

## Annex A. Agroclimatic indicators and BIOMSS

**Table A.1 Oct 2019 - Jan 2020 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 <sup>2</sup> )	RADPAR 15YA dep. (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA dep. (%)
C01	Equatorial central Africa	943	3	22.7	-0.4	1192	0	652	-7
C02	East African highlands	396	97	17.4	-0.3	1247	-5	450	4
C03	Gulf of Guinea	306	38	25.0	-0.3	1221	0	444	-12
C04	Horn of Africa	691	84	22.4	-0.5	1211	-6	704	1
C05	Madagascar (main)	1051	19	23.1	0.4	1332	1	806	-3
C06	Southwest Madagascar	240	-37	27.2	1.0	1515	9	901	9
C07	North Africa-Mediterranean	162	-20	11.4	-0.2	737	4	212	-12
C08	Sahel	150	230	24.9	-0.7	1212	-3	233	14
C09	Southern Africa	591	16	23.9	0.3	1397	2	846	3
C10	Western Cape (South Africa)	160	9	17.8	-0.3	1526	0	709	-4
C11	British Columbia to Colorado	343	-8	-3.3	-0.6	439	1	60	-8
C12	Northern Great Plains	218	17	0.3	-0.9	461	-4	80	-10
C13	Corn Belt	473	17	2.2	0.0	402	-5	79	-6
C14	Cotton Belt to Mexican Nordeste	456	25	12.0	0.5	633	-5	235	-1
C15	Sub-boreal America	207	-9	-6.6	-0.3	237	-1	29	-5
C16	West Coast (North America)	451	-14	8.2	-0.2	549	3	109	-18
C17	Sierra Madre	465	106	14.9	0.1	991	-5	339	5
C18	SW U.S. and N. Mexican highlands	163	20	8.6	-0.1	775	-1	185	2
C19	Northern South and Central America	693	0	23.0	0.3	1073	4	602	-2
C20	Caribbean	410	9	23.6	0.1	1042	4	645	1
C21	Central-northern Andes	863	-3	14.2	-0.1	1132	-2	414	-10
C22	Nordeste (Brazil)	270	12	26.6	0.4	1383	3	829	-1
C23	Central eastern Brazil	930	0	24.9	0.4	1299	4	840	1
C24	Amazon	1002	-2	25.4	-0.2	1197	5	791	3
C25	Central-north Argentina	581	21	24.1	-0.5	1383	-1	874	-2
C26	Pampas	520	-3	22.0	0.0	1401	-1	822	-2
C27	Western Patagonia	248	-23	12.6	0.3	1499	2	436	0
C28	Semi-arid Southern Cone	197	30	18.8	0.1	1626	-1	660	2
C29	Caucasus	248	-18	4.7	0.9	583	5	126	5

C30	Pamir area	261	30	1.8	-0.9	681	-6	129	8
C31	Western Asia	156	13	7.6	0.4	662	-2	168	29
C32	Gansu-Xinjiang (China)	67	7	-2.7	0.5	583	-3	85	4
C33	Hainan (China)	249	-55	21.3	0.8	873	16	510	16
C34	Huanghuaihai (China)	105	37	6.8	1.2	615	-7	151	7
C35	Inner Mongolia (China)	57	21	-5.4	0.7	578	-2	82	7
C36	Loess region (China)	99	37	1.6	0.8	661	-7	115	-5
C37	Lower Yangtze (China)	250	-17	11.7	1.2	658	2	227	7
C38	Northeast China	88	-3	-6.9	0.7	490	0	67	7
C39	Qinghai-Tibet (China)	278	39	0.0	-0.1	819	-8	116	-11
C40	Southern China	234	-31	15.5	0.8	813	11	301	-3
C41	Southwest China	336	25	8.5	0.6	551	-7	149	-12
C42	Taiwan (China)	178	-51	20.3	0.6	888	10	377	8
C43	East Asia	344	9	-0.2	1.0	491	-2	86	1
C44	Southern Himalayas	250	27	15.7	-0.4	898	-3	291	12
C45	Southern Asia	477	59	22.0	-0.1	1036	-5	497	18
C46	Southern Japan and Korea	566	18	10.2	1.5	570	-2	185	6
C47	Southern Mongolia	24	-4	-7.7	1.2	498	0	36	-29
C48	Punjab to Gujarat	136	345	19.7	-0.9	931	-7	369	175
C49	Maritime Southeast Asia	1291	-9	24.1	0.2	1152	9	739	6
C50	Mainland Southeast Asia	270	-40	22.9	0.3	1133	10	535	-5
C51	Eastern Siberia	229	-9	-8.8	0.9	282	3	33	9
C52	Eastern Central Asia	73	-1	-13.5	0.1	376	1	34	5
C53	Northern Australia	432	-46	26.8	0.5	1503	10	872	-2
C54	Queensland to Victoria	141	-44	21.4	0.6	1561	7	779	-1
C55	Nullarbor to Darling	48	-57	20.2	0.8	1618	7	813	8
C56	New Zealand	257	-25	13.5	0.5	1357	8	494	7
C57	Boreal Eurasia	421	12	-2.1	1.1	121	-3	18	-1
C58	Ukraine to Ural mountains	254	-8	1.9	2.9	180	-3	39	15
C59	Mediterranean Europe and Turkey	396	7	8.8	0.7	532	-1	156	2
C60	W. Europe (non Mediterranean)	388	7	6.1	1.2	296	0	73	3
C61	Boreal America	462	17	-7.0	-0.5	133	-2	17	3
C62	Ural to Altai mountains	224	18	-4.7	2.2	262	-1	39	11
C63	Australian desert	48	-52	22.2	0.4	1647	5	799	0
C64	Sahara to Afghan deserts	84	85	17.1	0.1	958	-2	272	39
C65	Sub-arctic America	97	-10	-19.5	0.7	36	0	2	5

**Table A.2 Oct 2019 - Jan 2020 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 <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
ARG	Argentina	475	15	21.7	-0.5	1421	-2	817	-1

Country code	Country name	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
AUS	Australia	143	-45	21.8	0.7	1567	7	791	1
BGD	Bangladesh	306	17	20.6	-0.2	942	-5	418	26
BRA	Brazil	888	-2	24.8	0.3	1290	4	824	1
KHM	Cambodia	298	-37	24.7	0.3	1198	12	605	-8
CAN	Canada	312	-3	-4.4	-0.4	276	-1	36	-5
CHN	China	213	-4	6.7	0.8	632	-1	146	0
EGY	Egypt	81	99	17.3	0.5	772	0	174	-14
ETH	Ethiopia	264	72	17.8	-0.3	1283	-3	439	12
FRA	France	542	39	7.4	0.8	300	-10	79	-9
DEU	Germany	317	-5	5.3	1.2	230	0	54	1
IND	India	323	76	19.8	-0.3	973	-7	404	37
IDN	Indonesia	1250	-11	24.4	0.2	1188	9	764	6
IRN	Iran	212	22	7.7	-0.1	754	-3	191	22
KAZ	Kazakhstan	189	15	-3.0	1.8	347	-2	54	8
MEX	Mexico	456	62	18.0	0.4	973	-3	386	2
MMR	Myanmar	259	-19	19.1	0.0	1075	6	364	-17
NGA	Nigeria	282	57	24.6	-0.4	1216	-3	313	-10
PAK	Pakistan	183	149	13.3	-1.3	815	-8	285	113
PHL	Philippines	898	-16	24.0	0.0	1083	8	699	6
POL	Poland	221	-20	5.3	2.2	215	3	51	12
ROU	Romania	160	-35	5.3	2.1	412	9	90	10
RUS	Russia	236	-1	-2.4	2.4	216	-1	36	13
ZAF	South Africa	268	0	20.6	0.2	1500	3	795	2
THA	Thailand	240	-43	23.4	0.6	1170	10	561	-4
TUR	Turkey	301	-14	6.5	1.2	599	4	147	9
GBR	United Kingdom	520	9	6.3	-0.2	163	-3	40	-7
UKR	Ukraine	156	-34	4.6	2.6	294	8	73	26
USA	United States	389	18	5.6	-0.1	533	-4	126	-5
UZB	Uzbekistan	127	-14	5.5	-0.1	617	1	117	-1
VNM	Vietnam	416	-28	20.0	0.4	912	11	481	1
AFG	Afghanistan	194	43	3.8	-0.7	746	-5	147	21
AGO	Angola	1029	20	22.9	-0.2	1240	1	768	2
BLR	Belarus	240	-15	3.9	3.2	155	-5	37	19
HUN	Hungary	197	-16	6.0	1.6	355	4	80	1
ITA	Italy	499	20	8.7	0.8	460	1	143	1
KEN	Kenya	831	122	19.7	-0.6	1210	-6	629	-8
LKA	Sri Lanka	1230	3	24.6	0.2	1158	9	767	7
MAR	Morocco	142	-33	11.4	-0.2	799	5	185	-17
MNG	Mongolia	60	28	-12.7	0.4	450	-1	41	2
MOZ	Mozambique	710	12	25.7	0.3	1332	1	838	-3
ZMB	Zambia	962	12	23.7	0.1	1315	0	786	2

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 July and October.

**Table A.3 Argentina, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by province)**

RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
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Buenos Aires	259	0	19.7	-0.5	1496	-2	799	1
Chaco	650	14	24.3	-0.7	1320	-2	853	0
Cordoba	310	17	22.5	-0.3	1478	-3	894	2
Corrientes	511	-20	23.7	0.1	1377	-1	839	-4
Entre Rios	629	49	21.2	-1.2	1389	-6	810	-5
La Pampa	171	-22	21.7	-0.1	1574	0	917	9
Misiones	706	-10	23.2	0.5	1393	0	872	-1
Santiago Del Estero	606	25	24.0	-1.1	1347	-2	864	-2
San Luis	230	7	21.9	0.1	1550	1	916	8
Salta	1116	39	21.3	-0.5	1294	-3	739	-10
Santa Fe	564	34	22.9	-0.9	1374	-5	838	-2
Tucuman	674	36	20.5	0.2	1346	-7	747	-16

**Table A.4 Australia, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by state)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure(°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
New South Wales	114	-54	22.7	1.0	1633	8	785	-3
South Australia	125	-4	19.4	-0.3	1479	1	777	5
Victoria	192	-17	17.0	-0.4	1392	-1	674	-1
W. Australia	71	-50	21.0	0.8	1614	7	803	6

**Table A.5 Brazil, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by state)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Ceara	240	66	27.7	0.0	1401	1	895	8
Goiias	1087	-5	24.8	0.6	1337	5	865	4
Mato Grosso Do Sul	788	-12	26.5	0.7	1355	3	918	3
Mato Grosso	1173	-3	25.4	0.0	1230	7	824	5
Minas Gerais	1272	13	22.6	0.4	1291	3	776	-3
Parana	840	-7	22.4	0.8	1365	4	821	1
Rio Grande Do Sul	478	-25	21.9	0.7	1389	0	787	-6
Santa Catarina	736	-6	19.7	0.5	1294	3	681	-4
Sao Paulo	1046	-8	23.4	0.5	1333	6	841	4

**Table A.6 Canada, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by province)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Alberta	145	-5	-5.7	-1.0	267	-1	35	-8
Manitoba	217	9	-5.9	-0.3	248	-12	30	-22
Saskatchewan	129	-19	-5.9	-0.7	277	-2	36	-7

**Table A.7 India, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by state)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Andhra Pradesh	438	70	22.9	0.1	1056	-5	551	9
Assam	416	43	17.7	-0.1	809	-9	362	-7
Bihar	112	7	18.5	-0.7	899	-8	291	14
Chhattisgarh	182	40	19.8	0.1	1034	-4	354	22
Daman and Diu	79	98	25.7	-0.2	1098	-5	469	110
Delhi	147	370	17.2	-0.8	845	-10	269	60
Gujarat	145	351	23.6	-0.7	1055	-4	434	179
Goa	494	113	26.6	-0.1	1145	-5	550	32
Himachal Pradesh	307	120	6.6	-1.3	826	-8	162	40
Haryana	134	385	17.1	-0.8	844	-8	289	88
Jharkhand	243	89	17.8	-0.3	958	-7	338	27
Kerala	994	34	25.2	0.2	1131	-1	691	7
Karnataka	622	93	22.6	0.0	1057	-8	540	5
Meghalaya	428	6	17.2	0.2	828	-8	339	3
Maharashtra	399	230	22.3	-0.3	1037	-9	452	47
Manipur	430	21	13.4	-0.5	889	-1	279	-9
Madhya Pradesh	184	223	18.8	-0.6	940	-11	357	74
Mizoram	280	-18	15.5	-0.8	1000	3	344	3
Nagaland	698	68	12.9	-0.4	766	-8	270	-13
Orissa	299	41	20.4	0.1	1032	-4	405	14
Puducherry	957	6	25.9	0.1	1201	8	813	13
Punjab	202	290	15.8	-1.4	784	-9	287	53
Rajasthan	107	420	19.3	-0.7	932	-8	371	237
Sikkim	49	-42	7.4	-0.3	1035	-2	130	2
Tamil Nadu	890	20	23.9	-0.1	1096	2	694	2
Tripura	287	-13	19.3	0.1	931	-4	384	13
Uttarakhand	177	179	9.3	-1.2	893	-6	135	13
Uttar Pradesh	123	125	17.7	-0.7	882	-9	276	39
West Bengal	321	70	20.3	-0.3	942	-6	400	30

**Table A.8 Kazakhstan, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by oblast)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Akmolinskaya	224	54	-4.1	2.5	284	-6	45	17
Karagandinskaya	162	31	-4.9	1.9	356	-5	47	3
Kustanayskaya	196	32	-3.6	2.5	266	-2	44	19
Pavlodarskaya	147	21	-4.4	2.5	275	-2	30	-20
Severo kazachstanskaya	193	21	-4.2	2.8	225	-2	35	20
Vostochno kazachstanskaya	237	13	-5.1	1.0	393	-1	46	-4
Zapadno kazachstanskaya	144	-21	0.5	2.7	273	-6	55	17

**Table A.9 Russia, Oct 2019 - Jan 2020 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 <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
<b>Bashkortostan Rep.</b>	263	4	-3.3	2.6	181	-5	29	12
<b>Chelyabinskaya Oblast</b>	170	7	-4.4	2.2	218	3	34	19
<b>Gorodovikovsk</b>	148	-37	5.3	1.9	391	18	103	35
<b>Krasnodarskiy Krai</b>	223	-21	-0.9	1.9	316	11	58	24
<b>Kurganskaya Oblast</b>	184	5	-4.7	2.2	190	4	30	28
<b>Kirovskaya Oblast</b>	407	31	-2.2	2.8	95	-15	15	-5
<b>Kurskaya Oblast</b>	211	-24	2.4	2.9	200	1	43	20
<b>Lipetskaya Oblast</b>	220	-18	1.8	3.1	185	-3	38	17
<b>Mordoviya Rep.</b>	252	-7	0.1	3.0	159	-4	29	12
<b>Novosibirskaya Oblast</b>	266	20	-5.8	2.7	188	0	27	21
<b>Nizhegorodskaya O.</b>	351	19	0.0	3.2	113	-16	20	-5
<b>Orenburgskaya Oblast</b>	218	4	-2.0	2.6	242	-4	43	19
<b>Omskaya Oblast</b>	216	9	-5.2	3.0	178	2	28	29
<b>Permskaya Oblast</b>	348	18	-3.8	2.6	108	-11	16	2
<b>Penzenskaya Oblast</b>	240	-12	0.1	2.8	169	-8	31	6
<b>Rostovskaya Oblast</b>	147	-41	4.3	2.3	343	12	85	31
<b>Ryazanskaya Oblast</b>	278	-1	1.5	3.4	149	-7	30	13
<b>Stavropolskiy Krai</b>	147	-41	4.9	1.4	415	14	103	24
<b>Sverdlovskaya Oblast</b>	227	8	-4.9	2.3	139	0	21	19
<b>Samarskaya Oblast</b>	215	-11	-0.8	2.8	187	-8	34	11
<b>Saratovskaya Oblast</b>	174	-24	0.7	2.8	231	-3	46	15
<b>Tambovskaya Oblast</b>	220	-20	1.4	3.1	185	-5	37	14
<b>Tyumenskaya Oblast</b>	217	6	-5.3	2.5	160	6	25	37
<b>Tatarstan Rep.</b>	249	-6	-1.5	2.8	139	-11	23	1
<b>Ulyanovskaya Oblast</b>	198	-19	-0.6	2.8	173	-5	31	10
<b>Udmurtiya Rep.</b>	338	17	-2.7	2.8	106	-16	16	-7
<b>Volgogradskaya O.</b>	145	-32	2.3	2.6	292	5	65	21
<b>Voronezhskaya Oblast</b>	172	-33	2.2	2.8	230	-1	50	19

**Table A.10 United States, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by state)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Arkansas	583	29	9.2	-0.1	564	-6	175	-5
California	274	-22	9.9	-0.1	671	3	117	-23
Idaho	291	-13	-1.3	-0.7	458	0	71	-6
Indiana	464	14	4.8	0.3	448	-5	110	-3
Illinois	446	24	4.2	-0.2	447	-8	105	-9
Iowa	318	26	1.1	-0.7	448	-6	83	-13
Kansas	216	19	5.4	-0.6	609	-2	143	-3
Michigan	461	26	1.1	-0.1	313	-11	59	-14
Minnesota	319	38	-2.9	-0.7	339	-11	49	-23
Missouri	422	30	5.4	-0.4	518	-6	125	-10
Montana	165	-10	-2.4	-1.1	427	-1	61	-14
Nebraska	185	21	1.7	-1.2	555	-1	104	-8
North Dakota	216	33	-3.6	-1.2	348	-11	48	-23
Ohio	420	7	4.7	0.7	440	-1	106	0
Oklahoma	409	66	8.6	-0.5	624	-5	177	-6
Oregon	439	-19	3.6	-0.3	419	3	81	-1
South Dakota	207	32	-1.2	-1.6	452	-6	71	-20
Texas	293	9	13.1	0.1	703	-3	261	2
Washington	519	-4	2.7	-0.1	331	0	67	0
Wisconsin	373	31	-1.2	-0.3	347	-11	56	-18

**Table A.11 China, Oct 2019 - Jan 2020 agroclimatic indicators and biomass (by province)**

	RAIN Current (mm)	RAIN 15YA Departure (%)	TEMP Current (°C)	TEMP 15YA Departure (°C)	RADPAR Current (MJ/m <sup>2</sup> )	RADPAR 15YA Departure (%)	BIOMSS Current (gDM/m <sup>2</sup> )	BIOMSS 5YA Departure (%)
Anhui	239	16	10.0	1.4	608	-7	180	-1
Chongqing	368	52	9.3	0.6	494	-13	143	-12
Fujian	200	-47	13.4	1.0	743	17	280	16
Gansu	117	6	-0.2	0.6	673	-6	105	-8
Guangdong	170	-53	17.4	1.3	848	17	336	3
Guangxi	285	-17	15.2	1.0	667	0	272	-3
Guizhou	426	23	9.4	0.7	469	-4	142	-7
Hebei	59	35	0.6	0.7	602	-4	112	7
Heilongjiang	88	-4	-8.7	0.8	448	1	56	5
Henan	154	54	8.1	1.1	611	-10	158	3
Hubei	262	35	9.1	1.0	590	-10	167	-9
Hunan	303	4	10.9	1.0	623	0	218	7
Jiangsu	199	7	10.3	1.6	606	-7	190	5
Jiangxi	212	-35	12.4	1.5	692	8	257	16
Jilin	93	-6	-5.6	0.9	533	1	78	8
Liaoning	80	-1	-1.8	0.6	569	-1	102	8
Inner Mongolia	53	11	-7.6	0.6	537	0	70	8
Ningxia	68	27	-0.4	0.5	695	-4	111	-1
Shaanxi	154	50	3.4	0.6	631	-9	119	-10
Shandong	100	48	6.5	1.3	629	-5	154	6
Shanxi	83	50	0.0	0.8	628	-7	105	2
Sichuan	323	29	6.7	0.5	560	-10	131	-18
Yunnan	294	-2	10.0	0.2	780	6	213	-8
Zhejiang	321	-14	10.7	1.0	605	-1	202	-1