## LAND SUITABILITY MAP

### NATURAL RUBBER

# LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

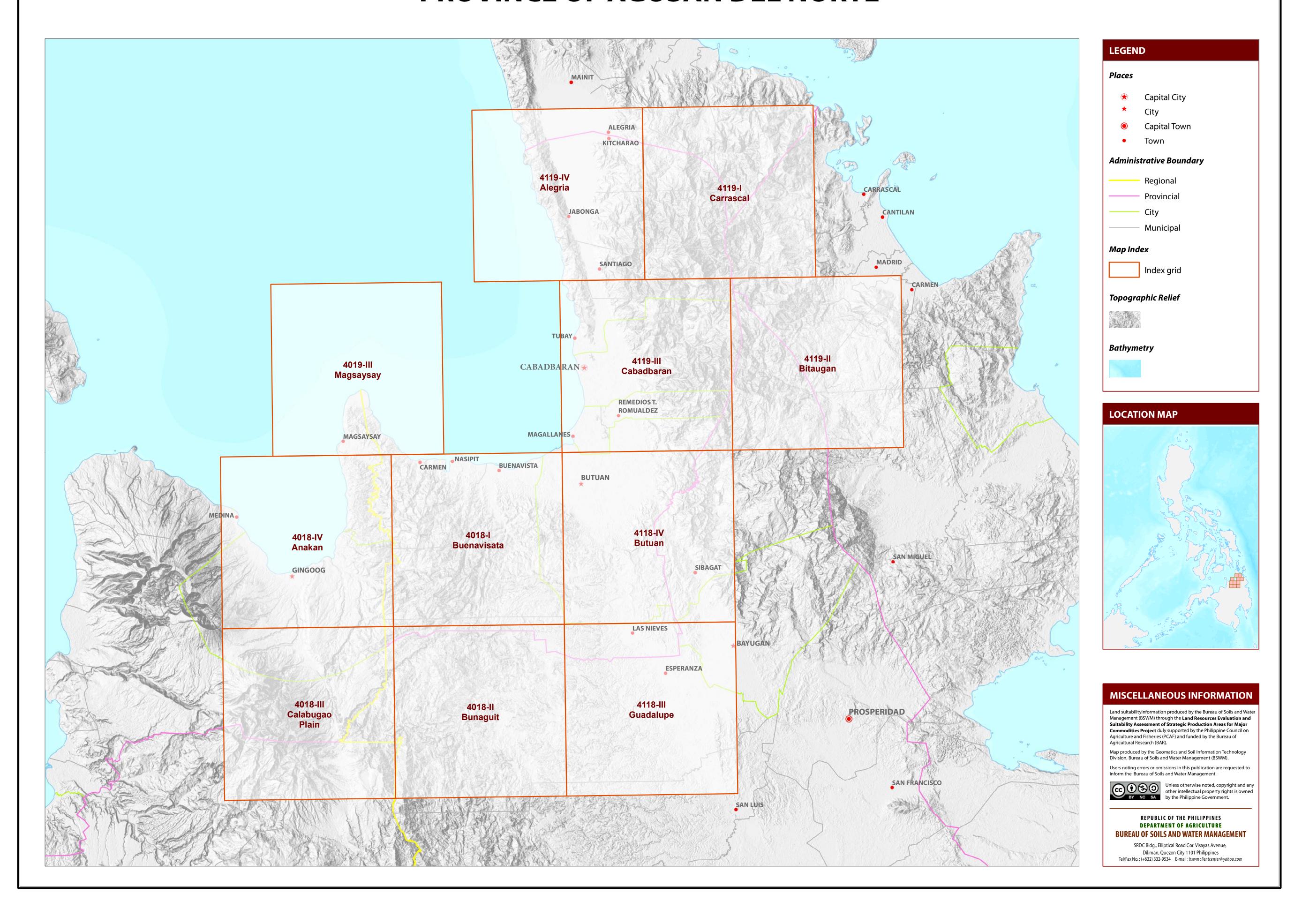
### PROVINCE OF AGUSAN DEL NORTE





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# LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS PROVINCE OF AGUSAN DEL NORTE



# LAND SUITABILITY MAP FOR RUBBER

## LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS AGUSAN DEL NORTE, REGION XIII

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

					EXPANSION AREA (Ha)						CONFLICT RESOLUTION AREA (Ha)					TOTAL	
MUNICIPALITY				TOTAL EXISTING AREA (Ha)	Coconut		Shrubland, unmanaged*		Grassland, unmanaged*		Corn		Paddy rice, non-irrigated		Other crops		POTENTIAL EXPANSION
	<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>	S2	S1	S2	S1	<b>S2</b>	<b>S1</b>	<b>S2</b>	AREA (Ha)
BUENAVISTA	-	-	-	-	1,931	6,069	33	531	169	803	449	231	-	-	-	-	10,216
BUTUAN CITY	-	-	-	-	7,064	13,520	2	250	10	190	6,009	1,136	-	-	i	-	28,181
CARMEN	-	-	-	-	326	1,539	-	-	57	306	129	12	-	-	-	-	2,370
CITY OF CABADBARAN	-	_		-	3,142	561	1	-	113	86	2,913	61	-	-	1	1	6,876
JABONGA	-	_		-	645	620	-	-	24	101	812	9	-	-	ı	-	2,210
KITCHARAO	-	_		-	444	623	-	16	-	31	297	10	-	-	ı	-	1,420
LAS NIEVES	-	_		-	907	5,804	43	407	4	315	810	578	-	-	1	1	8,868
MAGALLANES	-	_		-	799	15	1	-	-	-	142	41	-	-	1	1	997
NASIPIT	-	-	-	-	458	740	-	-	198	447	173	247	-	-	1	-	2,262
REMEDIOS T. ROMUALDEZ	-	_	-	-	429	445	-	-	-	-	497	46	-	-	-	-	1,417
SANTIAGO	-			-	1,060	357	-	-	56	103	447	13	-	-	ı	-	2,036
TUBAY	-	-	-	-	1,804	531	-	-	7	169	443	2	-	-	-	-	2,957
TOTAL	_	-	_	-	19,009	30,826	79	1,204	638	2,550	13,120	2,384	-		-	_	69,810

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 UTILIZAT TYPE	ON 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 T	ee 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	
SLOPE (%) SOIL DRAINAGE					SOIL REACTION (pH)			SOIL TEXTURE					
0 - 3	level to gently slopin	ng	ED - ex	cessively drained		< 4.5 - ex	tremely acid		Coarse			Fine	
3 - 8	3 - 8 - gently sloping to undulating WD - well drained				4.5 - 5.0 - ve	ery strongly acid		S -:	sand		SC - sar	ndy clay	
8 - 18	8 - 18 - undulating to rolling MWD		MWD - mo	noderately well drained		5.1 - 5.5 - strongly acid			LS -	loamy sand		SiC - silt	y clay
18 - 30	18 - 30 - rolling to moderately steep SPI		SPD - so	omewhat poorly drained		5.6 - 6.0 - medium acid		CSL -	coarse sandy loam		C - cla	y	
30 - 50	, ,		PD - po	orly drained		6.1 - 6.5 - slightly acid			SL -	sandy loam			avy clay
> 50			6.6 - 7.2 - neutral			Medium	-						
						7.3 - 7.8 - m	ildly alkaline		FSL -	fine sandy loam			
SOIL DEPTH (cm) SURFACE IMPEDIMENT				7.9 - 8.4 - moderately alkaline			L -	loam					
0 - 30	0 - 30 - very shallow ROCK OUTCROPS			> 8.5 - st	rongly alkaline		SiL -:	silt loam					
30 - 50	·						CL -	clay loam					
50 - 100	moderately deep		10 - 30% - co	mmon						silty clay loam			
50 - 100	· moderately deep		10 - 30% - co	mmon					SICL -	siity ciay loam			

#### LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

- deep to very deep

> 30% - many

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 - < 500m or > 2500m	D3 - Very poorly drained or excessively drained	Sh3 - Very shallow (< 30cm)	E3 - Severe erosion
SLOPE/TOPOGRAPHY	SOIL TEXTURE	ROCK OUTCROPS	FLOODING
T2 - Undulating to moderately steep	Tc - Coarse texture	Rc2 - Common	F2 - Moderate seasonal flooding
T3 - Steep to very steep		Rc3 - Many	F3 - Severe seasonal flooding

CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION
1	El2-E2-Rc3	11	T2-E3	21	T2-El2-Rc2	31	T3-E3-Sh2-Rc3	41	T3-El3-E3-Sh3-Rc2	51	T3-El3-E3-Sh3-Rc3
2	El2-Sh2-Rc2	12	T2-E3-Rc3	22	T2-El2-Sh2-Rc2	32	T3-E3-Sh3-Rc2	42	T3-F3-D2	<i>52</i>	T3-El3
3	F2-D2	13	T2-E3-Sh2-Rc2	23	T2-El3-E3-Rc2	33	T3-E3-Sh3-Rc3	43	T3		
4	F2-Tc	14	T2-E3-Sh2-Rc3	24	T2-El3-E3-Rc3	34	T3-El2	44	T3-E3		
5	F3-D2	15	T2-El2	25	T2-El3-E3-Sh2-Rc2	35	T3-El2-E3	45	T3-E3-Sh3-Rc3		
6	Sh2	16	T2-El2-E3	26	T2-El3-Sh2-Rc2	36	T3-El2-E3-Rc2	46	T3-El2		
7	Sh2-Rc2	17	T2-El2-E3-Rc2	27	T2-F2-D2	37	T3-El2-E3-Sh2-Rc3	47	T3-El2-E3		
8	T2	18	T2-El2-E3-Rc3	28	T2-F3-D2	38	T3-El2-E3-Sh3-Rc2	48	T3-El2-E3-Rc3		
9	T2-E2	19	T2-El2-E3-Sh2-Rc2	29	T3	39	T3-El2-E3-Sh3-Rc3	49	T3-El2-E3-Sh3-Rc3		
<i>10</i>	T2-E2-Sh2-Rc2	20	T2-El2-E3-Sh2-Rc3	30	Т3-Е3	40	T3-El3-E3-Sh2-Rc3	<i>50</i>	T3-El3		

CODE	LANDUSE
4	Corn
81	Coffee
82	Cacao
116	Coconut
126	Grassland
130	Bare areas, unmanaged
134	Shrubs, unmanaged

- sandy clay loam

#### **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**

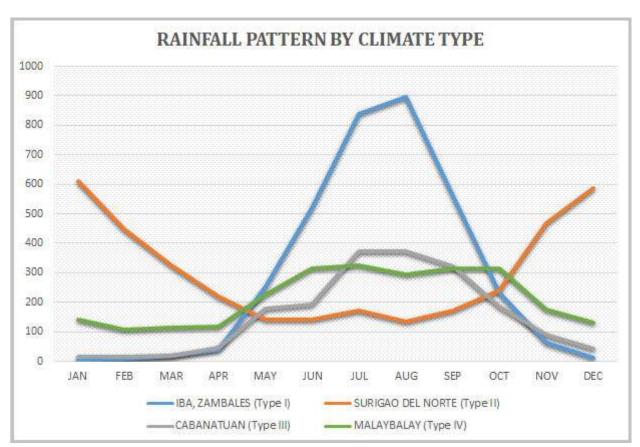
**TYPE I**: Two pronouced season, dry from November to April and **TYPE II**: No dry season with a very pronounced maximum rain wet during the rest of the year. Maximum rain period is from June to September

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

Western part of Agusan Del Norte is classified as climatic Type IV and North Eastern part is climatic Type II.



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>.

