LAND SUITABILITY MAP

ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

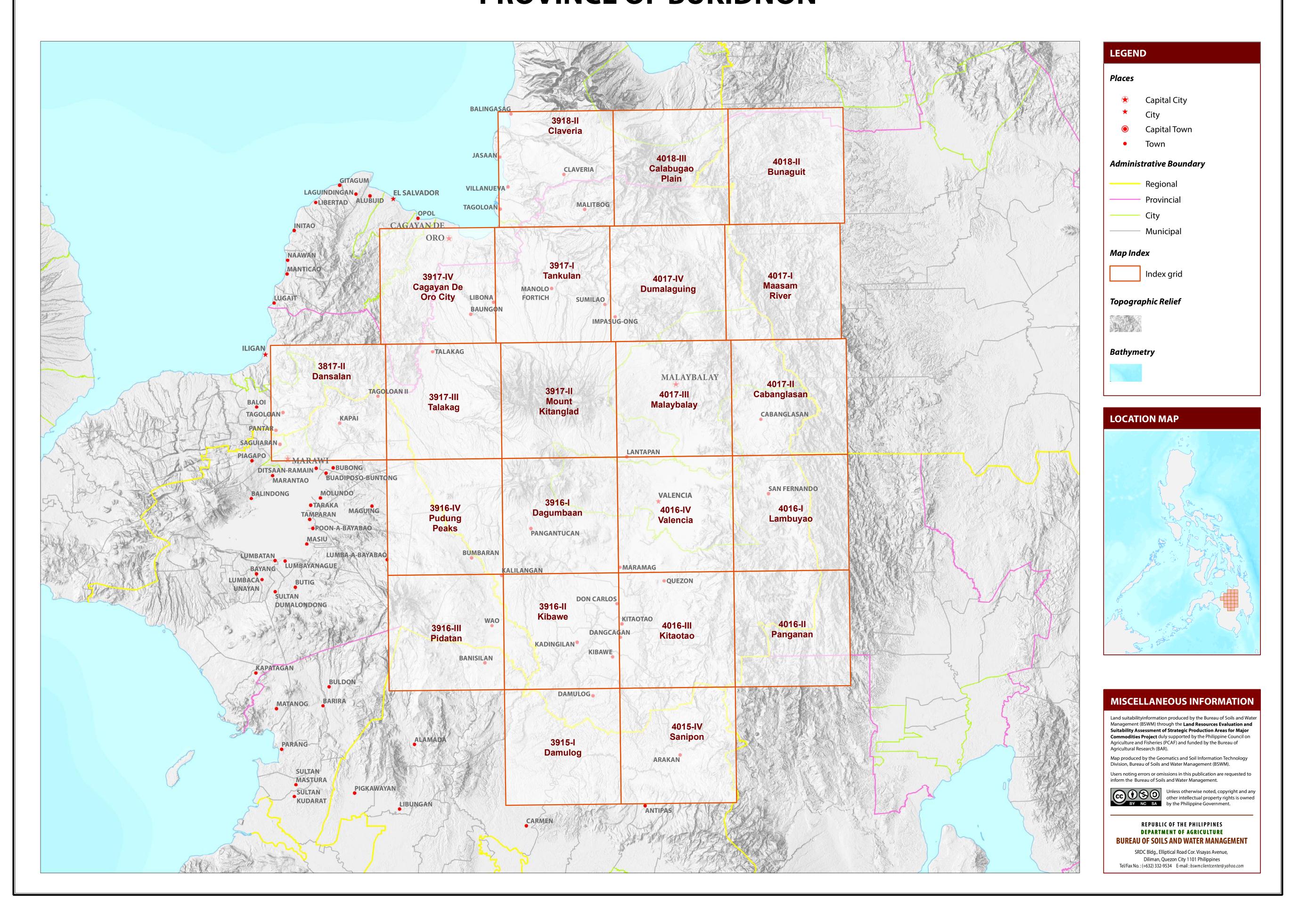
PROVINCE OF BUKIDNON





MAP INDEX

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS PROVINCE OF BUKIDNON



LAND SUITABILITY MAP FOR ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS BUKIDNON, REGION X

EXTENT OF SUITABILITY FOR ROBUSTA, LIBERICA AND EXCELSA COFFEE PRODUCTION BY MUNICIPALITY

						EX	PANSION	NAREA (H	la)					CONFLI	CT RESOI	LUTION A	REA (Ha)	-			TOTAL
MUNICIPALITY	EXIS	TING COF (Ha)	FEE	TOTAL EXISTING AREA (Ha)	Coco	nut	Shrul unmar	•	Grass unman	•	Co	rn	Sugar	cane	Ban	ana	Vegeta	ables	Other	crops	POTENTIAL EXPANSION AREA (Ha)
	S1	S2	S 3		S1	S2	S1	S2	S1	S2	S1	S2	AKEA (IIa)								
BAUNGON	676	361	499	1,536	1,392	30	-	1	1,992	2,047	4,740	2,591	-	-	41	10	-	-	88	34	12,966
CABANGLASAN	-	1	1	2	-	-	217	198	9	290	2,280	4,453	1	-	-	-	-	-	99	40	7,586
CITY OF MALAYBALAY	-	-		-	79	96	83	84	1,135	2,985	1,895	8,617	-	-	1,871	14,288	-	-	-	-	31,133
CITY OF VALENCIA	3	73	446	522	9	-	331	1,416	376	778	2,371	6,134	2,201	183	1,988	2,922	-	-	72	-	18,781
DAMULOG	165	-	168	333	798	4	4	_	84	_	202	28	-	-	-	_	7,675	158	_	_	8,954
DANGCAGAN	-	-		-	163	253	-	-	-	-	4,441	165	4	-	-	-	-	26	-	-	5,052
DON CARLOS	80	10	14	104	95	-	199	6	61	41	2,216	84	10,201	805	-	-	27	-	510	-	14,245
IMPASUG-ONG	-	13	1,080	1,093	-	572	3	366	134	1,142	19	5,032	-	-	-	623	-	-	-	1,779	9,671
KADINGILAN	190	7	65	262	58	1	9	3	3,268	279	5,614	137	72	61	-		1	-	-	-	9,503
KALILANGAN	1	122	379	502	-	53	3	212	-	1	2,908	9,632	386	811	-	1	-	-	-	-	14,009
KIBAWE	-	-		-	1,207	237	42	5	46	-	3,596	734	1,415	511	43	-	1,829	31	1	2	9,699
KITAOTAO	123	15	387	525	433	4	-	167	121	1,174	2,580	256	6,694	267	-	-	58	4	-	-	11,758
LANTAPAN	-	-		-	-	-	-	376	-	338	1,615	13,440	263	45	272	277	-	-	-	-	16,627
LIBONA	-	26	83	109	500	229	101	588	32	1,532	312	450	-	-	95	10,576	-	-	-	-	14,417
MALITBOG	-	11	31	42	633	985	344	864	386	997	498	1,408	-	-	-	738	-	-	1	-	6,855
MANOLO FORTICH	-	6	31	37	491	477	339	736	299	1,733	5,247	8,345	-	-	-	342	-	-	466	424	18,900
MARAMAG	107	182	276	564	524	13	169	430	605	382	2,964	380	5,035	5,194	1	358	108	-	235	233	16,630
PANGANTUCAN	98	174	1,904	2,176	3	131	74	42	-	79	2,740	7,301	1,768	4,488	-	1,177	-	-	-	2	17,805
QUEZON	33	3	207	244	11	7	71	-	1,061	2,495	83	240	13,646	285	-	-	957	5	-	-	18,861
SAN FERNANDO	76	8	196	279	1	3	111	216	1,832	2,028	1,579	2,166	-	-	40	32	-	-	-	-	8,008
SUMILAO	-	-		-	-	-	110	423	12	2,129	245	817	-	-	-	42	-	-	113	5,132	9,023
TALAKAG	-	1,281	286	1,566	3,674	7,858	39	9,980	329	6,503	243	5,430	-	-	-	14	-	-	-	4,811	38,881
TOTAL	1,551	2,293	6,053	9,897	10,070	10,955	2,249	16,113	11,782	26,953	48,390	77,841	41,686	12,650	4,351	31,400	10,656	225	1,585	12,457	319,363

Note: Delivery of robusta coffee planting materials must be started on the onset of rainy season. *establishment of shade trees prior to planting of robusta coffee.

AGRONOMIC REQUIREMENT OF ROBUSTA, LIBERICA AND EXCELSA COFFEE PRODUCTION

LAND UTILIZATION TYPE	SUITABILITY RATING	SLOPE (%)	SOIL DEPTH (cm)	SOIL TEXTURE	SOIL DRAINAGE	SOIL REACTION (pH)	INHERENT FERTILITY	FLOODING CLASS	EROSION CLASS	ROCK OUTCROPS	ELEVATION (masl)	ANNUAL RAINFALL (mm)	CLIMATIC TYPE
Coffee	S1	<8	>100	CL, SiCL, SCL, SC, SiC, C, HC	WD,MWD	5.6 -7.2	high	none-slight	none-slight	none-few	<1000	2001-4500	I, III, IV
(Robusta, Excelsa,	S2	8 - 30	30 - 100	FSL, L, SiL	SPD,PD	5.1 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	1000-2000	1000-2000	I, II
Liberica)	S3	>30	<30	S, LS, CSL, SL	VPD,ED	<5.0 -> 7.9	low	severe	severe	many	>2000	<1000 >4500	

					>4500
SLOPE (%	%)	SOIL DRAINAGE	SOIL REACTION (pH)	SOIL TEXTURE	
0 - 3	- level to gently sloping	ED - excessively drained	< 4.5 - extremely acid	Coarse	Fine
3 - 8	- gently sloping to undulating	WD - well drained	4.5 - 5.0 - very strongly acid	S - sand	SC - sandy clay
8 - 18	- undulating to rolling	MWD - moderately well drained	5.1 - 5.5 - strongly acid	LS - loamy sand	SiC - silty clay
18 - 30	- rolling to moderately steep	SPD - somewhat poorly drained	5.6 - 6.0 - medium acid	CSL - coarse sandy loam	C - clay
30 - 50	- steep	PD - poorly drained	6.1 - 6.5 - slightly acid	SL - sandy loam	HC - heavy clay
> 50	- very steep	VPD - very poorly drained	6.6 - 7.2 - neutral	Medium	
			7.3 - 7.8 - mildly alkaline	FSL - fine sandy loam	
SOIL DEF	РТН (ст)	SURFACE IMPEDIMENT	7.9 - 8.4 - moderately alkaline	L - loam	
0 - 30	- very shallow	ROCK OUTCROPS	> 8.5 - strongly alkaline	SiL - silt loam	
30 - 50	- shallow	< 10% - none - few		CL - clay loam	
50 - 100	- moderately deep	10 - 30% - common		SiCL - silty clay loam	
> 100	- deep to very deep	> 30% - many		SCL - sandy clay loam	

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

ELEVATION	SOIL DRAINAGE	SOIL DEPTH	SOIL EROSION
El2 - 1000m - 2000m	D2 - Somewhat poorly drained to poorly drained	Sh2 - Shallow to moderately deep (30 - 100cm)	E2 - Moderate erosion
El3 -> 2000m	D3 - Very poorly drained or excessively drained	Sh3 - Very shallow (< 30cm)	E3 - Severe erosion
SLOPE/TOPOGRAPHY	SOIL TEXTURE	ROCK OUTCROPS	FLOODING
SLOPE/TOPOGRAPHY T2 - Undulating to moderately steep	SOIL TEXTURE Tc - Coarse texture	ROCK OUTCROPS Rc2 - Common	FLOODING F2 - Moderate seasonal flooding

CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION
1	E2-Sh2-Rc2	11	El3-E2-Sh2-Rc3	21	T2-E3-Rc2	31	T2-El3-E3-Rc2	41	T3-El2-E3	<i>51</i>	T3-E3-Rc3
2	E3-Rc3	12	El3-E3-Sh2-Rc3	22	T2-E3-Rc3	32	T2-El3-E3-Sh2-Rc2	42	T3-El2-E3-Rc2	<i>52</i>	T3-E3-Sh3-Rc3
3	E3-Sh2-Rc3	13	El3-Rc2	23	T2-E3-Sh2-Rc2	33	T2-El3-E3-Sh2-Rc3	43	T3-El2-E3-Sh2-Rc3	<i>53</i>	T3-El2
4	El2	14	El3-Sh2-Rc2	24	T2-E3-Sh2-Rc3	34	T3	44	T3-El2-E3-Sh3-Rc2	54	T3-El2-E3
5	El2-E2-Sh2-Rc3	15	F2-D2	25	T2-El2	35	T3-E3	45	T3-El2-E3-Sh3-Rc3	<i>55</i>	T3-El2-E3-Rc3
6	El2-E3-Rc3	16	Rc2	26	T2-El2-E3	36	T3-E3-Rc2	46	T3-El3-E3-Rc2	56	T3-El2-E3-Sh3-Ro
7	El2-E3-Sh2-Rc3	17	Sh2-Rc2	27	T2-El2-E3-Rc2	37	T3-E3-Sh2-Rc3	47	T3-El3-E3-Sh3-Rc2	<i>57</i>	T3-El3-E3-Rc3
8	El2-Rc2	18	Sh2-Rc3	28	T2-El2-E3-Rc3	38	T3-E3-Sh3-Rc2	48	T3-El3-E3-Sh3-Rc3	58	T3-El3-E3-Sh3-Ro
9	El2-Sh2-Rc2	19	T2	29	T2-El2-E3-Sh2-Rc2	39	T3-E3-Sh3-Rc3	49	T3		
10	El2-Sh2-Rc3	20	T2-E3	30	T2-El2-E3-Sh2-Rc3	40	T3-El2	50	Т3-Е3		

CODE	LANDUSE	CODE	LANDUSE
4	Corn	119	Oil palm
81	Coffee	126	Grassland
82	Cacao	134	Shrubs, unmanaged
84	Pineapple	137	Rubber
85	Mango		
91	Banana		
105	Fruit trees, mixed		
112	Sugarcane		
115	Mixed crops		
116	Coconut		
	•		•

SUITABILITY CLASSES:

Highly Suitable (S1) Land having no significant limitation to sustained application of a given use, or only minor limitations that will not significantly reduce productivity or benefits and will not raise inputs above an acceptable level.

Marginally Suitable (S3) Land having limitations which in aggregate are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified.

Moderately Suitable (S2) Land having limitation which in aggregate are moderately severe for sustained application of a given use; the limitation will reduce productivity or benefits and increase required inputs to the extent that the overall advantage to be gained from the use, although still attractive, will be appreciably inferior to that expected on class S1 land.

Not Suitable / Not Relevant Land having limitations which may be surmountable in time but which cannot be corrected with existing knowledge at currently acceptable cost; the limitations are so severe as to preclude successful sustained use of the land in the given manner. Existing forest, shrubland greater than 18% slope, irrigated paddy rice and miscellaneous land types such as built up areas, roads, etc are considered as not relevant.

CLIMATE TYPE

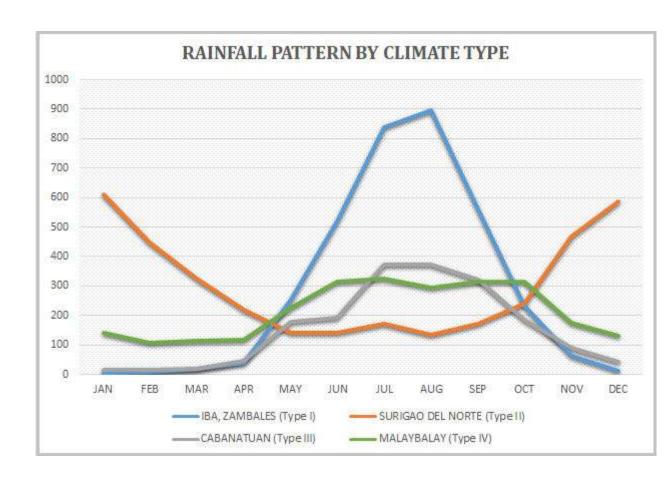
wet during the rest of the year. Maximum rain period is from June to September

TYPE I: Two pronouced season, dry from November to April and **TYPE II**: No dry season with a very pronounced maximum rain period from December to February. There is not a single dry month. Maximum monthly rainfall occurs during the period from March to May.

TYPE III: No very pronounced maximum rain period, with a dry season lasting only from one to three months, either during the period from December to February or from March to May. This type resembles Type I since it has a short dry season.

TYPE IV: Rainfall is more or less evenly distributed throughout the year. This type resembles Type II since it has no dry season.

Western part of Bukidnon is classified as climatic Type III and Northeastern part is Type IV.



Source: PAGASA 2018, Climatological Normals (Rainfall), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>.

