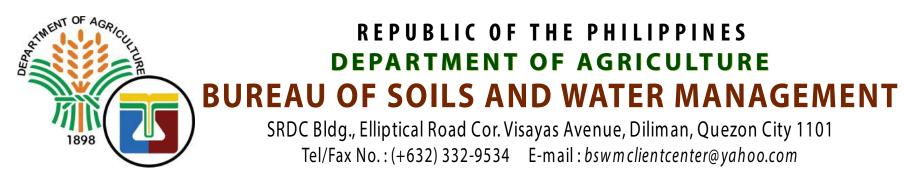
LAND SUITABILITY MAP

ARABICA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

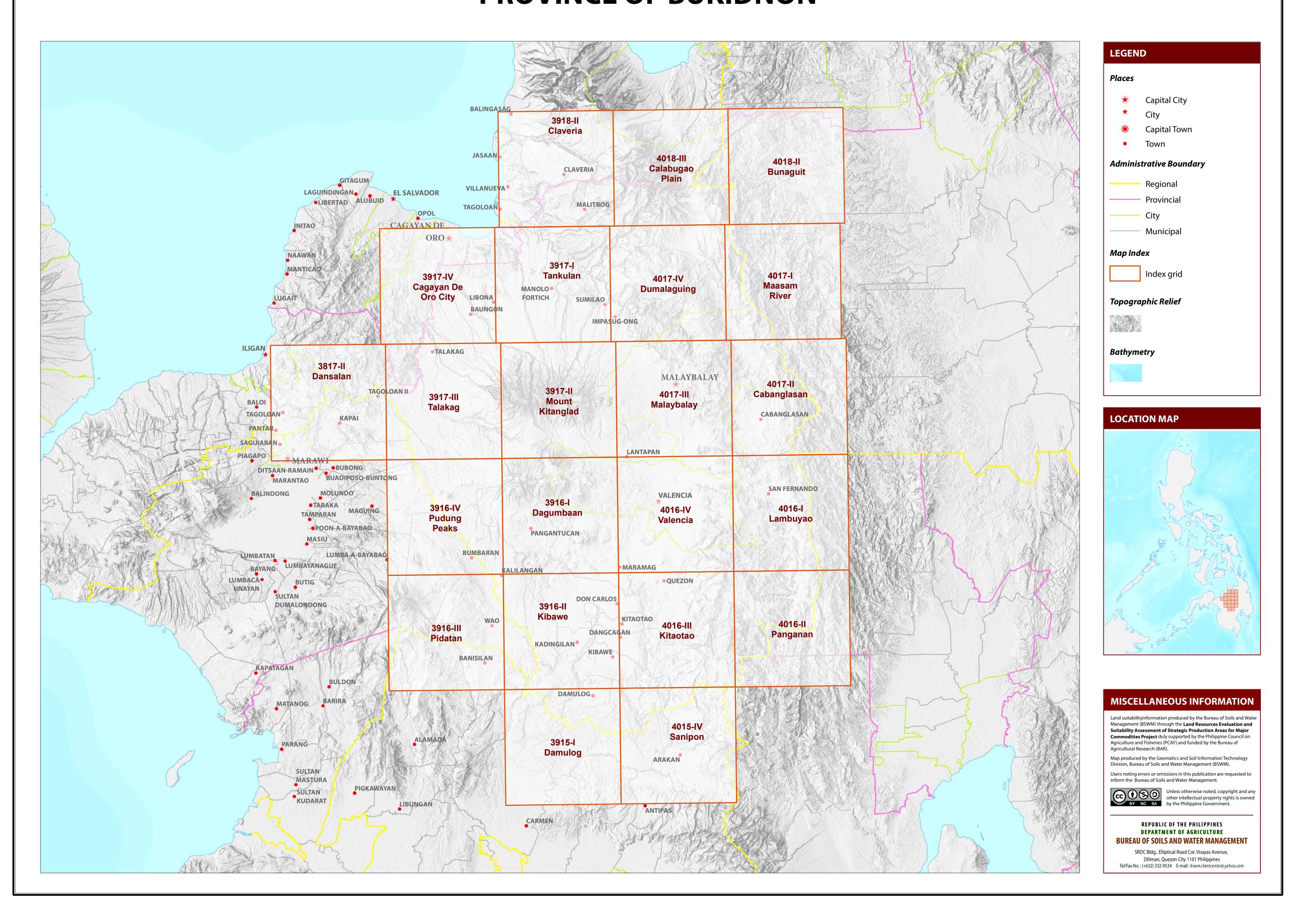
PROVINCE OF BUKIDNON





MAP INDEX

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



LAND SUITABILITY MAP FOR ARABICA COFFEE

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

CODE

81 Coffee

82 Cacao

84 Pineapple85 Mango91 Banana

105 Fruit trees, mixed112 Sugarcane115 Mixed crops116 Coconut

LANDUSE

LANDUSE

CODE

119 Oil palm

126 Grassland

134 Shrubs, unmanaged

EXTENT OF SUITABILITY FOR ARABICA COFFEE PRODUCTION BY MUNICIPALITY

	EXISTING COFFEE (Ha)			_	EXPANSION AREA (Ha)						CONFLICT RESOLUTION AREA (Ha)									TOTAL	
MUNICIPALITY			TOTAL EXISTING AREA (Ha)	Coconut		·			Grassland, unmanaged*		Corn		Banana		cane	ne Pineapple		Other crops		POTENTIAL EXPANSION	
	S1	S2	S 3		S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	AREA (Ha)
BAUNGON	-	1,049	488	1,536	-	30	-	-	-	1,891	-	2,583	-	6	-	-	-	-	-	-	4,510
CABANGLASAN	-	1	1	2	-	-	-	24	-	148	-	816	-	-	-	-	-	-	-	-	988
CITY OF MALAYBALAY	-	-	-	-	-	96	-	24	30	3,162	118	8,628	193	14,094	-	-	-	-	-	-	26,346
CITY OF VALENCIA	-	93	429	522	-	-	70	1,351	3	772	66	6,067	67	2,860	-	181	-	-	-	-	11,437
DAMULOG	-	165	167	333	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
DANGCAGAN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DON CARLOS	-	90	14	104	-	-	-	6	-	41	-	10	-	-	-	486	-	-	-	-	543
IMPASUG-ONG	-	17	1,076	1,093	-	572	8	358	41	1,111	40	5,038	39	584	-	-	109	1,670	-	1	9,571
KADINGILAN	-	198	65	263	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	7
KALILANGAN	13	115	374	502	-	53	-	212	-	1	651	9,046	-	1	14	786	-	-	-	-	10,764
KIBAWE	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	243	-	-	-	-	245
KITAOTAO	-	138	387	525	-	-	-	167	-	1,212	-	114	-	-	-	214	-	-	-	-	1,707
LANTAPAN	-	-	-	-	-	-	50	326	-	338	625	12,815	-	277	-	45	-	-	-	-	14,476
LIBONA	-	42	67	109	-	-	-	290	-	262	-	59	5	9,739	-	-	-	-	-	-	10,355
MALITBOG	-	11	31	42	-	328	4	858	49	942	-	1,227	6	731	-	-	-	-	-	-	4,146
MANOLO FORTICH	-	6	31	37	-	470	3	422	33	1,699	39	8,203	47	295	-	-	-	86	-	-	11,299
MARAMAG	-	289	275	564	-	1	-	430	-	392	7	344	-	358	-	5,176	-	233	-	-	6,942
PANGANTUCAN	-	361	1,815	2,176	-	131	-	42	-	79	613	5,981	113	1,064	131	4,194	-	-	-	2	12,350
QUEZON	-	36	208	244	-	-	-	-	-	2,495	-	240	-	-	-	197	-	-	-	-	2,932
SAN FERNANDO	-	84	195	279	-	1	-	28	-	1,056	-	27	-	-	-	-	-	-	-	-	1,113
SUMILAO	-	-	-	-	-	-	-	421	126	2,003	8	803	-	42	-	-	1	5,107	25	104	8,642
TALAKAG	-	1,281	285	1,566	-	7,858	250	9,729	90	6,412	2,253	3,177	-	14	-	-	-	85	718	4,009	34,596
TOTAL	13	3,976	5,908	9,897		9,542	386	14,690	374	24,017	4,420	65,187	471	30,065	145	11,523	110	7,180	743	4,116	172,968

Note: Delivery of arabica coffee planting materials must be started on the onset of rainy season.

*establishment of shade trees prior to planting of arabica coffee.

AGRONOMIC REQUIREMENT OF ARABICA 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
	S1	<8	>100	CL, SiCL, SCL, SC, SiC, C, HC	WD,MWD	5.6 -7.2	high	none-slight	none-slight	none-few	1000-2000	2001-4500	I, III, IV
Coffee (Arabica)	S2	8 - 30	30 - 100	FSL, L, SiL	SPD,PD	5.1 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	500-1000 2000-2500	1000-2000	I, II
	S3	>30	<30	S, LS, CSL, SL	VPD,ED	<5.0 - > 7.9	low	severe	severe	many	<500 >2500	<1000 >4500	

SLOPE (%	%)	SOIL DRAI	INAGE	SOIL REA	ACTION (pH)	SOIL TE	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	С	- 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	Mediun	1					
				7.3 - 7.8	- mildly alkaline	FSL	- fine sandy loam					
SOIL DE	PTH (cm)	SURFACE I	IMPEDIMENT	7.9 - 8.4	- moderately alkaline	L	- loam					
0 - 30	- very shallow	ROCK OUT	CROPS	> 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 - 500 - 1000m or 2000 - 2500m	D2 - Somewhat poorly drained to poorly drained	Sh2 - Shallow to moderately deep (30 - 100cm)	E2 - Moderate erosion
El3 $-<500$ m or >2500 m	D3 - Very poorly drained or excessively drained	Sh3 - Very shallow (< 30cm)	E3 - Severe erosion
SLOPE/TOPOGRAPHYT2 - Undulating to moderately steepT3 - Steep to very steep	SOIL TEXTURE Tc - Coarse texture	ROCK OUTCROPS Rc2 - Common Rc3 - Many	FLOODING F2 - Moderate seasonal flooding F3 - Severe seasonal flooding

CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION
1	E2-Sh2-Rc3	11	T2-E3-Rc2	21	T2-El2-F2-D2	31	T2-Rc2	41	T3-El2-E3	51	Т3	61	T3-El3-E3-Sh3-Rc3
2	El2	12	T2-E3-Rc3	22	T2-El2-Rc2	32	T2-Sh2-Rc2	42	T3-El2-E3-Rc2	52	T3-E3		
3	El2-F2-D2	13	T2-E3-Sh2-Rc2	23	T2-El2-Sh2-Rc2	33	T2-Sh2-Rc3	43	T3-El2-E3-Sh2-Rc3	53	T3-E3-Rc3		
4	El2-Rc2	14	T2-E3-Sh2-Rc3	24	T2-El2-Sh2-Rc3	34	T3	44	T3-El2-E3-Sh3-Rc2	54	T3-E3-Sh3-Rc3		
5	El2-Sh2-Rc2	15	T2-El2	25	T2-El3	35	Т3-Е3	45	T3-El2-E3-Sh3-Rc3	55	T3-El2		
6	El3	16	T2-El2-E3	26	T2-El3-E2-Sh2-Rc2	36	T3-E3-Rc2	46	T3-El3	56	T3-El2-E3		
7	El3-Sh2-Rc2	17	T2-El2-E3-Rc2	27	T2-El3-E3	37	T3-E3-Sh2-Rc3	47	T3-El3-E3	<i>57</i>	T3-El2-E3-Rc3		
8	Sh2-Rc2	18	T2-El2-E3-Rc3	28	T2-El3-E3-Rc3	38	T3-E3-Sh3-Rc2	48	T3-El3-E3-Sh2-Rc3	58	T3-El2-E3-Sh3-Rc3		
9	T2	19	T2-El2-E3-Sh2-Rc2	29	T2-El3-E3-Sh2-Rc2	39	T3-E3-Sh3-Rc3	49	T3-El3-E3-Sh3-Rc2	59	T3-El3		
10	T2-E3	20	T2-El2-E3-Sh2-Rc3	30	T2-El3-E3-Sh2-Rc3	40	T3-El2	50	T3-El3-E3-Sh3-Rc3	60	T3-El3-E3		

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.

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.

Marginally Suitable (S3)

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

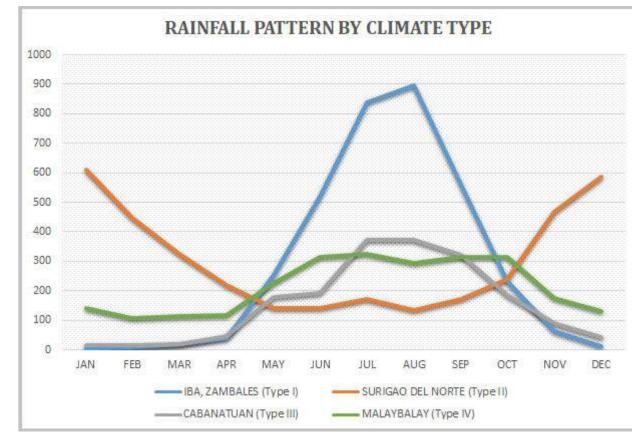
TYPE I: Two pronouced season, dry from November to April and wet during the rest of the year. Maximum rain period is from June to September

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.

