

Annex A. Agroclimatic indicators and BIOMSS

Table A.1 October 2021 – January 2022 agroclimatic indicators and biomass by global Monitoring and Reporting Unit (MRU)

65 Global MRUs		RAIN Current (mm)	RAIN 15YA dep. (%)	TEMP Current (°C)	TEMP 15YA dep. (°C)	RADPAR Current(MJ/m ²)	RADPAR 15YA dep. (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA dep. (%)
C01	Equatorial central Africa	715	-20	23.4	0.4	1276	7	1193	-3
C02	East African highlands	164	-30	18.4	0.2	1341	3	527	-10
C03	Gulf of Guinea	156	-31	25.8	0.6	1251	2	642	-9
C04	Horn of Africa	222	-43	22.1	0.6	1354	6	707	-18
C05	Madagascar (main)	760	-13	23.2	0.2	1407	5	1183	-7
C06	Southwest Madagascar	145	-62	26.3	0.3	1518	7	762	-20
C07	North Africa-Mediterranean	132	-34	11.6	-0.4	753	6	355	-21
C08	Sahel	54	-13	25.5	0.2	1259	1	481	2
C09	Southern Africa	380	-30	23.8	0.3	1396	2	932	-12
C10	Western Cape (South Africa)	178	24	18.0	-0.1	1557	2	746	11
C11	British Columbia to Colorado	374	4	-1.6	0.7	441	0	307	3
C12	Northern Great Plains	175	-7	2.2	1.2	497	4	341	-2
C13	Corn Belt	369	-8	2.9	0.7	434	3	475	8
C14	Cotton Belt to Mexican Nordeste	285	-23	12.6	1.2	697	5	600	-6
C15	Sub-boreal America	227	3	-6.2	0.1	248	3	248	8
C16	West Coast (North America)	593	18	7.8	-0.2	513	-3	500	0
C17	Sierra Madre	205	-18	15.8	0.4	1091	5	469	-10
C18	SW U.S. and N. Mexican highlands	118	-15	9.4	0.9	803	3	346	-6
C19	Northern South and Central America	627	-11	22.4	0.1	1100	6	955	-4
C20	Caribbean	301	-21	24.0	0.2	1081	6	865	-3
C21	Central-northern Andes	861	-7	15.5	-0.1	1170	2	814	-4
C22	Nordeste (Brazil)	155	-43	27.3	1.3	1379	3	724	-12
C23	Central eastern Brazil	575	-39	25.8	1.2	1242	-2	1129	-17
C24	Amazon	1026	-1	25.4	0.1	1185	3	1397	1
C25	Central-north Argentina	816	54	23.5	-0.7	1331	-4	1251	10
C26	Pampas	477	-13	22.5	0.4	1436	2	1083	-3

C27	Western Patagonia	207	-31	12.9	0.5	1573	7	603	-7
C28	Semi-arid Southern Cone	277	61	18.5	0.0	1620	-1	701	6
C29	Caucasus	268	-10	4.5	0.1	579	3	430	-4
C30	Pamir area	159	-18	2.5	-0.3	738	3	285	-9
C31	Western Asia	136	-7	7.4	0.5	673	2	326	-4
C32	Gansu-Xinjiang (China)	73	-3	-4.0	-0.4	596	1	138	-6
C33	Hainan (China)	756	36	21.1	0.4	751	-1	903	7
C34	Huanghuaihai (China)	128	56	5.7	0.3	625	-4	314	31
C35	Inner Mongolia (China)	70	39	-5.9	0.3	574	-2	168	16
C36	Loess region (China)	160	113	0.6	-0.1	675	-4	290	31
C37	Lower Yangtze (China)	319	9	10.8	0.3	626	-2	630	8
C38	Northeast China	142	54	-6.6	1.0	460	-5	227	21
C39	Qinghai-Tibet (China)	213	4	0.0	-0.5	873	-1	279	2
C40	Southern China	378	11	14.8	0.2	744	1	710	6
C41	Southwest China	326	20	7.8	0.0	557	-7	578	9
C42	Taiwan (China)	312	-4	21.3	1.0	831	2	669	2
C43	East Asia	369	17	0.0	0.9	494	-1	357	8
C44	Southern Himalayas	239	15	15.7	-0.4	924	0	512	13
C45	Southern Asia	346	16	21.9	-0.2	1083	0	740	11
C46	Southern Japan and the southern fringe of the Korea peninsula	380	-20	9.4	0.6	637	10	612	-7
C47	Southern Mongolia	36	-30	-12.7	0.6	477	2	94	-6
C48	Punjab to Gujarat	115	177	19.7	-0.6	971	-2	443	36
C49	Maritime Southeast Asia	1367	-1	24.4	0.2	1146	6	1456	2
C50	Mainland Southeast Asia	461	1	22.6	0.1	1052	2	833	-2
C51	Eastern Siberia	247	3	-7.6	2.0	275	1	207	11
C52	Eastern Central Asia	72	-4	-11.9	1.8	368	-1	131	8
C53	Northern Australia	924	17	26.8	0.4	1439	3	1342	8
C54	Queensland to Victoria	360	44	19.8	-0.9	1410	-4	919	11
C55	Nullarbor to Darling	91	-15	19.0	-0.7	1540	1	605	-5
C56	New Zealand	357	10	14.4	1.1	1298	1	870	8
C57	Boreal Eurasia	409	7	-2.5	0.5	116	-6	274	1
C58	Ukraine to Ural mountains	285	4	-0.3	0.4	193	4	348	1
C59	Mediterranean Europe and Turkey	341	-10	8.2	-0.3	563	5	542	-7

C60	W. Europe (non Mediterranean)	341	-9	4.9	-0.2	307	5	507	-2
C61	Boreal America	370	-8	-8.3	-2.0	140	2	174	-16
C62	Ural to Altai mountains	191	-1	-4.9	1.8	262	-3	230	3
C63	Australian desert	162	52	20.4	-1.2	1556	-1	709	6
C64	Sahara to Afghan deserts	61	0	16.8	0.2	951	2	320	1
C65	Sub-arctic America	106	-7	-17.2	2.1	39	-5	66	33

Table A.2 October 2021 – January 2022 agroclimatic indicators and biomass by country

Country code	Country name	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
ARG	Argentina	516	18	22.2	0.2	1455	0	1060	5
AUS	Australia	341	30	20.5	-0.7	1434	-2	870	8
BGD	Bangladesh	241	-6	20.5	-0.4	970	-2	598	4
BRA	Brazil	659	-28	25.5	0.9	1253	0	1144	-13
KHM	Cambodia	541	12	24.1	-0.2	1069	0	979	3
CAN	Canada	316	-1	-3.7	0.2	289	2	275	6
CHN	China	264	18	6.2	0.3	618	-3	404	11
EGY	Egypt	70	28	17.1	-0.1	775	1	281	12
ETH	Ethiopia	127	-24	18.4	0.1	1361	3	481	-8
FRA	France	348	-16	5.9	-0.8	373	13	542	-8
DEU	Germany	292	-15	4.3	0.0	228	0	496	-1
IND	India	245	26	19.7	-0.4	1024	-1	592	18
IDN	Indonesia	1396	2	24.5	0.2	1176	5	1494	3
IRN	Iran	170	-4	8.4	0.4	782	2	353	-4
KAZ	Kazakhstan	170	2	-3.5	1.4	343	-2	257	2
MEX	Mexico	257	-14	18.4	0.6	1050	6	536	-6
MMR	Myanmar	281	-16	19.5	0.3	1048	3	644	-4
NGA	Nigeria	140	-25	25.1	0.2	1283	3	568	-4
PAK	Pakistan	143	23	11.4	-0.5	869	0	340	13
PHL	Philippines	1016	-6	24.7	0.1	1052	2	1287	-3
POL	Poland	248	-10	3.3	0.0	217	6	457	-1
ROU	Romania	232	-5	3.5	0.0	384	2	440	-1
RUS	Russia	246	5	-3.5	1.1	219	-1	263	4
ZAF	South Africa	181	-34	19.8	-0.3	1516	4	766	-11
THA	Thailand	400	-8	22.7	0.0	1100	4	811	-4
TUR	Turkey	323	-8	5.5	-0.2	593	3	510	-3
GBR	United Kingdom	426	-15	7.1	0.5	169	1	578	-1
UKR	Ukraine	219	-5	2.5	0.2	291	8	428	3
USA	United States	291	-12	6.6	1.0	571	4	447	-2
UZB	Uzbekistan	117	-21	5.3	0.3	627	3	262	-12
VNM	Vietnam	698	21	19.5	0.0	809	-2	939	2
AFG	Afghanistan	133	-2	4.4	-0.3	791	2	312	1
AGO	Angola	730	-19	23.3	0.4	1277	4	1226	-3
BLR	Belarus	270	-4	1.1	0.2	179	12	388	0
HUN	Hungary	207	-11	3.9	-0.6	369	9	452	-3

Country code	Country name	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
ITA	Italy	419	-2	7.5	-0.3	465	2	600	3
KEN	Kenya	277	-34	20.7	0.4	1310	2	768	-14
LKA	Sri Lanka	1283	9	24.8	0.2	1171	7	1424	4
MAR	Morocco	105	-51	11.9	0.1	815	6	322	-29
MNG	Mongolia	49	-4	-11.6	1.7	446	0	121	5
MOZ	Mozambique	454	-30	25.8	0.5	1346	2	995	-14
ZMB	Zambia	551	-37	24.6	1.1	1366	4	1039	-15
KGZ	Kyrgyzstan	154	-25	-4.2	0.1	614	3	202	-14

Note: Departures are expressed in relative terms (percentage) for all variables, except for temperature, for which absolute departure in degrees Celsius is given. Zero means no change from the average value; relative departures are calculated as $(C-R)/R*100$, with C=current value and R=reference value, which is the fifteen-year average (15YA) for the same period between Oct-Jan.

Table A.3 Argentina, October 2021 – January 2022 agroclimatic indicators and biomass (by province)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Buenos Aires	316	20	20.5	0.2	1506	-1	940	9
Chaco	511	-12	25.0	-0.1	1367	2	1165	-5
Cordoba	423	53	23.0	0.3	1500	-1	1059	12
Corrientes	482	-23	24.5	0.8	1464	5	1128	-9
Entre Rios	414	-1	23.4	0.9	1541	5	1086	2
La Pampa	338	49	21.5	-0.3	1545	-1	1031	19
Misiones	829	12	23.2	0.2	1437	3	1296	-4
Santiago Del Estero	728	42	24.2	-0.6	1363	-1	1248	7
San Luis	272	20	21.6	-0.2	1495	-3	933	6
Salta	1411	61	20.3	-1.1	1171	-10	1338	8
Santa Fe	505	17	24.4	0.6	1501	4	1161	6
Tucuman	1090	100	19.7	-0.5	1288	-9	1252	17

Table A.4 Australia, October 2021 – January 2022 agroclimatic indicators and biomass (by state)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
New South Wales	396	47	20.2	-1.5	1402	-7	970	13
South Australia	178	33	18.5	-1.0	1463	0	707	5
Victoria	298	25	17.1	-0.5	1396	0	831	8
W. Australia	138	-11	20.1	-0.6	1541	2	621	-6

Table A.5 Brazil, October 2021 – January 2022 agroclimatic indicators and biomass (by state)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Ceara	124	-40	28.4	0.8	1421	4	726	-2
Goias	416	-64	27.2	2.9	1224	-5	904	-40
Mato Grosso Do Sul	525	-42	27.1	1.3	1285	-3	1208	-17
Mato Grosso	966	-23	26.0	0.7	1126	-3	1351	-11
Minas Gerais	565	-50	24.2	1.8	1267	0	1073	-23
Parana	638	-29	22.4	0.6	1329	1	1247	-11
Rio Grande Do Sul	391	-36	21.8	0.5	1419	2	1030	-14
Santa Catarina	755	-5	19.3	-0.1	1244	-2	1255	-3
Sao Paulo	482	-57	24.4	1.5	1302	2	1091	-26

Table A.6 Canada, October 2021 – January 2022 agroclimatic indicators and biomass (by province)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Alberta	156	1	-5.5	-0.5	281	4	242	-2
Manitoba	233	23	-4.8	0.8	293	3	287	14
Saskatchewan	164	4	-4.9	0.3	307	6	271	6

Table A.7 India, October 2021 – January 2022 agroclimatic indicators and biomass (by state)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Andhra Pradesh	325	38	22.6	-0.1	1096	-1	811	17
Assam	278	-15	16.6	-0.9	905	4	541	-5
Bihar	263	148	18.6	-0.5	943	-3	515	30
Chhattisgarh	71	-42	19.7	0.0	1096	2	444	-8
Daman and Diu	93	152	25.7	-0.5	1147	0	588	26
Delhi	301	727	16.5	-1.5	865	-6	609	113
Gujarat	90	184	23.5	-0.8	1097	0	506	25
Goa	436	82	25.3	-0.7	1154	-2	937	29
Himachal Pradesh	221	49	8.0	-0.9	870	-2	385	19
Haryana	226	484	16.7	-1.0	860	-5	540	92
Jharkhand	150	19	18.2	-0.2	1019	0	492	10
Kerala	980	31	24.4	0.0	1076	-4	1123	3
Karnataka	476	63	22.4	-0.3	1097	-3	881	20
Meghalaya	249	-30	17.2	-0.5	940	5	532	-10
Maharashtra	178	50	22.1	-0.5	1131	1	603	12

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Manipur	251	-32	13.5	-0.7	950	5	562	-5
Madhya Pradesh	74	35	19.0	-0.5	1050	1	422	12
Mizoram	267	-27	16.4	-0.5	975	0	601	-2
Nagaland	282	-35	12.8	-1.1	912	9	570	-9
Orissa	188	-2	20.5	0.2	1058	-1	591	6
Puducherry	741	32	25.8	0.1	1141	0	1213	14
Punjab	202	182	16.1	-0.9	820	-4	483	55
Rajasthan	112	405	19.4	-0.5	970	-3	448	51
Sikkim	227	306	9.0	-0.5	1016	-3	343	41
Tamil Nadu	858	24	23.8	0.1	1065	-1	1185	11
Tripura	249	-30	19.0	-0.3	965	1	599	-1
Uttarakhand	174	144	9.8	-1.2	909	-4	374	43
Uttar Pradesh	176	209	17.3	-1.1	917	-4	480	46
West Bengal	260	55	19.9	-0.5	976	-2	591	15

Table A.8 Kazakhstan, October 2021 – January 2022 agroclimatic indicators and biomass (by oblast)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Akmolinskaya	148	0	-5.0	1.6	292	-2	233	0
Karagandinskaya	124	-2	-5.5	1.2	360	-1	221	-4
Kustanayskaya	149	-2	-4.6	1.5	268	0	252	3
Pavlodarskaya	132	2	-5.0	1.9	261	-6	234	2
Severo kazachstanskaya	147	-10	-5.2	1.8	221	-4	230	3
Vostochno kazachstanskaya	208	0	-5.1	1.2	389	-1	228	-1
Zapadno kazachstanskaya	252	40	-0.5	1.7	270	-6	355	11

Table A.9 Russia, October 2021 – January 2022 agroclimatic indicators and biomass (by oblast, kray and republic)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Bashkortostan Rep.	262	3	-4.5	1.3	189	0	245	5
Chelyabinskaya Oblast	144	-12	-5.3	1.3	217	1	233	4
Gorodovikovsk	224	-1	4.3	0.7	349	2	509	7
Krasnodarskiy Kray	280	2	-0.4	1.4	307	2	346	8
Kurganskaya Oblast	162	-9	-5.3	1.6	180	-2	229	4
Kirovskaya Oblast	333	6	-3.9	0.9	108	-2	254	5
Kurskaya Oblast	258	-6	0.1	0.3	207	5	359	-1

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Lipetskaya Oblast	245	-7	-0.6	0.5	193	2	340	0
Mordoviya Rep.	254	-8	-1.9	0.7	160	-3	303	2
Novosibirskaya Oblast	234	4	-5.7	2.7	162	-13	213	7
Nizhegorodskaya O.	310	6	-2.4	0.6	128	-4	290	2
Orenburgskaya Oblast	238	12	-3.2	1.4	249	-1	280	5
Omskaya Oblast	200	0	-5.4	2.6	151	-14	220	8
Permskaya Oblast	331	11	-4.7	1.6	117	-4	233	8
Penzenskaya Oblast	252	-8	-1.7	0.8	178	-3	307	2
Rostovskaya Oblast	264	12	3.0	0.8	320	3	461	6
Ryazanskaya Oblast	303	10	-1.2	0.4	161	2	319	-1
Stavropolskiy Kray	216	-9	4.0	0.3	373	0	460	-1
Sverdlovskaya Oblast	210	-1	-5.2	2.0	145	2	225	9
Samarskaya Oblast	279	13	-2.3	1.2	191	-6	299	4
Saratovskaya Oblast	277	18	-0.8	1.2	228	-4	339	6
Tambovskaya Oblast	251	-7	-0.8	0.7	190	-2	336	1
Tyumenskaya Oblast	211	2	-5.3	2.4	138	-10	223	9
Tatarstan Rep.	281	3	-3.1	1.2	144	-6	275	5
Ulyanovskaya Oblast	243	-2	-2.3	0.9	173	-4	296	4
Udmurtiya Rep.	327	10	-4.0	1.3	116	-8	251	6
Volgogradskaya O.	268	27	1.0	1.2	277	-1	398	8
Voronezhskaya Oblast	225	-10	0.2	0.6	234	1	370	2

Table A.10 United States, October 2021 – January 2022 agroclimatic indicators and biomass (by state)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Arkansas	395	-16	10.8	1.7	623	5	780	9
California	386	19	9.7	-0.3	646	-1	472	0
Idaho	347	6	0.0	0.8	453	-1	377	7
Indiana	389	-4	5.3	0.9	479	2	582	7
Illinois	352	-3	5.1	0.9	490	1	579	9
Iowa	232	-9	2.4	0.9	495	4	459	6
Kansas	118	-37	8.0	2.2	671	8	306	-24
Michigan	301	-15	1.7	0.5	353	1	447	7
Minnesota	266	17	-1.8	0.6	376	0	361	11

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Missouri	318	-5	7.1	1.5	575	5	626	12
Montana	164	-12	-0.3	1.3	437	1	326	3
Nebraska	99	-37	5.0	2.3	593	5	278	-24
North Dakota	231	53	-1.7	0.7	398	1	363	21
Ohio	360	-8	4.9	0.8	466	4	566	7
Oklahoma	189	-28	11.0	2.1	702	7	423	-17
Oregon	543	5	4.1	0.2	398	-4	468	2
South Dakota	163	3	1.7	1.5	499	3	359	7
Texas	196	-27	14.7	1.9	767	6	456	-14
Washington	677	20	3.0	0.1	314	-4	442	1
Wisconsin	223	-21	-0.4	0.5	399	3	397	8

Table A.11 China, October 2021 – January 2022 agroclimatic indicators and biomass (by province)

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m ²)	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m ²)	BIOMSS 15YA Departure (%)
Anhui	213	-1	9.2	0.6	652	1	464	0
Chongqing	294	7	8.7	0.0	543	-2	600	9
Fujian	365	-6	12.8	0.3	616	-3	729	9
Gansu	175	62	-0.9	-0.2	691	-3	269	11
Guangdong	373	-4	16.2	0.3	747	2	700	1
Guangxi	391	6	13.8	-0.1	626	-5	746	8
Guizhou	396	12	8.7	0.0	459	-7	689	5
Hebei	128	171	-0.6	-0.1	600	-4	254	59
Heilongjiang	131	37	-8.3	1.3	411	-6	215	20
Henan	126	14	6.9	0.0	629	-6	345	17
Hubei	223	1	8.3	0.3	627	-3	483	3
Hunan	358	12	10.0	0.1	580	-6	697	15
Jiangsu	214	13	9.5	0.7	672	4	464	5
Jiangxi	306	-12	11.3	0.4	620	-3	652	5
Jilin	147	46	-5.8	0.7	499	-5	241	20
Liaoning	167	103	-2.2	0.2	552	-4	274	31
Inner Mongolia	60	16	-7.6	0.7	529	-2	150	11
Ningxia	86	53	-1.6	-0.5	716	-1	194	7
Shaanxi	198	82	2.8	0.0	644	-5	334	25
Shandong	116	57	5.8	0.4	636	-3	303	28
Shanxi	148	162	-0.8	0.0	642	-4	259	42
Sichuan	327	27	6.2	-0.1	561	-9	504	8
Yunnan	361	21	10.1	0.2	719	-3	651	11
Zhejiang	405	10	10.4	0.5	616	1	693	6