

Annex A. Agroclimatic indicators and BIOMSS

Table A.1. October 2018 – January 2019 agroclimatic indicators and biomass by global Monitoring and Reporting Unit

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 5YA dep. (%)
C01	Equatorial central Africa	522	-1	25.5	0	1224	4	1503	-1
C02	East African highlands	151	-13	20.2	0.5	1328	1	581	-4
C03	Gulf of Guinea	285	10	26.9	-0.3	1245	2	731	5
C04	Horn of Africa	268	-13	24.4	-0.6	1284	0	855	-8
C05	Madagascar (main)	756	1	24.5	-0.4	1358	3	1649	3
C06	Southwest Madagascar	365	-6	24.7	-0.9	1415	2	1082	-3
C07	North Africa-Mediterranean	158	6	12.7	-0.7	715	1	535	6
C08	Sahel	59	8	27.5	-0.3	1245	0	192	8
C09	Southern Africa	403	-11	24.9	-0.4	1442	5	1091	-14
C10	Western Cape (South Africa)	44	-58	19	0.3	1592	5	203	-52
C11	British Columbia to Colorado	329	-1	-3	0.6	434	0	516	2
C12	Northern Great Plains	251	25	-0.1	-0.4	453	-6	614	0
C13	Corn Belt	458	36	1.1	-1.1	394	-7	743	-8
C14	Cotton Belt to Mexican Nordeste	527	54	11.4	-0.7	611	-8	1203	26
C15	Sub-boreal America	207	-6	-8	-0.2	244	2	352	-15
C16	West Coast (North America)	287	4	7.5	0.5	542	2	770	15
C17	Sierra Madre	169	43	14.8	-0.4	1000	-4	609	46
C18	SW U.S. and N. Mexican highlands	152	35	7.9	-0.4	751	-4	549	32
C19	Northern South and Central America	362	-18	25.6	-0.3	1070	4	888	-15
C20	Caribbean	204	-36	24.6	-0.4	1050	6	654	-25
C21	Central-northern Andes	593	-3	16.7	0	1139	-2	1259	-1
C22	Nordeste (Brazil)	311	13	28.3	0.2	1356	1	880	15
C23	Central eastern Brazil	684	-7	26.2	-0.5	1318	6	1782	-3
C24	Amazon	851	1	27.2	-0.9	1152	2	1971	1
C25	Central-north Argentina	456	5	24.6	-1.7	1278	-9	1337	1
C26	Pampas	760	18	22.5	-0.7	1365	-4	1715	7
C27	Western Patagonia	100	11	12.2	-1.2	1466	0	450	16
C28	Semi-arid Southern Cone	153	22	17.6	-1.5	1609	-3	521	13
C29	Caucasus	399	23	4.7	1	520	-7	896	14

C30	Pamir area	235	6	2.3	-0.2	691	-5	551	9
C31	Western Asia	192	26	7.2	0.2	649	-4	551	19
C32	Gansu-Xinjiang (China)	150	25	-4.8	-0.9	598	0	355	4
C33	Hainan (China)	170	-55	22.2	0.5	805	7	484	-21
C34	Huanghuaihai (China)	109	10	6.2	0.1	659	1	409	3
C35	Inner Mongolia (China)	47	-42	-5.2	0.7	602	3	220	-31
C36	Loess region (China)	87	-18	1.2	-0.3	719	2	337	-18
C37	Lower Yangtze (China)	222	1	11.1	-0.4	555	-15	785	11
C38	Northeast China	69	-34	-5.7	2.4	504	4	309	-13
C39	Qinghai-Tibet (China)	100	-36	0.7	-0.7	895	1	307	-22
C40	Southern China	193	21	16.3	-0.2	681	-8	697	36
C41	Southwest China	129	-18	8.9	-0.5	549	-7	494	-7
C42	Taiwan (China)	154	-7	18.9	0.3	845	5	640	19
C43	East Asia	133	-11	-0.3	0.9	512	3	470	-3
C44	Southern Himalayas	124	-12	17.9	0	935	1	396	1
C45	Southern Asia	165	-29	24.1	0.1	1117	2	424	-23
C46	Southern Japan and Korea	173	-47	9.5	0.3	603	5	687	-33
C47	Southern Mongolia	175	83	-10.2	-0.1	497	-1	388	22
C48	Punjab to Gujarat	33	-4	21	-0.3	1013	1	134	11
C49	Maritime Southeast Asia	1081	-5	25.6	-0.3	1106	5	2118	-2
C50	Mainland Southeast Asia	379	-2	25.6	0.3	1070	4	928	15
C51	Eastern Siberia	197	-8	-9.7	1.1	275	1	356	12
C52	Eastern Central Asia	82	-2	-13.9	2	372	0	245	18
C53	Northern Australia	657	3	27.2	-0.3	1372	0	1353	-6
C54	Queensland to Victoria	202	-14	21.9	0.9	1486	1	777	-6
C55	Nullarbor to Darling	76	-23	19.1	-0.7	1509	0	353	-16
C56	New Zealand	207	36	14.3	0.5	1301	4	723	12
C57	Boreal Eurasia	321	-15	-4	-0.6	130	5	514	3
C58	Ukraine to Ural mountains	245	-11	-1.4	-0.5	201	9	633	-2
C59	Mediterranean Europe and Turkey	315	19	8.8	-0.4	526	-1	923	12
C60	W. Europe (non Mediterranean)	306	0	5.6	-0.3	304	3	955	7
C61	Boreal America	439	12	-5.9	2.2	130	-4	430	17
C62	Ural to Altai mountains	189	-1	-8.2	-0.2	273	3	397	-3
C63	Australian desert	126	9	21.6	-0.4	1547	-2	558	9
C64	Sahara to Afghan deserts	109	69	17.9	0	962	-2	318	56
C65	Sub-arctic America	92	-16	-18.1	0.1	39	10	169	18

Table A.2. October 2018 – January 2019 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 5YA Departure (%)
ARG	Argentina	638	29	21.6	-1.3	1355	-8	1487	8
AUS	Australia	233	-7	22.0	0.6	1478	1	724	-7
BGD	Bangladesh	153	-38	22.4	-0.2	994	1	468	-18
BRA	Brazil	721	-1	26.2	-0.5	1283	4	1753	1
KHM	Cambodia	344	-20	27.6	0.2	1133	6	942	-2
CAN	Canada	283	6	-5.6	-0.2	279	-1	412	-11
CHN	China	145	-7	6.8	0.0	601	-6	459	-1
EGY	Egypt	45	-3	17.6	-0.5	775	0	185	23
ETH	Ethiopia	141	-5	20.9	0.9	1348	2	548	3
FRA	France	267	1	7.4	-1.6	344	3	934	5
DEU	Germany	288	-6	5.4	0.7	245	6	1009	4
IND	India	97	-35	21.9	0.1	1063	2	276	-24
IDN	Indonesia	1106	-1	25.7	-0.4	1130	4	2170	-1
IRN	Iran	316	38	8.7	1.0	722	-7	762	26
KAZ	Kazakhstan	168	2	-6.5	-0.4	358	1	443	-3
MEX	Mexico	226	23	18.7	-0.5	967	-3	648	36
MMR	Myanmar	278	22	22.5	-0.1	1006	-1	782	24
NGA	Nigeria	229	16	26.9	-0.3	1263	1	502	13
PAK	Pakistan	92	35	14.3	-0.5	876	-2	231	27
PHL	Philippines	751	-25	25.5	-0.2	1068	7	1442	-18
POL	Poland	271	-1	3.7	0.6	224	8	921	6
ROU	Romania	305	35	3.4	0.2	382	1	893	18
RUS	Russia	217	-10	-5.3	0.0	228	5	471	0
ZAF	South Africa	321	-15	21.1	0.1	1567	8	942	-19
THA	Thailand	395	10	25.9	0.5	1099	4	890	20
TUR	Turkey	421	26	6.2	0.9	533	-8	1010	17
GBR	United Kingdom	417	-13	6.9	-1.4	173	3	1113	1
UKR	Ukraine	257	19	1.6	-0.5	288	7	801	8
USA	United States	417	40	5.1	-0.5	518	-7	816	10
UZB	Uzbekistan	197	-12	5.0	0.5	578	-5	607	1
VNM	Vietnam	412	-8	22.5	0.5	856	4	1076	23
AFG	Afghanistan	150	-6	4.6	-0.7	765	-3	460	1
AGO	Angola	423	-21	26.0	1.4	1326	9	1269	-16
BLR	Belarus	260	-8	0.4	-0.3	182	13	717	-3
HUN	Hungary	212	22	5.3	0.7	356	4	814	16
ITA	Italy	333	22	9.1	0.2	456	1	948	12
KEN	Kenya	238	-21	22.3	-0.5	1300	1	810	-13
LKA	Sri Lanka	917	2	25.8	-0.6	1095	3	1790	2
MAR	Morocco	151	-17	12.4	-0.5	774	2	505	-12
MNG	Mongolia	68	-15	-13.5	1.6	461	1	239	11
MOZ	Mozambique	603	12	26.3	-1.4	1318	0	1405	8
ZMB	Zambia	489	-14	25.2	-0.7	1340	2	1357	-14

Table A.3. Argentina, October 2018 – January 2019 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 5YA Departure (%)
Buenos Aires	547	26	18.7	-1.6	1475	-4	1482	10
Chaco	597	7	25.2	-1	1210	-11	1612	4
Cordoba	524	24	21.4	-1.4	1407	-8	1483	8
Corrientes	1230	48	24.2	-0.8	1268	-10	1966	8
Entre Rios	992	78	22	-1.3	1346	-9	1757	14
La Pampa	506	28	20	-1.5	1498	-5	1583	20
Misiones	905	-4	24.1	-0.5	1369	-1	2127	5

Santiago Del Estero	490	21	24.4	-1.6	1214	-13	1436	12
San Luis	449	16	20.5	-1.5	1451	-7	1456	11
Salta	457	-5	23.4	-1.7	1166	-14	1303	-2
Santa Fe	807	51	22.8	-1.1	1296	-11	1736	11
Tucuman	306	-23	22.5	-1.7	1290	-12	1007	-16

Table A.4. Australia, October 2018 – January 2019 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 5YA Departure (%)
New South Wales	219	-10	22.9	1.3	1514	0	812	-6
South Australia	134	25	19.5	0.2	1452	-1	637	24
Victoria	166	12	18.7	0.8	1409	1	735	11
W. Australia	99	-25	19.8	-0.6	1512	0	379	-16

Table A.5. Brazil, October 2018 – January 2019 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 5YA Departure (%)
Ceara	303	67	28.8	0.1	1380	0	915	79
Goiás	726	-9	25.7	-0.5	1353	8	2045	-1
Mato Grosso Do Sul	611	-16	27.2	-0.3	1438	10	1759	-10
Mato Grosso	927	-5	26.5	-1.2	1219	7	2279	0
Minas Gerais	696	-13	24.9	0.1	1295	4	1744	-6
Parana	667	-14	23.9	0.2	1388	6	1834	-5
Rio Grande Do Sul	880	13	23.1	0	1362	-2	1914	10
Santa Catarina	860	2	21.7	0.4	1279	1	1921	-1
Sao Paulo	644	-14	25.1	0.3	1334	7	1887	-2

Table A.6. Canada, October 2018 – January 2019 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 5YA Departure (%)
Alberta	136	-13	-5.1	1.5	275	2	425	-2
Manitoba	174	-14	-8.4	-1.2	277	-2	351	-23
Saskatchewan	132	-20	-7.2	0.1	285	0	377	-13

Table A.7. India, October 2018 – January 2019 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 5YA Departure (%)
Andhra Pradesh	82	-63	25.3	0	1128	1	306	-43
Assam	93	-54	22	0.2	909	3	384	-31
Bihar	40	-46	20.8	-0.8	992	2	180	-28
Chhattisgarh	42	-59	22.2	0.1	1092	1	187	-44
Daman and Diu	46	-29	25	-0.7	1197	4	164	-21

	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 5YA Departure (%)
Delhi	44	3	18.9	-0.3	921	-1	215	36
Gujarat	34	-23	24.8	0.3	1135	3	150	-1
Goa	208	2	25.2	0.4	1218	1	560	4
Himachal Pradesh	153	1	3.8	0.5	864	-4	358	2
Haryana	66	23	17.9	-0.6	911	0	250	29
Jharkhand	41	-56	20.4	-0.4	1023	0	176	-46
Kerala	510	-4	25.1	-0.4	1136	0	1002	-11
Karnataka	160	-26	24.2	-0.1	1174	3	445	-20
Meghalaya	67	-74	18.8	0.7	923	4	311	-43
Maharashtra	59	-44	24.4	0.6	1175	3	183	-40
Manipur	110	-45	16.9	0.7	972	8	395	-34
Madhya Pradesh	25	-51	21.7	0.3	1087	4	110	-45
Mizoram	241	-16	18.1	-0.2	1005	3	663	-4
Nagaland	61	-68	16.2	0.5	865	4	296	-51
Orissa	135	-21	23.1	0.1	1077	1	429	-9
Puducherry	852	-1	26.5	-0.5	1198	8	1459	10
Punjab	104	53	17.4	0.3	851	-1	352	32
Rajasthan	12	-39	20.7	-0.4	1024	2	56	-24
Sikkim	90	-53	4.7	-0.4	1092	4	286	-30
Tamil Nadu	432	-19	26.1	-0.4	1131	6	1062	-5
Tripura	201	-38	21.4	-0.4	967	0	640	-3
Uttarakhand	165	3	9.4	1	949	0	391	5
Uttar Pradesh	53	-26	20	-0.1	984	2	200	-17
West Bengal	79	-55	22.7	0.1	1017	1	291	-34

Table A.8. Kazakhstan, October 2018 – January 2019 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 5YA Departure (%)
Akmolinskaya	157	11	-8.6	-0.5	307	1	385	-7
Karagandinskaya	143	14	-8.6	-0.8	376	0	372	-9
Kustanayskaya	123	-17	-7.6	-0.5	285	5	429	-3
Pavlodarskaya	124	4	-8.4	-0.3	293	4	400	-4
Severo kazachstanskaya	152	-3	-8.2	-0.1	244	5	395	-4
Vostochno kazachstanskaya	194	-1	-9.9	-0.7	403	1	357	-8
Zapadno kazachstanskaya	206	12	-3.6	-0.8	310	7	563	-5

Table A.9. Russia, October 2018 – January 2019 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 5YA Departure (%)
Bashkortostan Rep.	201	-20	-6.3	-0.3	195	2	429	-5
Chelyabinskaya Oblast	136	-13	-7.2	-0.3	223	4	417	-2

	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 5YA Departure (%)
Gorodovikovsk	393	44	3.6	0	320	-3	927	8
Krasnodarskiy Kray	256	5	-3.2	0.2	291	2	543	9
Kurganskaya Oblast	152	-12	-7.6	0.1	193	5	412	-1
Kirovskaya Oblast	268	-14	-5	0.1	105	-7	457	-4
Kurskaya Oblast	221	-21	-1.1	-0.9	226	16	647	-7
Lipetskaya Oblast	207	-24	-2.2	-1.2	214	14	599	-9
Mordoviya Rep.	185	-33	-3.7	-1	186	13	530	-8
Novosibirskaya Oblast	223	3	-10	-0.2	200	5	355	-2
Nizhegorodskaya O.	212	-29	-3.5	-0.5	141	5	528	-7
Orenburgskaya Oblast	176	-16	-6	-0.9	273	9	461	-7
Omskaya Oblast	205	6	-9.3	0.1	179	1	363	-3
Permskaya Oblast	280	-4	-6.5	0.4	111	-10	413	-2
Penzenskaya Oblast	206	-25	-3.8	-1.1	205	12	532	-9
Rostovskaya Oblast	286	42	1.7	-0.3	308	1	805	9
Ryazanskaya Oblast	200	-30	-2.9	-1.1	186	18	564	-9
Stavropolskiy Kray	264	21	4.2	0.3	357	-1	900	16
Sverdlovskaya Oblast	195	-6	-7.1	0.6	137	-3	407	1
Samarskaya Oblast	207	-14	-4.8	-1	226	12	508	-6
Saratovskaya Oblast	240	5	-3.3	-1.2	261	11	574	-6
Tambovskaya Oblast	204	-27	-2.8	-1.2	211	9	572	-10
Tyumenskaya Oblast	197	-3	-8.4	0.4	155	1	382	-1
Tatarstan Rep.	206	-23	-4.7	-0.6	170	10	489	-7
Ulyanovskaya Oblast	207	-15	-4.4	-1.1	207	15	517	-8
Udmurtiya Rep.	253	-13	-5.4	0.1	121	-5	450	-4
Volgogradskaya O.	301	37	-0.8	-0.8	285	3	683	-4
Voronezhskaya Oblast	229	-12	-1.2	-0.7	259	12	649	-6

Table A.10. United States, October 2018 – January 2019 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 5YA Departure (%)
Arkansas	704	42	9.2	-0.8	540	-10	1324	5
California	219	13	8.7	0.6	651	0	688	23
Idaho	290	10	-1.9	0	466	2	597	2
Indiana	445	28	4	-0.6	443	-6	953	-4
Illinois	414	26	3.4	-1	466	-4	915	-5

	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 5YA Departure (%)
Iowa	399	57	0.2	-1.1	446	-7	724	-7
Kansas	277	71	4.2	-1.1	556	-11	748	30
Michigan	367	25	0.1	-1.1	321	-9	703	-9
Minnesota	280	11	-4.2	-1.4	353	-7	503	-17
Missouri	461	31	5	-1	500	-9	1017	3
Montana	258	16	-1.2	0.9	423	-2	615	1
Nebraska	216	20	1.3	-0.6	533	-6	717	6
North Dakota	233	13	-4.4	-0.5	370	-6	491	-11
Ohio	442	39	3.9	-0.5	416	-7	946	-3
Oklahoma	386	51	7.8	-1.3	582	-12	984	20
Oregon	276	-3	3.8	0.4	421	4	808	6
South Dakota	235	17	-1.1	-0.7	465	-4	636	-4
Texas	436	66	12.1	-1.3	641	-12	1028	42
Washington	346	4	3	0.8	353	8	840	11
Wisconsin	350	22	-1.8	-1.1	364	-7	612	-12

Table A.11. China, October 2018 – January 2019 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 5YA Departure (%)
Anhui	191	-8	9.6	0	602	-8	667	-8
Chongqing	134	-32	8.2	-1	492	-13	562	-11
Fujian	248	24	13.8	0.3	561	-13	915	50
Gansu	97	-1	-0.3	-0.7	714	0	325	-9
Guangdong	162	-2	17	0	655	-11	639	29
Guangxi	159	-15	15	-0.8	536	-21	614	11
Guizhou	124	-27	9.5	-0.6	389	-21	491	-11
Hebei	35	-45	0.3	0	646	3	172	-38
Heilongjiang	73	-32	-7.2	3	454	3	323	-4
Henan	87	-31	7.5	0	665	-2	391	-25
Hubei	179	-8	8.6	-0.4	588	-11	676	-1
Hunan	213	-2	10	-1	504	-20	774	12
Jiangsu	188	0	9.2	0.1	621	-5	698	1
Jiangxi	262	6	11.7	-0.5	534	-18	833	12
Jilin	66	-38	-4.6	2.1	551	5	305	-23
Liaoning	59	-38	-1	1	603	5	272	-34
Inner Mongolia	51	-38	-6.9	1.5	553	3	239	-21
Ningxia	109	47	-1.3	-0.7	718	-1	338	18
Shaanxi	96	-36	2.9	-0.5	704	2	417	-22
Shandong	159	55	6.1	0.2	667	1	549	34
Shanxi	66	-23	-0.7	-0.1	687	3	261	-27
Sichuan	83	-31	7.4	-0.7	610	-2	335	-21
Yunnan	211	50	12.1	-0.1	755	3	652	35
Zhejiang	256	0	11	0.1	538	-13	962	20