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APPENDICES

Appendix-A

Table A.1 In-situ temperature measurement done on 25th Dec 2018, 10th Jan 2019, 11th Feb 2019, 4th Mar 2021, 20th Mar 2021, and 5th Apr 2021

S.No.	Date	In-situ temp (°C)
1	25 December 2018	18.50
2	25 December 2018	18.76
3	25 December 2018	18.93
4	25 December 2018	19.14
5	25 December 2018	18.83
6	25 December 2018	19.02
7	25 December 2018	18.80
8	25 December 2018	18.94
9	25 December 2018	18.87
10	25 December 2018	19.03
11	25 December 2018	19.16
12	25 December 2018	18.87
13	25 December 2018	19.06
14	25 December 2018	18.95
15	25 December 2018	19.05
16	25 December 2018	18.68
17	25 December 2018	18.62
18	25 December 2018	19.04
19	25 December 2018	18.92
20	25 December 2018	18.51
21	10 January 2019	19.46
22	10 January 2019	19.34
23	10 January 2019	19.33
24	10 January 2019	19.32
25	10 January 2019	19.29
26	10 January 2019	19.27
27	10 January 2019	19.27
28	10 January 2019	19.23

29	10 January 2019	19.20
30	10 January 2019	19.18
31	10 January 2019	19.16
32	10 January 2019	19.02
33	10 January 2019	19.01
34	10 January 2019	18.99
35	10 January 2019	19.26
36	10 January 2019	19.10
37	10 January 2019	19.24
38	10 January 2019	19.22
39	10 January 2019	19.17
40	10 January 2019	19.05
41	11 February 2019	18.73
42	11 February 2019	19.62
43	11 February 2019	19.11
44	11 February 2019	19.10
45	11 February 2019	19.12
46	11 February 2019	19.14
47	11 February 2019	19.47
48	11 February 2019	19.94
49	11 February 2019	20.07
50	11 February 2019	20.09
51	11 February 2019	22.30
52	11 February 2019	22.32
53	11 February 2019	21.93
54	11 February 2019	20.86
55	11 February 2019	20.73
56	11 February 2019	18.77
57	11 February 2019	20.75
58	11 February 2019	18.90
59	11 February 2019	20.14
60	11 February 2019	18.95
61	04 March 2021	22.43
62	04 March 2021	22.57
63	04 March 2021	20.85
64	04 March 2021	22.15
65	04 March 2021	22.78
66	04 March 2021	21.13
67	04 March 2021	22.35
68	04 March 2021	22.97
69	04 March 2021	21.98
70	04 March 2021	22.35
71	04 March 2021	21.95

72	04 March 2021	22.67
73	04 March 2021	22.76
74	04 March 2021	22.87
75	04 March 2021	21.98
76	04 March 2021	22.47
77	04 March 2021	22.63
78	04 March 2021	22.18
79	04 March 2021	22.51
80	04 March 2021	22.26
81	20 March 2021	22.85
82	20 March 2021	22.28
83	20 March 2021	22.95
84	20 March 2021	22.18
85	20 March 2021	23.21
86	20 March 2021	23.46
87	20 March 2021	22.45
88	20 March 2021	22.15
89	20 March 2021	23.31
90	20 March 2021	22.29
91	20 March 2021	22.81
92	20 March 2021	22.49
93	20 March 2021	23.45
94	20 March 2021	23.21
95	20 March 2021	22.07
96	20 March 2021	23.23
97	20 March 2021	22.63
98	20 March 2021	22.52
99	20 March 2021	22.67
100	20 March 2021	23.26
101	05 April 2021	21.67
102	05 April 2021	25.37
103	05 April 2021	24.85
104	05 April 2021	24.51
105	05 April 2021	24.45
106	05 April 2021	24.77
107	05 April 2021	24.49
108	05 April 2021	24.10
109	05 April 2021	25.28
110	05 April 2021	25.12
111	05 April 2021	24.73
112	05 April 2021	24.03
113	05 April 2021	24.27
114	05 April 2021	25.87

115	05 April 2021	21.18
116	05 April 2021	24.09
117	05 April 2021	25.96
118	05 April 2021	24.35
119	05 April 2021	23.58
120	05 April 2021	22.97

Points have been marked in Figure 4.6.

Table A.2 In-situ temperature measurement done on 5th April 2021

S.No.	In-situ measurement (°C)
1	26.8
2	27
3	27
4	27.2
5	27.1
6	27.2
7	27.2
8	27.1
9	26.9
10	26.6
11	26.5
12	26.5
13	26.1
14	26
15	26
16	26.3
17	26.7
18	26.7
19	27.1
20	27.2
21	27.2
22	27.2
23	27.4
24	27.4
25	27.7
26	27.5
27	27.8
28	27.9
29	27.9
30	28.1

Points have been marked in Figure 6.19

Table A.3 In-situ temperature measurement done on 7th April 2021

S.No.	In-situ measurement (°C)
1	26.8
2	27
3	27
4	27.2
5	27.1
6	27.2
7	27.2
8	27.1
9	26.9
10	26.6
11	26.6
12	26.5
13	26.1
14	25.9
15	26
16	26.3
17	26.7
18	26.7
19	27.1
20	27.2
21	27.2
22	27.3
23	27.4
24	27.4
25	27.7
26	27.5
27	27.8
28	27.8
29	27.9
30	28.1

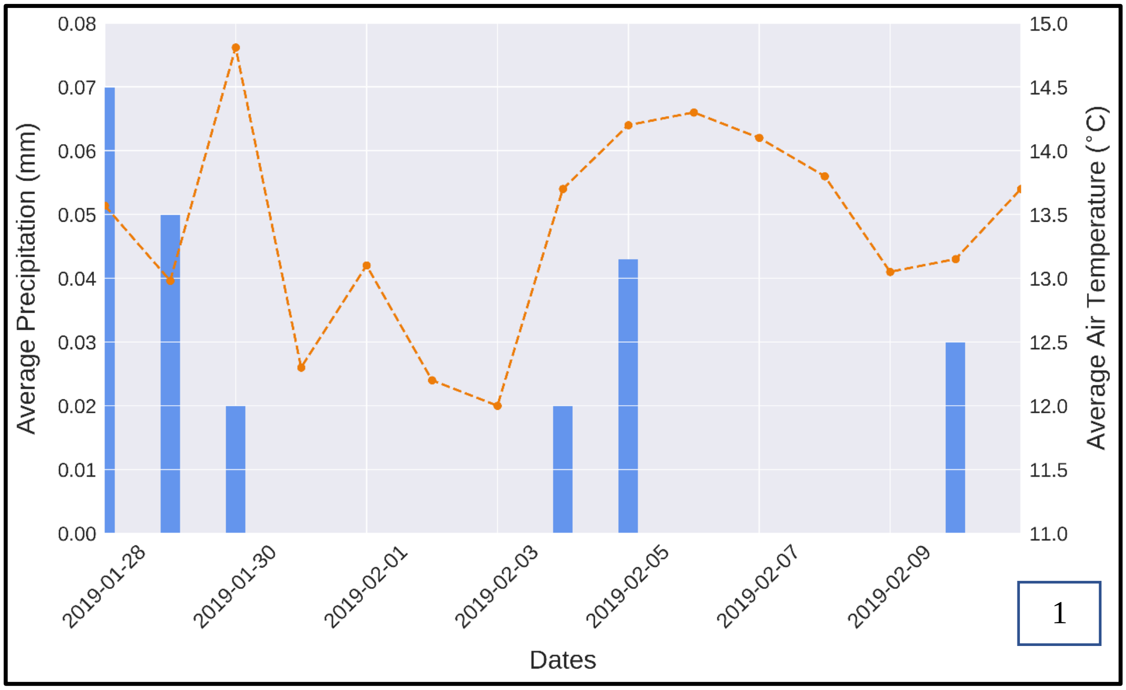
Points have been marked in Figure 6.20

Table A.4 In-situ temperature measurement done on 15th April 2021

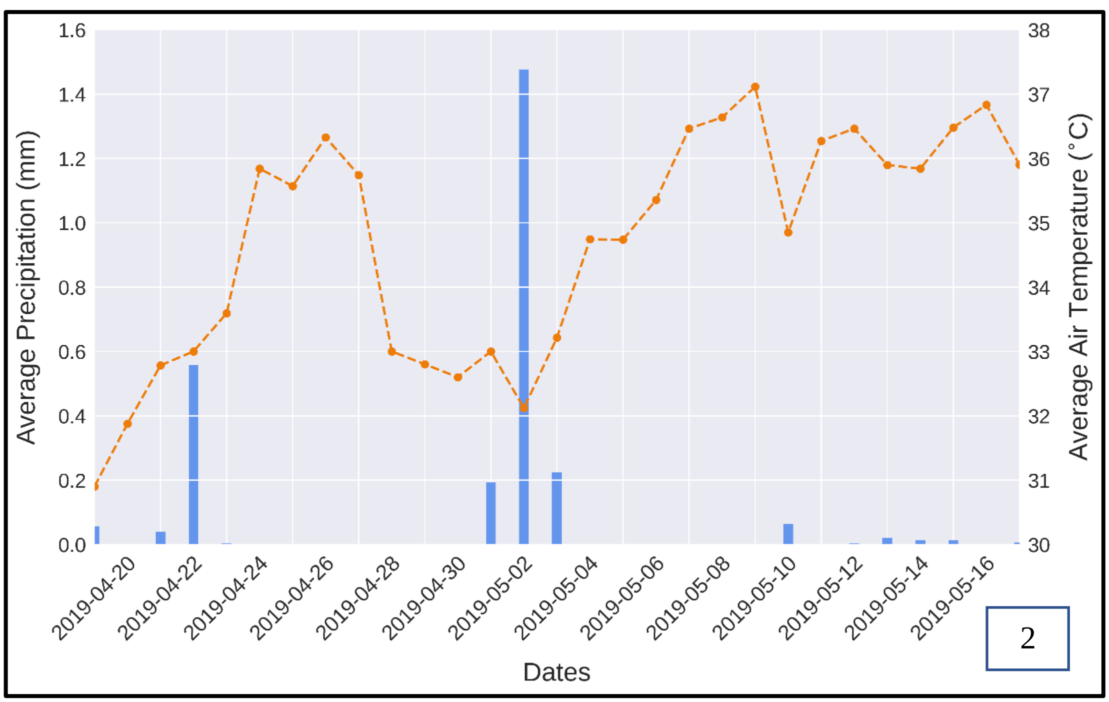
S.No.	In-situ measurement (°C)
1	27.9
2	27.9
3	28.2
4	28.1
5	28.3
6	28.3
7	28.3
8	28.4
9	28.5
10	28.5
11	28.5
12	28.2
13	28.1
14	28.1

Points have been marked in Figure 6.21

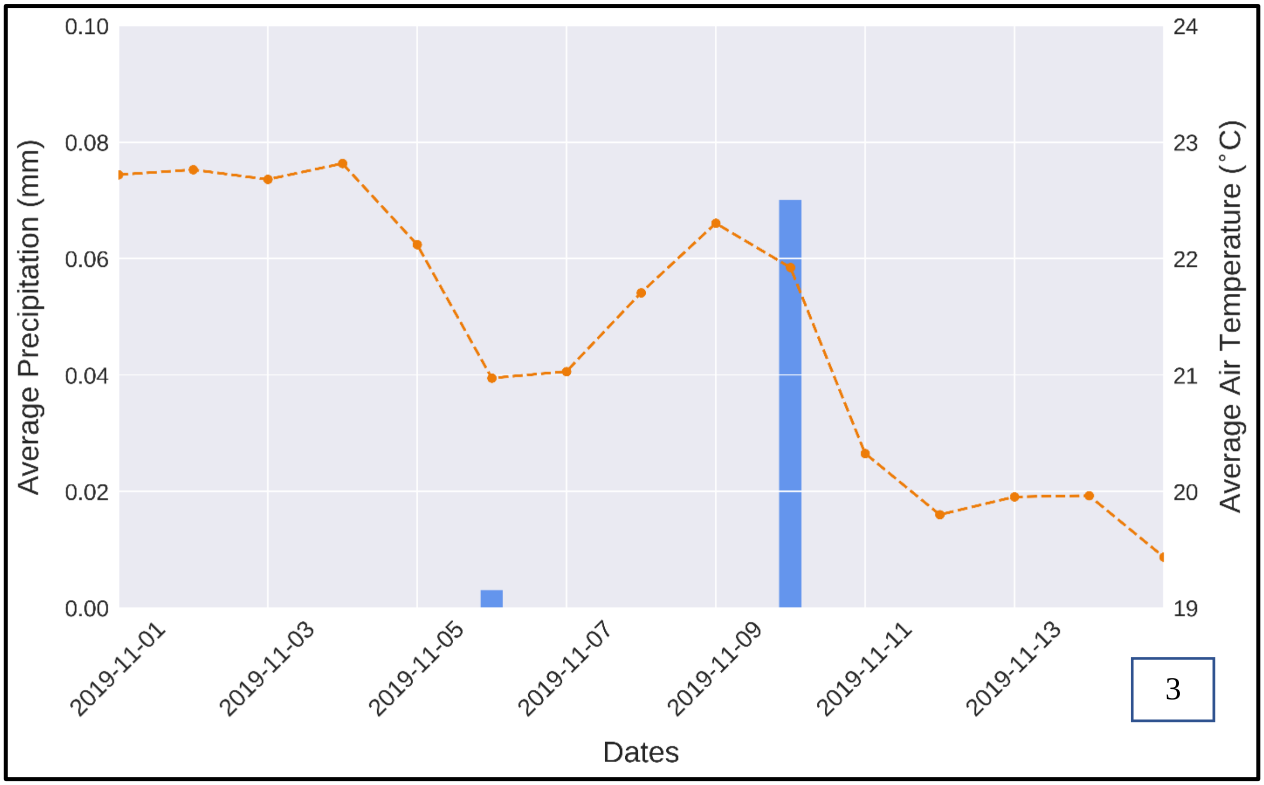
Appendix-B



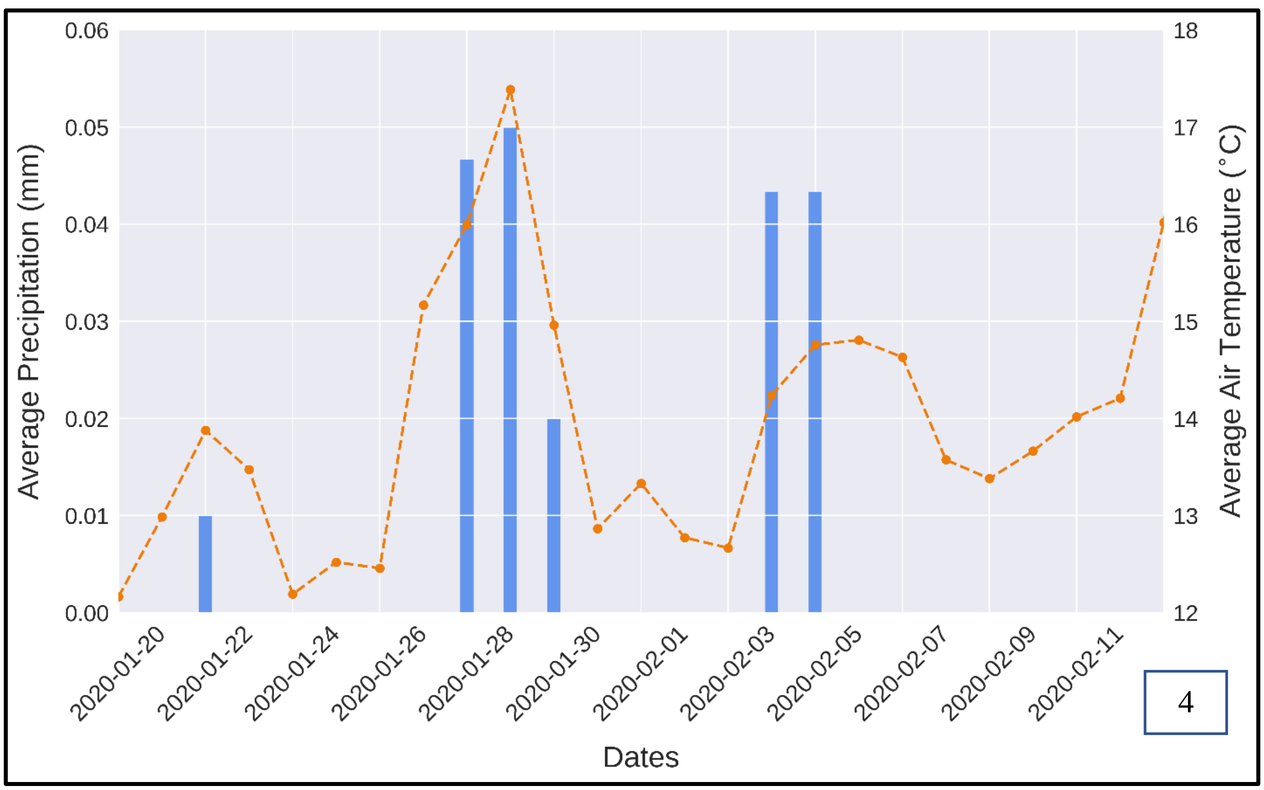
Average Precipitation (mm)
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Average Air Temperature (°C)
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
2019-01-28
2019-01-30
2019-02-01
2019-02-03
2019-02-05
2019-02-07
2019-02-09
Dates
1



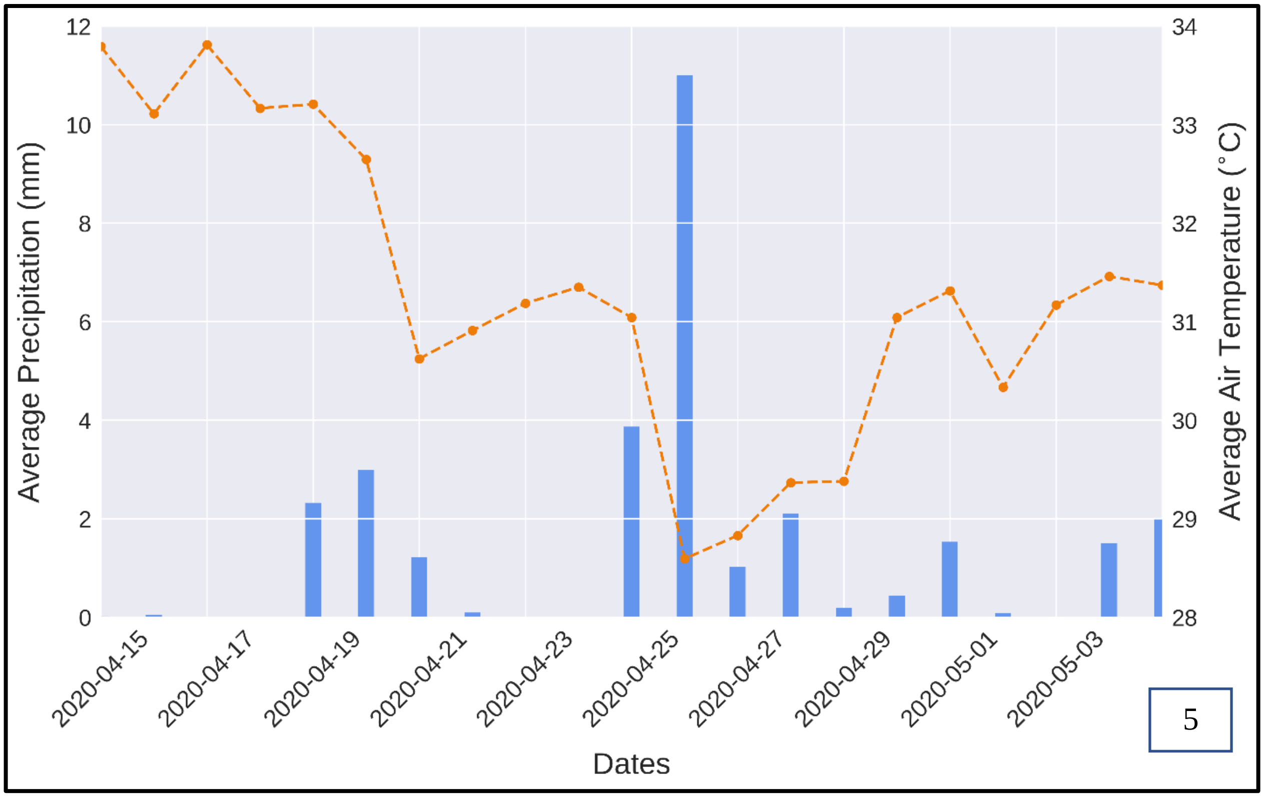
Average Precipitation (mm)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Average Air Temperature (°C)
38
37
36
35
34
33
32
31
30
2019-04-20
2019-04-22
2019-04-24
2019-04-26
2019-04-28
2019-04-30
2019-05-02
2019-05-04
2019-05-06
2019-05-08
2019-05-10
2019-05-12
2019-05-14
2019-05-16
Dates
2



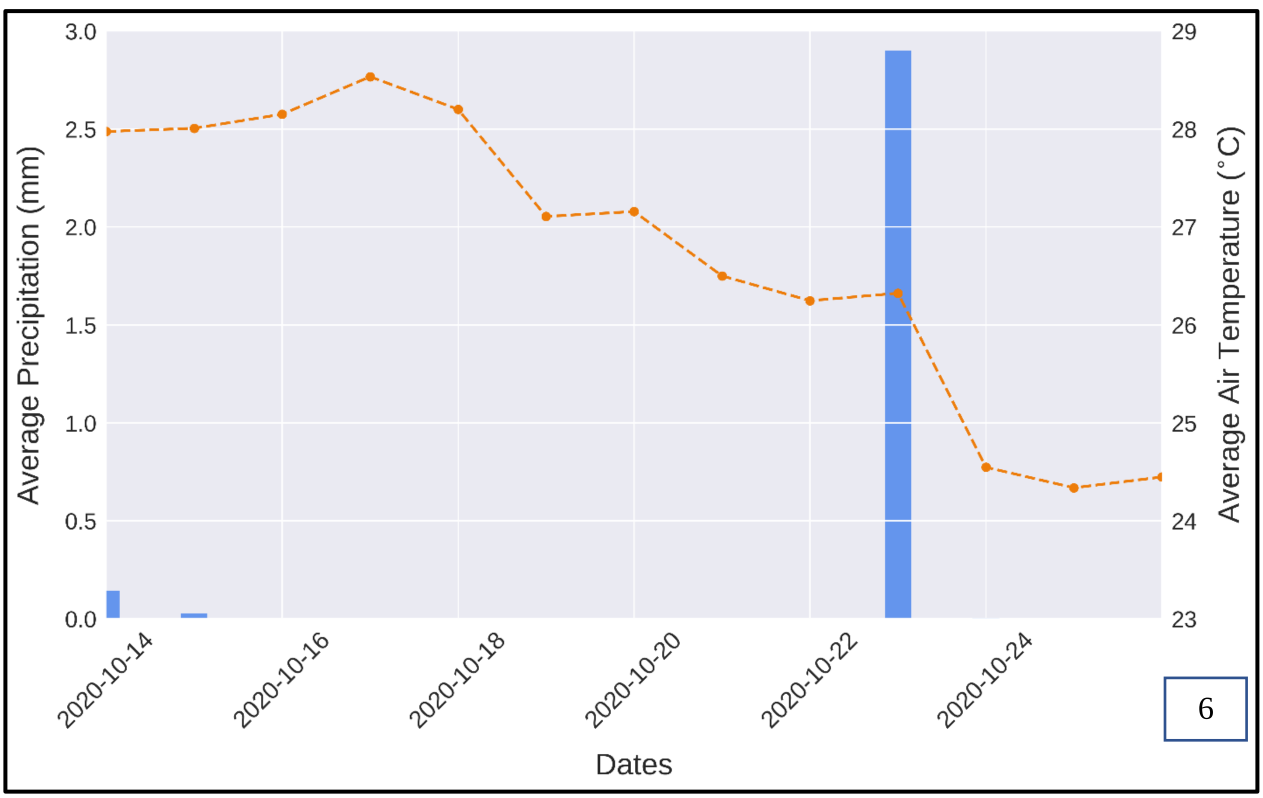
Average Precipitation (mm)
0.10
0.08
0.06
0.04
0.02
0.00
Average Air Temperature (°C)
24
23
22
21
20
19
2019-11-01
2019-11-03
2019-11-05
2019-11-07
2019-11-09
2019-11-11
2019-11-13
Dates
3



Average Precipitation (mm)
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Average Air Temperature (°C)
18
17
16
15
14
13
12
2020-01-20
2020-01-22
2020-01-24
2020-01-26
2020-01-28
2020-01-30
2020-02-01
2020-02-03
2020-02-05
2020-02-07
2020-02-09
2020-02-11
Dates
4



Average Precipitation (mm)
Average Air Temperature (°C)
Dates
2020-04-15
2020-04-17
2020-04-19
2020-04-21
2020-04-23
2020-04-25
2020-04-27
2020-04-29
2020-05-01
2020-05-03
5



Average Precipitation (mm)
Average Air Temperature (°C)
Dates
2020-10-14
2020-10-16
2020-10-18
2020-10-20
2020-10-22
2020-10-24
6

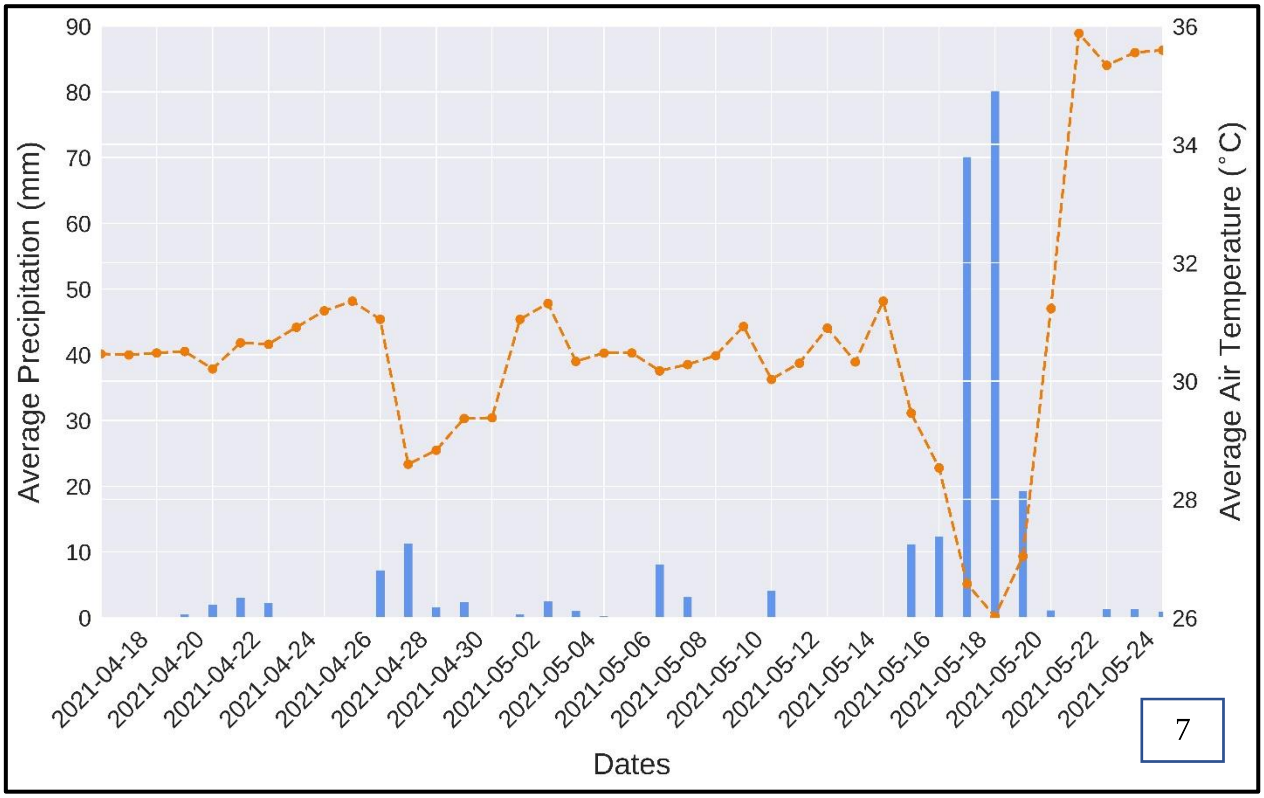


Figure B.1. Graphical representation of the meteorological parameters (air temperature and rainfall) for the time period (1) 28th January-12th February 2019 (2) 20th April-19th May 2019 (3) 1st November-15th November 2019 (4) 20th January-15th February 2020 (5) 15th April-5th May 2020 (6) 14th October-28th October 2020 (7) 18th April-24th May 2021

Note: Air temperature has been represented in the form of dots and dotted lines. Rainfall has been denoted in the form of bar diagrams.

Appendix-C

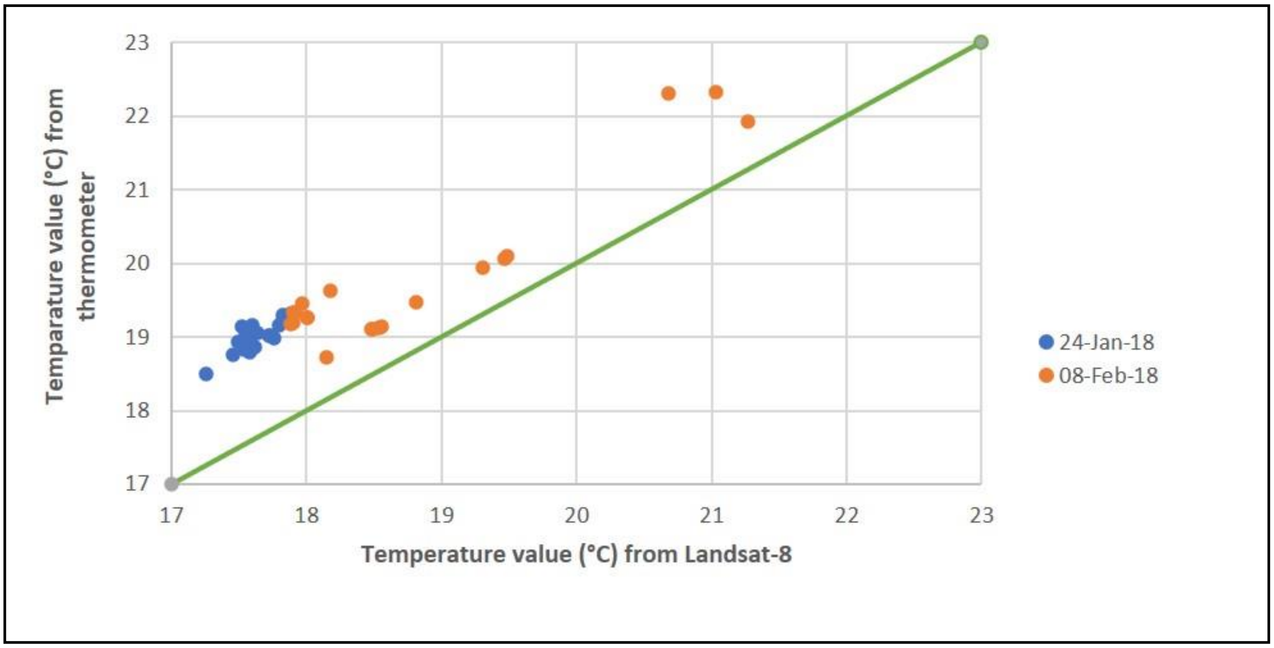


Figure C.1. Correlation plot of L-8 and in-situ temperature

This plot is drawn as per the suggestion given by Examiner-1 in chapter 3.

LIST OF PUBLICATIONS

Das, N., Bhattacharjee, R., Choubey, A., Agnihotri, A. K., Ohri, A., & Gaur, S. (2022). Analysis of the Spatio-Temporal Variation of the Thermal Pattern of River Ganges in Proximity to Varanasi, India. *Journal of the Indian Society of Remote Sensing*, 1-16. https://doi.org/10.1007/s12524-022-01514-x

Das, N., Bhattacharjee, R., Choubey, A., Agnihotri, A. K., Ohri, A., & Gaur, S. (2022). Analysing the change in water quality parameters along river Ganga at Varanasi, Mirzapur and Ghazipur using Sentinel-2 and Landsat-8 satellite data during pre-lockdown, lockdown and post-lockdown associated with COVID-19. *Journal of Earth System Science.* https://doi.org/10.1007/s12040-022-01825-0