

Annex A. Agroclimatic indicators and BIOMSS

Table A.1 January - April 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	500	0	26.3	0.4	1238	5	1527	1
C02	East African highlands	192	-10	21.6	0.7	1384	3	677	-9
C03	Gulf of Guinea	206	0	28.6	-0.4	1314	1	675	-1
C04	Horn of Africa	274	-17	25.1	-0.1	1346	6	830	-16
C05	Madagascar (main)	1051	4	25.2	0.1	1187	2	2106	10
C06	Southwest Madagascar	467	5	25.6	-0.3	1216	-1	1271	1
C07	North Africa-Mediterranean	95	-33	11.5	-0.6	983	2	353	-30
C08	Sahel	21	-27	29.3	-0.7	1358	-2	72	-23
C09	Southern Africa	530	4	24.6	0.2	1263	4	1303	-3
C10	Western Cape (South Africa)	98	-14	19.3	-0.2	1284	2	395	-13
C11	British Columbia to Colorado	250	-11	-4.5	-1.5	686	-2	477	-6
C12	Northern Great Plains	232	12	-2.3	-2.3	714	-4	565	-6
C13	Corn Belt	455	34	-0.1	-0.7	635	-5	682	-4
C14	Cotton Belt to Mexican Nordeste	374	6	12.1	-0.2	826	-6	1030	4
C15	Sub-boreal America	203	-7	-10.2	-1.4	544	3	349	-4
C16	West Coast (North America)	301	32	6.4	-0.6	729	-6	798	24
C17	Sierra Madre	49	-37	16.4	0.4	1311	1	224	-25
C18	SW U.S. and N. Mexican highlands	122	24	8.9	-0.3	1019	-5	443	16
C19	Northern South and Central America	167	-33	26.5	-0.1	1195	4	476	-28
C20	Caribbean	169	-4	24.3	-0.1	1138	1	647	13
C21	Central-northern Andes	671	-3	16.8	0.1	1014	-2	1373	1
C22	Nordeste (Brazil)	560	23	28.2	0.5	1313	5	1495	21
C23	Central eastern Brazil	734	-3	26.4	0	1248	6	1819	0
C24	Amazon	1119	-6	27	-0.5	1097	4	2219	-3
C25	Central-north Argentina	541	1	23.9	-1.4	1092	-6	1421	-2
C26	Pampas	676	15	22.7	-0.8	1137	-4	1624	7
C27	Western Patagonia	71	-26	13	-1	1241	4	338	-16
C28	Semi-arid Southern Cone	121	-30	17.9	-1	1312	0	386	-33

C29	Caucasus	249	-5	2.9	-0.1	766	-4	701	-4
C30	Pamir area	208	-9	3	-0.2	848	-7	629	4
C31	Western Asia	218	33	7.1	-0.2	866	-6	658	22
C32	Gansu-Xinjiang (China)	122	61	-1.1	0.7	878	-2	414	36
C33	Hainan (China)	100	-39	23.6	2	1078	17	439	-15
C34	Huanghuaihai (China)	140	34	6.8	0.2	889	-4	539	25
C35	Inner Mongolia (China)	91	25	-2.7	1.6	907	0	381	21
C36	Loess region (China)	115	35	3.4	0.3	969	-2	433	18
C37	Lower Yangtze (China)	494	21	10.7	-0.3	615	-15	1188	8
C38	Northeast China	62	-28	-3.9	3	823	4	304	-12
C39	Qinghai-Tibet (China)	148	-23	2.1	0	1048	-1	392	-9
C40	Southern China	345	43	16.9	0.6	816	0	804	15
C41	Southwest China	183	15	10.3	0.2	777	-3	625	11
C42	Taiwan (China)	264	45	18.4	1.2	1019	7	832	23
C43	East Asia	107	-23	-0.8	1.3	796	3	398	-10
C44	Southern Himalayas	161	3	19.5	-0.1	1121	-1	548	17
C45	Southern Asia	94	-13	26.6	0	1300	1	298	-11
C46	Southern Japan and Korea	341	12	7.5	0.6	820	2	1045	10
C47	Southern Mongolia	181	170	-8.2	-0.2	860	0	524	80
C48	Punjab to Gujarat	59	20	22.3	-1.1	1184	-2	273	28
C49	Maritime Southeast Asia	1012	-8	25.6	-0.4	1126	5	1983	-5
C50	Mainland Southeast Asia	153	-12	27.3	0.6	1240	6	515	-8
C51	Eastern Siberia	136	-27	-9.9	1.3	592	6	316	6
C52	Eastern Central Asia	64	-28	-11.6	2.4	723	3	240	-5
C53	Northern Australia	807	-3	26.7	-0.4	1225	1	1613	-5
C54	Queensland to Victoria	171	-23	22.5	0.9	1258	5	573	-23
C55	Nullarbor to Darling	65	-40	20.6	-0.8	1298	5	322	-31
C56	New Zealand	112	-32	15.3	0.2	1082	9	523	-21
C57	Boreal Eurasia	283	-4	-4	1.1	408	6	496	9
C58	Ukraine to Ural mountains	250	0	-0.4	1.7	442	-1	658	7
C59	Mediterranean Europe and Turkey	204	-5	7.8	-0.1	820	5	671	-6
C60	W. Europe (non Mediterranean)	231	-4	5.5	0.5	586	4	806	0
C61	Boreal America	370	21	-5.4	3.5	419	-5	425	32
C62	Ural to Altai mountains	169	-2	-6.8	1.4	531	-3	438	5
C63	Australian desert	116	-8	22.8	-0.1	1337	4	508	-4
C64	Sahara to Afghan deserts	104	23	17.1	-1.1	1161	-2	358	24
C65	Sub-arctic America	76	-1	-24.5	-1.7	305	-2	62	-34

Table A.2 January - April 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	173	-2	4.9	-1.1	919	-6	606	10
AUS	Australia	554	-6	25.8	1.7	1228	6	1590	-2
BGD	Bangladesh	605	14	21.6	-1.2	1137	-4	1396	1
BRA	Brazil	225	-17	22.6	0.5	1258	4	580	-21
KHM	Cambodia	299	32	24.2	0.3	1174	-1	873	35
CAN	Canada	229	-14	1.9	1.9	455	9	806	13
CHN	China	856	-1	26.3	-0.1	1207	5	1932	3
EGY	Egypt	254	0	-8.1	-1.4	572	2	371	-7
ETH	Ethiopia	255	20	7.7	0.6	789	-4	604	10
FRA	France	265	5	5.5	1.2	516	1	985	9
DEU	Germany	42	-20	15	-1.3	1013	-1	225	8
IND	India	194	5	22.4	0.8	1386	2	698	3
IDN	Indonesia	160	-18	6.8	-0.5	637	6	630	-15
IRN	Iran	324	-15	6.3	0.2	441	6	974	-3
KAZ	Kazakhstan	124	-12	6.1	1	646	4	556	-9
MEX	Mexico	1147	-2	25.7	-0.4	1117	4	2194	-2
MMR	Myanmar	97	-3	24	-0.3	1240	0	324	8
NGA	Nigeria	289	39	6.9	-0.7	956	-5	755	19
PAK	Pakistan	119	-24	8.1	0.1	776	9	495	-19
PHL	Philippines	159	4	-4.9	1.4	632	-4	495	6
POL	Poland	184	-40	23.7	0.1	1395	5	555	-39
ROU	Romania	145	-26	28.8	0	1206	4	550	-17
RUS	Russia	401	-31	27.1	-0.1	1264	4	1000	-23
ZAF	South Africa	99	-39	11.8	0	1051	3	347	-36
THA	Thailand	50	-49	20	0.1	1248	1	231	-29
TUR	Turkey	88	1	24.5	0.3	1295	4	335	1
GBR	United Kingdom	48	-27	-11.1	2.2	815	2	211	-18
UKR	Ukraine	843	27	26.3	-0.6	1182	-1	1603	4
USA	United States	181	9	29.2	-0.3	1324	-1	476	8
UZB	Uzbekistan	153	6	14.7	-1.3	1014	-6	498	27
VNM	Vietnam	325	-49	25.5	-0.5	1198	7	870	-28
AFG	Afghanistan	249	-4	4.1	1.6	492	4	932	12
AGO	Angola	229	12	4	0.8	661	3	768	5
BLR	Belarus	209	-3	-4.1	1.7	481	-1	484	4
HUN	Hungary	177	-12	27.8	0.6	1230	6	565	-10
ITA	Italy	309	-1	4.3	-0.1	790	-3	848	1
KEN	Kenya	209	-4	2.9	1.2	521	-1	755	2
LKA	Sri Lanka	353	19	4.6	-0.7	747	-6	742	3
MAR	Morocco	213	5	7.3	1.4	761	-10	716	9
MNG	Mongolia	167	-6	23.8	1.2	1016	6	600	3
MOZ	Mozambique	375	14	20.9	0.3	1296	5	1161	8
ZMB	Zambia	525	-12	24.3	0	1220	4	1482	-9

Table A.3 Argentina, January - April 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	443	-2	19.5	-1.1	1235	2	1199	-8
Chaco	1131	69	24.5	-1.4	1020	-11	1955	20
Cordoba	520	13	21.1	-1.2	1181	-4	1464	5
Corrientes	904	35	24.1	-1.3	1039	-12	1912	19
Entre Rios	756	24	22.3	-1.2	1112	-7	1578	5
La Pampa	353	-15	20.5	-0.9	1286	2	1055	-17
Misiones	714	2	24.1	-0.8	1142	-4	1946	14
Santiago Del Estero	625	23	23.7	-1.6	1030	-9	1538	7
San Luis	449	11	20.2	-1.1	1222	-2	1372	4
Salta	407	-37	22.7	-1.2	1029	-7	1204	-21
Santa Fe	744	25	22.7	-1.2	1090	-8	1724	11
Tucuman	314	-40	21.8	-1.4	1094	-8	930	-35

Table A.4 Australia, January - April 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	187	-16	23.4	1.2	1293	4	626	-18
South Australia	89	-24	20.5	0.3	1228	3	427	-16
Victoria	95	-33	19.6	0.6	1193	5	430	-29
W. Australia	105	-34	21.3	-0.7	1301	5	381	-27

Table A.5 Brazil, January - April 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	882	44	27.8	-0.1	1287	4	2172	40
Goiias	774	-1	25.7	-0.1	1292	7	2068	4
Mato Grosso Do Sul	665	-5	27.1	-0.1	1263	7	1717	-7
Mato Grosso	1003	-6	27.1	-0.1	1183	7	2333	1
Minas Gerais	577	-6	25.5	0.6	1286	8	1590	1
Parana	626	-2	24.1	0.1	1209	4	1738	0
Rio Grande Do Sul	710	14	23.5	-0.2	1087	-8	1832	12
Santa Catarina	721	8	22.2	0.1	1075	-4	1933	10
Sao Paulo	673	-2	25.2	0.2	1201	6	1830	1

Table A.6 Canada, January - April 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	137	-26	-7.9	-1.9	581	5	432	-4
Manitoba	161	-19	-10.6	-1.7	588	2	348	-7
Saskatchewan	129	-29	-10.0	-1.8	606	7	384	-4

Table A.7 India, January - April 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	27	-55	28.1	-0.1	1317	1	129	-43
Assam	310	-19	22.5	0.4	1057	0	1005	2
Bihar	120	59	22.5	-1.4	1175	-3	536	72
Chhattisgarh	73	6	25.4	-0.2	1251	-1	336	15
Daman and Diu	26	92	24.8	-1.4	1385	1	122	93
Delhi	125	97	20.6	-1.2	1077	-7	598	103
Gujarat	11	6	25.6	-0.6	1330	0	67	21
Goa	9	-60	25.2	-0.4	1428	1	51	-42
Himachal Pradesh	229	8	4.6	-0.2	980	-7	546	6
Haryana	117	20	19.5	-1.2	1077	-5	515	29
Jharkhand	137	96	23.0	-1.0	1179	-4	577	88
Kerala	169	-35	26.7	-0.2	1353	4	536	-27
Karnataka	54	-37	26.4	-0.3	1368	3	222	-24
Meghalaya	414	-14	19.8	1.0	1112	3	1077	7
Maharashtra	18	-53	27.1	0.4	1378	3	91	-45
Manipur	167	-34	18.2	1.0	1178	2	592	-17
Madhya Pradesh	48	-12	24.2	-0.3	1256	0	220	-2
Mizoram	226	2	20.4	0.7	1243	0	669	5
Nagaland	248	-14	17.0	0.8	1112	2	928	5
Orissa	116	41	25.7	-0.4	1216	-2	473	38
Puducherry	51	-41	28.2	141.2	1395	0	233	-15
Punjab	163	30	18.6	-0.4	999	-6	627	25
Rajasthan	34	19	22.5	-1.2	1195	-2	160	22
Sikkim	329	18	5.1	-0.4	1205	-4	558	4
Tamil Nadu	54	-53	28.5	0.3	1357	3	225	-41
Tripura	342	4	23.4	0.3	1182	2	832	2
Uttarakhand	212	15	9.9	-0.3	1090	-5	562	10
Uttar Pradesh	109	47	21.8	-1.0	1148	-3	466	50
West Bengal	204	51	24.4	-0.3	1183	-2	696	43

Table A.8 Kazakhstan, January - April 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 15YA Departure (%)
Akmolinskaya	162	17	-7.4	1.3	574	-7	429	1
Karagandinskaya	138	10	-6.6	1.3	678	-4	451	2
Kustanayskaya	154	-3	-6.9	1.0	539	-5	456	2
Pavlodarskaya	121	6	-7.3	1.2	581	-3	445	3
Severo kazachstanskaya	153	1	-7.5	1.2	511	-3	416	1
Vostochno kazachstanskaya	133	-15	-7.5	1.7	723	1	409	4
Zapadno kazachstanskaya	224	16	-2.9	0.9	577	-1	609	4

Table A.9 Russia, January - April 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 15YA Departure (%)
Bashkortostan Rep.	244	2	-5.3	1.6	450	-3	468	7
Chelyabinskaya Oblast	170	1	-6.3	1.2	479	-3	440	3
Gorodovikovsk	281	-1	4.3	1.2	584	-1	887	6
Krasnodarskiy Kray	154	-24	-1.9	1.5	559	1	476	-4
Kurganskaya Oblast	188	10	-6.8	1.2	423	-6	431	2
Kirovskaya Oblast	287	3	-4.3	1.8	316	-10	478	7
Kurskaya Oblast	279	6	0.6	1.5	428	-5	734	8
Lipetskaya Oblast	240	-8	-0.5	1.7	429	-6	677	9
Mordoviya Rep.	226	-11	-2.3	1.8	426	-1	587	9
Novosibirskaya Oblast	163	-14	-8.4	1.6	447	-2	395	3
Nizhegorodskaya O.	246	-6	-2.2	2.0	367	-6	582	10
Orenburgskaya Oblast	237	7	-5.0	1.2	538	0	507	5
Omskaya Oblast	175	-3	-8.4	1.2	416	-6	386	0
Permskaya Oblast	290	9	-5.8	1.8	326	-10	432	6
Penzenskaya Oblast	255	-1	-2.6	1.5	434	-3	581	7
Rostovskaya Oblast	169	-16	2.5	1.1	558	-1	660	-7
Ryazanskaya Oblast	252	-5	-1.3	1.8	397	-5	633	9
Stavropolskiy Kray	171	-15	4.4	1.1	622	0	678	-10
Sverdlovskaya Oblast	222	7	-6.1	1.7	370	-5	437	6
Samarskaya Oblast	283	19	-3.9	1.4	466	-3	534	6
Saratovskaya Oblast	277	19	-2.5	1.0	498	-3	603	4

	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 (%)
Tambovskaya Oblast	238	-10	-1.4	1.6	434	-6	638	8
Tyumenskaya Oblast	205	8	-7.6	1.4	370	-8	404	2
Tatarstan Rep.	275	11	-3.9	1.7	386	-6	513	7
Ulyanovskaya Oblast	257	10	-3.5	1.5	434	-3	538	6
Udmurtiya Rep.	285	6	-4.7	1.8	335	-8	469	7
Volgogradskaya O.	229	1	0.1	1.0	547	-1	710	3
Voronezhskaya Oblast	274	5	0.2	1.6	474	-7	721	8

Table A.10 United States, January - April 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	618	24	9.7	-0.6	727	-8	1379	5
California	312	67	7.7	-0.3	821	-9	778	37
Idaho	267	10	-2.1	-0.9	695	-3	598	0
Indiana	451	26	3.3	-0.5	639	-8	912	-3
Illinois	375	18	2.6	-1.1	653	-9	880	-3
Iowa	351	28	-1.5	-2.0	654	-7	674	-12
Kansas	218	16	3.7	-1.8	820	-6	681	8
Michigan	362	21	-2.3	-1.1	592	-4	573	-9
Minnesota	316	24	-6.6	-2.6	597	-6	453	-17
Missouri	450	11	4.9	-1.1	706	-8	1028	-1
Montana	196	-3	-5.2	-3.5	698	-2	510	-15
Nebraska	214	22	-0.4	-2.4	768	-7	687	0
North Dakota	252	24	-7.9	-3.0	645	-3	435	-15
Ohio	468	31	3.2	0.0	648	-4	904	1
Oklahoma	245	-16	7.9	-1.5	816	-7	857	2
Oregon	261	16	2.9	-0.9	629	-4	776	7
South Dakota	274	41	-4.4	-3.5	682	-8	542	-16
Texas	230	-4	12.9	-1.0	865	-7	761	9
Washington	222	-12	1.5	-1.5	595	0	742	4
Wisconsin	391	33	-4.0	-1.8	618	-4	528	-13

Table A.11 China, January - April 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	262	-14	9.3	-0.2	730	-11	908	-5
Chongqing	180	-7	9.4	0.0	709	-6	690	1
Fujian	534	27	13.2	0.7	650	-8	1259	13
Gansu	658	69	17.1	0.9	671	-4	1097	11
Guangdong	82	10	2.3	0.4	985	0	337	15
Guangxi	421	39	15.3	-0.1	508	-18	1001	21
Guizhou	266	38	10.6	0.2	584	-8	817	25
Hebei	99	57	2.4	0.5	912	-3	409	39

	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 (%)
Heilongjiang	122	-12	7.9	-0.2	877	-4	527	-7
Henan	61	-24	-5.2	3.6	786	6	301	-8
Hubei	237	-13	8.7	-0.5	734	-9	862	1
Hunan	485	20	9.8	-0.9	548	-17	1206	8
Jiangsu	65	-26	-2.8	2.8	861	4	315	-14
Jiangxi	217	4	8.4	0.1	782	-10	812	6
Jilin	589	17	11.4	-0.4	569	-17	1398	9
Liaoning	64	-31	0.3	1.7	890	1	308	-23
Inner Mongolia	83	9	-4.5	2.3	876	1	358	20
Ningxia	50	21	1.9	0.5	999	-1	226	23
Shaanxi	106	-9	9.4	0.3	867	-1	421	-8
Shandong	175	77	6.4	0.3	905	-3	608	44
Shanxi	118	16	5.1	0.2	935	-1	478	13
Sichuan	135	66	1.7	0.4	942	-2	489	32
Yunnan	149	42	13.8	0.4	1103	6	505	23
Zhejiang	500	26	10.2	0.3	630	-16	1370	21