# LAND SUITABILITY MAP

## NATURAL RUBBER

# LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

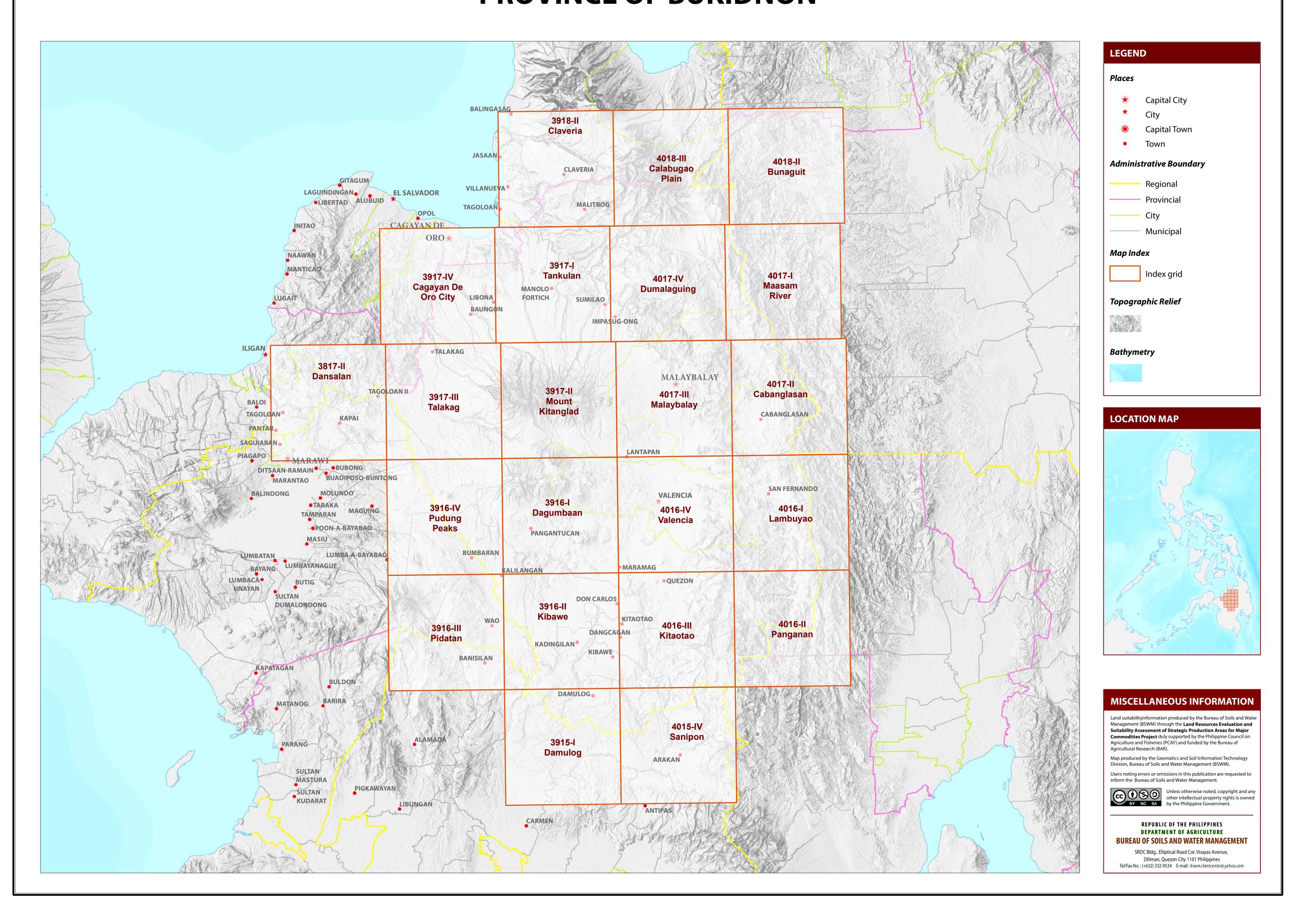
### PROVINCE OF BUKIDNON





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



# LAND SUITABILITY MAP FOR RUBBER

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

#### EXTENT OF SUITABILITY FOR RUBBER PRODUCTION BY MUNICIPALITY

							EXI	EXPANSION AREA (Ha) CONFLICT RESOLUTION AREA (Ha)								TOTAL						
MUNICIPALITY	ď	EXIST	TING RUE (Ha)	BBER	TOTAL EXISTING AREA (Ha)	Cocc	onut	Shrub unman	/		sland, naged*	Co	rn	Suga	rcane	Ban	ana	Vege	tables	Other	crops	POTENTIAL EXPANSION AREA (Ha)
		<b>S1</b>	<b>S2</b>	<b>S</b> 3		<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	<b>S1</b>	<b>S2</b>	АКЕА (Па)
BAUNGON		-	-	-	-	497	925	-	1	73	3,966	1,359	5,972	-	-	7	44	-	-	62	60	12,966
CABANGLASAN		6	-	-	6	-	-	45	369	5	293	1,414	5,318	1	-	-	-	-	-	69	71	7,586
CITY OF MALAYBALAY	Y	_	-	-	-	-	175	19	148	146	3,974	1,128	8,907	_	-	1,273	14,884	-	-	-	-	30,653
CITY OF VALENCIA		8	311	114	433	5	4	31	1,717	39	1,115	1,956	6,549	1,502	882	1,563	3,347	-	-	17	55	18,781
DAMULOG		-	-	-	-	88	714	-	4	11	72	-	231	-	-	-	-	852	6,982	-	-	8,954
DANGCAGAN		-	-	-	-	60	355	-	-	-	-	3,185	1,422	4	-	-	-	-	26	-	-	5,052
DON CARLOS		2	-	-	2	1	94	14	191	-	102	1,244	1,056	6,249	4,757	-	-	-	27	485	25	14,245
IMPASUG-ONG		-	-	-	-	-	572	-	369	10	1,266	-	5,052	-	-	-	581	-	-	-	1,779	9,629
KADINGILAN		-	-	-	-	-	59	-	12	220	3,327	2,574	3,176	46	86	-	-	-	1	-	-	9,502
KALILANGAN		-	-	-	-	-	53	-	215	-	1	1,298	11,242	303	895	-	1	-	-	-	-	14,008
KIBAWE		28	11	5	44	214	1,230	-	46	-	46	2,209	2,122	126	1,800	43	-	508	1,352	1	2	9,699
KITAOTAO		-	-	-	-	43	394	-	167	20	1,275	1,375	1,461	1,237	5,724	-	-	-	63	-	-	11,758
LANTAPAN		-	-	-	-	-	-	-	376	-	146	1,034	12,845	211	97	223	122	-	-	-	-	15,054
LIBONA		-	-	-	-	450	279	17	673	10	1,554	281	481	-	-	83	10,588	-	-	-	-	14,417
MALITBOG		-	1	-	1	283	1,335	81	1,126	62	1,321	13	1,893	-	-	-	738	-	-	-	-	6,854
MANOLO FORTICH		-	-	-	-	333	636	45	1,031	91	1,940	2,797	10,794	-	-	-	342	-	-	242	649	18,900
MARAMAG		-	8	-	8	73	464	48	551	95	892	2,120	1,224	2,086	8,142	1	358	1	107	199	269	16,630
PANGANTUCAN		-	69	4	73	3	131	-	116	-	79	806	9,236	932	5,323	-	1,177	-	-	-	2	17,805
QUEZON		-	-		-	-	18	8	63	281	3,276	78	245	7,620	6,312	-	-	75	887	-	-	18,861
SAN FERNANDO		1	1		2	-	3	43	285	1,001	2,859	1,430	2,315	-	-	15	56	-	-	-	-	8,007
SUMILAO		-	-	-	-	-	-	25	508	-	2,141	199	863	-	-	-	42	-	-	95	5,150	9,023
TALAKAG		-	-		-	1,924	9,609	7	10,011	93	6,739	40	5,633	-	-	-	14	-	-	-	4,522	38,591
ı	TOTAL	45	401	123	569	3,974	17,050	384	17,978	2,159	36,384	26,540	98,036	20,317	34,018	3,209	32,294	1,436	9,445	1,168	12,583	316,976

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

#### AGRONOMIC REQUIREMENT OF RUBBER 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, SPD	5.6 -7.2	high	none-slight	none-slight	none-few	<500	1000-2000	III, IV
Rubber Tree	S2	8 - 30	30 - 100	FSL, L, SiL, SL	PD,VPD	4.5 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	500-1000	2001-4500	I, II, III
	S3	>30	<30	S, LS, CSL	ED	<4.5 - > 7.9	low	severe	severe	many	>1000	<1000 >4500	

	S3	>30	<30	S, LS, CSL	ED	<4.5 - > 7.9	low	severe	severe	many	>1000	>45	
SLOPE (9	<b>%)</b>		SOIL DRAI	NAGE		SOIL REACT	ION (pH)		SOIL TEXT	TURE			
0 - 3	- level to gently sloping	J	ED ·	- excessively drained		< 4.5 - 6	extremely acid		Coarse			Fine	
3 - 8	- gently sloping to undu	ılating	WD ·	- well drained		4.5 - 5.0 - 3	very strongly acid		S	- sand		SC	- sandy clay
8 - 18	- undulating to rolling		MWD ·	- moderately well drair	ned	5.1 - 5.5 - 9	strongly acid		LS	- loamy sand		SiC	- silty clay
18 - 30	- rolling to moderately	steep	SPD ·	- somewhat poorly dra	ined	5.6 - 6.0 - 1	medium acid		CSL	- coarse sandy loam		С	- clay
30 - 50	- steep		PD ·	- poorly drained		6.1 - 6.5 - 9	slightly acid		SL	- sandy loam		HC	<ul> <li>heavy clay</li> </ul>
> 50	- very steep		VPD -	- very poorly drained		6.6 - 7.2 - 1	neutral		Medium				
						7.3 - 7.8 - 1	mildly alkaline		FSL	- fine sandy loam			
SOIL DE	PTH (cm)		SURFACE I	MPEDIMENT		7.9 - 8.4 - 1	moderately alkaline		L	- loam			
0 - 30	- very shallow		ROCK OUT C	CROPS		> 8.5 - 9	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 El3 - < 500m or > 2500m	<ul><li>D2 - Somewhat poorly drained to poorly drained</li><li>D3 - Very poorly drained or excessively drained</li></ul>	Sh2 - Shallow to moderately deep (30 - 100cm) Sh3 - Very shallow (< 30cm)	<ul><li>E2 - Moderate erosion</li><li>E3 - Severe erosion</li></ul>
SLOPE/TOPOGRAPHY T2 - Undulating to moderately steep	SOIL TEXTURE Tc - Coarse texture	ROCK OUTCROPS Rc2 - Common	<b>FLOODING</b> F2 - Moderate seasonal flooding
	i c course texture	162 6011111011	

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

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**

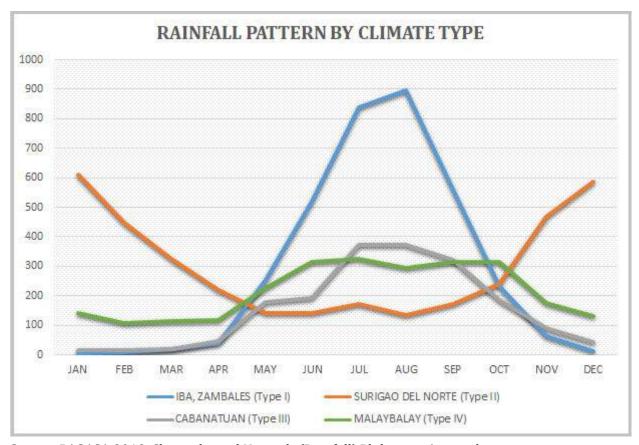
wet during the rest of the year. Maximum rain period is from June to September

**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, <a href="https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals">https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals</a>.

