4** Districts.

Taluk wise Annual Rainfall pattern of 2020 is given in the following table (**Total 227 Taluks in the State**):

Large Excess ($\geq 60\%$)	5 Taluks
Excess (+20 to +59%)	106 Taluks
Normal (-19 to +19%)	115 Taluks
Deficient (-20 to -59%)	1 Taluk
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

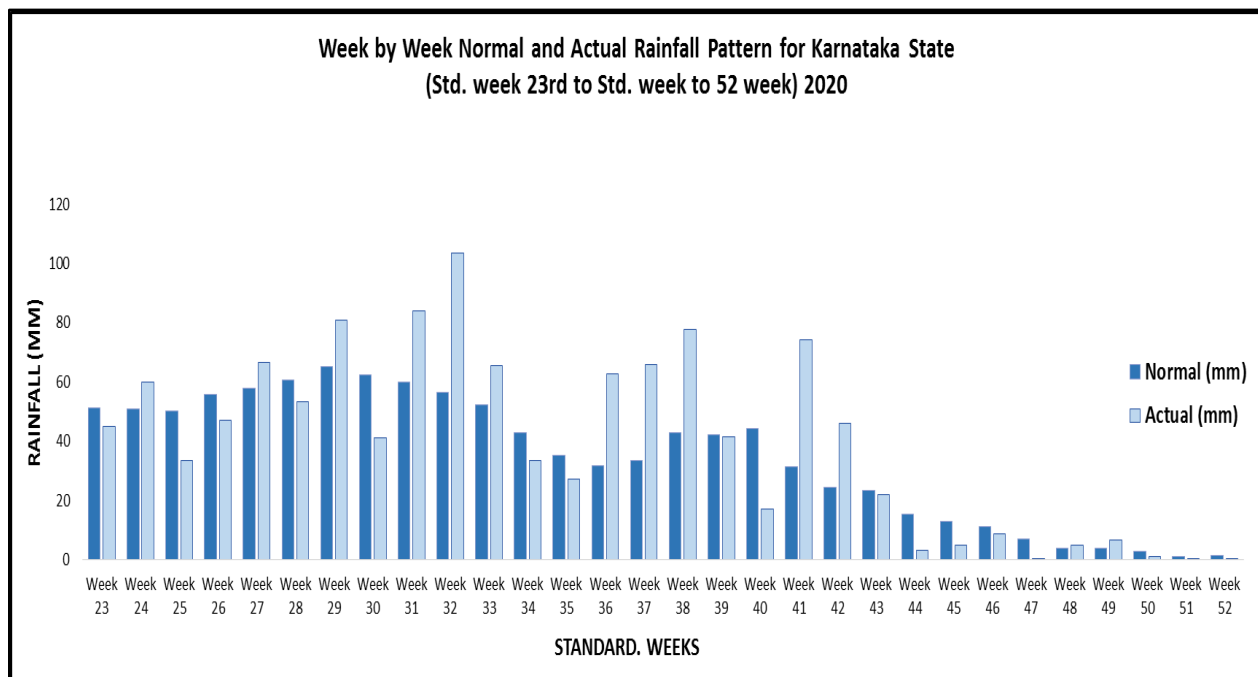
During 2020, the Annual rainfall was **Large Excess** in **5** Taluks, **Excess** in **106** Taluks, **Normal** in **115** Taluks and **Deficit** in **1** Taluk. During the preceding year (2019) the Annual rainfall was **Excess** in **70** Taluks, **Normal** in **90** Taluks and **Deficit** in **16** Taluks.

Hobli wise Rainfall pattern during 2020 is given in the following table (**Total 850 Hoblis in the State**):

Large Excess ($\geq 60\%$)	29 Hoblis
Excess (+20 to +59%)	439 Hoblis
Normal (-19 to +19%)	352 Hoblis
Deficient (-20 to -59%)	30 Hoblis
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

During 2020, the Annual rainfall was **Large Excess** in **29** Hoblis, **Excess** in **439** Hoblis, **Normal** in **352** Hoblis and **Deficit** in **30** Hoblis. During the preceding year (2019) the annual rainfall **Excess** in **265** Hoblis, **Normal** in **380** Hoblis and **Deficit** in **102** Hoblis.

Weekly Rainfall pattern for the State during 2020 is given in the following Figure 1.2.



Number of Taluks falling under different Rainfall Categories during 2020 and 2019.

Division	Total No Taluks	Large Excess		Excess		Normal		Deficit		Large Deficient		No Rain	
		2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
1.SIK	67	0	0	26	20	40	42	1	0	0	0	0	0
2.NIK	108	4	0	64	23	40	31	0	16	0	0	0	0
3.MALNAD	26	1	0	4	16	21	9	0	0	0	0	0	0
4.COASTAL	26	0	0	12	11	14	8	0	0	0	0	0	0
State	227	0	0	0	70	0	90	0	16	0	0	0	0

1.3 Rainfall in 4 meteorological sub-Divisions of the State during 2020.

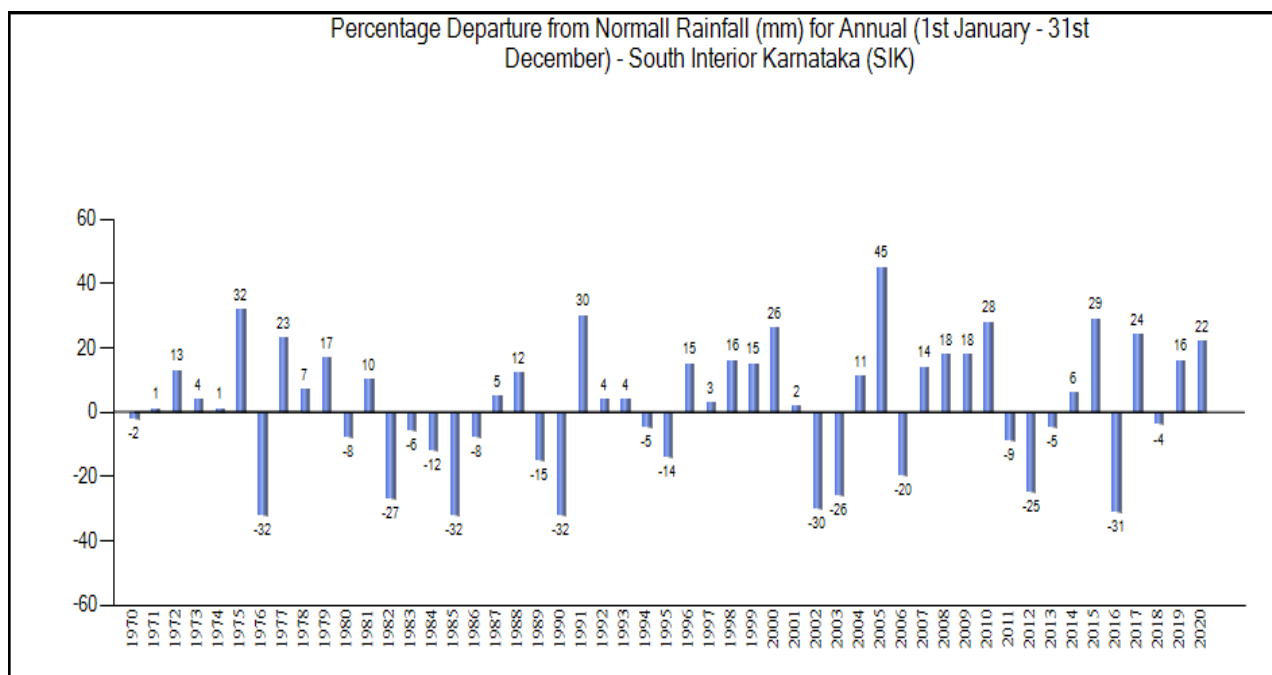
1.3.1 South-Interior Karnataka (SIK):

During 2020, the Annual rainfall was **Excess** in **Bengaluru Rural, Bengaluru Urban Chitradurga, Chikkaballapura, Davanagere, Kolar, Mysuru and Tumakuru Districts** and **Normal** in, **Chamarajanagara, , Mandya, Ramanagara Districts**. During the preceding year (2019), the Annual rainfall was **Excess** in **2 Districts** and **Normal** in **9 Districts**.

Among the **67 Taluks** in SIK, the Annual rainfall was **Excess** in **26 Taluks**, **Normal** in **40 Taluks** and **Deficit** in **1 Taluk**. During the preceding year (2019), the Annual rainfall was **Excess** in **20 Taluks**, **Normal** in **42 Taluks**.

Among the **336 Hoblis** in SIK, the Annual rainfall was **Large Excess** in **12 Hoblis**, **Excess** in **178 Hoblis**, **Normal** in **143 Hoblis** and **Deficit** in **3 Hoblis**. During the preceding year (2019), the Annual rainfall was **Excess** in **88 Hoblis**, **Normal** in **177 Hoblis** and **Deficit** in **12 Hoblis**.

The departure (%) of the Annual rainfall from Normal in South-Interior Karnataka since 1970 is given in the following Figure 1.3:



The figure shows that, during 2020, the **South-Interior Karnataka** recorded a rainfall **22% more** than the Normal which is **more** than the preceding year.

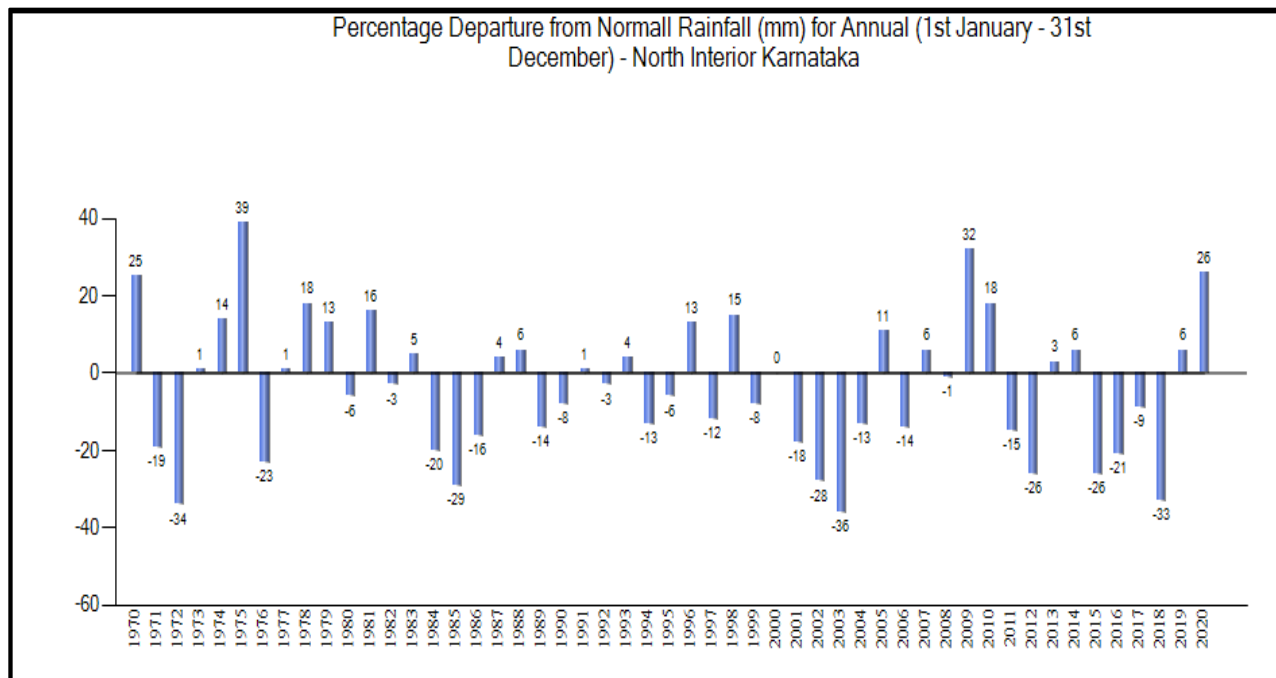
1.3.2 North-Interior Karnataka (NIK):

During 2020, the Annual rainfall was **Excess** in **Bagalkote, Ballari, Belagavi, Bidar, Dharwad, Koppala, Kalaburagi, Raichur Vijayapura Haveri and Yadgir Districts** and **Normal** in **Gadag and Haveri Districts**. During the preceding year (2019), the Annual rainfall was **Normal** in **2 Districts** and **Deficit** in **10 Districts**.

Among the **108 Taluks**, the Annual rainfall was **Large Excess** in **4 Taluks**, **Excess** in **64 Taluks** and **Normal** in **40 Taluks**. During the preceding year (2019), the Annual rainfall was **Excess** in **23 Taluks**, **Normal** in **31 Taluks** and **Deficit** in **16 Taluks**.

Among the **316** Hoblis, the annaual rainfall was **Large Excess** in **14** Hoblis, **Excess** in **205** Hoblis, **Normal** in **93** Hoblis and **Deficit** in **4** Hoblis. During the preceeding year (2019), the Annual rainfall was **Excess** in **64** Hoblis, **Normal** in **132** Hoblis and **Deficit** in **85** Hoblis.

Percentage departure of the Annual rainfall from Normal in North-Interior Karnataka since 1970 is given in the following Figure 1.4:



The figure indicates that, during 2020, the **North-Interior Karnataka** recorded a rainfall **26% more** than the Normal which is **more** than the preceding year.

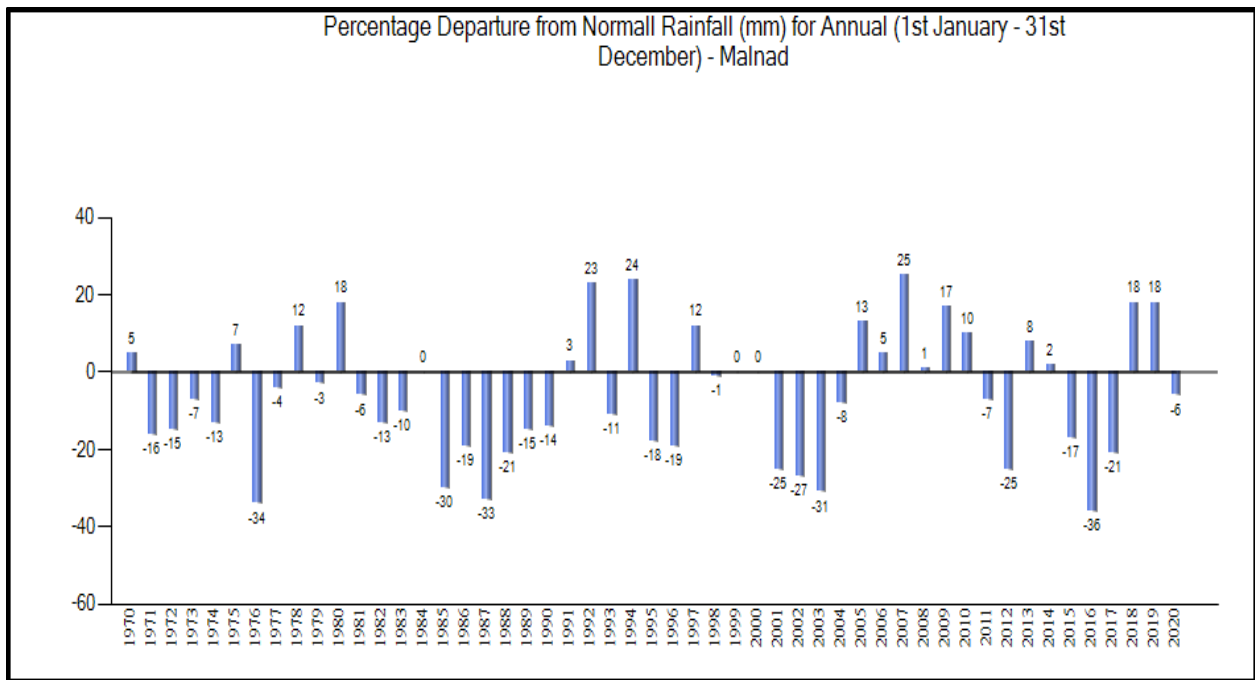
1.3.3 Malnad Region:

During 2020, the Annual rainfall was **Normal** in **Chikkamagaluru, Hassan, Kodagu** and **Shivamogga** Districts. During the preceding year (2019), the Annual rainfall was **Excess** in **3** Districts, **Normal** in **1** District.

Among the **26** Taluks, the Annual rainfall was **Large Excess** in **1** Taluk, **Excess** in **4** Taluks, **Normal** in **21** Taluks. During the preceding year (2019), the Annual rainfall was **Excess** in **16** Taluks, **Normal** in **9** Taluks.

Among the **131** Hoblis, the Annual rainfall was **Large Excess** in **1** Hobli, **Excess** in **28** Hoblis, **Normal** in **79** Hoblis and **Deficit** in **23** Hoblis. During the preceding year (2019), the Annual rainfall was **Excess** in **78** Hoblis, **Normal** in **45** Hoblis and **Deficit** in **5** Hoblis.

Percentage departure of the Annual rainfall from Normal in Malnad Region since 1970 is given in the following Figure 1.5:



The Figure shows that, during 2020, the Malnad Region recorded a rainfall **4% less** than the Normal, which is **less** than the preceding year.

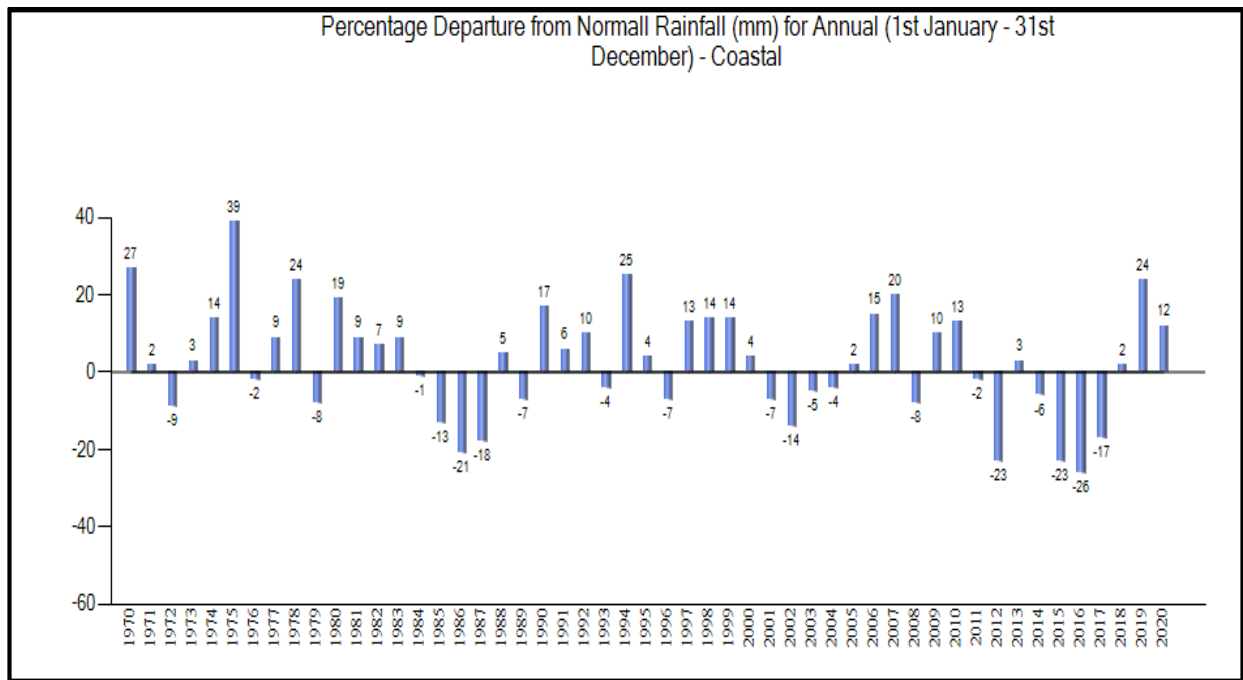
1.3.4 Coastal Region:

During 2020, the Annual rainfall was **Excess** in **Uttara Kannada** District and **Normal** in **Dakshina Kannada** and **Udupi** Districts. During the preceding year (2019), the Annual rainfall was **Excess** in **1** District and **Normal** in **2** Districts.

Among the **26** Taluks, the Annual rainfall was **Excess** in **12** Taluks, **Normal** in **14** Taluks. During the preceding year (2019), the Annual rainfall was **Excess** in **11** Taluks, **Normal** in **8** Taluks

Among the **67** Hoblis, the Annual rainfall was **Large Excess** in **2** Hoblis, **Excess** in **28** Hoblis, **Normal** in **37** Hoblis. During the preceding year (2019), the Annual rainfall was **Excess** in **35** Hoblis and **Normal** in **26** Hoblis.

Percentage departure of the Annual rainfall from Normal in Coastal Region since 1970 is given in the following Figure 1.6:



The figure shows that, during 2020, the **Coastal Region** recorded a rainfall **12% more** than the Normal, which is **less** in corresponding periods of the last year.

Table: 1.1: Hobli/Taluk/District/Region rainfall Pattern in Karnataka State during 2020

Note: Weighted average rainfall is computed using Thiessen Polygon method and Departure calculated from Normal. The long period Normal rainfall data is available for Taluk headquarters stations. The Normal rainfall for other stations is estimated through interpolations.

LE : Large Excess (=>60%) E : Excess (20 to +59%) N: Normal (-19 to +19%) D: Deficient (-20 to -59%) D: Large Deficient (-60 to -99%) NR : No Rainfall (-100 %)).

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
1	BENGALURU URBAN	156	215	38	471	579	23	219	289	32	846	1082	28
1	Anekal	180	209	16	477	508	6	244	323	32	902	1040	15
1	Anekal_1	180	210	17	477	433	-9	244	316	29	902	960	6
2	Attibele_1	154	181	17	445	397	-11	224	302	35	824	879	7
3	Jigani_1	159	255	60	464	548	18	222	367	66	845	1169	38
4	Sarjapura_1	129	178	38	411	514	25	208	236	13	748	928	24
5	Anekal_2	172	227	32	472	439	-7	237	334	41	881	1000	14
6	Jigani_2	164	210	28	482	613	27	220	400	82	865	1222	41
7	Attibele_2	161	204	27	469	550	17	227	356	57	857	1110	30
8	Sarjapura_1	155	232	49	474	564	19	226	325	44	855	1121	31
9	Sarjapura_3	142	171	20	453	511	13	219	230	5	814	911	12
2	Bengaluru North	183	230	26	574	634	10	248	282	14	1004	1146	14
10	Bengaluru North_1	183	233	27	574	608	6	248	284	15	1004	1125	12
11	Dasanapura_1	177	198	12	490	659	34	228	212	-7	896	1069	19
12	Yashavantapura_1	155	270	74	451	700	55	213	272	28	819	1241	52
13	Bengaluru North_2	159	225	42	472	675	43	223	249	12	854	1150	35
14	Yashavantapura_2	163	277	69	493	675	37	209	330	58	866	1281	48
15	Dasanapura_2	167	199	19	488	599	23	217	289	33	872	1088	25
16	Dasanapura_3	167	192	15	511	563	10	222	318	43	900	1073	19
3	Bengaluru South	159	223	41	478	607	27	183	339	85	820	1169	43
17	Beguru_3	159	226	42	478	586	23	183	345	89	820	1157	41

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
18	Kengeri_1	169	224	33	505	688	36	232	366	58	905	1277	41
19	Tavarekere_1	153	188	23	417	564	35	164	298	81	734	1050	43
20	Uttarahalli_4	170	317	86	514	633	23	220	450	105	905	1400	55
21	Uttarahalli_1	168	249	48	499	643	29	219	412	88	886	1304	47
22	Uttarahalli_2	166	223	34	495	609	23	210	305	45	872	1138	30
23	Uttarahalli_3	165	183	11	478	631	32	219	331	51	863	1145	33
24	Uttarahalli_5	175	291	67	531	612	15	235	378	61	941	1282	36
25	Beguru_1	171	239	39	503	490	-3	238	311	31	912	1040	14
26	Beguru_2	162	235	45	484	570	18	229	345	51	875	1149	31
27	Kengeri_2	164	211	29	503	660	31	211	259	23	878	1129	29
28	Kengeri_3	164	242	48	491	597	22	205	314	54	860	1154	34
29	Kengeri_4	162	300	85	492	676	37	197	443	125	852	1419	67
30	Tavarekere_2	168	178	6	553	558	1	240	442	84	961	1178	23
31	Tavarekere_3	165	186	13	496	602	21	210	246	17	871	1034	19
4	Bengaluru East	119	220	85	479	544	14	217	254	18	815	1019	25
32	Mahadevpura_1	119	217	83	479	592	24	217	254	17	815	1063	30
33	Bidarahalli_2	140	232	66	458	571	25	231	255	11	828	1058	28
34	Varturu_1	133	192	44	465	512	10	219	230	5	818	935	14
35	K R Pura_2	152	221	45	475	595	25	228	217	-5	855	1032	21
36	K R Pura_3	133	190	43	472	529	12	223	255	15	827	974	18
37	Varturu_2	160	229	43	490	504	3	231	275	19	881	1007	14
38	Bidarahalli_1	127	245	92	469	542	15	224	273	22	821	1060	29
39	Mahadevpura_2	159	171	8	491	504	3	233	294	27	882	969	10
40	Marathahalli	162	202	24	495	503	2	234	290	24	891	995	12
41	Bidharahalli_3	143	255	78	436	580	33	219	213	-3	799	1048	31
5	Yelahanka	147	199	36	397	612	54	208	205	-1	752	1017	35
42	Yelahanka_1	147	218	49	397	648	63	208	214	3	752	1080	44

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
43	Yelahanka_2	150	272	82	423	612	45	213	217	2	785	1101	40
44	Yelahanka_3	152	256	68	435	664	53	214	243	14	801	1164	45
45	Jala_1	125	178	43	427	592	38	208	246	18	760	1015	34
46	Jala_2	129	219	70	426	616	45	208	214	3	763	1049	37
47	Jala_3	134	196	47	434	526	21	214	228	7	781	950	22
48	Hesarughatta_1	142	183	29	416	691	66	188	193	2	746	1066	43
49	Hesarughatta_2	143	156	9	430	597	39	208	154	-26	781	907	16
2	BENGALURU RURAL	141	198	40	444	590	33	213	168	-21	798	956	20
6	Devanahalli	142	203	43	452	558	24	215	165	-23	808	927	15
50	Devanahalli	142	196	38	452	586	30	215	181	-16	808	962	19
51	Channarayapatna	135	174	30	442	576	30	219	194	-12	796	944	19
52	Kundana	133	242	81	438	543	24	215	145	-32	786	930	18
53	Vijayapura	130	194	49	440	529	20	217	144	-34	787	866	10
7	Doddaballapura	136	184	36	434	595	37	229	133	-42	799	912	14
54	Dodballapur	136	239	76	434	628	45	229	137	-40	799	1004	26
55	Dodda Belavangala	146	170	16	442	587	33	204	124	-39	792	881	11
56	Madure	157	210	34	449	584	30	207	106	-49	812	900	11
57	Sasalu	123	119	-2	401	580	45	185	133	-28	709	833	17
58	Tubagere	127	201	59	442	596	35	219	152	-31	787	950	21
8	Hosakote	146	194	33	455	583	28	257	223	-13	857	999	17
59	Hosakote	146	180	24	455	575	26	257	235	-8	857	990	16
60	Anugondhalli	118	228	94	407	639	57	207	241	17	731	1107	51
61	Jadigenhalli	133	196	47	432	585	36	231	246	6	796	1027	29
62	Nandagudi	126	191	51	428	579	35	223	202	-9	777	972	25
63	Sulibele	134	179	33	441	544	23	227	196	-14	803	919	15
9	Nelamangala	195	219	12	512	615	20	248	165	-33	954	999	5
64	Nelamangala	195	219	13	512	567	11	248	212	-14	954	999	5

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
65	Sompura	158	193	22	448	669	49	188	155	-17	794	1018	28
66	Tyamagondal	178	258	45	496	611	23	204	107	-47	877	976	11
67	Nelamangala_2	177	217	23	494	572	16	220	171	-22	891	960	8
68	Sompura_2	162	220	36	469	784	67	197	138	-30	827	1142	38
69	Tyamagondal_2	175	229	31	490	605	23	205	138	-33	870	972	12
3	RAMANAGARA	178	205	16	436	516	18	226	240	6	840	961	14
10	Channapatna	184	218	18	438	470	7	239	228	-4	861	916	6
70	Channapatna	184	205	11	438	465	6	239	219	-8	861	890	3
71	Maluru	179	225	26	432	446	3	233	228	-2	843	899	7
72	Virupakshipura	180	220	22	430	498	16	234	235	0	843	953	13
11	Kanakapura	187	218	17	383	529	38	226	221	-2	797	969	22
73	Kanakapura	187	214	14	383	578	51	226	190	-16	797	982	23
74	Dodda Maralavadi	174	203	16	430	566	31	224	253	13	828	1021	23
75	Harohalli	172	194	12	447	676	51	226	307	36	845	1177	39
76	Kodihalli	182	285	57	392	581	48	229	202	-11	802	1067	33
77	Satnuru	181	209	15	388	448	16	230	242	6	798	899	13
78	Uyyamballi	182	208	15	380	410	8	231	179	-22	792	797	1
12	Magadi	202	192	-5	543	531	-2	254	255	0	1000	978	-2
79	Magadi	202	190	-6	543	489	-10	254	284	12	1000	963	-4
80	Kuduru	171	181	6	469	642	37	201	222	11	841	1046	24
81	Madabal	196	221	13	526	469	-11	246	282	15	968	972	0
82	Solur	174	177	1	505	549	9	202	230	14	881	955	8
83	Tippasanara	173	177	2	449	541	21	201	237	18	822	955	16
13	Ramanagara	182	239	32	494	571	15	245	278	13	921	1088	18
84	Ramanagara_1	182	338	86	494	550	11	245	345	41	921	1232	34
85	Bidadi	171	200	17	477	635	33	217	264	21	865	1099	27
86	Kailancha	178	224	25	455	623	37	234	236	1	867	1082	25

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
87	Kutgallu	178	255	43	472	455	-4	237	322	36	887	1032	16
88	Ramanagara_2	177	251	42	482	498	4	231	234	1	889	983	11
89	Kailancha_2	179	222	24	456	592	30	237	253	7	872	1067	22
4	KOLAR	117	127	9	399	601	51	219	254	16	735	983	34
14	Bangarapet	146	167	15	392	554	41	226	209	-7	764	930	22
90	Bangarapet	146	171	18	392	570	45	226	220	-3	764	961	26
91	Budikote	105	160	52	395	485	23	187	191	2	687	836	22
92	Kamsandra	134	160	20	422	550	30	222	198	-11	778	908	17
93	Robertsonpet	148	179	21	437	642	47	234	234	0	818	1055	29
15	Kolar	128	128	0	416	566	36	240	232	-3	784	926	18
94	Kolar	128	142	11	416	555	34	240	251	5	784	949	21
95	Holuru	116	138	19	403	623	55	226	246	9	745	1007	35
96	Huttur	124	112	-9	410	596	45	235	237	1	768	945	23
97	Narasapura	124	161	30	411	525	28	218	262	20	753	947	26
98	Sugaturu	123	104	-16	412	555	35	228	209	-8	763	868	14
99	Vakkaleri	120	128	7	403	508	26	215	227	6	738	864	17
100	Rajakallahalli Vemagal	124	125	1	413	579	40	221	207	-7	758	910	20
16	Malur	140	199	42	429	528	23	230	220	-4	798	947	19
101	Malur	140	217	55	429	548	28	230	236	3	798	1002	25
102	Lakkur	88	227	158	275	550	100	166	209	26	529	985	86
103	Masathi	94	182	95	364	480	32	175	223	27	633	885	40
104	Tyakal	91	160	76	383	526	38	176	201	14	649	887	37
17	Mulabagilu	115	89	-22	419	667	59	270	281	4	804	1038	29
105	Mulbagal	115	94	-18	419	643	53	270	249	-8	804	986	23
106	Avani	124	122	-1	406	738	82	246	309	26	775	1169	51
107	Bairakur	108	55	-49	392	537	37	234	340	45	734	932	27
108	Duggasandra	111	78	-30	403	708	76	239	221	-8	753	1007	34

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
109	Tayilur	117	98	-16	363	695	91	228	295	29	708	1088	54
18	Srinivasapura	121	83	-31	411	614	50	226	288	28	758	986	30
110	Srinivasapura	121	100	-18	411	636	55	226	245	9	758	981	29
111	Nelavanki	94	97	2	380	741	95	190	360	89	664	1197	80
112	Ronuru	108	69	-36	395	516	31	208	287	38	711	871	23
113	Rayalpadu	86	75	-12	375	641	71	179	309	73	639	1025	60
114	Yelldur	108	77	-29	390	523	34	212	230	9	710	830	17
19	KGF	160	132	-17	483	703	46	247	290	17	890	1125	26
115	Betamangala	139	122	-12	418	655	57	240	278	16	797	1056	32
116	Kyasamballi	137	136	-1	410	731	78	237	309	30	785	1177	50
117	Robertsonpet	160	142	-11	483	732	52	247	246	0	890	1121	26
5	CHIKKABALLAPURA	108	107	-1	416	628	51	211	227	8	736	962	31
20	Bagepalli	101	73	-28	379	590	56	215	218	2	695	881	27
118	Bagepalli	101	81	-20	379	616	63	215	271	26	695	968	39
119	Chelur	103	82	-21	394	610	55	209	192	-8	706	883	25
120	Guluru	101	49	-51	383	527	38	213	225	6	696	801	15
121	Mittemari	102	74	-27	406	617	52	207	256	24	715	947	32
122	Pathapalya	100	81	-19	395	597	51	207	175	-15	701	854	22
21	Chikkaballapura	120	148	23	486	627	29	223	202	-9	828	977	18
123	Chikballapura	120	154	28	486	617	27	223	222	0	828	993	20
124	Mandikal	99	137	39	428	626	46	196	214	9	723	977	35
125	Nandi	122	154	26	466	636	37	220	170	-22	808	961	19
22	Chintamani	123	98	-21	415	612	48	249	282	13	787	992	26
126	Chintamani	123	118	-4	415	608	47	249	298	20	787	1024	30
127	Ambajidurga	119	108	-9	416	664	60	234	352	51	768	1124	46
128	Chilakalanerpu	108	75	-30	400	581	45	214	246	15	722	901	25
129	Kaiwara	109	149	37	418	599	43	209	212	2	736	961	31

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
130	Munganahalli	110	95	-13	404	581	44	217	262	21	730	938	29
131	Murugamale	115	62	-46	407	644	58	227	312	37	749	1018	36
23	Gauribidanur	109	110	1	406	713	76	189	193	2	704	1016	44
132	Gauribidanur	109	113	4	406	791	95	189	175	-7	704	1080	53
133	D.Palya	105	124	19	415	794	91	193	224	16	713	1142	60
134	Hosur	112	84	-25	402	644	60	195	155	-21	709	883	24
135	Manchenahalli	100	118	18	472	731	55	215	179	-17	786	1028	31
136	Nagaragere	100	108	8	410	663	62	186	247	33	695	1017	46
137	Tondebavi	110	120	9	444	655	48	205	201	-2	758	976	29
24	Gudibanda	89	87	-2	420	581	38	185	222	20	694	890	28
138	Gudibanda	89	93	5	420	625	49	185	238	29	694	956	38
139	Somenahalli	102	81	-21	418	534	28	208	204	-2	728	819	13
25	Sidlaghatta	127	130	2	412	609	48	224	238	6	763	977	28
140	Sidlaghatta	127	137	7	412	648	57	224	208	-7	763	993	30
141	Bashattahalli	114	113	-1	432	573	33	218	258	18	765	944	23
142	Jangamakote	125	162	29	430	553	29	221	213	-3	776	928	20
143	Sadali	107	112	5	418	643	54	211	280	33	735	1035	41
6	TUMAKURU	125	134	8	358	527	47	186	167	-10	669	828	24
26	Chikkanayakanahalli	145	140	-4	398	427	7	218	150	-31	761	717	-6
144	Chiknayakanahalli	145	134	-8	398	427	7	218	132	-40	761	692	-9
145	Handanakere	127	139	10	284	412	45	184	165	-10	595	716	20
146	Huliyaru	116	135	16	245	391	60	143	164	14	504	690	37
147	Kandikere	126	162	28	306	459	50	177	131	-26	610	752	23
148	Shettikeri	143	128	-10	354	500	41	204	128	-37	700	756	8
27	Gubbi	153	141	-8	439	516	17	217	146	-33	809	803	-1
149	Gubbi	153	138	-10	439	583	33	217	163	-25	809	883	9
150	Chandrashekerapura	131	192	47	376	467	24	186	171	-8	692	830	20

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
151	Chelur	131	117	-11	400	530	32	198	137	-31	729	783	7
152	Hagalavadi	125	138	11	347	485	40	184	113	-38	655	736	12
153	Kadaba	123	132	7	473	481	2	191	166	-13	787	780	-1
154	Nittur	139	154	11	443	533	20	208	148	-29	789	835	6
28	Koratagere	153	122	-20	418	582	39	206	160	-23	777	864	11
155	Koratagere	153	106	-31	418	545	30	206	178	-13	777	830	7
156	Chennarayadurga	118	121	3	467	573	23	202	153	-24	787	847	8
157	Holanahalli	134	84	-37	410	586	43	224	165	-26	768	835	9
158	Kolala	136	172	26	404	614	52	180	149	-17	720	935	30
29	Kunigal	180	215	19	437	469	7	208	226	9	825	909	10
159	Kunigal	180	196	8	437	510	17	208	226	9	825	931	13
160	Amrutur	148	232	57	330	433	31	197	209	6	675	874	29
161	Huliyurudurga	136	223	64	394	493	25	211	233	10	741	948	28
162	Huttaridurga	182	195	7	406	502	24	211	271	28	799	967	21
163	Kottagere	156	190	22	404	478	18	192	212	10	752	880	17
164	Yedeyur	140	233	66	332	411	24	197	213	8	669	857	28
30	Madhugiri	122	94	-23	401	585	46	207	186	-10	730	864	18
165	Madhugiri	122	92	-24	401	572	42	207	176	-15	730	839	15
166	Dodderi	93	126	35	340	548	61	160	196	22	594	869	46
167	Itakadibbanahalli	96	69	-28	340	602	77	180	189	5	616	860	40
168	Kodigenahalli	106	72	-32	347	615	78	179	177	-1	632	865	37
169	Midigesi	75	114	51	306	594	94	172	172	0	553	880	59
170	Puravara	111	74	-34	371	594	60	191	212	11	674	879	31
31	Pavagada	104	101	-3	324	565	74	184	156	-15	611	821	34
171	Pavagada	104	109	5	324	508	57	184	164	-11	611	781	28
172	Nagalamadike	96	83	-14	318	570	79	174	151	-13	588	804	37
173	Nidagal	85	108	27	287	640	123	146	148	1	518	897	73

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
174	Yellappanayakana Hosakote	81	106	31	297	550	85	154	161	4	532	817	54
32	Sira	119	96	-20	344	490	43	175	154	-12	638	740	16
175	Sira	119	98	-17	344	555	61	175	155	-12	638	808	27
176	Bukkaptna	105	111	6	299	482	61	175	98	-44	579	692	20
177	Gowdagere	108	89	-17	312	455	46	161	192	19	581	736	27
178	Hulikunta	87	90	3	284	481	70	135	190	41	506	761	51
179	Kallambella	115	82	-29	334	459	38	158	148	-6	606	689	14
33	Tiptur	174	151	-13	323	565	75	234	170	-27	731	886	21
180	Tiptur	174	142	-19	323	551	71	234	192	-18	731	884	21
181	Honnnavalli	164	177	8	319	543	70	223	124	-44	705	844	20
182	Kibbanahalli	133	139	4	302	652	115	172	156	-9	607	947	56
183	Nonavinakere	164	142	-14	347	535	54	209	210	1	720	887	23
34	Tumakuru	130	154	18	489	615	26	211	147	-30	830	916	10
184	Tumakuru North	130	144	11	489	612	25	211	127	-40	830	883	6
185	Bellavi	135	138	2	443	607	37	210	133	-37	788	878	11
186	Guluru	145	150	4	497	685	38	227	163	-28	869	998	15
187	Hebbur	136	196	44	392	608	55	150	188	26	678	992	46
188	Uradigere	143	163	14	382	620	62	157	120	-24	682	902	32
189	Kora	132	122	-8	446	602	35	210	139	-34	788	863	9
190	Tumakuru East	141	118	-16	484	542	12	219	111	-49	844	771	-9
191	Tumakuru West	145	157	9	474	497	5	221	142	-36	839	796	-5
192	Tumakuru South	145	155	7	484	638	32	217	123	-43	846	916	8
35	Turuvekere	160	174	9	373	485	30	239	196	-18	772	855	11
193	Turuvekere	160	171	6	373	534	43	239	178	-26	772	882	14
194	Dabbegatta	119	149	25	305	471	54	182	208	15	605	828	37
195	Dandinasivara	143	166	16	362	512	41	203	175	-13	707	853	21

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
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196	Mayasandra	126	203	62	332	433	31	200	216	8	657	852	30
7	CHITRADURGA	103	95	-8	282	505	79	155	169	9	540	769	42
36	Challakere	99	82	-18	244	501	106	141	154	9	485	737	52
197	Challakere	99	109	9	244	495	103	141	180	27	485	783	62
198	Nayakanahatti	86	72	-17	206	436	111	135	144	6	428	651	52
199	Parasurampura	71	77	8	241	590	145	98	152	55	410	819	100
200	Thalku	80	69	-13	203	471	132	109	140	29	392	680	73
37	Chitradurga	126	119	-5	330	576	75	210	211	0	666	906	36
201	Chitradurga	126	102	-19	330	605	84	210	197	-6	666	905	36
202	Bharmasagara	90	152	68	365	635	74	146	203	39	601	990	65
203	Hire Guntanur	98	106	8	331	518	56	147	205	39	576	829	44
204	Turuvanur	119	124	4	277	507	83	185	247	33	581	877	51
38	Hiriyur	122	80	-34	282	450	60	175	145	-17	578	675	17
205	Hiriyur	122	101	-17	282	391	39	175	137	-22	578	629	9
206	Aymangala	105	72	-31	265	464	75	147	156	6	517	692	34
207	Dharmapura	91	82	-10	262	511	95	128	132	3	481	724	51
208	Javanagondanahalli	109	75	-31	290	413	42	163	152	-7	562	639	14
39	Holalkere	130	98	-25	393	536	36	199	177	-11	722	811	12
209	Holalkere	130	83	-36	393	517	31	199	195	-2	722	795	10
210	Bharmanaikanadurga	105	92	-13	372	547	47	170	210	24	648	849	31
211	Ramagiri	110	123	12	282	513	82	144	129	-10	535	766	43
212	Talya	120	92	-23	349	559	60	182	179	-1	650	830	28
40	Hosadurga	132	126	-4	321	452	41	194	192	-1	648	770	19
213	Hosadurga	132	105	-20	321	420	31	194	173	-11	648	698	8
214	Madadhakeri	117	125	7	284	479	69	172	194	13	573	798	39
215	Mathodu	119	130	10	285	454	59	177	208	17	580	791	36
216	Srirampura	115	152	32	273	454	67	176	201	14	564	807	43

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
41	Molakalmuru	99	58	-42	282	567	101	164	128	-22	545	753	38
217	Molakalmuru	99	56	-43	282	530	88	164	106	-36	545	692	27
218	Devasamudra	77	59	-22	206	608	195	118	154	30	400	821	105
8	DAVANAGERE	105	114	8	393	540	38	161	172	7	659	826	25
42	Channagiri	128	108	-15	533	568	7	180	157	-13	840	832	-1
219	Channagiri	128	116	-9	533	572	7	180	158	-12	840	847	1
220	Basavapatna_1	107	71	-34	424	580	37	173	165	-4	703	816	16
221	Basavapatna_2	105	65	-38	407	548	35	170	192	13	682	806	18
222	Santebannur_1	99	91	-8	430	585	36	181	179	-1	710	855	20
223	Santebannur_2	111	93	-16	453	535	18	177	155	-13	741	783	6
224	Ubrani	120	149	25	459	567	23	173	128	-26	752	843	12
43	Davanagere	102	140	38	373	569	53	167	198	18	641	907	41
225	Davangere	102	134	32	373	501	34	167	168	1	641	804	25
226	Anogodu	95	160	69	353	570	62	151	188	24	599	918	53
227	Mayakonda	98	121	23	381	649	70	160	244	53	639	1013	59
44	Harihara	119	91	-23	347	447	29	164	136	-17	630	674	7
228	Harihara	119	87	-27	347	403	16	164	123	-25	630	612	-3
229	Malebennur	96	95	-1	344	483	40	147	146	0	586	724	23
45	Honnali	111	81	-27	366	553	51	184	191	3	662	824	25
230	Honnali	111	84	-24	366	542	48	184	189	3	662	816	23
231	Govinakovi_2	111	73	-34	374	483	29	183	159	-13	667	715	7
232	Sasavehalli_1	112	77	-31	428	575	34	180	205	14	719	857	19
233	Sasavehalli_2	104	83	-20	375	593	58	161	195	21	640	871	36
46	Jagalur	100	114	14	287	487	70	141	177	26	528	778	47
234	Jagalur	100	78	-21	287	472	64	141	193	37	528	744	41
235	Bilichodu	79	135	70	302	507	68	122	148	22	504	790	57
236	Sokke	94	135	45	347	488	40	133	183	37	574	807	40

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
47	Nyamati	115	135	17	535	612	14	176	172	-2	826	919	11
237	Belagutti	115	146	26	535	632	18	176	149	-15	826	927	12
238	Govinakovi_1	112	105	-6	416	555	34	183	234	28	710	895	26
9	CHAMARAJANAGARA	203	229	13	320	434	35	263	222	-16	787	885	13
48	Chamarajanagara	203	215	6	312	416	33	254	221	-13	770	852	11
239	Chamarajanagara	203	208	3	312	441	41	254	246	-3	770	895	16
240	Chandakavadi	207	223	8	327	426	30	259	242	-7	793	892	12
241	Haradhanalli	204	192	-6	315	363	15	255	209	-18	774	764	-1
242	Harve	207	190	-8	307	402	31	238	175	-27	752	767	2
243	Santemarahalli	212	262	23	362	446	23	263	220	-17	838	927	11
49	Gundlupet	236	267	13	274	374	37	282	146	-48	792	788	-1
244	Gundlupet	236	227	-4	274	357	30	282	134	-52	792	718	-9
245	Begur	199	180	-10	259	355	37	190	110	-42	648	645	-1
246	Terakanambi	219	251	14	293	307	5	254	168	-34	766	727	-5
247	Hangala	220	317	44	310	406	31	254	157	-38	784	880	12
50	Kollegal	200	256	28	367	461	25	276	244	-12	843	961	14
248	Kollegala	200	303	51	367	483	31	276	243	-12	843	1029	22
249	Palya	194	232	19	349	449	29	260	245	-6	802	926	15
51	Yelandur	218	255	17	377	490	30	272	256	-6	867	1001	15
250	Yelandur	218	266	22	377	461	22	272	232	-15	867	959	11
251	Agara	192	250	30	339	504	48	240	267	11	771	1021	32
52	Hanur	192	208	8	284	467	65	278	258	-7	754	933	24
252	Hanur	192	280	46	284	456	61	278	236	-15	754	972	29
253	Lokkanahalli	194	225	16	309	441	43	278	248	-11	781	915	17
254	Ramapura	198	176	-11	321	479	49	292	269	-8	811	924	14
10	MYSURU	205	210	2	419	443	6	214	170	-20	837	822	-2
53	Heggadadevanakote	233	187	-20	409	557	36	194	95	-51	837	838	0

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
255	Heggadadevanakote	233	211	-10	409	597	46	194	87	-55	837	895	7
256	Antarasante	231	170	-26	594	548	-8	206	81	-61	1031	799	-23
257	Hampapura	205	174	-15	376	489	30	184	141	-23	764	805	5
54	Hunsur	208	191	-8	369	495	34	223	186	-16	799	872	9
258	Hunsur	208	166	-20	369	448	21	223	244	10	799	858	7
259	Bilikere	200	170	-15	346	490	42	218	201	-8	764	861	13
260	Gowdargyare	197	165	-16	356	399	12	214	203	-5	767	768	0
261	Hanagoadu	218	231	6	543	565	4	215	135	-37	976	932	-5
55	Krishnarajanagar	193	188	-3	321	329	2	221	191	-13	735	708	-4
262	Krishnarajanagar	193	212	10	321	391	22	221	301	37	735	904	23
263	Chanachanakatte	181	154	-15	310	320	3	207	133	-36	698	607	-13
264	Hebbalu	189	199	5	314	369	18	218	187	-14	721	755	5
265	Hasa Agrahar	179	225	26	283	309	9	220	189	-14	682	723	6
266	Mirale	179	181	1	297	280	-6	214	176	-18	690	636	-8
267	Saligram	178	167	-6	288	302	5	196	166	-15	662	635	-4
56	Mysuru	223	255	14	354	406	15	234	252	8	810	912	13
268	Mysuru	223	282	27	354	367	4	234	260	11	810	909	12
269	Elivala	202	222	10	327	418	28	228	277	21	757	918	21
270	Jayapura	208	252	21	358	446	25	208	193	-7	774	892	15
271	Varuna	195	258	33	330	385	17	214	289	35	738	933	26
57	Nanjanagud	201	189	-6	322	407	26	207	178	-14	730	774	6
272	Nanjangud	201	196	-2	322	392	22	207	156	-25	730	743	2
273	Biligere	189	196	4	335	423	26	201	254	26	726	873	20
274	Chikkayyana Chattra	200	219	10	325	436	34	208	218	5	732	873	19
275	Hullahalli	211	175	-17	377	365	-3	201	131	-35	788	671	-15
276	Doddakowlande	199	176	-11	313	459	47	220	197	-10	731	832	14
58	Periyapatna	206	177	-14	437	489	12	209	133	-36	852	799	-6

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
277	Periyapatna	206	171	-17	437	565	29	209	118	-44	852	854	0
278	Bettadpur	184	218	18	378	391	3	207	173	-17	770	782	2
279	Haranahalli	183	149	-19	563	525	-7	211	125	-41	957	799	-17
280	Ravanduru	193	181	-6	406	432	7	211	125	-40	810	739	-9
59	T.Narasipura	178	278	56	338	373	10	222	265	19	738	916	24
281	T.Narasipur	178	288	62	338	336	-1	222	339	52	738	962	30
282	Bannur	182	320	76	321	338	5	219	203	-7	721	862	20
283	Muguru	198	261	32	346	399	15	238	237	-1	781	897	15
284	Sosale	178	265	49	337	348	3	222	293	32	738	907	23
285	Talakad	196	257	31	343	439	28	238	260	9	777	957	23
60	Saraguru	238	251	5	492	397	-19	219	82	-62	949	730	-23
286	Saraguru	238	232	-3	492	398	-19	219	97	-56	949	727	-23
287	B.Matakere	230	266	16	489	395	-19	219	71	-68	937	733	-22
11	MANDYA	166	229	38	316	372	18	217	219	1	699	820	17
61	Krishnarajapet	197	216	10	317	311	-2	233	206	-12	747	733	-2
288	Krishnarajapet	197	222	13	317	305	-4	233	218	-7	747	746	0
289	Akkihebalu	180	222	23	297	283	-5	223	178	-20	699	682	-2
290	Bukanakere	185	219	18	296	308	4	220	294	34	700	821	17
291	Kikkeri	172	179	4	329	266	-19	218	134	-38	719	580	-19
292	Santebachahalli	151	235	56	297	373	26	205	208	2	652	816	25
293	Silanare	183	220	20	297	323	8	218	191	-12	698	733	5
62	Maddur	170	237	40	358	397	11	239	220	-8	767	854	11
294	Madduru_2	170	275	63	358	379	6	239	262	9	767	916	19
295	Koppa_2	162	222	37	473	401	-15	248	179	-28	883	803	-9
296	Chikkaarasinakere_1	171	271	59	351	412	17	231	243	5	753	926	23
297	Autaguru	166	225	36	382	401	5	231	204	-12	779	831	7
298	Madduru_1	164	259	58	360	379	5	233	247	6	758	885	17

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
299	Koppa_2	147	188	28	377	459	22	215	261	21	739	908	23
300	Koppa_1	158	192	21	437	367	-16	237	173	-27	832	732	-12
301	Koppa_3	166	233	41	370	412	11	233	225	-3	769	871	13
302	Chikaarasinakere_2	173	261	50	341	393	15	228	230	1	742	883	19
303	Chikaarasinakere_3	169	206	22	337	372	11	229	184	-20	734	762	4
63	Malavalli	173	192	11	314	410	31	216	244	13	703	846	20
304	Malavalli_1	173	142	-18	314	377	20	216	225	4	703	744	6
305	Halaguru	183	203	11	379	436	15	237	243	2	799	881	10
306	Kirgavalu_1	175	233	33	322	411	28	222	210	-5	719	854	19
307	B G Pura_2	188	190	1	341	445	30	249	275	11	778	911	17
308	Malavalli_2	177	208	17	339	382	13	232	267	15	748	857	15
309	Malavalli_3	177	240	36	362	409	13	234	247	6	772	897	16
310	Kirgavalu_2	172	148	-14	327	391	20	222	210	-5	721	749	4
311	Kirgavalu_3	177	190	8	322	377	17	220	234	7	719	802	12
312	B G Pura_1	189	181	-4	344	378	10	240	235	-2	773	794	3
64	Mandya	162	235	45	309	361	17	229	187	-18	699	783	12
313	Mandya_1	162	248	53	309	384	25	229	236	3	699	869	24
314	Basaralu_1	138	207	50	283	299	6	189	139	-26	610	644	6
315	Dudda_1	154	235	53	290	348	20	205	189	-8	649	771	19
316	Keragodu_1	155	208	34	358	386	8	222	159	-29	735	753	2
317	Kottatti_1	166	290	75	307	365	19	224	212	-5	697	867	24
318	Mandya_2	163	266	63	345	377	9	228	237	4	737	880	19
319	Kottatti_2	166	273	65	316	403	28	227	211	-7	709	887	25
320	Keragodu_2	161	195	21	359	329	-8	227	164	-28	747	688	-8
321	Dudda_2	159	241	52	305	385	26	217	245	13	681	871	28
322	Basaralu_2	158	190	20	407	383	-6	231	120	-48	796	693	-13
65	Nagamangala	191	235	23	326	388	19	248	209	-16	765	832	9

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
323	Nagamangala	191	239	25	326	371	14	248	209	-16	765	819	7
324	Belluru	104	269	159	250	430	72	167	280	68	520	978	88
325	Bendaganavele	108	217	101	261	438	68	187	217	16	556	873	57
326	Devalapura	149	234	57	334	420	26	209	195	-7	692	849	23
327	Honakere	115	217	89	189	285	51	161	151	-7	465	653	40
66	Pandavapura	183	255	39	277	383	38	220	255	16	679	892	31
328	Pandavapura_1	183	272	49	277	415	50	220	268	22	679	956	41
329	Chinkurali	182	249	37	287	363	26	216	288	33	684	900	32
330	Melukote	185	258	39	303	376	24	214	209	-2	702	843	20
331	Pandavapura_2	171	236	38	279	419	50	211	228	8	660	883	34
67	Srirangapatna	169	267	58	272	358	31	197	223	13	638	847	33
332	Srirangapatna	169	291	72	272	333	22	197	246	25	638	870	36
333	Arakere	178	306	72	304	358	18	218	174	-20	701	838	20
334	Belagola	200	202	1	319	406	27	229	294	29	748	902	21
335	K Shettihalli_2	172	227	32	276	344	25	203	212	5	650	784	21
336	K Shettihalli_1	170	240	41	274	355	30	199	210	6	643	805	25
12	BALLARI	92	100	9	368	547	49	154	167	9	614	814	33
68	Ballari	89	55	-38	282	545	93	145	115	-21	516	716	39
337	Ballari	89	66	-25	282	481	70	145	145	0	516	692	34
338	Moka	81	54	-34	296	612	107	147	107	-27	524	773	48
339	Rupanagudi	84	45	-47	277	548	98	143	97	-32	505	690	37
340	Koluru	75	50	-33	299	579	93	151	94	-38	525	724	38
69	Hadagali	111	145	30	369	456	24	161	195	22	641	796	24
341	Hadagali	111	156	40	369	452	22	161	201	25	641	809	26
342	Hirehadagalli	114	135	19	378	431	14	161	208	30	652	775	19
343	Ittigi	107	137	28	409	488	19	150	174	16	667	800	20
70	Hosapete	75	77	3	446	612	37	184	205	12	704	894	27

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
344	Hospet	75	80	7	446	644	45	184	232	27	704	956	36
345	Kamalapura	69	44	-36	421	583	38	168	185	10	658	811	23
346	Mariyammanahalli	79	107	36	434	629	45	160	215	34	673	952	41
71	Hagaribommanahalli	90	141	57	398	505	27	147	208	42	635	853	34
347	Hagaribommanahalli	90	128	42	398	446	12	147	195	33	635	768	21
348	Hampa Sagara	102	197	94	367	449	23	149	183	23	617	830	35
349	Tambarahalli	91	116	28	393	577	47	144	236	63	628	928	48
350	Kogali	93	140	51	387	503	30	137	201	46	617	843	37
72	Kudligi	88	80	-9	365	541	48	136	147	7	590	768	30
351	Kudligi	88	107	22	365	577	58	136	175	29	590	860	46
352	Gudekote	91	74	-19	289	578	100	141	137	-3	521	789	51
353	Hosahalli	93	75	-20	270	479	77	141	143	2	504	697	38
73	Sandur	126	83	-34	506	709	40	186	216	16	819	1008	23
354	Sandur	126	87	-31	506	778	54	186	240	29	819	1105	35
355	Choranuru	93	92	-1	384	727	90	150	229	52	627	1048	67
356	Toranagallu	87	66	-24	366	588	61	159	166	5	612	820	34
74	Siruguppa	70	67	-4	438	577	32	167	115	-31	675	759	12
357	Siruguppa	70	58	-17	438	591	35	167	148	-11	675	797	18
358	Hachcholli	66	89	35	431	519	21	159	96	-40	655	704	7
359	Karuru	71	54	-25	334	592	77	158	97	-38	563	743	32
360	Tekkalakote	70	73	5	394	587	49	166	121	-27	630	781	24
75	Harappanahalli	130	167	29	436	473	9	190	193	2	755	833	10
361	Harapanahalli	130	204	57	436	472	8	190	176	-7	755	852	13
362	Arasikere	108	135	24	394	480	22	154	252	64	656	867	32
363	Chigateri	119	183	54	486	498	2	156	181	16	761	862	13
364	Telagi	116	150	29	385	442	15	165	155	-6	665	747	12
76	Kurugodu	69	64	-7	275	516	88	156	105	-32	499	685	37

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
365	Kurugodu	69	55	-19	275	518	88	156	110	-29	499	683	37
366	Koluru	75	76	2	286	513	79	152	98	-36	514	687	34
77	Kotturu	84	100	20	342	492	44	107	166	55	533	758	42
367	Kotturu	84	88	5	342	501	46	107	158	47	533	747	40
368	Kogali	101	155	54	400	394	-1	141	160	14	641	709	11
369	Hoshalli	93	94	1	331	576	74	136	218	61	560	888	59
78	Kampli	62	57	-7	310	557	80	160	132	-18	531	746	40
370	Kampli	62	54	-12	310	566	83	160	137	-14	531	757	43
371	Kurugodu	64	71	12	331	513	55	158	106	-33	553	691	25
13	KOPPALA	82	100	22	383	554	45	149	196	31	614	849	38
79	Gangavathi	61	72	19	384	522	36	139	132	-5	583	726	25
372	Gangavathi	61	83	36	384	613	60	139	130	-6	583	826	42
373	Marali	62	73	18	360	455	26	149	114	-23	571	642	12
374	Venkatagiri	61	64	6	374	511	37	151	145	-4	586	721	23
80	Koppala	73	92	27	416	593	43	147	242	65	635	927	46
375	Koppal	73	97	33	416	560	35	147	272	86	635	929	46
376	Alawandi	103	87	-16	339	461	36	145	237	63	587	785	34
377	Hitnal	74	95	28	417	683	64	149	215	45	640	993	55
378	Irkalgada	79	93	18	399	778	95	149	222	49	627	1093	74
81	Kushtagi	81	111	37	361	543	50	154	192	25	597	846	42
379	Kushtagi	81	135	66	361	548	52	154	216	40	597	898	51
380	Hanumanhal	95	94	-1	421	637	51	143	180	26	658	911	38
381	Hanamsagar	92	114	23	399	501	26	136	201	48	627	816	30
382	Tavaragera	72	92	27	368	520	41	151	160	6	591	773	31
82	Yelburga	86	124	44	377	528	40	134	177	33	597	829	39
383	Yelburga	86	126	46	377	537	42	134	180	35	597	843	41
384	Hire Wankalkunti	79	120	52	368	508	38	147	171	16	595	799	34

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
83	Karatagi	73	82	11	387	620	60	179	134	-25	640	836	31
385	Karatgi	73	98	34	387	671	73	179	142	-21	640	911	42
386	Siddapur	66	64	-3	363	567	56	164	125	-23	593	757	28
84	Kukanuru	123	99	-19	414	524	27	157	223	42	693	846	22
387	Kukanoor	123	110	-10	414	502	21	157	221	41	693	834	20
388	Manglur	90	73	-19	394	574	45	146	225	54	630	872	38
85	Kanakagiri	52	93	80	331	531	61	143	176	23	525	800	52
389	Kanakagiri	52	87	69	331	565	71	143	219	53	525	871	66
390	Hulihaidar	60	106	77	352	490	39	146	178	22	558	775	39
391	Nauli	64	88	37	369	530	43	161	127	-21	595	745	25
14	RAICHUR	69	72	5	440	612	39	146	142	-3	654	826	26
86	Deodurga	81	59	-28	517	602	16	160	137	-14	759	798	5
392	Devadurga	81	59	-28	517	647	25	160	157	-2	759	863	14
393	Arakeri	69	48	-31	454	538	19	135	123	-9	658	709	8
394	Gabbur	70	88	25	482	643	33	130	135	3	683	866	27
395	Jalihalli	69	37	-46	472	564	19	148	130	-12	690	732	6
87	Lingsugur	73	72	-2	403	567	41	155	157	1	631	796	26
396	Lingasuguru	73	70	-4	403	554	38	155	158	2	631	782	24
397	Gurgunta	66	62	-6	410	560	37	146	167	14	622	789	27
398	Mudgal	74	86	15	395	587	49	155	144	-7	624	817	31
88	Manvi	61	96	57	450	603	34	141	123	-13	652	822	26
399	Manvi	61	106	72	450	619	38	141	132	-6	652	857	32
400	Hire Katankal	63	105	67	437	561	28	145	130	-10	644	795	24
401	Kurdi	67	75	12	466	624	34	130	103	-21	663	802	21
89	Raichur	80	66	-18	512	751	47	144	123	-15	736	940	28
402	Raichur	80	51	-36	512	787	54	144	122	-16	736	960	30
403	Chandrabanda	76	31	-60	520	823	58	137	128	-7	733	982	34

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
404	Devarsugur	74	40	-46	518	756	46	132	116	-12	723	911	26
405	Gilasuguru	71	93	32	419	664	59	120	119	-1	610	877	44
406	Kalmali	70	97	39	477	740	55	132	141	7	678	978	44
407	Yergara	64	72	14	580	741	28	120	110	-8	763	924	21
90	Sindhanur	68	69	1	443	529	19	180	175	-3	691	772	12
408	Sindhanur	68	50	-26	443	526	19	180	186	3	691	762	10
409	Badarli	68	61	-11	427	528	23	167	183	9	663	771	16
410	Gorebal	69	35	-49	405	477	18	174	170	-2	649	683	5
411	Gunjihalli	67	74	11	400	545	36	168	215	28	634	833	31
412	Hadganhal	66	105	59	430	567	32	158	169	7	655	841	29
413	Huda	70	32	-54	411	517	26	169	170	0	650	719	11
414	Jalihal	71	68	-4	393	508	29	174	135	-22	638	712	12
415	Jawalgeri	66	94	43	421	617	47	169	171	1	656	882	35
416	Kunatgi	66	51	-23	422	558	32	172	178	4	660	787	19
417	Salgundi	69	39	-43	423	548	30	168	206	22	660	793	20
418	Turvihal	67	93	39	394	471	19	166	153	-8	627	717	14
419	Walkamdinni	65	122	88	424	549	30	156	184	18	645	855	33
91	Maski	59	89	50	349	582	67	149	150	0	558	821	47
420	Maski	59	98	65	349	538	54	149	143	-4	558	779	40
421	Halapur	62	66	8	373	647	73	151	149	-1	586	862	47
422	Pamankallur	65	69	5	387	594	54	150	130	-13	601	793	32
423	Balganur	63	70	11	380	666	75	155	168	9	598	904	51
424	Gunjihalli	66	119	81	384	567	48	159	188	18	609	875	44
425	Turvihal	69	103	49	378	606	60	156	137	-12	603	847	40
426	Gudadur	61	98	62	360	597	66	152	185	22	573	880	54
427	Lingsugur	65	94	45	375	549	46	152	137	-9	592	780	32
92	Sirivara	65	62	-5	399	633	59	124	111	-11	589	806	37

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
428	Sirwar	65	56	-14	399	604	51	124	121	-2	589	781	33
429	Kallur	68	69	1	472	583	23	131	123	-6	671	775	15
430	Mallat	67	60	-11	426	689	62	131	87	-33	624	836	34
431	Kavital	64	64	0	413	652	58	145	113	-21	622	830	33
15	KALABURAGI	67	65	-3	576	823	43	127	180	41	770	1068	39
93	Afzalpur	66	77	16	506	680	35	121	186	54	692	943	36
432	Afzalpur	66	85	30	506	676	34	121	166	37	692	927	34
433	Atanur	65	79	23	518	731	41	124	201	62	707	1011	43
434	Karajgi	62	66	6	481	628	31	121	188	56	664	882	33
94	Aland	69	69	0	572	783	37	123	188	53	763	1039	36
435	Aland	69	82	20	572	794	39	123	218	78	763	1094	43
436	Khajuri	67	52	-23	569	817	44	120	160	33	757	1029	36
437	Madana Hipparga	67	78	15	545	741	36	123	172	40	735	991	35
438	Narona	66	80	21	577	858	49	123	239	95	766	1177	54
439	Nimbarga Tanda	68	58	-15	569	741	30	125	166	33	761	965	27
95	Chincholi	68	44	-35	709	855	21	136	186	36	913	1085	19
440	Chincholi	68	38	-44	709	870	23	136	181	33	913	1089	19
441	Ainapur	67	52	-23	608	868	43	108	178	65	783	1098	40
442	Sulepet	69	41	-40	675	817	21	130	205	58	874	1064	22
443	Kodli Chincholi	68	57	-17	695	867	25	133	169	27	896	1092	22
96	Chittapur	85	68	-20	570	844	48	117	177	51	771	1088	41
444	Chittapur	85	79	-7	570	891	56	117	191	64	771	1162	51
445	Gundgurti	72	38	-47	578	751	30	126	191	51	777	980	26
446	Nalavara	73	72	-1	579	848	47	140	159	14	791	1079	36
97	Kalaburagi	68	60	-11	600	858	43	127	186	47	794	1105	39
447	Kalaburagi	68	92	37	600	918	53	127	226	79	794	1237	56
448	Aurad	65	57	-12	589	925	57	123	199	62	777	1182	52

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
449	Farhatabad	68	50	-26	576	785	36	136	154	14	779	989	27
450	Pattan	66	52	-21	581	834	44	125	185	48	772	1072	39
98	Jevargi	76	85	13	580	764	32	149	152	2	805	1001	24
451	Jewargi	76	85	12	580	808	39	149	154	3	805	1047	30
452	Andola	73	73	0	573	782	36	146	150	3	792	1005	27
453	Nelogi	67	98	45	548	710	30	138	153	11	753	960	28
99	Sedam	73	75	4	593	974	64	126	179	42	791	1228	55
454	Sedam	73	52	-28	593	924	56	126	197	57	791	1174	48
455	Adki	70	70	1	610	1099	80	128	156	22	807	1325	64
456	Kodla	73	75	3	598	895	50	129	176	37	799	1147	43
457	Mudhol	69	108	55	612	1038	70	126	176	40	807	1321	64
100	Kalagi	71	44	-37	577	843	46	118	216	83	766	1104	44
458	Kalagi	71	45	-36	577	850	47	118	215	82	766	1110	45
459	Kodli	70	38	-46	587	853	45	118	203	72	774	1094	41
460	Gundgurti	70	55	-21	581	801	38	122	250	104	773	1106	43
101	Kamalapura	58	76	31	592	1011	71	112	208	85	762	1295	70
461	Kamalapur	58	80	38	592	993	68	112	204	82	762	1277	68
462	Mahagaon Tanda	63	58	-9	591	1052	78	117	220	88	772	1330	72
463	Narona	63	91	46	594	1037	75	114	207	82	770	1336	73
464	Ainapur	66	81	21	601	855	42	112	178	58	780	1113	43
102	Yadrami	55	50	-9	502	694	38	130	116	-11	687	859	25
465	Yadrami	55	51	-7	502	674	34	130	127	-2	687	853	24
466	Ijeri	68	48	-30	540	725	34	142	97	-32	750	870	16
103	Shahbadha	60	40	-34	547	869	59	152	194	28	758	1102	45
467	Shahabad	60	39	-34	547	869	59	152	194	28	758	1102	45
16	BIDAR	71	81	14	650	814	25	117	154	32	838	1049	25
104	Aurad	68	82	22	681	766	13	106	113	6	854	962	13

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
468	Aurad	68	79	17	681	747	10	106	103	-3	854	929	9
469	Chintaki	68	80	18	690	801	16	115	113	-2	872	994	14
470	Santpur	66	88	33	693	762	10	116	125	7	874	974	11
105	Bidar	82	97	19	717	837	17	140	163	16	939	1097	17
471	Bidar	82	134	64	717	925	29	140	172	22	939	1231	31
472	Bagadhal	72	55	-24	651	797	22	119	142	20	843	995	18
473	Bidar South	81	90	10	714	787	10	139	166	20	935	1043	12
474	Janwada	77	122	59	702	895	28	131	145	11	909	1162	28
475	Kamthana	80	118	47	695	794	14	131	175	33	906	1086	20
476	Manalli	78	83	7	683	825	21	129	185	44	890	1093	23
106	Bhalki	80	72	-10	677	740	9	117	145	24	874	957	10
477	Bhalki	80	66	-18	677	687	1	117	164	40	874	917	5
478	Halburga	75	78	4	680	833	23	120	151	26	875	1062	21
479	Khatak Chincholi	75	70	-7	642	791	23	115	171	48	833	1033	24
480	Lakangaon	71	64	-10	683	725	6	124	136	10	877	925	5
481	Nittur Buzurg	70	66	-5	686	702	2	117	133	14	873	902	3
482	Saigaon	62	85	36	599	715	19	108	123	14	769	923	20
107	Basavakalyan	69	77	13	609	866	42	112	190	70	790	1134	43
483	Basavakalyan	69	75	8	609	768	26	112	176	57	790	1019	29
484	Kohinoor	65	94	44	594	983	66	116	239	107	775	1316	70
485	Matala	68	77	14	605	819	35	114	153	34	787	1048	33
486	Mudabi	66	79	19	601	948	58	111	230	106	779	1257	61
487	Rajeshwar	76	65	-15	624	830	33	112	163	45	813	1057	30
108	Humnabad	84	96	15	636	880	38	114	158	38	834	1135	36
488	Humnabad	84	80	-5	636	879	38	114	139	22	834	1098	32
489	Dubalgundi	75	105	40	633	913	44	113	188	66	822	1206	47
490	Hallikheda	74	111	49	639	831	30	114	143	26	827	1085	31

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
109	Chittaguppa	67	62	-6	592	886	50	101	164	62	759	1112	46
491	Chitguppa	67	69	4	592	875	48	101	179	77	759	1124	48
492	Bhimalkhed	71	37	-48	648	893	38	120	161	35	838	1091	30
493	Nirna	69	76	9	615	892	45	110	148	35	794	1116	41
110	Kamalanagara	71	66	-6	701	774	11	131	112	-15	902	952	6
494	Kamalnagar	71	59	-17	701	758	8	131	111	-15	902	928	3
495	Dabaka C.	69	66	-5	690	874	27	118	127	7	877	1067	22
496	Thanakushanur	70	81	16	686	688	0	117	95	-19	873	864	-1
111	Hulasuru	58	95	64	577	788	37	105	196	87	739	1080	46
497	Hulsoor	58	95	65	577	788	37	105	196	87	739	1080	46
17	BELAGAVI	95	78	-18	599	772	29	133	144	8	826	993	20
112	Athani	79	85	7	326	456	40	134	171	28	539	712	32
498	Athani	79	83	4	326	434	33	134	173	29	539	689	28
499	Anantapur	71	78	11	325	431	33	121	178	47	517	687	33
500	Telsang	58	91	59	326	492	51	124	164	33	507	748	47
113	Bailhongal	115	94	-18	564	651	16	137	113	-18	816	858	5
501	Bailhongal	115	92	-20	564	638	13	137	96	-30	816	826	1
502	Nesargi	115	96	-17	518	660	27	137	128	-7	771	884	15
114	Belagavi	156	107	-32	1046	1097	5	162	126	-22	1363	1330	-2
503	Belagavi	156	100	-36	1046	1169	12	162	131	-19	1363	1400	3
504	Hirebagevadi	113	78	-31	787	910	16	141	134	-5	1041	1122	8
505	Kakti	135	126	-7	845	864	2	150	138	-8	1131	1128	0
506	Uchagaon	131	118	-10	1059	1480	40	151	105	-31	1341	1702	27
115	Chikkodi	93	47	-49	441	599	36	132	169	28	666	815	22
507	Chikkodi	93	47	-50	441	621	41	132	163	24	666	832	25
508	Nagaramonnali	94	51	-46	410	560	37	131	155	19	634	767	21
509	Sadalgi	87	43	-51	450	608	35	126	203	61	663	853	29

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
116	Gokak	99	66	-33	296	489	65	130	129	0	524	684	30
510	Gokak	99	73	-26	296	492	66	130	127	-2	524	691	32
511	Kowjalgi	88	68	-23	321	486	51	128	119	-7	537	672	25
512	Arbhavi	96	45	-53	336	484	44	129	148	15	560	677	21
117	Hukkeri	120	82	-32	384	591	54	145	171	18	649	843	30
513	Hukkeri	120	63	-48	384	506	32	145	168	16	649	736	13
514	Sankeswar	100	85	-14	553	630	14	160	187	17	812	902	11
515	Yamkanmardi	101	96	-5	454	633	39	130	161	24	685	890	30
118	Khanapur	112	88	-22	1681	2021	20	157	115	-27	1950	2223	14
516	Khanapur	112	66	-41	1681	1266	-25	157	123	-22	1950	1454	-25
517	Bidi	102	69	-32	1170	1197	2	142	90	-37	1413	1357	-4
518	Gunji	91	91	0	2022	2303	14	151	115	-24	2263	2508	11
519	Jamboti	96	105	9	1617	2532	57	143	122	-14	1856	2759	49
119	Ramadurga	87	83	-4	318	468	47	136	125	-8	540	676	25
520	Ramdurg	87	66	-24	318	410	29	136	108	-21	540	583	8
521	Bidki	91	74	-19	316	533	69	127	138	9	534	745	40
522	Katkol	91	108	19	317	475	50	128	128	0	536	711	33
523	Mudkavi	81	77	-4	331	421	27	131	118	-10	543	616	14
120	Raibagh	72	58	-20	301	454	51	111	174	57	483	685	42
524	Raibagh	72	50	-31	301	467	55	111	158	43	483	675	40
525	Kudchi	76	64	-15	342	442	29	111	187	68	529	693	31
121	Soundatti	107	66	-38	332	534	61	129	136	5	568	736	30
526	Savadatti	107	60	-44	332	603	81	129	142	11	568	806	42
527	Manoli	101	55	-45	331	502	52	130	126	-3	562	684	22
528	Muragoda	102	69	-32	376	512	36	129	126	-2	607	707	17
529	Yargatti	96	79	-17	314	514	64	123	145	18	533	738	39
122	Kitthuru	125	110	-12	768	881	15	142	116	-18	1036	1107	7

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
530	Kittur	125	109	-13	768	873	14	142	114	-20	1036	1096	6
123	Nippani	87	58	-33	627	740	18	125	158	26	838	956	14
531	Nippani	87	66	-24	627	811	29	125	148	18	838	1025	22
532	Sadalgi	89	48	-46	548	648	18	129	171	32	767	867	13
124	Kagavada	77	57	-25	361	432	20	103	174	69	541	663	23
533	Kagwad	77	57	-25	361	432	20	103	174	69	541	663	23
125	Mudagali	97	79	-18	307	507	65	129	177	37	534	763	43
534	Arbhavi	97	84	-13	307	482	57	129	182	40	534	748	40
535	Kowjalgi	80	75	-7	320	530	66	128	172	34	529	777	47
18	BAGALKOTE	80	59		362	518	43	141	162	15	582	739	27
126	Badami	86	70	-18	372	481	29	142	137	-3	600	688	15
536	Badami	86	82	-4	372	506	36	142	135	-5	600	723	21
537	Kerur	81	62	-23	351	474	35	138	136	-2	570	672	18
538	Kulgeri	89	66	-26	357	464	30	136	141	3	583	671	15
127	Bagalkote	79	39	-51	375	482	29	159	139	-12	613	660	8
539	Bagalkote	79	39	-50	375	487	30	159	140	-12	613	667	9
540	Kaladgi	76	36	-53	335	494	47	137	129	-6	548	659	20
541	Rampura	77	41	-46	396	467	18	139	146	5	612	654	7
128	Bilgi	87	31	-65	366	474	29	156	139	-11	609	644	6
542	Bilgi	87	29	-67	366	448	22	156	135	-14	609	612	0
543	Anagvadi	80	32	-60	367	500	36	152	144	-5	599	677	13
129	Hungund	97	69	-28	418	595	42	156	184	18	670	848	27
544	Hungund	97	63	-35	418	615	47	156	175	13	670	853	27
545	Amingarh	90	82	-8	397	577	45	146	182	25	633	841	33
546	Karadi	89	67	-25	407	575	41	156	203	30	652	845	30
130	Jamkhandi	74	51	-31	337	487	45	138	141	3	548	680	24
547	Jamakhandi	74	46	-38	337	470	39	138	146	6	548	661	21

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
548	Savalagi	65	53	-18	333	501	51	132	135	2	530	689	30
549	Terdal	74	67	-9	333	495	49	136	165	21	543	726	34
131	Mudhol	82	63	-23	323	546	69	128	201	57	532	810	52
550	Mudhol	82	60	-26	323	511	58	128	216	69	532	787	48
551	Lokapur	66	66	0	284	583	106	123	185	51	473	835	77
132	Guledagudda	74	62	-17	398	564	42	135	175	30	607	801	32
552	Guledagudda	74	61	-17	398	564	42	135	175	30	607	800	32
133	Ilkal	104	94	-10	401	570	42	146	182	25	651	846	30
553	Ilkal	104	98	-6	401	554	38	146	169	15	651	820	26
554	Amingarh	89	72	-19	406	571	41	141	198	41	636	841	32
555	Karadi	91	111	23	408	617	51	155	201	30	654	929	42
134	Rabakavi Banahatti	64	60	-6	301	526	75	131	210	61	496	797	61
556	Terdal	64	62	-4	301	528	75	131	212	62	496	802	62
557	Mudhol	84	55	-35	338	519	53	127	203	60	550	777	41
19	VIJAYAPURA	63	60	-4	396	544	37	133	133	0	591	737	25
135	Basavanabagevadi	87	59	-32	426	604	42	156	142	-9	669	804	20
558	Basavana Bagewadi	87	55	-37	426	617	45	156	162	4	669	834	25
559	Huvin Hippargi	80	88	10	416	587	41	151	125	-17	647	800	24
560	Managuli	72	34	-53	391	607	55	146	138	-5	608	779	28
136	Vijayapura	84	75	-11	428	511	19	159	130	-18	671	716	7
561	Vijayapura	84	63	-25	428	526	23	159	132	-17	671	721	7
562	Nagathan	25	92	272	261	490	88	107	126	19	392	708	81
137	Indi	62	64	2	437	487	12	121	132	9	620	682	10
563	Indi	62	67	8	437	475	9	121	132	9	620	673	9
564	Ballolli	48	60	25	402	500	24	113	132	16	563	692	23
138	Muddebihal	90	67	-25	393	594	51	169	140	-17	652	801	23
565	Muddebihal	90	61	-32	393	607	55	169	155	-9	652	822	26

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
566	Dhavalagi	81	48	-41	399	553	39	158	105	-34	638	706	11
567	Nalatvad	78	89	15	450	619	38	163	157	-3	691	866	25
139	Sindgi	61	71	16	469	619	32	128	129	1	658	818	24
568	Sindhagi	61	72	17	469	623	33	128	125	-2	658	820	25
569	Almel	60	70	16	463	613	33	124	134	8	646	816	26
140	Babaleshwara	56	43	-25	345	490	42	144	111	-23	545	644	18
570	Babaleshwar	56	53	-6	345	510	48	144	118	-18	545	681	25
571	Mamdapur	68	17	-75	358	440	23	143	93	-34	569	550	-3
141	Chadachana	57	44	-23	387	472	22	108	148	37	552	664	20
572	Chadchan	57	44	-23	387	472	22	108	148	37	552	663	20
142	Nidagundi	75	40	-46	402	533	33	139	139	0	616	712	16
573	Nidagundi	75	36	-52	402	532	32	139	138	-1	616	706	15
574	Basavana Bagewadi	80	45	-43	403	498	23	147	131	-11	631	674	7
575	Huvin Hipprgi	81	51	-37	399	550	38	149	137	-8	629	737	17
576	Muddebihal	75	37	-51	402	537	34	138	151	10	615	724	18
577	Dhavalagi	79	48	-40	399	579	45	146	173	19	624	800	28
143	Talikote	60	73	21	378	615	63	148	113	-24	586	800	37
578	Talikoti	60	72	21	378	609	61	148	118	-20	586	799	36
579	Devarhipargi	60	50	-16	404	662	64	134	117	-13	597	829	39
580	Dhavalagi	69	83	20	392	593	51	151	102	-32	612	779	27
581	Huvinhippargi	64	131	104	397	561	41	142	72	-49	603	764	27
144	Tikota	31	61	98	282	449	59	93	151	63	406	661	63
582	Tikota	31	61	98	282	449	59	93	151	63	406	661	63
145	Kolhara	82	34	-58	373	541	45	151	124	-18	606	699	15
583	Kolhar	82	34	-59	373	541	45	151	124	-18	606	699	15
146	Devara Hipparagi	67	52	-24	431	592	38	132	140	6	630	783	24
584	Devar Hipparagi	67	55	-18	431	591	37	132	137	3	630	783	24

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
585	Huvinhiprgi	67	31	-53	420	597	42	138	155	12	625	783	25
20	GADAG	106	117	11	372	486	31	147	131	-11	624	734	18
147	Gadag	121	136	12	379	512	35	159	118	-26	659	765	16
586	Gadag	121	133	10	379	537	42	159	121	-24	659	791	20
587	Betageri	120	138	15	377	491	30	158	115	-27	655	744	14
148	Mundargi	107	100	-6	307	449	46	143	155	8	557	704	26
588	Mundargi	107	88	-18	307	452	47	143	166	17	557	707	27
589	Dambal	80	107	33	265	447	69	116	148	27	462	702	52
149	Naragund	95	88	-8	331	492	49	131	124	-5	557	703	26
590	Naragund	95	91	-4	331	510	54	131	119	-9	557	720	29
591	Konnur	92	83	-9	356	466	31	136	130	-4	583	679	16
150	Ron	114	130	14	432	543	26	154	125	-19	699	798	14
592	Ron	114	141	24	432	555	28	154	128	-17	699	824	18
593	Hole Alur	94	124	31	387	539	39	142	120	-15	623	783	26
594	Nargil	107	121	13	412	527	28	149	132	-11	668	780	17
151	Shirahatti	119	106	-11	397	432	9	173	142	-18	689	680	-1
595	Shirahatti	119	106	-11	397	432	9	173	142	-18	689	680	-1
152	Gajendragad	106	132	25	488	514	5	143	139	-3	737	785	6
596	Rona	106	107	1	488	533	9	143	123	-14	737	763	3
597	Nargil	106	140	32	407	508	25	147	144	-2	660	792	20
153	Laxmeshwar	105	109	3	341	420	23	147	112	-24	594	640	8
598	Laxmeshwar	105	109	3	341	420	23	147	112	-24	594	640	8
21	HAVERI	122	89		512	547	7	166	128	-23	800	764	-4
154	Byadgi	121	68	-44	411	523	27	147	143	-3	679	733	8
599	Byadgi	121	73	-40	411	502	22	147	163	11	679	738	9
600	Kaginelli	118	61	-48	513	550	7	166	116	-30	797	727	-9
155	Hanagal	122	84	-31	755	744	-1	167	134	-20	1044	963	-8

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
601	Hangal	122	77	-37	755	806	7	167	136	-19	1044	1019	-2
602	Akki Alur	114	70	-38	786	691	-12	167	149	-11	1067	910	-15
603	Bommanhalli	126	105	-16	727	735	1	172	118	-31	1024	958	-6
156	Haveri	129	82	-36	476	487	2	173	143	-18	778	711	-9
604	Haveri	129	52	-59	476	471	-1	173	129	-26	778	652	-16
605	Guttal	107	109	3	351	457	30	161	152	-5	619	718	16
606	Karajgi	122	70	-43	447	543	21	163	142	-13	732	754	3
157	Hirekerur	118	93	-21	563	536	-5	176	112	-36	856	742	-13
607	Hirekerur	118	106	-10	563	515	-9	176	130	-26	856	750	-12
608	Haunsbhavi	121	81	-33	609	556	-9	187	96	-49	918	733	-20
158	Ranebennur	136	109	-19	339	417	23	148	112	-24	623	639	3
609	Ranebennur	136	103	-24	339	456	34	148	125	-15	623	684	10
610	Kuppelur	122	102	-17	418	352	-16	168	98	-42	708	551	-22
611	Medleri	123	121	-2	369	427	16	158	111	-30	651	660	1
159	Savanur	134	68	-49	413	494	20	153	127	-17	699	690	-1
612	Savanur	134	78	-41	413	500	21	153	140	-8	699	719	3
613	Hatti Mattur	124	60	-52	433	489	13	159	115	-28	717	664	-7
160	Shiggaon	127	104	-18	520	698	34	166	119	-28	814	921	13
614	Shiggaon	127	96	-24	520	545	5	166	137	-17	814	779	-4
615	Bankapur	119	122	2	521	678	30	168	113	-32	808	914	13
616	Dhundsi	128	97	-24	659	819	24	168	110	-34	955	1027	7
161	Ratteeahalli	130	91	-30	470	474	1	190	137	-28	790	702	-11
617	Rattihalli	130	93	-28	470	483	3	190	140	-26	790	717	-9
618	Hirekerur	124	82	-34	528	436	-17	177	126	-29	830	645	-22
22	DHARWAD	125	151	20	514	704	37	148	132	-10	787	987	25
162	Dharwad	135	143	6	490	782	60	153	156	2	777	1081	39
619	Dharwad	135	153	14	490	927	89	153	155	2	777	1235	59

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		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
620	Aminbhavi	135	109	-19	509	550	8	148	164	11	792	823	4
621	Garag	130	167	28	635	806	27	143	147	3	908	1120	23
163	Hubballi	125	159	27	491	623	27	155	117	-25	772	899	16
622	Chabbi	125	183	46	491	732	49	155	145	-6	772	1060	37
623	Shirguppi	126	144	15	422	556	32	151	99	-35	699	799	14
164	Kalghatgi	132	176	33	680	920	35	166	125	-25	979	1221	25
624	Kalghatgi	132	157	18	680	965	42	166	107	-35	979	1229	26
625	Dummavada	130	177	36	568	860	51	154	119	-23	852	1155	36
626	Tabkad Honnihalli	120	199	65	684	937	37	161	152	-5	965	1288	33
165	Kundgol	125	159	27	385	605	57	151	99	-35	661	863	30
627	Kundgol	125	157	25	385	697	81	151	120	-21	661	973	47
628	Saunshi	122	161	32	421	526	25	154	81	-47	696	768	10
166	Navalgund	138	114	-18	364	534	47	129	139	8	631	787	25
629	Moraba	138	114	-18	364	534	47	129	139	8	631	787	25
167	Hubballi Nagara	142	158	11	440	706	61	164	120	-27	746	985	32
630	Hubballi Urban	142	158	11	440	706	61	164	120	-27	746	985	32
168	Alnavara	105	92	-12	1024	1086	6	139	141	1	1267	1319	4
631	Alnavar	105	92	-12	1024	1086	6	139	141	1	1267	1319	4
169	Annigeri	106	179	69	407	589	45	138	155	12	651	923	42
632	Annigeri	106	179	69	407	589	45	138	155	12	651	923	42
23	SHIVAMOGGA	129	111	-14	1991	1804	-9	205	207	1	2325	2122	-9
170	Bhadravathi	113	101	-10	579	743	28	174	200	14	866	1044	21
633	Bhadravathi_1	113	122	8	579	700	21	174	208	19	866	1030	19
634	Bhadravathi_2	114	129	13	638	1081	69	185	186	1	936	1396	49
635	Hole Honnuru_1	117	123	5	577	650	13	189	186	-2	883	959	9
636	Hole Honnuru_3	116	114	-2	546	678	24	183	195	6	846	987	17
637	Hole Honnuru_2	115	54	-53	502	700	40	183	171	-7	800	925	16

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638	Kudligere	116	85	-27	582	623	7	184	222	21	882	930	5
171	Hosanagara	172	126	-27	2676	2683	0	223	295	32	3071	3104	1
639	Hosanagar	172	112	-35	2676	2418	-10	223	315	42	3071	2845	-7
640	Huncha	138	166	20	2146	2426	13	207	319	54	2490	2911	17
641	Kerehalli	148	190	28	1408	1326	-6	208	151	-28	1764	1666	-6
642	Nagar	168	74	-56	4744	3837	-19	293	357	22	5205	4267	-18
172	Sagara	121	62	-49	2164	2584	19	210	232	10	2495	2877	15
643	Sagar	121	77	-36	2164	1330	-39	210	117	-44	2495	1525	-39
644	Anandapuram	150	74	-50	1356	1258	-7	197	118	-40	1702	1451	-15
645	Baragadde	101	44	-57	3723	3540	-5	215	296	38	4040	3880	-4
646	Anahalli	136	51	-62	2337	1819	-22	220	192	-12	2692	2062	-23
647	Karauru	147	64	-57	3747	4103	9	260	391	50	4154	4557	10
648	Talguppa	105	59	-44	2415	2081	-14	190	131	-31	2710	2271	-16
173	Shikaripura	143	111	-23	677	737	9	155	143	-8	975	991	2
649	Shikaripur	143	56	-61	677	765	13	155	120	-22	975	940	-4
650	Anjanapura	127	98	-23	869	677	-22	175	81	-54	1171	857	-27
651	Husuru	124	131	6	568	642	13	170	182	7	861	955	11
652	Udagani	107	152	43	771	797	3	160	150	-6	1037	1099	6
653	Talagunda	108	93	-15	780	863	11	162	171	5	1050	1126	7
174	Shivamogga	114	159	39	543	788	45	186	156	-16	842	1103	31
654	Shivamogga_2	114	133	16	543	698	29	186	199	7	842	1029	22
655	Shivamogga_1	115	129	12	852	762	-11	183	157	-15	1150	1048	-9
656	Haranahalli	111	117	5	754	601	-20	172	97	-44	1037	815	-21
657	Holalur_1	115	164	43	543	617	14	185	158	-14	843	939	11
658	Holalur_2	118	127	8	604	599	-1	191	174	-9	913	901	-1
659	Kumsi	108	168	55	727	1018	40	149	100	-32	984	1286	31
660	Nidige_1	119	150	27	642	767	19	190	221	16	951	1138	20

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661	Nidige_2	117	123	6	880	763	-13	196	192	-2	1193	1078	-10
662	Ayanuru	109	258	137	760	979	29	174	141	-19	1043	1378	32
175	Soraba	111	110	-1	1252	1277	2	178	146	-18	1541	1534	0
663	Sorab	111	94	-15	1252	1273	2	178	144	-19	1541	1511	-2
664	Anavatti	100	95	-5	992	815	-18	169	149	-12	1261	1059	-16
665	Chandragutti	104	91	-12	2043	1811	-11	184	147	-20	2332	2050	-12
666	Jade	86	66	-23	1225	1075	-12	167	152	-9	1478	1293	-12
667	Kuppagadde	101	154	52	1145	1227	7	172	163	-5	1417	1544	9
668	Ulvi	90	137	52	1625	1308	-20	181	130	-28	1895	1575	-17
176	Tirthahalli	122	133	9	2547	2338	-8	198	218	10	2867	2689	-6
669	Thirthahalli	122	108	-11	2547	2736	7	198	213	7	2867	3056	7
670	Agrahara	139	173	25	2363	2259	-4	211	277	31	2713	2709	0
671	Agumbe	225	102	-55	6984	3310	-53	356	283	-20	7565	3695	-51
672	Mandagadde	130	155	19	1368	1421	4	192	162	-16	1690	1738	3
673	Malur	134	124	-8	2244	2069	-8	201	160	-21	2579	2352	-9
24	HASSAN	168	191	13	754	781	4	220	189	-14	1142	1161	2
177	Alur	194	230	19	748	756	1	207	163	-21	1149	1149	0
674	Alur	194	210	8	748	583	-22	207	184	-11	1149	977	-15
675	Kenchamman Hoskote	186	243	31	1395	1007	-28	233	167	-28	1814	1418	-22
676	Kundur	160	261	63	773	544	-30	203	137	-33	1136	941	-17
677	Palya	180	205	14	1193	789	-34	208	166	-20	1581	1160	-27
178	Arkalgud	166	156	-6	510	483	-5	209	154	-27	885	792	-11
678	Arkalgud	166	142	-14	510	466	-8	209	132	-37	885	741	-16
679	Doddamagge	162	177	9	519	394	-24	218	141	-35	899	712	-21
680	Konanuru	154	170	10	425	538	27	218	174	-20	797	882	11
681	Mallipatna	150	129	-14	866	626	-28	230	158	-31	1246	913	-27
682	Ramanathapura	161	155	-4	451	395	-12	217	166	-23	830	717	-14

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179	Arasikere	162	152	-7	318	437	38	215	161	-25	696	749	8
683	Arasikere	162	121	-26	318	443	40	215	186	-14	696	750	8
684	Banavara	107	145	36	284	513	80	174	164	-5	564	822	46
685	Gandasi	135	194	44	327	416	27	200	172	-14	661	782	18
686	Javagal	157	113	-28	572	391	-32	205	159	-22	934	664	-29
687	Kanakatte	124	180	45	264	437	65	208	124	-40	595	740	24
180	Belur	209	233	11	573	746	30	239	181	-24	1021	1160	14
688	Belur	209	192	-8	573	756	32	239	178	-26	1021	1125	10
689	Arehalli	176	240	36	1378	1251	-9	236	221	-6	1790	1712	-4
690	Bikkodu	180	278	55	806	790	-2	228	165	-27	1213	1233	2
691	Halebeedu	168	223	33	924	423	-54	213	169	-21	1305	815	-38
692	Madihalli	178	260	46	1978	552	-72	222	168	-24	2378	980	-59
181	Channarayapatna	155	185	20	317	451	42	219	164	-25	690	800	16
693	Channarayapatna	155	157	1	317	368	16	219	119	-46	690	643	-7
694	Baguru	158	202	28	379	472	24	241	178	-26	779	852	9
695	Dandiganahalli	146	191	31	345	408	18	201	117	-42	692	716	3
696	Hirisave	184	177	-4	350	526	50	234	220	-6	768	922	20
697	Nuggehalli	158	181	15	313	488	56	199	206	4	669	874	31
698	Shravan Belgola	170	200	18	360	430	20	204	131	-36	733	761	4
182	Hassan	170	213	25	454	454	0	222	158	-29	846	824	-3
699	Hassan	170	241	42	454	448	-1	222	169	-24	846	858	1
700	Dudda	142	223	57	300	439	46	210	128	-39	652	791	21
701	Kattya	125	203	62	416	470	13	151	171	13	693	845	22
702	Salagame	169	197	16	456	474	4	191	154	-19	816	824	1
703	Shantigrama	137	200	45	344	447	30	180	174	-3	661	820	24
183	Holenarasipura	179	186	4	356	327	-8	234	140	-40	768	653	-15
704	Holenarasipur	179	190	6	356	365	3	234	130	-44	768	685	-11

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
705	Halekote	158	191	21	416	374	-10	205	155	-24	778	719	-8
706	Halli Mysore	173	181	4	368	272	-26	225	137	-39	767	590	-23
184	Sakaleshpura	208	198	-5	1795	2351	31	244	352	44	2247	2902	29
707	Sakaleshpur	208	207	0	1795	2010	12	244	256	5	2247	2473	10
708	Balegodu	184	213	15	1378	1198	-13	228	197	-13	1790	1608	-10
709	Hanbalu	210	209	0	1932	2745	42	236	413	75	2377	3367	42
710	Hettur	202	208	3	1760	2830	61	257	463	80	2218	3500	58
711	Yaslur	176	147	-16	1377	2034	48	231	282	22	1783	2463	38
25	CHIKKAMAGALURU	164	184	12	1447	1355	-6	221	215	-3	1833	1753	-4
185	Chikkamagaluru	198	217	10	432	1021	136	206	234	14	836	1472	76
712	Chikkamagaluru	198	205	4	432	710	64	206	248	20	836	1163	39
713	Amble	186	212	14	538	633	18	214	203	-5	938	1048	12
714	Aldur	180	229	27	1227	1294	5	236	288	22	1643	1811	10
715	Sangmeswarpet	213	294	38	1889	1415	-25	236	210	-11	2339	1919	-18
716	Lakya	173	215	24	893	476	-47	217	228	5	1283	919	-28
717	Avathi	157	191	22	957	1295	35	226	248	10	1340	1734	29
718	Jagar	148	195	32	550	1305	137	211	239	13	909	1739	91
719	Vasthare	160	209	30	664	1145	73	224	220	-2	1048	1574	50
186	Kadur	139	139	0	294	416	42	206	157	-24	639	712	11
720	Kadur	139	116	-16	294	419	43	206	168	-19	639	703	10
721	Birur	131	93	-29	350	444	27	195	121	-38	677	657	-3
722	Hirenalluru	119	64	-46	358	337	-6	166	189	14	643	590	-8
723	Sakkarepatna	143	171	20	469	404	-14	202	145	-28	813	720	-11
724	Shingatagere	125	195	56	313	454	45	192	179	-7	630	828	31
725	Yagati	122	148	21	327	383	17	183	175	-4	632	706	12
726	Panchanahalli	123	187	52	269	486	81	202	160	-21	594	833	40
187	Koppa	178	191	7	2515	2375	-6	214	201	-6	2907	2767	-5

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
727	Koppa	178	198	11	2515	2263	-10	214	163	-24	2907	2624	-10
728	Hariharpur	144	169	18	2693	2689	0	209	184	-12	3046	3042	0
729	Meguda	200	198	-1	2678	2282	-15	244	241	-1	3122	2721	-13
188	Mudigere	222	245	10	1827	2500	37	267	321	20	2315	3066	32
730	Mudigere	222	239	7	1827	1965	8	267	249	-7	2315	2452	6
731	Bankal	218	279	28	3639	2559	-30	283	342	21	4139	3180	-23
732	Gonibidu	212	180	-15	1814	2345	29	242	424	76	2268	2950	30
733	Kalasa	240	251	4	2952	2713	-8	299	300	0	3491	3263	-7
734	Baluru	222	280	26	3354	2465	-26	291	265	-9	3866	3010	-22
189	Narasimharajapura	138	183	32	1292	1355	5	178	177	-1	1609	1716	7
735	Narasimharajapur	138	169	22	1292	1173	-9	178	177	-1	1609	1519	-6
736	Balehonnur	239	201	-16	2108	1580	-25	243	178	-27	2590	1959	-24
190	Sringeri	202	224	11	3416	3291	-4	269	311	16	3887	3826	-2
737	Sringeri	202	184	-9	3416	2814	-18	269	273	1	3887	3270	-16
738	Kigga	203	237	17	3891	3446	-11	284	323	14	4377	4006	-8
191	Tarikere	120	110	-9	596	718	21	198	162	-18	914	990	8
739	Tarikere	120	85	-29	596	613	3	198	183	-7	914	881	-4
740	Amrutapur	119	129	9	571	662	16	191	173	-10	881	964	9
741	Lakavalli	110	119	8	927	817	-12	219	150	-31	1256	1086	-13
742	Lingadahalli	125	98	-21	507	737	45	194	152	-21	825	988	20
192	Ajjampura	115	131	14	402	481	20	151	135	-10	669	748	12
743	Ajjampura	115	151	31	402	460	14	151	120	-20	669	732	9
744	Chowlahiriyur	120	94	-21	305	390	28	182	162	-11	607	647	7
745	Shivani	106	136	28	321	560	74	148	128	-14	575	823	43
746	Amrutapura	117	161	37	419	598	43	163	187	15	698	946	36
747	Hirenalluru	117	98	-17	366	409	12	161	134	-17	645	641	-1
26	KODAGU	253	248	-2	2188	2067	-6	288	226	-22	2729	2541	-7

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
193	Madikeri	235	344	46	2738	2829	3	292	315	8	3265	3488	7
748	Madikeri	235	279	19	2738	2295	-16	292	282	-3	3265	2857	-13
749	Bhagamandala	328	389	19	4992	3456	-31	465	398	-14	5784	4242	-27
750	Napoklu	384	361	-6	2153	2643	23	297	219	-26	2833	3224	14
751	Sampaje	295	326	11	3704	2674	-28	418	360	-14	4418	3360	-24
194	Somwarpet	194	179	-8	1653	1391	-16	252	214	-15	2098	1784	-15
752	Somwarpet	194	146	-25	1653	1302	-21	252	178	-30	2098	1626	-23
753	Kodlipet	169	144	-14	1221	1088	-11	223	164	-27	1613	1396	-13
754	Kushalnagar	189	184	-3	582	876	51	207	138	-33	978	1198	22
755	Sanivarsante	174	117	-33	1463	1006	-31	227	203	-10	1863	1326	-29
756	Santhahalli	201	257	28	1831	2264	24	262	388	48	2294	2909	27
757	Suntikoppa	174	185	6	1202	1552	29	213	207	-3	1589	1944	22
195	Virajpet	256	207	-19	1921	1813	-6	291	157	-46	2468	2177	-12
758	Virajpet	256	226	-12	1921	2476	29	291	213	-27	2468	2915	18
759	Ammati	280	229	-18	1448	1241	-14	264	161	-39	1992	1631	-18
760	Blale	235	230	-2	1321	1366	3	242	79	-67	1798	1674	-7
761	Hudakere	235	141	-40	1910	2587	35	257	257	0	2403	2986	24
762	Ponnampet	232	216	-7	1792	1466	-18	243	112	-54	2267	1794	-21
763	Srimangala	206	197	-4	2298	1605	-30	249	100	-60	2753	1902	-31
27	DAKSHINA KANNADA	243	225	-7	3388	3183	-6	376	509	35	4006	3917	-2
196	Beltangadi	227	232	2	3804	3419	-10	395	609	54	4426	4260	-4
764	Belthangady	227	204	-10	3804	3499	-8	395	552	40	4426	4255	-4
765	Kokkada	270	233	-14	3554	3205	-10	437	676	55	4261	4115	-3
766	Venur	224	285	27	3524	3646	3	369	603	63	4117	4534	10
197	Bantwal	221	157	-29	3306	3024	-9	330	387	17	3856	3568	-7
767	Bantwal	221	140	-36	3306	3102	-6	330	427	29	3856	3670	-5
768	Pane Mangalore	219	145	-34	3330	3049	-8	336	381	13	3885	3574	-8

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
769	Vittal	218	182	-16	3395	2936	-14	371	356	-4	3984	3474	-13
198	Mangaluru	271	134	-50	3054	3494	14	284	380	34	3609	4009	11
770	Mangaluru_A	271	122	-55	3054	3152	3	284	371	31	3609	3645	1
771	Mangaluru_B	243	148	-39	3083	3131	2	305	425	39	3631	3704	2
772	Gurpur	223	101	-55	3267	3556	9	311	388	25	3801	4045	6
773	Mulki	217	177	-18	3269	3779	16	303	370	22	3788	4326	14
774	Suratkal	219	140	-36	3306	3619	9	309	360	16	3834	4119	7
199	Puttur	217	239	10	3448	2810	-19	393	381	-3	4058	3429	-16
775	Puttur	217	233	7	3448	2807	-19	393	367	-7	4058	3408	-16
776	Uppinangadi	239	255	7	3271	2817	-14	429	422	-2	3939	3495	-11
200	Sulya	246	310	26	2953	2914	-1	393	511	30	3592	3734	4
777	Sullia	246	304	24	2953	2924	-1	393	489	24	3592	3718	3
778	Panaje	276	323	17	3331	2889	-13	408	559	37	4015	3771	-6
201	Mudabidri	219	178	-19	3449	3724	8	342	440	29	4010	4342	8
779	Mudbidri	219	178	-19	3449	3724	8	342	440	29	4010	4342	8
202	Kadaba	281	276	-2	3437	2925	-15	417	640	53	4135	3840	-7
780	Kadaba	281	258	-8	3437	2828	-18	417	589	41	4135	3675	-11
781	Panaje	308	358	16	3482	2905	-17	425	621	46	4215	3884	-8
782	Uppinangadi	260	260	0	2888	3125	8	347	750	116	3495	4135	18
28	UDUPI	201	172	-15	4022	4572	14	312	416	33	4535	5159	14
203	Karkala	222	299	35	4117	4380	6	438	428	-2	4777	5107	7
783	Karkala	222	253	14	4117	4227	3	438	438	0	4777	4919	3
784	Ajekar	221	384	74	4159	4662	12	375	408	9	4755	5454	15
204	Kundapur	198	100	-50	3355	4634	38	233	401	72	3786	5136	36
785	Kundapur	198	122	-38	3355	4448	33	233	455	95	3786	5025	33
786	Vandse	167	88	-47	3833	4733	23	260	373	43	4260	5194	22
205	Udupi	213	200	-6	3367	4541	35	281	357	27	3862	5098	32

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
787	Udupi	213	196	-8	3367	4587	36	281	364	30	3862	5146	33
788	Brahmavara	212	208	-2	3803	4444	17	318	343	8	4333	4995	15
206	Bynduru	220	49	-78	3941	5197	32	267	380	43	4428	5625	27
789	Bainduru	220	48	-78	3941	5197	32	267	380	43	4428	5625	27
207	Bramhavara	202	122	-39	3527	4386	24	315	450	43	4043	4958	23
790	Brahmavara	202	128	-36	3527	4289	22	315	427	36	4043	4844	20
791	Kota	171	116	-32	3113	4487	44	240	474	97	3525	5076	44
208	Kapu	238	271	14	3216	4587	43	303	388	28	3757	5246	40
792	Kapu	238	271	14	3216	4587	43	303	388	28	3757	5246	40
209	Hebri	204	239	18	5268	4140	-21	331	497	50	5802	4876	-16
793	Ajekar	204	240	18	5268	4092	-22	331	490	48	5802	4822	-17
794	Kundapur	183	238	30	4579	4303	-6	311	519	67	5073	5061	0
29	UTTARA KANNADA	103	105	2	2647	3217	22	187	216	16	2936	3538	20
210	Ankola	147	63	-57	3155	4803	52	230	257	12	3532	5123	45
795	Ankola	147	61	-59	3155	4697	49	230	247	7	3532	5004	42
796	Belikere	140	39	-72	3151	4938	57	226	238	5	3517	5215	48
797	Basagod	133	62	-53	3071	5124	67	234	335	43	3438	5520	61
798	Blale	123	88	-29	3003	4772	59	237	273	15	3364	5133	53
211	Bhatkal	186	99	-47	3855	4659	21	281	497	77	4322	5255	22
799	Susgadi	186	101	-46	3855	4862	26	281	471	68	4322	5435	26
800	Mavalli	151	97	-36	3663	4411	20	257	528	106	4071	5036	24
212	Haliyal	89	164	83	1114	1233	11	135	144	7	1339	1541	15
801	Haliyal	89	128	44	1114	1449	30	135	160	18	1339	1737	30
802	Murkvad	88	191	117	843	1174	39	130	161	24	1061	1526	44
803	Sambrani	80	161	102	1050	1143	9	131	118	-9	1260	1422	13
804	Dandeli	85	163	92	1151	1508	31	134	209	56	1371	1881	37
213	Honnar	158	90	-43	3315	4705	42	254	484	90	3728	5279	42

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
805	Honnavar	158	147	-7	3315	4980	50	254	538	112	3728	5666	52
806	Manki	134	76	-44	3294	4556	38	240	460	92	3668	5092	39
807	Mavinakurvei	137	67	-51	3492	4643	33	240	469	95	3869	5178	34
214	Karwar	150	43	-72	2864	4731	65	219	236	7	3234	5010	55
808	Baad	150	25	-83	2864	4936	72	219	225	3	3234	5187	60
809	Ghadasaya	114	41	-64	3299	4581	39	199	250	26	3611	4872	35
810	Kinnar	130	45	-65	3110	4798	54	208	245	18	3448	5087	48
811	Savantvada	141	63	-55	2975	4986	68	214	178	-17	3329	5227	57
215	Kumta	142	68	-52	3152	4433	41	229	347	52	3523	4847	38
812	Kumta	142	93	-34	3152	4542	44	229	451	97	3523	5086	44
813	Gokarna	114	64	-44	2883	4592	59	246	307	25	3243	4962	53
814	Kujahalli	128	76	-41	3624	4170	15	225	357	58	3978	4603	16
815	Mirjan	136	57	-58	3158	4589	45	232	331	43	3526	4977	41
216	Mundgod	160	150	-7	1081	1259	16	197	152	-23	1438	1561	9
816	Mundgod	160	188	17	1081	1301	20	197	165	-16	1438	1655	15
817	Pala	107	97	-9	967	1200	24	169	135	-20	1243	1432	15
217	Siddapur	122	105	-14	2693	3383	26	201	193	-4	3016	3681	22
818	Umbalamani	115	80	-31	4137	3372	-18	204	205	1	4456	3657	-18
819	Siddapura	122	134	10	2693	2769	3	201	143	-29	3016	3047	1
820	Kodkani	107	107	-1	3061	3806	24	202	216	7	3371	4129	22
218	Sirsi	83	106	28	2083	2937	41	194	212	9	2360	3256	38
821	Sirsi	83	141	70	2083	2384	14	194	188	-3	2360	2713	15
822	Banavasi	92	105	14	1250	1908	53	169	194	15	1511	2206	46
823	Hulekal	82	107	32	1926	2878	49	166	189	14	2174	3175	46
824	Sampakanda	110	91	-17	3830	4182	9	201	265	32	4141	4538	10
219	Supa	55	102	86	2390	2834	19	134	127	-5	2578	3063	19
825	Supa	55	110	101	2390	1989	-17	134	113	-16	2578	2212	-14

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
826	Kasalrock	73	116	60	4418	3599	-19	167	95	-43	4658	3811	-18
827	Kumbarawada	67	87	29	2852	2952	4	154	156	2	3073	3195	4
220	Yellapur	96	143	49	2396	2453	2	176	122	-31	2668	2718	2
828	Yellapur	96	112	17	2396	3082	29	176	131	-26	2668	3325	25
829	Manchikeri	57	170	198	1811	1908	5	122	114	-6	1989	2192	10
221	Dandelli	52	140	167	1356	1501	11	131	110	-16	1540	1750	14
830	Dhandeli	52	140	167	1356	1501	11	131	110	-16	1540	1750	14
30	YADGIR	68	61	-9	517	748	45	134	116	-13	719	925	29
222	Shahapur	87	54	-39	600	765	27	161	105	-35	848	923	9
831	Shahpur	87	63	-28	600	777	30	161	106	-34	848	947	12
832	Doranahlli	80	51	-36	582	795	37	154	94	-39	816	940	15
833	Gogi	76	43	-43	550	728	32	149	97	-35	775	868	12
834	Hayyalbuzurg	74	62	-16	512	788	54	150	169	13	735	1019	39
223	Shorapur	62	38	-38	508	669	32	151	120	-21	721	826	15
835	Shorapur	62	40	-35	508	668	32	151	133	-12	721	841	17
836	Kakkeri	60	56	-7	381	682	79	135	114	-15	576	853	48
837	Kembhavi	58	25	-56	412	659	60	114	110	-3	584	795	36
224	Yadgir	75	80	6	683	854	25	150	123	-18	908	1057	16
838	Yadgir	75	98	30	683	863	26	150	128	-14	908	1089	20
839	Balichakra	70	63	-10	579	831	43	124	110	-11	773	1004	30
840	Hattikuni	72	92	27	642	818	27	141	131	-7	854	1040	22
841	Saidapur	71	55	-23	571	913	60	111	116	4	754	1083	44
225	Gurumithakala	62	92	49	591	840	42	121	116	-4	773	1048	36
842	Gurmitakal	62	115	86	591	903	53	121	128	6	773	1146	48
843	Konakal	67	85	27	587	798	36	122	110	-10	776	993	28
844	Balichakra	70	67	-3	574	800	39	119	105	-12	763	971	27
226	Vadagera	60	66	11	453	813	79	104	122	17	617	1000	62

Sl. No	District/Taluk/Hobli	Pre-Monsoon (1 st January to 31 st May 2020)			Southwest Monsoon (1 st June to 30 th Sept'2020)			North East Monsoon (1 st Oct to 31 st Dec)			Annual Rainfall Pattern 2020 (1 st Jan to 31 st Dec)		
		Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP	Normal (mm)	Actual (mm)	%DEP
845	Wadagera	60	55	-8	453	760	68	104	126	21	617	941	53
846	Doranhalli	67	85	27	525	864	65	124	111	-10	715	1061	48
847	Hayyala Buzurg	71	72	2	513	871	70	139	121	-13	722	1064	47
227	Hunisigi	54	46	-14	323	561	74	124	111	-11	501	718	43
848	Hunasagi	54	35	-34	323	566	76	124	102	-18	501	703	41
849	Kodekal	69	56	-19	402	562	40	151	117	-22	622	735	18
850	Kakkeri	63	41	-35	369	524	42	140	122	-13	571	686	20

Figure 1.7: District wise Rainfall (mm) pattern during 2020.

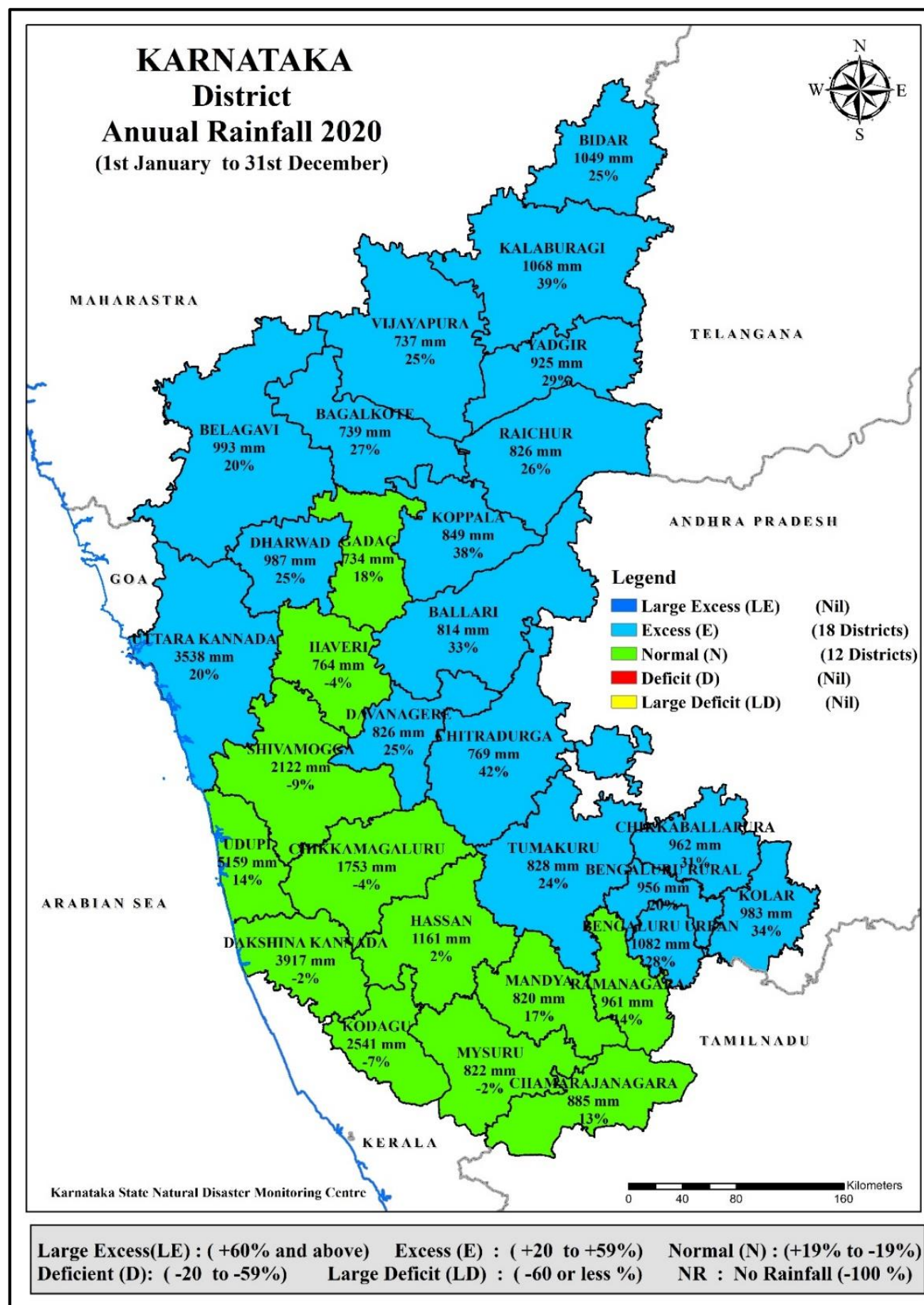


Figure 1.8: Taluk wise Rainfall (mm) pattern during 2020.

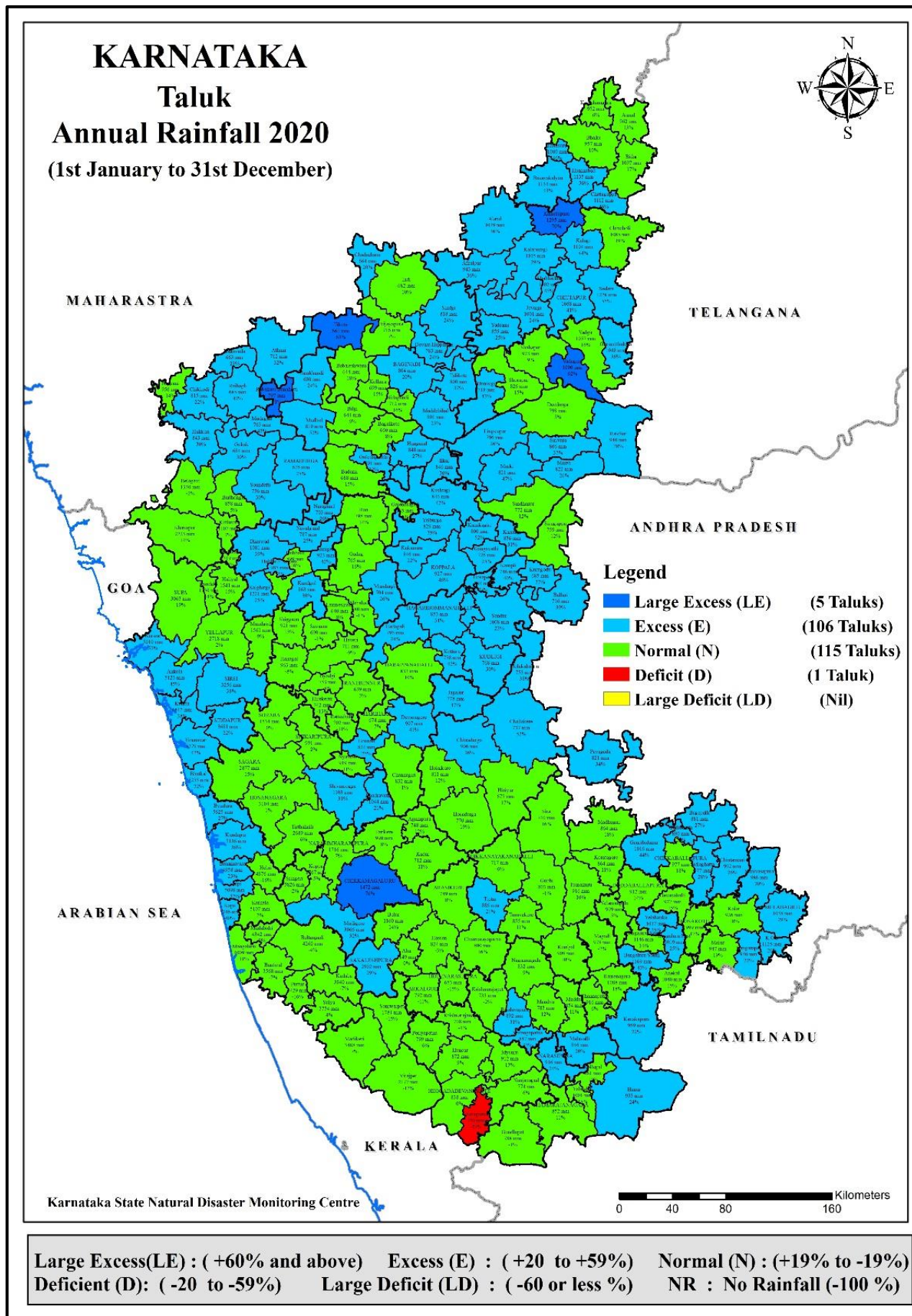


Figure 1.9: Taluk wise Rainfall (mm) pattern during 2020

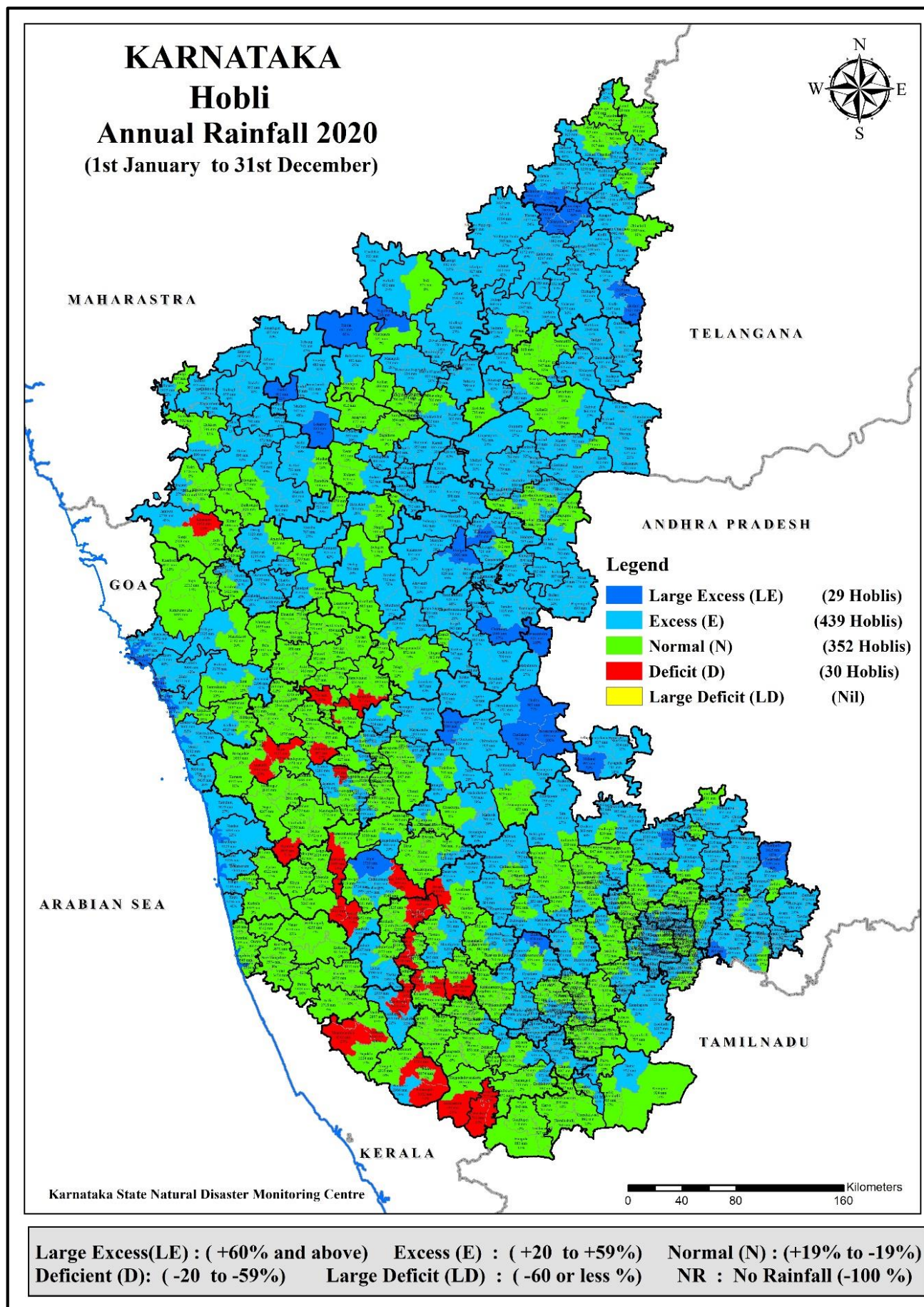


Table: 1.2: Classification of Taluk wise Rainfall pattern (1st January to 31st December)

Sl. N o.	District	Total Taluks \ Hoblis	Large Excess		Excess		Normal		Total		Deficit		Large Deficit		No Rain		Total	
			Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis	Taluks	Hoblis
1	BENGALURU URBAN	5/49	0	1	3	34	2	14	5	49	0	0	0	0	0	0	0	0
2	BENGALURU RURAL	4/20	0	0	0	7	4	13	4	20	0	0	0	0	0	0	0	0
3	RAMANAGARA	4/20	0	0	1	9	3	11	4	20	0	0	0	0	0	0	0	0
4	KOLAR	6/28	0	3	4	21	2	4	6	28	0	0	0	0	0	0	0	0
5	CHIKKABALLAPUR A	6/26	0	1	5	22	1	3	6	26	0	0	0	0	0	0	0	0
6	TUMAKURU	10/53	0	1	2	30	8	22	10	53	0	0	0	0	0	0	0	0
7	CHITRADURGA	6/22	0	5	3	13	3	4	6	22	0	0	0	0	0	0	0	0
8	DAVANAGERE	6/20	0	0	3	11	3	9	6	20	0	0	0	0	0	0	0	0
9	CHAMARAJANAGARA	5/16	0	0	1	3	4	13	5	16	0	0	0	0	0	0	0	0
10	MYSURU	8/33	0	0	1	8	6	22	7	30	1	3	0	0	0	0	1	3
11	MANDYA	7/49	0	1	3	20	4	28	7	49	0	0	0	0	0	0	0	0
	South Interior Karnataka	67/336	0	12	26	178	40	143	66	333	1	3	0	0	0	0	1	3
12	BALLARI	11/35	0	1	9	27	2	7	11	35	0	0	0	0	0	0	0	0
13	KOPPALA	7/20	0	2	7	17	0	1	7	20	0	0	0	0	0	0	0	0
14	RAICHUR	7/40	0	0	5	29	2	11	7	40	0	0	0	0	0	0	0	0
15	KALABURAGI	11/36	1	5	9	29	1	2	11	36	0	0	0	0	0	0	0	0
30	YADGIR	6/20	1	0	2	15	3	5	6	20	0	0	0	0	0	0	0	0
16	BIDAR	8/30	0	2	4	18	4	10	8	30	0	0	0	0	0	0	0	0
17	BELAGAVI	14/38	0	0	9	23	5	14	14	37	0	1	0	0	0	0	0	1
18	BAGALKOTE	9/22	1	2	5	14	3	6	9	22	0	0	0	0	0	0	0	0
19	VIJAYAPURA	12/28	1	2	6	17	5	9	12	28	0	0	0	0	0	0	0	0
20	GADAG	7/13	0	0	2	6	5	7	7	13	0	0	0	0	0	0	0	0
21	HAVERI	8/20	0	0	0	0	8	17	8	17	0	3	0	0	0	0	0	3
22	DHARWAD	8/14	0	0	6	10	2	4	8	14	0	0	0	0	0	0	0	0
	North Interior Karnataka	108/316	4	14	64	205	40	93	108	312	0	4	0	0	0	0	0	4
23	SHIVAMOGGA	7/41	0	0	2	5	5	31	7	36	0	5	0	0	0	0	0	5
24	HASSAN	8/38	0	0	1	10	7	20	8	30	0	8	0	0	0	0	0	8
25	CHIKKAMAGALURU	8/36	1	1	1	9	6	22	8	32	0	4	0	0	0	0	0	4
26	KODAGU	3/16	0	0	0	4	3	6	3	10	0	6	0	0	0	0	0	6
	Malnad	26/131	1	1	4	28	21	79	26	108	0	23	0	0	0	0	0	23
27	DAKSHINA KANNADA	7/19	0	0	0	0	7	19	7	19	0	0	0	0	0	0	0	0
28	UDUPI	7/12	0	0	5	7	2	5	7	12	0	0	0	0	0	0	0	0
29	UTTARA KANNADA	12/36	0	2	7	21	5	13	12	36	0	0	0	0	0	0	0	0
	Coastal	26/67	0	2	12	28	14	37	26	67	0	0	0	0	0	0	0	0
	STATE	227/850	5	29	106	439	115	352	226	820	1	30	0	0	0	0	1	30

1.4 SEASONAL RAINFALL DURING 2020

1.4.1. PRE-MONSOON SEASON RAINFALL:

The Pre-Monsoon season covers Five months, from January to May, of which January and February pertains to winter and the later three months, March to May, is characterized with hot weather condition.

The Pre-Monsoon Normal rainfall for the State is **120 mm** which constitutes only **10%** of the Annual Normal rainfall. The Pre-Monsoon Normal rainfall varies from **63 mm** in **Vijayapura** District to **253 mm** in **Kodagu** District.

Rainfall pattern during Pre-Monsoon-2020.

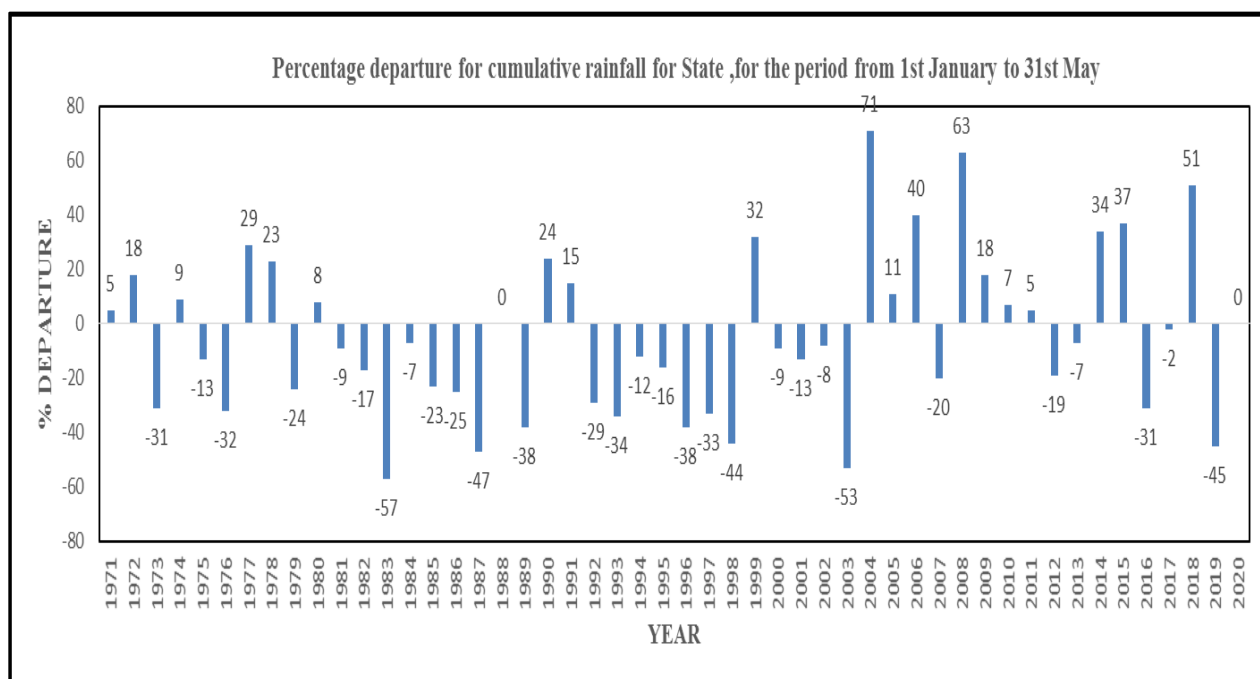
During Pre-Monsoon season 2020 the state as a whole recorded an actual amount of **120 mm** of rainfall as against the Normal rainfall of **120 mm** with percentage departure from Normal being (**0%**). Thus the State as whole is classified under **Normal** Category.

The comparison of Zone wise rainfall pattern during the period from **Pre- Monsoon 2020** with the rainfall of corresponding week in the last **4** years is as follows.

Region/State	Normal (mm)	2016		2017		2018		2019		2020	
		Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%
1.SIK	143	113	-25	204	35	235	56	121	-20	168	17
2.NIK	83	62	-34	54	-43	109	16	38	-60	81	-2
3.MALNAD	168	116	-36	178	-2	308	69	90	-51	183	9
4.COASTAL	158	100	-42	148	-13	312	82	44	-74	149	-6
State	120	89	-31	126	-2	194	51	71	-45	120	0

The percentage departure of rainfall from Normal for the state during Pre-Monsoon which is **good** when compared to the corresponding period of preceding year.

The percentage departure of rainfall from Normal for the state as a whole, during the period **Pre-Monsoon** since 1971, in given figure below:



The figure shows that the percentage departure of rainfall from Normal for the State which is the **more** in the corresponding period of **last** year.

District wise Rainfall pattern during Pre-Monsoon 2020 is given in the following :(Total 30 Districts in the State):

SI. No.	District	Normal	Actual	Percentage Departure
1	HAVERI	122	89	-27
2	BAGALKOTE	80	59	-26
3	BELAGAVI	95	78	-18
4	UDUPI	201	172	-15
5	SHIVAMOGGA	129	111	-14
6	YADGIR	68	61	-9
7	CHITRADURGA	103	95	-8
8	DAKSHINA KANNADA	243	225	-7
9	VIJAYAPURA	63	60	-4
10	KALABURAGI	67	65	-3
11	KODAGU	253	248	-2
12	CHIKKABALLAPURA	108	107	-1
13	UTTARA KANNADA	103	105	2
14	MYSURU	205	210	2
15	RAICHUR	69	72	5
16	TUMAKURU	125	134	8
17	DAVANAGERE	105	114	8
18	KOLAR	117	127	9

Sl. No.	District	Normal	Actual	Percentage Departure
19	BALLARI	92	100	9
20	GADAG	106	117	11
21	CHIKKAMAGALURU	164	184	12
22	CHAMARAJANAGARA	203	229	13
23	HASSAN	168	191	13
24	BIDAR	71	81	14
25	RAMANAGARA	178	205	16
26	DHARWAD	125	151	20
27	KOPPALA	82	100	22
28	BENGALURU URBAN	156	215	38
29	MANDYA	166	229	38
30	BENGALURU RURAL	141	198	40
	STATE	74	72	-2

The district wise rainfall pattern indicates:

Rainfall category	No. of Districts
Large Excess ($\geq 60\%$)	Nil
Excess (+20 to +59%)	5 Districts
Normal (-19 to +19%)	23 Districts
Deficient (-20 to -59%)	2 Districts
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

The data shows that, the rainfall was **Excess** in **5** Districts, **Normal** in **23** Districts and **Deficient** in **2** Districts during **Pre-Monsoon 2020**. During the corresponding period of the preceding year (2019), the rainfall was **Normal** in **6** Districts, **Deficient** in **16** Districts and **Large Deficient** in **8** Districts.

1.1.2 Taluk wise Rainfall pattern during Pre-Monsoon 2020 is given in the following table. (**Total 227 Taluks in the State**):

Rainfall category	No. of Taluks
Large Excess ($\geq 60\%$)	8 Taluks
Excess (+20 to +59%)	43 Taluks
Normal (-19 to +19%)	114 Taluks
Deficient (-20 to -59%)	59 Taluks
Large Deficient (-60 to -99%)	3 Taluks
No rain ($\leq -100\%$)	Nil

The data shows that, the rainfall was **Large Excess** in **8** Taluks, **Excess** in **43** Taluks, **Normal** in **114** Taluks, **Deficient** in **59** Taluks and **Large Deficient** in **3** Taluks during the **Pre-Monsoon 2020**.

During the preceding year (2019), the rainfall was **Excess** in **2** Taluks, **Normal** in **35** Taluks, **Deficient** in **77** Taluks, **Large Deficient** in **61** Taluks and **No Rain** in **1** Taluk.

The Hobli-wise rainfall pattern during **Pre-Monsoon** 2020 is given in the following table
(**Total 850 Hoblis in the State**):

Rainfall category	No. of Hoblis
Large Excess ($\geq 60\%$)	65 Hoblis
Excess (+20 to +59%)	231 Hoblis
Normal (-19 to +19%)	363 Hoblis
Deficient (-20 to -59%)	180 Hoblis
Large Deficient (-60 to -99%)	11 Hoblis
No rain ($\leq -100\%$)	Nil

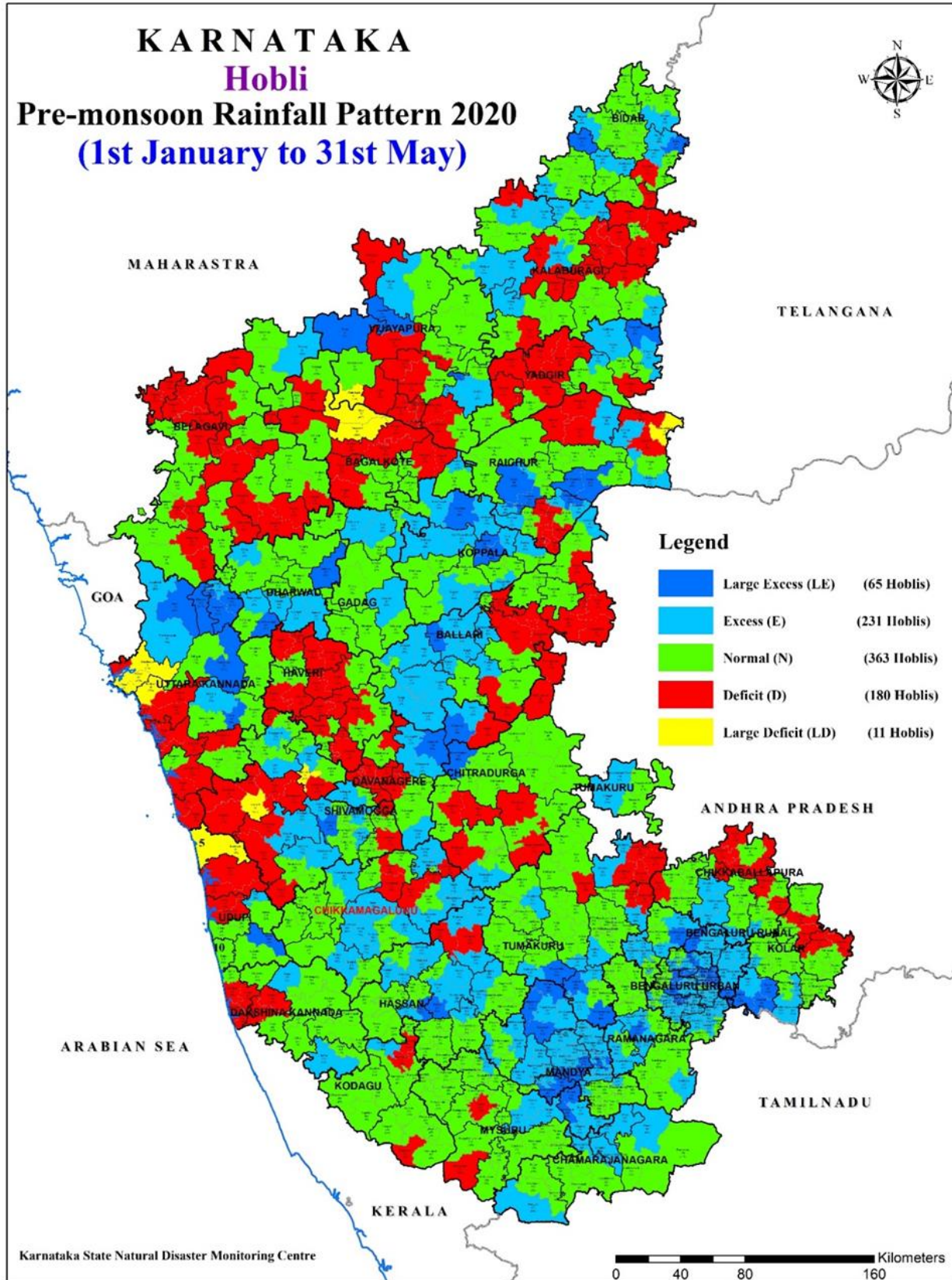
The data shows that, the rainfall was **Large Excess** in **65** Hoblis, **Excess** in **231** Hoblis, **Normal** in **363** Hoblis, **Deficient** in **180** Hoblis and **Large Deficient** in **11** Hoblis during the **Pre-Monsoon 2019**. During the preceding year (2020), the rainfall was **Excess** in **23** Hoblis, **Normal** in **149** Hoblis, **Deficient** in **317** Hoblis and **Large Deficient** in **257** Hoblis.

Figure 1.9: Hobli-Wise Rainfall pattern during the Pre-Monsoon Season 2020

KARNATAKA

Hobli

Pre-monsoon Rainfall Pattern 2020 (1st January to 31st May)



Large Excess(LE) : (+60% and above) Excess (E) : (+20 to +59%) Normal (N) : (+19% to -19%)
 Deficient (D): (-20 to -59%) Large Deficit (LD) : (-60 or less %) NR : No Rainfall (-100 %)

1.4.2. SOUTH WEST (SW) MONSOON SEASON 2020 RAINFALL:

The South-West (SW) Monsoon season (June to September) contributes **76%** of the Normal Annual rainfall of the State. The onset of SW-Monsoon over the State normally takes place by the first week of June. The Normal SW-Monsoon season rainfall varies from as **low as 282 mm** in **Chitradurga** District to as high as **4,022 mm** in **Udupi** District. The Kharif agricultural production in the State heavily depends on the timeliness, quantum and distribution of the SW-Monsoon season rainfall.

Rainfall Condition during the South West Monsoon season 2020:

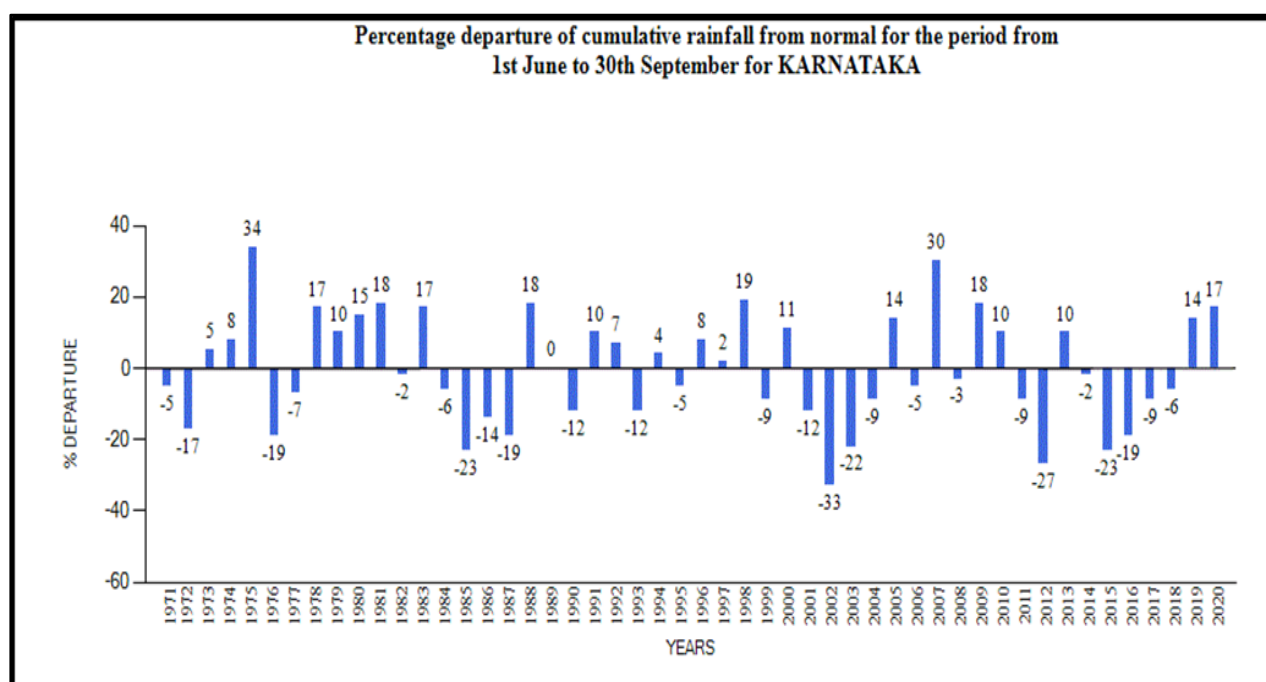
During the **SW-Monsoon season 2019**, the State as a whole recorded **978 mm** of rainfall as against the Normal rainfall of **839 mm** with a (+) **17%** departure from the Normal. Thus, the rainfall over the State during the SW-Monsoon season 2019 is classified as **Normal**.

The comparison of Zone-wise rainfall pattern during the SW-Monsoon season **2019** with the rainfall of corresponding season in the last 4 years is as follows.

Region/State	Normal (mm)	2016		2017		2018		2019		2020	
		Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%	Actual (mm)	Dep%
1.SIK	369	314	-16	457	22	333	-11	411	10	514	39
2.NIK	479	464	-12	462	-12	311	-41	506	-4	651	36
3.MALNAD	1556	1066	-29	1236	-18	1858	24	1834	22	1473	-7
4.COASTAL	3101	2403	-20	2579	-15	3104	3	3734	24	3467	12
State	852	690	-18	774	-8	804	-6	975	14	991	17

The departure (%) of rainfall from the Normal during SW-Monsoon season is (+) **17%**, which is **good** when compared to the corresponding periods of the **last 4** years.

The percentage departure of rainfall from Normal for the State during the SW-Monsoon season, since 1971 is given in the following Figure 1.10:



The figure indicates that the departure (%) of rainfall from the Normal during SW-Monsoon season 2019 is (+) **17%**, which is **more** than the corresponding period of the last **9** years.

District wise Rainfall pattern during South West Monsoon 2020.

Sl. No.	District	Normal	Actual	Percentage Departure
1	CHITRADURGA	282	505	79
2	KOLAR	399	614	54
3	CHIKKABALLAPURA	416	632	52
4	BALLARI	368	549	49
5	TUMAKURU	358	527	47
6	KOPPALA	383	554	45
7	YADGIR	517	748	45
8	BAGALKOTE	362	517	43
9	KALABURAGI	576	824	43
10	RAICHUR	440	612	39
11	VIJAYAPURA	396	545	38
12	DAVANAGERE	393	540	37
13	CHAMARAJANAGARA	320	435	36
14	DHARWAD	514	694	35
15	BENGALURU RURAL	444	595	34
16	GADAG	372	485	30
17	BELAGAVI	599	771	29
18	BIDAR	650	815	25
19	BENGALURU URBAN	471	582	23
20	RAMANAGARA	436	529	21
21	UTTARA KANNADA	2647	3197	21
22	MANDYA	316	373	18
23	UDUPI	4022	4572	14
24	HAVERI	512	542	6
25	MYSURU	419	442	6
26	HASSAN	754	781	4
27	DAKSHINA KANNADA	3388	3190	-6
28	CHIKKAMAGALURU	1447	1331	-8
29	KODAGU	2188	1997	-9
30	SHIVAMOGGA	1991	1816	-9
	State	852	993	17

The District-wise rainfall pattern during the SW-Monsoon season 2020 is given in the following table (**Total 30 Districts in the State**):

Rainfall category	No. of Districts
Large Excess ($\geq 60\%$)	1 District
Excess (+20 to +59%)	19 Districts
Normal (-19 to +19%)	10 Districts
Deficient (-20 to -59%)	Nil
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

The data shows that the rainfall during the SW-Monsoon season 2020 was **Large Excess** in **1** District, **Excess** in **19** Districts and **Normal** in **10** Districts. During the preceding year (2019), the SW-Monsoon season rainfall was **Excess** in **10** Districts, **Normal** in **15** Districts and **Deficit** in **5** Districts.

The Taluk-wise rainfall pattern during the SW-Monsoon season 2020 is given in the following table (**Total 227 Taluks in the State**):

Rainfall category	No. of Taluks
Large Excess ($\geq 60\%$)	27 Taluks
Excess (+20 to +59%)	132 Taluks
Normal (-19 to +19%)	67 Taluks
Deficient (-20 to -59%)	1 Taluk
Large Deficient (-60 to -99%)	Nil
No rain ($\leq -100\%$)	Nil

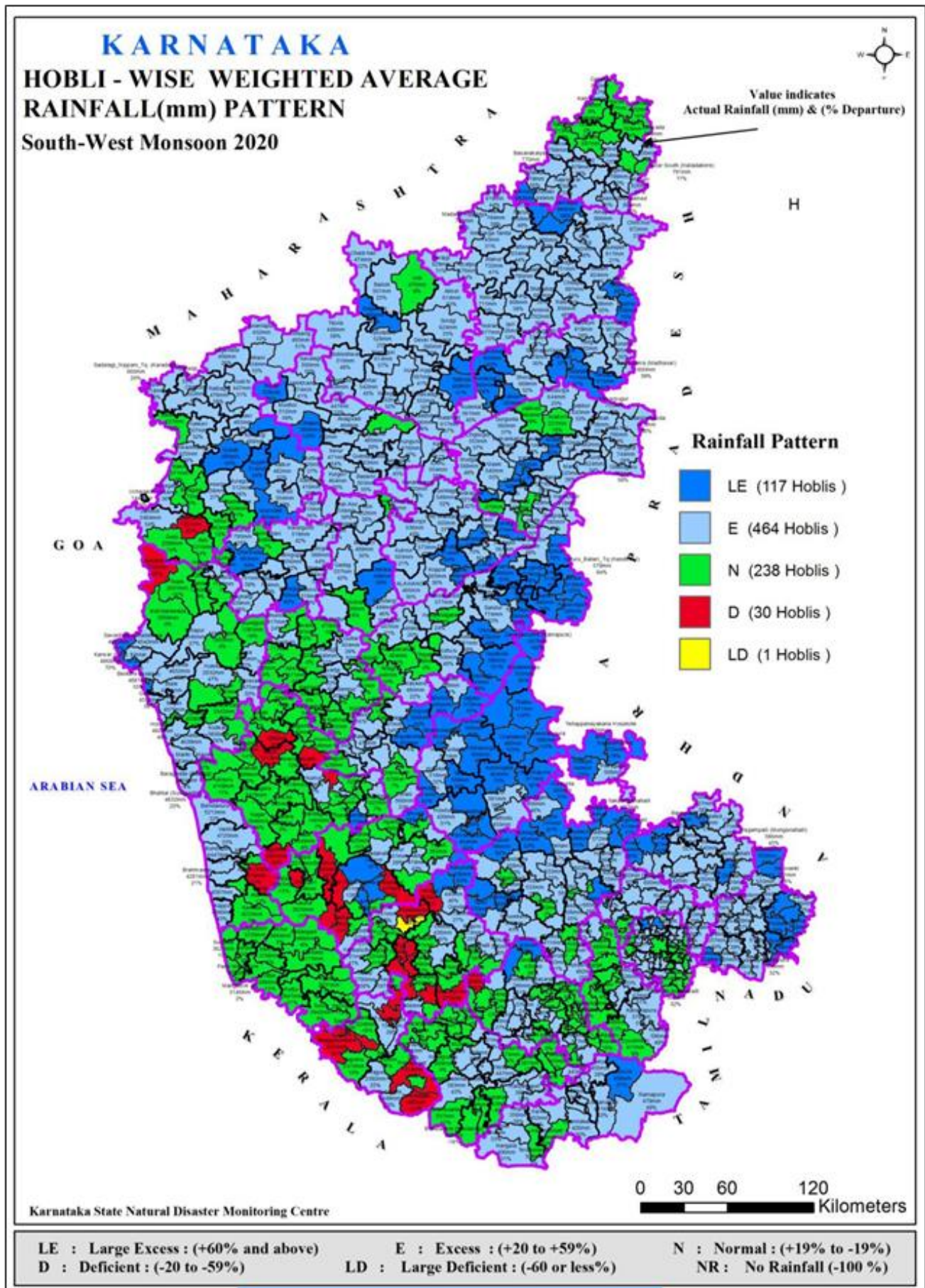
The data shows that the rainfall during the SW-Monsoon season 2020 was **Large Excess** in **27** Taluks, **Excess** in **132** Taluks, **Normal** in **67** Taluks and **Deficit** in **1** Taluk. During the preceding year (2019), the SW-Monsoon season rainfall was **Excess** in **66** Taluks, **Normal** in **84** Taluks and **Deficit** in **26** Taluks.

The Hobli-wise rainfall pattern during the SW-Monsoon season 2020 is given in the following table (**Total 850 Hoblis in the State**):

Rainfall category	No. of Hoblis
Large Excess ($\geq 60\%$)	117 Hoblis
Excess (+20 to +59%)	464 Hoblis
Normal (-19 to +19%)	238 Hoblis
Deficient (-20 to -59%)	30 Hoblis
Large Deficient (-60 to -99%)	1 Hobli
No rain ($\leq -100\%$)	Nil

The data shows that the rainfall during the SW-Monsoon season 2020 was **Large Excess** in **117** Hoblis, **Excess** in **464** Hoblis, **Normal** in **238** Hoblis, **Deficit** in **30** Hoblis and **Large Deficient** in **1** Hobli. During the preceding year (2019), the SW-Monsoon season rainfall was **Excess** in **271** Hoblis, **Normal** in **327** Hoblis and **Deficit** in **149** Hoblis.

Figure 1.11: Hobli-wise Rainfall pattern during the Southwest Monsoon Season 2020:



1.4.3. NORTH EAST (NE) MONSOON SEASON RAINFALL:

The North-East (NE) Monsoon season (October to December) contributes about **15%** of rainfall to the Annual Normal rainfall for the State. The Normal NE-Monsoon season rainfall varies from as **low** as **117 mm** in **Bidar** District to as high as **376 mm** in **Dakshina Kannada** District.

Rainfall during North-East Monsoon season 2020 in the State.

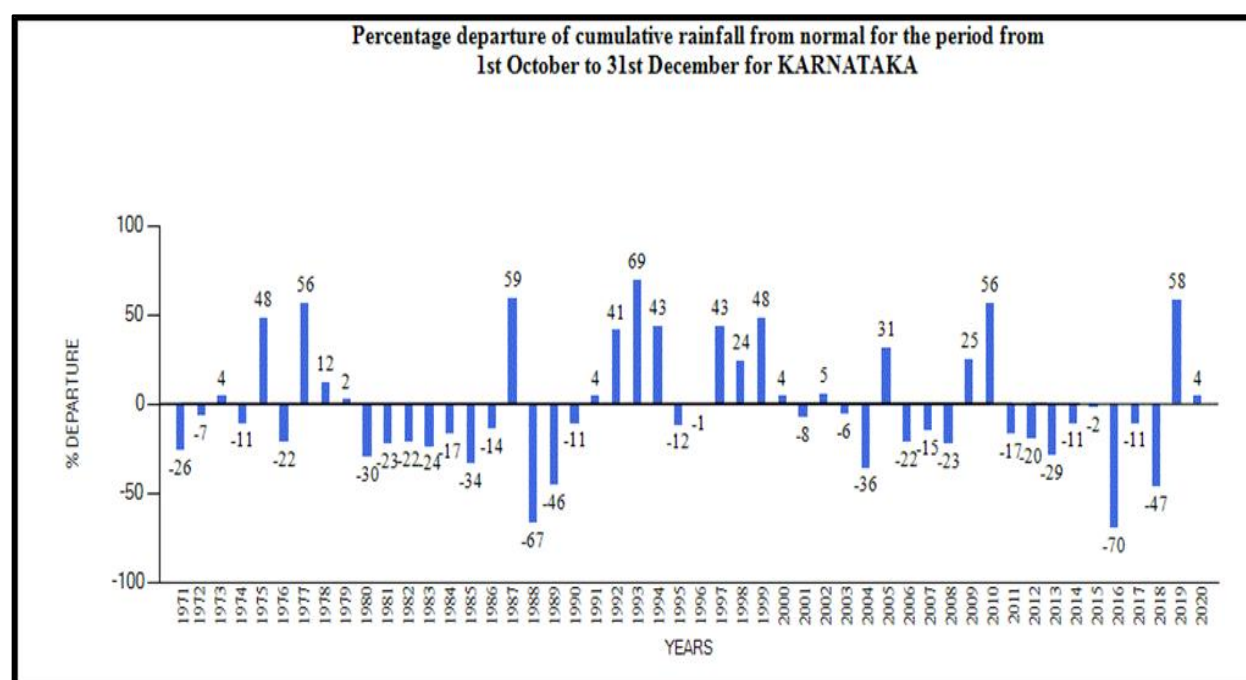
During the **NE-Monsoon season**, the State as a whole recorded **190 mm** of rainfall as against the Normal rainfall of **182 mm** with a **(+)4%** departure from Normal rainfall for the season. Thus, the rainfall for the State during the NE-Monsoon season 2020 is considered as **Normal**.

The comparison of Zone-wise rainfall pattern during the **NE-Monsoon season 2020** with the rainfall of corresponding season in the last 4 years is as follows.

Region/State	Normal (mm)	2016		2017		2018		2019		2020	
		Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)	Actual (mm)	Dep (%)
.SIK	202	66	-67	227	12	119	-41	287	42	196	-3
2.NIK	140	27	-81	124	-11	49	-65	202	44	151	8
3.MALNAD	226	74	-67	126	-44	137	-39	376	66	207	-8
4.COASTAL	259	112	-57	196	-24	187	-28	580	124	330	27
State	182	54	-70	163	-11	96	-47	288	58	190	4

The data indicates that the departure (%) of rainfall for the State during **NE-Monsoon 2020** was **(+) 4%** which is **bad** when compared to the corresponding periods of the last year. The departure (%) of rainfall from Normal during the NE-Monsoon season 2019 was **(-) 3%** in **SIK**, **(+) 8%** in **NIK**, **(-) 8%** in **Malnad** and **(+) 27%** **Coastal region**.

The percentage departure of rainfall from Normal for the State during the **NE-Monsoon season**, since 1971 is given in the following Figure:



The figure indicates that the departure (%) of rainfall from the Normal during the NE-Monsoon season 2019 is (+)4% which is **less than** the corresponding periods of the last year.

District wise Rainfall pattern during North-East Monsoon 2020.

Sl. No.	District	Normal	Actual	Percentage Departure
1	KALABURAGI	127	180	41
2	DAKSHINA KANNADA	376	509	35
3	UDUPI	312	416	33
4	BENGALURU URBAN	219	289	32
5	BIDAR	117	153	31
6	KOPPALA	149	195	31
7	KOLAR	219	254	16
8	BAGALKOTE	141	163	15
9	UTTARA KANNADA	187	216	15
10	BALLARI	154	167	9
11	CHITRADURGA	155	169	9
12	BELAGAVI	133	144	8
13	CHIKKABALLAPURA	211	227	8
14	DAVANAGERE	161	172	7
15	RAMANAGARA	226	240	6
16	MANDYA	217	218	1
17	SHIVAMOGGA	205	207	1
18	VIJAYAPURA	133	133	0
19	CHIKKAMAGALURU	221	214	-3
20	RAICHUR	146	142	-3
21	TUMAKURU	186	167	-10
22	DHARWAD	148	132	-11
23	GADAG	147	131	-11
24	YADGIR	134	116	-13
25	HASSAN	220	189	-14
26	CHAMARAJANAGARA	263	222	-16
27	BENGALURU RURAL	213	168	-21
28	MYSURU	214	170	-21
29	KODAGU	288	226	-22
30	HAVERI	166	128	-23
	State	182	190	4

The District-wise rainfall pattern during the NE-Monsoon season 2020 is given in the following table: **(Total 30 Districts in the State):**

Large Excess (>=60%)	Nil
Excess (+20 to +59%)	6 Districts
Normal (-19 to +19%)	20 Districts
Deficient (-20 to -59%)	4 Districts
Large Deficient (-60 to -99%)	Nil
No rain (<=-100%)	Nil

The data shows that the rainfall during NE-Monsoon season 2020 was **Excess** in **6** Districts, **Normal** in **20** Districts and **Deficient** in **4** Districts. During the preceding year (2019), the NE-Monsoon season rainfall was **Excess** in **24** Districts, **Normal** in **4** Districts and **Deficient** in **2** Districts..

The Taluk-wise rainfall pattern during the NE-Monsoon season 2020 is given in the following table (**Total 227 Taluks in the State**):

Large Excess ($\geq 60\%$)	13 Taluks
Excess (+20 to +59%)	43 Taluks
Normal (-19 to +19%)	126 Taluks
Deficient (-20 to -59%)	44 Taluks
Large Deficient (-60 to -99%)	1 Taluk
No rain ($\leq -100\%$)	Nil

The data shows that the rainfall during NE-Monsoon season 2020 was **Large Excess** in **13** Taluks, **Excess** in **43** Taluks, **Normal** in **126** Taluks, **Deficient** in **44** Taluks and **Large Deficient** in **1** Taluk. During the preceding year (2019), the NE-Monsoon season rainfall was **Excess** in **124** Taluks, **Normal** in **44** Taluks and **Deficit** in **7** Taluks and **Scanty** in **1** Taluk.

The Hobli-wise rainfall pattern during the NE-Monsoon season 2020 is given in the following table (**Total 850 Hoblis in the State**):

Large Excess ($\geq 60\%$)	55 Hoblis
Excess (+20 to +59%)	184 Hoblis
Normal (-19 to +19%)	434 Hoblis
Deficient (-20 to -59%)	173 Hoblis
Large Deficient (-60 to -99%)	4 Hoblis
No rain ($\leq -100\%$)	Nil

The data shows that the rainfall during NE-Monsoon season 2020 was **Large Excess** in **55** Hoblis, **Excess** in **184** Hoblis, **Normal** in **434** Hoblis, **Deficient** in **173** Hoblis and **Large Deficient** in **4** Hoblis. During the preceding year (2019), the NE-Monsoon season rainfall was **Excess** in **485** Hoblis, **Normal** in **197** Hoblis, **Deficit** in **57** Hoblis and **Scanty** in **8** Hoblis.

Figure 1.12: Hobli-wise Rainfall pattern during the NE-Monsoon season 2020

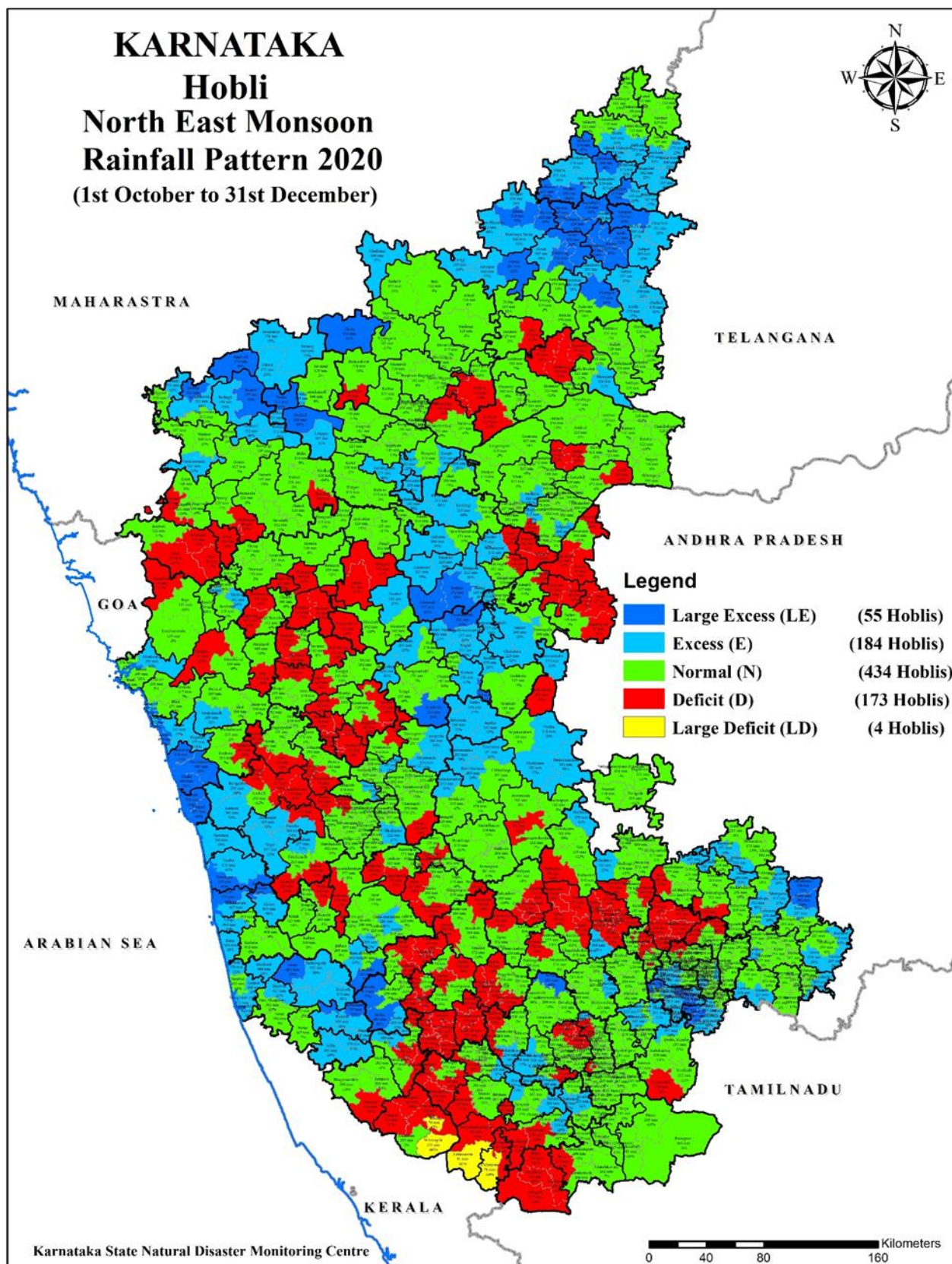
KARNATAKA

Hobli

North East Monsoon

Rainfall Pattern 2020

(1st October to 31st December)



Large Excess(LE) : (+60% and above) Excess (E) : (+20 to +59%) Normal (N) : (+19% to -19%)
 Deficient (D): (-20 to -59%) Large Deficit (LD) : (-60 or less %) NR : No Rainfall (-100 %)

2. AGRICULTURE SITUATION IN KARNATAKA-2020

Kharif season (June to September), accounts for about **71%** of the total agricultural area sown in the state, Rabi season (October to December) and Summer season (January to March) constitutes **25%** and **4%** of the total agricultural sown area.

During 2020, **Kharif** crops recorded **77%** of total annual normal coverage. **Rabi** and **Summer** crops recorded **27%** and **5%** of annual normal coverage.

Table no. 2.1 provides the normal area for different crops and the actual area covered during the current a season. During a 2020 a total of **109.07 (101.42) lakh hectares** was sown as against the normal of **100.40 lakh hectares**.

The figures in parenthesis in the following analysis indicate last year's coverage for the respective crops unless otherwise indicated.

During 2020, coverage by **Cereals** was **106% (102%)** of the normal. The area covered as percentage of normal under Cereals crops are Wheat- **109%**, Jowar- **84%**, Maize- **115%**, Minor Millets- **95%**, Ragi- **105%**, Rice- **119%** and Bajra- **88%**.

In case of **Pulses**, the area sown was **106% (99%)** of the normal. The area covered as percentage of normal under Pulses crops are Greengram- **109%**, Bengalgram- **90%**, Tur- **129%**, Blackgram- **117%**, Horsegram- **83%**, Cowpea & others- **86%**, Avare- **105%** and Mothbean- **200%**.

In case of **Oilseeds**, the area sown was **106% (93%)** of the normal. The area covered as percentage of normal under Oilseeds crops are Soyabean- **107%**, Groundnut- **142%**, Safflower- **above 100%**, Sesamum- **18%**, Castor- **100%**, Sunflower- **112%**, Mustard- **33%** and Niger- **83%**.

In case of **Cashcrops**, the area sown was **128% (110%)** of the normal. The area covered as percentage of normal under Cashcrops crops are Cotton- **138%**, Sugarcane- **126%** and Tobacco- **86%**.

Table: 2.1: Normal area and areas actually sowed under different major crops during 2020 in the state

(Area in lakh ha.)

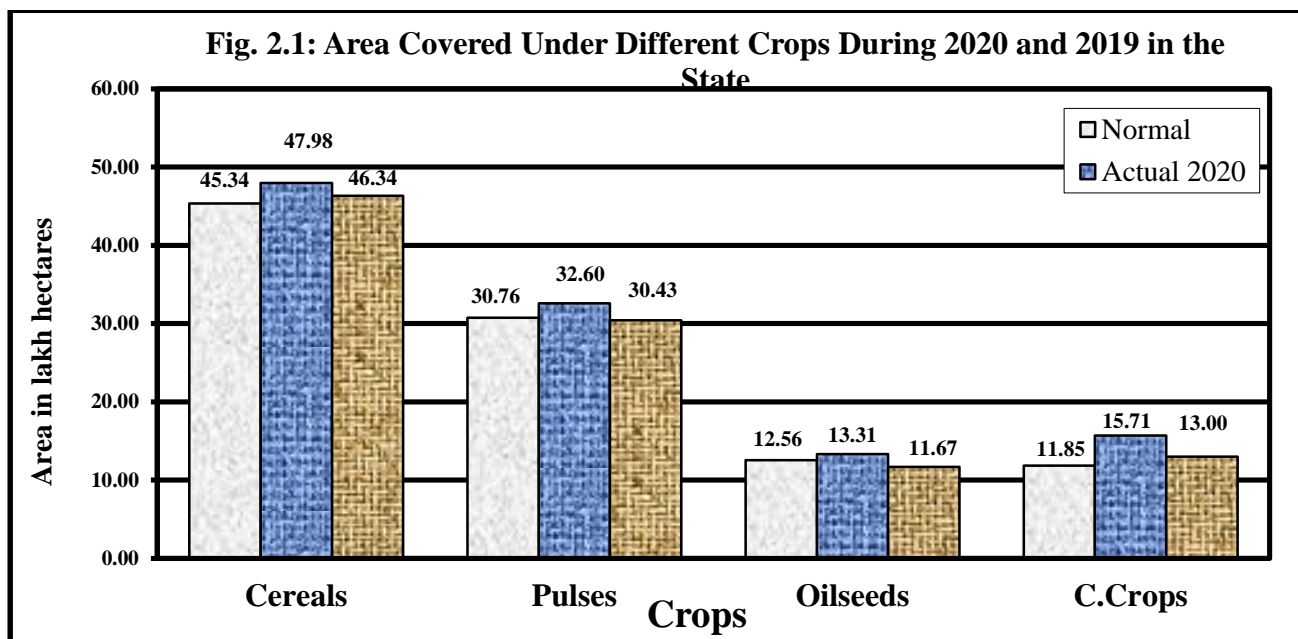
SI. no.	Crops	Annual Normal (Kharif + Rabi + Summer)	Khari f 2020	Rabi 2020	Summer 2021	Total Area-2020 (Col.4+5+6)	Col.7 as% of Col.3	Total Area-2019 (K+R+S)	Col.9 as % of Col.3
1	2	3	4	5	6	7	8	9	10
1	Rice	11.11	10.36	0.08	2.76	13.20	119	12.51	113
2	Jowar	9.94	0.73	7.64	0.01	8.38	84	8.73	88
3	Ragi	6.76	6.72	0.32	0.06	7.10	105	6.69	99
4	Maize	13.20	14.14	0.76	0.22	15.12	115	13.57	103
5	Bajra	2.21	1.90	0.03	0.01	1.94	88	2.28	103
6	Wheat	1.74	0.00	1.90	0.00	1.90	109	1.97	113
7	Minor Millets	0.37	0.32	0.03	0.00	0.35	95	0.59	159
	Total Cereals	45.34	34.17	10.75	3.06	47.98	106	46.34	102
8	Tur	10.09	13.03	0.00	0.00	13.03	129	11.99	119
9	Bengalgram	12.99	0.00	11.75	0.00	11.75	90	12.26	94
10	Horsegram	1.50	0.30	0.94	0.00	1.24	83	1.30	87
11	Blackgram	0.96	1.09	0.03	0.00	1.12	117	0.74	77
12	Greengram	3.64	3.93	0.02	0.01	3.96	109	2.74	75
13	Cowpea & others	0.96	0.65	0.12	0.06	0.83	86	0.80	83
14	Avare	0.60	0.55	0.08	0.00	0.63	105	0.57	95
15	Mothbean	0.01	0.02	0.00	0.00	0.02	200	0.01	100
	Total Pulses	30.76	19.58	12.94	0.08	32.60	106	30.43	99
	Total Foodgrains	75.99	53.75	23.69	3.14	80.58	106	76.77	101
16	Groundnut	5.33	5.31	1.32	0.92	7.55	142	6.18	116
17	Sesamum	1.50	0.27	0.00	0.00	0.27	18	0.16	11
18	Sunflower	1.53	1.05	0.61	0.05	1.71	112	1.57	103
19	Castor	0.08	0.08	0.00	0.00	0.08	100	0.06	75
20	Niger	0.06	0.05	0.00	0.00	0.05	83	0.04	67
21	Mustard	0.03	0.01	0.00	0.00	0.01	33	0.01	33
22	Soyabean	3.09	3.29	0.01	0.00	3.30	107	3.31	107
23	Safflower	0.03	0.00	0.30	0.00	0.30	1000	0.31	1033
24	Linseed	0.00	0.00	0.03	0.00	0.03	0.00	0.02	0.00
	Total Oilseeds	12.56	10.05	2.29	0.97	13.31	106	11.67	93
25	Cotton	5.42	7.22	0.23	0.01	7.46	138	6.18	114
26	Sugarcane	5.49	5.68	0.89	0.35	6.92	126	6.00	109
27	Tobacco	0.92	0.79	0.00	0.00	0.79	86	0.81	88
	Total Cashcrops	11.85	13.69	1.12	0.36	15.17	128	13.00	110
	State Total	100.40	77.50	27.10	4.47	109.07	109	101.42	101

Table: 2.2: District wise Annual Area Normal and Annual Area sown during 2020 in the state.

(Area in lakh ha.)

Sl.No .	Crops	Annual Normal (Kharif + Rabi + Summer)	Khari f 2020	Rabi 2020	Summe r 2021	Total Area- 2020 (Col.4 + 5+6)	Col. 7 as% of Col. 3	Total Area- 2019 (K+R+S)	Col. 9 as % of Col. 3
1	2	3	4	5	6	7	8	9	10
1	Bengaluru rural	0.54	0.56	0.01	0.00	0.57	106	0.53	98
2	Bengaluru urban	0.20	0.19	0.00	0.00	0.19	93	0.16	78
3	Chamarajanagar a	1.50	1.23	0.26	0.02	1.51	101	1.57	105
4	Chikkaballapura	1.36	1.34	0.01	0.01	1.36	100	1.31	96
5	Chitradurga	3.34	3.56	0.58	0.04	4.18	125	2.93	88
6	Davanagere	3.44	2.32	0.14	0.55	3.01	88	2.87	83
7	Kolar	0.86	0.91	0.05	0.00	0.96	112	0.82	95
8	Mandya	1.96	1.89	0.28	0.18	2.35	120	1.97	101
9	Mysuru	4.28	3.94	0.67	0.01	4.62	108	4.27	100
10	Ramanagara	0.99	0.91	0.04	0.01	0.96	97	0.95	96
11	Tumakuru	2.88	3.59	0.03	0.02	3.64	126	2.69	93
	1.SIK	21.35	20.44	2.07	0.84	23.35	109	20.06	94
12	Bagalkote	5.66	2.84	2.82	0.36	6.02	106	5.66	100
13	Ballari	4.97	4.49	0.84	0.59	5.92	119	5.76	116
14	Belagavi	9.73	6.97	3.11	0.13	10.21	105	10.14	104
15	Bidar	4.45	3.71	1.08	0.00	4.79	108	4.60	103
16	Dharwad	4.17	2.41	1.67	0.03	4.11	99	4.23	101
17	Gadag	4.60	2.84	2.73	0.14	5.71	124	4.61	100
18	Haveri	3.72	3.31	0.51	0.17	3.99	107	4.18	112
19	Kalaburagi	10.03	7.48	2.65	0.18	10.31	103	9.75	97
20	Koppala	4.32	3.06	1.62	0.51	5.19	120	4.68	108
21	Raichur	6.43	4.67	2.24	0.92	7.83	122	6.52	101
22	Vijayapura	9.4	5.06	4.25	0.25	9.56	102	9.58	102
23	Yadgir	3.89	3.85	0.93	0.18	4.96	128	4.79	123
	2.NIK	71.37	50.69	24.4 5	3.46	78.60	110	74.52	104
24	Chikkamagalur	1.54	1.21	0.31	0.00	1.52	99	1.29	84
25	Hassan	2.4	2.29	0.12	0.00	2.41	100	2.21	92
26	Kodagu	0.29	0.27	0.00	0.00	0.27	93	0.25	86
27	Shivamogga	1.76	1.43	0.01	0.16	1.60	91	1.75	99
	3.Malnad	5.99	5.2	0.44	0.16	5.80	97	5.50	92
28	D.Kannada	0.35	0.11	0.03	0.00	0.14	40	0.13	37
29	Udupi	0.51	0.36	0.08	0.00	0.44	86	0.43	84
30	Uttara kannada	0.81	0.7	0.03	0.01	0.74	91	0.78	96
	4.Coastal	1.67	1.17	0.14	0.01	1.32	79	1.34	80
	State Total	100.40	77.50	27.1 0	4.47	109.07	109	101.42	101

Fig. 2.1 provides a diagrammatic representation of the coverage by various crop groups during 2020.



3. SATELLITE BASED VEGETATION STATUS ASSESSMENT OVER THE STATE

Agricultural Condition Assessment is essential for taking appropriate remedial measures for improvement of drought situation. Satellite based remote sensing data has been shown to be highly useful for crop condition assessment and drought monitoring.

Agricultural condition has been assessed using satellite derived Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI) and Vegetation Condition Index (VCI).

Among the various spectral vegetation indices commonly derived from remote sensing data, Normalized Difference Vegetation Index (NDVI) is most widely used for operational drought assessment because of its simplicity in calculation, easiness in interpretation and also its ability to partially compensate for the effects of atmosphere, illumination geometry etc. NDVI is derived using the formula $(\text{NIR} - \text{Red}) / (\text{NIR} + \text{Red})$, where NIR and Red are the reflectance in visible and near infrared channels. Various colours in the NDVI image - Yellow through Green to Purple - indicate increasing vegetation vigour. The legend of colour bars and the vegetation index values are provided along with the vegetation index image. Water, clouds and snow have higher reflectance in the visible region and consequently NDVI assumes negative values for these features. Bare soil and rocks exhibit similar reflectance in both visible and near IR regions and the index values are near zero. The NDVI values for vegetation generally range from 0.2 to 0.6, the higher index values being associated with greater green leaf area and biomass.

Shortwave Infrared (SWIR) band is sensitive to moisture available in soil as well as in crop canopy. In the beginning of the cropping season, soil background is dominant hence SWIR is sensitive to soil moisture in the top 1-2 cm. As the crop growth progresses, SWIR becomes sensitive to leaf moisture content. SWIR band provides only surface wetness information. Normalized Difference Wetness Index (NDWI), computed using SWIR data, can complement NDVI for drought assessment particularly in the beginning of the cropping season. NDWI is derived as follows: $\text{NDWI} = (\text{NIR} - \text{SWIR}) / (\text{NIR} + \text{SWIR})$ where, NIR and SWIR are the reflected radiation in Near-Infrared and Shortwave Infrared channels. Higher values of NDWI signify more surface wetness.

NDVI and NDWI values are generated and compared with long-term data by computing Vegetation Condition Index (VCI). The VCI compares the observed NDVI & NDWI to the range of values observed in the same period in previous years. The VCI is expressed in % and gives an idea where the current value is placed between the extreme values (minimum and maximum) in the long term datasets. Lower and higher values indicate bad and good vegetation state conditions, respectively.

Satellite based crop condition anomalies which point towards agricultural drought can be generated by computing Vegetation Condition Index (VCI) or NDVI/NDWI deviations from the normal years. Normal NDVI/NDWI is generated by averaging the NDVI/NDWI of at least 3 recent normal years. Such comparisons enable minimization of the effect on account of the differences in cropping pattern and crop calendar.

The agriculture condition has been monitored at Hobli/Taluk/District level using Modis Terra (250 m) data for the entire State.

Time composite NDVI and NDWI images are generated for June, July, August, September, October, November and December months separately for the agricultural area of the State. The NDVI and NDWI image generated at the end of each month is given in Fig.3.1 to 3.22.

3.1 Month wise status assessment:

June 2020:

The NDVI and NDWI were higher in Parts of South Interior Karnataka Districts. Deficit rainfall received in Mysuru, Gadag, Shivamogga, Chikkamagaluru, Hassan and Dakshina Kannada and all other districts of Karnataka received normal to large excess rainfall resulted in lower Area Favorable for Crop Sowing in June 2020.

NDVI and NDWI Deviation Images (Fig. 3.3.) shows Poor Vegetation and Moisture condition in parts of Chikkaballapura, Chitradurga, parts of Tumakuru, Ballari, Koppal, Raichuru, Kalaburagi, Bidar and parts of Haveri and Gadag Districts. **Districtwise** analysis in the state, by the end of June 2020, indicated “**Normal**” agricultural situation in **26** Districts. The agricultural situation has been categorized as “**Moderate**” in **1** District and as “**Severe**” in **3** Districts.

Sl.No.	Category	Districts
1	Normal (26 Districts)	Benagluru Urban, Bengaluru Rural, Ramanagra, Kolar, Tumakuru, Davangere, Chamrajanagara, Mysuru, Mandya, Belagavi, Bagalkote, Hassana, Chikkamagaluru, Kodagu, Dakshina Kannada, Uttara Kannada, Chikkabalapura, Kalaburagi, Vijayapura, Shivamogga, Udupi, Chitradurga, Ballari, Koppala, Raichur, Yadgir, Bidar, Gadag, Haveri and Dharwad
2	Moderate (1 District)	Chitradurga
3	Severe (3 Districts)	Chikkaballapura, Gadag and Yadgir

Talukwise analysis in the state, by the end of June 2020, indicated “**Normal**” agricultural situation in **139** taluks. The agricultural situation has been categorized as “**Moderate**” in **17** taluks and as “**Severe**” in **71** taluks.

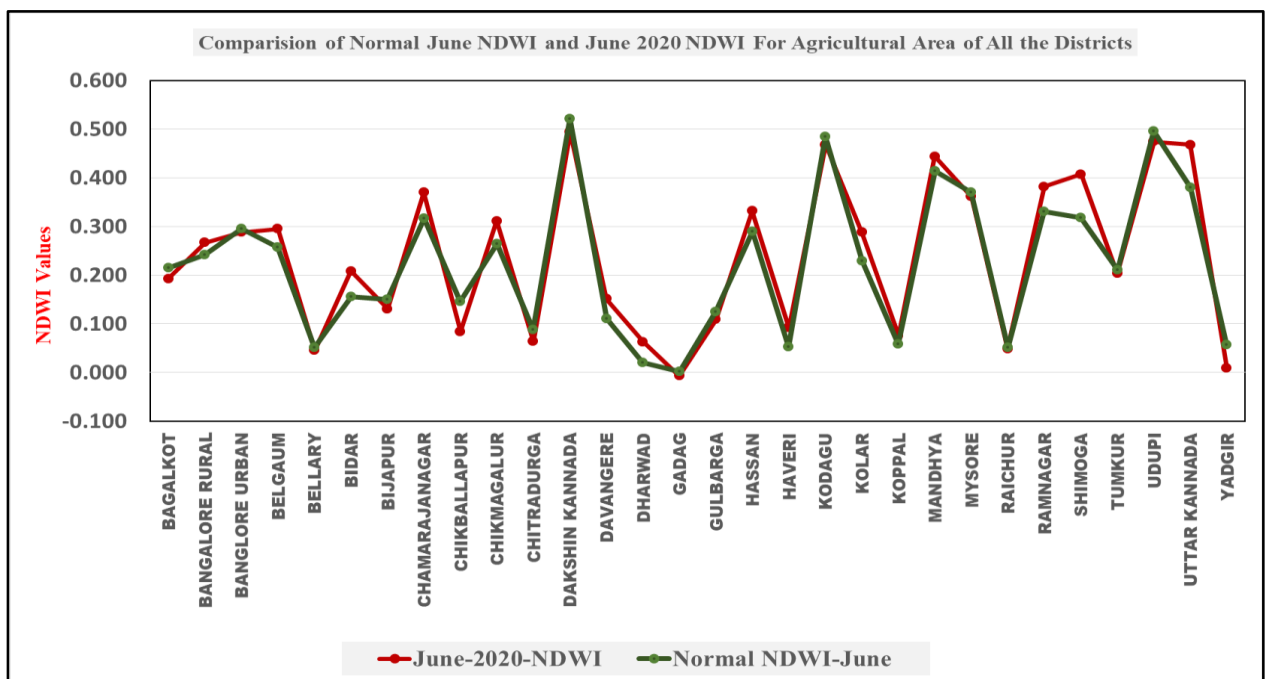
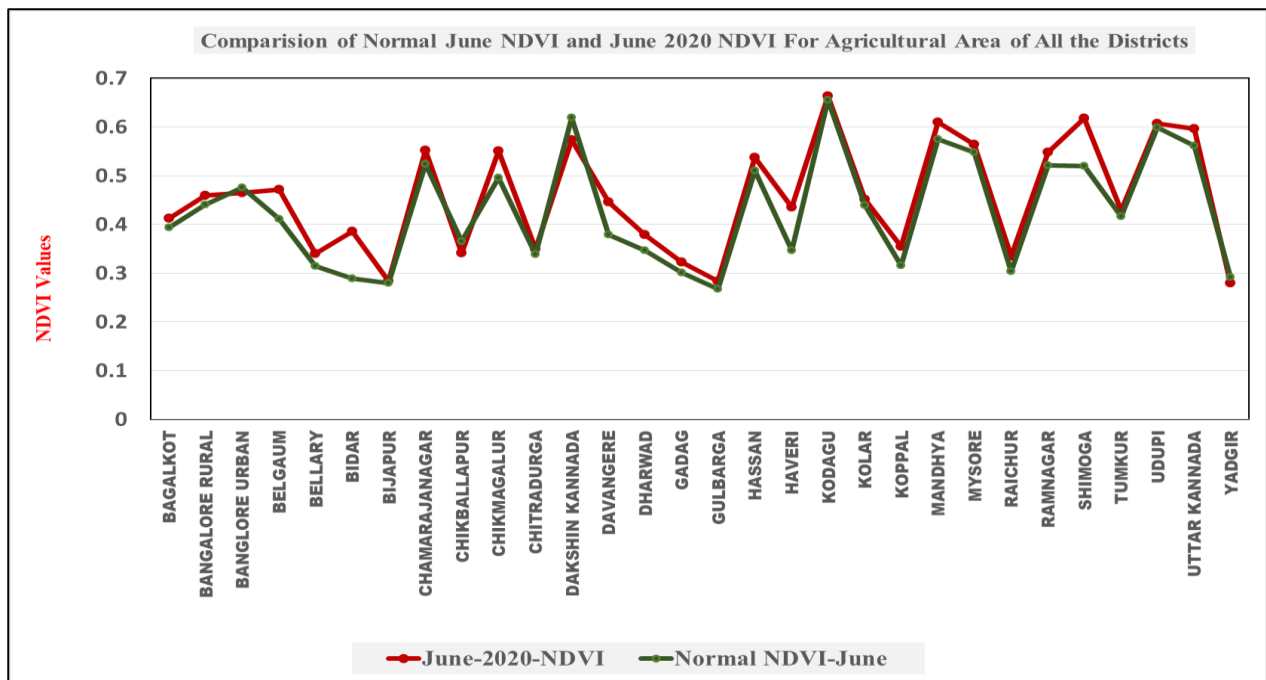
NDVI and NDWI VCI Images (Fig. 3.4.) shows Poor Vegetation and Moisture condition in Most of Districts in the State. **Districtwise** analysis in the state, by the end of June 2020, indicated “**Normal**” agricultural situation in **15** Districts. The agricultural situation has been categorized as “**Moderate**” in **10** Districts and as “**Severe**” in **5** Districts.

Sl.No.	Category	Districts
1	Normal (15 Districts)	Bengaluru Rural, Belgaum, Bidar, Chmarajnagara, Chikamagalur, Davanagere, Dharwad, Haveri, Kolar, Koppala, Mandya, Mysuru, Ramanagara, Shivamogga and Uttara Kannada
2	Moderate (10 Districts)	Bagalkote, Ballari, Vijayapura, Chitradurga, Dakshina Kannada, Gadag, Kalaburagi, Hassan, Kodagu, Raichur
3	Severe (5 Districts)	Benagluru Urban, Chikkabalapura, Tumakuru, Udupi and Yadgiri

Talukwise analysis in the state, by the end of June 2020, indicated “**Normal**” agricultural situation in **41** taluks. The agricultural situation has been categorized as “**Moderate**” in **45** taluks and as “**Severe**” in **141** taluks.

The overall situation of the State remains in Watch condition in the month of June. Since, sowing generally does not start in some parts of the State in June, it is expected that if there is a revival monsoon during July, the agricultural situation may improve.

Agricultural situation upto June 2020 given below and maps are shown fig.3.1 and fig.3.2.

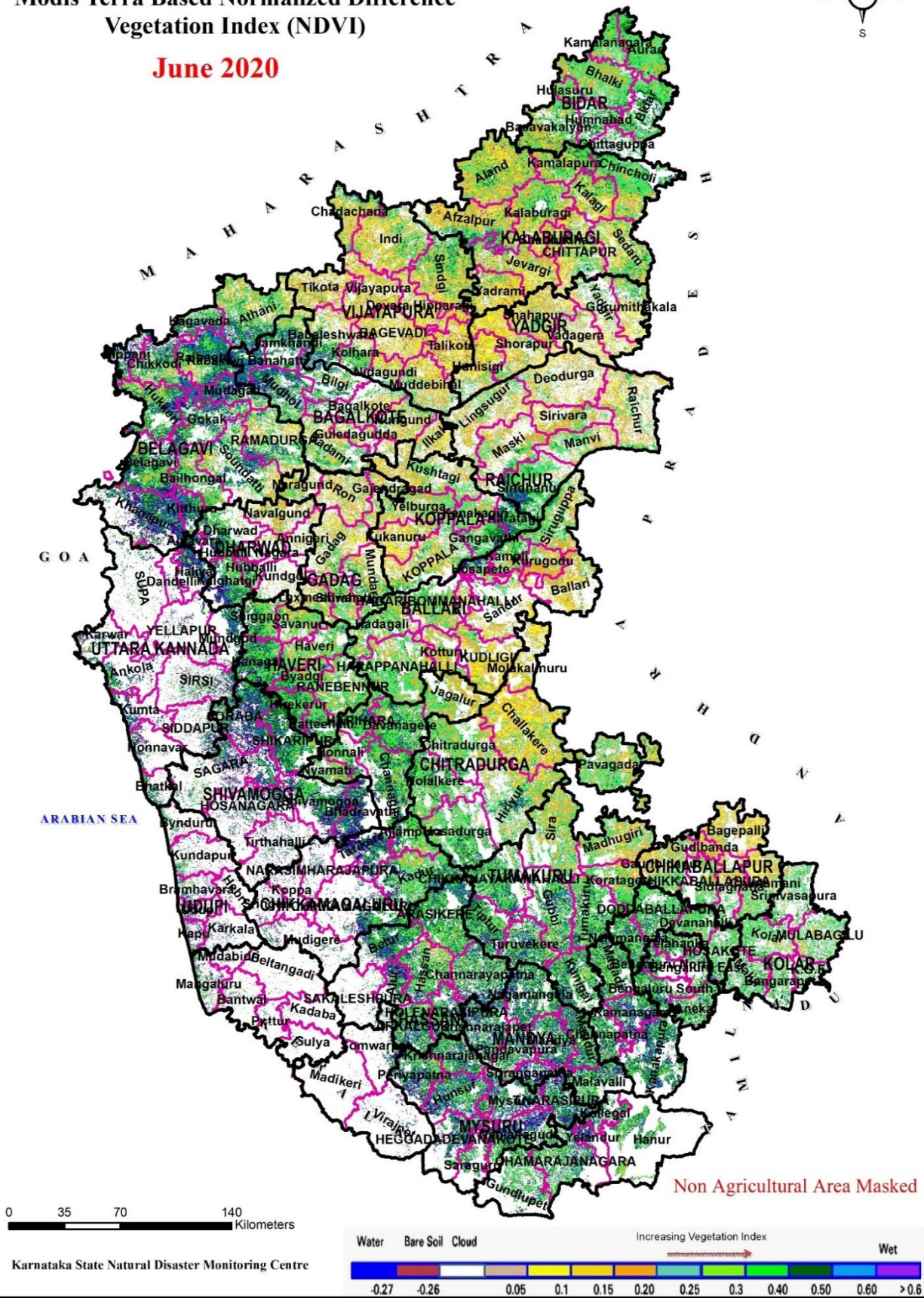
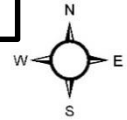


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Modis Terra Based Normalized Difference Vegetation Index (NDVI)

June 2020

Fig.3.



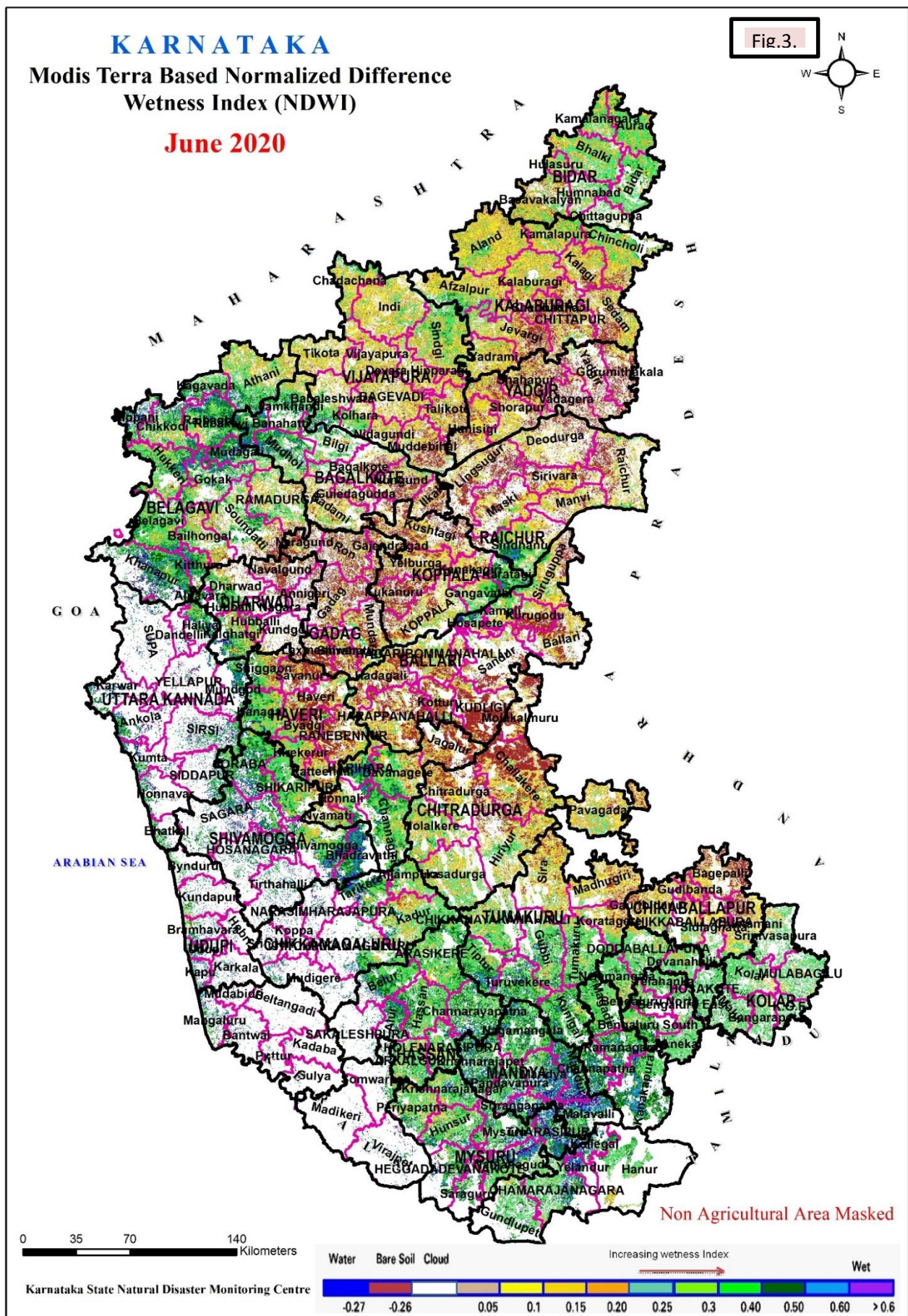


Fig. 3.3

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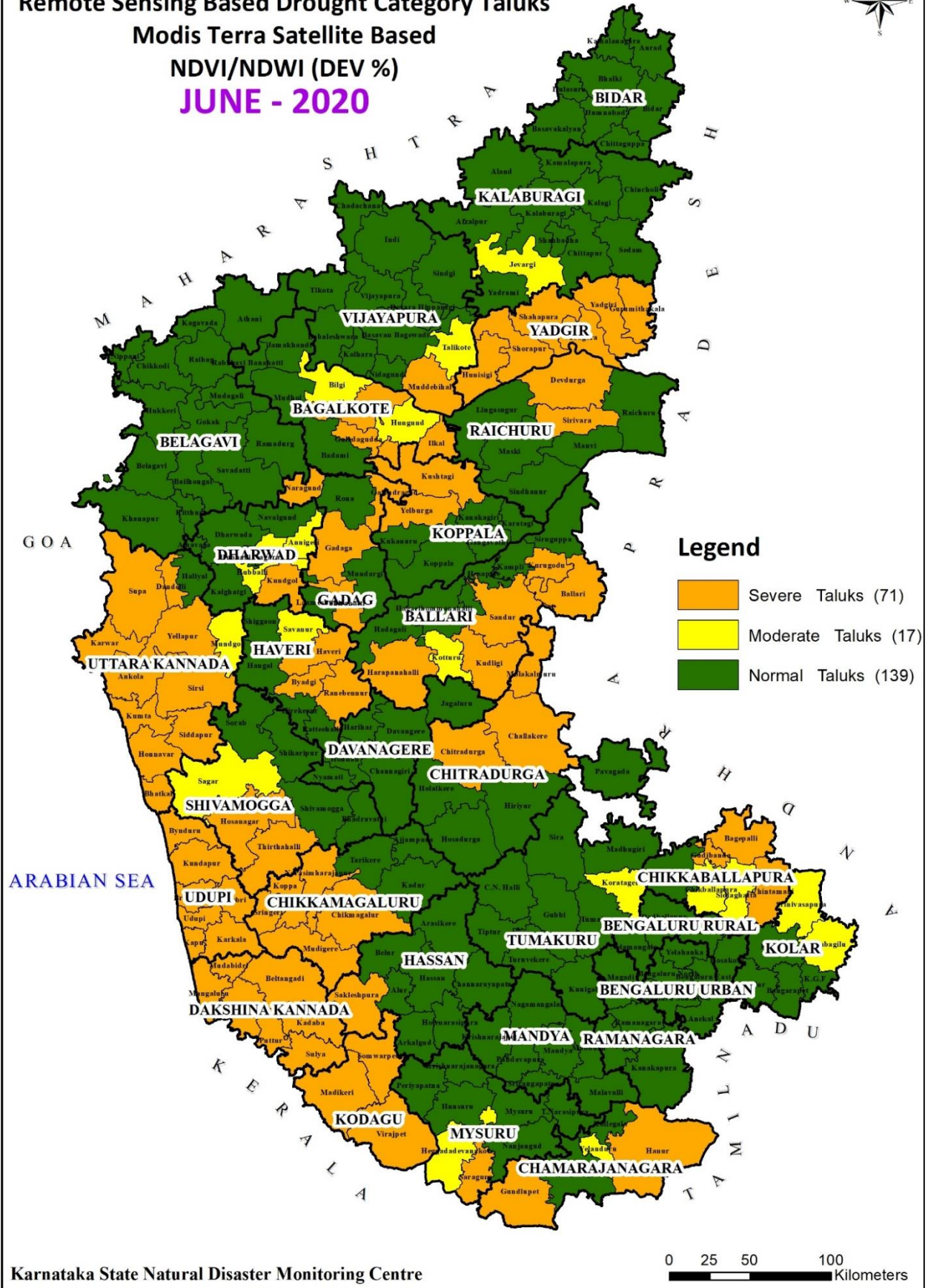
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (DEV %)

JUNE - 2020

Fig.3.



Taluks under Remotesensing based Drought Category - June 2020 - NDVI/NDWI (%Dev)

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote	3	2	4
2	Ballari	5	1	5
3	Belagavi			14
4	Bengaluru Rural			4
5	Bengaluru Urban			5
6	Bidar			8
7	Chamarajanagar	2	1	2
8	Chikballapur	3	2	1
9	Chikkamagaluru	5		3
10	Chitradurga	3		3
11	Dakshina Kannada	7		
12	Davanagere			6
13	Dharwad	1	2	5
14	Gadag	4		3
15	Hassan	1		7
16	Haveri	3	1	4
17	Kalaburagi		1	10
18	Kodagu	3		
19	Kolar		2	4
20	Koppal	2		5
21	Mandya			7
22	Mysuru	1	1	6
23	Raichur	2		5
24	Ramanagara			4
25	Shivamogga	2	1	4
26	Tumakuru		1	9
27	Udupi	7		
28	Uttara Kannada	10	1	1
29	Vijayapura	1	1	10
30	Yadgir	6		
Total		71	17	139

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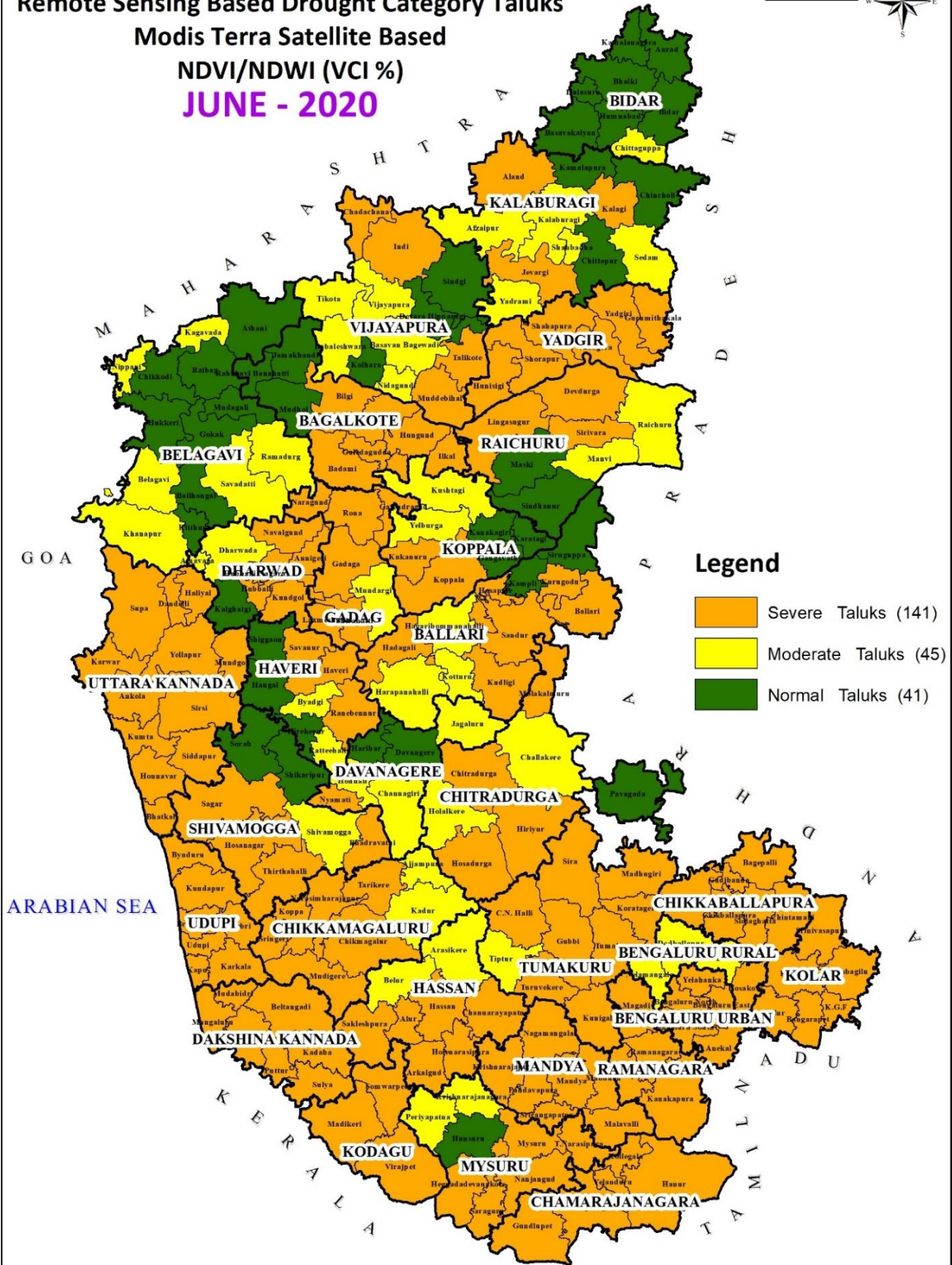
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (VCI %)

JUNE - 2020

Fig.3.



Legend

- Severe Taluks (141)
- Moderate Taluks (45)
- Normal Taluks (41)

**Taluks under Remotesensing based Drought Category - June 2020 - NDVI/NDWI -
Vegetation Condition Index (VCI)**

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote	6		3
2	Ballari	6	3	2
3	Belagavi		6	8
4	Bengaluru Rural	1	3	
5	Bengaluru Urban	5		
6	Bidar		1	7
7	Chamarajanagar	5		
8	Chikballapur	6		
9	Chikkamagaluru	6	2	
10	Chitradurga	4	2	
11	Dakshina Kannada	7		
12	Davanagere	1	3	2
13	Dharwad	5	2	1
14	Gadag	6	1	
15	Hassan	6	2	
16	Haveri	3	2	3
17	Kalaburagi	3	5	3
18	Kodagu	3		
19	Kolar	6		
20	Koppal	2	2	3
21	Mandya	7		
22	Mysuru	5	2	1
23	Raichur	3	2	2
24	Ramanagara	4		
25	Shivamogga	4	1	2
26	Tumakuru	8	1	1
27	Udupi	7		
28	Uttara Kannada	12		
29	Vijayapura	4	5	3
30	Yadgir	6		
Total		141	45	41

July 2020:

The NDVI and NDWI were higher in South Interior and parts of North Interior Karnataka Districts. Out of 30 districts 6 districts received Deficit rainfall Viz., Haveri, Shivamogga, Hassan , Chikkamagaluru, Kodagu and Dakshina Kannada districts and all other districts in the State received normal to large excess rainfall resulted in Area Favorable for Crop Sowing in July 2020.

NDVI and NDWI Deviation Images (Fig. 3.7.) shows Poor Vegetation and Moisture condition in some parts of the district in North Interior Karnataka. **Districtwise** analysis in the state, by the end of July 2020, indicated “**Normal**” agricultural situation in **29** Districts. The agricultural situation has been categorized as “**Moderate**” in **1** District and as “**Severe**” in nil District.

Sl.No.	Category	Districts
1	Normal (29 Districts)	Bengaluru Urban, Bengaluru Rural, Ramanagra, Kolar, Tumakuru, Davangere, Chamrajanagara, Mysuru, Mandya, Belagavi, Bagalkote, Hassan, Chikkamagaluru, Dakshina Kannada, Uttara Kannada, Chikkabalapura, Vijayapura, Shivamogga, Udupi, Chitradurga, Gadag, Haveri, Ballari, Koppala, Raichur, Bidar, Kalaburagi, Yadgir and Dharwad
2	Moderate (2 Districts)	Kodagu
3	Severe (0 Districts)	Nil

Talukwise analysis in the state, by the end of July 2020, indicated “**Normal**” agricultural situation in **180** taluks. The agricultural situation has been categorized as “**Moderate**” in **5** taluks and as “**Severe**” in **42** taluks.

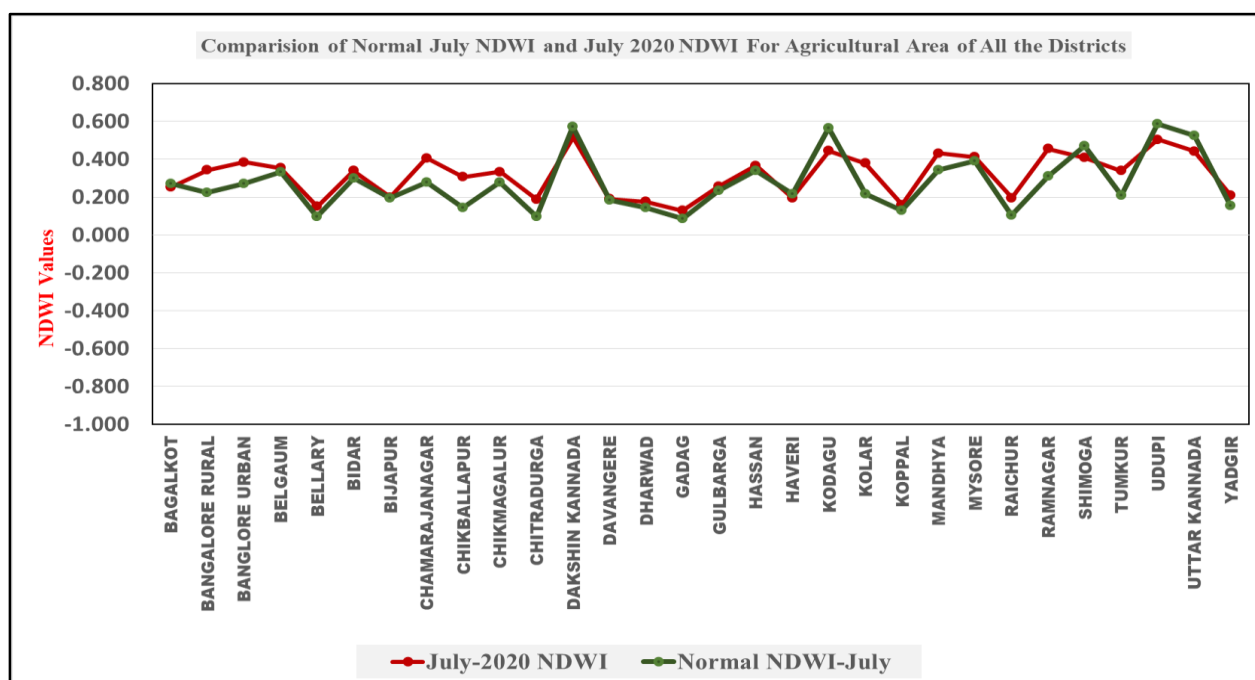
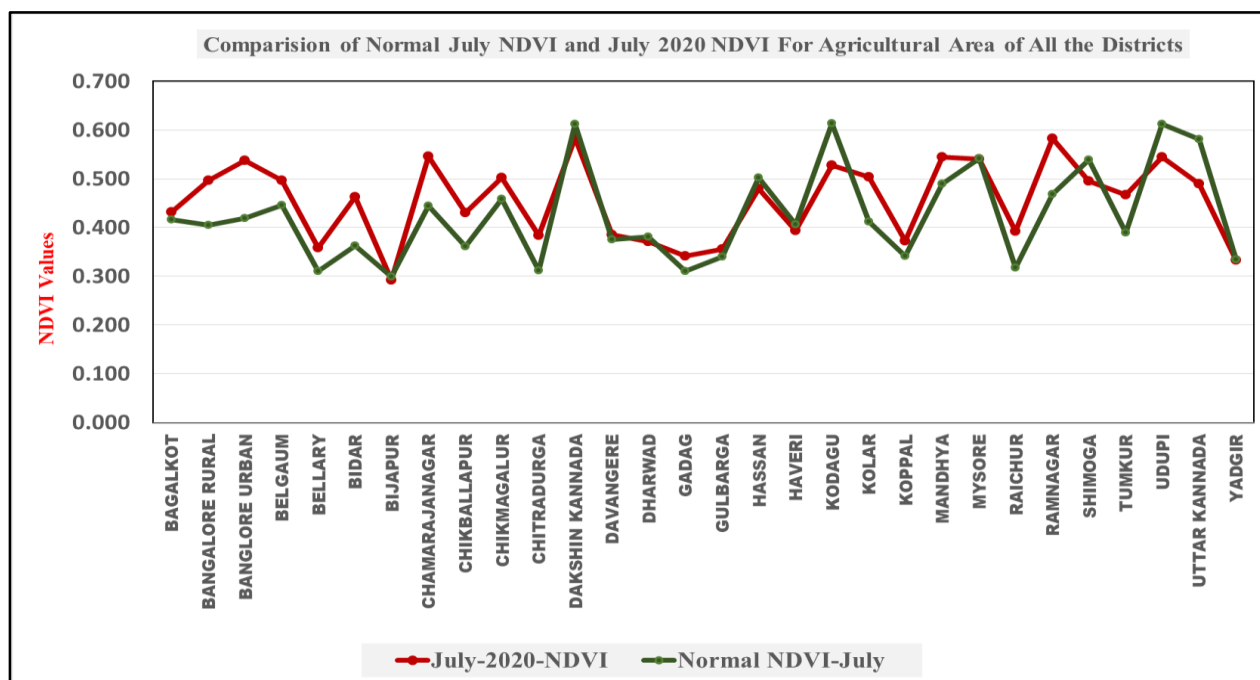
NDVI and NDWI VCI Images (Fig. 3.8.) shows Poor Vegetation and Moisture condition in some parts of Districts in the State. **Districtwise** analysis in the state, by the end of July 2020, indicated “**Normal**” agricultural situation in **17** Districts. The agricultural situation has been categorized as “**Moderate**” in **5** Districts and as “**Severe**” in **8** Districts.

Sl.No.	Category	Districts
1	Normal (17 Districts)	Bengaluru Urban, Bengaluru Rural, Belagavi, Ballari, Bidar, Vijayapura, Chamrajanagara, Chikkabalapura, Chitradurga, Gadag, Kalaburagi, Kolar, Koppala, Mandya, Raichur, Ramanagra, Tumakuru
2	Moderate (5 Districts)	Bagalkote, Chikkamagaluru, Dharwad, Mysuru and Yadgir
3	Severe (8 Districts)	Davangere, Hassan, Dakshina Kannada, Vijayapura, Shivamogga, Udupi, Raichur, Bidar, Kodagu, Haveri, Uttara Kannada,

Talukwise analysis in the state, by the end of July 2020, indicated “**Normal**” agricultural situation in **95** taluks. The agricultural situation has been categorized as “**Moderate**” in **46** taluks and as “**Severe**” in **86** taluks.

The overall situation of the State remains in Watch condition in the month of July, it is expected that if there is a revival monsoon during July, the agricultural situation may improve.

Agricultural situation upto July 2020 given below and maps are shown fig.3.5 and fig.3.6.

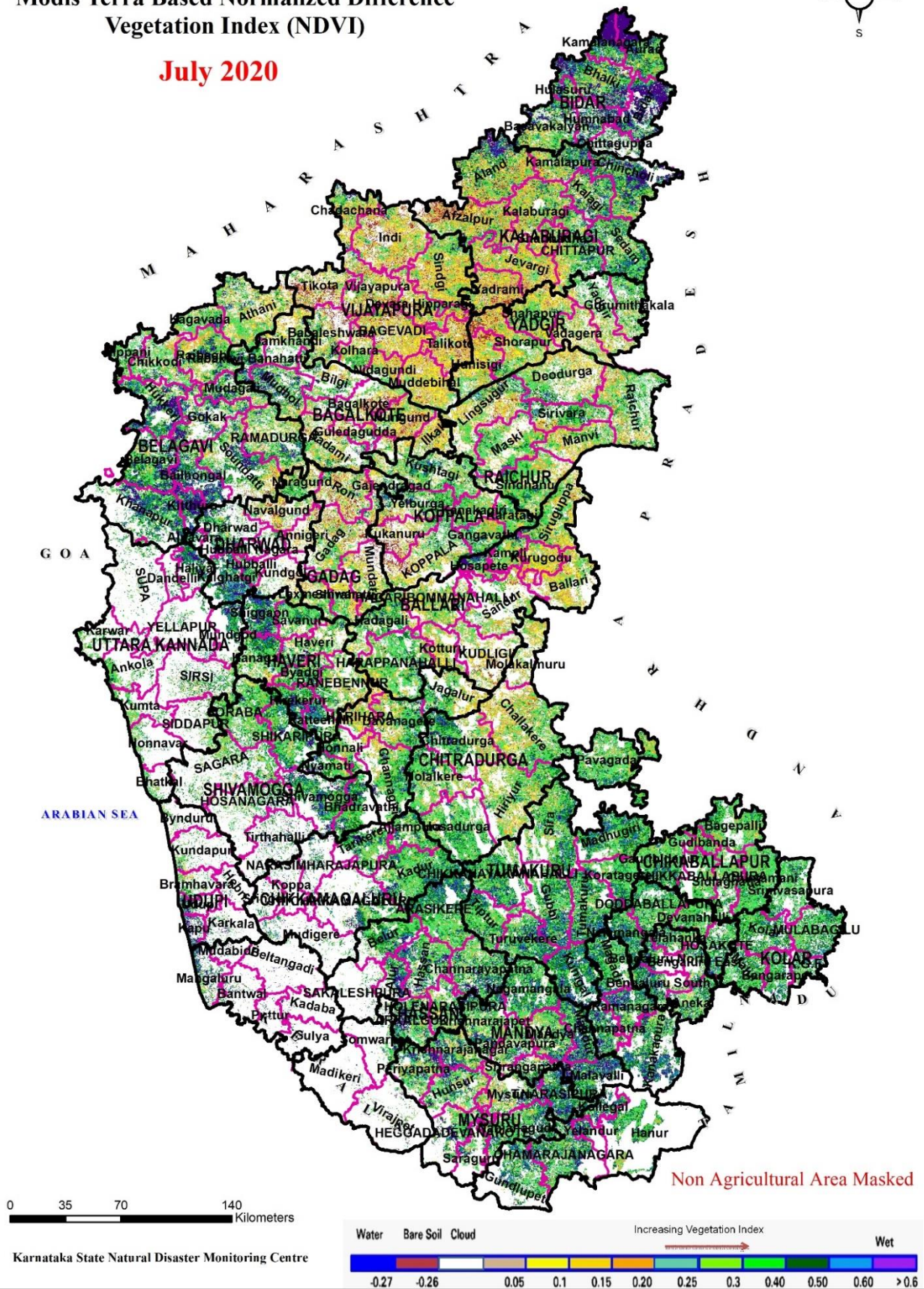
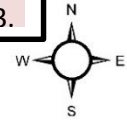


KARNATAKA

Modis Terra Based Normalized Difference Vegetation Index (NDVI)

July 2020

Fig.3.

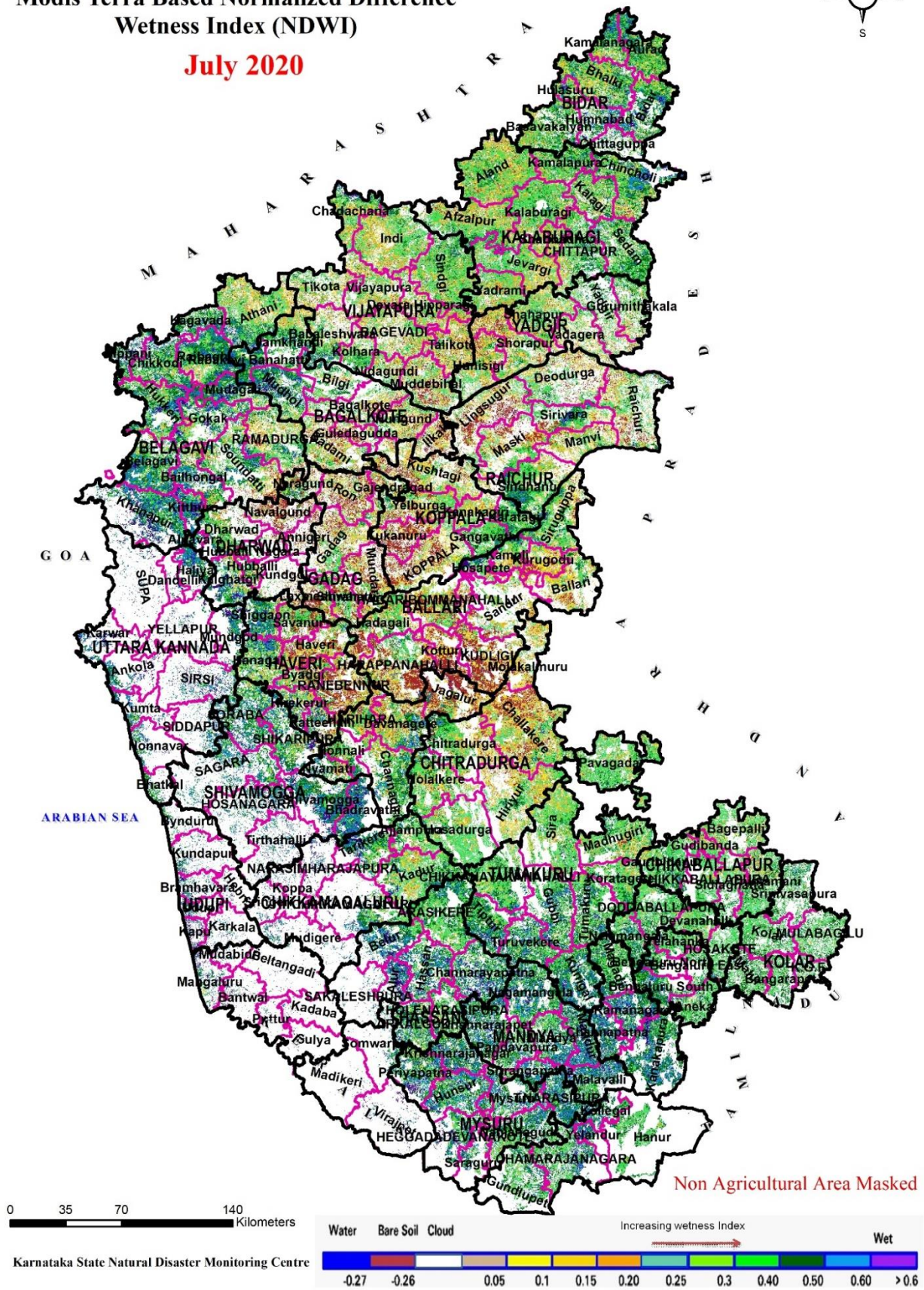
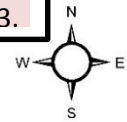


KARNATAKA

Modis Terra Based Normalized Difference Wetness Index (NDWI)

July 2020

Fig.3.



KARNATAKA

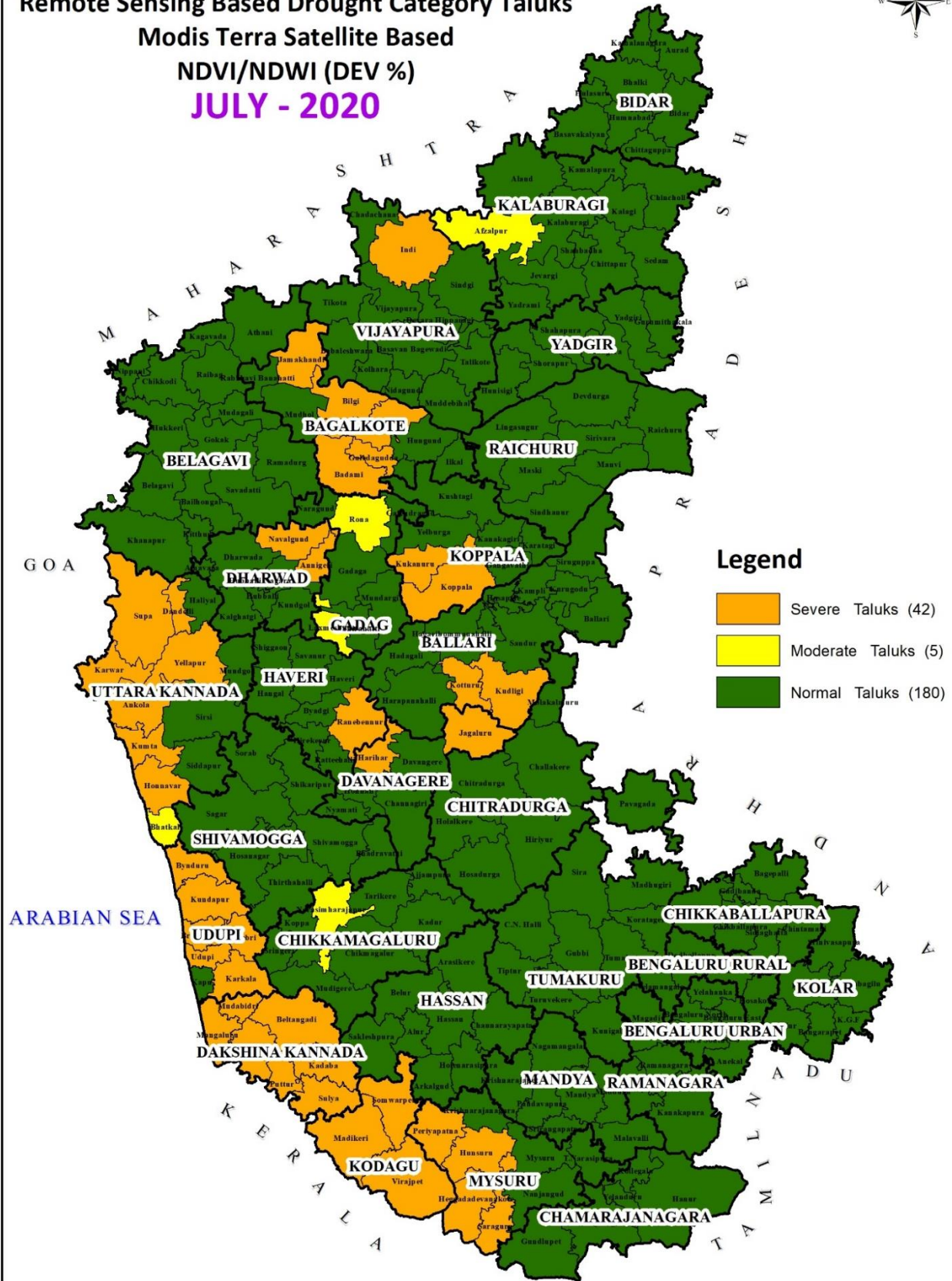
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (DEV %)

JULY - 2020

Fig.3.



Karnataka State Natural Disaster Monitoring Centre

0 25 50 100 Kilometers

Taluks under Remotesensing based Drought Category - July 2020 - NDVI/NDWI (%Dev)

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote	5		4
2	Ballari	2		9
3	Belagavi			14
4	Bengaluru Rural			4
5	Bengaluru Urban			5
6	Bidar			8
7	Chamarajanagar			5
8	Chikballapur			6
9	Chikkamagaluru		1	7
10	Chitradurga			6
11	Dakshina Kannada	7		
12	Davanagere	2		4
13	Dharwad	2		6
14	Gadag		2	5
15	Hassan			8
16	Haveri	1		7
17	Kalaburagi		1	10
18	Kodagu	3		
19	Kolar			6
20	Koppal	2		5
21	Mandya			7
22	Mysuru	4		4
23	Raichur			7
24	Ramanagara			4
25	Shivamogga			7
26	Tumakuru			10
27	Udupi	6		1
28	Uttara Kannada	7	1	4
29	Vijayapura	1		11
30	Yadgir			6
Total		42	5	180

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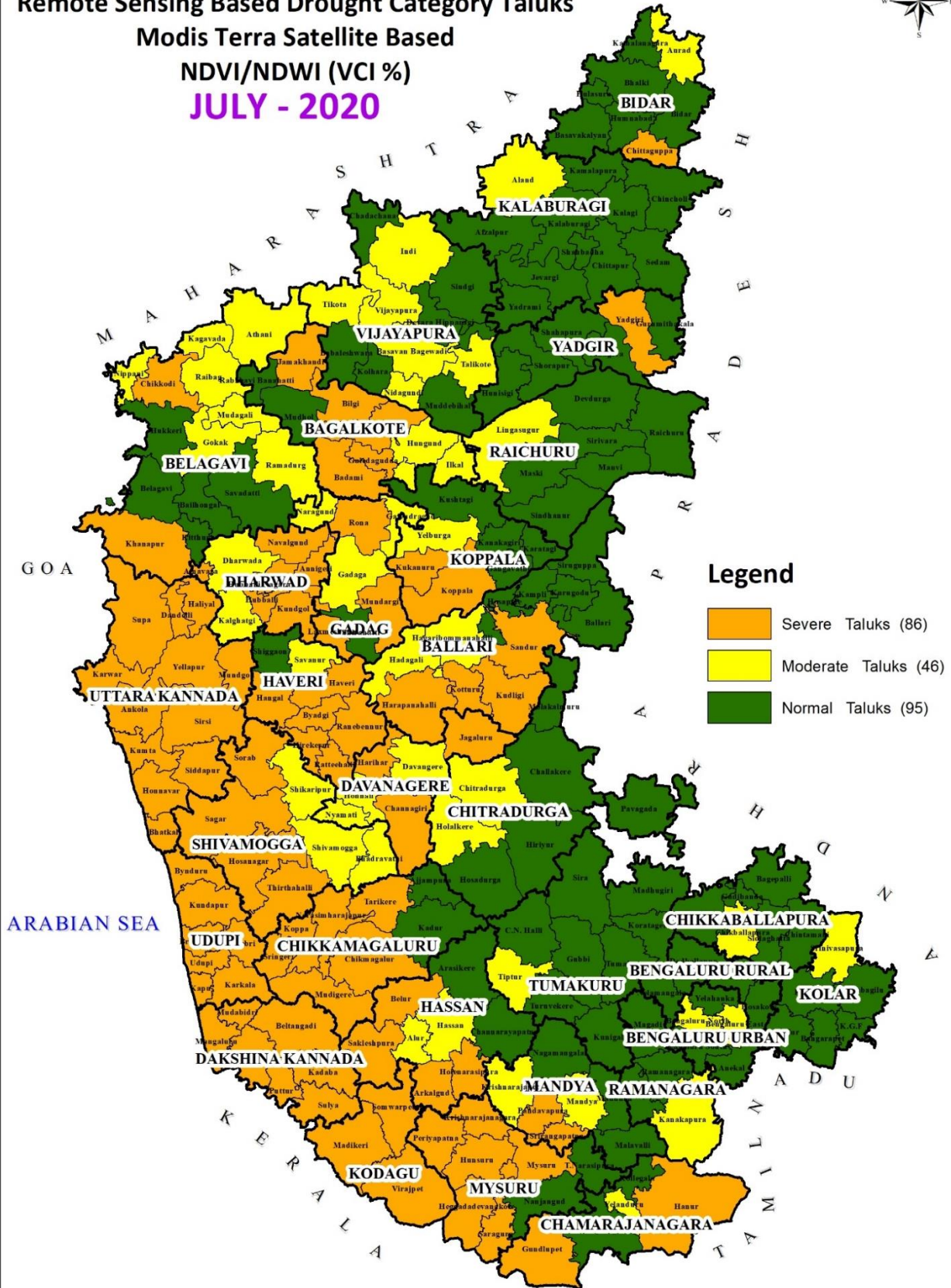
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (VCI %)

JULY - 2020

Fig.3.



Legend

- Severe Taluks (86)
- Moderate Taluks (46)
- Normal Taluks (95)

Karnataka State Natural Disaster Monitoring Centre

0 25 50 100 Kilometers

**Taluks under Remotesensing based Drought Category - July 2020 - NDVI/NDWI -
Vegetation Condition Index (VCI)**

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote	2	2	5
2	Ballari	2	5	4
3	Belagavi	7	5	2
4	Bengaluru Rural		4	
5	Bengaluru Urban	2	3	
6	Bidar	1	6	1
7	Chamarajanagar	1	2	2
8	Chikballapur	1	5	
9	Chikkamagaluru		2	6
10	Chitradurga	2	4	
11	Dakshina Kannada			7
12	Davanagere	3		3
13	Dharwad	2		6
14	Gadag	3	1	3
15	Hassan	2	2	4
16	Haveri	1	1	6
17	Kalaburagi	1	10	
18	Kodagu			3
19	Kolar	1	5	
20	Koppal	1	4	2
21	Mandya	2	3	2
22	Mysuru		2	6
23	Raichur	1	6	
24	Ramanagara	1	3	
25	Shivamogga	3		4
26	Tumakuru	1	9	
27	Udupi			7
28	Uttara Kannada			12
29	Vijayapura	6	6	
30	Yadgir		5	1
Total		46	95	86

August 2020:

The NDVI and NDWI were higher South Interior and in Parts of North Interior Karnataka Districts. Out of 30 districts 3 districts received Deficit rainfall Viz., Bengaluru urban, Ramnagara and Mandya districts and all other districts of Karnataka received normal to large excess rainfall resulted in significantly good vegetation condition during August 2020 compared to July 2020.

NDVI and NDWI Deviation Images (Fig. 3.11.) shows Poor Vegetation and Moisture condition in Chitradurga, Davanagere, Ballari, Koppala, Raichur, Chikkamagaluru, Kolar, Chikkaballapura nad Haveri districts. **Districtwise** analysis in the state, by the end of August 2020, indicated “**Normal**” agricultural situation in **21** Districts. The agricultural situation has been categorized as “**Moderate**” in **1** District and as “**Severe**” in **8** Districts.

Sl.No.	Category	Districts
1	Normal (21 Districts)	Bengaluru Urban, Bengaluru Rural, Ramanagra, Tumakuru, Chamrajanagara, Mysuru, Mandya, Hassana, Kodagu, Vijayapura, Gadag, Kalaburagi, Yadgir, Bidar, Kolar, Chikkaballapura, Chitradurga, Davangere, Ballari, Koppala, Raichur, Chikkamagaluru
2	Moderate (1 District)	Dharwad
3	Severe (8 Districts)	Belagavi, Bagalkote, Dakshina Kannada, Gadag, Haveri, Shimoga, Udupi, Uttara Kannada

Talukwise analysis in the state, by the end of August 2020, indicated “**Normal**” agricultural situation in **198** taluks. The agricultural situation has been categorized as “**Moderate**” in **15** taluks and as “**Severe**” in **14** taluks.

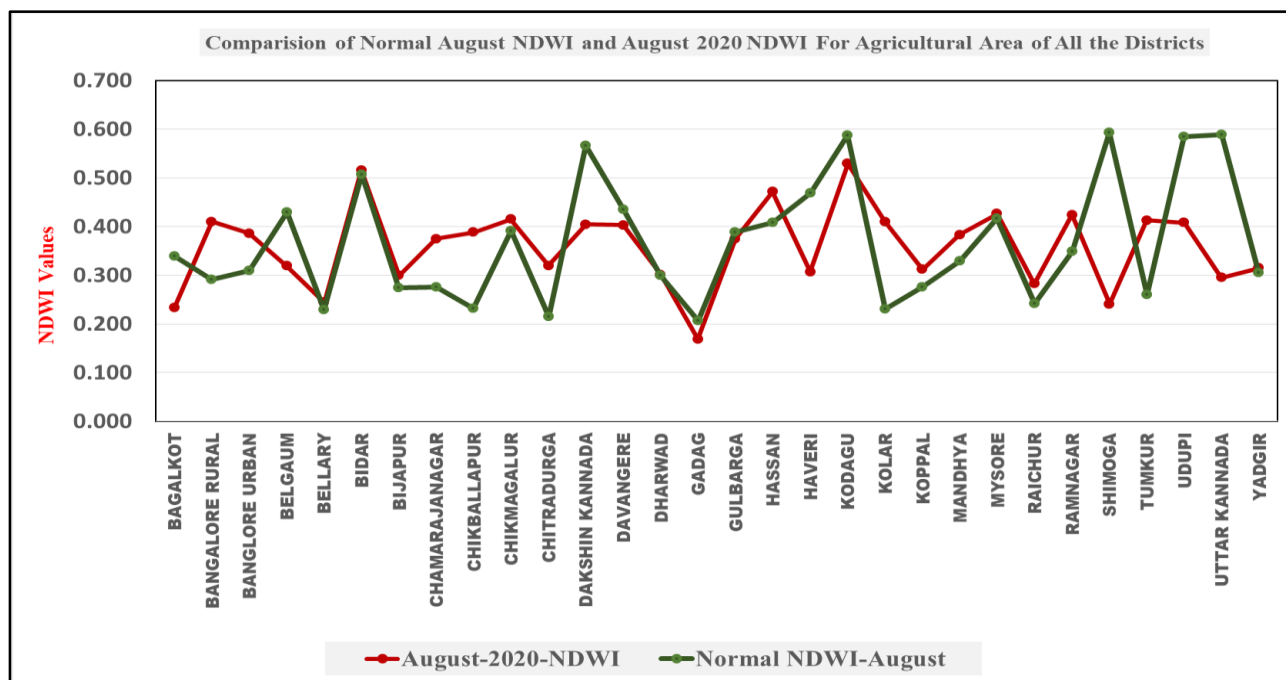
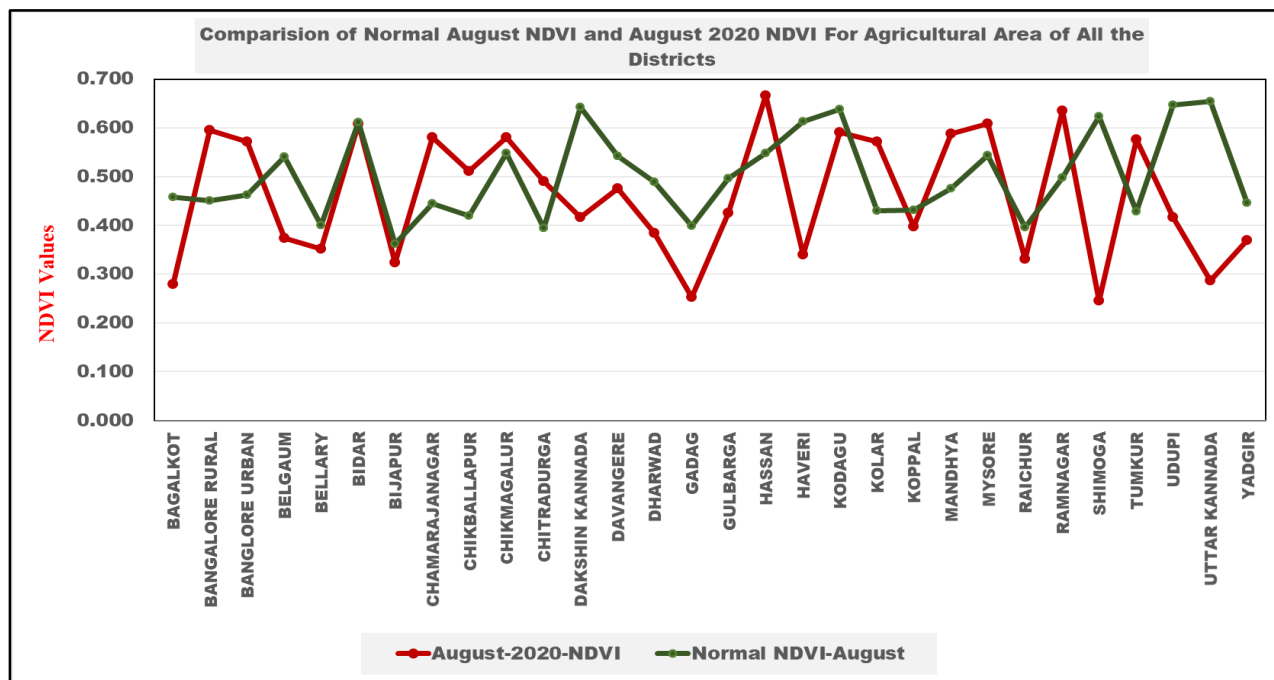
NDVI and NDWI VCI Images (Fig. 3.12.) shows Poor Vegetation and Moisture condition in Most of Districts in the State. **Districtwise** analysis in the state, by the end of August 2019, indicated “**Normal**” agricultural situation in **1** District. The agricultural situation has been categorized as “**Moderate**” in **5** Districts and as “**Severe**” in **24** Districts.

Sl.No.	Category	Districts
1	Normal (13 Districts)	Mysuru, , Bidar, Hassana, Chikkamagaluru, Chikkaballapura, Chitradurga, Kolar, , Benagluru Urban, Bengaluru Rural, Ramanagra, Tumakuru, Chamrajanagara, Mandya
2	Moderate (1 Districts)	Koppala
3	Severe (16 Districts)	Bagalkote, Belagavi, Ballari, Vijayapura, Dakshina Kannada, Davangere, Dharwad, Gadag, Kalaburagi, Haveri, Kodagu, Raichur, Shivamogga, Udupi, Uttara Kannada , Yadgir

Talukwise analysis in the state, by the end of August 2020, indicated “**Normal**” agricultural situation in **177** taluks. The agricultural situation has been categorized as “**Moderate**” in **25** taluks and as “**Severe**” in **25** taluks.

This year the agricultural situation is significantly better than previous year due to excess/normal rainfall during August Month. The overall situation has improved from July to august month.

Agricultural situation upto August 2020 given below and maps are shown fig.3.9 and fig.3.10.

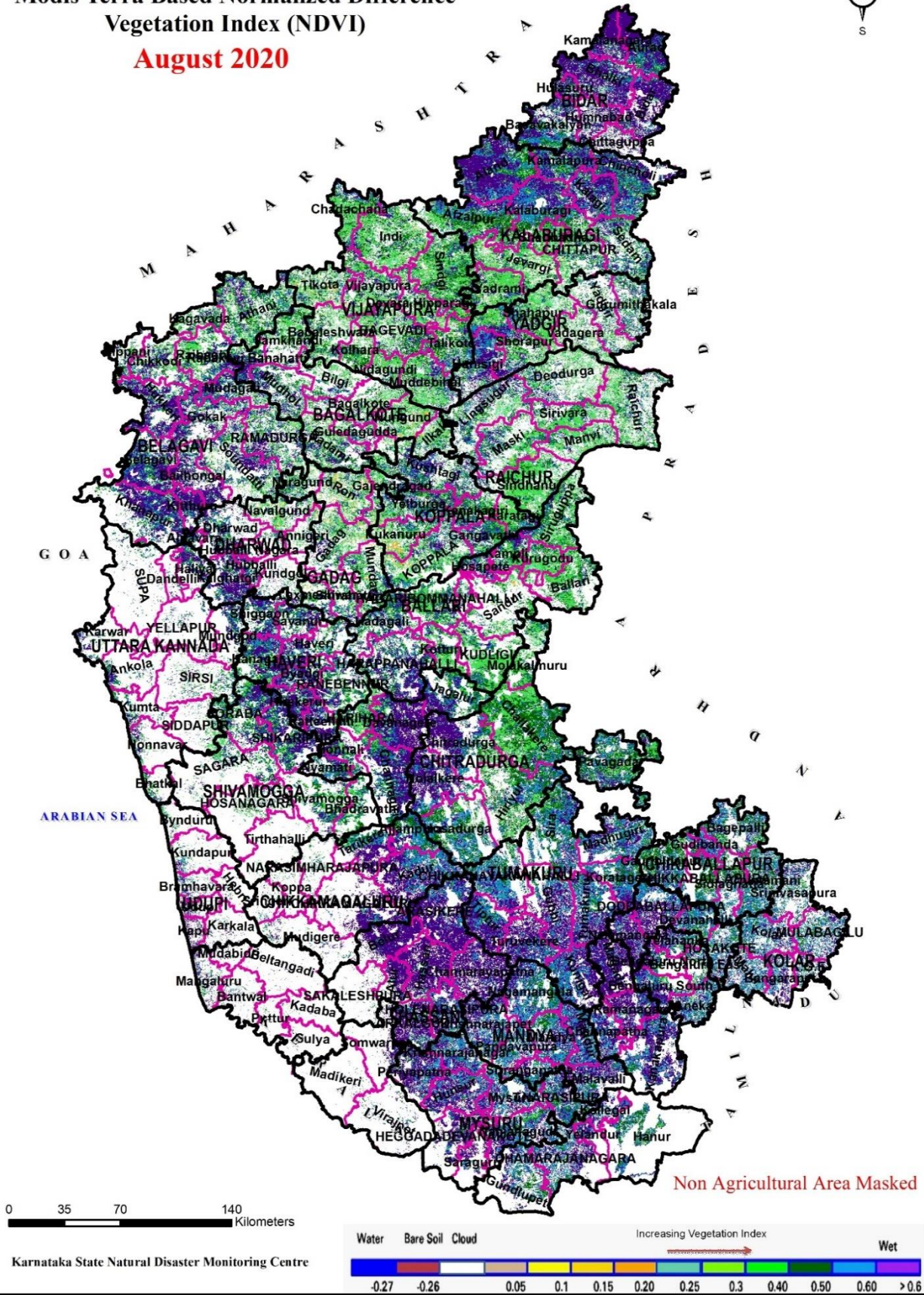
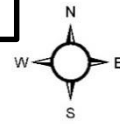


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Modis Terra Based Normalized Difference Vegetation Index (NDVI)

August 2020

Fig.3.

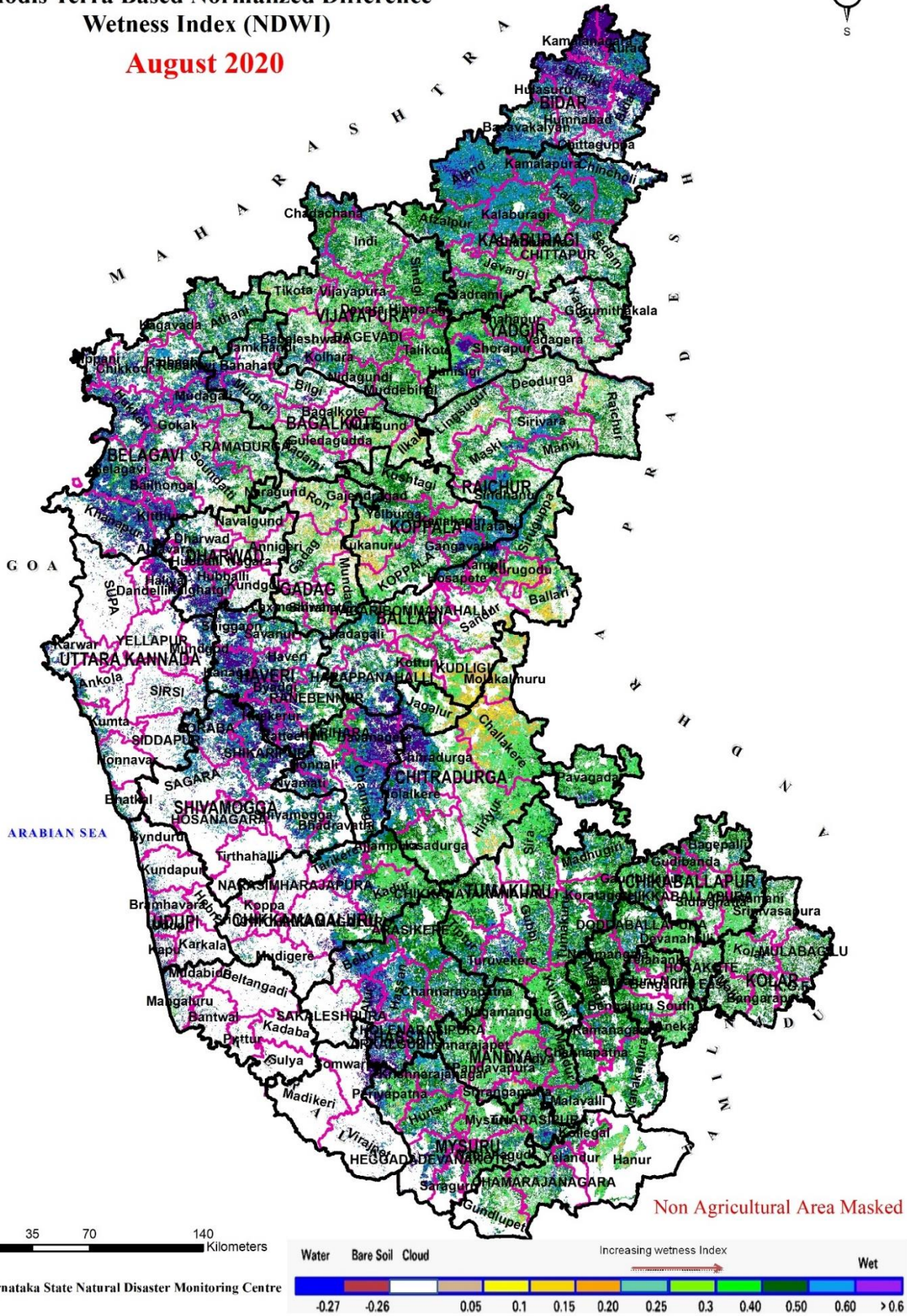
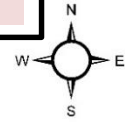


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Modis Terra Based Normalized Difference Wetness Index (NDWI)

August 2020

Fig.3.10



KARNATAKA

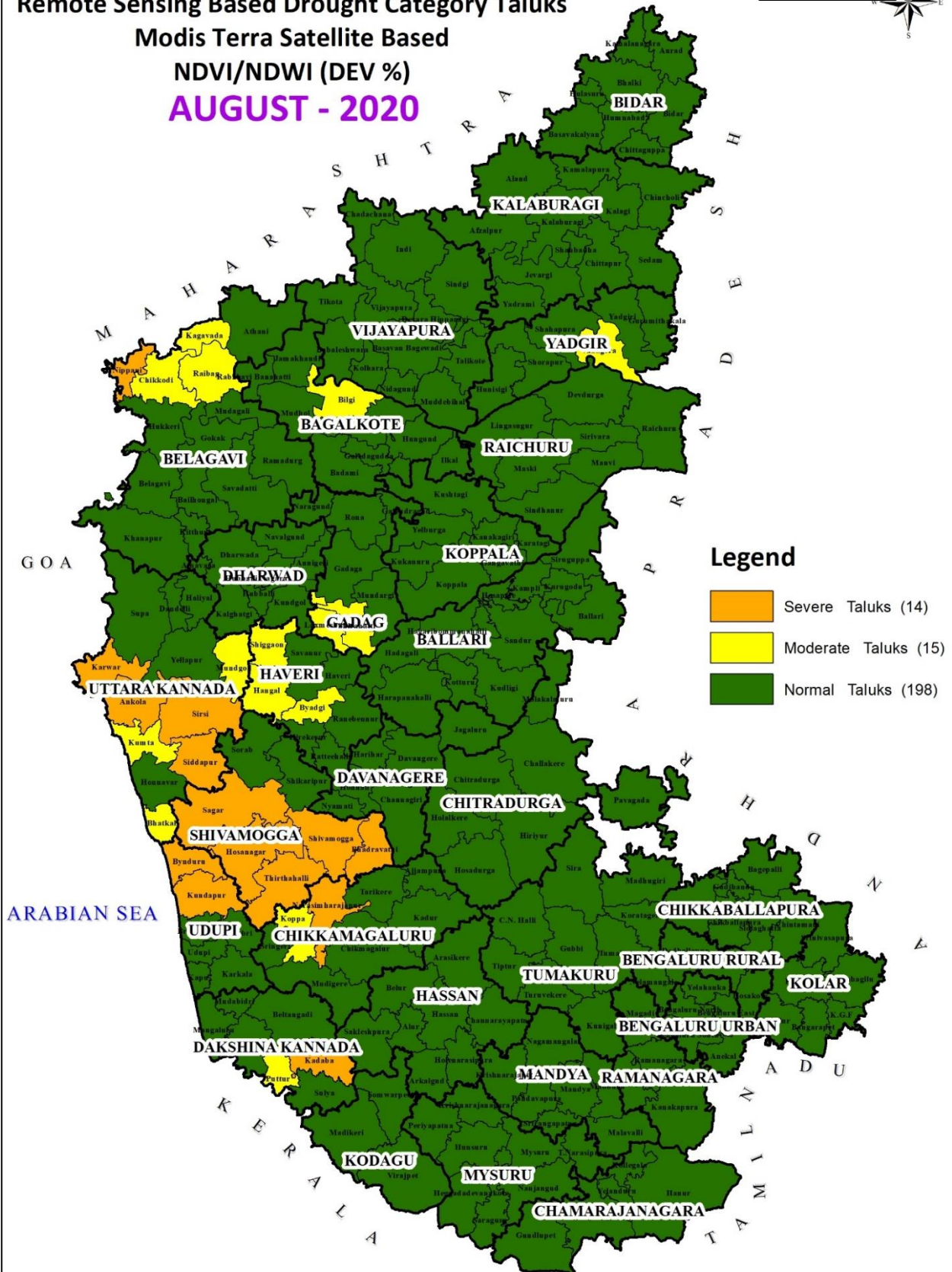
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (DEV %)

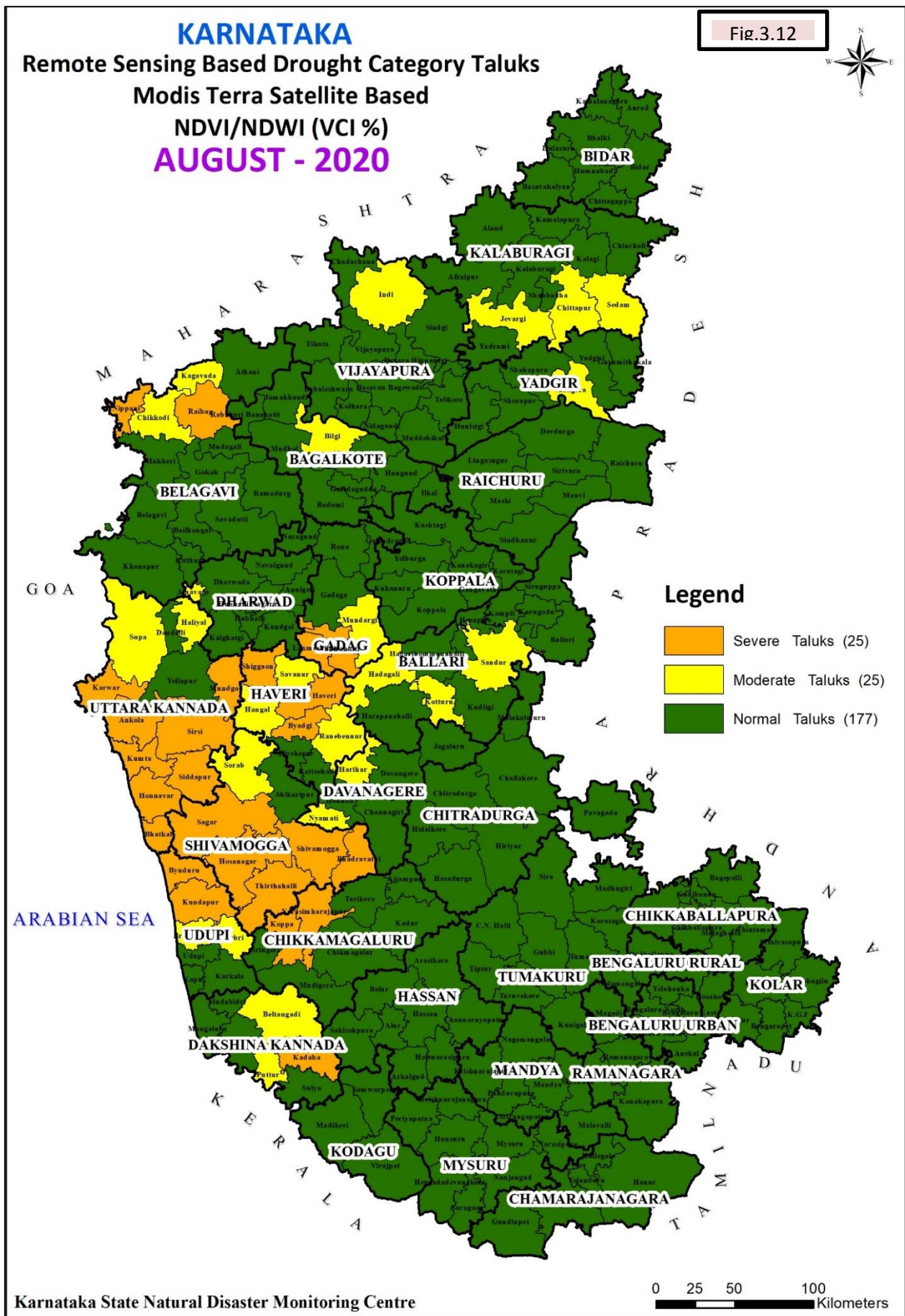
AUGUST - 2020

Fig.3.11



Taluks under Remotesensing based Drought Category - August 2020 - NDVI/NDWI (%Dev)

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote		1	8
2	Ballari			11
3	Belagavi	1	3	10
4	Bengaluru Rural			4
5	Bengaluru Urban			5
6	Bidar			8
7	Chamarajanagar			5
8	Chikballapur			6
9	Chikkamagaluru	1	1	6
10	Chitradurga			6
11	Dakshina Kannada	1	1	5
12	Davanagere			6
13	Dharwad			8
14	Gadag		2	5
15	Hassan			8
16	Haveri		3	5
17	Kalaburagi			11
18	Kodagu			3
19	Kolar			6
20	Koppal			7
21	Mandya			7
22	Mysuru			8
23	Raichur			7
24	Ramanagara			4
25	Shivamogga	5		2
26	Tumakuru			10
27	Udupi	2		5
28	Uttara Kannada	4	3	5
29	Vijayapura			12
30	Yadgir		1	5
Total		14	15	198



**Taluks under Remotesensing based Drought Category - August 2020 - NDVI/NDWI -
Vegetation Condition Index (VCI)**

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote		1	8
2	Ballari		3	8
3	Belagavi	2	2	10
4	Bengaluru Rural			4
5	Bengaluru Urban			5
6	Bidar			8
7	Chamarajanagar			5
8	Chikballapur			6
9	Chikkamagaluru	2		6
10	Chitradurga			6
11	Dakshina Kannada	1	2	4
12	Davanagere		2	4
13	Dharwad		1	7
14	Gadag	2	1	4
15	Hassan			8
16	Haveri	3	3	2
17	Kalaburagi		3	8
18	Kodagu			3
19	Kolar			6
20	Koppal			7
21	Mandya			7
22	Mysuru			8
23	Raichur			7
24	Ramanagara			4
25	Shivamogga	5	1	1
26	Tumakuru			10
27	Udupi	2	2	3
28	Uttara Kannada	8	2	2
29	Vijayapura		1	11
30	Yadgir		1	5
Total		25	25	177

September 2020:

The NDVI and NDWI were higher in most Parts of the Karnataka Districts. Out of 30 districts 5 districts received Normal rainfall Viz., Bengaluru Urban , Benagluru Rural, Ramangara, Kolar and Mandya districts and all other districts of Karnataka received Excess to Large excess rainfall resulted in improvement in vegetation condition during September 2020.

NDVI and NDWI Deviation Images (Fig. 3.15.) shows Good Vegetation and Moisture condition in major parts of the State. **Districtwise** analysis in the state, by the end of September 2019, indicated “**Normal**” agricultural situation in **30** Districts. The agricultural situation has been categorized as “**Moderate**” in Nil District and as “**Severe**” in Nil Districts.

Sl.No.	Category	Districts
1	Normal (30 Districts)	Chitradurga, Davangere, Ballari, Koppala, Chikkamagaluru, Benagluru Urban, Bengaluru Rural, Ramanagra, Tumakuru, Chamrajanagara, Mysuru, Mandya, Belagavi, Bagalkote, Hassana, Kodagu, Dakshina Kannada, Uttara Kannada, Shivamogga, Udupi, Gadag, Kalaburagi, Yadgir, Bidar, Dharwad, Kolar, Chikkabalapura, Vijayapura and Raichur and Haveri
2	Moderate (Nil)	-
3	Severe (Nil)	-

Talukwise analysis in the state, by the end of September 2020, indicated “**Normal**” agricultural situation in **222** taluks. The agricultural situation has been categorized as “**Moderate**” in **5** taluks and as “**Severe**” in **nil** taluk.

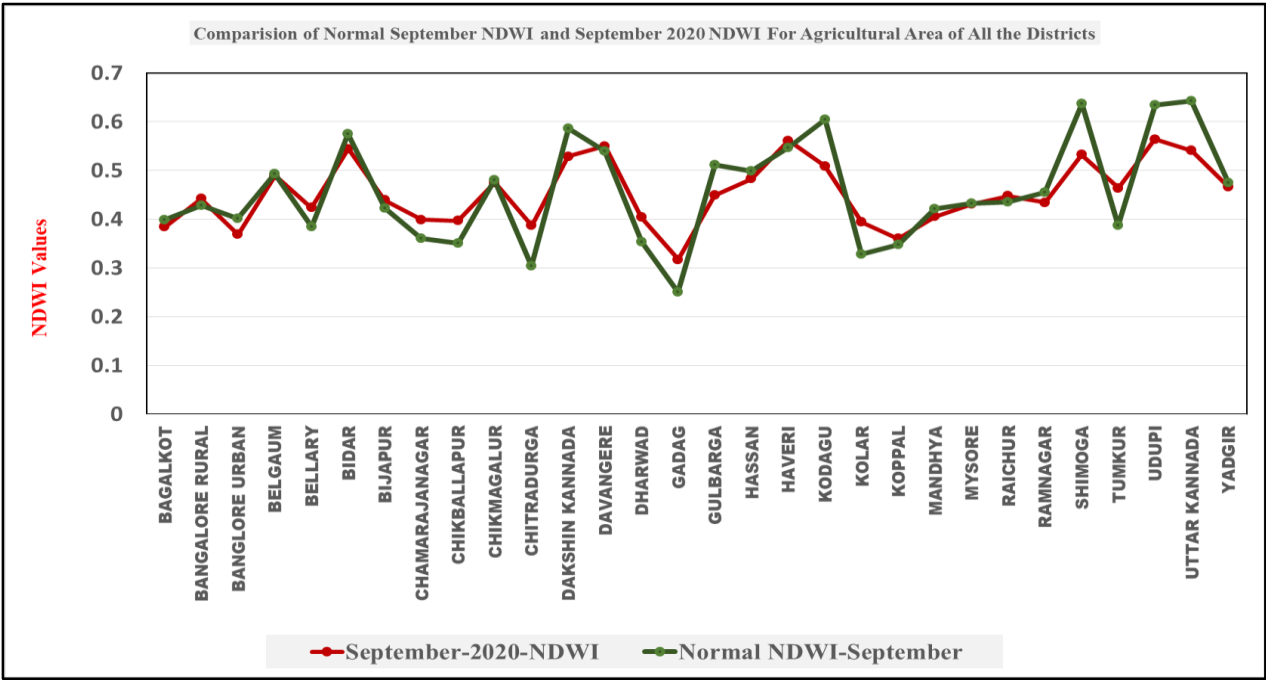
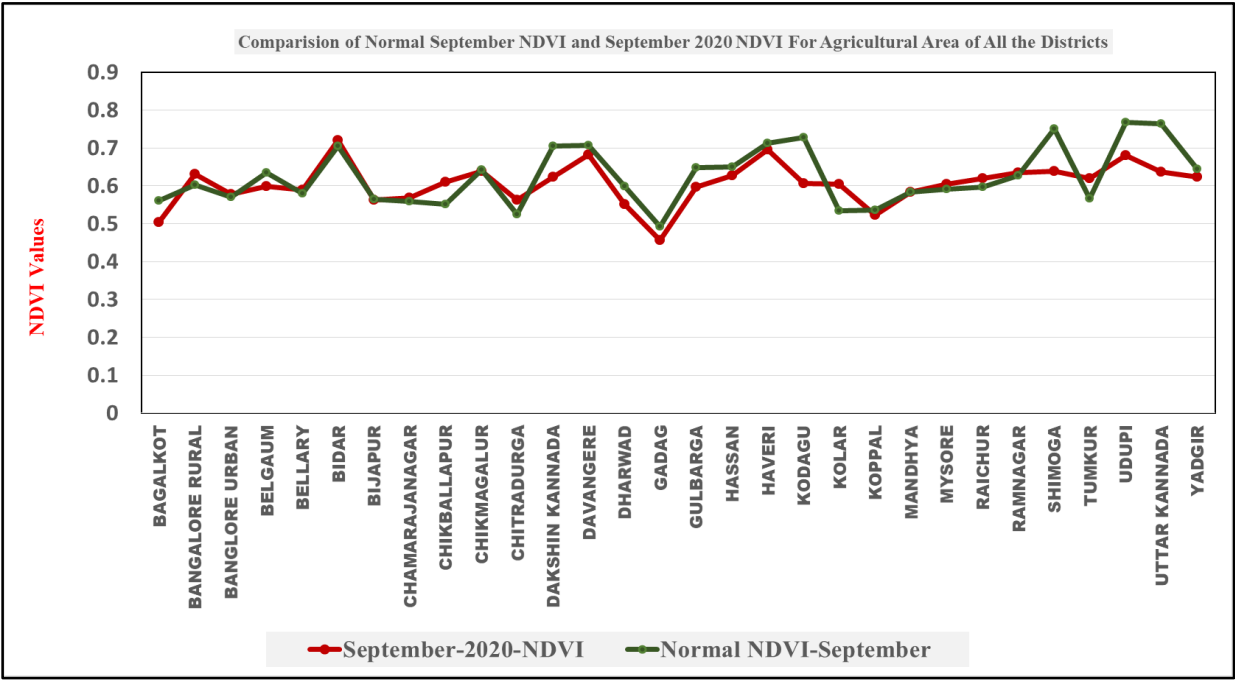
NDVI and NDWI VCI Images (Fig. 3.16.) shows Poor Moisture condition in few parts of North Interior Karnataka Districts in the State. **Districtwise** analysis in the state, by the end of September 2019, indicated “**Normal**” agricultural situation in **18** Districts. The agricultural situation has been categorized as “**Moderate**” in **6** Districts and as “**Severe**” in **6** Districts.

Sl.No.	Category	Districts
1	Normal (18 Districts)	Ramanagra, Chitradurga, Chamrajanagara, Mandya, Mysuru, Yadgir, Bidar, Haveri, Hassana, Chikkamagaluru, , Ballari, Raichur, Vijayapura, Bengaluru Rural, Kolar, Chikkabalapura, Tumakuru, Koppala,
2	Moderate (6 Districts)	Bagalkote, Benagluru Urban, Belagavi, Davangere, Gadag, Kalaburagi
3	Severe (6 Districts)	Dakshina Kannada, Dharwad, Kodagu, Shivamogga, Udupi, Uttara Kannada

Talukwise analysis in the state, by the end of September 2020, indicated “**Normal**” agricultural situation in **132** taluks. The agricultural situation has been categorized as “**Moderate**” in **53** taluks and as “**Severe**” in **42** taluks.

The overall situation of the State has continued to remain good from august to September 2020 month.

Agricultural situation upto September 2020 given below and maps are shown fig.3.13 and fig.3.14.

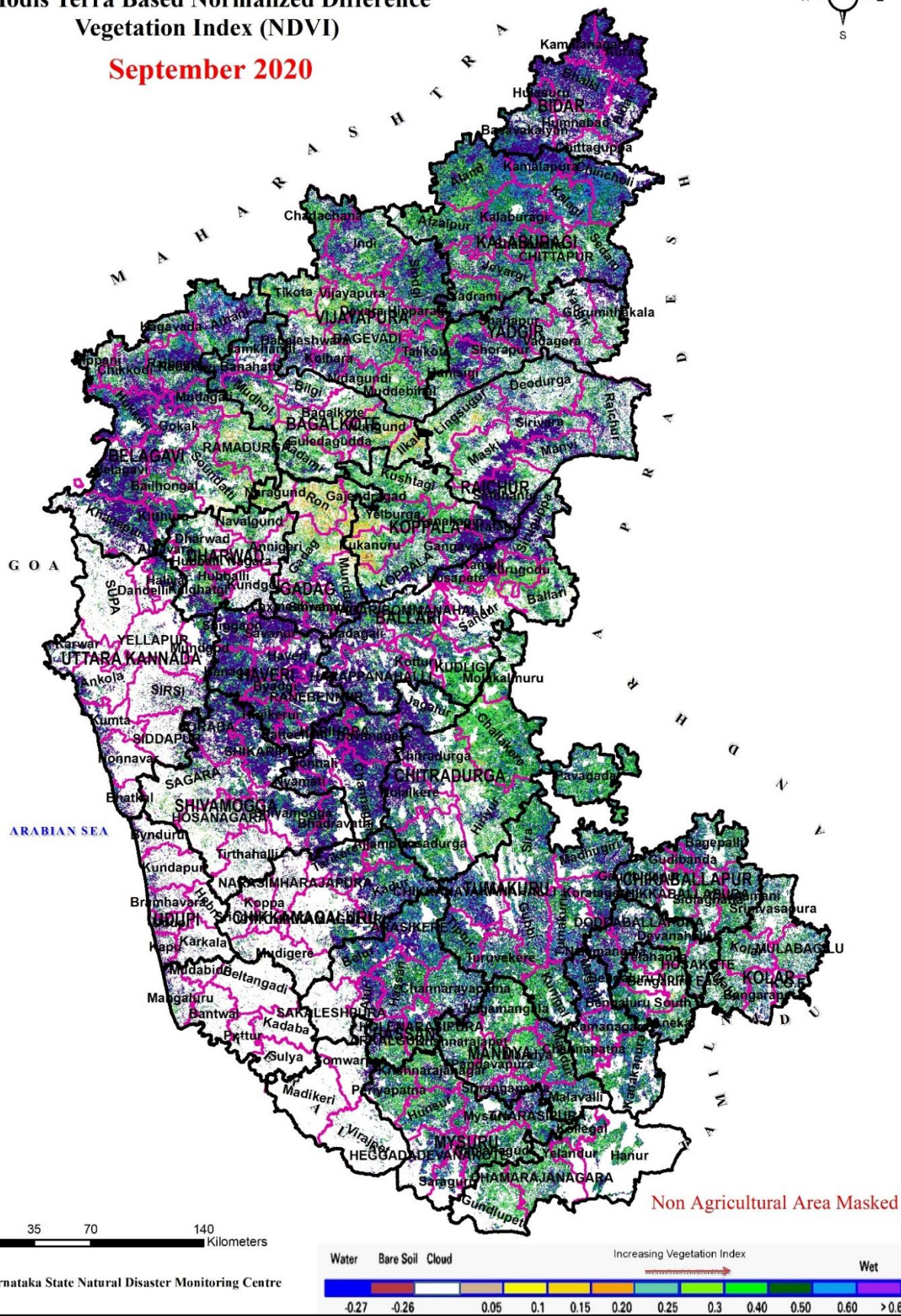
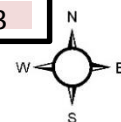


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Modis Terra Based Normalized Difference
Vegetation Index (NDVI)

September 2020

Fig.3.13

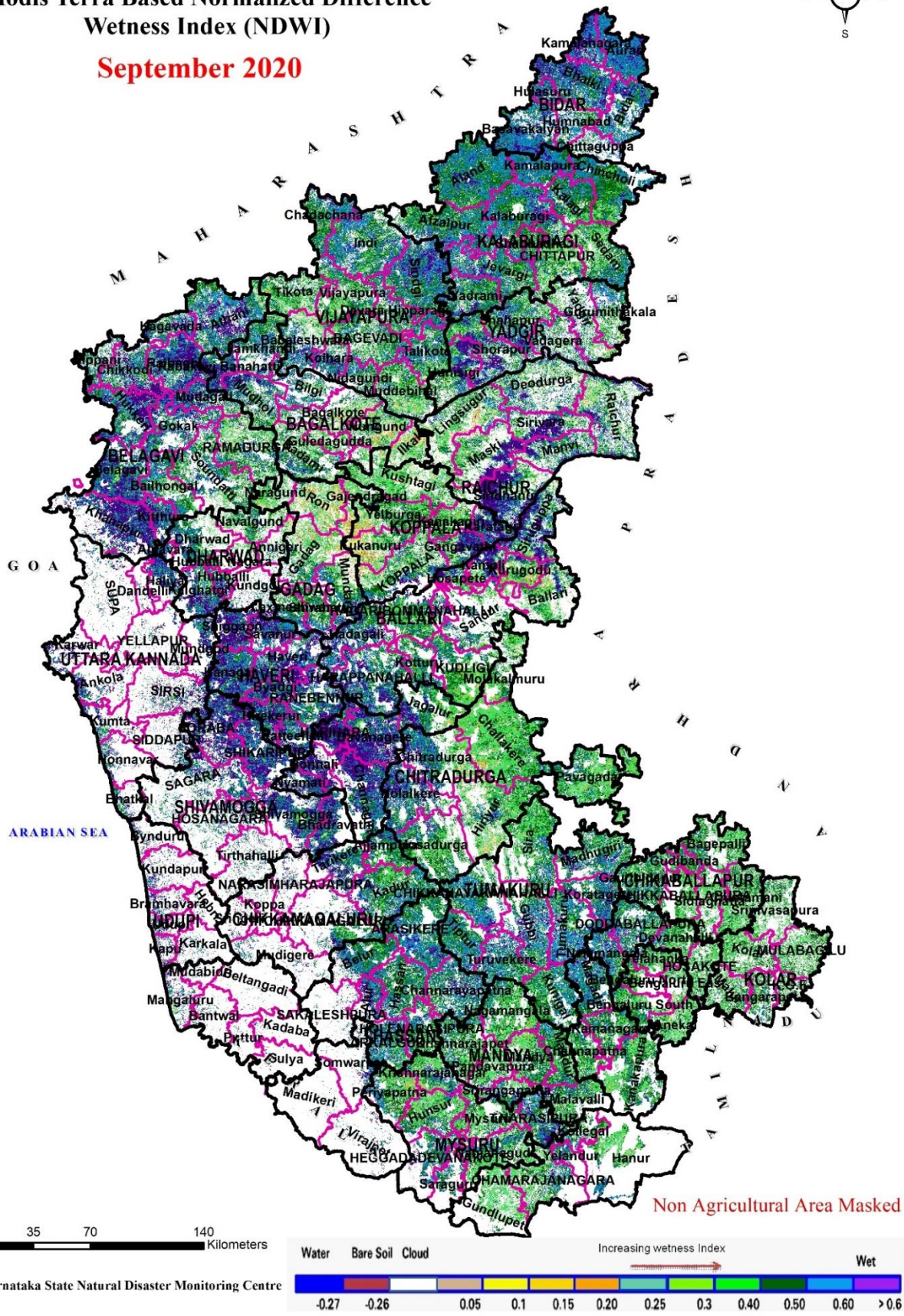
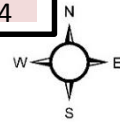


KARNATAKA

Modis Terra Based Normalized Difference Wetness Index (NDWI)

September 2020

Fig.3.14



KARNATAKA

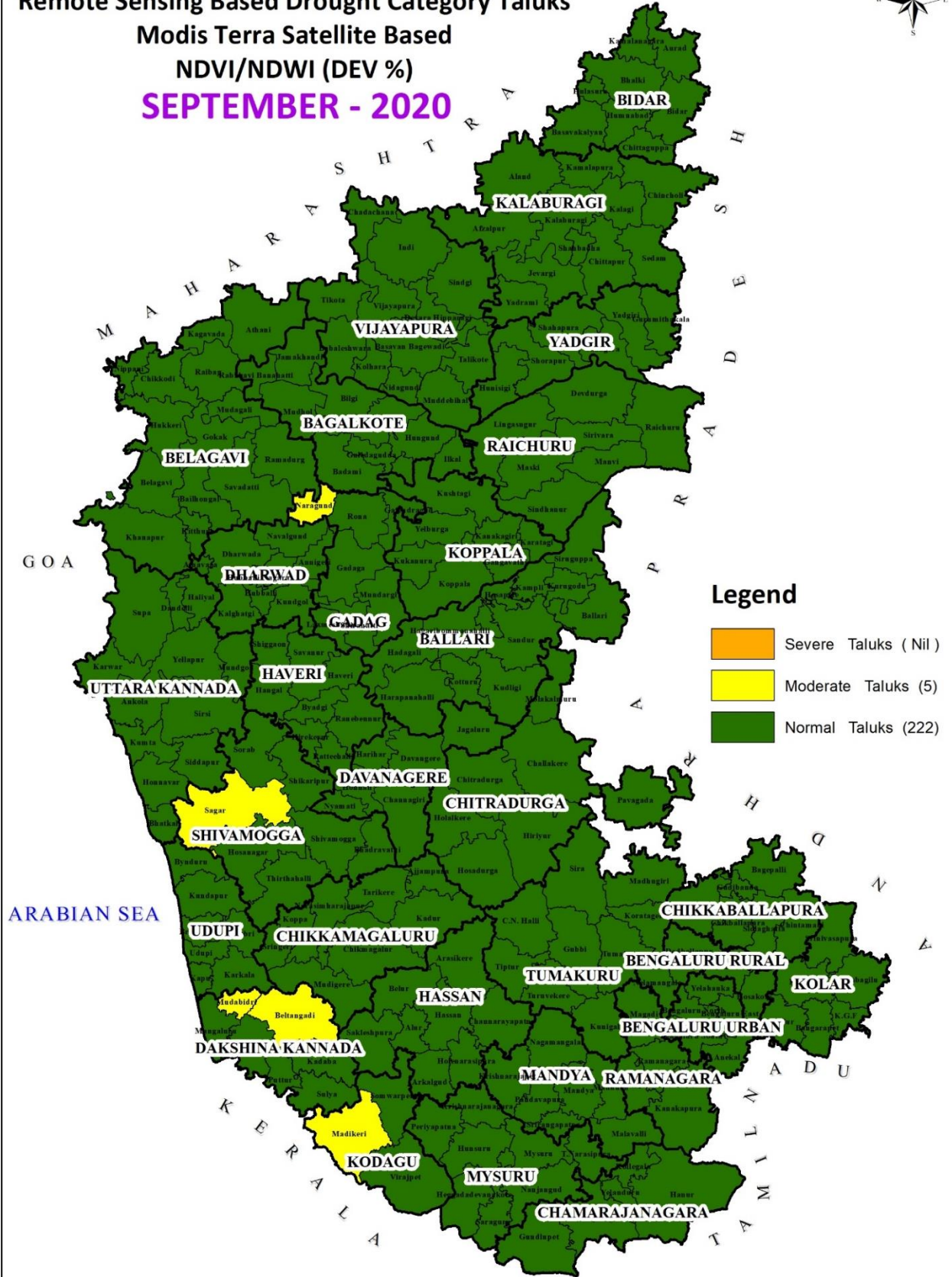
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (DEV %)

SEPTEMBER - 2020

Fig.3.15



Legend

- Severe Taluks (Nil)
- Moderate Taluks (5)
- Normal Taluks (222)

Karnataka State Natural Disaster Monitoring Centre

0 25 50 100 Kilometers

Taluks under Remotesensing based Drought Category - September 2020 - NDVI/NDWI (%Dev)

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote			9
2	Ballari			11
3	Belagavi			14
4	Bengaluru Rural			4
5	Bengaluru Urban			5
6	Bidar			8
7	Chamarajanagar			5
8	Chikballapur			6
9	Chikkamagaluru			8
10	Chitradurga			6
11	Dakshina Kannada		2	5
12	Davanagere			6
13	Dharwad			8
14	Gadag		1	6
15	Hassan			8
16	Haveri			8
17	Kalaburagi			11
18	Kodagu		1	2
19	Kolar			6
20	Koppal			7
21	Mandya			7
22	Mysuru			8
23	Raichur			7
24	Ramanagara			4
25	Shivamogga		1	6
26	Tumakuru			10
27	Udupi			7
28	Uttara Kannada			12
29	Vijayapura			12
30	Yadgir			6
Total		0	5	222

KARNATAKA

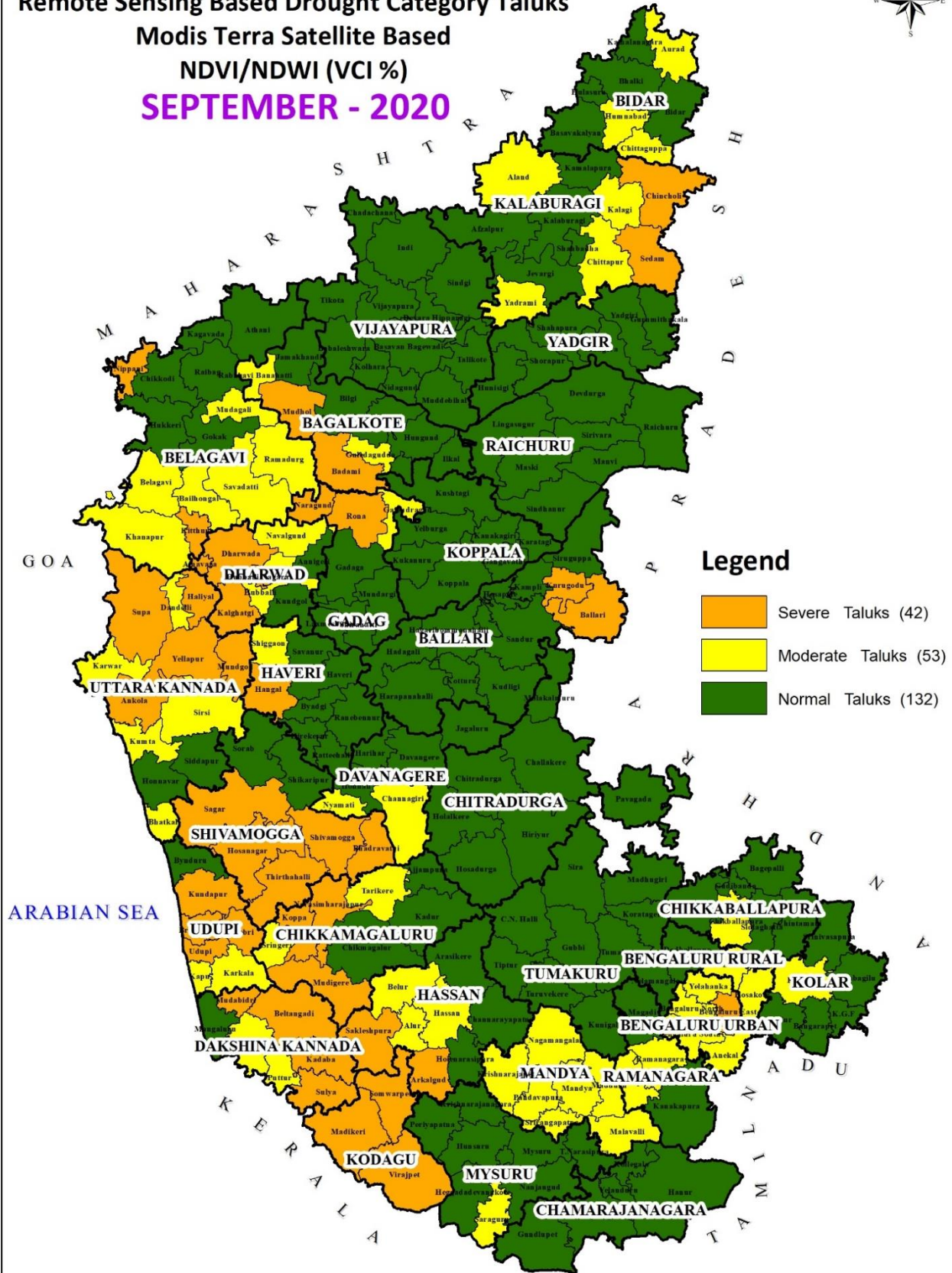
Remote Sensing Based Drought Category Taluks

Modis Terra Satellite Based

NDVI/NDWI (VCI %)

SEPTEMBER - 2020

Fig.3.16



Karnataka State Natural Disaster Monitoring Centre

0 25 50 100 Kilometers

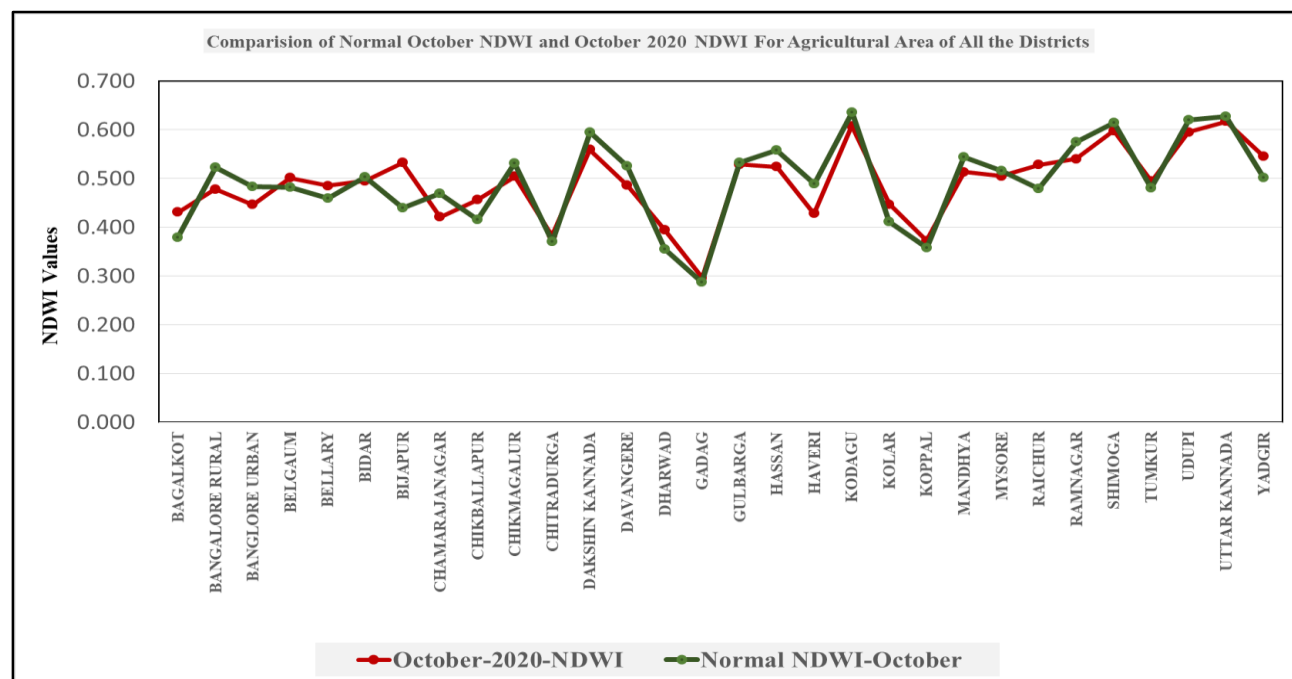
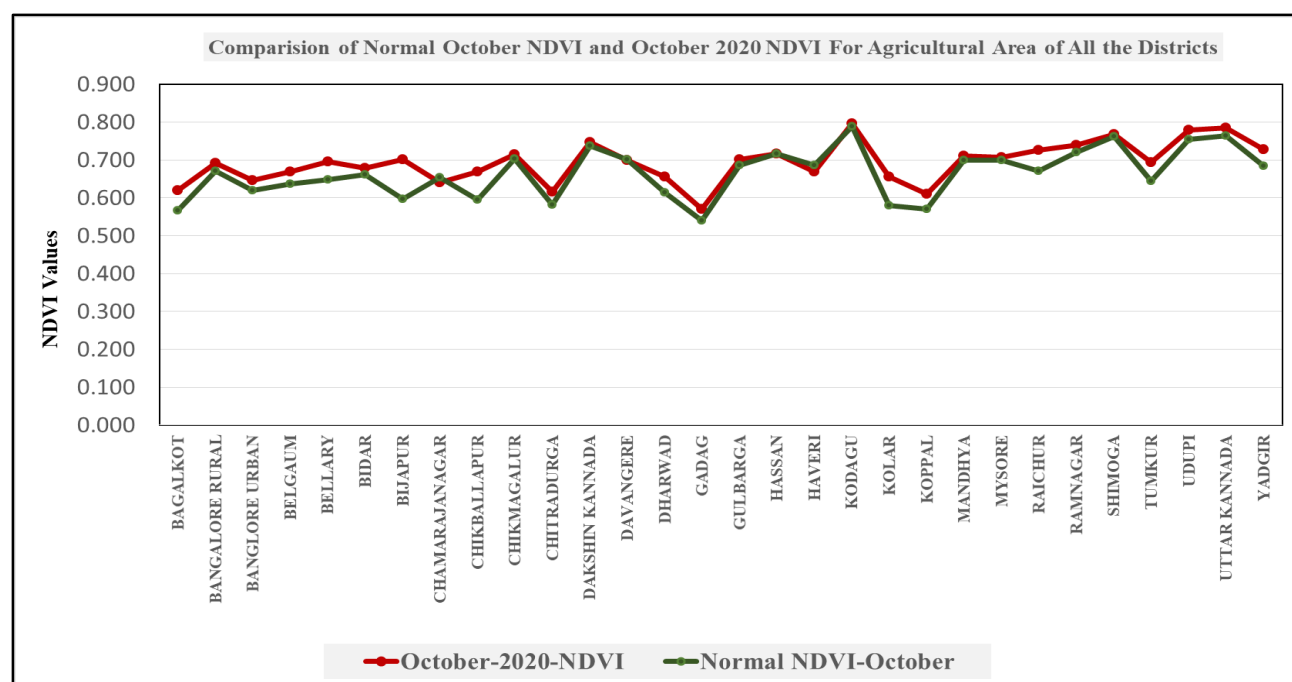
**Taluks under Remotesensing based Drought Category - September 2020 - NDVI/NDWI -
Vegetation Condition Index (VCI)**

Sl. No.	District	Severe	Moderate	Normal
1	Bagalkote	2	2	5
2	Ballari	2		9
3	Belagavi	2	6	6
4	Bengaluru Rural		2	2
5	Bengaluru Urban	1	4	
6	Bidar		3	5
7	Chamarajanagar			5
8	Chikballapur		1	5
9	Chikkamagaluru	3	2	3
10	Chitradurga			6
11	Dakshina Kannada	4	2	1
12	Davanagere		2	4
13	Dharwad	4	2	2
14	Gadag	2	1	4
15	Hassan	2	3	3
16	Haveri	1	1	6
17	Kalaburagi	2	4	5
18	Kodagu	3		
19	Kolar		1	5
20	Koppal			7
21	Mandya		7	
22	Mysuru		1	7
23	Raichur			7
24	Ramanagara		2	2
25	Shivamogga	5		2
26	Tumakuru			10
27	Udupi	4	2	1
28	Uttara Kannada	5	5	2
29	Vijayapura			12
30	Yadgir			6
Total		42	53	132

October 2020:

The NDVI and NDWI were higher in most Parts of the Karnataka Districts. Out of 30 districts 3 districts viz., Benagluru rural, Chhmarajnagara and Mysuru received Deficit rainfall and all other districts of Karnataka received normal to large excess rainfall resulted in good vegetation condition during October 2020. During October 2020, the agriculture situation has improved from September to October in the State. The trends of different crop indices are normal in many parts of Karnataka districts indicating progressive improvement in agriculture situation from June.

Agricultural situation upto October 2020 given below and maps are shown fig.3.17 and fig. 3.18.

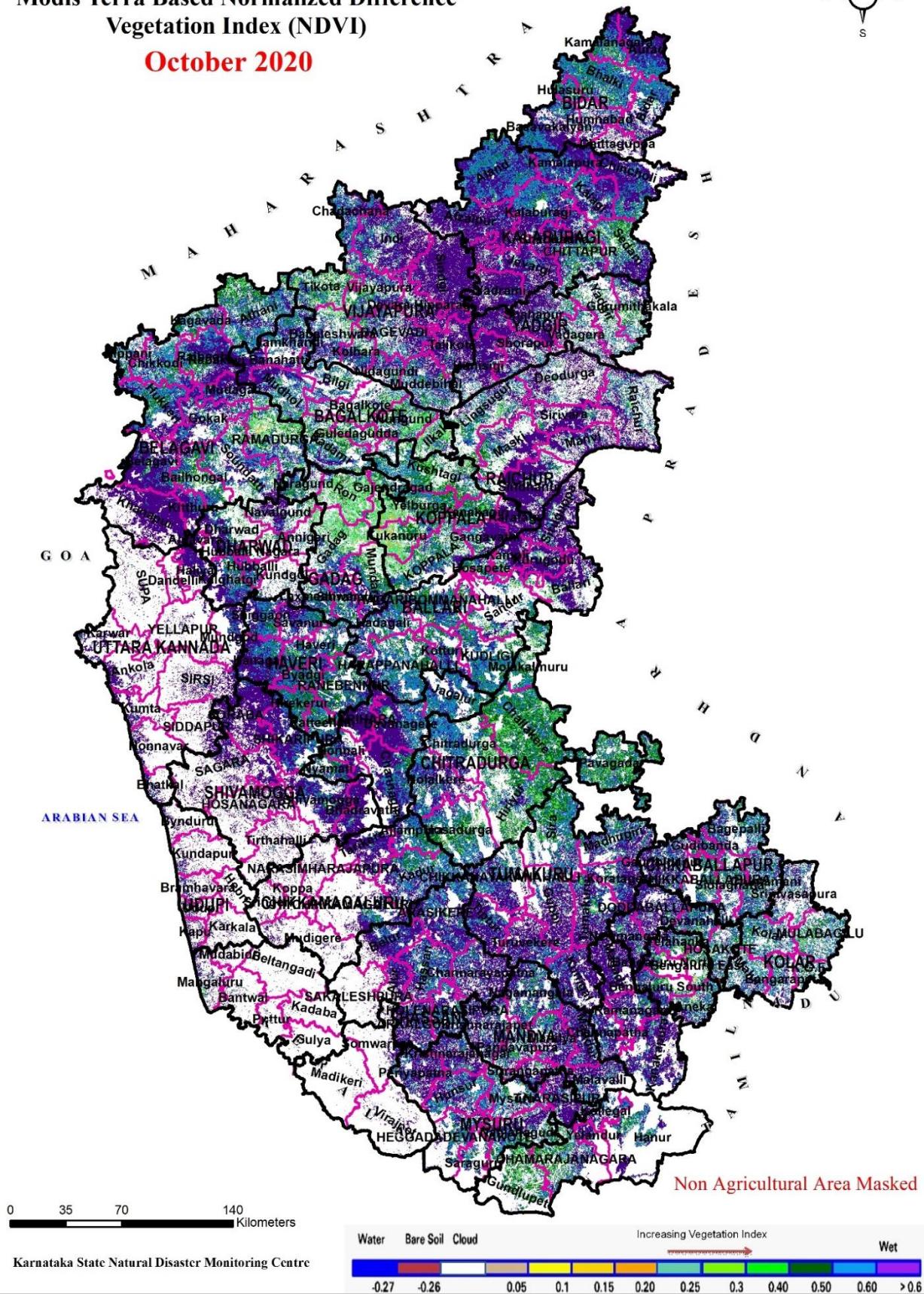
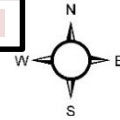


KARNATAKA

Modis Terra Based Normalized Difference Vegetation Index (NDVI)

October 2020

Fig.3.17

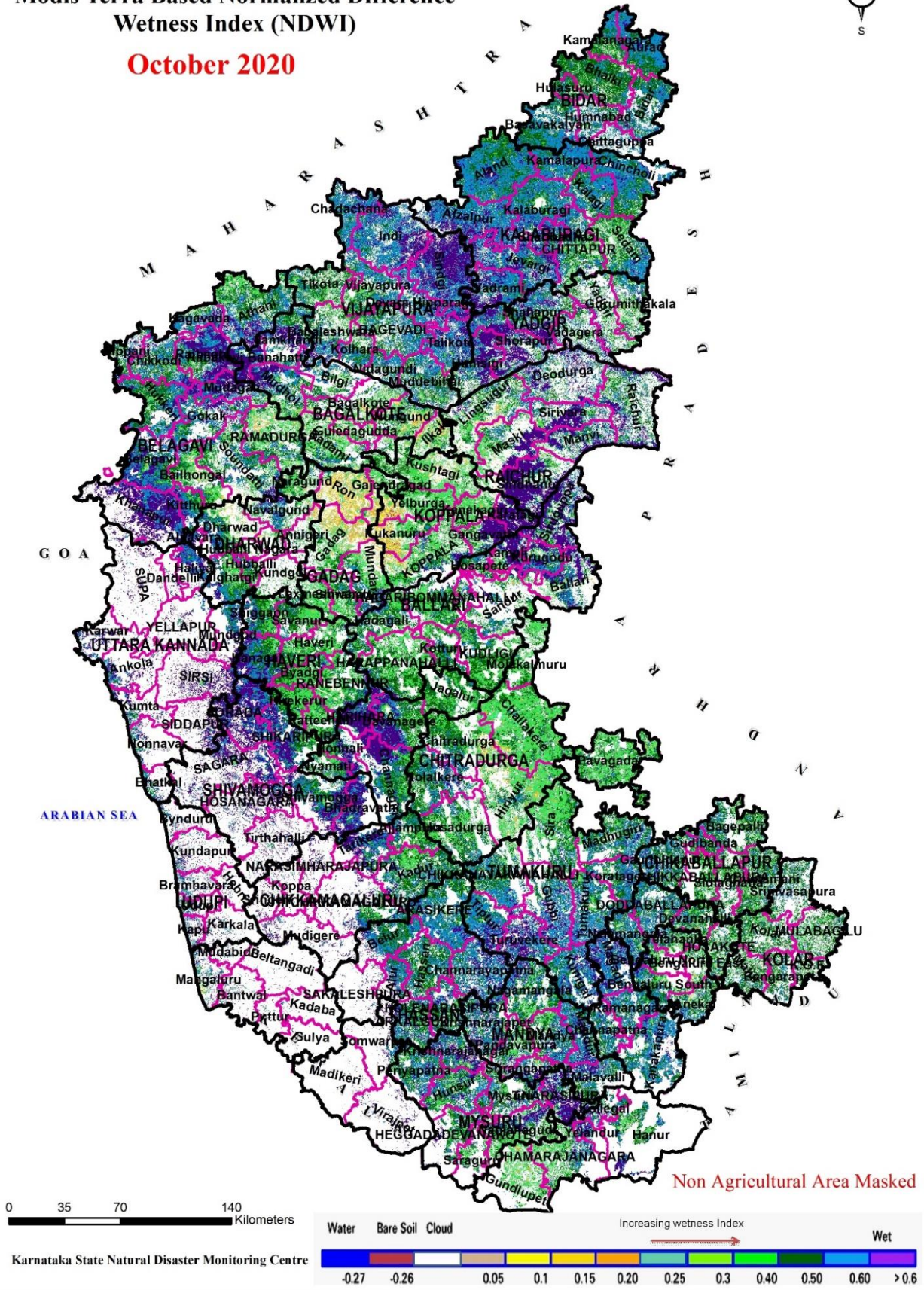
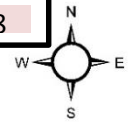


KARNATAKA

Modis Terra Based Normalized Difference Wetness Index (NDWI)

October 2020

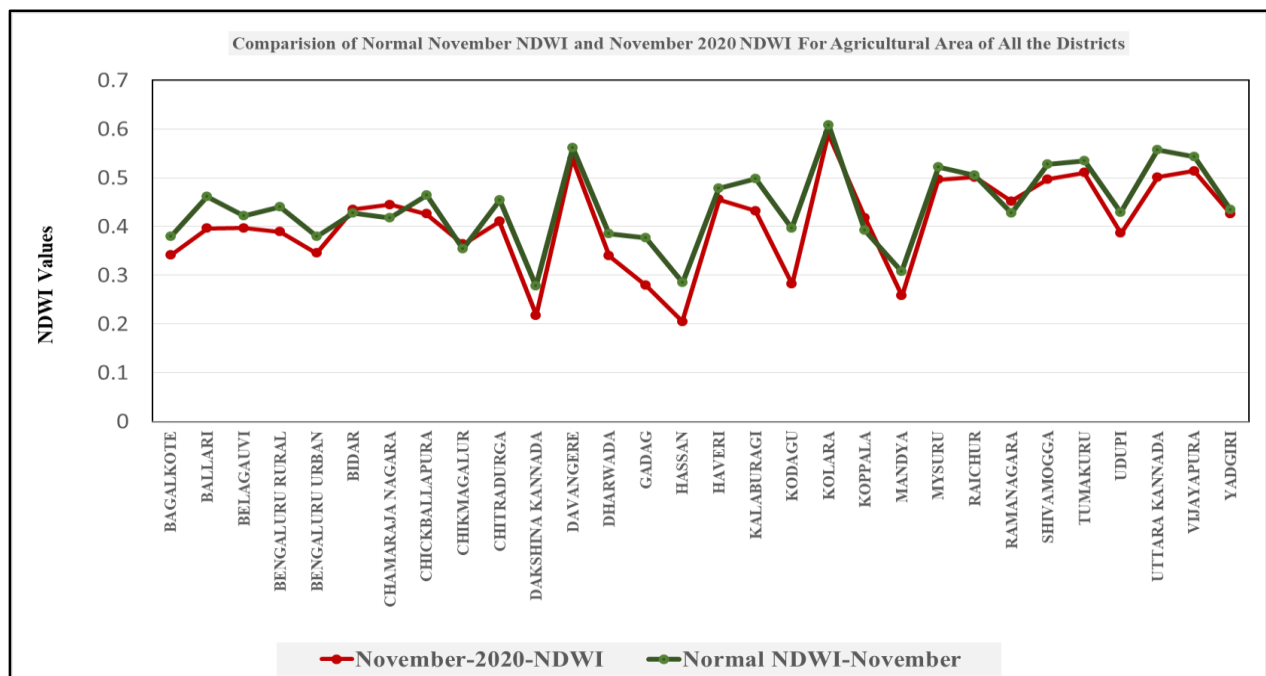
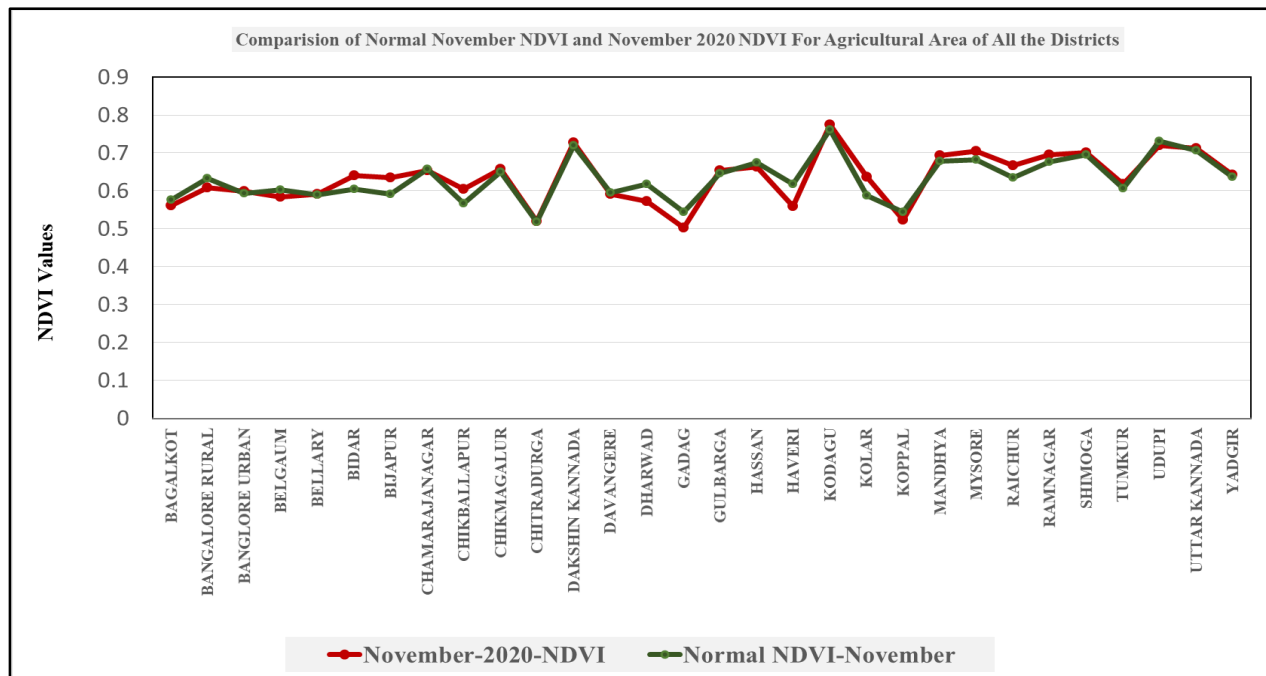
Fig.3.18



November 2020:

The NDVI map of November 2020 showed that Good vegetation and moisture condition in major parts of the State.

Agricultural situation upto November 2020 given below and maps are shown fig.3.3 to 3.4.

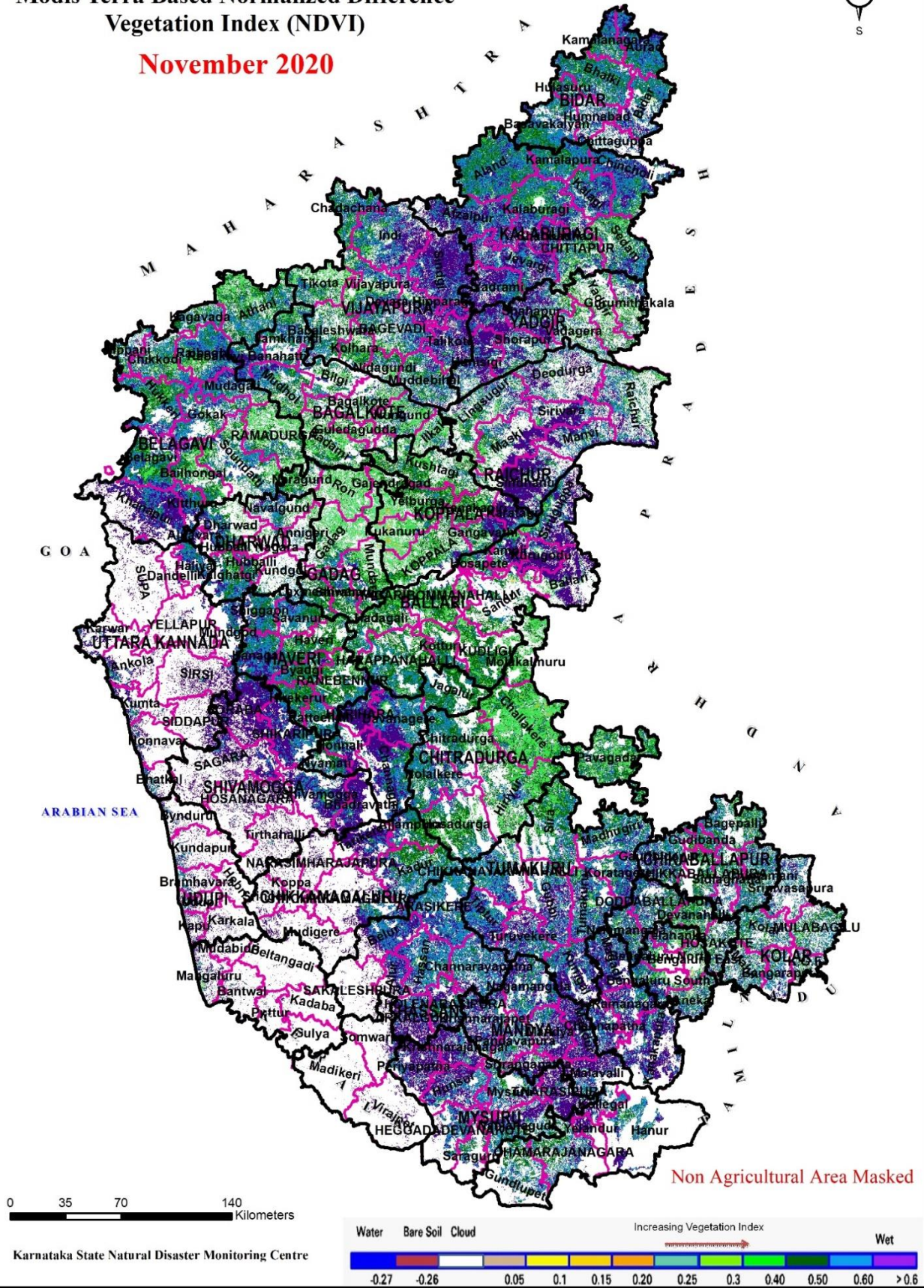
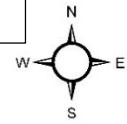


KARNATAKA

Modis Terra Based Normalized Difference
Vegetation Index (NDVI)

November 2020

Fig.3.19

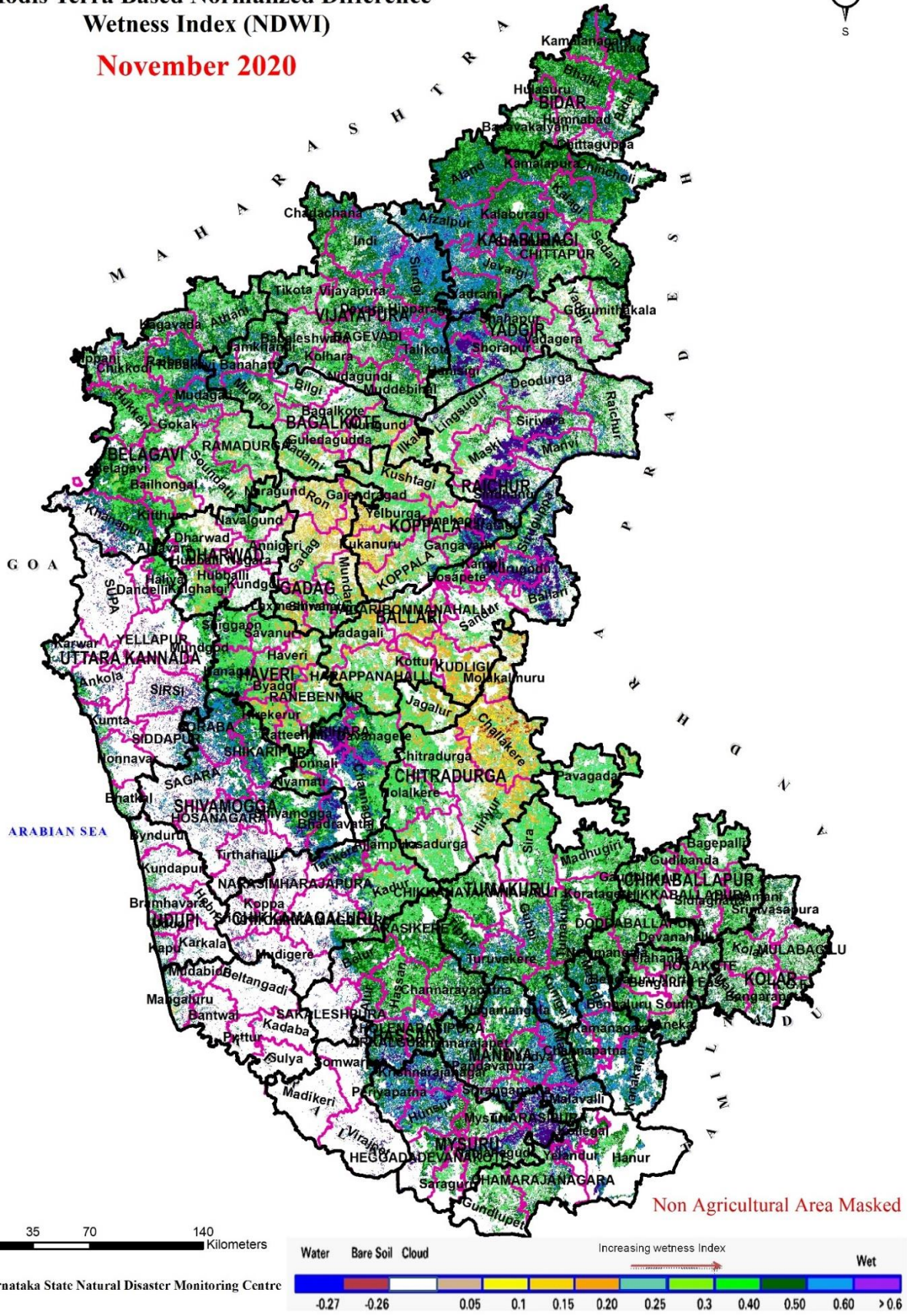
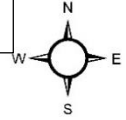


KARNATAKA

Modis Terra Based Normalized Difference Wetness Index (NDWI)

November 2020

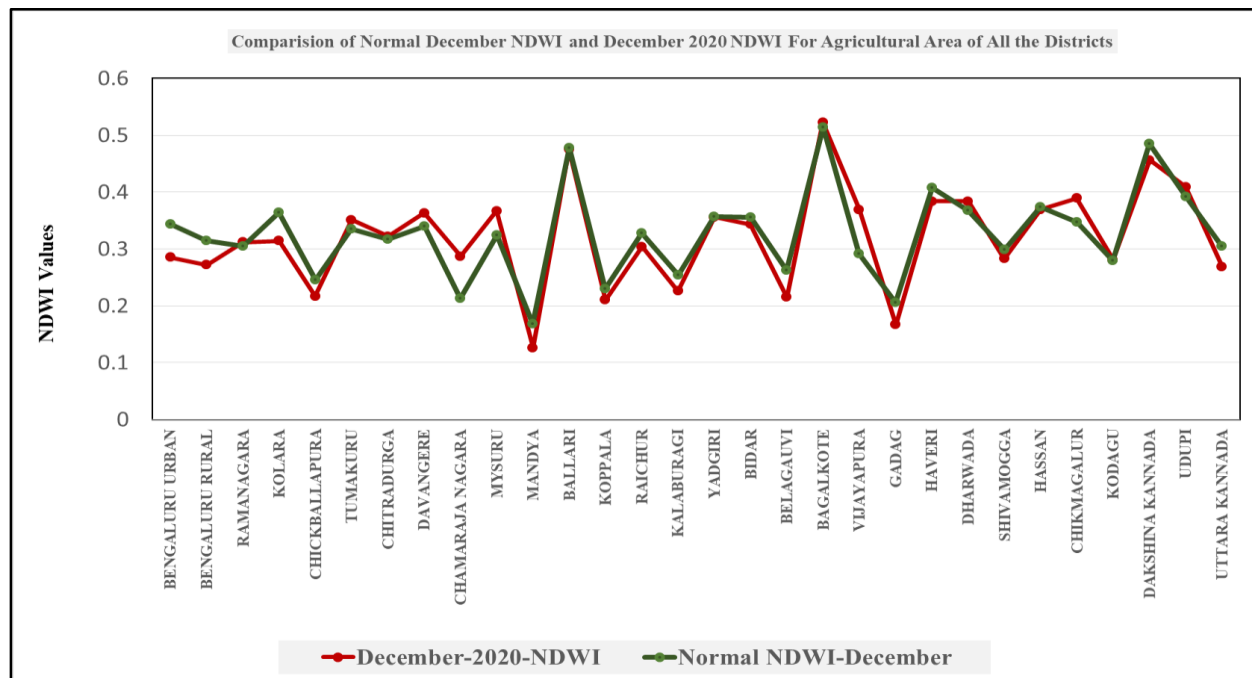
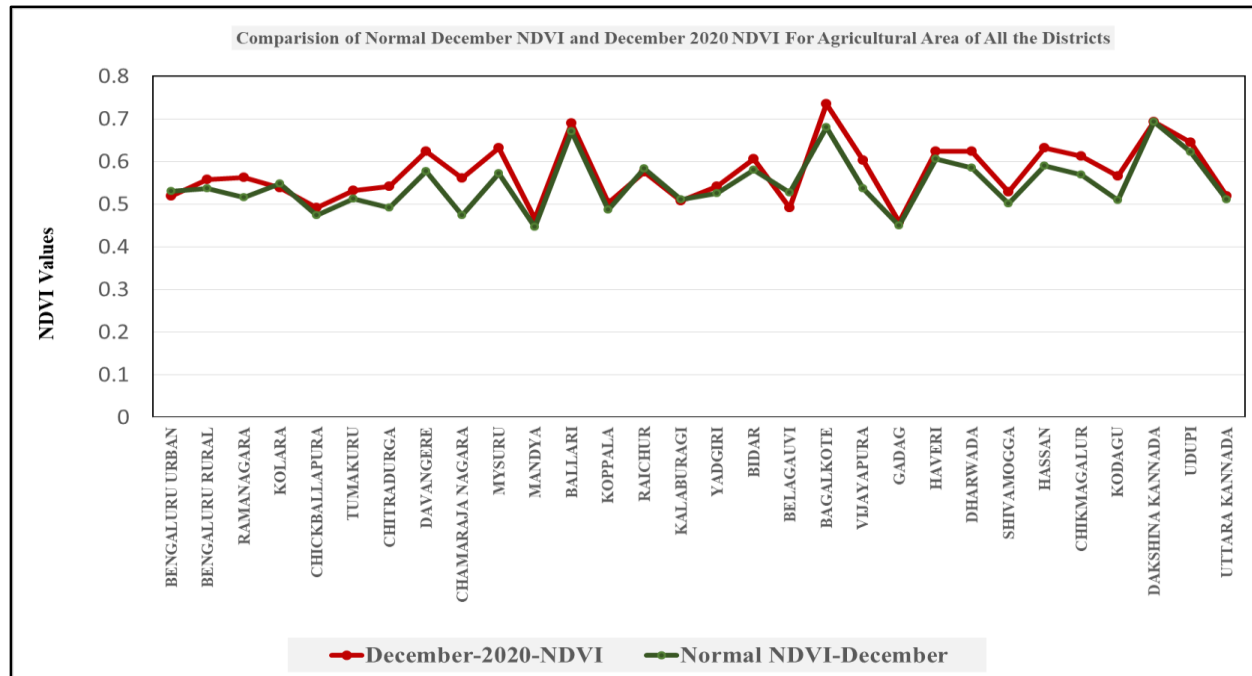
Fig.3.20



December 2020:

The NDVI map of December 2020 showed that major parts of the area in the State shows good vegetation condition. However, the condition was good compared to Normal NDVI.

Agricultural situation upto December 2020 given below and maps are shown fig.3.5 to 3.6.

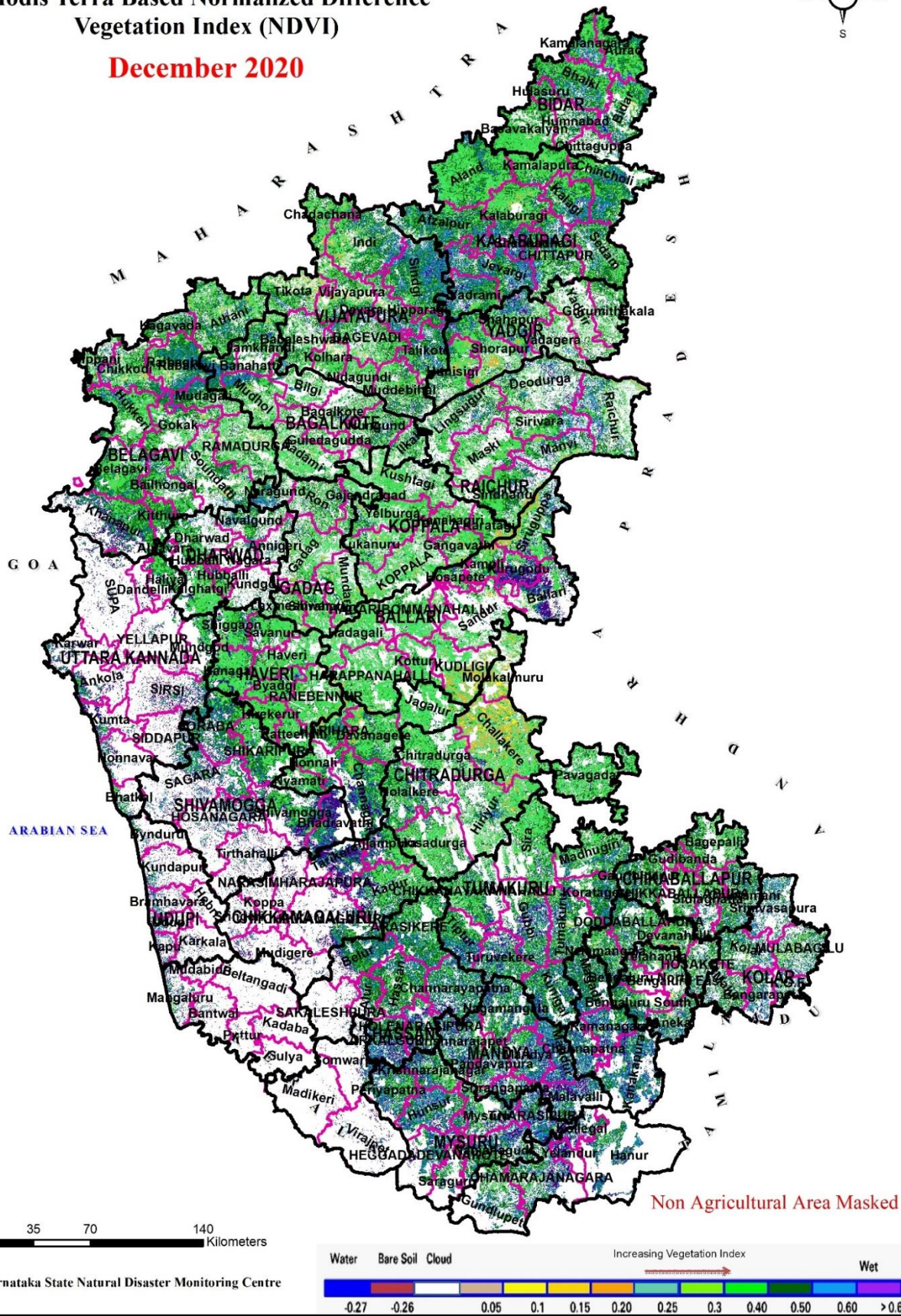
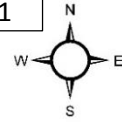


KARNATAKA

Modis Terra Based Normalized Difference Vegetation Index (NDVI)

December 2020

Fig.3.21

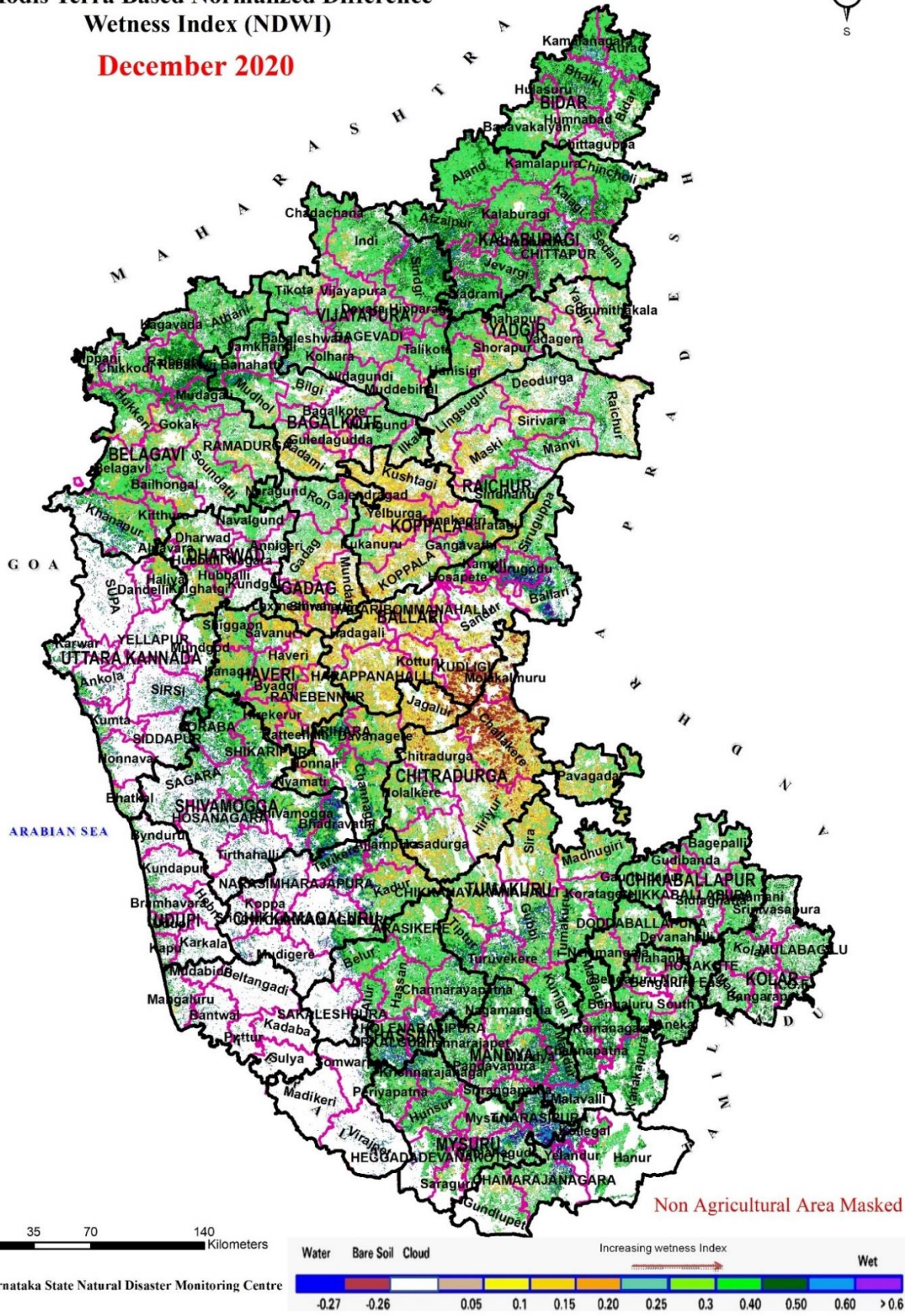
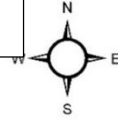


KARNATAKA

Modis Terra Based Normalized Difference Wetness Index (NDWI)

December 2020

Fig.3.22



3.3 Taluk Level NDVI/NDWI Values for the months June 2020 to December 2020 derived from MODIS TERRA 250m Satellite Data:

Sl.No.	DISTRICT	TALUK	June 2020		July 2020		August 2020		September 2020		October 2020		November 2020		December 2020	
			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
1	Bengaluru Urban	Anekal	0.254	0.217	0.264	0.242	0.367	0.237	0.376	0.233	0.426	0.300	0.336	0.273	0.306	0.229
2	Bengaluru Urban	Bengaluru North	0.188	0.148	0.218	0.183	0.266	0.185	0.260	0.178	0.298	0.207	0.228	0.176	0.192	0.127
3	Bengaluru Urban	Bengaluru South	0.258	0.220	0.280	0.275	0.376	0.262	0.383	0.257	0.429	0.303	0.331	0.265	0.287	0.198
4	Bengaluru Urban	Bengaluru East	0.177	0.162	0.213	0.173	0.254	0.185	0.258	0.165	0.275	0.180	0.206	0.172	0.189	0.145
5	Bengaluru Urban	Yelahanka	0.262	0.218	0.281	0.240	0.399	0.273	0.409	0.277	0.445	0.306	0.334	0.267	0.282	0.199
6	Bengaluru Rural	Devanahalli	0.232	0.190	0.281	0.224	0.402	0.249	0.447	0.296	0.487	0.330	0.347	0.287	0.288	0.181
7	Bengaluru Rural	Doddaballapura	0.258	0.185	0.296	0.238	0.435	0.312	0.460	0.337	0.507	0.356	0.378	0.267	0.310	0.186
8	Bengaluru Rural	Hosakote	0.200	0.199	0.282	0.204	0.321	0.232	0.344	0.222	0.374	0.251	0.300	0.244	0.259	0.195
9	Bengaluru Rural	Nelamangala	0.315	0.224	0.375	0.290	0.502	0.340	0.526	0.399	0.564	0.406	0.429	0.317	0.341	0.193
10	Ramanagara	Channapatna	0.279	0.299	0.336	0.323	0.396	0.272	0.387	0.270	0.469	0.335	0.392	0.320	0.345	0.259
11	Ramanagara	Kanakapura	0.242	0.218	0.249	0.245	0.314	0.206	0.315	0.208	0.371	0.269	0.316	0.258	0.268	0.191
12	Ramanagara	Magadi	0.282	0.241	0.319	0.282	0.492	0.335	0.512	0.389	0.574	0.435	0.455	0.369	0.366	0.247
13	Ramanagara	Ramanagara	0.342	0.297	0.339	0.340	0.453	0.313	0.451	0.309	0.505	0.366	0.417	0.341	0.363	0.264
14	Kolar	Bangarapet	0.158	0.143	0.263	0.185	0.290	0.199	0.308	0.212	0.323	0.221	0.264	0.206	0.252	0.184
15	Kolar	Kolar	0.173	0.173	0.288	0.207	0.318	0.220	0.336	0.216	0.362	0.247	0.290	0.227	0.263	0.202
16	Kolar	Malur	0.190	0.176	0.285	0.216	0.310	0.219	0.324	0.215	0.359	0.243	0.289	0.232	0.250	0.180
17	Kolar	Mulabagilu	0.137	0.139	0.280	0.180	0.285	0.222	0.302	0.198	0.319	0.218	0.255	0.204	0.228	0.183
18	Kolar	Srinivasapura	0.121	0.104	0.226	0.155	0.228	0.161	0.243	0.154	0.276	0.190	0.230	0.176	0.207	0.157
19	Kolar	K.G.F	0.144	0.133	0.239	0.160	0.252	0.188	0.275	0.187	0.285	0.195	0.232	0.181	0.221	0.177

Sl.No.	DISTRICT	TALUK	June 2020		July 2020		August 2020		September 2020		October 2020		November 2020		December 2020	
			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
20	Chikballapur	Bagepalli	0.074	-0.006	0.244	0.149	0.314	0.263	0.374	0.245	0.401	0.275	0.299	0.207	0.241	0.160
21	Chikballapur	Chikkaballapura	0.127	0.094	0.182	0.163	0.251	0.189	0.298	0.185	0.321	0.210	0.238	0.168	0.199	0.126
22	Chikballapur	Chintamani	0.127	0.063	0.283	0.210	0.358	0.259	0.409	0.260	0.448	0.302	0.357	0.261	0.313	0.222
23	Chikballapur	Gauribidanur	0.147	0.072	0.282	0.231	0.357	0.302	0.443	0.314	0.497	0.353	0.388	0.260	0.312	0.190
24	Chikballapur	Gudibanda	0.120	0.048	0.248	0.181	0.418	0.334	0.479	0.323	0.504	0.356	0.368	0.253	0.299	0.184
25	Chikballapur	Sidlaghatta	0.124	0.076	0.221	0.166	0.287	0.202	0.327	0.205	0.362	0.242	0.287	0.211	0.240	0.167
26	Tumakuru	Chikkanayakanahalli	0.235	0.143	0.258	0.201	0.338	0.242	0.403	0.298	0.416	0.297	0.331	0.222	0.250	0.147
27	Tumakuru	Gubbi	0.230	0.188	0.278	0.218	0.364	0.256	0.380	0.301	0.428	0.323	0.346	0.264	0.285	0.207
28	Tumakuru	Koratagere	0.194	0.095	0.302	0.231	0.415	0.329	0.487	0.390	0.536	0.385	0.419	0.286	0.349	0.217
29	Tumakuru	Kunigal	0.298	0.269	0.366	0.323	0.446	0.294	0.433	0.335	0.542	0.403	0.439	0.349	0.356	0.248
30	Tumakuru	Madhugiri	0.136	0.047	0.313	0.186	0.371	0.288	0.418	0.313	0.449	0.314	0.343	0.225	0.273	0.157
31	Tumakuru	Pavagada	0.166	0.077	0.250	0.195	0.363	0.276	0.412	0.273	0.439	0.278	0.321	0.203	0.260	0.142
32	Tumakuru	Sira	0.138	0.059	0.240	0.165	0.334	0.231	0.375	0.258	0.397	0.244	0.299	0.185	0.232	0.117
33	Tumakuru	Tiptur	0.320	0.272	0.293	0.313	0.484	0.340	0.493	0.388	0.564	0.432	0.453	0.344	0.363	0.254
34	Tumakuru	Tumakuru	0.273	0.214	0.331	0.265	0.435	0.320	0.469	0.382	0.524	0.381	0.404	0.309	0.329	0.225
35	Tumakuru	Turuvekere	0.314	0.279	0.343	0.297	0.481	0.340	0.466	0.377	0.544	0.436	0.436	0.337	0.363	0.269
36	Chitradurga	Challakere	0.113	-0.003	0.161	0.093	0.364	0.199	0.440	0.289	0.486	0.289	0.309	0.110	0.210	0.019
37	Chitradurga	Chitradurga	0.158	0.014	0.215	0.124	0.368	0.273	0.377	0.271	0.380	0.237	0.284	0.146	0.216	0.083
38	Chitradurga	Hiriyur	0.142	0.062	0.166	0.104	0.269	0.175	0.314	0.208	0.338	0.188	0.245	0.132	0.198	0.086
39	Chitradurga	Holalkere	0.210	0.116	0.200	0.160	0.404	0.341	0.428	0.341	0.452	0.317	0.338	0.209	0.275	0.155
40	Chitradurga	Hosadurga	0.188	0.110	0.213	0.146	0.285	0.205	0.336	0.246	0.354	0.242	0.260	0.160	0.199	0.112
41	Chitradurga	Molakalmuru	0.063	-0.015	0.081	0.055	0.217	0.103	0.285	0.198	0.324	0.203	0.205	0.073	0.125	0.018

Sl.No.	DISTRICT	TALUK	June 2020		July 2020		August 2020		September 2020		October 2020		November 2020		December 2020	
			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
42	Davanagere	Channagiri	0.261	0.210	0.199	0.185	0.383	0.352	0.475	0.395	0.501	0.365	0.409	0.293	0.318	0.216
43	Davanagere	Davanagere	0.301	0.181	0.225	0.175	0.597	0.507	0.632	0.521	0.626	0.457	0.490	0.327	0.309	0.186
44	Davanagere	Harihara	0.292	0.283	0.095	0.125	0.299	0.318	0.608	0.540	0.672	0.550	0.564	0.445	0.307	0.258
45	Davanagere	Honnali	0.210	0.153	0.180	0.167	0.306	0.312	0.467	0.406	0.460	0.359	0.378	0.275	0.251	0.177
46	Davanagere	Jagalur	0.126	-0.023	0.157	0.017	0.342	0.241	0.400	0.286	0.415	0.256	0.296	0.132	0.195	0.047
47	Davanagere	Nyamati	0.188	0.091	0.252	0.177	0.323	0.328	0.466	0.387	0.445	0.302	0.354	0.216	0.252	0.150
48	Chamarajanagar	Chamarajanagara	0.203	0.182	0.255	0.204	0.287	0.194	0.277	0.205	0.304	0.200	0.260	0.196	0.246	0.176
49	Chamarajanagar	Gundlupet	0.123	0.103	0.170	0.123	0.182	0.117	0.171	0.106	0.185	0.101	0.167	0.119	0.150	0.096
50	Chamarajanagar	Kollegal	0.250	0.259	0.288	0.241	0.306	0.226	0.312	0.242	0.370	0.287	0.325	0.277	0.287	0.238
51	Chamarajanagar	Yelandur	0.209	0.211	0.209	0.195	0.235	0.189	0.207	0.195	0.280	0.225	0.255	0.226	0.226	0.205
52	Chamarajanagar	Hanur	0.059	0.047	0.074	0.058	0.086	0.049	0.094	0.065	0.110	0.078	0.092	0.072	0.084	0.057
53	Mysuru	Heggadadevanakote	0.209	0.167	0.153	0.174	0.273	0.210	0.278	0.210	0.287	0.205	0.248	0.192	0.220	0.154
54	Mysuru	Hunsur	0.338	0.221	0.230	0.302	0.442	0.304	0.411	0.276	0.488	0.342	0.437	0.362	0.363	0.260
55	Mysuru	Krishnarajanagar	0.337	0.241	0.288	0.324	0.443	0.364	0.430	0.314	0.562	0.423	0.490	0.420	0.357	0.286
56	Mysuru	Mysuru	0.286	0.237	0.193	0.249	0.334	0.218	0.352	0.239	0.387	0.282	0.327	0.261	0.279	0.198
57	Mysuru	Nanjanagud	0.323	0.256	0.293	0.251	0.375	0.263	0.378	0.273	0.436	0.298	0.378	0.302	0.328	0.246
58	Mysuru	Periyapatna	0.311	0.175	0.239	0.273	0.422	0.300	0.392	0.271	0.494	0.342	0.441	0.349	0.331	0.237
59	Mysuru	T.Narasipura	0.375	0.391	0.408	0.366	0.430	0.339	0.478	0.391	0.581	0.457	0.522	0.461	0.421	0.386
60	Mysuru	Saraguru	0.127	0.113	0.110	0.114	0.179	0.137	0.182	0.138	0.188	0.121	0.151	0.106	0.132	0.086
61	Mandya	Krishnarajapet	0.337	0.301	0.291	0.312	0.415	0.265	0.403	0.300	0.495	0.372	0.417	0.334	0.346	0.241
62	Mandya	Maddur	0.373	0.418	0.422	0.393	0.491	0.338	0.501	0.362	0.609	0.459	0.528	0.446	0.447	0.364
63	Mandya	Malavalli	0.269	0.311	0.353	0.295	0.376	0.256	0.373	0.270	0.443	0.327	0.391	0.334	0.342	0.267
64	Mandya	Mandya	0.340	0.330	0.270	0.281	0.404	0.270	0.411	0.280	0.500	0.345	0.433	0.354	0.364	0.282
65	Mandya	Nagamangala	0.315	0.274	0.301	0.307	0.393	0.261	0.385	0.279	0.476	0.336	0.396	0.316	0.329	0.234
66	Mandya	Pandavapura	0.269	0.248	0.206	0.240	0.344	0.203	0.349	0.225	0.406	0.276	0.346	0.271	0.294	0.205
67	Mandya	Srirangapatna	0.341	0.312	0.236	0.302	0.382	0.268	0.427	0.302	0.479	0.358	0.411	0.341	0.328	0.255

Sl.No.	DISTRICT	TALUK	June 2020		July 2020		August 2020		September 2020		October 2020		November 2020		December 2020	
			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
68	Ballari	Ballari	0.075	0.008	0.086	0.075	0.200	0.124	0.260	0.179	0.373	0.264	0.325	0.269	0.266	0.210
69	Ballari	Hadagali	0.174	0.018	0.209	0.104	0.307	0.268	0.474	0.376	0.466	0.313	0.308	0.157	0.198	0.083
70	Ballari	Hosapete	0.172	0.129	0.225	0.145	0.277	0.229	0.362	0.276	0.364	0.260	0.258	0.170	0.200	0.115
71	Ballari	Hagaribommanahalli	0.150	0.044	0.127	0.066	0.266	0.198	0.379	0.278	0.416	0.270	0.271	0.127	0.190	0.067
72	Ballari	Kudligi	0.087	-0.031	0.065	0.008	0.226	0.136	0.340	0.240	0.402	0.260	0.270	0.099	0.152	0.010
73	Ballari	Sandur	0.062	0.010	0.087	0.051	0.108	0.084	0.198	0.145	0.214	0.149	0.149	0.091	0.111	0.053
74	Ballari	Siruguppa	0.165	0.073	0.176	0.177	0.299	0.282	0.476	0.369	0.547	0.421	0.419	0.346	0.271	0.191
75	Ballari	Harappanahalli	0.171	0.004	0.213	0.066	0.346	0.297	0.469	0.364	0.443	0.277	0.320	0.160	0.211	0.097
76	Ballari	Kurugodu	0.144	0.009	0.121	0.076	0.273	0.195	0.411	0.258	0.611	0.441	0.545	0.454	0.458	0.366
77	Ballari	Kotturu	0.121	-0.020	0.114	-0.015	0.260	0.181	0.398	0.300	0.435	0.289	0.294	0.144	0.206	0.073
78	Ballari	Kampli	0.203	0.149	0.244	0.181	0.367	0.324	0.505	0.374	0.553	0.424	0.410	0.328	0.271	0.212
79	Koppal	Gangavathi	0.290	0.211	0.259	0.275	0.386	0.382	0.553	0.423	0.586	0.450	0.412	0.334	0.246	0.190
80	Koppal	Koppala	0.124	0.040	0.118	0.050	0.235	0.197	0.341	0.249	0.358	0.227	0.242	0.139	0.181	0.095
81	Koppal	Kushtagi	0.120	-0.001	0.207	0.073	0.318	0.233	0.310	0.202	0.369	0.205	0.268	0.140	0.200	0.078
82	Koppal	Yelburga	0.153	0.017	0.211	0.105	0.371	0.298	0.373	0.260	0.418	0.211	0.295	0.146	0.260	0.120
83	Koppal	Karatagi	0.347	0.308	0.272	0.308	0.334	0.415	0.604	0.493	0.697	0.568	0.515	0.464	0.265	0.185
84	Koppal	Kukanuru	0.089	-0.028	0.059	0.001	0.229	0.155	0.269	0.180	0.336	0.169	0.209	0.099	0.216	0.111
85	Koppal	Kanakagiri	0.173	0.058	0.215	0.122	0.323	0.266	0.366	0.265	0.427	0.250	0.306	0.175	0.233	0.101
86	Raichur	Deodurga	0.070	0.011	0.139	0.083	0.174	0.166	0.271	0.207	0.327	0.247	0.260	0.201	0.192	0.132
87	Raichur	Lingsugur	0.097	-0.011	0.152	0.044	0.246	0.189	0.282	0.191	0.341	0.218	0.269	0.175	0.215	0.121
88	Raichur	Manvi	0.123	0.036	0.153	0.092	0.213	0.231	0.381	0.294	0.432	0.325	0.342	0.281	0.244	0.169
89	Raichur	Raichur	0.089	0.027	0.164	0.093	0.200	0.185	0.320	0.230	0.353	0.263	0.263	0.205	0.205	0.135
90	Raichur	Sindhanur	0.228	0.142	0.213	0.204	0.241	0.296	0.471	0.371	0.531	0.413	0.429	0.381	0.262	0.196
91	Raichur	Maski	0.114	0.022	0.170	0.083	0.226	0.216	0.340	0.254	0.387	0.272	0.303	0.236	0.191	0.120
92	Raichur	Sirivara	0.111	0.000	0.233	0.173	0.245	0.272	0.416	0.333	0.481	0.364	0.389	0.324	0.256	0.173

Sl.No.	DISTRICT	TALUK	June 2020		July 2020		August 2020		September 2020		October 2020		November 2020		December 2020	
			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
93	Kalaburagi	Afzalpur	0.157	0.133	0.114	0.180	0.371	0.359	0.460	0.389	0.597	0.468	0.479	0.414	0.360	0.318
94	Kalaburagi	Aland	0.175	0.118	0.246	0.196	0.561	0.487	0.564	0.466	0.643	0.489	0.491	0.431	0.346	0.311
95	Kalaburagi	Chincholi	0.215	0.116	0.346	0.248	0.447	0.380	0.516	0.369	0.549	0.405	0.437	0.350	0.339	0.261
96	Kalaburagi	Chittapur	0.133	0.032	0.241	0.212	0.268	0.262	0.422	0.292	0.468	0.339	0.365	0.283	0.313	0.248
97	Kalaburagi	Kalaburagi	0.175	0.095	0.175	0.213	0.445	0.412	0.536	0.431	0.596	0.460	0.460	0.398	0.339	0.287
98	Kalaburagi	Jevargi	0.140	0.066	0.127	0.183	0.237	0.252	0.460	0.381	0.576	0.445	0.461	0.378	0.378	0.303
99	Kalaburagi	Sedam	0.156	0.039	0.312	0.260	0.306	0.272	0.466	0.317	0.488	0.345	0.370	0.276	0.315	0.238
100	Kalaburagi	Kalagi	0.179	0.077	0.298	0.205	0.515	0.424	0.547	0.407	0.600	0.441	0.485	0.395	0.373	0.312
101	Kalaburagi	Kamalapura	0.236	0.151	0.292	0.271	0.517	0.468	0.634	0.500	0.652	0.503	0.487	0.416	0.320	0.277
102	Kalaburagi	Yadrami	0.109	0.090	0.087	0.169	0.325	0.350	0.486	0.404	0.646	0.494	0.519	0.432	0.399	0.324
103	Kalaburagi	Shahbadha	0.133	0.052	0.175	0.162	0.317	0.340	0.513	0.381	0.611	0.477	0.499	0.399	0.397	0.314
104	Bidar	Aurad	0.273	0.203	0.463	0.319	0.611	0.532	0.699	0.526	0.657	0.491	0.519	0.424	0.356	0.317
105	Bidar	Bidar	0.244	0.181	0.438	0.272	0.486	0.406	0.499	0.374	0.464	0.354	0.358	0.308	0.278	0.243
106	Bidar	Bhalki	0.213	0.171	0.373	0.250	0.538	0.475	0.599	0.454	0.533	0.377	0.419	0.347	0.348	0.316
107	Bidar	Basavakalyan	0.194	0.107	0.279	0.211	0.432	0.394	0.550	0.434	0.541	0.400	0.407	0.323	0.272	0.217
108	Bidar	Humnabad	0.205	0.128	0.334	0.212	0.349	0.292	0.361	0.268	0.370	0.271	0.287	0.237	0.217	0.172
109	Bidar	Chittaguppa	0.140	0.076	0.202	0.131	0.233	0.187	0.246	0.184	0.260	0.190	0.202	0.159	0.151	0.105
110	Bidar	Kamalanagara	0.239	0.180	0.522	0.300	0.620	0.528	0.634	0.497	0.564	0.404	0.448	0.370	0.352	0.324
111	Bidar	Hulasuru	0.213	0.149	0.339	0.248	0.493	0.446	0.591	0.455	0.530	0.382	0.414	0.344	0.340	0.309
112	Belagavi	Athani	0.222	0.177	0.156	0.191	0.299	0.286	0.470	0.386	0.456	0.357	0.337	0.298	0.283	0.252
113	Belagavi	Bailhongal	0.226	0.121	0.347	0.230	0.390	0.322	0.420	0.323	0.435	0.265	0.313	0.195	0.278	0.187
114	Belagavi	Belagavi	0.333	0.252	0.319	0.302	0.437	0.386	0.549	0.435	0.574	0.426	0.405	0.316	0.309	0.221
115	Belagavi	Chikkodi	0.289	0.232	0.191	0.284	0.233	0.245	0.461	0.385	0.468	0.362	0.353	0.290	0.274	0.230
116	Belagavi	Gokak	0.299	0.226	0.253	0.254	0.336	0.298	0.422	0.343	0.446	0.347	0.338	0.254	0.252	0.187
117	Belagavi	Hukkeri	0.313	0.237	0.329	0.292	0.415	0.365	0.540	0.443	0.526	0.391	0.397	0.303	0.297	0.222
118	Belagavi	Khanapur	0.308	0.246	0.229	0.236	0.294	0.277	0.396	0.335	0.444	0.350	0.360	0.275	0.274	0.189
119	Belagavi	Ramadurga	0.180	0.111	0.200	0.151	0.284	0.226	0.301	0.251	0.363	0.234	0.256	0.181	0.212	0.150
120	Belagavi	Raibagh	0.377	0.327	0.240	0.354	0.289	0.298	0.558	0.486	0.587	0.498	0.447	0.385	0.375	0.330
121	Belagavi	Soundatti	0.171	0.098	0.190	0.146	0.237	0.190	0.282	0.234	0.350	0.246	0.252	0.182	0.206	0.144
122	Belagavi	Kitthuru	0.411	0.306	0.488	0.389	0.534	0.458	0.530	0.461	0.599	0.430	0.468	0.317	0.347	0.216
123	Belagavi	Nippani	0.300	0.269	0.221	0.281	0.168	0.194	0.348	0.285	0.399	0.304	0.309	0.252	0.237	0.195
124	Belagavi	Kagavada	0.303	0.252	0.219	0.293	0.217	0.231	0.431	0.371	0.449	0.379	0.342	0.304	0.296	0.255
125	Belagavi	Mudagali	0.389	0.328	0.265	0.339	0.375	0.353	0.471	0.412	0.541	0.453	0.417	0.351	0.338	0.291

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			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
126	Bagalkote	Badami	0.141	0.057	0.126	0.073	0.244	0.208	0.292	0.237	0.355	0.223	0.241	0.151	0.187	0.110
127	Bagalkote	Bagalkote	0.109	0.038	0.084	0.074	0.161	0.147	0.203	0.151	0.259	0.162	0.190	0.137	0.161	0.114
128	Bagalkote	Bilgi	0.158	0.113	0.111	0.128	0.138	0.159	0.245	0.202	0.259	0.199	0.193	0.161	0.149	0.123
129	Bagalkote	Hungund	0.126	0.021	0.097	0.103	0.201	0.199	0.292	0.196	0.372	0.222	0.278	0.187	0.261	0.185
130	Bagalkote	Jamkhandi	0.231	0.189	0.125	0.196	0.213	0.239	0.396	0.306	0.415	0.339	0.314	0.271	0.252	0.221
131	Bagalkote	Mudhol	0.324	0.260	0.284	0.293	0.273	0.255	0.381	0.338	0.458	0.359	0.344	0.283	0.269	0.216
132	Bagalkote	Guledagudda	0.096	0.018	0.124	0.047	0.215	0.165	0.238	0.169	0.289	0.168	0.202	0.122	0.165	0.097
133	Bagalkote	Ilkal	0.086	-0.009	0.094	0.043	0.199	0.139	0.237	0.148	0.301	0.164	0.228	0.130	0.212	0.128
134	Bagalkote	Rabakavi Banahatti	0.433	0.368	0.324	0.379	0.403	0.390	0.521	0.463	0.592	0.522	0.468	0.403	0.382	0.330
135	Vijayapura	Bagevadi	0.066	0.054	0.079	0.102	0.273	0.246	0.375	0.289	0.457	0.330	0.350	0.282	0.261	0.196
136	Vijayapura	Vijayapura	0.068	0.072	0.086	0.101	0.269	0.243	0.353	0.278	0.436	0.324	0.326	0.273	0.239	0.185
137	Vijayapura	Indi	0.134	0.112	0.085	0.158	0.262	0.279	0.458	0.366	0.540	0.426	0.418	0.353	0.299	0.238
138	Vijayapura	Muddebihal	0.110	0.022	0.091	0.087	0.280	0.249	0.336	0.252	0.437	0.320	0.338	0.251	0.260	0.172
139	Vijayapura	Sindgi	0.185	0.173	0.137	0.214	0.324	0.339	0.541	0.453	0.671	0.528	0.539	0.448	0.409	0.329
140	Vijayapura	Babaleshwara	0.152	0.126	0.111	0.136	0.189	0.205	0.344	0.266	0.357	0.269	0.268	0.226	0.217	0.188
141	Vijayapura	Chadachana	0.165	0.152	0.167	0.214	0.326	0.362	0.471	0.387	0.539	0.440	0.397	0.346	0.273	0.238
142	Vijayapura	Nidagundi	0.112	0.071	0.115	0.106	0.228	0.251	0.337	0.279	0.406	0.306	0.282	0.225	0.209	0.161
143	Vijayapura	Talikote	0.065	0.044	0.064	0.092	0.346	0.282	0.456	0.365	0.599	0.452	0.488	0.388	0.357	0.246
144	Vijayapura	Tikota	0.067	0.079	0.063	0.095	0.217	0.195	0.321	0.249	0.367	0.274	0.270	0.234	0.220	0.192
145	Vijayapura	Kolhara	0.159	0.131	0.145	0.172	0.228	0.268	0.399	0.327	0.413	0.305	0.272	0.231	0.211	0.181
146	Vijayapura	Devara Hipparagi	0.078	0.070	0.091	0.114	0.266	0.263	0.419	0.346	0.560	0.421	0.448	0.360	0.320	0.227

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			NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI	NDVI	NDWI
147	Gadag	Gadag	0.099	-0.014	0.114	0.065	0.185	0.139	0.258	0.183	0.288	0.141	0.201	0.102	0.187	0.112
148	Gadag	Mundargi	0.136	0.030	0.080	0.042	0.213	0.163	0.359	0.258	0.363	0.227	0.245	0.136	0.174	0.080
149	Gadag	Naragund	0.121	-0.005	0.176	0.098	0.219	0.192	0.257	0.209	0.392	0.250	0.276	0.180	0.288	0.209
150	Gadag	Ron	0.103	-0.007	0.109	0.035	0.192	0.137	0.199	0.138	0.296	0.115	0.207	0.100	0.243	0.169
151	Gadag	Shirahatti	0.165	-0.004	0.141	0.110	0.211	0.171	0.429	0.325	0.462	0.280	0.326	0.167	0.217	0.101
152	Gadag	Gajendragad	0.116	0.003	0.156	0.086	0.251	0.212	0.272	0.171	0.336	0.171	0.220	0.100	0.217	0.118
153	Gadag	Laxmeshwar	0.119	-0.039	0.128	0.040	0.196	0.163	0.419	0.306	0.406	0.212	0.296	0.136	0.206	0.094
154	Haveri	Byadgi	0.279	0.044	0.292	0.138	0.442	0.415	0.660	0.542	0.605	0.363	0.450	0.220	0.320	0.183
155	Haveri	Hanagal	0.384	0.263	0.258	0.246	0.428	0.449	0.643	0.528	0.680	0.504	0.532	0.350	0.334	0.233
156	Haveri	Haveri	0.203	0.022	0.200	0.078	0.323	0.300	0.537	0.433	0.481	0.297	0.343	0.179	0.241	0.133
157	Haveri	Hirekerur	0.357	0.165	0.378	0.218	0.532	0.495	0.634	0.526	0.592	0.355	0.449	0.211	0.315	0.192
158	Haveri	Ranebennur	0.179	0.026	0.141	0.045	0.270	0.250	0.485	0.389	0.448	0.292	0.326	0.181	0.220	0.118
159	Haveri	Savanur	0.175	-0.027	0.234	0.116	0.326	0.295	0.573	0.444	0.515	0.304	0.387	0.204	0.270	0.147
160	Haveri	Shiggaon	0.247	0.128	0.352	0.270	0.330	0.321	0.533	0.448	0.518	0.350	0.397	0.249	0.284	0.185
161	Haveri	Ratteehalli	0.273	0.060	0.295	0.153	0.449	0.407	0.544	0.442	0.506	0.316	0.399	0.215	0.282	0.161
162	Dharwad	Dharwad	0.180	0.097	0.207	0.122	0.245	0.208	0.269	0.218	0.316	0.199	0.241	0.144	0.193	0.115
163	Dharwad	Hubballi	0.119	0.047	0.135	0.072	0.182	0.158	0.246	0.183	0.262	0.165	0.197	0.121	0.167	0.112
164	Dharwad	Kalghatgi	0.298	0.188	0.316	0.225	0.382	0.358	0.399	0.344	0.462	0.309	0.347	0.189	0.246	0.144
165	Dharwad	Kundgol	0.042	0.000	0.061	0.021	0.106	0.092	0.157	0.124	0.157	0.099	0.118	0.071	0.096	0.066
166	Dharwad	Navalgund	0.090	-0.028	0.083	-0.001	0.168	0.126	0.262	0.201	0.353	0.239	0.260	0.174	0.237	0.170
167	Dharwad	Hubballi Nagara	0.130	0.085	0.126	0.121	0.191	0.156	0.201	0.144	0.232	0.137	0.167	0.096	0.128	0.074
168	Dharwad	Alnavara	0.371	0.263	0.297	0.298	0.337	0.345	0.411	0.366	0.518	0.396	0.406	0.286	0.295	0.180
169	Dharwad	Annigeri	0.059	-0.017	0.052	0.005	0.115	0.092	0.184	0.127	0.201	0.117	0.152	0.093	0.154	0.115

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170	Shivamogga	Bhadravathi	0.335	0.303	0.257	0.304	0.170	0.192	0.424	0.346	0.475	0.376	0.405	0.324	0.355	0.276
171	Shivamogga	Hosanagara	0.128	0.117	0.087	0.105	0.052	0.066	0.136	0.119	0.183	0.148	0.161	0.136	0.136	0.112
172	Shivamogga	Sagara	0.168	0.149	0.088	0.119	0.091	0.103	0.178	0.157	0.240	0.192	0.207	0.169	0.166	0.130
173	Shivamogga	Shikaripura	0.343	0.211	0.288	0.232	0.416	0.402	0.539	0.444	0.554	0.418	0.467	0.332	0.306	0.233
174	Shivamogga	Shivamogga	0.300	0.224	0.273	0.284	0.159	0.186	0.407	0.339	0.445	0.339	0.375	0.284	0.293	0.214
175	Shivamogga	Soraba	0.409	0.308	0.238	0.274	0.363	0.384	0.556	0.467	0.611	0.480	0.518	0.400	0.368	0.283
176	Shivamogga	Tirthahalli	0.075	0.071	0.064	0.071	0.011	0.015	0.081	0.069	0.105	0.086	0.094	0.083	0.083	0.073
177	Hassan	Alur	0.305	0.256	0.277	0.284	0.418	0.338	0.413	0.330	0.431	0.319	0.360	0.263	0.275	0.195
178	Hassan	Arkalgud	0.322	0.213	0.314	0.268	0.502	0.415	0.465	0.380	0.547	0.387	0.480	0.377	0.400	0.303
179	Hassan	Arasikere	0.305	0.233	0.320	0.260	0.495	0.328	0.504	0.382	0.529	0.389	0.421	0.290	0.333	0.214
180	Hassan	Belur	0.311	0.253	0.265	0.250	0.481	0.357	0.441	0.331	0.485	0.347	0.404	0.296	0.335	0.231
181	Hassan	Channarayapatna	0.313	0.284	0.303	0.295	0.484	0.330	0.459	0.367	0.527	0.406	0.413	0.316	0.355	0.256
182	Hassan	Hassan	0.264	0.245	0.281	0.252	0.535	0.387	0.476	0.363	0.521	0.366	0.423	0.287	0.337	0.219
183	Hassan	Holenarasipura	0.303	0.212	0.226	0.226	0.432	0.322	0.411	0.317	0.484	0.348	0.408	0.304	0.342	0.246
184	Hassan	Sakaleshpura	0.035	0.035	0.026	0.029	0.028	0.025	0.043	0.036	0.053	0.042	0.048	0.041	0.043	0.037
185	Chikkamagaluru	Chikkamagaluru	0.122	0.090	0.110	0.087	0.168	0.119	0.160	0.118	0.178	0.127	0.153	0.114	0.136	0.100
186	Chikkamagaluru	Kadur	0.270	0.170	0.301	0.204	0.442	0.289	0.467	0.337	0.481	0.329	0.367	0.234	0.306	0.188
187	Chikkamagaluru	Koppa	0.040	0.038	0.030	0.034	0.020	0.022	0.040	0.033	0.052	0.041	0.048	0.041	0.043	0.038
188	Chikkamagaluru	Mudigere	0.051	0.052	0.042	0.043	0.049	0.045	0.055	0.049	0.078	0.061	0.071	0.061	0.065	0.056
189	Chikkamagaluru	Narasimharajapura	0.072	0.067	0.069	0.068	0.039	0.045	0.084	0.069	0.094	0.076	0.087	0.075	0.079	0.065
190	Chikkamagaluru	Sringeri	0.063	0.057	0.044	0.049	0.037	0.039	0.063	0.054	0.077	0.062	0.069	0.061	0.062	0.056
191	Chikkamagaluru	Tarikere	0.309	0.219	0.218	0.222	0.333	0.283	0.376	0.300	0.427	0.322	0.368	0.277	0.332	0.253
192	Chikkamagaluru	Ajjampura	0.259	0.175	0.271	0.200	0.426	0.307	0.483	0.365	0.522	0.353	0.395	0.241	0.339	0.211

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193	Kodagu	Madikeri	0.005	0.007	0.005	0.006	0.006	0.006	0.006	0.006	0.009	0.007	0.009	0.007	0.008	0.007
194	Kodagu	Somwarpet	0.062	0.051	0.054	0.049	0.082	0.074	0.085	0.069	0.097	0.074	0.085	0.069	0.074	0.058
195	Kodagu	Virajpet	0.028	0.026	0.020	0.025	0.029	0.027	0.029	0.027	0.038	0.030	0.034	0.030	0.031	0.027
196	Dakshina Kannada	Beltangadi	0.010	0.011	0.014	0.012	0.008	0.008	0.011	0.009	0.017	0.013	0.016	0.013	0.014	0.012
197	Dakshina Kannada	Bantwal	0.030	0.035	0.038	0.035	0.031	0.031	0.039	0.035	0.049	0.039	0.044	0.038	0.040	0.033
198	Dakshina Kannada	Mangaluru	0.118	0.117	0.163	0.119	0.126	0.119	0.171	0.135	0.175	0.127	0.157	0.119	0.142	0.101
199	Dakshina Kannada	Puttur	0.019	0.021	0.025	0.022	0.014	0.015	0.024	0.019	0.029	0.022	0.026	0.022	0.025	0.020
200	Dakshina Kannada	Sulya	0.005	0.006	0.010	0.007	0.006	0.005	0.008	0.006	0.008	0.006	0.008	0.006	0.007	0.006
201	Dakshina Kannada	Mudabidri	0.041	0.042	0.043	0.040	0.034	0.035	0.039	0.035	0.056	0.042	0.048	0.040	0.043	0.035
202	Dakshina Kannada	Kadaba	0.011	0.011	0.014	0.012	0.007	0.007	0.014	0.011	0.015	0.011	0.014	0.011	0.012	0.010
203	Udupi	Karkala	0.050	0.047	0.051	0.043	0.041	0.040	0.057	0.047	0.066	0.050	0.057	0.046	0.052	0.041
204	Udupi	Kundapur	0.063	0.055	0.046	0.059	0.047	0.051	0.092	0.076	0.102	0.079	0.084	0.063	0.078	0.059
205	Udupi	Udupi	0.132	0.106	0.142	0.115	0.121	0.107	0.156	0.122	0.160	0.119	0.137	0.103	0.125	0.092
206	Udupi	Bynduru	0.052	0.046	0.036	0.050	0.037	0.044	0.086	0.069	0.092	0.069	0.077	0.056	0.068	0.049
207	Udupi	Bramhavara	0.129	0.110	0.099	0.127	0.129	0.130	0.178	0.147	0.189	0.147	0.155	0.117	0.150	0.113
208	Udupi	Kapu	0.172	0.159	0.253	0.174	0.195	0.175	0.221	0.182	0.229	0.173	0.200	0.150	0.183	0.131
209	Udupi	Hebri	0.035	0.031	0.026	0.030	0.023	0.023	0.038	0.029	0.044	0.034	0.039	0.032	0.036	0.029

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210	Uttara Kannada	Ankola	0.099	0.098	0.070	0.089	0.072	0.074	0.133	0.112	0.151	0.117	0.128	0.101	0.114	0.088
211	Uttara Kannada	Bhatkal	0.114	0.095	0.062	0.099	0.082	0.094	0.162	0.120	0.168	0.123	0.140	0.096	0.111	0.075
212	Uttara Kannada	Haliyal	0.273	0.196	0.242	0.222	0.259	0.271	0.319	0.280	0.371	0.289	0.282	0.193	0.211	0.123
213	Uttara Kannada	Honnavar	0.079	0.068	0.045	0.066	0.061	0.062	0.099	0.076	0.103	0.076	0.090	0.064	0.078	0.058
214	Uttara Kannada	Karwar	0.094	0.091	0.063	0.094	0.060	0.064	0.122	0.107	0.135	0.108	0.125	0.099	0.111	0.083
215	Uttara Kannada	Kumta	0.125	0.108	0.080	0.108	0.095	0.100	0.149	0.120	0.163	0.124	0.145	0.105	0.132	0.093
216	Uttara Kannada	Mundgod	0.180	0.159	0.154	0.152	0.157	0.162	0.234	0.202	0.262	0.205	0.207	0.142	0.150	0.096
217	Uttara Kannada	Siddapur	0.111	0.102	0.066	0.089	0.058	0.076	0.138	0.119	0.171	0.138	0.149	0.123	0.121	0.097
218	Uttara Kannada	Sirsi	0.134	0.127	0.089	0.108	0.078	0.089	0.179	0.154	0.214	0.173	0.188	0.156	0.155	0.125
219	Uttara Kannada	Supa	0.038	0.043	0.034	0.029	0.029	0.032	0.051	0.045	0.068	0.053	0.058	0.050	0.050	0.041
220	Uttara Kannada	Yellapur	0.051	0.051	0.043	0.040	0.041	0.043	0.055	0.047	0.068	0.056	0.061	0.051	0.053	0.044
221	Uttara Kannada	Dandelli	0.061	0.059	0.063	0.053	0.063	0.066	0.079	0.069	0.087	0.069	0.076	0.062	0.066	0.052
222	Yadgir	Shahapur	0.111	0.001	0.164	0.156	0.266	0.258	0.464	0.356	0.541	0.406	0.422	0.330	0.315	0.220
223	Yadgir	Shorapur	0.097	0.036	0.140	0.106	0.349	0.320	0.459	0.367	0.569	0.447	0.441	0.361	0.269	0.193
224	Yadgir	Yadgir	0.082	-0.002	0.136	0.122	0.173	0.160	0.275	0.197	0.281	0.201	0.187	0.132	0.153	0.102
225	Yadgir	Gurumithakala	0.111	-0.018	0.208	0.149	0.271	0.222	0.370	0.262	0.381	0.260	0.287	0.203	0.224	0.142
226	Yadgir	Vadagera	0.076	-0.013	0.107	0.102	0.158	0.174	0.317	0.244	0.349	0.266	0.239	0.182	0.185	0.129
227	Yadgir	Hunisigi	0.098	0.025	0.121	0.111	0.412	0.332	0.456	0.361	0.562	0.435	0.449	0.377	0.261	0.194

4. WATER BALANCE METHODOLOGY FOR MONITORING OF DROUGHT PERIODS AND THEIR SEVERITIES DURING AGRICULTURAL GROWING SEASON

The understanding of agricultural drought pattern requires not only analysis of rainfall records but also adequacy of soil moisture patterns and deficiencies of the same during the crop growing season of a particular year or between different years. It is more realistic to adopt a suitable method of water budgeting and deal with the soil moisture available in a crop growing season. Drought occurs when there is insufficient moisture in the root zone of the crop. Where direct measurement of soil moisture and its determination are not possible, the concept of potential evapo-transpiration and the water budgeting provide an indirect method for determining actual evapo-transpiration (AE) and changes in soil moisture.

Moisture Adequacy Index:

The ratio AE / PE expressed in percentage known as Moisture Adequacy Index (MAI) is a useful index for scientific crop planning and drought monitoring. The systems analysis approach using the distribution of Moisture Adequacy Index with in crop growing season would help in determining optimum times for sowing, selection of suitable crop varieties and other cultural operations for specific regions.

Decrease of MAI from 100% would indicate soil moisture stress conditions experienced by the crops. Up to MAI value of 75%, there would be hardly any moisture stress. So period with MAI >75% can be denoted as humid period. Many dry land crops would experience only slight moisture stress even up to MAI of 50%. So period for which MAI is 50% -75% or above is considered as agricultural condition. When MAI is between 25% and 50% crops would experience only moderate drought conditions. So some of the drought resistant crops like Jowar, Ragi, Bajra, Minor millets, Groundnut, Sunflower and Pulses etc., would be able to withstand such droughts for a limited period. But when MAI becomes less than 25% severe drought would set in. The results of moisture adequacy index studies at the end of the South-West Monsoon season are presented in the figures 4.1

The Salient findings are as follows:

At the end of **September 2020**, due to **Normal** rainfall over major parts of the State, **4%** of the geographical area is falling under **moderate** condition and remaining **96%** of the geographical area is falling under **Normal agriculturally favorable** condition.

At the end of **December 2020**, due to **Normal** rainfall over major parts of the State **84%** of the area is falling under **moderate to severe** condition and remaining **16%** of the geographical area is falling under **Normal agriculturally favorable** condition.

Figure 4.1: Moisture Adequacy Index (MAI) for SW Monsoon 2020

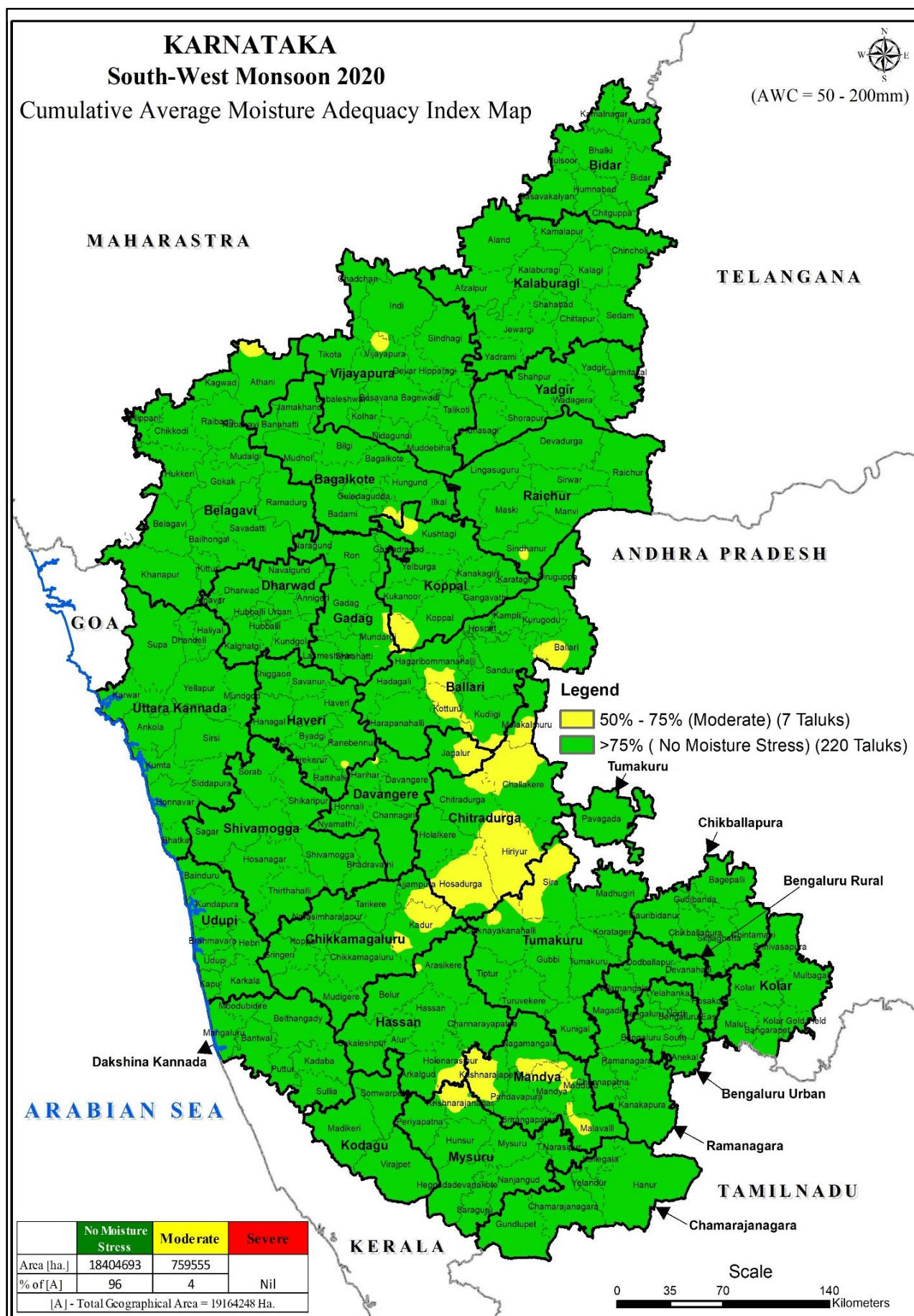
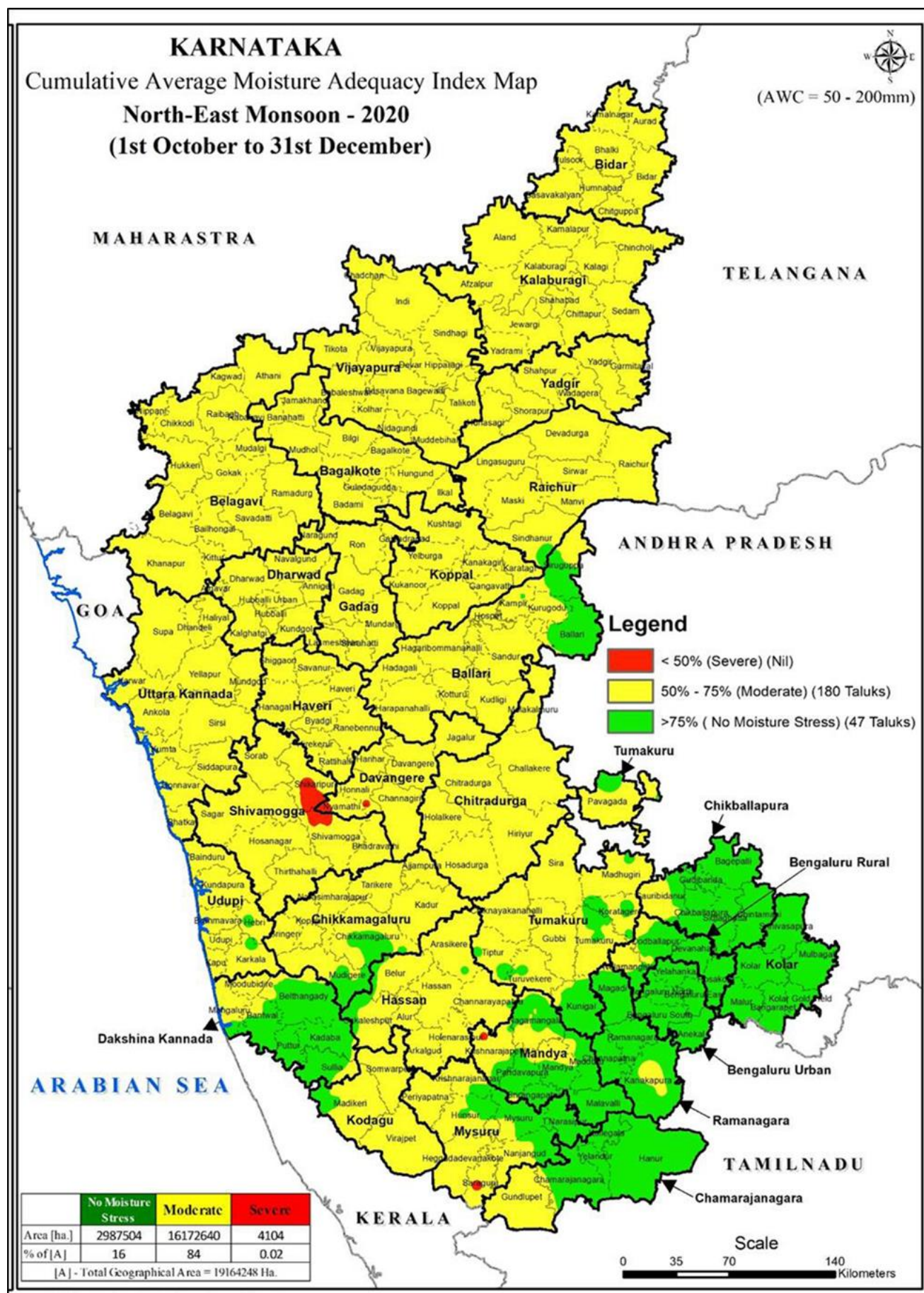


Figure 4.2: Moisture Adequacy Index (MAI) for NE Monsoon 2020



5. MAJOR RESERVOIR LEVELS IN THE STATE

The position of reservoir levels from 23rd standard week (01.06.2020) to 52nd standard week (31.12.2020), their respective maximum levels, previous year levels reservoir level during recent 10 years depicting maximum, minimum and average levels during particular standard weeks, difference in RL compared to the 10 years average level and difference in RL compared to the previous year level are given in table no. 5.2 to 5.14

Hydel generation reservoirs: Linganamakki, Supa and Varahi are the three main Hydel generation reservoirs of the state which come under west coast basin. The state receives maximum rainfall in the catchments of these basins and the annual rainfall is about 3000 to 4000 mm.

During the water year 2020, the levels in **Linganamakki** reservoir levels in most of the standard weeks were **highest** compared to the recent 10 years average levels. Maximum rise in reservoir level of **16.34 feet** was during **32nd std week**. The highest level of **1816.00 feet** was reached during **42nd std. week** against full reservoir level of **1819 feet**. The level during the season was **more** by **13.29 feet** compared to the average level and also **more** by **16.50 feet** compared to previous year level.

In the **Supa** reservoir, levels in most of the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **27.22 feet** was during **32nd week**. The highest level of **1832.86 feet** was reached during **42nd std. week** against full reservoir level of **1849.92 feet**. The level during the season was **more** by **21.59 feet** compared to the average level and **less** by **4.72 feet** compared to previous year level.

In the **Varahi** reservoir, levels in most of the standard weeks were **lower** compared to the recent 10 years average levels. Maximum rise in reservoir level of **13.51 feet** was during **32nd week**. The highest level of **1932.51 feet** was reached during **42nd std. week** against full reservoir level of **1949.50 feet**. The level during the season was **less** by **1.42 feet** compared to the average level and **more** by **9.09 feet** compared to previous year level.

Reservoirs Cauvery Basin: The 4 major reservoirs of **Cauvery basin viz., Harangi, Hemavathi, K.R.S and Kabini** are used for irrigation purpose.

In the **Harangi** reservoir, levels in most of the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **7.88 feet** was during **27th week**. The highest level of **2858.88 feet** was reached during **39th std. week** against full reservoir level of **2859.00 feet**. The level during the season was **more** by **23.62 feet** compared to the average level and **more** by **35.02 feet** compared to previous year level.

In the **Hemavathi** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **18.07 feet** was during **32nd week**. The highest level of **2921.50 feet** was reached during **39th std. week** against full reservoir level of **2922.00 feet**. The level during the season was **more** by **17.44 feet** compared to the average level and also **more** by **18.68 feet** compared to previous year level.

In the **K.R.S** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **15.38 feet** was during **32nd week**. The full reservoir level of **124.80 feet** was reached during **40th std. week**. The level during the season was **more** by **16.50 feet** compared to the average level and **more** by **24.07 feet** compared to previous year level.

In the **Kabini** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **6.22 feet** was during **27th std. week**. The full

reservoir level of **2284.00 feet** was reached during **37th std. week**. The level during the season was **more** by **6.70 feet** compared to the average level and **more** by **5.86 feet** compared to previous year level.

Krishna Basin reservoirs: Bhadra, Tungabhadra, Ghataprabha, Malaprabha, Alamatti and Narayanapura are the major irrigation reservoirs under **Krishna basin**.

In **Bhadra** reservoir, levels during all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **19.08 feet** was during **32nd week**. The full reservoir level of **2157.60 feet** was reached during **43rd std. week**. The level during the season was **more** by **9.37 feet** compared to the average level and **more** by **17.33 feet** compared to previous year level.

In **Tungabhadra** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **16.51 feet** was during **32nd week**. The full reservoir level of **1633.00 feet** was reached during **34th std. week**. The level during the season was **more** by **9.34 feet** compared to the average level and also **more** by **19.45 feet** compared to previous year level.

In **Ghataprabha** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **26.35 feet** was during **32nd std. week**. The full reservoir level of **2175.00 feet** was reached during **35th std. week**. The level during the season was **more** by **25.57 feet** compared to the average level and **more** by **39.39 feet** compared to previous year level.

In **Malaprabha** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **11.00 feet** was during **32nd week**. The full reservoir level of **2079.50 feet** was reached during **40th std. week**. The level during the season was **more** by **17.77 feet** compared to the average level and **more** by **20.77 feet** compared to previous year level.

In the **Alamatti** reservoir, levels in all the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **11.61 feet** was during **25th week**. The full reservoir level of **1704.81 feet** was reached during **36th std. week**. The level during the season was **more** by **20.03 feet** compared to the average level and **more** by **24.97 feet** compared to previous year level.

In the **Narayanapura** reservoir, levels in most of the standard weeks were **higher** compared to the recent 10 years average levels. Maximum rise in reservoir level of **8.20 feet** was during **28th week**. The full reservoir level of **1615.07 feet** was reached during **40th std. week**. The level during the season was **more** by **12.25 feet** compared to the average level and **more** by **7.84 feet** compared to previous year level.

The levels at all the major reservoirs were better when compared to average levels and also previous year levels

Table-5.1

Name of the Reservoir: (1) LINGANAMAKKI

Basin: HYDEL GENERATION RESERVOIR

Full Reservoir Level: 1819

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared to the previous year levels
	Maximum	Minimum	Average 10 years				
23	1758.20	1742.40	1751.41	1764.70	13.29	1748.20	16.50
24	1764.65	1744.65	1752.50	1759.65	7.15	1746.55	13.10
25	1766.05	1744.10	1754.25	1758.65	4.40	1744.10	14.55
26	1773.45	1746.55	1759.49	1754.60	-4.89	1746.55	8.05
27	1784.50	1748.55	1765.92	1761.25	-4.67	1755.85	5.40
28	1792.45	1753.05	1770.54	1766.10	-4.44	1765.45	0.65
29	1801.35	1757.60	1778.54	1771.00	-7.54	1767.75	3.25
30	1811.50	1767.90	1786.33	1771.00	-15.33	1774.75	-3.75
31	1817.00	1776.40	1792.93	1777.60	-15.33	1785.32	-7.72
32	1818.00	1784.45	1800.18	1793.94	-6.24	1811.35	-17.41
33	1819.00	1785.45	1802.67	1801.75	-0.92	1815.40	-13.65
34	1819.00	1787.07	1804.09	1805.60	1.51	1816.55	-10.95
35	1818.90	1787.24	1806.58	1806.20	-0.38	1818.30	-12.10
36	1818.95	1787.20	1808.00	1807.75	-0.25	1817.95	-10.20
37	1818.75	1787.94	1808.56	1809.55	0.99	1818.15	-8.60
38	1819.00	1790.95	1809.23	1813.15	3.93	1818.40	-5.25
39	1818.80	1791.79	1809.51	1814.35	4.84	1818.45	-4.10
40	1818.65	1792.44	1809.73	1814.20	4.47	1818.40	-4.20
41	1818.80	1793.01	1809.61	1814.40	4.79	1818.80	-4.40
42	1818.95	1792.98	1809.26	1816.00	6.74	1818.95	-2.95
43	1818.50	1793.04	1808.84	1813.95	5.11	1818.50	-4.55
44	1818.40	1793.01	1808.48	1815.35	6.87	1818.40	-3.05
45	1817.95	1793.24	1807.97	1814.50	6.53	1817.95	-3.45
46	1817.25	1793.25	1807.30	1813.65	6.36	1817.25	-3.60
47	1816.30	1793.19	1806.63	1812.70	6.07	1816.30	-3.60
48	1815.40	1793.00	1805.85	1811.95	6.10	1815.40	-3.45
49	1814.40	1792.25	1804.79	1811.40	6.61	1814.40	-3.00
50	1813.25	1791.70	1803.85	1811.00	7.15	1813.25	-2.25
51	1812.10	1791.10	1802.90	1810.05	7.15	1812.10	-2.05
52	1810.85	1790.25	1801.59	1808.85	7.26	1810.65	-1.80

Table-5.2**Name of the Reservoir: (2) SUPA****Basin: HYDEL GENERATION RESERVOIR****Full Reservoir Level: 1849.89 Unit: in feet****Reservoir level (RL): above mean sea level**

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019.	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	1753.21	1698.00	1730.70	1741.06	10.36	1745.78	-4.72
24	1755.13	1692.00	1731.10	1738.76	7.66	1744.99	-6.23
25	1752.79	1692.64	1729.27	1735.54	6.27	1743.52	-7.98
26	1757.32	1690.68	1732.28	1730.86	-1.42	1748.76	-17.91
27	1763.59	1700.35	1737.59	1738.73	1.14	1754.80	-16.07
28	1784.65	1703.96	1744.89	1747.85	2.96	1771.53	-23.68
29	1803.18	1709.86	1757.68	1753.00	-4.68	1775.96	-22.96
30	1811.87	1730.99	1772.60	1751.03	-21.57	1783.99	-32.96
31	1824.07	1748.57	1784.15	1757.75	-26.40	1804.00	-46.25
32	1839.82	1768.74	1795.75	1784.98	-10.77	1839.82	-54.84
33	1845.30	1772.54	1801.25	1802.20	0.95	1845.30	-43.10
34	1846.34	1772.49	1803.55	1812.36	8.81	1846.34	-33.98
35	1846.97	1770.66	1808.36	1816.40	8.04	1846.97	-30.57
36	1848.35	1764.88	1811.60	1819.32	7.71	1848.35	-29.03
37	1846.64	1769.94	1813.16	1821.12	7.96	1846.64	-25.52
38	1846.64	1772.02	1814.72	1826.27	11.55	1846.64	-20.37
39	1846.48	1772.09	1815.10	1830.31	15.20	1846.48	-16.17
40	1846.64	1772.53	1815.13	1831.68	16.56	1846.64	-14.96
41	1846.77	1773.38	1815.04	1832.11	17.07	1846.77	-14.66
42	1846.90	1773.06	1813.99	1832.86	18.88	1846.90	-14.04
43	1848.80	1773.39	1813.90	1831.62	17.72	1848.80	-17.19
44	1848.58	1773.66	1813.29	1832.86	19.58	1848.58	-15.71
45	1848.28	1773.96	1812.67	1832.37	19.71	1848.28	-15.91
46	1847.23	1773.99	1811.57	1831.85	20.28	1847.23	-15.38
47	1845.92	1774.00	1810.24	1830.86	20.62	1845.92	-15.06
48	1844.15	1774.00	1808.97	1829.49	20.51	1844.15	-14.66
49	1842.84	1774.02	1807.39	1827.78	20.39	1842.84	-15.06
50	1840.80	1773.98	1805.86	1827.45	21.59	1840.80	-13.35
51	1838.37	1773.43	1804.31	1825.68	21.37	1838.37	-12.69
52	1834.70	1772.45	1802.22	1823.19	20.97	1834.70	-11.51

Table-5.3

Name of the Reservoir: (3) VARAHI

Basin: HYDEL GENERATION RESERVOIR

Full Reservoir Level: 1949.44

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	1886.41	1872.00	1878.76	1875.83	-2.92	1874.03	1.80
24	1893.74	1870.00	1880.52	1876.62	-3.90	1873.18	3.44
25	1893.48	1868.35	1882.49	1877.44	-5.05	1868.35	9.09
26	1898.79	1873.73	1887.31	1875.57	-11.74	1873.73	1.84
27	1907.39	1878.39	1892.38	1881.67	-10.71	1880.69	0.98
28	1914.86	1885.44	1896.95	1885.93	-11.01	1886.33	-0.39
29	1923.72	1889.15	1904.56	1891.51	-13.05	1889.15	2.36
30	1933.72	1894.36	1912.71	1890.46	-22.24	1894.36	-3.90
31	1939.69	1902.40	1917.60	1896.43	-21.17	1902.40	-5.97
32	1941.83	1910.93	1924.39	1909.94	-14.45	1919.19	-9.25
33	1947.66	1915.06	1928.22	1917.23	-10.99	1924.51	-7.28
34	1948.45	1918.67	1929.96	1921.23	-8.73	1925.95	-4.72
35	1948.52	1919.62	1932.25	1921.69	-10.56	1927.85	-6.17
36	1948.42	1920.11	1934.43	1923.13	-11.31	1933.56	-10.43
37	1947.66	1920.11	1935.41	1925.03	-10.38	1937.69	-12.66
38	1947.66	1921.42	1936.20	1930.02	-6.18	1937.96	-7.94
39	1947.70	1923.06	1936.15	1931.53	-4.62	1937.89	-6.36
40	1947.96	1923.12	1936.10	1931.62	-4.48	1937.50	-5.87
41	1947.37	1922.74	1935.57	1931.53	-4.04	1937.27	-5.74
42	1946.61	1921.75	1934.89	1932.51	-2.38	1937.50	-4.99
43	1946.02	1920.70	1934.12	1931.33	-2.79	1938.55	-7.22
44	1945.83	1920.31	1933.64	1931.82	-1.82	1937.82	-6.00
45	1945.04	1919.62	1932.72	1930.94	-1.78	1936.71	-5.77
46	1943.27	1919.03	1931.39	1929.92	-1.47	1936.02	-6.10
47	1941.66	1918.73	1930.19	1928.77	-1.42	1935.13	-6.36
48	1940.38	1918.01	1929.27	1927.33	-1.94	1934.28	-6.95
49	1938.97	1917.00	1928.30	1925.88	-2.41	1933.23	-7.35
50	1937.23	1916.57	1927.06	1925.10	-1.96	1931.40	-6.30
51	1935.20	1916.24	1926.06	1924.05	-2.01	1930.35	-6.30
52	1933.43	1915.39	1924.62	1922.67	-1.95	1928.38	-5.71

Table-5.4

Name of the Reservoir: (4) HARANGI

Basin: CAUVERY GENERATION RESERVOIR

Full Reservoir Level: 2859

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2837.38	2797.77	2807.83	2831.44	23.62	2804.97	26.47
24	2840.61	2801.28	2813.94	2833.52	19.58	2805.68	27.84
25	2844.86	2806.81	2820.36	2836.88	16.52	2806.81	30.07
26	2857.14	2808.07	2831.63	2839.44	7.81	2808.07	31.37
27	2856.73	2812.30	2837.66	2847.32	9.66	2812.30	35.02
28	2857.30	2818.81	2842.98	2851.52	8.54	2818.81	32.71
29	2858.26	2827.56	2849.25	2855.21	5.96	2827.56	27.65
30	2858.53	2833.79	2853.77	2857.54	3.77	2833.79	23.75
31	2858.41	2833.29	2854.99	2855.94	0.95	2833.29	22.65
32	2858.62	2854.39	2857.09	2856.39	-0.70	2854.39	2.00
33	2858.78	2851.72	2856.90	2857.96	1.06	2857.93	0.03
34	2858.75	2854.88	2857.24	2858.00	0.76	2858.00	0.00
35	2858.60	2853.84	2857.08	2856.99	-0.09	2858.24	-1.25
36	2858.91	2851.40	2856.57	2856.40	-0.17	2857.96	-1.56
37	2858.80	2843.79	2855.55	2857.67	2.12	2858.25	-0.58
38	2858.47	2842.58	2854.77	2858.05	3.28	2858.00	0.05
39	2858.07	2841.17	2854.51	2858.88	4.37	2856.64	2.24
40	2857.76	2835.59	2852.29	2857.96	5.67	2855.91	2.05
41	2858.14	2833.25	2850.71	2858.25	7.54	2857.79	0.46
42	2858.22	2829.05	2849.05	2858.39	9.34	2858.22	0.17
43	2857.63	2823.31	2847.24	2857.68	10.45	2857.63	0.05
44	2856.86	2816.06	2842.63	2855.41	12.78	2856.86	-1.45
45	2854.98	2809.62	2839.47	2851.56	12.09	2854.98	-3.42
46	2854.71	2802.06	2834.20	2847.19	12.99	2851.89	-4.70
47	2853.34	2792.63	2830.24	2843.00	12.77	2848.06	-5.06
48	2849.66	2787.80	2825.31	2837.48	12.17	2843.87	-6.39
49	2845.66	2784.78	2819.97	2831.03	11.06	2839.66	-8.63
50	2841.60	2783.47	2814.94	2824.65	9.71	2835.58	-10.93
51	2838.33	2783.26	2810.87	2819.45	8.58	2834.00	-14.55
52	2835.79	2782.28	2807.67	2819.63	11.96	2831.72	-12.09

Table-5.5**Name of the Reservoir: (5) HEMAVATHI****Basin: CAUVERY GENERATION RESERVOIR****Full Reservoir Level: 2922****Unit: in feet****Reservoir level (RL): above mean sea level**

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2871.50	2852.70	2865.65	2879.97	14.32	2863.90	16.07
24	2898.66	2855.93	2870.82	2880.47	9.65	2863.92	16.55
25	2902.20	2858.10	2874.72	2882.78	8.06	2864.10	18.68
26	2906.96	2865.29	2881.31	2883.85	2.54	2865.62	18.23
27	2908.91	2870.30	2887.61	2889.04	1.43	2876.75	12.29
28	2920.15	2874.18	2892.83	2891.62	-1.21	2886.65	4.97
29	2919.93	2884.25	2899.05	2895.01	-4.04	2889.02	5.99
30	2920.75	2892.33	2904.82	2896.44	-8.38	2892.33	4.11
31	2921.08	2894.27	2908.58	2901.85	-6.73	2894.27	7.58
32	2921.71	2895.83	2913.54	2919.92	6.38	2919.41	0.51
33	2921.97	2893.50	2913.28	2921.32	8.04	2921.45	-0.13
34	2921.81	2893.58	2912.60	2921.50	8.90	2921.45	0.05
35	2921.93	2894.20	2912.65	2920.15	7.50	2921.75	-1.60
36	2921.75	2890.40	2911.87	2920.01	8.14	2921.48	-1.47
37	2921.95	2877.50	2910.11	2919.18	9.07	2921.95	-2.77
38	2921.81	2873.41	2908.81	2921.22	12.41	2921.40	-0.18
39	2921.75	2876.35	2908.39	2921.50	13.11	2921.04	0.46
40	2921.41	2875.33	2907.19	2920.04	12.85	2919.98	0.06
41	2921.25	2871.70	2905.59	2919.42	13.83	2920.12	-0.70
42	2920.75	2872.25	2904.18	2920.34	16.16	2920.75	-0.41
43	2921.71	2870.81	2902.60	2919.59	16.99	2921.71	-2.12
44	2921.04	2868.02	2900.56	2918.00	17.44	2921.04	-3.04
45	2919.75	2868.04	2899.65	2915.57	15.92	2919.75	-4.18
46	2922.00	2864.81	2898.25	2913.21	14.96	2917.75	-4.54
47	2922.00	2864.93	2896.84	2910.25	13.42	2915.29	-5.04
48	2921.12	2864.94	2895.13	2906.97	11.84	2912.55	-5.58
49	2919.68	2864.95	2892.42	2903.31	10.90	2910.25	-6.94
50	2918.31	2865.06	2889.77	2899.66	9.89	2907.26	-7.60
51	2917.26	2865.10	2887.28	2896.44	9.16	2904.20	-7.76
52	2916.31	2865.08	2884.76	2893.30	8.55	2900.98	-7.68

Table-5.6

Name of the Reservoir: (6) K.R.S

Basin: CAUVERY GENERATION RESERVOIR

Full Reservoir Level: 124.8

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	93.65	63.35	75.95	92.45	16.50	80.50	11.95
24	100.75	67.86	78.80	92.87	14.07	80.08	12.79
25	105.15	68.00	81.85	95.75	13.90	79.79	15.96
26	108.20	72.40	87.21	97.14	9.93	80.05	17.09
27	108.77	77.70	92.04	100.33	8.29	83.65	16.68
28	123.43	76.80	95.99	104.46	8.47	90.30	14.16
29	123.25	75.60	99.98	107.70	7.72	88.12	19.58
30	123.08	75.27	102.82	106.52	3.70	87.13	19.39
31	123.63	79.35	105.16	107.17	2.01	83.10	24.07
32	124.80	92.80	112.22	122.55	10.33	122.30	0.25
33	124.80	90.60	112.77	124.10	11.33	124.80	-0.70
34	124.80	92.12	112.66	124.54	11.88	124.80	-0.26
35	124.80	93.03	113.60	123.30	9.70	124.80	-1.50
36	124.80	91.22	114.27	124.28	10.01	124.80	-0.52
37	124.80	86.10	114.21	124.70	10.49	124.80	-0.10
38	124.80	87.15	114.45	123.55	9.10	124.80	-1.25
39	124.80	89.35	115.10	124.72	9.62	124.80	-0.08
40	124.80	86.85	114.92	124.80	9.88	124.80	0.00
41	124.80	81.40	114.91	124.80	9.90	124.80	0.00
42	124.80	81.96	115.70	124.80	9.10	124.80	0.00
43	124.80	78.30	115.13	124.80	9.68	124.80	0.00
44	124.80	81.65	114.96	124.18	9.23	124.80	-0.62
45	124.80	81.64	114.88	123.90	9.02	124.80	-0.90
46	124.80	77.23	113.88	123.14	9.26	124.80	-1.66
47	124.80	78.05	113.36	121.95	8.59	124.29	-2.34
48	124.69	78.61	111.55	120.76	9.21	123.53	-2.77
49	124.23	78.75	111.07	120.00	8.93	123.10	-3.10
50	123.91	78.90	110.37	119.83	9.46	122.28	-2.45
51	123.38	79.30	109.52	119.38	9.86	121.72	-2.34
52	122.60	79.48	108.38	118.85	10.47	121.64	-2.79

Table-5.7**Name of the Reservoir: (7) KABINI****Basin: CAUVERY GENERATION RESERVOIR****Full Reservoir Level: 2284****Unit: in feet****Reservoir level (RL): above mean sea level**

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2265.52	2241.75	2256.16	2262.17	6.01	2256.31	5.86
24	2279.80	2242.18	2260.06	2262.24	2.18	2256.66	5.58
25	2280.70	2244.85	2264.92	2262.19	-2.73	2256.79	5.40
26	2282.35	2257.51	2269.94	2261.66	-8.28	2257.51	4.15
27	2282.82	2263.30	2272.62	2267.88	-4.74	2263.94	3.94
28	2282.78	2264.53	2274.73	2270.98	-3.75	2268.50	2.48
29	2283.33	2268.17	2277.31	2276.90	-0.40	2271.19	5.71
30	2283.23	2272.75	2278.28	2276.97	-1.31	2273.00	3.97
31	2283.17	2269.60	2278.69	2279.87	1.18	2274.74	5.13
32	2283.00	2269.56	2279.49	2283.14	3.65	2280.77	2.37
33	2283.79	2267.01	2279.69	2283.73	4.04	2283.79	-0.06
34	2283.81	2270.16	2279.76	2283.84	4.09	2283.81	0.03
35	2283.87	2275.74	2280.27	2282.64	2.37	2283.87	-1.23
36	2284.00	2274.55	2280.38	2283.02	2.64	2283.61	-0.59
37	2283.99	2270.27	2279.83	2284.00	4.17	2283.97	0.03
38	2283.99	2269.88	2279.77	2284.00	4.23	2283.99	0.01
39	2284.00	2271.26	2278.90	2283.87	4.97	2284.00	-0.13
40	2283.76	2268.70	2277.73	2283.27	5.54	2283.76	-0.49
41	2283.53	2267.23	2277.03	2283.73	6.70	2283.53	0.20
42	2284.00	2266.71	2276.88	2283.17	6.29	2283.91	-0.74
43	2283.94	2265.24	2276.61	2283.02	6.41	2283.94	-0.92
44	2283.94	2265.76	2275.99	2280.28	4.29	2283.94	-3.66
45	2283.56	2265.26	2275.51	2279.05	3.54	2283.56	-4.51
46	2282.81	2263.94	2274.45	2277.03	2.58	2282.81	-5.78
47	2281.04	2263.68	2273.49	2274.77	1.28	2281.04	-6.27
48	2279.17	2262.50	2272.25	2273.01	0.76	2279.17	-6.16
49	2278.41	2259.68	2271.53	2271.37	-0.16	2278.41	-7.04
50	2277.35	2258.35	2271.30	2271.39	0.09	2277.35	-5.96
51	2277.55	2257.15	2271.09	2271.02	-0.07	2276.64	-5.62
52	2278.15	2256.38	2271.02	2271.25	0.23	2276.85	-5.60

Table-5.8

Name of the Reservoir: (8) BHADRA
Basin: KRISHNA GENERATION RESERVOIR
Full Reservoir Level: 2158

Unit: in feet
Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2120.29	2073.29	2098.42	2105.06	6.64	2096.89	8.17
24	2121.31	2079.25	2102.17	2106.58	4.41	2096.50	10.08
25	2124.16	2084.00	2104.84	2110.00	5.16	2094.60	15.40
26	2130.50	2092.00	2110.31	2111.33	1.02	2094.00	17.33
27	2131.54	2096.70	2115.77	2116.41	0.64	2100.33	16.08
28	2141.25	2098.83	2120.76	2120.00	-0.76	2106.83	13.17
29	2152.83	2108.75	2127.90	2125.16	-2.73	2110.00	15.16
30	2156.83	2113.50	2133.90	2125.95	-7.95	2115.00	10.95
31	2156.85	2116.50	2137.09	2128.25	-8.84	2119.50	8.75
32	2157.06	2119.91	2143.40	2147.33	3.93	2151.66	-4.33
33	2157.56	2122.50	2145.29	2152.33	7.04	2157.16	-4.83
34	2158.00	2127.16	2146.67	2154.81	8.14	2157.54	-2.73
35	2158.00	2129.83	2148.44	2154.75	6.31	2157.66	-2.91
36	2158.00	2130.41	2149.33	2156.08	6.75	2157.54	-1.46
37	2158.00	2129.58	2149.68	2157.58	7.90	2157.68	-0.10
38	2158.00	2129.20	2149.62	2157.33	7.71	2157.83	-0.50
39	2158.00	2130.25	2149.87	2157.54	7.67	2157.83	-0.29
40	2158.66	2129.52	2150.08	2157.54	7.46	2157.95	-0.41
41	2158.00	2127.79	2149.46	2157.14	7.68	2157.79	-0.65
42	2158.00	2125.91	2149.02	2157.25	8.23	2158.00	-0.75
43	2157.66	2124.79	2148.23	2157.60	9.37	2157.66	-0.06
44	2157.75	2121.58	2147.49	2156.83	9.34	2157.75	-0.92
45	2157.62	2119.25	2146.86	2155.57	8.71	2157.60	-2.03
46	2157.50	2116.95	2145.91	2153.70	7.79	2157.16	-3.46
47	2157.58	2116.02	2145.57	2152.72	7.15	2156.39	-3.67
48	2157.47	2116.02	2145.44	2152.35	6.91	2155.16	-2.81
49	2157.45	2116.00	2145.42	2151.85	6.43	2154.56	-2.71
50	2157.75	2116.18	2145.52	2151.41	5.89	2154.54	-3.13
51	2158.00	2116.22	2145.29	2150.97	5.68	2154.56	-3.59
52	2158.00	2116.27	2145.02	2150.47	5.45	2154.58	-4.11

Table-5.9

Name of the Reservoir: (9) TUNGABHADRA
 Basin: KRISHNA GENERATION RESERVOIR
 Full Reservoir Level: 1633

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	1589.19	1568.85	1580.15	1584.37	4.22	1574.91	9.46
24	1600.36	1568.95	1583.16	1584.17	1.01	1574.41	9.76
25	1605.10	1569.15	1585.79	1587.24	1.45	1573.87	13.37
26	1610.10	1573.38	1590.71	1590.70	-0.01	1573.38	17.32
27	1617.65	1572.91	1598.60	1592.36	-6.24	1572.91	19.45
28	1625.12	1592.94	1606.30	1603.22	-3.08	1593.03	10.19
29	1631.65	1595.27	1612.53	1609.53	-3.00	1597.54	11.99
30	1631.52	1603.57	1618.76	1612.31	-6.45	1603.57	8.74
31	1632.98	1609.78	1622.36	1612.09	-10.27	1609.78	2.31
32	1633.00	1616.15	1627.21	1628.60	1.39	1629.65	-1.05
33	1633.00	1617.80	1628.65	1632.01	3.36	1633.00	-0.99
34	1633.00	1617.89	1629.23	1633.00	3.77	1633.00	0.00
35	1633.00	1616.80	1629.66	1632.93	3.27	1633.00	-0.07
36	1633.00	1614.86	1629.42	1633.00	3.58	1632.14	0.86
37	1633.00	1612.77	1629.23	1633.00	3.77	1633.00	0.00
38	1633.00	1612.90	1629.01	1632.38	3.38	1633.00	-0.62
39	1633.00	1614.49	1628.94	1633.00	4.06	1633.00	0.00
40	1633.00	1614.69	1628.80	1632.90	4.10	1633.00	-0.10
41	1633.00	1611.65	1628.38	1633.00	4.62	1633.00	0.00
42	1633.00	1608.24	1627.91	1633.00	5.09	1633.00	0.00
43	1632.80	1604.71	1626.77	1632.85	6.08	1632.80	0.05
44	1633.00	1599.37	1625.55	1632.46	6.91	1633.00	-0.54
45	1633.00	1593.60	1624.11	1631.58	7.47	1633.00	-1.42
46	1632.88	1589.31	1622.51	1630.47	7.96	1632.32	-1.85
47	1633.00	1589.13	1621.42	1628.93	7.51	1631.21	-2.28
48	1633.00	1589.94	1620.28	1627.87	7.59	1629.98	-2.11
49	1632.65	1589.64	1618.93	1627.57	8.64	1629.01	-1.44
50	1632.22	1588.60	1617.62	1626.81	9.19	1628.00	-1.19
51	1631.27	1588.08	1616.30	1625.64	9.34	1626.96	-1.32
52	1629.78	1587.94	1614.72	1624.00	9.28	1625.99	-1.99

Table-5.10

Name of the Reservoir: (10) GHATAPRABHA
 Basin: KRISHNA GENERATION RESERVOIR
 Full Reservoir Level: 2175

Unit: in feet

Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during 2019	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2087.80	2066.00	2075.16	2096.70	21.54	2067.58	29.12
24	2098.10	2065.00	2077.37	2098.96	21.59	2067.11	31.85
25	2108.23	2065.13	2080.48	2106.05	25.57	2066.66	39.39
26	2123.60	2066.25	2088.82	2103.70	14.88	2066.25	37.45
27	2132.63	2069.18	2101.89	2111.86	9.97	2103.58	8.28
28	2138.45	2072.71	2114.18	2128.43	14.25	2132.85	-4.42
29	2161.78	2100.20	2128.05	2136.20	8.15	2136.53	-0.33
30	2170.66	2116.70	2142.66	2139.96	-2.70	2142.00	-2.04
31	2173.80	2121.05	2154.92	2145.25	-9.67	2167.46	-22.21
32	2175.00	2125.80	2161.99	2171.60	9.61	2173.00	-1.40
33	2175.00	2129.43	2162.71	2173.03	10.32	2175.00	-1.97
34	2175.00	2130.60	2163.18	2174.40	11.23	2175.00	-0.60
35	2175.00	2130.20	2164.64	2175.00	10.36	2174.80	0.20
36	2175.00	2128.05	2166.09	2175.00	8.91	2175.00	0.00
37	2175.00	2127.71	2165.92	2175.00	9.08	2175.00	0.00
38	2175.00	2127.71	2166.04	2175.00	8.96	2175.00	0.00
39	2175.00	2127.70	2165.83	2175.00	9.17	2174.33	0.67
40	2175.00	2127.73	2165.69	2175.00	9.31	2175.00	0.00
41	2175.00	2128.15	2165.18	2175.00	9.82	2175.00	0.00
42	2175.00	2128.11	2165.12	2175.00	9.88	2175.00	0.00
43	2175.00	2127.93	2164.67	2175.00	10.33	2175.00	0.00
44	2175.00	2127.76	2164.26	2175.00	10.74	2175.00	0.00
45	2175.00	2127.58	2162.49	2175.00	12.51	2175.00	0.00
46	2175.00	2127.41	2160.29	2175.00	14.71	2175.00	0.00
47	2175.00	2123.38	2157.03	2173.41	16.38	2175.00	-1.59
48	2174.61	2122.81	2154.81	2169.58	14.77	2174.61	-5.03
49	2172.21	2116.35	2151.10	2167.68	16.58	2172.21	-4.53
50	2168.65	2114.80	2148.92	2167.51	18.59	2168.65	-1.14
51	2165.75	2114.56	2146.82	2167.33	20.51	2165.75	1.58
52	2164.92	2113.61	2143.07	2163.16	20.09	2164.92	-1.76

Table-5.11

Name of the Reservoir: (11) MALAPRABHA
Basin: KRISHNA GENERATION RESERVOIR
Full Reservoir Level: 2079.5

Unit: in feet
Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during No.	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	2041.82	2033.30	2037.25	2054.26	17.01	2036.17	18.09
24	2048.44	2032.88	2037.79	2053.77	15.98	2035.61	18.16
25	2049.35	2031.97	2038.03	2055.80	17.77	2035.03	20.77
26	2052.20	2031.63	2039.89	2054.15	14.27	2034.46	19.69
27	2055.68	2032.00	2042.22	2053.30	11.08	2041.00	12.30
28	2056.55	2033.10	2045.88	2058.15	12.27	2054.30	3.85
29	2061.49	2035.00	2050.07	2060.00	9.93	2055.80	4.20
30	2065.42	2041.40	2055.10	2060.95	5.85	2058.40	2.55
31	2071.00	2047.05	2060.08	2062.10	2.02	2071.00	-8.90
32	2077.00	2053.40	2063.22	2073.10	9.88	2077.00	-3.90
33	2079.20	2053.80	2064.47	2076.90	12.43	2079.20	-2.30
34	2079.50	2052.95	2065.01	2077.20	12.19	2079.50	-2.30
35	2079.50	2054.20	2065.84	2077.90	12.07	2079.50	-1.60
36	2079.50	2055.05	2066.82	2078.45	11.63	2079.50	-1.05
37	2079.50	2055.18	2067.19	2078.00	10.81	2079.50	-1.50
38	2079.50	2054.85	2067.17	2078.35	11.18	2079.50	-1.15
39	2079.50	2054.70	2067.34	2078.65	11.31	2079.50	-0.85
40	2079.50	2054.75	2067.73	2079.50	11.77	2079.50	0.00
41	2079.50	2055.42	2067.82	2079.10	11.28	2079.50	-0.40
42	2079.50	2055.41	2067.65	2078.70	11.05	2079.50	-0.80
43	2079.50	2055.33	2067.39	2079.50	12.11	2079.50	0.00
44	2079.50	2055.15	2067.01	2078.90	11.89	2079.50	-0.60
45	2079.50	2054.92	2066.46	2079.00	12.54	2079.50	-0.50
46	2079.50	2053.37	2065.67	2078.70	13.03	2079.50	-0.80
47	2079.50	2049.66	2064.52	2077.97	13.45	2079.50	-1.53
48	2079.00	2047.66	2062.97	2076.93	13.96	2079.00	-2.07
49	2078.17	2047.47	2061.55	2075.81	14.26	2078.17	-2.36
50	2077.17	2047.19	2059.94	2074.55	14.61	2077.17	-2.62
51	2076.00	2046.87	2058.43	2073.21	14.78	2076.00	-2.79
52	2074.46	2046.34	2056.74	2071.61	14.87	2074.46	-2.85

Table-5.12**Name of the Reservoir: (12) ALAMATTI****Basin: KRISHNA GENERATION RESERVOIR****Full Reservoir Level: 1708.17****Unit: in feet****Reservoir level (RL): above mean sea level**

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during No.	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	1671.73	1652.38	1663.85	1674.20	10.35	1667.50	6.70
24	1677.41	1652.18	1665.09	1676.59	11.50	1667.04	9.55
25	1684.79	1654.44	1668.17	1688.20	20.03	1666.72	21.48
26	1690.86	1658.78	1673.01	1691.45	18.44	1666.48	24.97
27	1690.70	1664.39	1679.39	1693.98	14.59	1679.38	14.60
28	1699.07	1664.48	1688.03	1697.92	9.89	1699.07	-1.15
29	1704.48	1673.15	1693.80	1697.16	3.36	1702.84	-5.68
30	1704.81	1686.29	1699.28	1697.16	-2.12	1703.72	-6.56
31	1704.81	1689.72	1700.54	1697.92	-2.62	1699.13	-1.21
32	1704.81	1692.29	1702.00	1702.77	0.77	1700.35	2.43
33	1704.81	1692.76	1703.16	1699.72	-3.44	1703.33	-3.61
34	1704.81	1692.21	1703.30	1704.48	1.18	1704.81	-0.33
35	1704.81	1691.33	1703.26	1704.80	1.54	1704.81	-0.01
36	1704.81	1688.94	1702.29	1704.81	2.52	1699.89	4.92
37	1704.81	1688.37	1703.08	1704.81	1.73	1704.81	0.00
38	1704.81	1690.73	1703.19	1704.81	1.62	1704.81	0.00
39	1704.81	1692.38	1703.15	1704.81	1.66	1704.80	0.01
40	1704.81	1691.81	1702.88	1704.81	1.93	1704.81	0.00
41	1704.81	1692.15	1702.73	1704.81	2.08	1704.81	0.00
42	1704.81	1690.80	1702.23	1704.81	2.58	1704.81	0.00
43	1704.81	1688.31	1701.15	1704.81	3.66	1704.64	0.16
44	1704.81	1686.45	1700.33	1704.81	4.48	1704.81	0.00
45	1704.81	1683.86	1699.37	1704.81	5.44	1704.81	0.00
46	1704.81	1681.54	1698.32	1704.09	5.76	1704.81	-0.72
47	1704.81	1679.69	1697.48	1703.99	6.51	1704.81	-0.82
48	1704.74	1676.69	1696.12	1703.63	7.50	1704.74	-1.11
49	1703.86	1675.35	1695.00	1702.41	7.42	1703.79	-1.38
50	1703.17	1673.92	1693.95	1701.53	7.58	1702.58	-1.05
51	1702.35	1672.00	1692.72	1701.30	8.58	1702.35	-1.05
52	1701.23	1671.84	1690.55	1699.56	9.01	1700.84	-1.28

Table-5.13

Name of the Reservoir: (13) NARAYANAPURA
Basin: KRISHNA GENERATION RESERVOIR
Full Reservoir Level: 1615

Unit: in feet
Reservoir level (RL): above mean sea level

Std. Week No.	Reservoir Level information during recent 10 years			Levels during 2020	Difference in RL of 2020 compared to the Average level	Levels during No.	Difference in RL of 2020 compared Maximum
	Maximum	Minimum	Average 10 years				
23	1604.27	1590.16	1598.11	1603.88	5.78	1598.66	5.22
24	1604.47	1592.29	1598.34	1603.75	5.41	1598.53	5.22
25	1604.31	1593.76	1598.59	1603.72	5.13	1598.40	5.32
26	1604.08	1593.43	1598.67	1604.74	6.07	1599.26	5.48
27	1603.98	1593.90	1599.01	1604.97	5.96	1599.19	5.78
28	1610.95	1593.88	1600.92	1613.17	12.25	1605.75	7.42
29	1613.84	1597.73	1606.55	1613.30	6.75	1611.92	1.38
30	1614.12	1598.72	1610.22	1612.94	2.72	1612.71	0.23
31	1614.42	1607.30	1610.44	1611.86	1.42	1607.30	4.56
32	1615.00	1605.72	1611.28	1613.56	2.29	1605.72	7.84
33	1614.34	1607.79	1611.88	1607.79	-4.09	1611.92	-4.13
34	1614.63	1609.35	1612.89	1612.61	-0.28	1614.61	-2.00
35	1615.03	1608.53	1613.17	1614.84	1.67	1615.00	-0.16
36	1615.01	1607.71	1612.31	1614.65	2.34	1611.86	2.79
37	1614.91	1608.10	1613.06	1614.48	1.42	1614.91	-0.43
38	1614.97	1611.46	1613.58	1614.25	0.67	1614.97	-0.72
39	1615.07	1610.13	1613.24	1614.71	1.47	1615.04	-0.33
40	1615.07	1608.22	1613.38	1615.07	1.69	1614.84	0.23
41	1614.94	1608.25	1613.10	1613.76	0.66	1614.94	-1.18
42	1614.94	1607.53	1612.71	1614.42	1.71	1614.84	-0.42
43	1614.78	1607.25	1612.79	1615.07	2.28	1614.78	0.30
44	1615.07	1607.06	1612.27	1615.07	2.80	1615.07	0.00
45	1615.07	1604.64	1611.11	1613.27	2.16	1615.07	-1.80
46	1614.59	1604.77	1611.16	1611.89	0.73	1614.09	-2.20
47	1614.53	1598.50	1610.38	1611.43	1.05	1613.10	-1.67
48	1613.75	1599.19	1610.55	1612.38	1.83	1613.75	-1.37
49	1613.05	1601.13	1609.30	1613.37	4.06	1612.87	0.49
50	1612.83	1598.20	1608.78	1612.68	3.90	1612.81	-0.13
51	1612.95	1598.44	1608.54	1612.71	4.17	1612.74	-0.03
52	1612.86	1598.70	1609.81	1612.81	2.99	1612.38	0.43

Fig - 5.1: Weekly Reservoir Level : Linganamakki Reservoir (Hydel-West Flowing)
River : Sharavathi **Location: Linganamakki, Shimoga district**

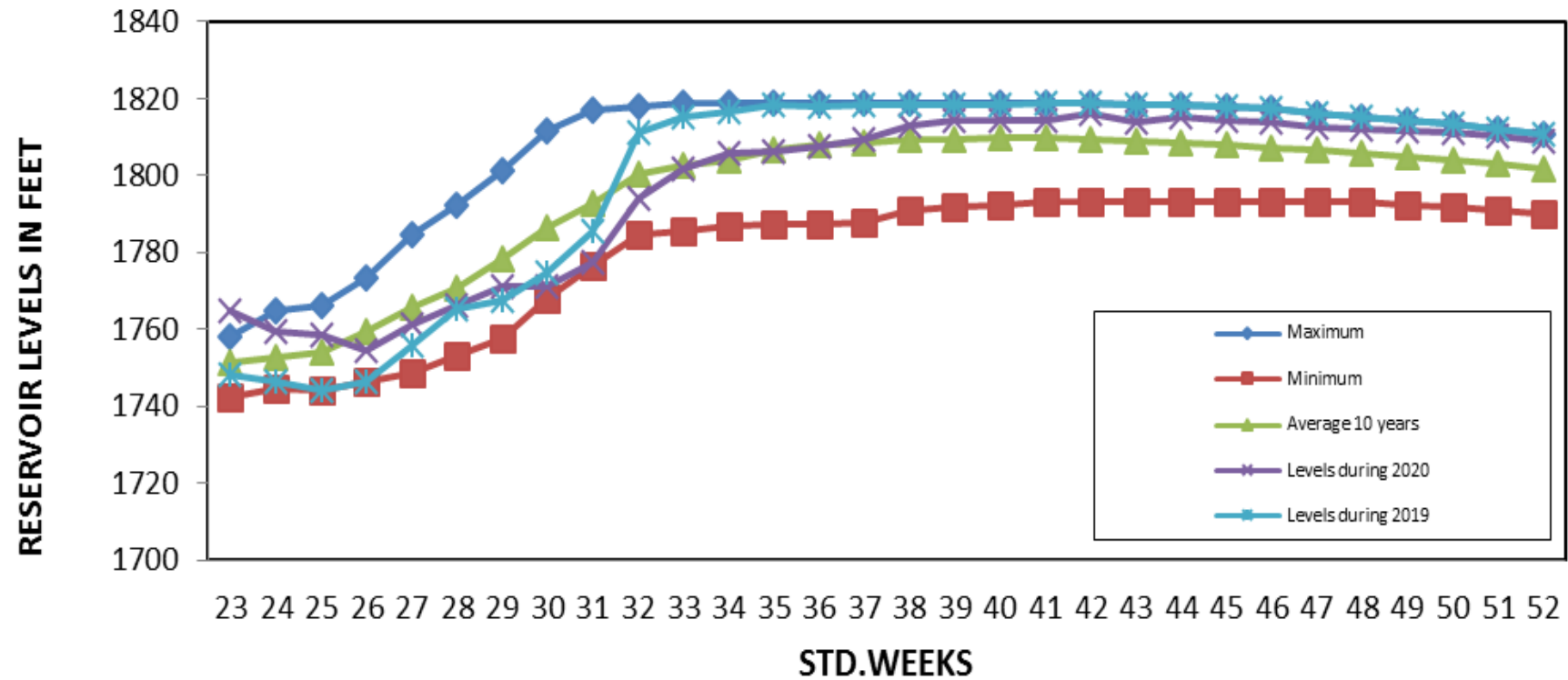


Fig - 5.2: Weekly Reservoir Level: Supa Reservoir (Hydel - West Flowing)

River : Kali

Location: Supa, Uttara Kannada district

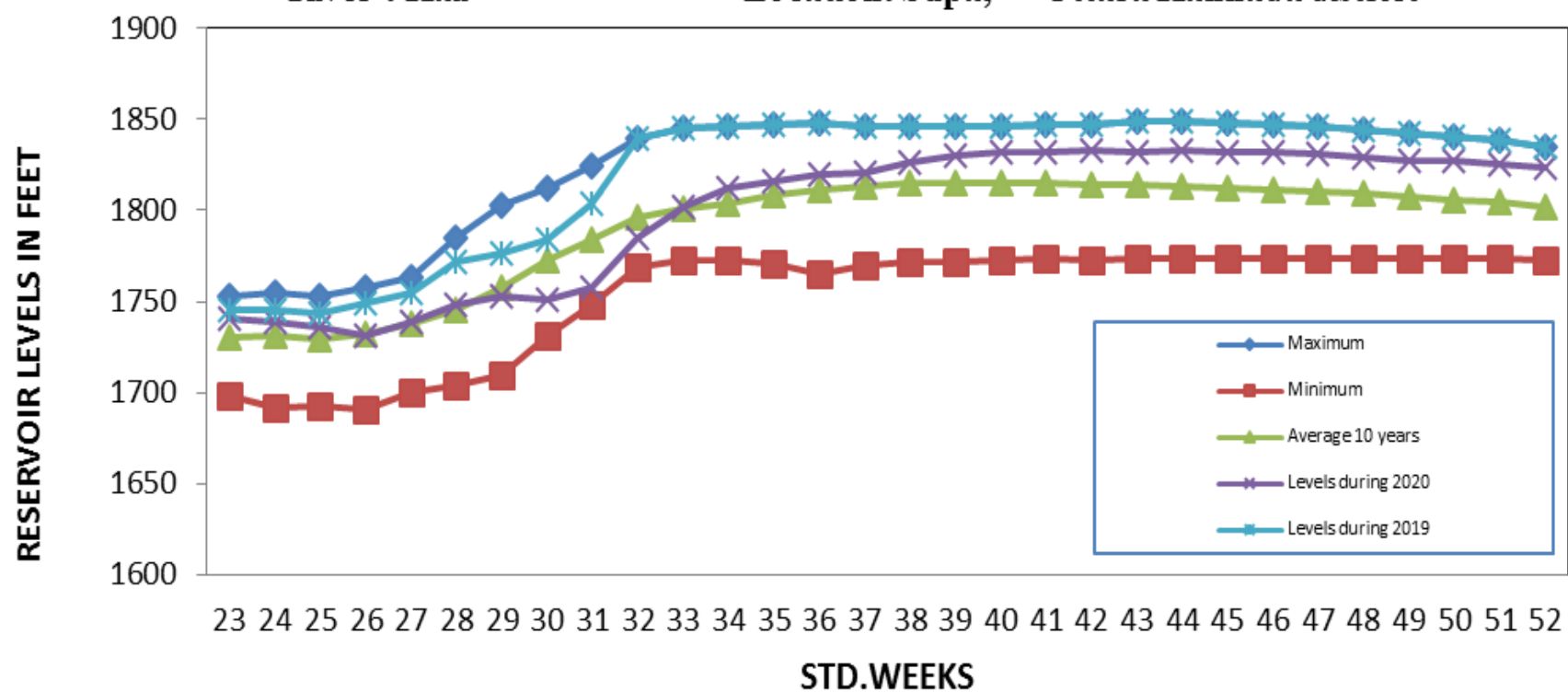


Fig - 5.3: Weekly Reservoir Level: Varahi Reservoir (Hydel-West Flowing)

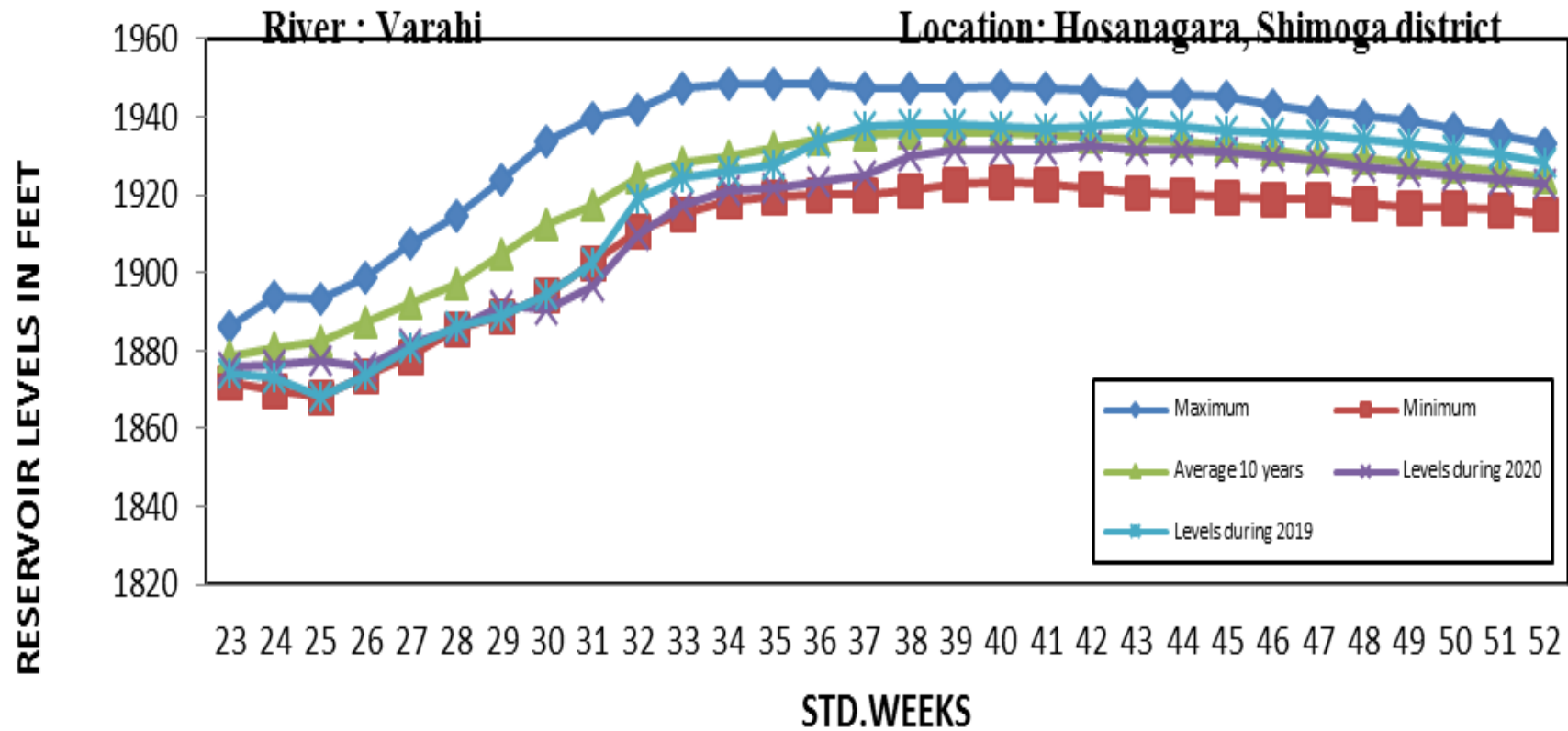


Fig - 5.4: Weekly Reservoir Level: Harangi Reservoir (Cauvery Basin)

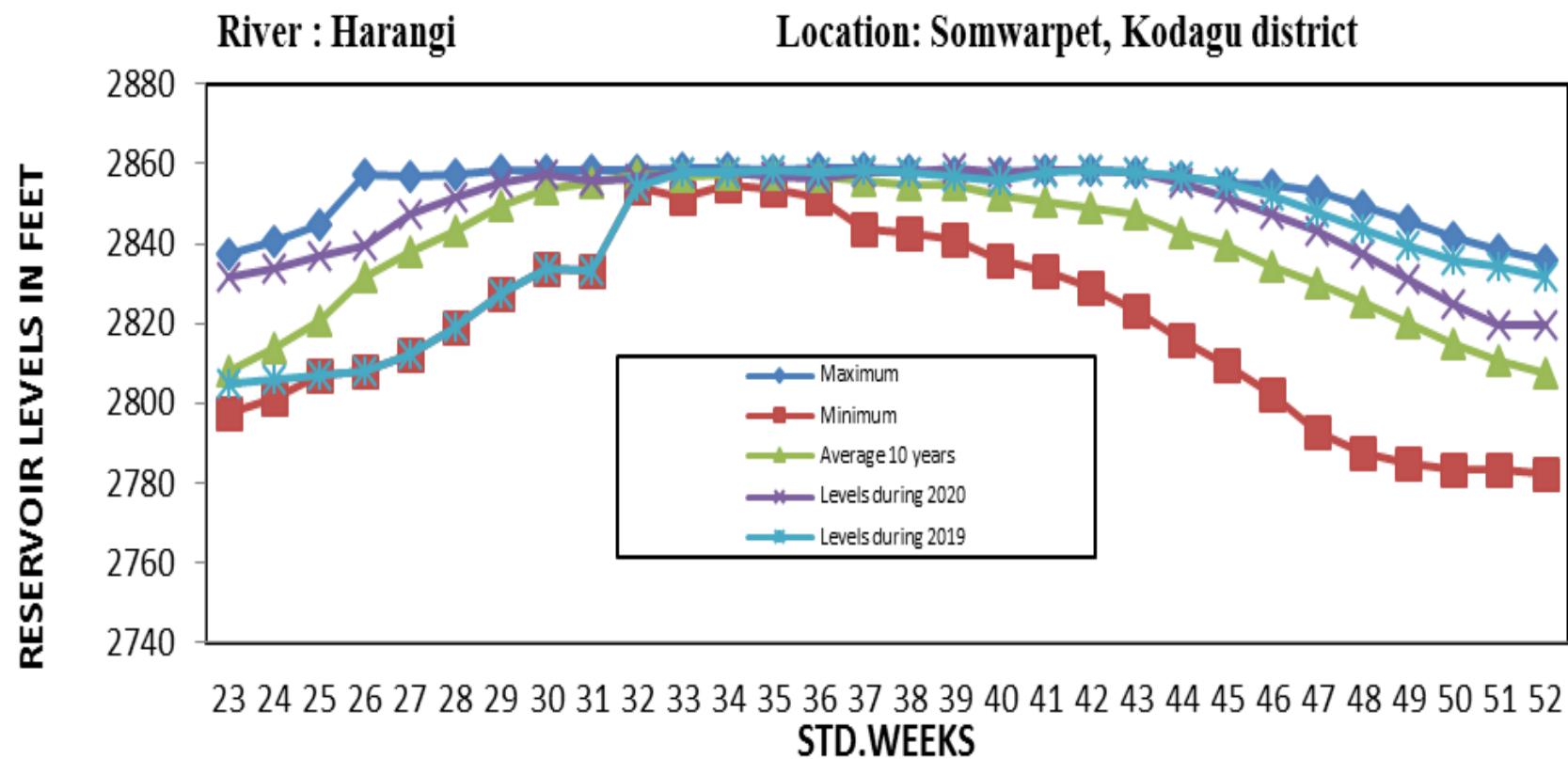


Fig - 5.5: Weekly Reservoir Level: Hemavathi Reservoir (Cauvery Basin)

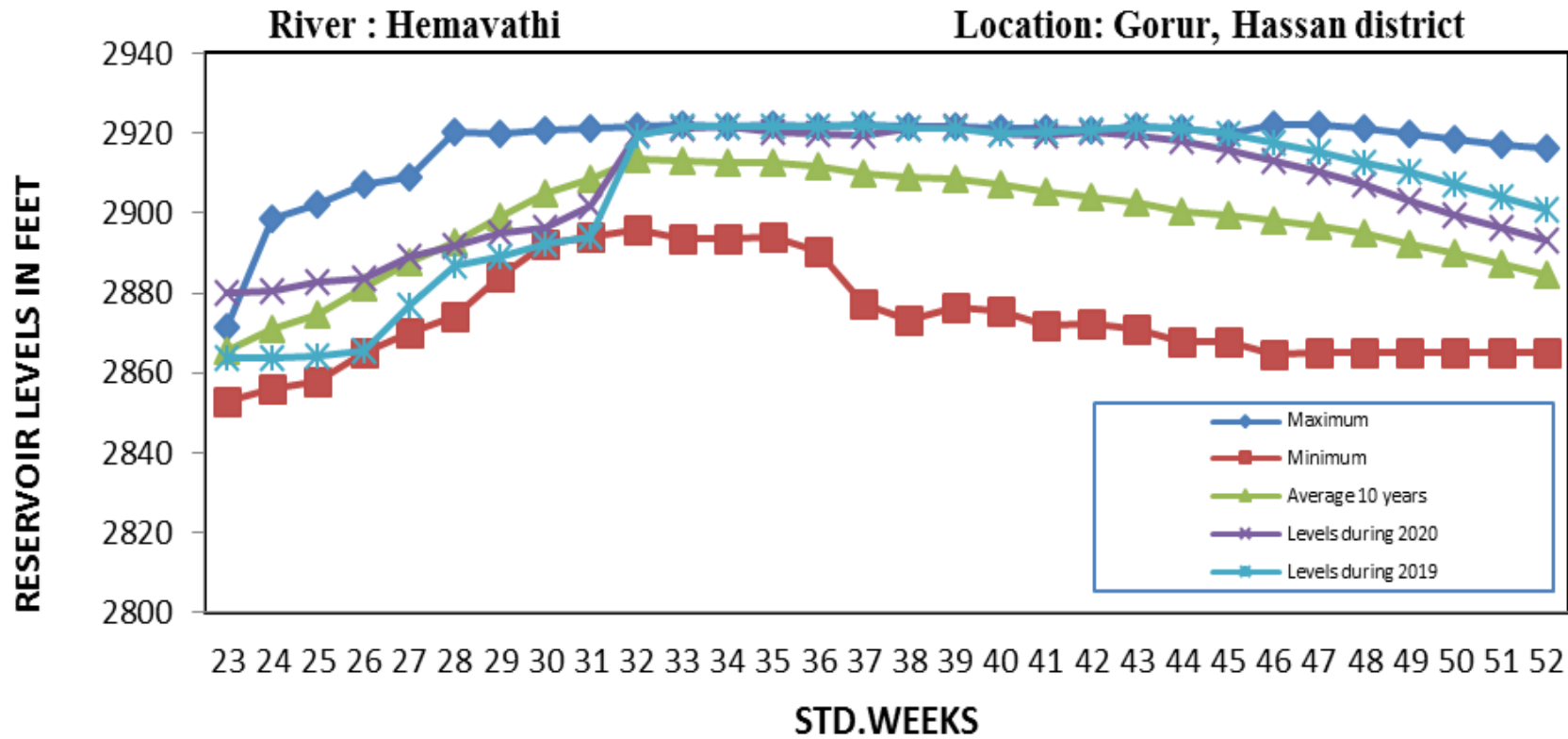


Fig - 5.6: Weekly Reservoir Level: K.R.S. Reservoir (Cauvery Basin)

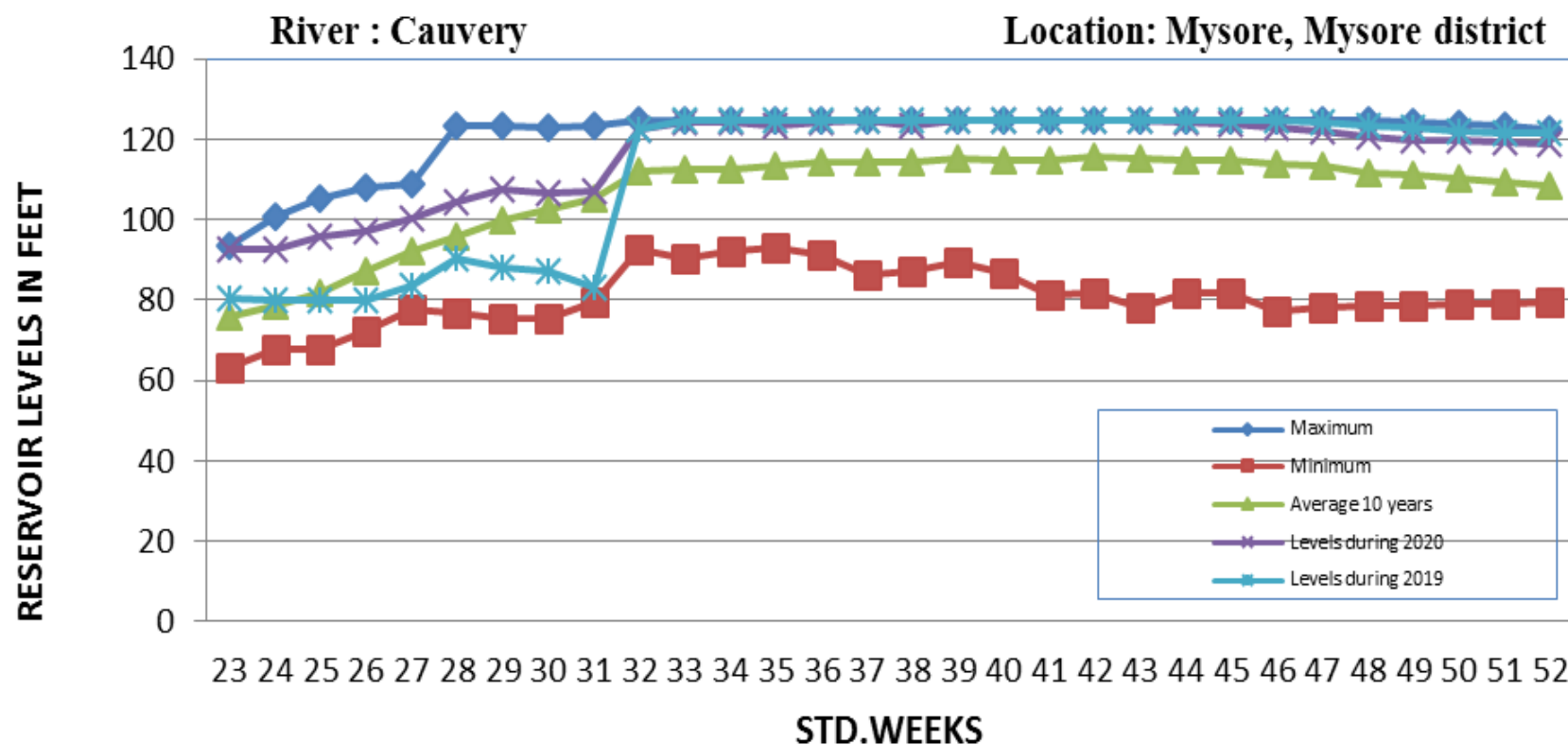


Fig - 5.7: Weekly Reservoir Level: Kabini Reservoir (Cauvery Basin)

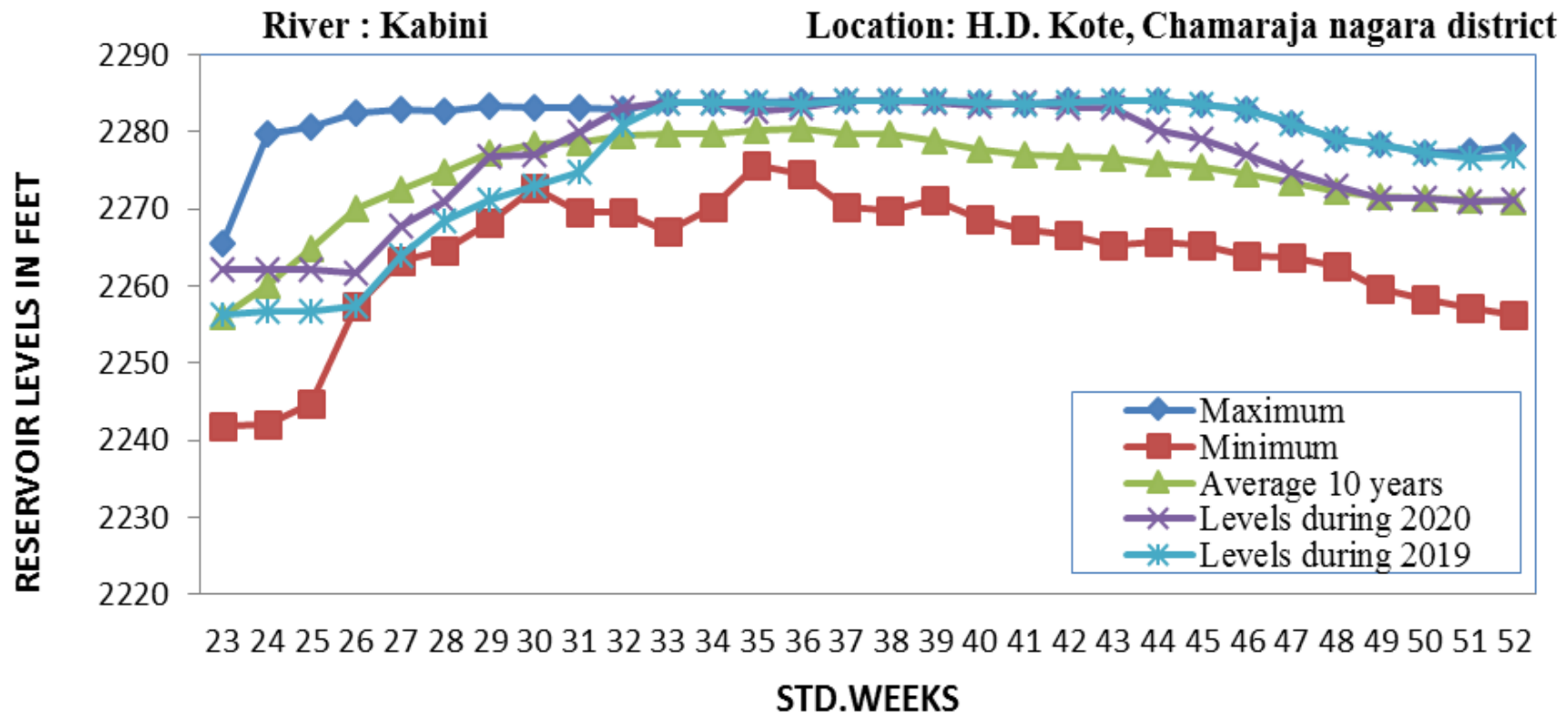


Fig - 5.8: Weekly Reservoir Level: Bhadra Reservoir (Krishna Basin)

River : Bhadra

Location: Tarikere, Chikkamagalur district

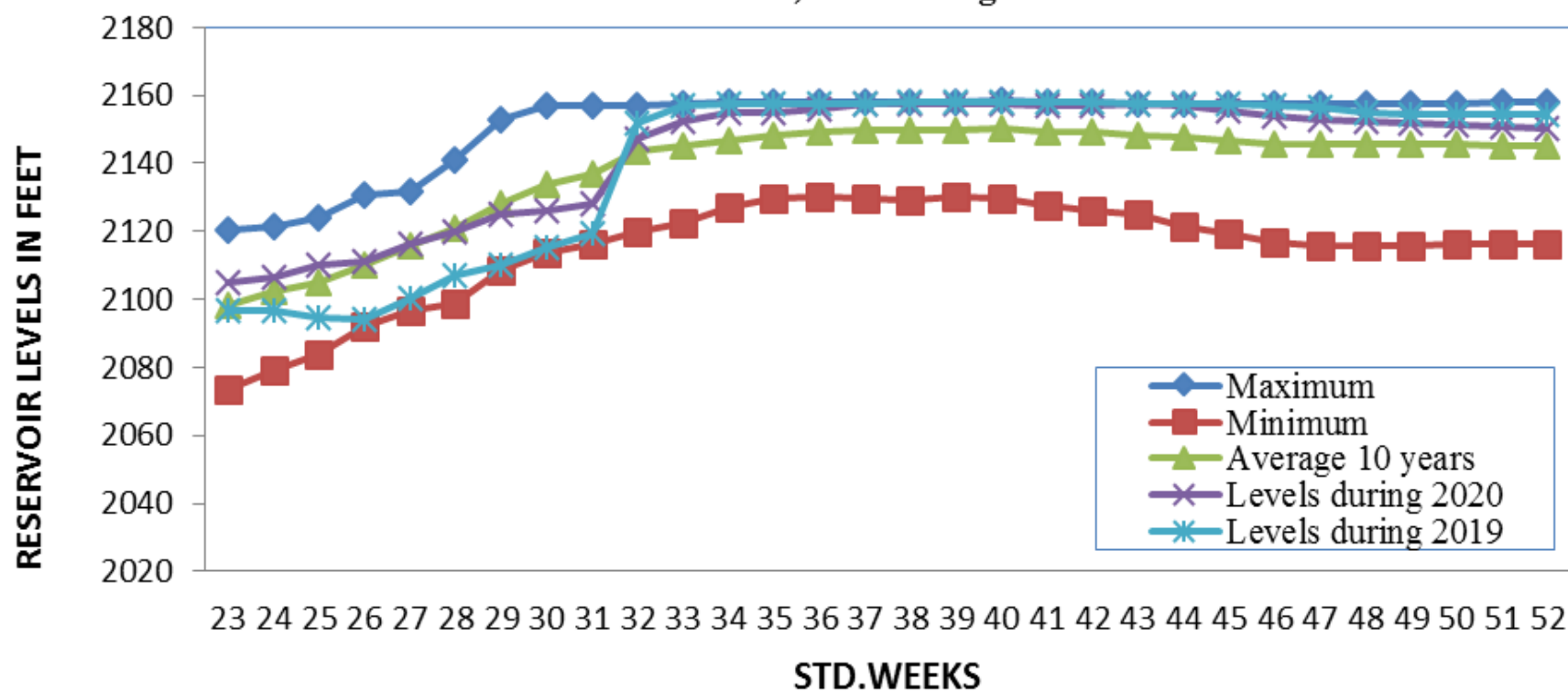


Fig - 5.9: Weekly Reservoir Level: Tungabhadra Reservoir (Krishna Basin)

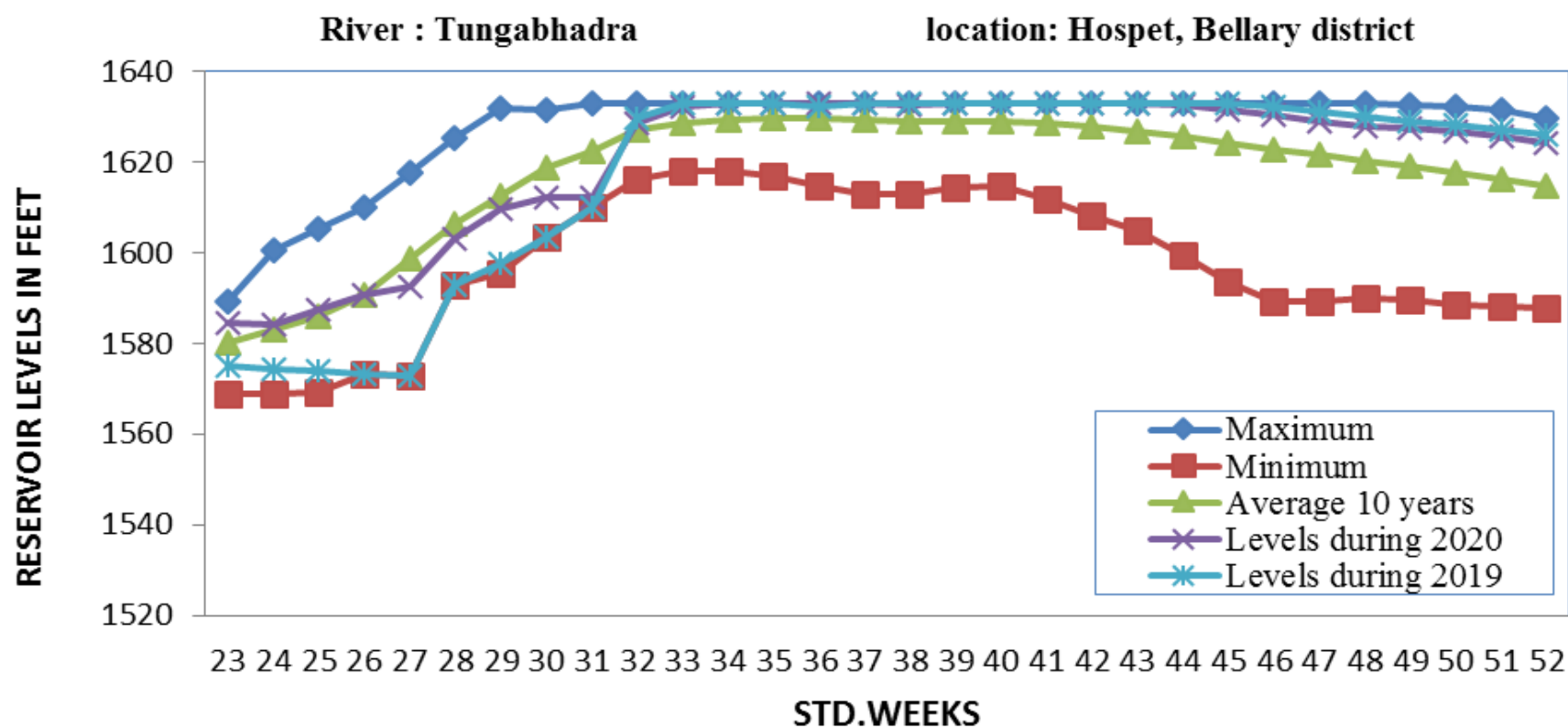


Fig - 5.10: Weekly Reservoir Level: Ghataprabha Reservoir (Krishna Basin)

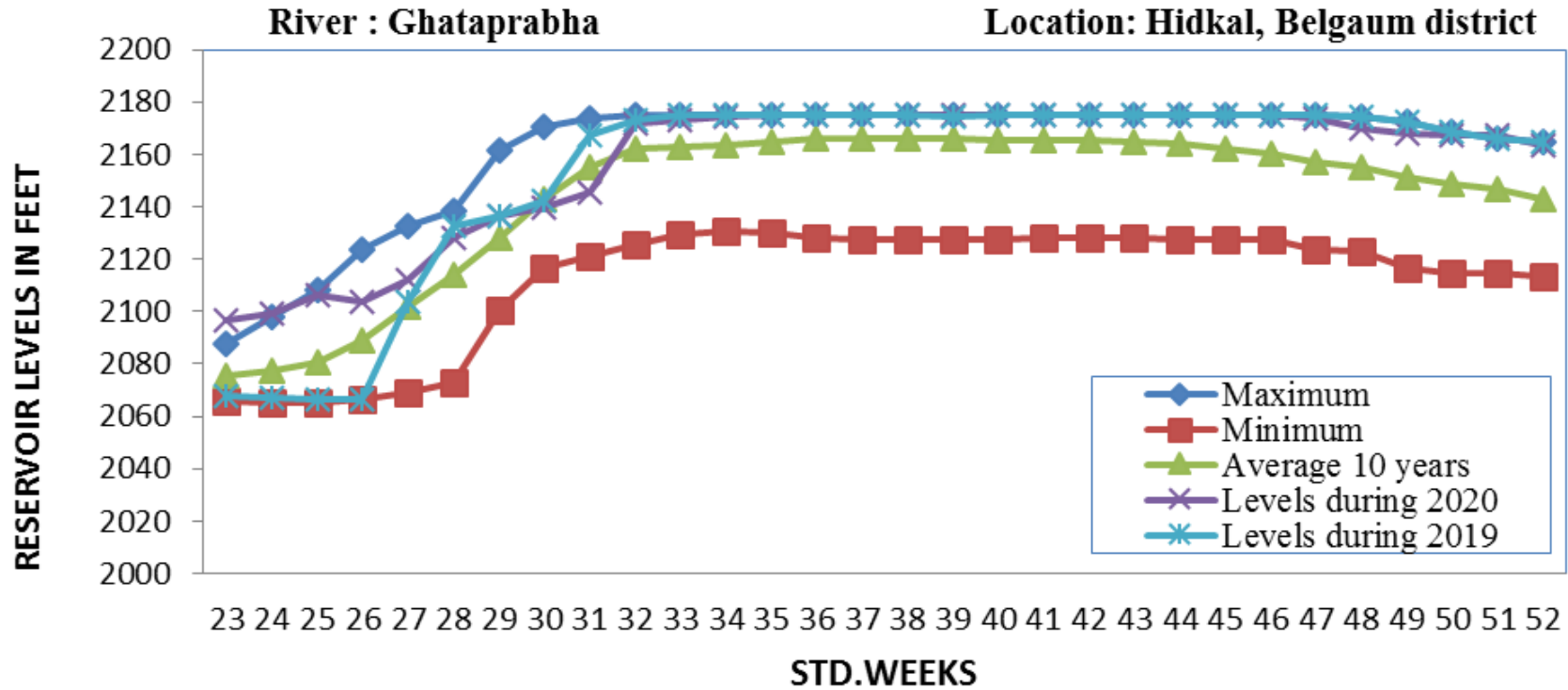


Fig - 5.11: Weekly Reservoir Level: Malaprabha Reservoir (Krishna Basin)

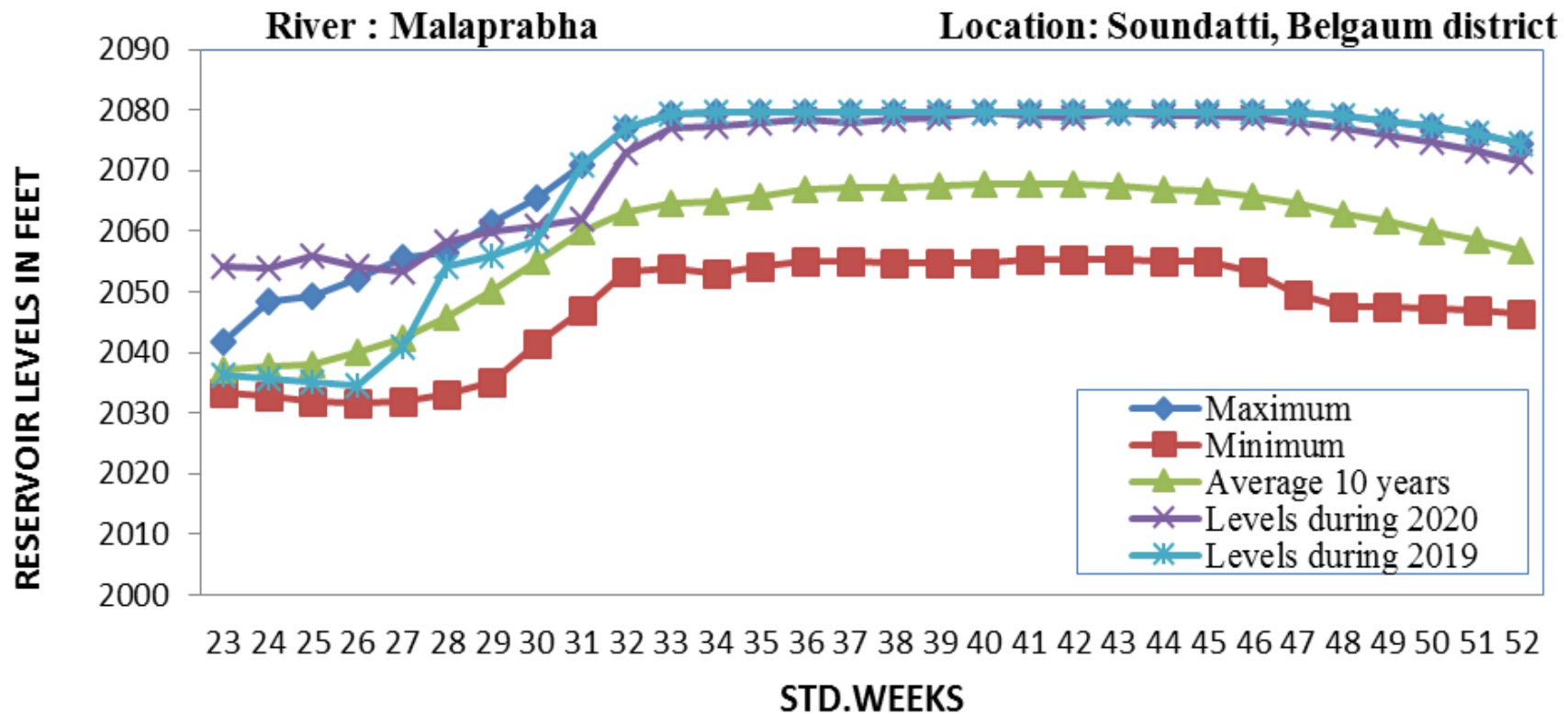


Fig - 5.12: Weekly Reservoir Level: Alamati Reservoir (Krishna Basin)

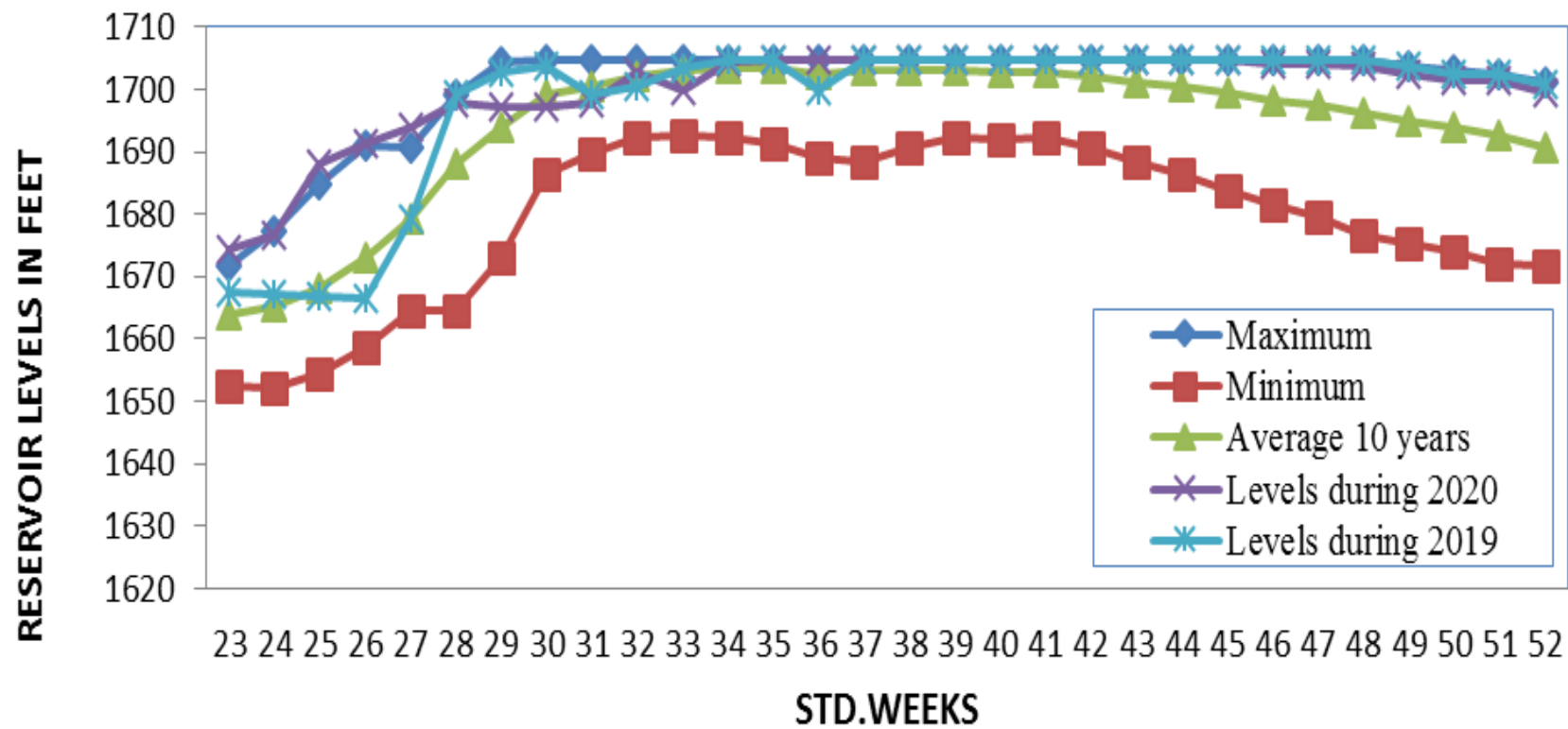


Fig - 5.13: Weekly Reservoir Level: Narayanapura Reservoir (Krishna Basin)

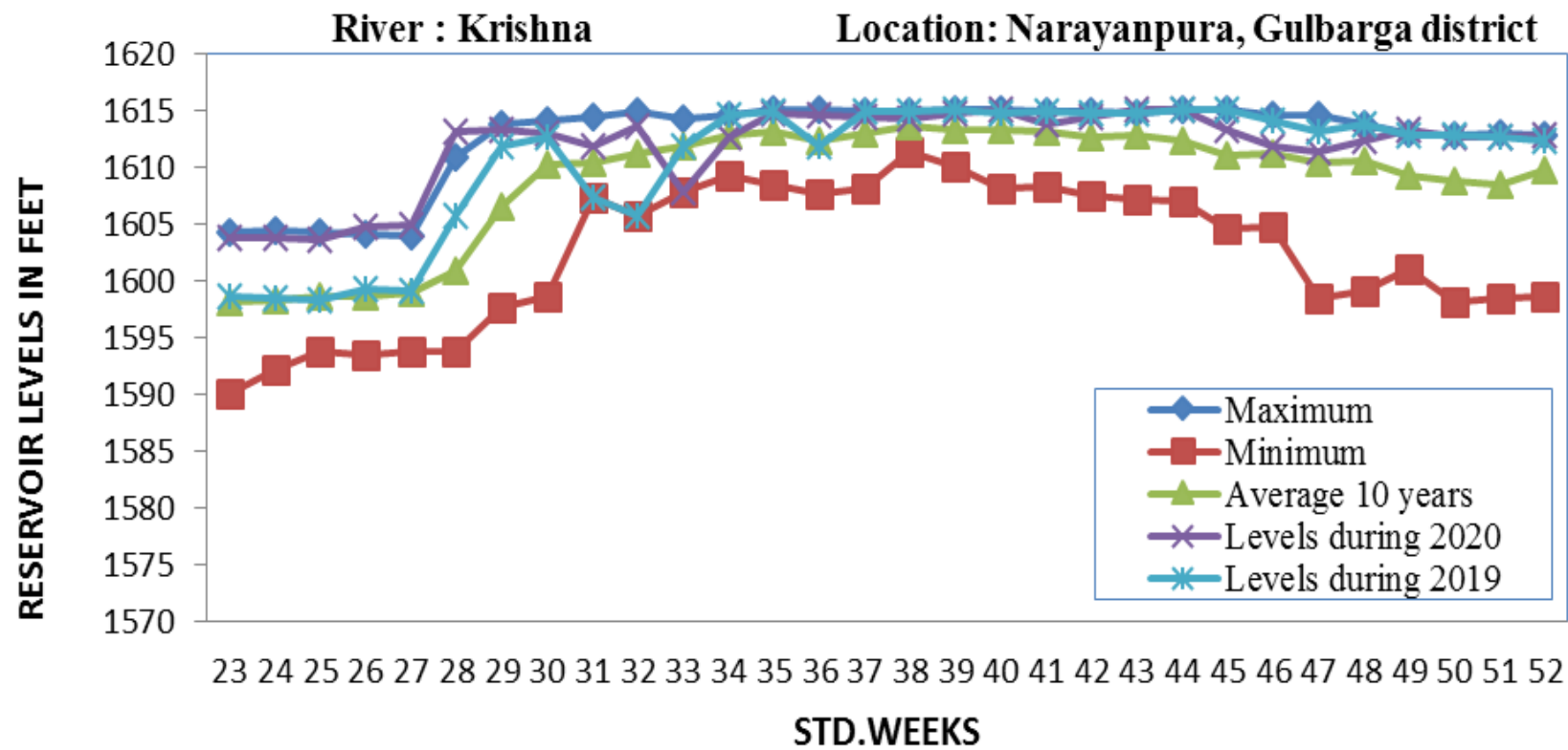
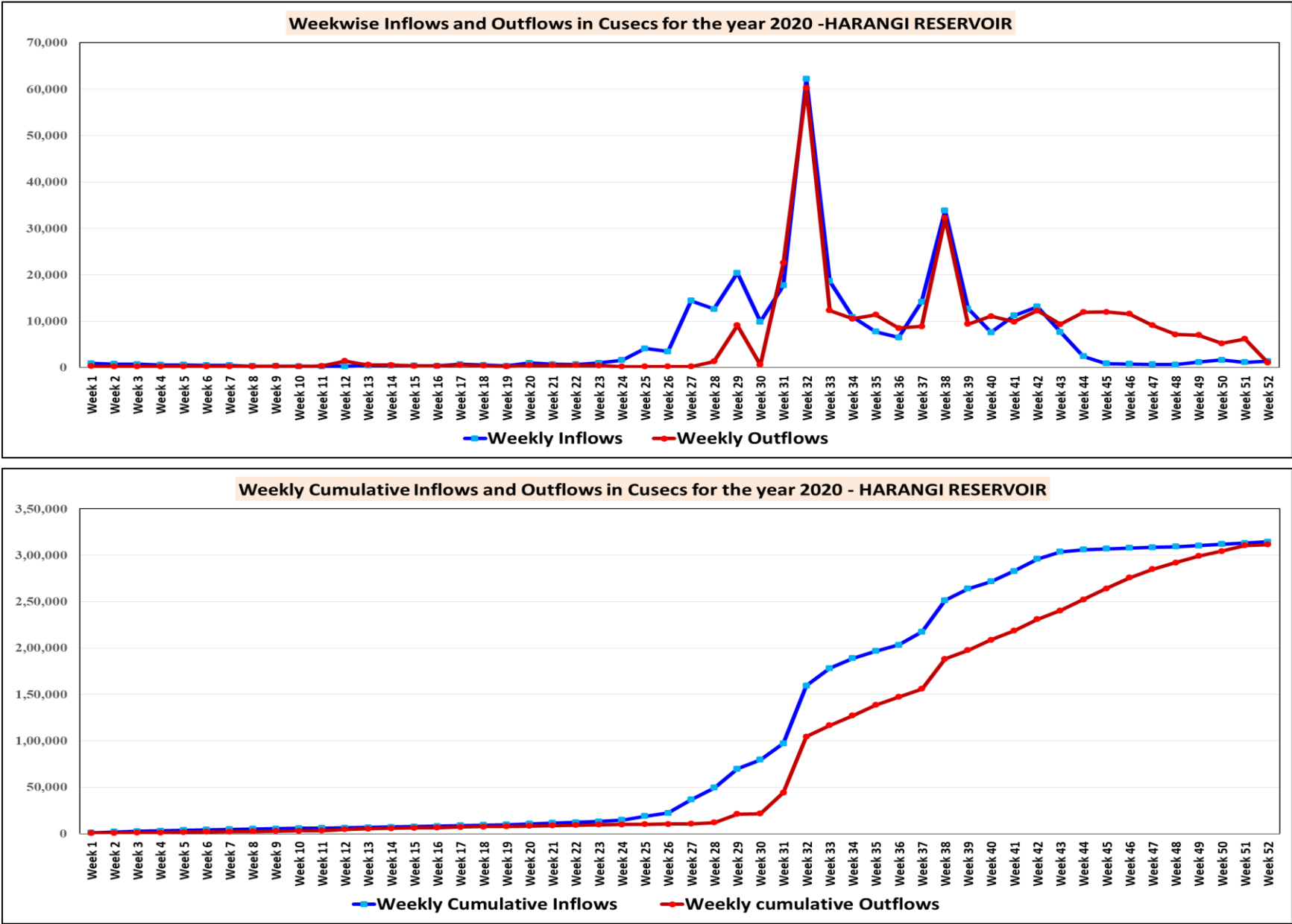


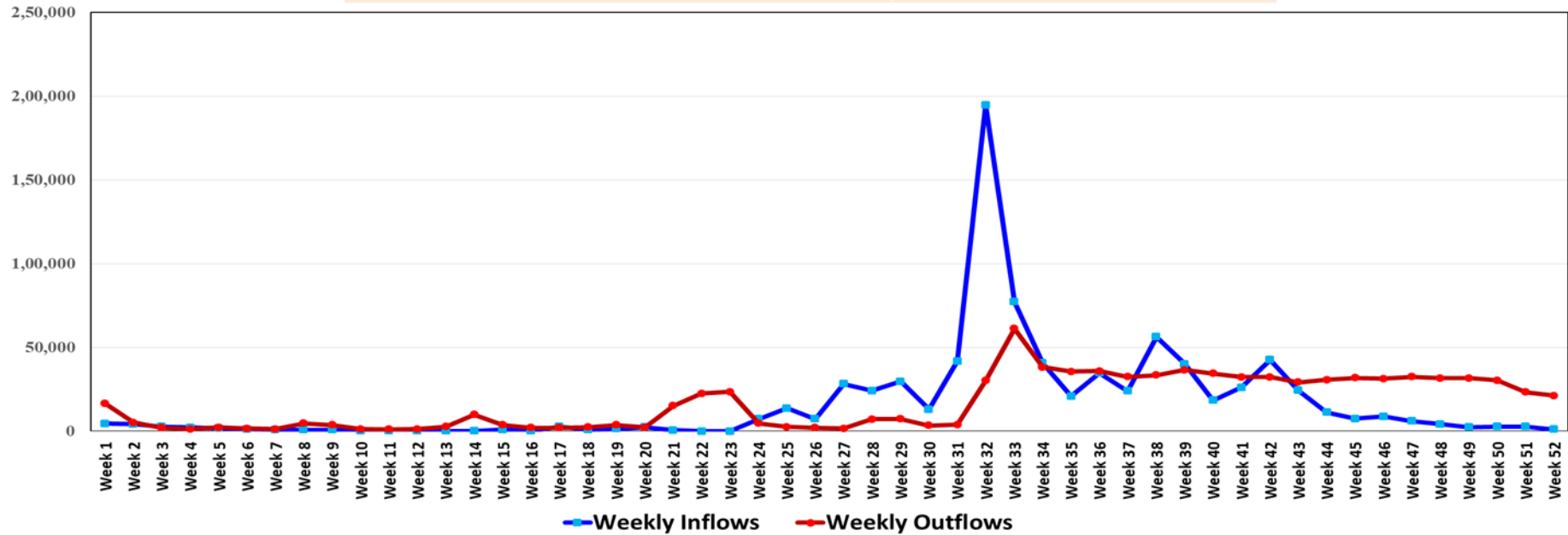
Table 5.14: Major Reservoir Levels in the State

Sl.	Name of the		Reservoir level Information during recent			R.L.as on	R.L. as on	Increase/Decrease	R.L. of 2020	R.L.as on	R.L. of 2020	Balance of level
No.	Reservoir	Level (FRL)	10 years (2010 to 2019) for the Annual			01.06.2020	31.12.2020	in R.L.from	compared to the	31.12.2019	compared to	to reach FRL
			Maximum	Minimum	Average			1.06.20 to 31.12.20	Average R.L		the R.L.of 2019	as on 31.12.2020
1	2	3	4	5	6	7	8	9	10	11	12	13
(a) Hydel generation Reservoirs (Western Coast)												
1	Linganamakki	1819.00	1810.85	1790.25	1801.59	1764.70	1808.85	44.15	7.26	1810.65	-1.80	-10.15
2	Supa	1849.92	1834.70	1772.45	1802.22	1745.55	1823.19	77.64	20.97	1834.70	-11.51	-26.73
3	Varahi	1949.50	1933.43	1915.39	1924.62	1877.80	1922.67	44.87	-1.95	1928.38	-5.71	-26.83
(b) Reservoirs of Cauvery Basin:												
4	Harangi	2859.00	2835.79	2782.28	2807.67	2830.83	2819.63	-11.20	11.96	2831.72	-12.09	-39.37
5	Hemavathi	2922.00	2916.31	2865.08	2884.76	2887.15	2893.30	6.15	8.55	2900.98	-7.68	-28.70
6	K.R.S.	124.80	122.60	79.48	108.38	92.00	118.85	26.85	10.47	121.64	-2.79	-5.95
7	Kabini	2284.00	2278.15	2256.38	2271.02	2261.91	2271.25	9.34	0.23	2276.85	-5.60	-12.75
(c) Reservoirs of Krishna Basin:												
8	Bhadra	2158.00	2158.00	2116.27	2145.02	2105.02	2150.47	45.45	5.45	2154.58	-4.11	-7.53
9	Tungabhadra	1633.00	1629.78	1587.94	1614.72	1584.56	1624.00	39.44	9.28	1625.99	-1.99	-9.00
10	Ghataprabha	2175.00	2164.92	2113.61	2143.07	2096.76	2163.16	66.40	20.09	2164.92	-1.76	-11.84
11	Malaprabha	2079.50	2074.46	2046.34	2056.74	2054.71	2071.61	16.90	14.87	2074.46	-2.85	-7.89
12	Almatti	1704.81	1701.23	1671.84	1690.55	1672.33	1699.56	27.23	9.01	1700.84	-1.28	-5.25
13	Narayanapura	1615.00	1612.86	1598.70	1609.81	1602.37	1612.81	10.43	2.99	1612.38	0.43	-2.19

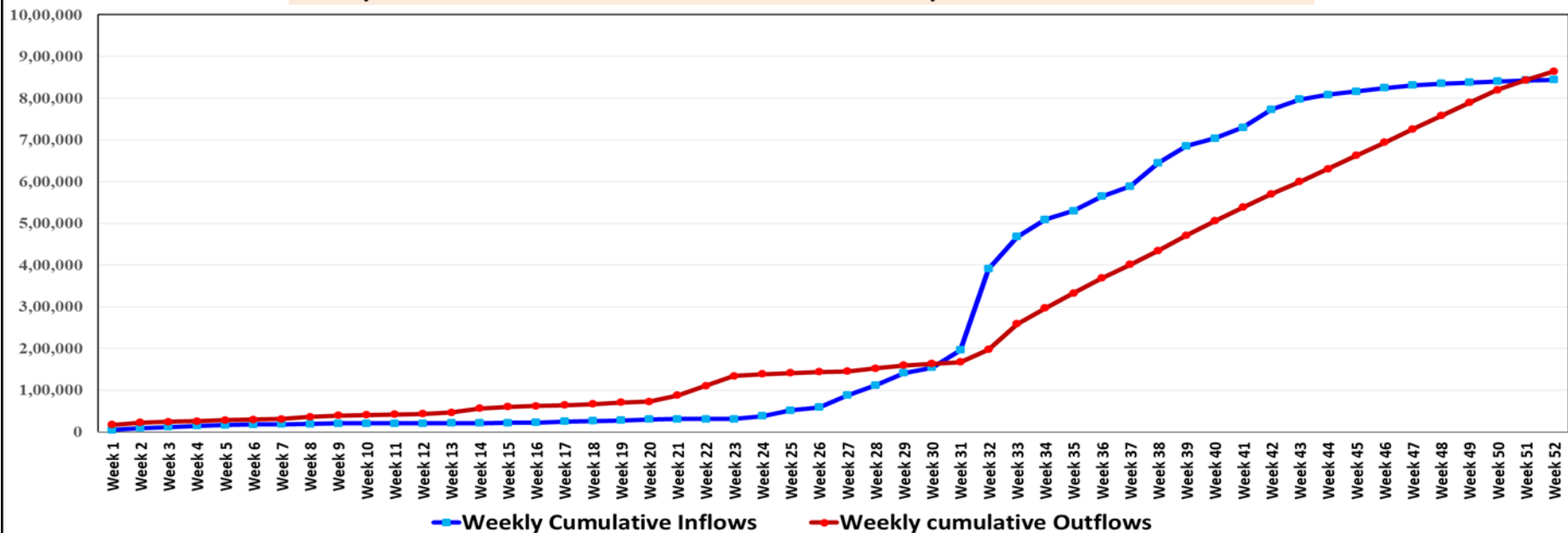
Weekly inflows and outflows



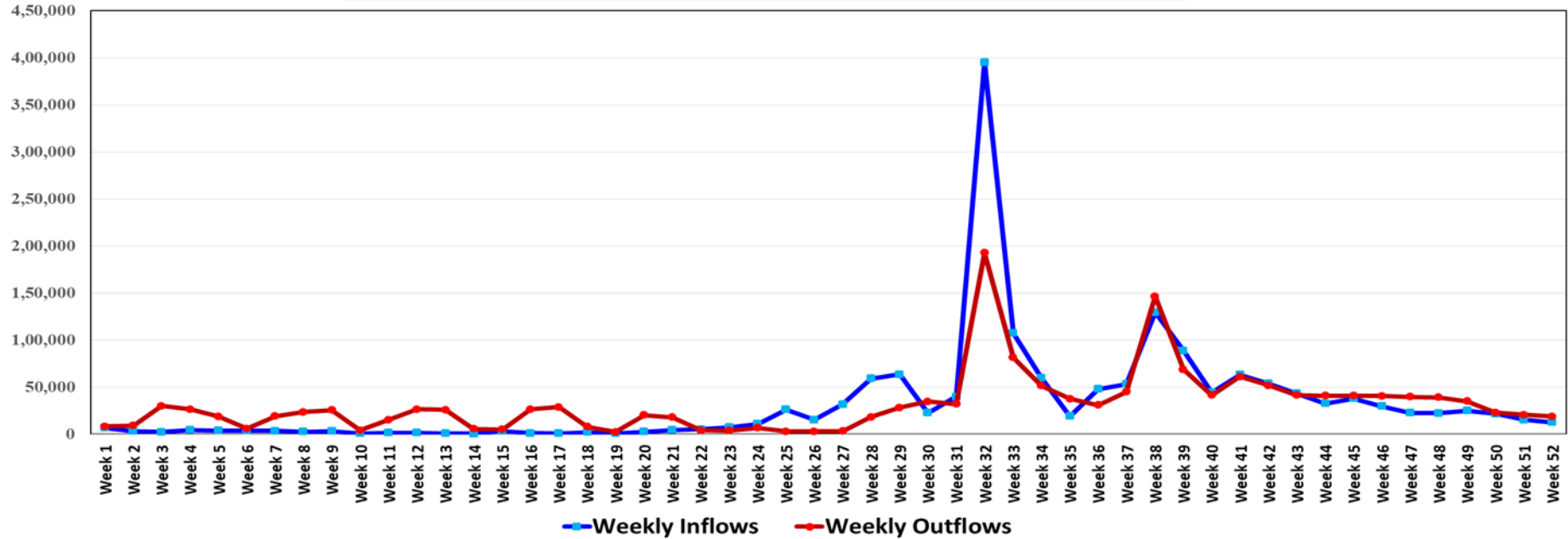
Weekwise Inflows and Outflows in Cusecs for the year 2020 - HEMAVATHI RESERVOIR



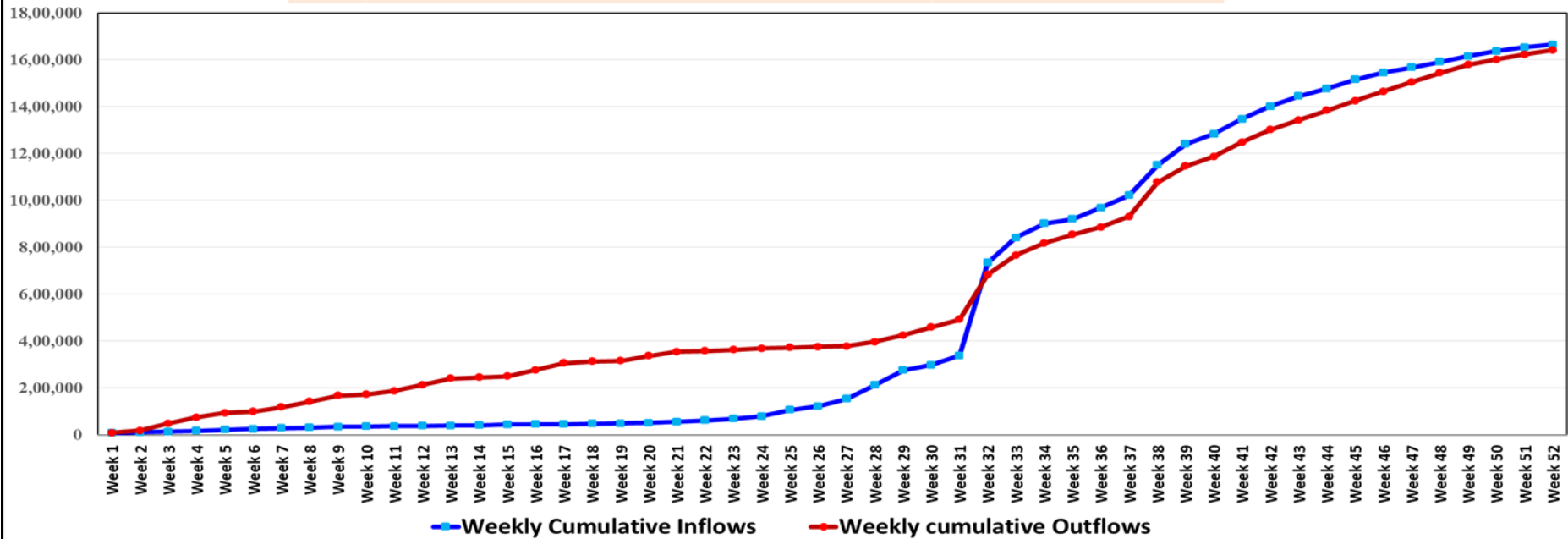
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - HEMAVATHI RESERVOIR



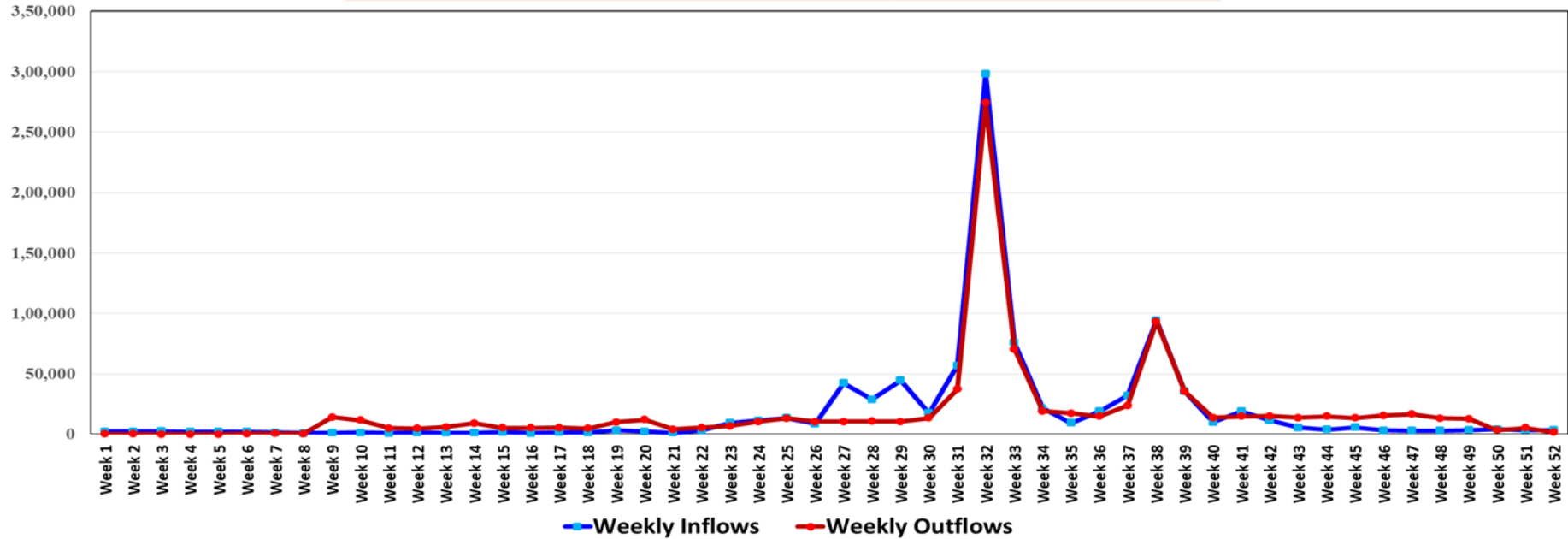
Weekwise Inflows and Outflows in Cusecs for the year 2020 - KRS RESERVOIR



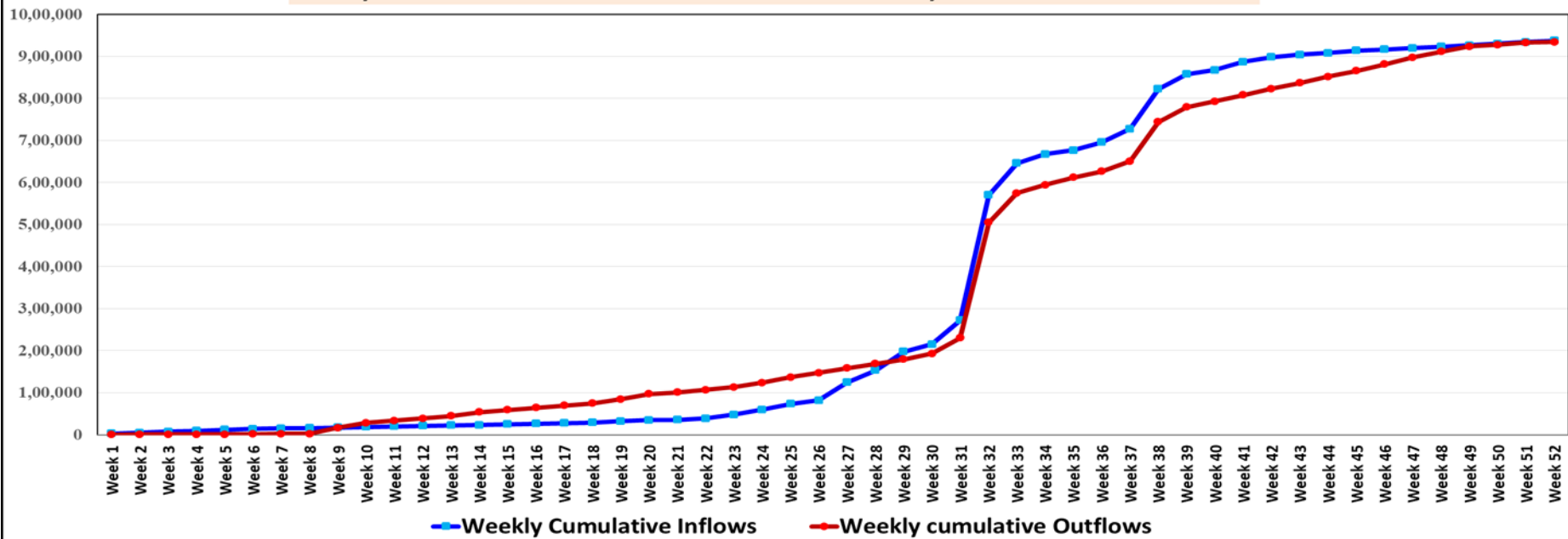
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - KRS RESERVOIR



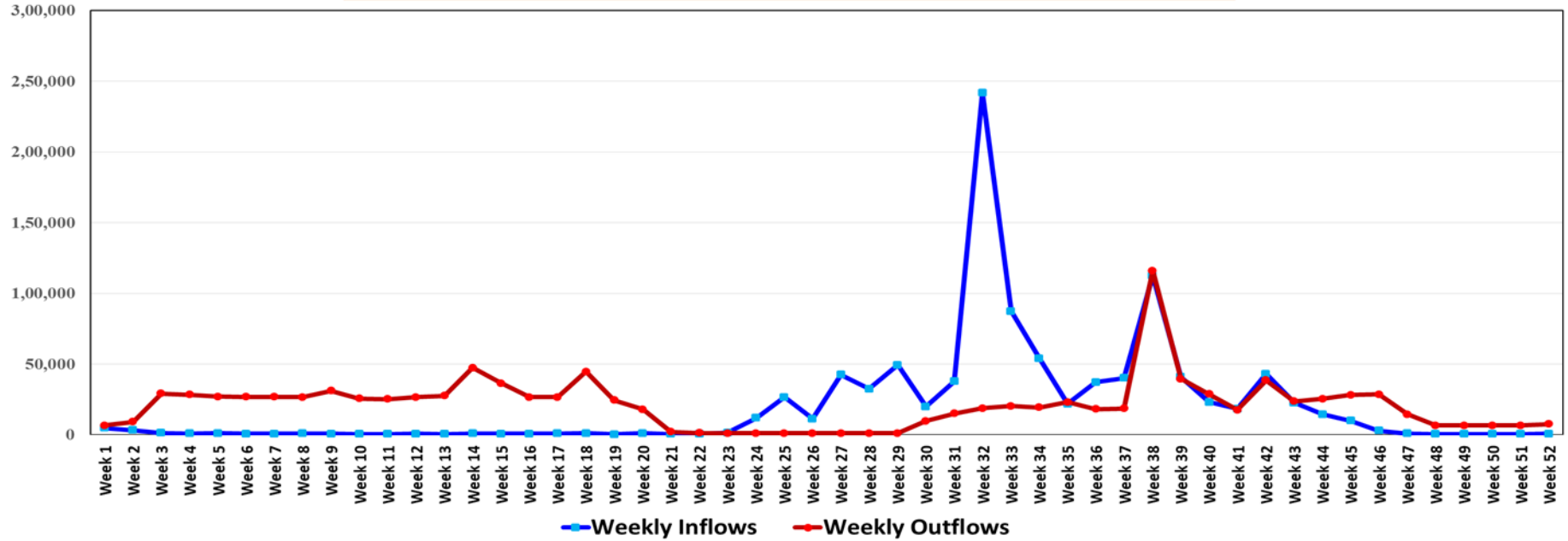
Weekwise Inflows and Outflows in Cusecs for the year 2020 - KABINI RESERVOIR



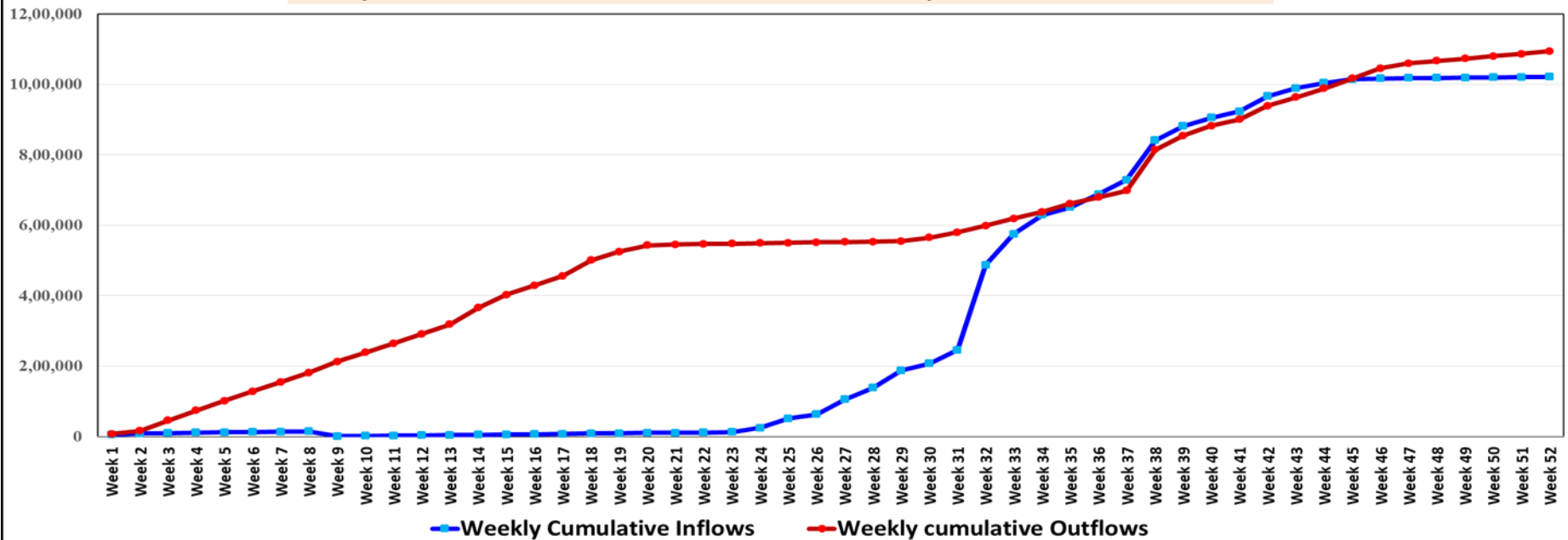
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - KABINI RESERVOIR



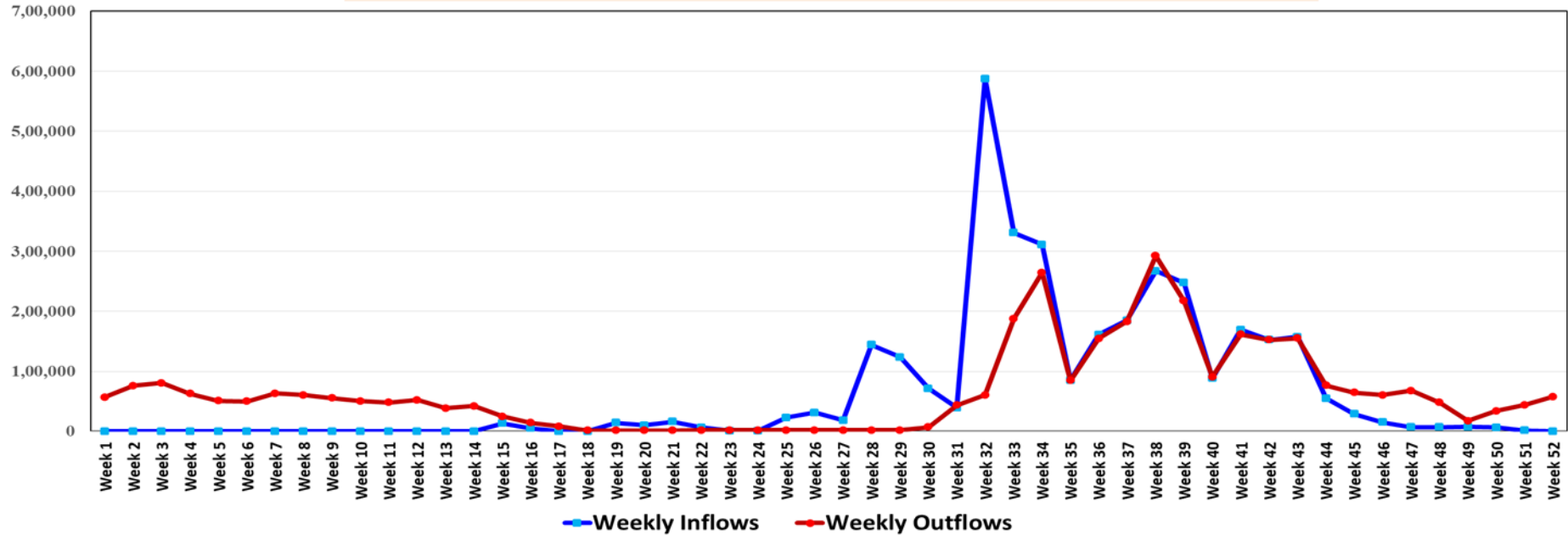
Weekwise Inflows and Outflows in Cusecs for the year 2020 - BHADRA RESERVOIR



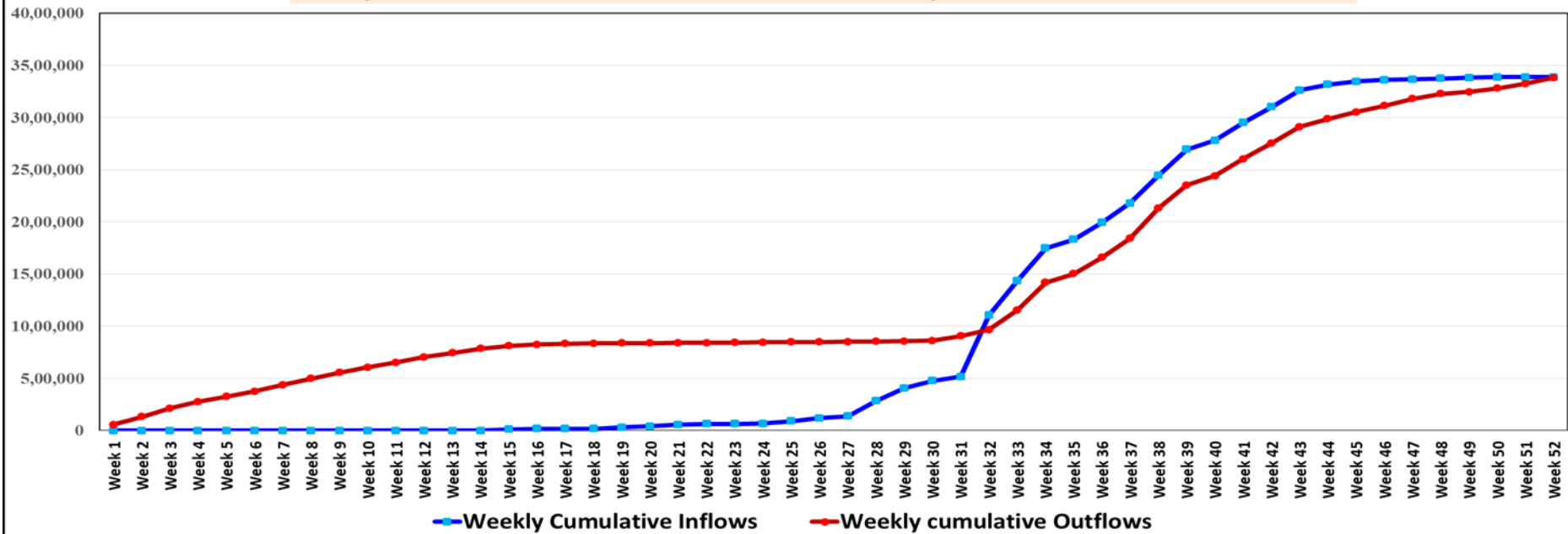
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - BHADRA RESERVOIR



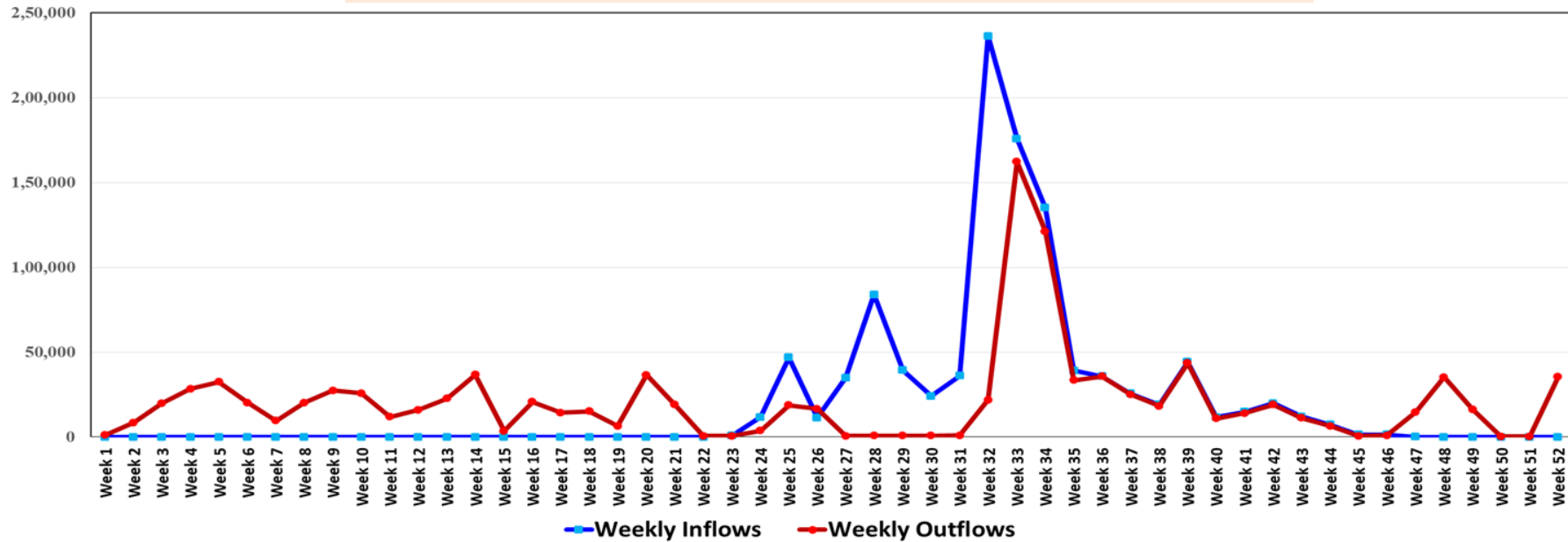
Weekwise Inflows and Outflows in Cusecs for the year 2020 - TUNGABHADRA RESERVOIR



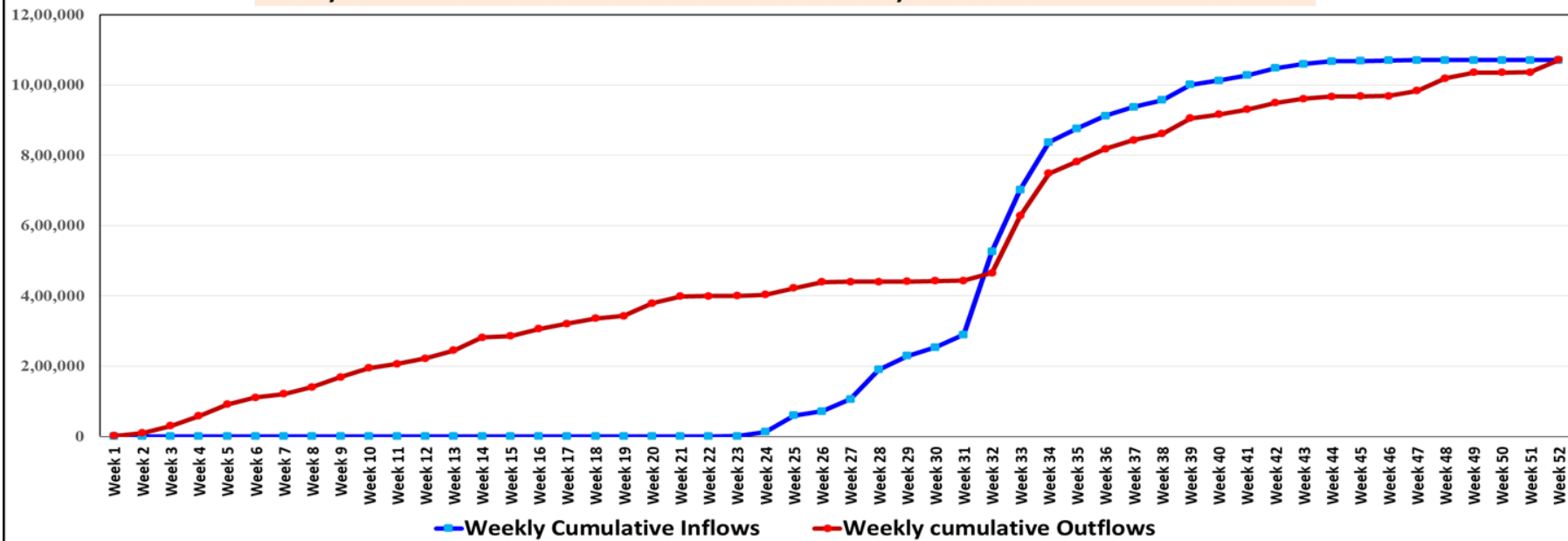
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - TUNGABHADRA RESERVOIR



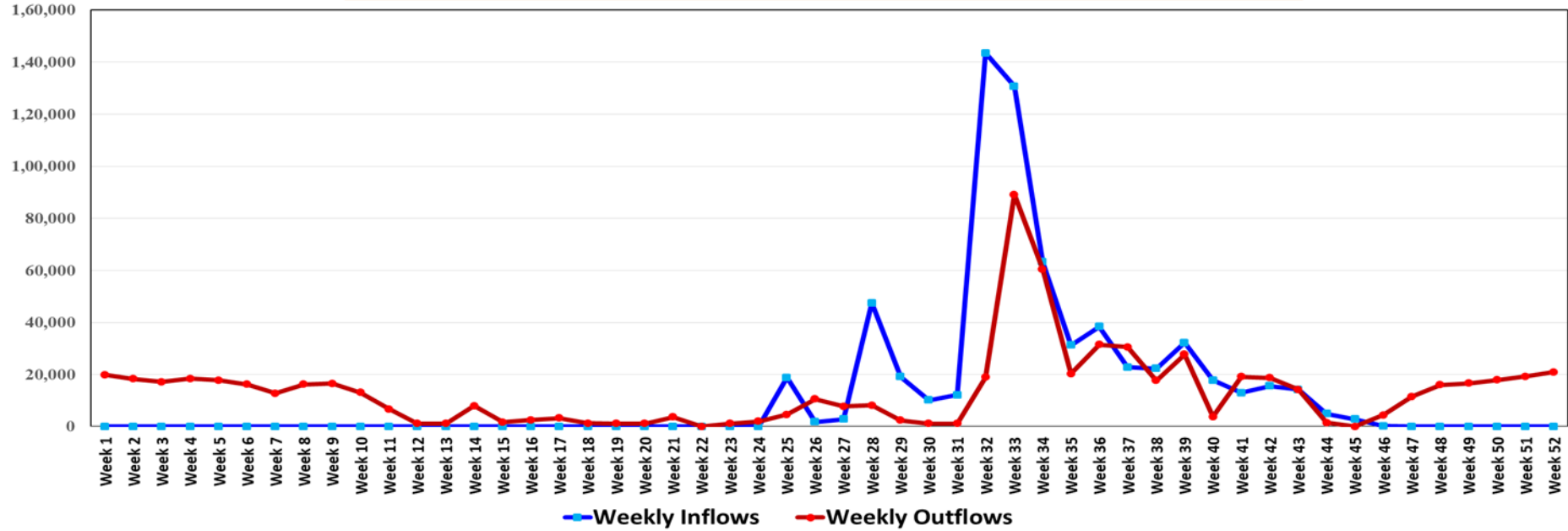
Weekwise Inflows and Outflows in Cusecs for the year 2020 - GHATAPRABHA RESERVOIR



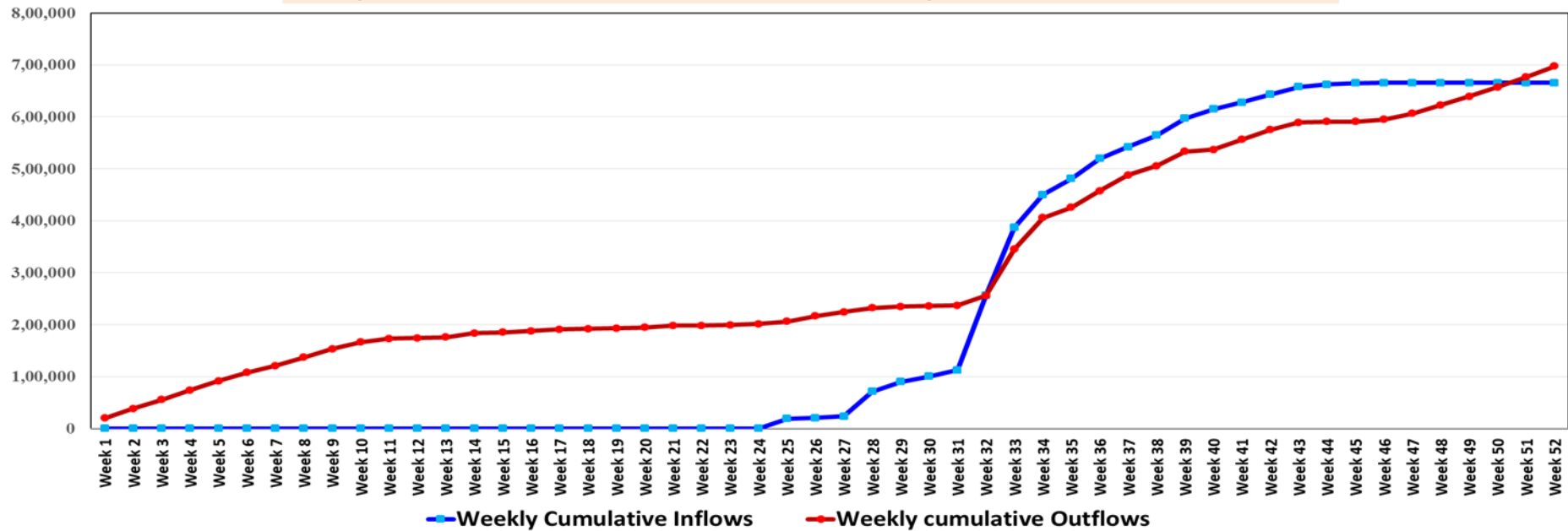
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - GHATAPRABHA RESERVOIR



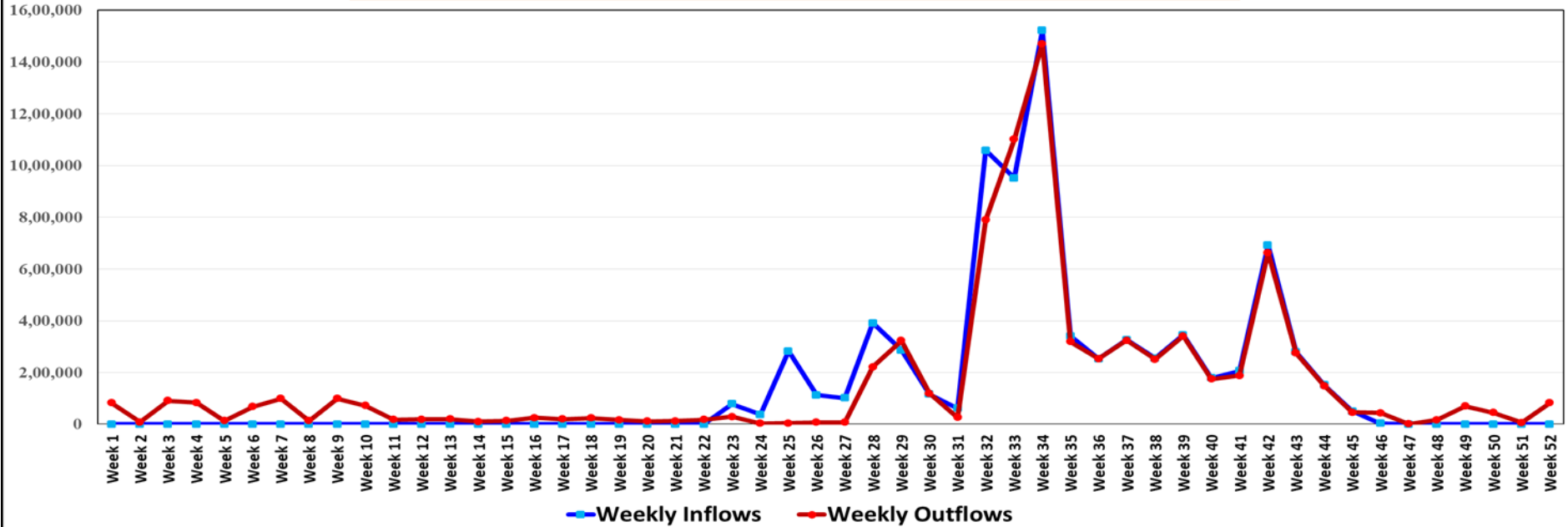
Weekwise Inflows and Outflows in Cusecs for the year 2020 - MALAPRABHA RESERVOIR



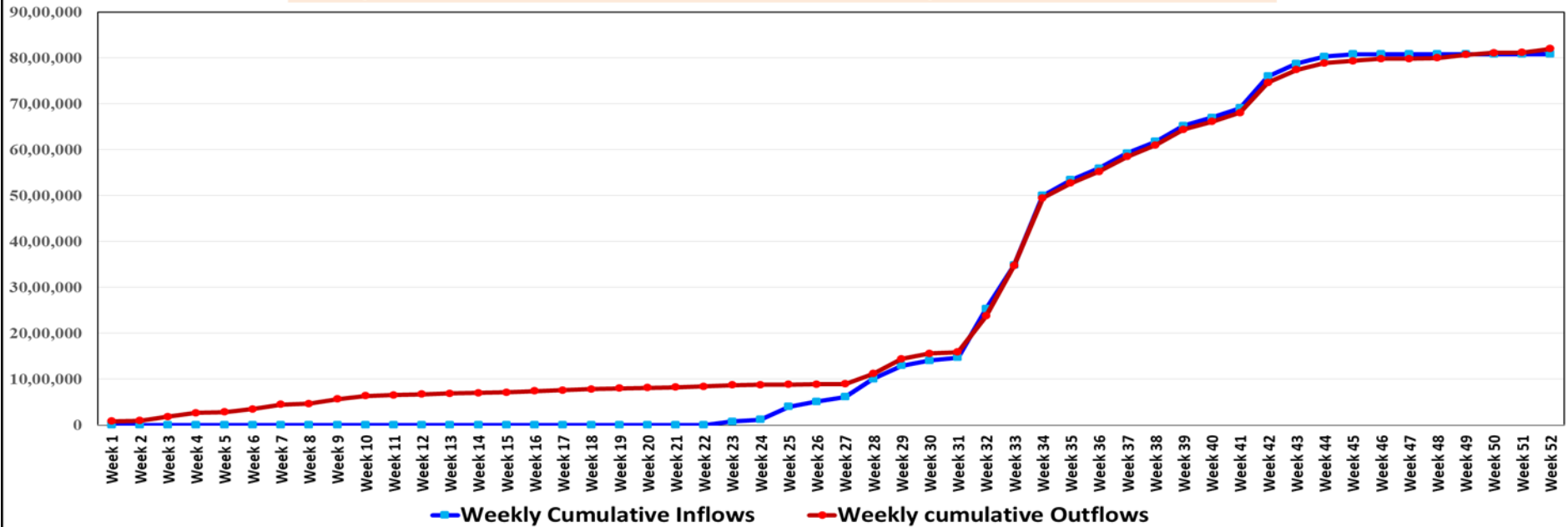
Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - MALAPRABHA RESERVOIR



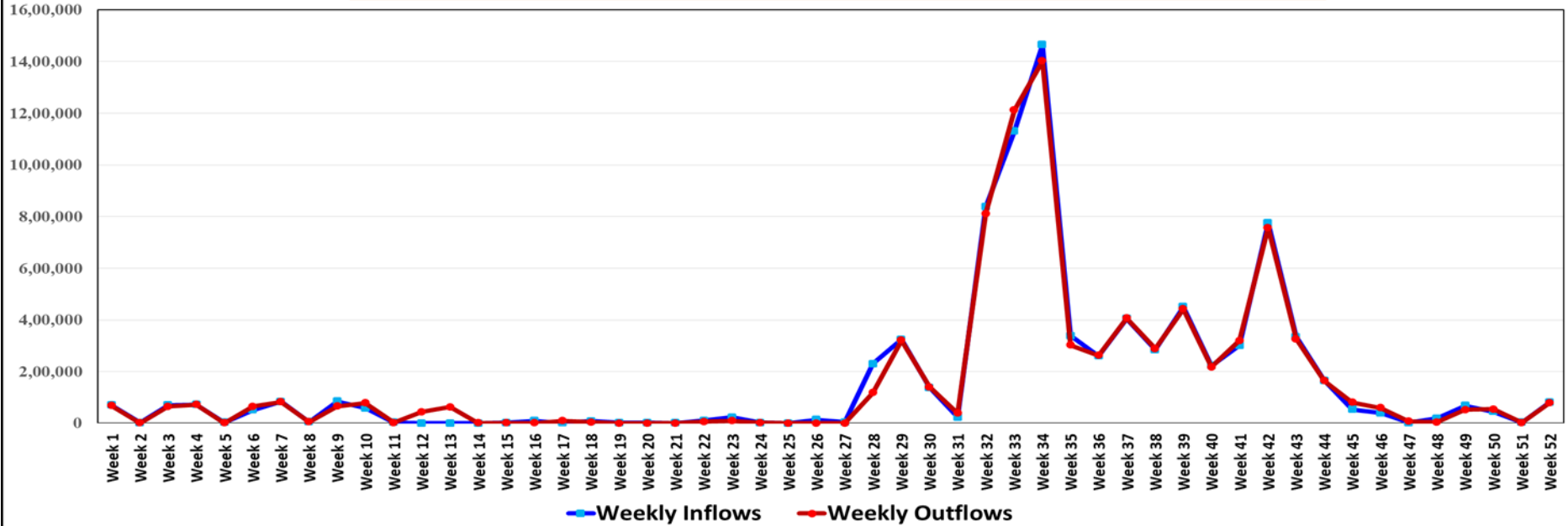
Weekwise Inflows and Outflows in Cusecs for the year 2020 - ALMATTI RESERVOIR



Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - ALMATTI RESERVOIR



Weekwise Inflows and Outflows in Cusecs for the year 2020 - NARAYANAPURA RESERVOIR



Weekly Cumulative Inflows and Outflows in Cusecs for the year 2020 - NARAYANAPURA RESERVOIR

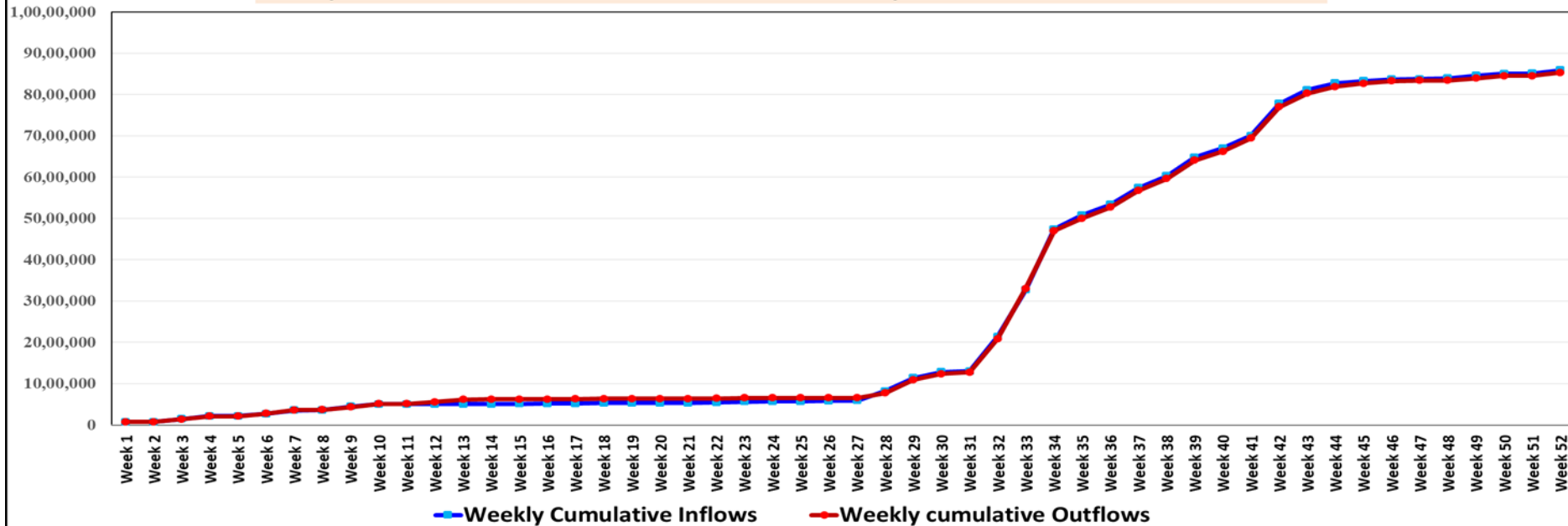


Table 5.25: Zone wise / District-wise Status of Minor Irrigation Tanks (Abstract)

Sl. No.	DISTRICT	No. Of Tanks	Full Capacity mcft.	Total atchkat area designed	No.of tanks not received water	30%	31-50%	51-99%	100%
1	2	3	4	5	6	7	8	9	10
	Minor Irrigation South Zone as on 31.12.2020								
1	Bangalore Urban	46	1400	4530	0	29	3	6	8
2	Bangalore Rural	98	3107	9681	0	73	14	6	5
3	Ramanagara	102	4216	15092	26	20	15	38	3
4	Kolar	138	5181	12147	125	7	3	3	0
5	Chikkaballapura	201	7954	19581	82	87	17	15	0
6	Tumkur	371	17194	36847	118	161	34	33	25
7	Chitradurga	133	6678	17472	10	57	26	25	15
8	Davangere	92	5145	11325	54	22	7	2	7
9	Chamarajnagar	306	3998	22497	0	0	3	303	0
10	Mysore	50	896	4318	8	1	12	26	3
11	Mandya	64	2552	13088	31	6	5	12	10
12	Shimoga	48	1170	4447	7	10	4	14	13
13	Hassan	170	5231	12503	47	31	12	80	0
14	Chikkmagalur	124	4267	16793	6	10	7	68	33
15	Kodagu	2	7	131	0	0	0	1	1
16	Dakshina Kannada	4	39	283	0	0	0	3	1
17	Udupi	29	495	1953	0	3	8	18	0
	Total	1978	69529	202687	514	517	170	653	124
(b)	Minor Irrigation North Zone as on 31.12.2020								
1	Belgaum	278	3308	30433	23	36	46	158	15
2	Bijapur	156	3584	23402	49	14	18	67	8
3	Bagalkote	65	1574	12132	5	16	10	33	1
4	Dharwad	112	1724	14068	1	0	0	4	107
5	Gadag	30	1315	7597	0	6	10	11	3
6	Haveri	264	4048	23320	0	16	39	209	0
7	Uttara kannada	91	1734	13765	1	2	0	88	0
8	Gulbarga	166	3859	28441	78	12	21	21	34
9	Yadgiri	72	1483	6601	67	3	2	0	0
10	Bidar	125	2924	21208	79	6	6	23	11
11	Bellary	89	3620	13710	20	42	13	14	0
12	Koppala	122	1937	15844	6	41	36	28	11
13	Raichur	73	1789	8779	1	25	27	20	0
	Total	1643	32899	219298	330	219	228	676	190
	State Total (a & b)	3621	102428	421985	844	736	398	1329	314

Zone wise/District-wise Status of Minor Irrigation Tanks (Abstract)

Status of Minor Irrigation Tanks: The above table indicates status of Minor Irrigation Tanks.

The **South zone** minor irrigation tanks comprises **17** Districts. A total number of **1978** minor irrigation tanks are existing in this zone. As per the reports available **124** tanks are reported to be filled upto their full capacity as on **31st December 2020**. **North zone** Minor irrigation comprises **13** Districts. A total number of **1643** tanks are existing in the North zone. As per the reports available **190** tanks are reported to have been filled upto their full capacity as on **31st December 2020**.

Out of total **3621** minor irrigation tanks in the state, only **9%** of the tanks had storage capacity of more than **50%** of their respective capacity, **37%** of the tanks had storage capacity of **30%** to **50%** of their respective capacity and remaining **11%** of the tanks were dry.

6. MONITORING OF SEISMIC ACTIVITY IN THE STATE

Earthquakes are one of the most costliest natural hazards faced by the entire human & living kind, posing a significant risk. The risks that earthquakes pose to the society, including death, injury, and economic loss, can be greatly reduced by better planning, construction, and mitigation practices before earthquakes happen and providing critical and timely information to improve response after they occur.

The disastrous earthquake in Killari in the early hours of September 30, 1993 caused considerable damages especially in the districts of Bidar, Gulbarga and Bijapur. The faults, shear zones and lineaments in Karnataka are considered to be potential risk zones of the Killari type of earthquakes which also caused damages in the adjacent villages of Karnataka.

In Historical years, the earthquakes were detected from the World Wide Seismic Stations Network (WWSSN) & United States Geological Survey (USGS). However, these stations are quite distant from the Peninsular India and hence were difficult to detect earthquakes with magnitudes less than 3.0. The lower magnitude earthquakes (2.0 and below) were reported by the local communities and recorded by the BARC seismic station (specially designed array of seismometers to detect nuclear explosions) at Gauribidanur but the location of these earthquakes are incomplete and highly biased as the tremors do not occur in the vicinity of this station.

The importance of seismological studies lies in the fact that information generated can be used to mitigate the earthquake hazards. Preparation of seismotectonic/seismic zonation maps is the first step in this direction. The basic data required for the preparation of these maps are:

- (i) a carefully compiled earthquake catalogue incorporating details about magnitude, location of epicenter, depth of focus etc., (ii) delineation of seismic source zones from all possible sources like recurrence relation, tectono-geological consideration, palaeoseismicity etc.,
- (iii) estimation of upper bound magnitude through statistical procedure, cumulative seismic energy release, active fault length etc., and (iv) Attenuation of ground shaking for better results.

Karnataka State Natural Disaster Monitoring Centre (KSNDMC) is the nodal agency in the State for monitoring of seismic activity. Scientific approaches currently adopted worldwide to enhance our resilience to the Earthquake hazard are of two types.

- The first is aimed at providing long term protection to life and property and involves estimation of the earthquake hazard in different areas of a region and its translation into engineering aspects for earthquake resistant structures and land use patterns in the area.
- The second adopted with the first is to keep a constant vigil on the evolving character of ground motion records emitted by small earthquakes from a wide area.

Taking these into considerations, KSNDMC has set up a VSAT Enabled & Solar Powered Permanent Seismic Monitoring Stations (PSMS) Network in Karnataka at 14 locations including 10 Dam sites during the year 2009-2010. The present setup of Stations established are equipped with the state-of-the-art solar powered VSAT technology which includes a Broadband Seismometer, Strong Motion Accelerograph and a Digitizer synchronised with GPS along with associated accessories and VSAT Connectivity for data transmission to the Master Control Centre (MCC) at KSNDMC, Bengaluru on real time basis.

Table 7.1: List of VSAT Enabled PSMS Network of Karnataka

Sl. No.	District	Location of the Site
01.	Kalaburgi	Sharana Sirasagi Village-12 km from Gulbarga on Afzalpur Road
02.	Raichuru	In the Permanent Observatory of KSNDMC, premises of Science Education Trust, Mantralaya Road
03.	Bellary	In the Permanent Observatory of KSNDMC, premises of T. B. Dam Site
04.	Vijayapura	In the existing Almatti Dam Site observatory
05.	Belagavi	In the existing Hidkal Dam Site observatory
06.	Uttara Kannada	In the existing Supa Dam Site observatory
07.	Shivamogga	In the existing Linganmakki Dam Site observatory
08.	Hassan	In the existing Hemavathi Dam Site observatory
09.	Chitradurga	In the premises of Jogimatti Forest Guest House, 11 kms from Chitradurga
10.	Mandya	In the Permanent Observatory of KSNDMC, premises of K.R.S. Dam site
11.	Bangalore	In the premises of T.G. Halli Dam site at the existing old I.B
12.	Chamarajnagar	In the premises of Gundal Dam site at the existing I.B, 15 kms from Kollegal
13.	Kodagu	In the premises of Harangi Dam site at the existing Seismological Observatory, 11 kms from Kushalnagar
14.	Udupi	In the Premises of Zonal Agricultural & Horticultural Research Station, Brahmavara

Table 7.2: Earthquakes recorded & reported by VSAT Enabled PSMS Network of Karnataka during 2020

Sl. No.	Duration	Local	Regional	Teleseismic	Total
01.	January 2020	-Nil-	03	04	07
02.	February 2020	-Nil-	-Nil-	02	02
03.	March 2020	-Nil-	01	02	03
04.	April 2020	01	01	02	04
05.	May 2020	-Nil-	-Nil-	01	01
06.	June 2020	-Nil-	-Nil-	01	01
07.	July 2020	-Nil-	02	02	04
08.	August 2020	-Nil-	01	-Nil-	01
09.	September 2020	-Nil-	-Nil-	-Nil-	00
10.	October 2020	-Nil-	-Nil-	-Nil-	00
11.	November 2020	-Nil-	-Nil-	-Nil-	00
12.	December 2020	-Nil-	-Nil-	-Nil-	00
Total Earthquakes during 2020		01	08	14	23

Table 7.3: Details of Local Earthquake recorded by the VSAT Enabled PSMS Network of Karnataka during the Year 2019

Sl. No.	Origin Time (UTC)	Origin Time (IST)	Epicentre Region	Magnitude
1.	03:04:2020:11:48:10	03:04:2020:17:18:10	Arakalgudu - K R Nagara Border Region	2.6

7. LANDSLIDE VULNERABILITY OF KARNATAKA

Protection of life and properties from landslide disaster is indispensable in creating a safe environment for the Society. The national imperative towards safety due to landslide initiation is increasing in view of the higher rate of human settlement in the mountain slope across the Country. Landslides are significant amongst those hazards that can be disastrous to human life and property.

The term landslide or less frequently, landslip, refers to several forms of mass wasting that include a wide range of ground movements, such as rockfalls, deep-seated slope failures, mudflows, and debris flows. Landslides occur in a variety of environments, characterized by either steep or gentle slope gradients, from mountain ranges to coastal cliffs. Gravity is the primary driving force for a landslide to occur, but there are other factors affecting slope stability that produce specific conditions that make a slope prone to failure. Landslides can be triggered by many, sometimes associated causes like slope, geological condition & geological structures, soil moisture condition, vegetation cover, precipitation, erosion, blasting of explosions and seismicity. Often, individual phenomenon join together to generate instability over time, which often does not allow a reconstruction of the evolution of a particular landslide.

Older than the great Himalayan mountain chain, the Western Ghats of India are a geomorphic feature of immense global importance. It is sometimes called the Great Escarpment of India. The central part of Western Ghat which is better known as Sahyadri hill range, occur almost fringing the circular chain of hills forming a loop of mountain chain in Karnataka state.

The Western Ghats constitutes a very prominent physiographic feature on the western margin of the peninsular India. This magnificent hill ranges run nearly 1600 km in NNW-SSE direction starting from Cape Comorian in the south to Tapi valley in the north with an average width of 50 km. The average elevations of this mountain belt are about 1200m above MSL and occasionally rise up to 2400m. The distance of the scarp line from the Arabian seashore varies from 32km to 100km, but is seldom more than 64 km.

The State receives an annual normal rainfall of 1,155 mm out of which the Pre-Monsoon season contributes about 11%, the South-West Monsoon season contributes about 73% and the North-East Monsoon season contributes about 16%. The spatial and temporal distribution of rainfall varies significantly across the State, i.e., from West to East. Udupi District which lies in the extreme western part of the State, receives maximum annual rainfall of 4,599 mm and Bagalkote District, which lies in the northeastern part of the State, receives minimum annual rainfall of 558 mm. Most of the rainfall received in the State is during the SW Monsoon season.

The Western Ghat rises precipitously from the narrow Coastal region in the west and gentle slope towards the east - marked by a number of hills of lesser elevation and gradually merges with the

plains. The hill ranges form a great barrier in the western extremity of the Indian Peninsula and are covered by luxuriant forest and inhabited by large variety of wild life. The biodiversity is the most important characteristic feature of the Western Ghat Mountain and has been considered as one of the very few "biodiversity hotspots" of the World.

The Western Ghats, which forms a gorgeous mountain chain separating the Arabian Sea in the west and the eastern plain of the peninsular Indian shield, has been witnessing frequent landslides. The topography of Malnad and Coastal region is sensitive and any changes in the land use causes landslide or slope failure affecting the local population. Slope angle having $>35^\circ$ in Coastal and Malnad regions have experienced more numbers of landslides and is shown as *Figure 1*.

Landslides affect at least 13.05% of the land area of Karnataka, exceeding 25,024.9 km² which falls in the 23 taluks. From the past decade in Karnataka, the maximum numbers of landslides were occurred in Kodagu district followed by Uttara Kannada, Dakshina Kannada, Chikkamagaluru, Udupi, Shimoga, Dakshina Kannada and Hassan as shown in *Figure 2* and has caused widespread damage and many casualties, together with significant economic losses and social disruption.

During August 2018, the State experienced both flood and drought. Parts of Malnad and Coastal Karnataka were affected by floods and landslides/mudflows due to high-intensity rainfall causing damage to agriculture/horticulture/high value plantation crops, damage to public infrastructure and multiple houses and many families were rendered homeless. During August 2019, again large parts of the State were affected by floods and landslides due to high-intensity rainfall coupled with record discharge from Maharashtra State into the Dams in Upper Krishna and Bhima Basins.

During the first fortnight of August, 2020, Coastal, Malnad and parts of North Interior Karnataka experienced very heavy to exceptionally heavy rainfall. Malnad districts like Kodagu, Chikkamagaluru, Shivamogga and Hassan, which are predominantly the high rainfall regions, have recorded more than 500% of the normal rainfall. Heavy rains have also induced landslides in Ghat areas of Kodagu, Chikkamagaluru, Hassan and Dakshina Kannada districts. As many as 23 districts have been affected due to heavy rains, floods and landslides.

Landslides have been recorded for several decades in Karnataka, however the 2009 Kadwad landslide in Uttara Kannada district that has swept away 9 houses in the foothills had raised question on protection of social and economic loss that occurred. Slope modification, road cut failure, seepage along weaker zone and increase in pore pressure due to heavy rains have caused 19 numbers of casualties and huge economic losses. Economic losses due to landslides are great and apparently are growing as development locally expands into unstable hillside areas under the pressures of expanding populations. In addition to killing people and animals (both livestock and wildlife), landslides destroy

or damage residential land industrial developments as well as agricultural and forest lands and negatively affect water quality in rivers and streams.

In Malnad and Coastal districts of Karnataka, 23 taluks have experienced more landslides which is covering an area of 25,024.9 Km² is vulnerable to landslides. Households of 7.7 lakhs and population of 34.14 lakhs falls under moderate to high vulnerable zones for landslides.

In spite of improvements in recognition, prediction, mitigate measures, and warning systems, landslide activity in Karnataka is increasing and this trend is expected to continue in the coming decades. The factors causing this expected augmented activity are:

- Increased urbanization and development activities in the landslide-prone areas
- Continued deforestation of landslide-prone areas and
- Increased regional precipitation caused by changing climate patterns

Landslides can result in direct losses, i.e., loss of life, property, infrastructure and lifeline fatalities, resources, farmland, and places of cultural importance and indirect losses i.e., loss in productivity of agricultural or forest land, reduced property values, loss of revenue, increased cost, adverse effect in water quality and loss of human productivity. These direct and indirect losses due to landslides will take a long duration to attain its regular situation. For example, due to the high intensity rainfall and flood triggered landslides in Kodagu, Hassan, Dakshina Kannada and Chikkamagalur districts during 2018, 2019 and 2020 which had caused widespread damage and many casualties required a long duration to rebuild its infrastructure and roads etc., in the completely damaged regions, furthermore the slided and silt deposited land is no longer suitable for agricultural practices.

Figure 1: Landslide Inventory locations imposed over slope map of Karnataka

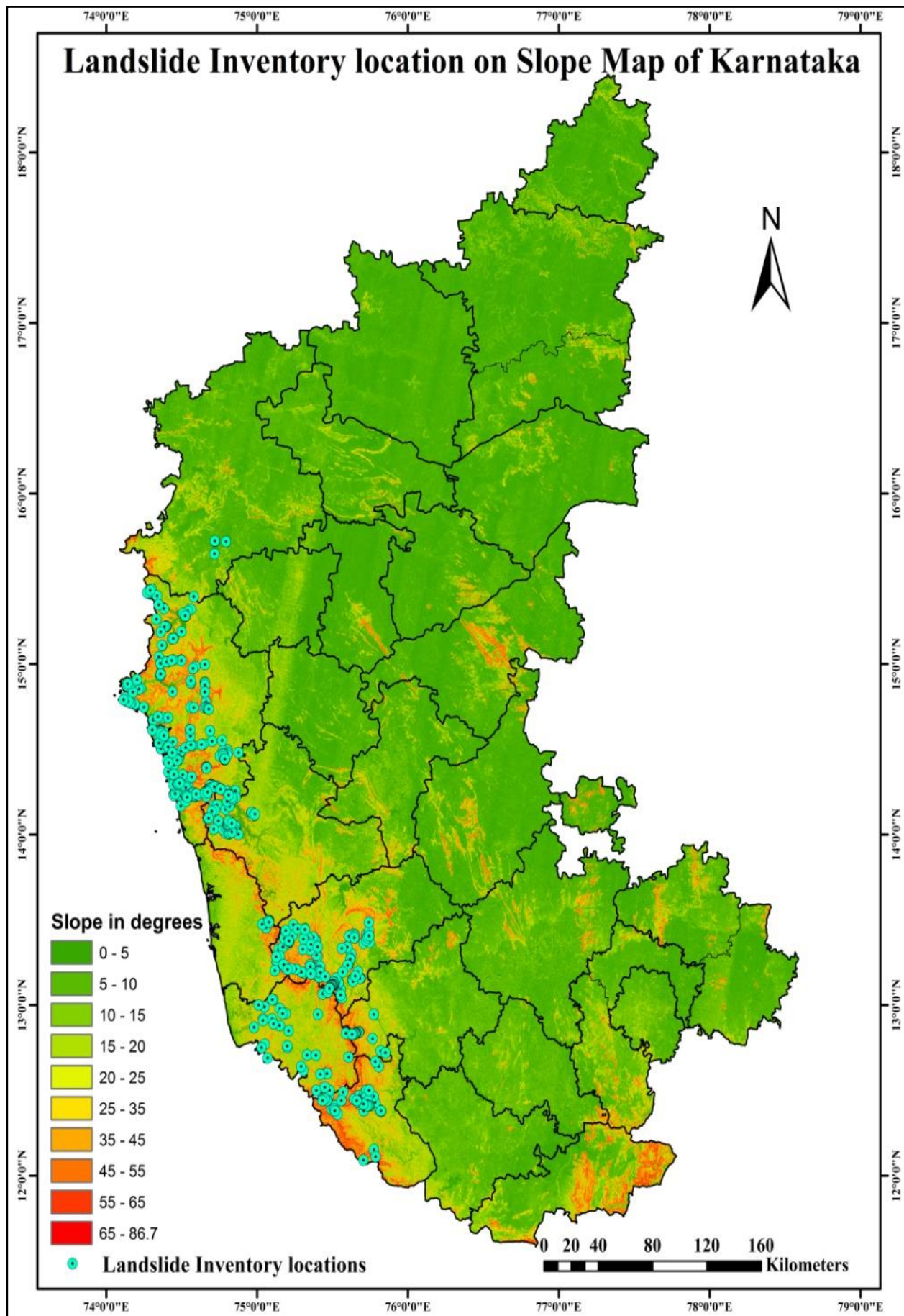
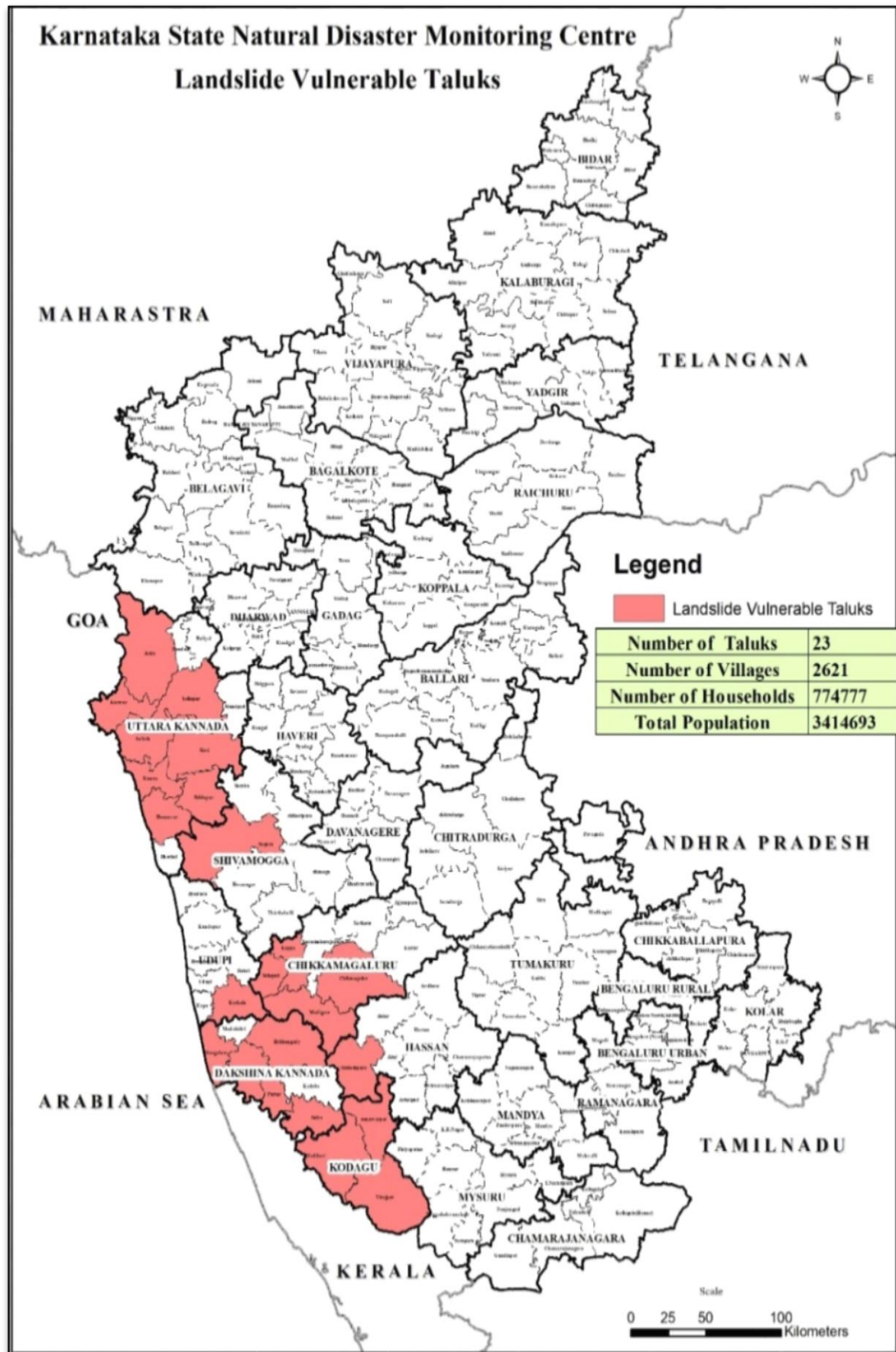


Figure 2: Landslide Vulnerable Taluks of Karnataka



8. ASSESSMENT OF FLOODS DURING THE YEAR 2020

In the past two decades, the State of Karnataka has been frequently confronted with various disasters such as drought, flood, hailstorm, etc, causing enormous loss and damage to life, property, crops and infrastructure.

Karnataka State has been experiencing severe floods both in Krishna River Basin and Cauvery River Basins during Southwest monsoon Season. The State is currently facing a third consecutive year of floods causing enormous loss and damage to life, property, crops and infrastructure. The floods in the State has been attributed to heavy to very heavy rainfall and copious inflows into river Krishna and its tributaries in upper regions resulting in very heavy discharge to the reservoirs of Karnataka leading to flooding of low-lying area and inundating large swathe of agriculture land along the river courses.

During August 2018, the State experienced both flood and drought. Parts of Malnad and Coastal Karnataka were affected by floods and landslides/mudflows due to high-intensity rainfall causing damage to agriculture/horticulture/high value plantation crops, public infrastructure and houses. Many families were rendered homeless. Similarly, during August 2019, large parts of the State was affected by floods and landslides due to high-intensity rainfall coupled with record discharge from Maharashtra state into the Dams in Upper Krishna and Bhima Basins. As an immediate gratuitous an amount of Rs.10,000 was paid to each of the 7768 families

South West Monsoon-2020 had set in over Coastal Karnataka and adjoining districts on 4th June and covered the entire Karnataka State by 11th June 2020. During the first fortnight of August, 2020, Coastal, Malnad and parts of North Interior Karnataka experienced very heavy to exceptionally heavy rainfall. Malnad districts like Kodagu, Chikmagalur, Shivamogga and Hassan, which are predominantly high rainfall regions, have recorded more than 500 % of the normal rainfall. Heavy rains have also induced landslides in Ghat areas of Kodagu, Chikmagalur, Hassan and Dakshina Kannada districts. As many as 23 districts have been affected due to heavy rains, floods and landslides.

Rainfall pattern, inflows and outflows in reservoirs as set-out in Chapter 3 which gives an overview of the gravity of the flood situation in the state during 2020. I Effective Dam management based on IMD, KSNDMC and CWC inflow forecasts and coordination among the States in the Krishna Basin and districts have mitigated the adverse impact of floods to a larger extent.

Preparedness:

The State Government has been proactive in taking flood preparedness. Despite COVID 19 situation, flood preparedness was also of high priority for the state and preparation for South West monsoon started during April 2020 itself. Hon'ble Chief Minister has been periodically reviewing the operations pertaining to monsoon calamity in the state. The district ministers were deputed to flood-affected districts to take stock of the situation. The Revenue Minister has had flood preparedness meetings regularly along with the ACS and Development Commissioner, Principal Secretary (DM), Commissioner, KSDMA and Districts through Video Conferencing. ACS & Development Commissioner has been conducting the Weekly Weather Watch Committee meeting and reviewing the flood preparation and giving necessary guidance to officers concerned since May 19, 2020.

For the first time in the country, 912 Gram Panchayats vulnerable to floods in 13 districts have been identified and village level flood preparedness through the Gram Panchayat Disaster Management Plan has been developed. The plan comprises of Gram Panchayat Profile, Hazard, Risk Vulnerability and

Capacity Assessment, Mitigation and Preparedness Plan, Response Plan, Contact Numbers & SOPs, Guidelines etc. This initiative is to engage the community in the flood preparedness and response.

Lessons learnt from last year were incorporated in Dam management, which has enabled us to plan for an Integrated Dam management and to effectively coordinate with Maharashtra and Kerala. Accordingly, water releases from reservoirs are regulated taking into account rainfall forecast, possible inflows to the reservoirs, carrying capacity of the river downstream. This has reduced flooding of downstream villages along the banks of the river. Information on Dam water release and alerts were given well in advance to villages along the river banks before release of water from reservoirs in frequent intervals. This has resulted in minimalizing of flooding of downstream villages along the banks of the river.

Inter-state coordination mechanism was evolved for forewarning of downstream areas prior to the release of water from reservoirs. Hon'ble Water Resource Minister, Govt. of Karnataka, visited Maharashtra during July and held Ministerial-level talks to further strengthen the interstate coordination mechanism.

Four NDRF teams were pre-deployed in Belagavi, Dharwad, Dakshina Kannada and Kodagu since the first week of June 2020. Besides, SDRF, Fire and Emergency Services were also deployed in vulnerable areas. When flood situation worsened in the second week of August 2020, four NDRF teams were additionally deployed. Four IAF helicopters were kept in standby at Yelahanka Air Base for search and rescue operations. Hon'ble Prime Minister was kind enough to review flood situation through Video Conference on 10th August 2020.

Response and Relief:

State Government's response to tackle the situation was swift and well-coordinated. Ninety-two relief camps were opened sheltering 6716 persons. Food, clean drinking water, masks, sanitizers, medical facilities and other relief items were provided to the affected people stationed in the relief camps. Necessary precautions were also taken to prevent the spread of Covid-19 pandemic.

As an immediate Gratuitous an amount of Rs.10,000 was paid to each of the 7636 families., of which Rs. 6200 is borne from the State Fund. Ex-gratia of Rs.5.00 lakh was paid to the next kin of the deceased. Rs.50 crores were released to 10 districts for immediate relief. To ensure safe housing and based on the principle of build back better, State Government has decided to provide Rs.5 lakh financial assistance (in tranches) for completely damaged houses of which Rs. 4.04 lakh is borne by the State Government. Similarly, financial assistance of Rs. 3 lakh and Rs.50000 is provided to houses with major damage and partial damage of which Rs. 2 lakh and Rs 44800 respectively, is borne by the State Government.

Loss and Damages:

During floods and landslides, 42 human lives were lost. While the people of the affected districts have gone through immense hardship, the loss of shelter has a devastating effect on the affected people. Around 10978 houses have been damaged, out of which about 2893 houses have fully collapsed or severely damaged.

About 3.31 lakh ha of agriculture crops, 0.32 lakh ha of horticulture crops and 0.38 lakh ha of plantation crops have been damaged. In all, crops in around 4.03 lakh ha have been destroyed or damaged. Besides, 812 ha of agricultural land are heavily silted and 334 ha of agricultural land has been irreversibly damaged. The crop loss due to flood and landslides is estimated at Rs. 5510 Crore. Critical infrastructure, such as roads, bridges/culverts, electrical infrastructure, schools, hospitals and Anganwadis/Government buildings has been affected. 14,182 km of State Highway, Major district, village & urban roads; 1268

bridges/culverts, 15,777 poles, 1952 transformers and 2987 KM of power supply lines have been severely damaged. 3168 Government building, community

The State Government is committed to construct disaster resilient houses and reconstruct damaged critical infrastructure under the principle of build back better. the State Government will take up medium and long term structural measures, using State Disaster Mitigation Fund and National Disaster Mitigation Fund to mitigate the adverse effects of floods. The loss due to floods and landslides are estimated at Rs. 8071.09 Crore.

9. ASSESSMENT OF DROUGHT DURING THE YEAR 2020

- Karnataka State has been subjected to drought condition during successive years in the past. During Kharif season 2020 rainfall was normal by 14%, and Rabi season normal by 4%. Subsequently, there is no such ≥ 3 consecutive weeks of dry spells in both seasons.
- During 2020, the rainfall was normal in the pre-monsoon season and subsequently the onset of monsoon over Karnataka got delayed by 1 week.
- During **June 2020**, the State as a whole received **185** mm of rainfall against the normal rainfall of **199** mm with **(-) 7 %** departure from Normal.
- During **July 2020**, the State received 261 mm of rainfall against the normal rainfall of **271** mm with **(-) 4 %** departure from Normal.
- During **August 2020**, the State received **285** mm of rainfall against the normal rainfall of **220** mm with **(+) 29 %** departure from Normal.
- During **September 2020**, the State received **261** mm of rainfall against the normal rainfall of **161** mm with **(+) 62 %** departure from Normal.
- Overall, from **1st June to 30th September 2020**, the state as a whole received **991** mm of rainfall against the normal rainfall of **852** mm with **(+) 16 %** departure from Normal.
- Following the Guidelines prescribed in the Drought Management Manual 2016 and amendments thereafter by GoI, the State has been assessed for the drought condition at taluka level.

Though none of the taluks are not qualified has drought affected in the year 2020.