

# Annex F. Clusters for 220 unique maize international testing sites using four consecutive monthly environmental variables starting from the 'best bet' planting date.

Several sites have two seasons : ID =1 main season; ID = 2 second season.

Diagnostic / Characteristic	CID	ID	Country	Location	PLANT	LAT	LONG	Z	DL	TMEAN	TDIF	TOTP	ETP	CID	ID	Country	Location	PLANT	LAT	LONG	Z	DL	TMEAN	TDIF	TOTP	ETP		
IDL-hTMEAN-vITDIF-aTOTP Tropical lowland average rainfall humid	90507	1	Indonesia	Muneng	4	-8.3	113.3	13	11.7	25.6	7.6	338	145	91301	1	Taiwan	Po-Tzu-Chia-I	8	23.5	120.2	4	12.4	26.2	8.6	510	175		
	90512	1	Indonesia	Maros	4	-5.0	119.6	52	11.8	27.3	8.1	348	160	91302	1	Taiwan	Taichung	8	24.0	120.7	82	12.4	25.5	8.1	483	175		
	91609	2	Philippines	Ilagan	9	16.5	121.2	278	11.8	25.4	7.5	699	175															
IDL-hTMEAN-vITDIF-aTOTP Tropical lowland average rainfall	4	1	Angola	Catete-Mazozo	3	-9.1	13.7	50	11.9	25.5	7.0	341	116	20518	2	Guatemala	Polochic	10	15.3	-89.8	40	11.4	25.4	8.5	549	102		
	8	1	Angola	Kilombo	10	-8.9	14.7	432	12.3	24.4	8.7	493	120	20615	2	Honduras	La Ceiba	12	15.8	-86.9	22	11.1	24.2	7.4	739	106		
	10	1	Angola	St.Vincente	11	-5.6	12.2	0	12.3	27.0	7.2	422	112	20615	1	Honduras	La Ceiba	6	15.8	-86.9	22	12.9	27.5	7.5	648	121		
	10502	2	Colombia	Turipana	9	8.7	-76.0	50	11.9	26.8	8.0	986	105	20902	1	Panama	Tocumen	5	9.1	-79.4	6	12.5	26.9	6.1	990	103		
	10502	1	Colombia	Turipana	4	8.7	-76.0	50	12.3	27.1	8.2	942	117	20907	1	Panama	Guarare	6	7.8	-80.3	33	12.4	26.2	7.6	714	103		
	10504	2	Colombia	Monteria	9	8.8	-75.8	70	11.9	26.9	8.2	973	106	20911	1	Panama	El Ejido	6	7.9	-80.4	22	12.4	26.5	7.6	695	103		
	10504	1	Colombia	Monteria	4	8.8	-75.8	70	12.3	27.1	8.3	905	118	11029	1	Peru	Iquitos	2	-3.8	-73.3	91	12.1	26.5	9.4	1088	96		
	10516	1	Colombia	Antioquia	5	7.7	-76.8	168	12.4	25.7	8.0	1109	111	91517	1	Vietnam	Dan Phuong	2	21.0	105.8	16	11.7	22.8	6.1	274	123		
	60702	1	Cote D'Ivoire	Bouake	7	7.7	-5.0	360	12.3	24.9	9.0	530	104	72408	1	Zaire	Mvuazi	10	-5.5	14.9	538	12.2	24.5	8.9	701	108		
	61103	1	Ghana	Kwadasco	6	6.8	-1.6	287	12.4	24.5	6.8	592	96															
	aDL-hTMEAN-aITDIF-vhTOTP Tropical lowland wet	20102	1	Belize	Central Farm	6	17.0	-89.0	353	13.0	26.0	7.3	1520	120	61302	1	G. Bissau	Cenmac	6	12.4	-14.6	23	12.7	26.8	8.6	1265	128	
20302		1	Costa Rica	Guanacaste	7	10.4	-85.1	25	12.4	27.0	10.4	1428	119	80422	1	India	Arabhavil	6	16.2	74.9	531	12.9	24.6	7.1	1053	160		
20304		2	Costa Rica	Los Diamantes	10	10.2	-83.8	245	11.6	25.2	10.0	1567	103	90503	1	Indonesia	Bogor	9	-6.6	106.7	341	12.1	25.4	7.7	1448	150		
20304		1	Costa Rica	Los Diamantes	5	10.2	-83.8	245	12.6	26.0	9.9	1400	111	20710	1	Mexico	Poza Rica	6	20.5	-97.4	87	13.2	27.5	10.7	999	129		
20311		2	Costa Rica	Turrialba	10	9.9	-83.7	595	11.6	23.9	10.8	1134	99	20716	1	Mexico	Veracruz	6	19.2	-96.1	3	13.1	27.4	9.9	968	124		
20311		1	Costa Rica	Turrialba	5	9.9	-83.7	595	12.5	24.7	10.7	1225	106	20717	1	Mexico	Natarit	6	21.5	-105.2	7	13.2	28.6	10.1	1300	138		
20502		1	Guatemala	La Maquina	6	14.3	-91.6	55	12.8	27.4	10.2	1642	121	20909	1	Panama	Chiriqui	5	8.4	-82.3	16	12.5	27.0	9.9	1476	107		
20518		1	Guatemala	Polochic	5	15.3	-89.8	40	12.8	28.2	9.6	1326	134															
ahDL-aTMEAN-aITDIF-hTOTP NONEQ Tropical midlands wet	5	1	Angola	Cela	10	-11.4	15.1	1328	12.4	20.5	9.8	680	116	71203	1	Mozambique	Lichinga	11	-13.3	35.2	1305	12.7	21.1	9.9	815	124		
	10302	1	Brazil	Sete Lagoas	10	-19.5	-44.3	823	12.8	22.5	11.1	954	115	72406	1	Zaire	Kaniamesh	11	-11.7	27.4	1295	12.6	22.1	11.5	952	110		
	20501	1	Guatemala	Cuyuta	5	14.3	-90.0	950	12.8	23.9	9.6	1040	125	25	1	Zambia	Kabwe	11	-14.5	28.5	1200	12.8	22.4	10.2	780	124		
	20506	1	Guatemala	San Jeronimo	5	15.1	-90.2	1420	12.8	22.4	10.2	1081	114	26	1	Zambia	Kasama	11	-10.2	31.1	1363	12.6	21.6	9.9	918	113		
	20507	1	Guatemala	Jutiapa	5	14.3	-89.9	948	12.8	23.7	9.7	1032	125	72501	1	Zambia	Mount-Makulu11	11	-15.5	28.3	1281	12.9	22.0	10.1	687	129		
	20604	1	Honduras	La Esperanza	5	14.3	-88.2	1821	12.8	18.9	11.0	1225	113	72502	1	Zambia	Mansa	11	-11.1	28.9	1267	12.6	21.8	10.3	842	112		
	20606	1	Honduras	Omonita	5	14.4	-87.7	560	12.8	25.2	9.9	990	132	72503	1	Zambia	Golden Valley	11	-14.2	28.4	1170	12.8	22.5	10.3	818	123		
	20612	1	Honduras	Catacamas	5	14.9	-85.9	819	12.8	22.8	8.9	687	120	28	1	Zimbabwe	Chipingwe	11	-20.2	32.6	1102	13.1	21.0	9.6	751	132		
	21	1	Malawi	Bembeke	12	-14.2	34.4	1170	12.8	21.5	8.8	802	117	72601	1	Zimbabwe	Ratray-Arnold11	11	-17.7	31.2	1452	13.0	20.8	10.5	683	128		
	71001	1	Malawi	Chitedze	12	-14.0	33.6	1097	12.8	22.1	9.6	724	119	72602	1	Zimbabwe	Harare	11	-17.8	31.1	1489	13.0	20.7	10.5	646	129		
	71005	1	Malawi	Bvumbwe	11	-15.9	35.1	889	12.9	23.1	9.3	788	128	72609	1	Zimbabwe	Glendale	11	-17.1	31.0	1250	13.0	21.7	10.5	682	131		
	71006	1	Malawi	Chitala	12	-13.1	34.1	733	12.7	24.1	8.9	948	125															
ahDL-ahTDIF-ahTOTP Subtropical midlands	7	1	Angola	Humpata	11	-15.0	13.4	1468	12.8	19.8	12.1	448	127	10901	1	Paraguay	Caacupe	9	-25.4	-57.1	214	12.4	23.6	11.0	497	145		
	10102	1	Argentina	Leales	12	-25.8	-65.3	1219	13.5	21.1	11.9	475	137	10902	1	Paraguay	Capitan Miranda9	9	-27.3	-55.8	91	12.4	22.4	12.9	576	135		
	10207	1	Bolivia	Iboperanda	11	-19.9	-63.8	1066	13.1	24.1	12.4	487	138	91602	1	Philippines	U.P.Los Bayos	5	14.2	121.3	52	12.8	24.9	12.0	949	163		
	10208	1	Bolivia	Mairana	11	-18.1	-64.0	1600	13.0	21.3	11.3	417	132	72001	1	Swaziland	Malkerns	10	-26.6	31.2	763	13.1	21.7	11.6	490	148		
	10224	1	Bolivia	Algarrobal	11	-21.5	-63.7	777	13.2	24.7	12.5	539	139	72005	1	Swaziland	Big-Bend	11	-26.8	31.9	909	13.6	25.0	11.6	351	149		
	13	1	Botswana	Pandamatenga	12	-18.6	25.7	1097	13.1	23.8	12.3	523	144	72101	1	Tanzania	Ilonga	12	-6.8	37.0	914	12.4	24.0	11.2	549	132		
	10317	1	Brazil	Jardinopolis	10	-21.0	-47.8	709	12.8	23.3	11.4	834	128	11303	1	Venezuela	San Joaquin	6	10.3	-67.8	580	12.6	24.1	10.6	602	123		
	10322	1	Brazil	Capinopolis	10	-18.7	-49.6	579	12.7	24.6	12.0	816	131	11312	1	Venezuela	San Javier	7	10.4	-68.7	557	12.4	24.6	10.5	551	130		
	20401	1	El Salvador	San Andres	5	13.8	-89.4	452	12.8	25.9	10.9	1083	135	27	1	Zambia	Masabuka	11	-15.9	27.8	1000	12.9	23.7	10.6	658	135		
	70601	1	Ethiopia	Alemaya	7	9.4	41.1	1524	12.4	22.3	12.6	415	139	72504	1	Zambia	Kaoma	12	-15.8	27.9	668	12.9	25.1	10.3	618	134		
	71004	1	Malawi	Ngabu	12	-16.5	34.9	108	12.9	27.5	11.3	584	141	29	1	Zimbabwe	Chiredzi	12	-21.0	31.6	433	13.2	25.5	11.9	424	150		
	20712	1	Mexico	Tlaltizapan	6	18.7	-99.1	945	13.1	26.5	13.5	819	119	30	1	Zimbabwe	Makoholi	11	-19.8	30.8	1111	13.1	22.5	11.2	489	146		
	20725	1	Mexico	Xalisco	6	21.4	-104.8	987	13.2	25.0	12.1	1094	124	31	1	Zimbabwe	Matopos	11	-20.4	28.5	1457	13.2	21.0	11.6	458	147		
	20764	1	Mexico	Culiacan	7	24.8	-107.4	48	13.1	29.0	12.0	560	143	32	1	Zimbabwe	Save-Valley	12	-20.4	32.3	446	13.2	25.4	11.9	326	142		
	20794	1	Mexico	Tlajomulco	6	20.5	-103.8	1513	13.2	22.8	13.0	742	121	72604	1	Zimbabwe	Kadoma	11										

1	8	aDL-vhTMEAN-ITDIF-aTOTP Tropical lowland, hot, average rainfall	80201	1	Bangladesh	Joydebpur	4	24.0	90.4	8	13.0	29.2	7.9	912	198	20805	1	Nicaragua	Santa Rosa	5	12.1	-86.2	77	12.7	27.4	9.2	617	146
		80202	1	Bangladesh	Ishurdi	4	24.1	89.1	31	13.0	29.5	9.9	775	225	3	1	Philippines	Cagayan	5	8.3	124.4	290	12.5	26.9	9.0	786	178	
		80209	1	Bangladesh	Rangpur	4	25.7	89.2	32	13.0	28.3	9.8	1324	213	91606	1	Philippines	Karaan	5	7.0	125.0	102	12.4	27.1	9.0	923	168	
		10203	1	Bolivia	Santa Cruz	10	-17.7	-63.1	350	12.7	26.0	10.7	564	152	91609	1	Philippines	Ilagan	4	16.5	121.2	278	12.6	27.0	9.1	612	205	
		10342	1	Brazil	S.c. Palmeira	11	-6.2	-36.0	182	12.3	26.5	9.4	137	146	91616	1	Philippines	Gral. Santos	5	6.1	125.2	12	12.3	26.8	8.1	396	168	
		61401	1	Burkina Faso	Farako	5	11.1	-4.3	466	12.6	26.7	10.5	744	149	91620	1	Philippines	Mindanao	6	7.2	124.8	24	12.4	27.9	9.2	791	175	
		90302	1	Cambodia	Banteay	5	12.0	105.0	15	12.7	28.3	8.2	680	180	91401	1	Thailand	Suwan	6	14.1	101.0	13	12.8	29.9	8.8	602	203	
		90403	1	China	Nanning	4	22.6	108.2	115	12.9	26.3	6.9	680	168	91406	1	Thailand	Nakhon Sawan	6	15.4	100.5	83	12.9	28.4	9.3	705	193	
	60701	1	Cote D'Ivoire	Ferkessedougou	4	9.6	-5.2	283	12.4	27.7	9.9	567	150	91407	1	Thailand	Phraphutthabat	6	14.7	100.6	6	12.8	28.6	9.1	742	190		
	60706	1	Cote D'Ivoire	Sinematiiali	4	9.6	-3.1	250	12.4	27.6	9.6	509	143	91414	1	Thailand	Khonkaen	6	16.4	102.8	162	12.9	28.8	8.5	795	195		
	80404	1	India	Hyderabad	7	17.3	78.5	521	12.7	26.1	9.1	541	195	91501	1	Vietnam	Song Boi	6	20.5	107.8	55	13.2	29.0	6.9	1219	183		
	80417	1	India	Jaina	6	19.9	75.9	485	13.1	27.0	9.5	602	208	91502	1	Vietnam	Hung Loc	4	11.0	107.2	193	12.4	26.4	8.2	972	160		
	2	1	Indonesia	Lampung	9	-5.3	105.1	118	12.1	27.1	9.1	633	168	91513	1	Vietnam	Doc Trong Farm	5	11.1	108.4	173	12.6	27.4	7.6	622	163		
90507	2	Indonesia	Muneng	9	-8.3	113.3	13	12.1	26.1	8.0	548	153																
90512	2	Indonesia	Maros	9	-5.0	119.6	52	12.1	27.5	8.3	783	163																
7	vhDL-ahTMEAN-ITDIF-hTOTP Subtropical midlands, wet	90402	1	China	Kunming	6	25.1	102.7	1957	13.5	19.4	8.8	703	183	34	1	Nepal	Kabre-Dolakha	5	27.7	86.1	###	13.6	20.8	6.8	1625	193	
	90406	1	China	Gui-yang	6	26.5	106.7	1153	13.6	23.2	9.0	631	203	35	1	Nepal	Pakhribas	6	27.1	87.3	###	13.6	24.4	6.8	696	210		
	80405	1	India	Pantnagar	6	29.0	79.5	204	13.8	29.1	8.8	993	230	38	1	Nepal	Dailekh	6	28.9	81.7	###	13.7	25.6	6.5	1302	213		
	80407	1	India	Dholi	6	26.0	86.3	34	13.5	29.6	7.6	1050	208	80601	1	Nepal	Rampur	6	27.6	84.4	185	13.7	28.9	8.6	1576	228		
	80413	1	India	Jorhat	6	26.8	94.3	123	13.6	28.0	7.1	1685	190	80608	1	Nepal	Surkhet	6	28.6	81.6	617	13.7	28.3	7.6	1531	238		
80420	1	India	Bahraich	6	27.7	81.6	130	13.7	30.1	8.5	1012	230																
4	hDL-hTMEAN-ITDIF-vhTOTP Subtropical midlands extreme wet	36	1	Nepal	Pokhara	5	28.2	84.0	944	13.7	24.7	8.8	2765	215	37	1	Nepal	Lumle Arc	5	28.3	83.8	###	13.7	22.8	5.1	3745	190	
	hDL-hTMEAN-ITDIF-vITOTP Subtropical-temperate, rainfall limited	50401	1	Egypt	Sids	6	28.9	31.0	29	13.7	27.2	14.2	0	188	50404	1	Egypt	Nubaria	6	31.0	30.5	8	13.9	25.8	11.9	0	173	
50402	1	Egypt	Gemmeiza	6	30.7	31.1	9	13.9	26.0	13.6	0	178	80427	1	India	Bangalore	2	13.0	77.6	909	11.8	26.6	13.8	178	243			
50403	1	Egypt	Sakha	6	31.1	31.0	7	13.9	25.7	13.3	0	177																
11	hDL-vhTMEAN-aTDIF-iTOTP Subtropical-temperate lowlands	80701	1	Pakistan	Pirsabak	6	34.0	72.8	474	14.1	30.2	12.1	446	323	80705	1	Pakistan	Islamabad	6	33.5	72.8	521	14.1	29.2	13.1	414	300	
	80702	1	Pakistan	Yousafwala	6	31.0	74.0	176	13.9	32.2	11.4	266	313	80403	1	India	Ludhiana	7	30.9	75.8	241	13.4	29.5	11.9	513	275		
5	viDL-aiTMEAN-hTDIF-vITOTP Subtropical winter, rainfall limited	80201	2	Bangladesh	Joydebpur	11	24.0	90.4	8	10.6	21.3	12.6	55	160	11	1	Botswana	Good-Hope	6	-25.5	25.5	###	10.5	13.8	18.1	26	104	
	80202	2	Bangladesh	Ishurdi	11	24.1	89.1	31	10.6	20.8	14.1	50	168	80420	2	India	Bahraich	12	27.7	81.6	130	10.4	18.6	15.8	66	168		
	80209	2	Bangladesh	Rangpur	11	25.7	89.2	32	10.5	19.7	14.3	34	160	20709	1	Mexico	Los Mochis	11	25.8	-109.0	10	10.5	19.9	17.3	43	94		
10	iDL-aiTMEAN-aITDIF-aITOTP Tropical midlands rainfall low-average	6	1	Angola	Chianga	10	-12.7	15.8	1736	12.5	19.8	11.3	784	122	70702	1	Kenya	Kitale	4	-1.0	35.0	###	12.0	18.5	12.8	488	105	
	9	1	Angola	Poligno-Florestal	10	-9.5	16.3	1178	12.4	21.3	11.7	545	113	70703	1	Kenya	Embu	3	-0.5	37.5	###	12.0	20.1	11.3	575	135		
	10501	1	Colombia	Palmira	9	3.6	-76.4	1189	12.0	22.4	10.3	555	101	70709	1	Kenya	Katamani	3	-1.6	37.2	###	12.0	20.2	11.2	314	123		
	10506	1	Colombia	Cali	9	3.5	-76.4	1189	12.0	22.4	10.3	555	101	11001	1	Peru	Piura	6	-5.2	-80.6	137	11.7	22.8	11.0	9	97		
	10601	1	Ecuador	Pichilingue	6	-1.1	-79.5	320	11.9	23.3	9.1	272	87	11005	1	Peru	La Molina	6	-12.1	-77.0	762	11.3	16.2	9.4	23	70		
	10602	1	Ecuador	Porto Viejo	7	-1.1	-80.4	213	12.0	24.0	10.2	0	93	11008	1	Peru	Tarapoto	2	-6.5	-76.4	412	12.1	24.7	10.7	522	100		
	33	1	Ethiopia	Ambo	5	9.1	37.8	2083	12.5	17.0	12.3	695	99	11018	1	Peru	El Porvenir	2	-6.5	-76.4	457	12.1	24.5	10.7	524	99		
	70602	1	Ethiopia	Awassa	5	7.1	38.5	1784	12.4	18.7	12.6	478	110	23	1	Tanzania	Sellyon	12	-4.5	35.2	###	12.3	19.3	10.9	516	116		
	70603	1	Ethiopia	Bako	5	5.9	37.1	1257	12.3	21.1	10.8	344	115	24	1	Tanzania	Uyole	11	-8.9	33.4	###	12.5	21.0	10.7	704	113		
	70607	1	Ethiopia	Nazareth	6	8.5	39.5	1631	12.5	21.1	12.0	567	119	72102	1	Tanzania	Ukiriguru	11	-2.7	33.0	###	12.2	22.6	9.8	468	127		
20604	2	Honduras	La Esperanza	12	14.3	-88.2	1821	11.2	16.8	12.6	94	105	72104	1	Tanzania	Lambo	3	-3.3	37.2	###	12.0	21.4	10.1	627	108			
20606	2	Honduras	Omonita	12	14.4	-87.7	560	11.2	22.8	11.1	139	121	72302	1	Uganda	Namulonge	3	0.5	32.6	###	12.0	22.4	10.3	477	130			
6	aDL-iTMEAN-ITDIF-aTOTP Tropical highlands, cold, low temp.diff.	15	2	Colombia	Chinchina	9	4.9	-75.6	2500	11.9	14.1	8.2	842	84	10507	2	Colombia	Tibaitata	9	4.7	-74.2	###	11.9	13.6	8.9	418	80	
	15	1	Colombia	Chinchina	4	4.9	-75.6	2500	12.2	14.5	8.0	658	86	10507	1	Colombia	Tibaitata	4	4.7	-74.2	###	12.2	13.7	8.1	369	78		
	16	2	Colombia	Medellin	9	6.3	-75.6	2286	11.9	15.9	9.7	870	87	10510	2	Colombia	Rionegro	9	6.2	-75.4	###	11.9	16.7	9.8	870	88		
	16	1	Colombia	Medellin	4	6.3	-75.6	2286	12.2	16.4	9.8	813	91	10510	1	Colombia	Rionegro	4	6.2	-75.4	###	12.2	17.1	9.8	825	92		
	17	1	Colombia	Popayan	9	2.5	-76.6	2362	12.0	14.6	9.9	813	86															
13	hDL-aTMEAN-hTDIF-iTOTP Subtropical highlands, warm	20708	1	Mexico	Celaya	6	20.5	-100.8	1765	13.2	21.7	13.8	501	129	12	1	Botswana	Hukunsi	2	-24.0	21.8	###	12.4	21.5	15.1	162	122	
	20763	1	Mexico	Gomez Farias	7	29.3	-107.8	2136	13.3	19.9	15.4	358	123	14	1	Botswana	Sebele	2	-24.6	26.0	972	12.4	21.1	15.2	197	124		
	21117	1	Mexico	Queretaro	6	20.5	-100.7	1777	13.2	21.7	13.7	465	129	19	1	Lesotho	Maseru	11	-29.3	27.5	###	13.8	19.9	13.7	384	156		
	21124	1	Mexico	Irapuato	6	20.7	-101.3	1785	13.2	21.7	13.8	570	128	71401	1	Rsa	Potchefstroom											