PROVINCE OF SURIGAO DEL SUR





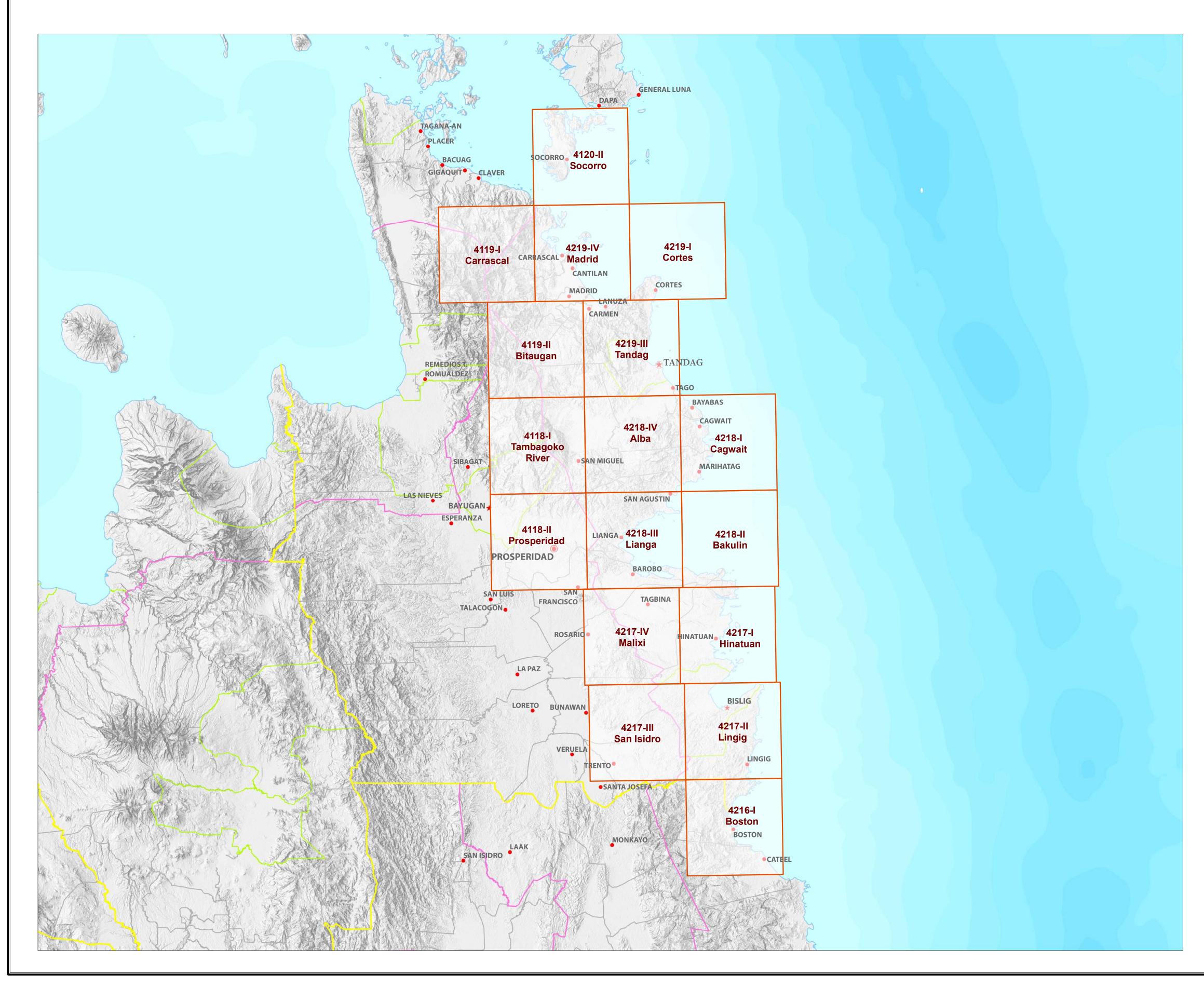
LAND SUITABILITY MAP

ARABICA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY **ASSESSMENT OF STRATEGIC PRODUCTION AREAS**

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE **BUREAU OF SOILS AND WATER MANAGEMENT** SRDC Bldg., Elliptical Road Cor. Visayas Avenue, Diliman, Quezon City 1101 Tel/Fax No.: (+632) 332-9534 E-mail: bswmclientcenter@yahoo.com

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS PROVINCE OF SURIGAO DEL SUR



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LAND SUITABILITY MAP FOR **ARABICA COFFEE**

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS **SURIGAO DEL SUR, REGION XIII**

EXTENT OF SUITABILITY FOR ARABICA COFFEE PRODUCTION BY MUNICIPALITY

						EX	PANSION	AREA (H	a)			CONFLIC	T RESOL	UTION A	REA (Ha)		TOTAL
MUNICIPALITY	EXISTI	NG COFFE	EE (Ha)	TOTAL EXISTING AREA (Ha)	Coco	onut	Shrul unmar	-	Grass unman		Со	rn	-	y rice, rigated	Other	crops	POTENTIAL EXPANSION
	S1	S2	S 3		S1	S2	S1	S2	S1	S 2	S1	S2	S1	S2	S1	S2	AREA (Ha)
BAROBO	2	-	3	5	11,830	2,063	715	25	64	9	517	42	-	-	-	-	15,264
BAYABAS	-	-	-	-	1,620	36	141	-	-	-	278	25	-	-	-	-	2,101
CAGWAIT	-	-	-	-	2,853	56	65	-	-	-	322	-	-	-	-	-	3,296
CANTILAN	-	-	-	-	791	420	29	81	38	100	1,808	143	-	-	-	-	3,409
CARMEN	-	-	-	-	635	54	39	198	23	94	273	17	-	-	-	-	1,334
CARRASCAL	-	-	-	-	228	510	596	754	109	927	308	33	-	-	-	-	3,467
CITY OF BISLIG	-	-	-	-	12,730	1,754	2,471	71	549	82	1,280	5	-	-	-	-	18,943
CITY OF TANDAG	-	-	-	-	1,308	2,795	230	86	22	124	322	337	-	-	-	-	5,225
CORTES	-	-	-	-	711	1,643	1	39	-	-	91	43	-	-	-	-	2,529
HINATUAN	-	-	-	-	14,187	10,068	338	593	547	156	383	22	-	-	-	-	26,293
LANUZA	-	-	-	-	790	297	3	274	18	281	129	2	-	-	-	-	1,795
LIANGA	14	21	11	45	2,575	978	177	169	-	137	77	-	-	-	-	-	4,112
LINGIG	-	-	-	-	2,650	7	806	-	158	-	83	-	-	-	-	-	3,704
MADRID	-	-	-	-	658	492	12	47	43	20	1,594	38	-	-	-	-	2,904
MARIHATAG	-	-	-	-	4,262	329	171	471	-	73	810	-	-	-	-	-	6,117
SAN AGUSTIN	-	-	-	-	1,912	216	98	582	8	163	497	-	-	-	-	-	3,475
SAN MIGUEL	-	-	-	-	3,178	522	777	472	335	169	5,745	100	-	-	-	-	11,299
TAGBINA	-	-	-	-	24,841	6,486	370	90	1,102	313	190	34	-	-	-	-	33,427
TAGO	-	-	-	-	2,921	1,462	182	1	15	14	3,707	2,890	-	-	-	-	11,192
TOTAL	16	21	14	50	90,680	30,188	7,221	3,955	3,031	2,663	18,415	3,732	-	-	-	-	159,885

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

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

AGRON	OMIC REQU	IREMENT	OF ARAB	ICA COFFEE	PRODUC	ΓΙΟΝ							
LAND UTILIZATION TYPE	N 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 DRAINA	AGE		SOIL REACTIO	N (pH)		SOIL TEXT	URE			
0-3 - le	evel to gently sloping	3	ED - e	excessively drained		< 4.5 - ext	remely acid		Coarse			Fine	
3-8 -g	ently sloping to und	ulating	WD - v	vell drained		4.5 - 5.0 - vei	ry strongly acid		S	- sand		SC - s	sandy clay
3-18 - u	ndulating to rolling		MWD - n	noderately well drain	ed	5.1 - 5.5 - str	ongly acid		LS	- loamy sand		SiC - s	silty clay
18 - 30 - re	olling to moderately	steep	SPD - s	omewhat poorly drain	ned	5.6 - 6.0 - me	edium acid		CSL	- coarse sandy loam		C - 0	clay
30 - 50 - st	eep		PD - p	oorly drained		6.1 - 6.5 - slig	ghtly acid		SL	- sandy loam		HC - I	neavy clay
> 50 - v	ery steep		VPD - v	very poorly drained		6.6 - 7.2 - nei	utral		Medium				
						7.3 - 7.8 - mi	ldly alkaline		FSL	- fine sandy loam			
SOIL DEPTH	(cm)		SURFACE IM	PEDIMENT		7.9 - 8.4 - mo	derately alkaline		L	- loam			
0-30 -v	ery shallow		ROCK OUTCR	OPS		> 8.5 - str	ongly alkaline		SiL	- silt loam			
30 - 50 - sl	nallow		<10% - n	none - few					CL	- clay loam			
50 - 100 - n	noderately deep		10 - 30% - c	common					SiCL	- silty clay loam			
>100 - d	eep to very deep		> 30% - n	nany						- sandy clay loam			

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

ELEVATION El2 - 500 - 1000m or 2000 - 2500m El3 - < 500m or > 2500m	SOIL DRAINAGED2- Somewhat poorly drained to poorly drainedD3- Very poorly drained or excessively drained	SOIL DEPTHSh2- Shallow to moderately deep (30 - 100cm)Sh3- Very shallow (< 30cm)
SLOPE/TOPOGRAPHYT2- Undulating to moderately steepT3- Steep to very steep	SOIL TEXTURE Tc - Coarse texture	ROCK OUTCROPSRc2- CommonRc3- Many

CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION	CODE	LIMITATION
1	El2	11	Sh2-Rc2	21	T2-El2-E3-Sh2-Rc2	31	T2-El3-E3-Sh2-Rc2	41	T3-E3-Sh3-Rc3	51	T3-El3-E3-Sh3-Rc2	61	T3-El3
2	El2-E2-Sh2-Rc3	12	T2	22	T2-El2-E3-Sh2-Rc3	32	T2-El3-E3-Sh2-Rc3	42	T3-El2	52	T3-El3-E3-Sh3-Rc3	62	T3-El3-E3
3	El2-Sh2-Rc2	13	T2-E3-Rc2	23	T2-El2-Rc2	33	T2-El3-F2-D2	43	T3-El2-E3-Rc2	53	T3-El3-F2-D2	63	T3-El3-E3-Sh3-Rc3
4	El3	14	T2-E3-Rc3	24	T2-El2-Sh2-Rc2	34	T2-El3-F3-D2	44	T3-El2-E3-Sh2-Rc3	54	T3-El3-F3-D2	64	T3-El3
5	El3-F2-D2	15	T2-E3-Sh2-Rc2	25	T2-El2-Sh2-Rc3	35	T2-Sh2-Rc2	45	T3-El2-E3-Sh3-Rc2	55	T3		
6	El3-F2-Tc	16	T2-E3-Sh2-Rc3	26	T2-El3	36	T2-Sh2-Rc3	46	T3-El2-E3-Sh3-Rc3	56	T3-E3-Rc3		
7	El3-F3-D2	17	T2-El2	27	T2-El3-E2-Sh2-Rc2	37	Т3	47	T3-El3	57	T3-E3-Sh3-Rc3		
8	El3-Sh2	18	T2-El2-E3	28	T2-El3-E3	38	T3-E3-Rc2	48	T3-El3-E3	58	T3-El2		
9	El3-Sh2-Rc2	19	T2-El2-E3-Rc2	29	T2-El3-E3-Rc2	39	T3-E3-Sh2-Rc3	49	T3-El3-E3-Rc2	59	T3-El2-E3		
10	El3-Tc	20	T2-El2-E3-Rc3	30	T2-El3-E3-Rc3	40	T3-E3-Sh3-Rc2	50	T3-El3-E3-Sh2-Rc3	60	T3-El2-E3-Sh3-Rc3		

	SOII	EROSION
m)	E2	- Moderate erosion
	E3	- Severe erosion

FLOODING

- Moderate seasonal flooding F2 - Severe seasonal flooding F3

CODE	LANDUSE
4	Corn
81	Coffee
82	Сасао
116	Coconut
126	Grassland
134	Shrubs, unmanaged
136	Forest

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.

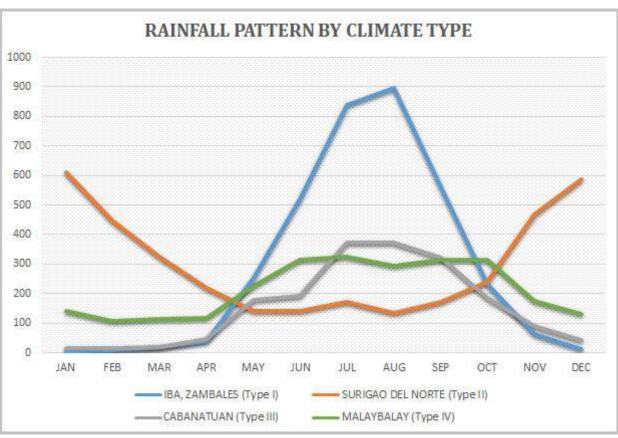
Moderately Suitable (S2)

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.

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
- **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.

Surigao Del Sur is classified as climatic Type II.

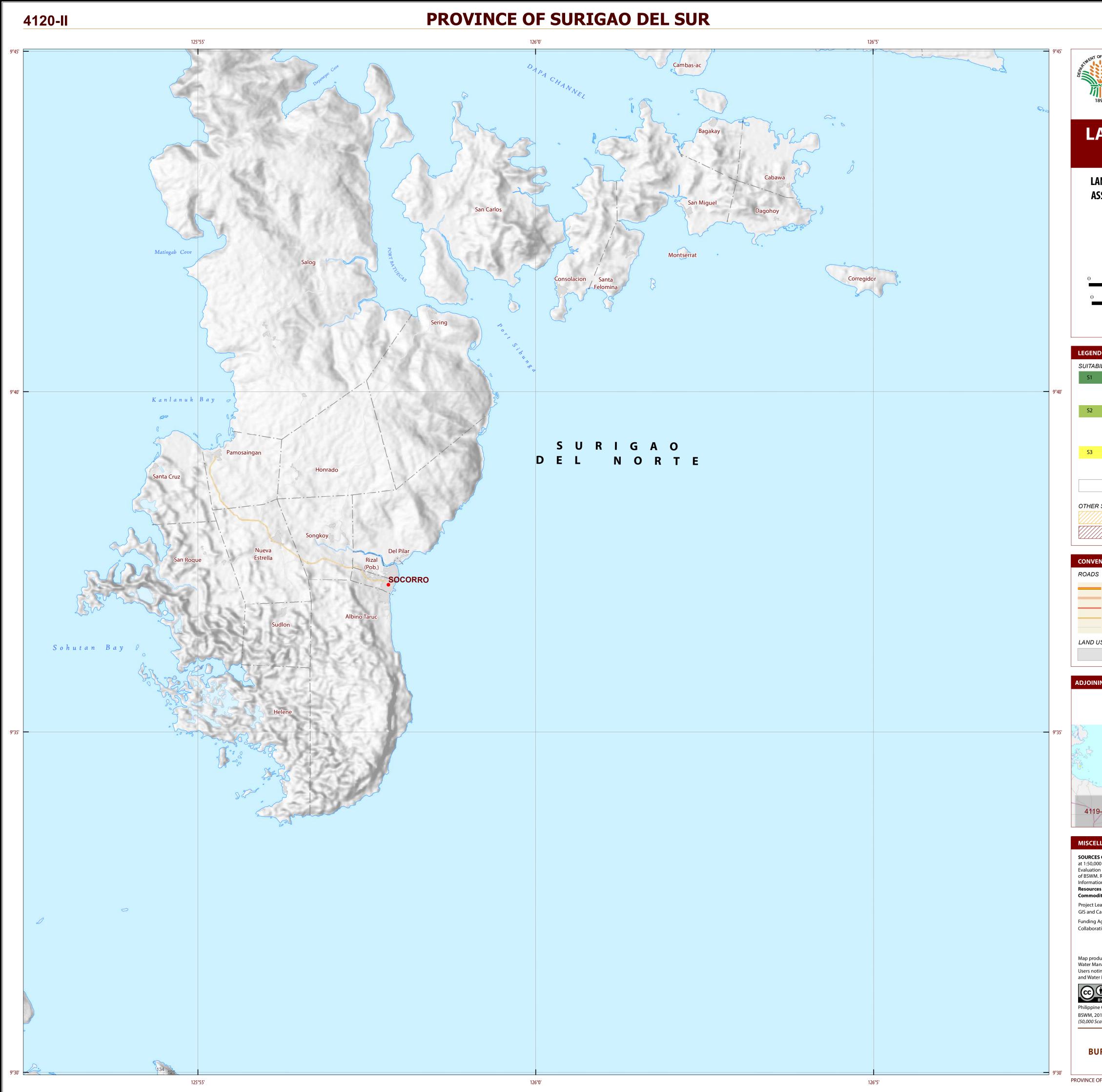


Source: PAGASA 2018, *Climatological Normals (Rainfall)*, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>.

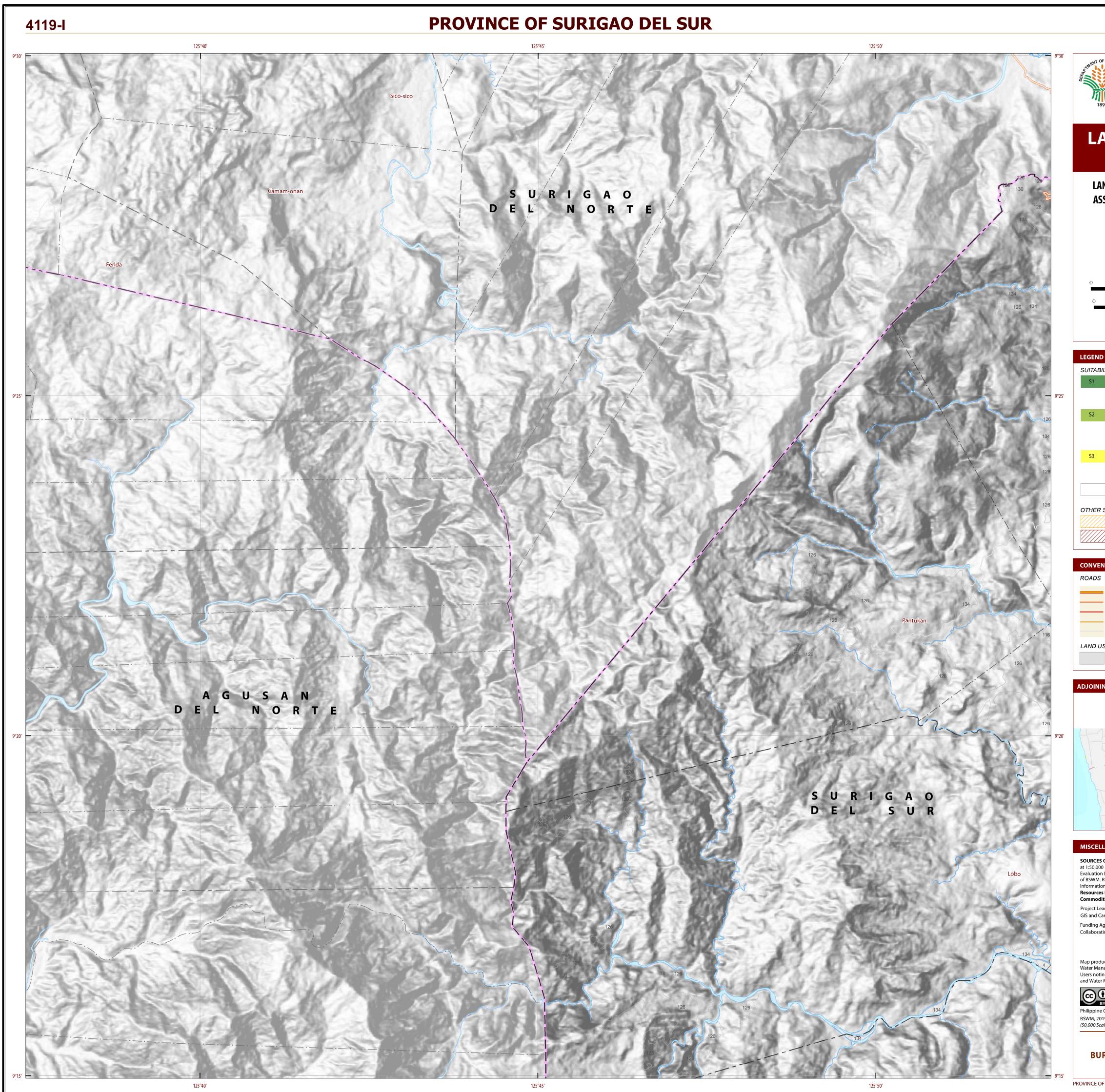
Marginally Suitable (S3) Land having limitations which in aggregate are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified.

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.

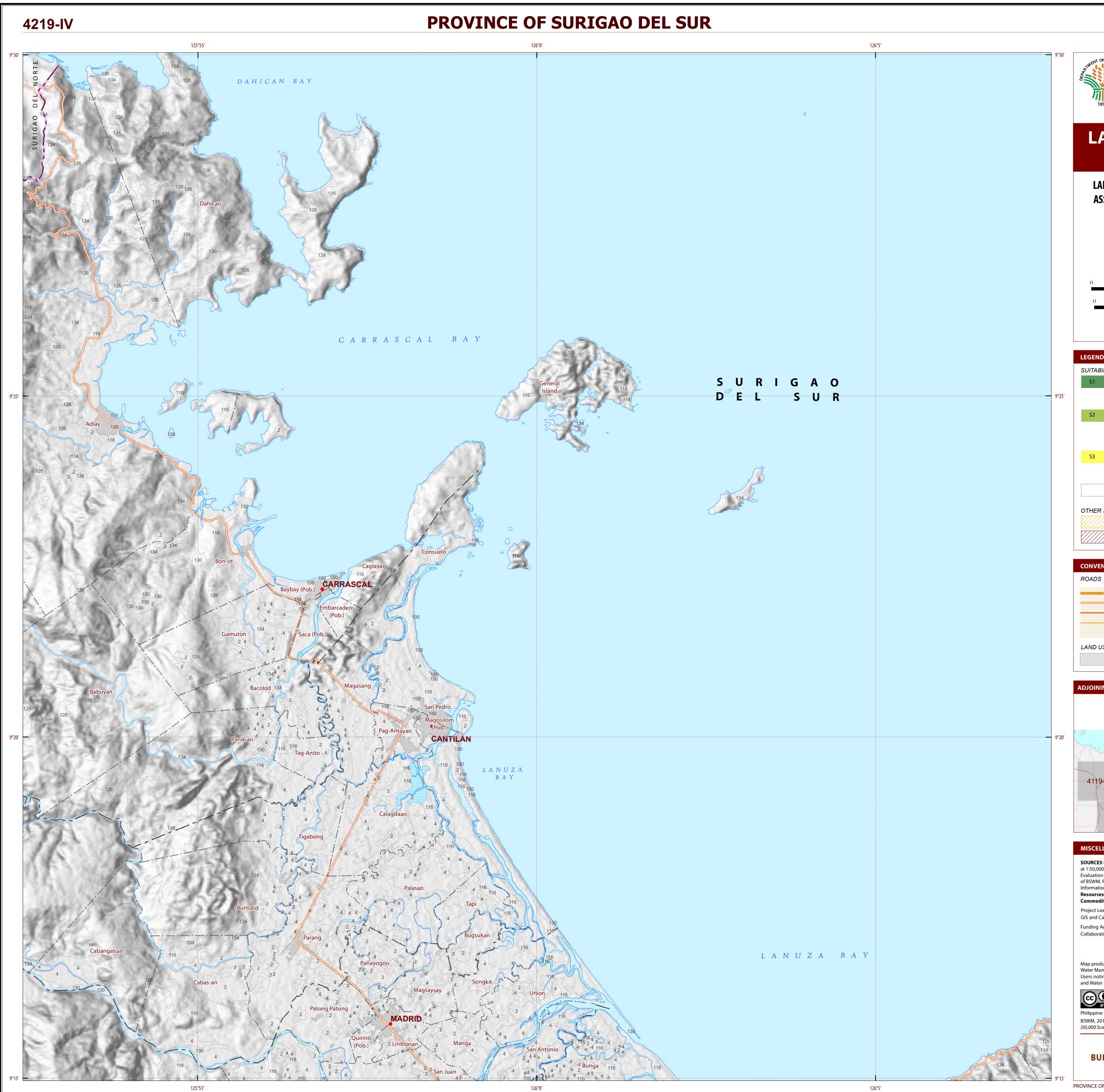
- period from December to February. There is not a single dry month. Maximum monthly rainfall occurs during the period from March to May.
- **TYPE IV** : Rainfall is more or less evenly distributed throughout the year. This type resembles Type II since it has no dry season.



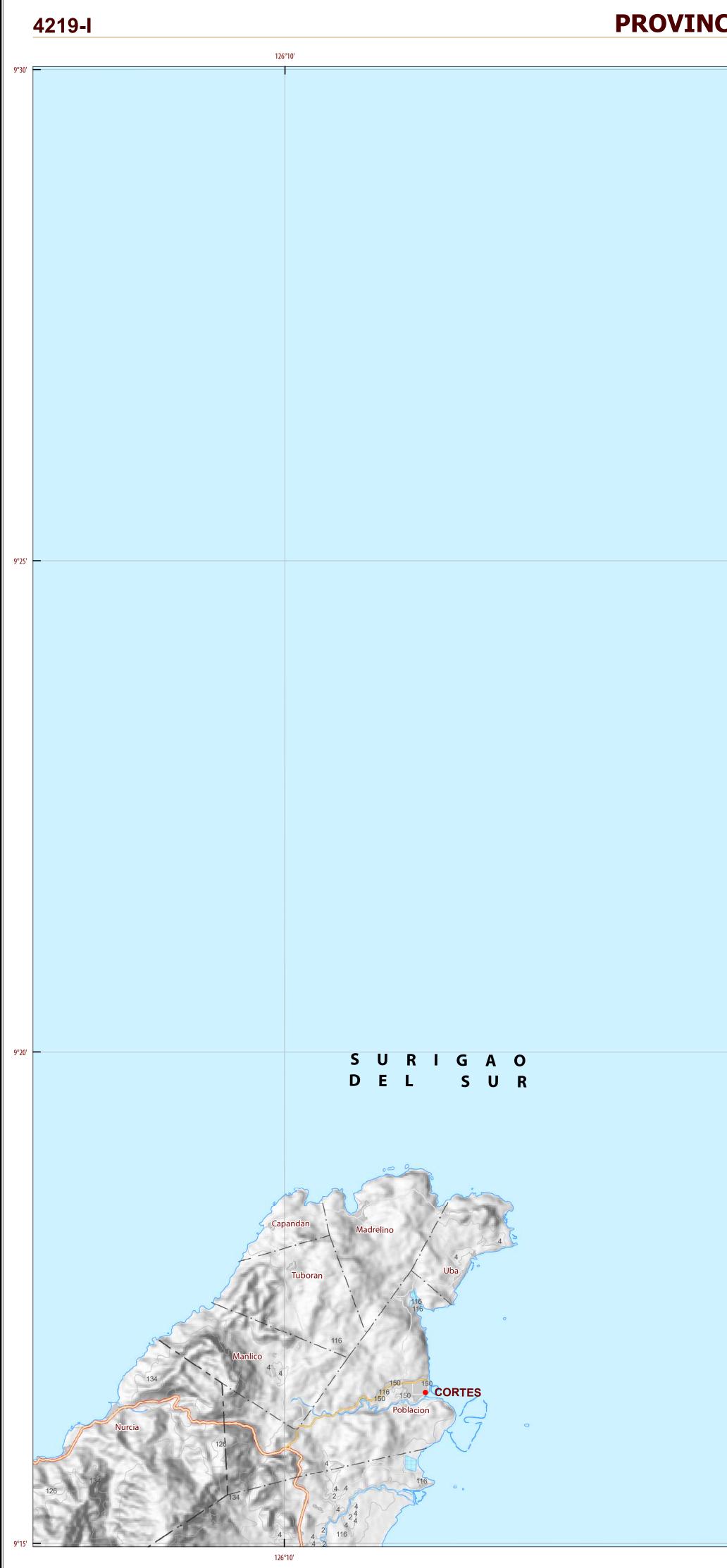
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Highly Suitable application of a g cantly reduce pro an acceptable lev	yiven use, or only minor oductivity or benefits an vel.	icant limitations to sustained r limitations that will not signifi- nd will not raise inputs above itations which in aggregate are
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SIGNS NGP Areas Cacao	Land limita	tion
NTIONAL SIGNS		
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Expressway Trunk line Primary Secondary Tertiary	OUNDARY Region Province District Municipality Barangay Fishpond Image:	Sea / Shoreline Lakes / Rivers PLACES Capital City / City Capital Town / Town Capital Town / Town Mangrove NDEX MAP COMPANY COMPAN
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5 OF INFORMATION : Topographic information taken from N 10 scale. Land resources information from the Agricultural Lan n Division (ALMED), Soils Survey Division (SSD) and Laborato Rice areas obtained from the Land Use System (FAO, 2015) a on System (PRISM) (IRRI, 2015). Data analysis and compilation tes Evaluation and Suitability Assessment of Strategic Pro- lities Project implemented by BSWM (2017). eader : BERNARDO B. PASCUA Cartography : IRVIN K. SAMALCA Agency : Department of Agriculture - Bureau of Agri titing Agencies : Philippine Council on Agriculture and Fish : Department of Agriculture and Fisheries - Agriculture Regional Field Office of Regior : Local Government Unit (LGU) of covered p	nd Management and ry Services Division (LSD) nd Philippine Rice in through the Land duction Areas for Major icultural Research (DA-BAR) eries (PCAF) ARMM, Department of in IX, X, XI, XII and XIII (Caraga)
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PROVINCE OF SURIGAO DEL SUR 126°15' 126°20' P H I L I P P I N E S E A

9°15'

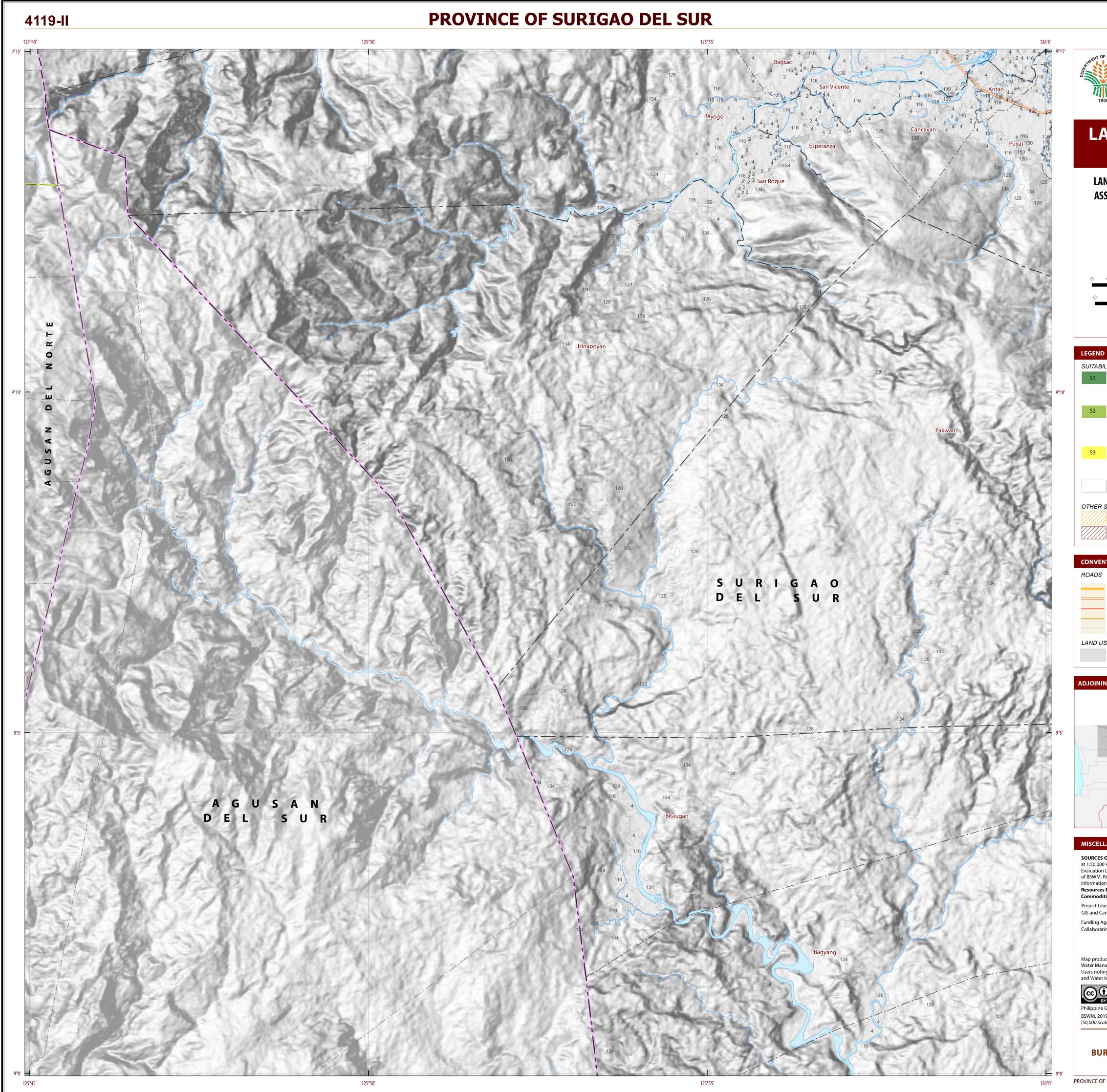
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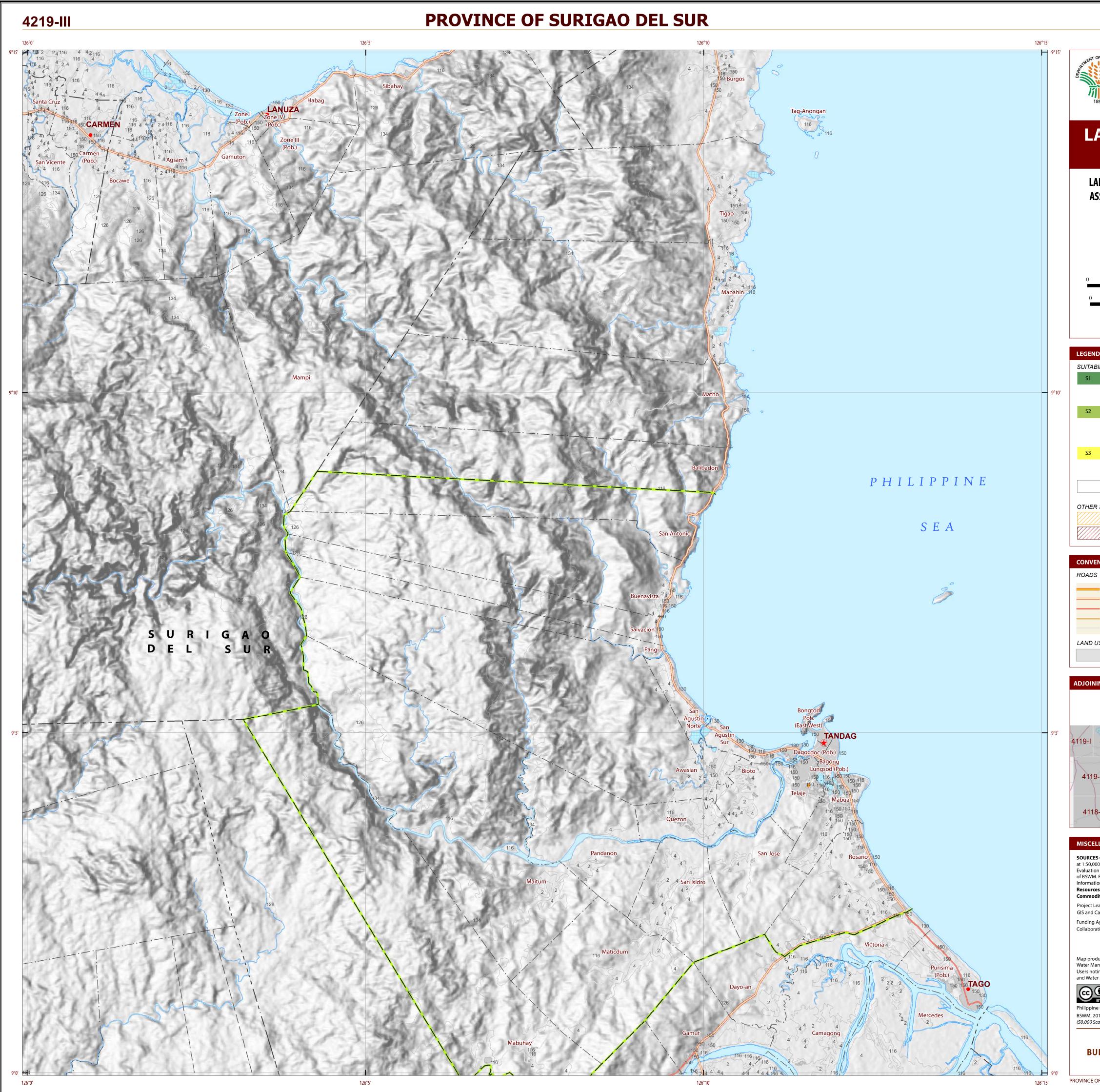
LANUZA BAY

126°15'

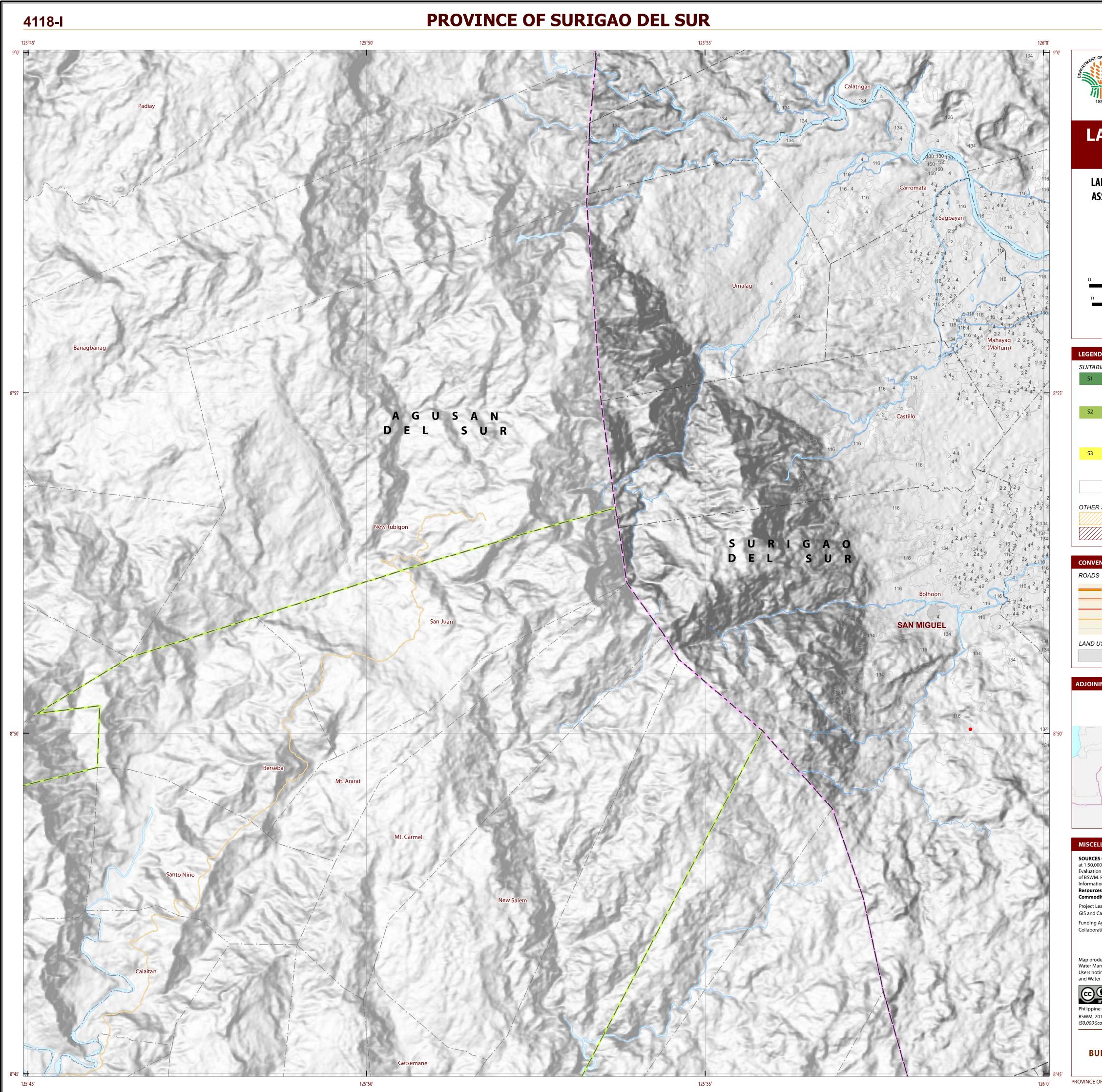
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MISCELLANEOUS INFORMATION SOURCES OF INFORMATION : Topographic information taken from at 1:50,000 scale. Land resources information from the Agricultural Evaluation Division (ALMED), Soils Survey Division (SSD) and Labora of BSWM. Rice areas obtained from the Land Use System (FAO, 2015) Information System (PRISM) (IRRI, 2015). Data analysis and compilate Resources Evaluation and Suitability Assessment of Strategic P Commodities Project implemented by BSWM (2017). Project Leader : BERNARDO B. PASCUA GIS and Cartography : IRVIN K. SAMALCA Funding Agency : Department of Agriculture - Bureau of <i>I</i> : Department of Agriculture and Fisherie Agriculture Regional Field Office of Reg : Local Government Unit (LGU) of coveree Map produced by the Geomatics and Soil Information Technology I : Sources and Soil Information Technology I	Land Management and atory Services Division (LSD) 5) and Philippine Rice cion through the Land roduction Areas for Major Agricultural Research (DA-BAR) sheries (PCAF) s - ARMM, Department of ion IX, X, XI, XII and XIII (Caraga) d provinces and municipalities
Water Management (BSWM). Users noting errors or omissions in this publication are requested to and Water Management. This publication is licensed under a Creat International License. Unless otherwise r	o inform the Bureau of Soils ive Commons Attribution 4.0 loted, copyright and any other
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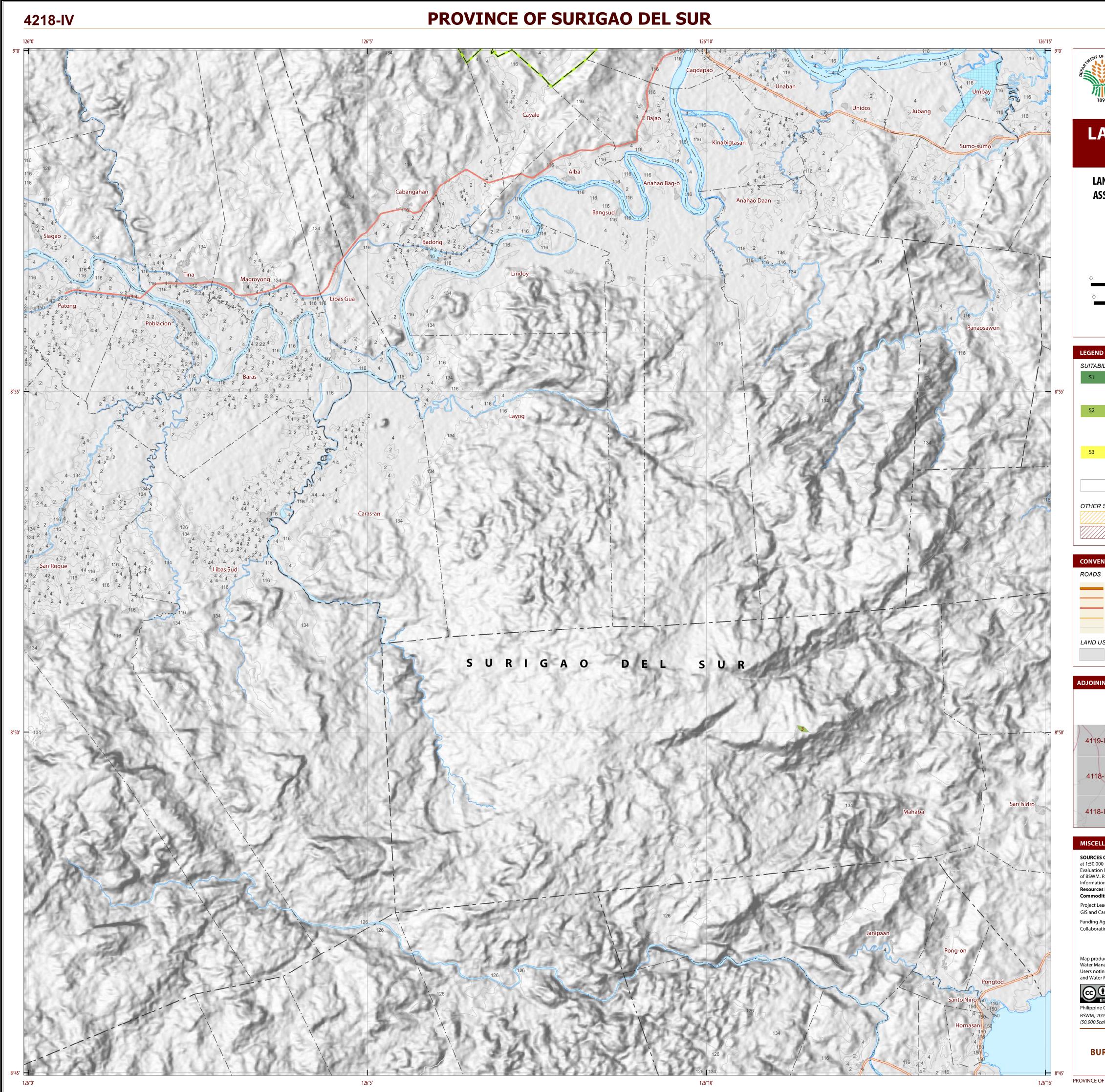
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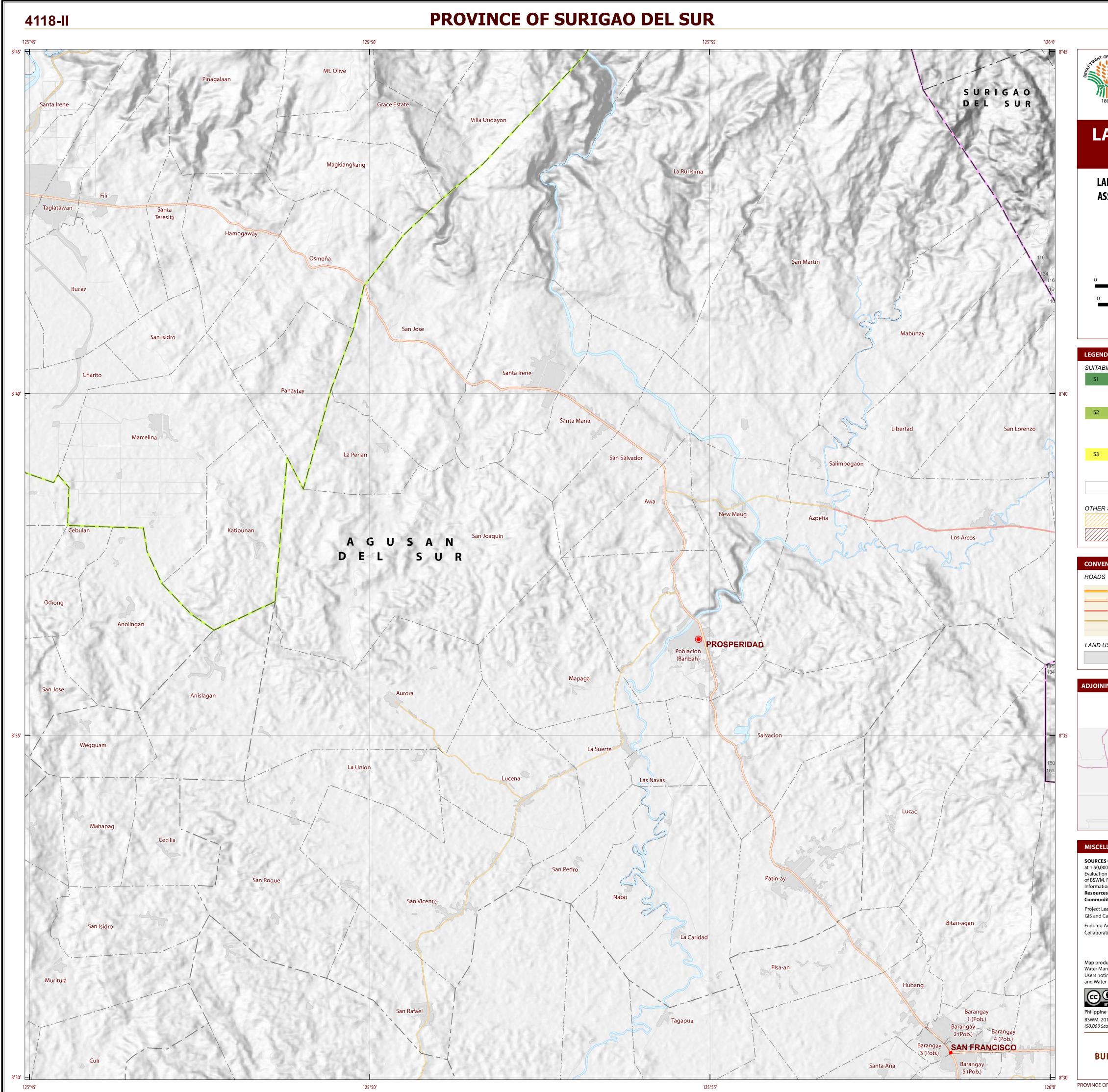


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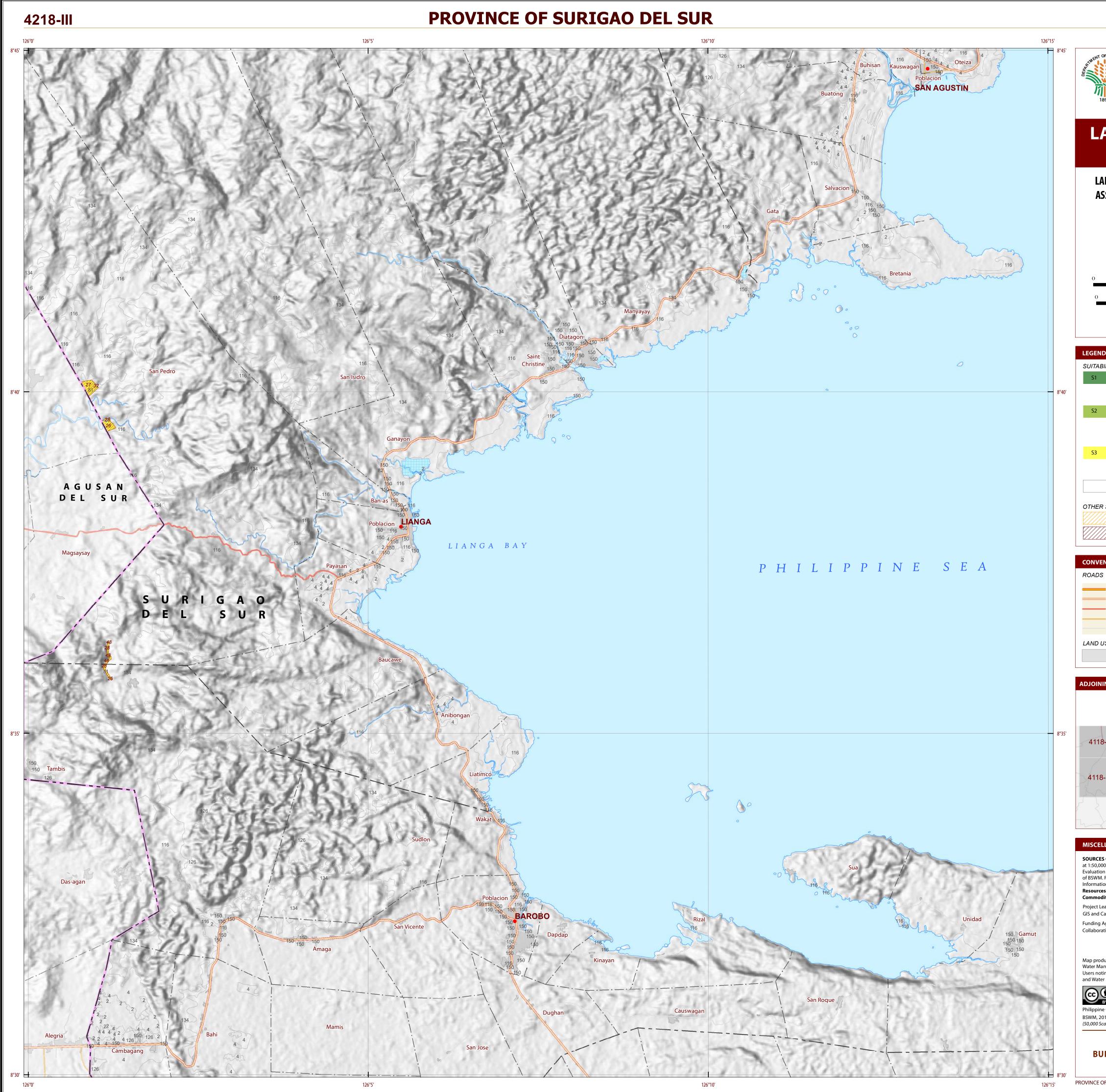


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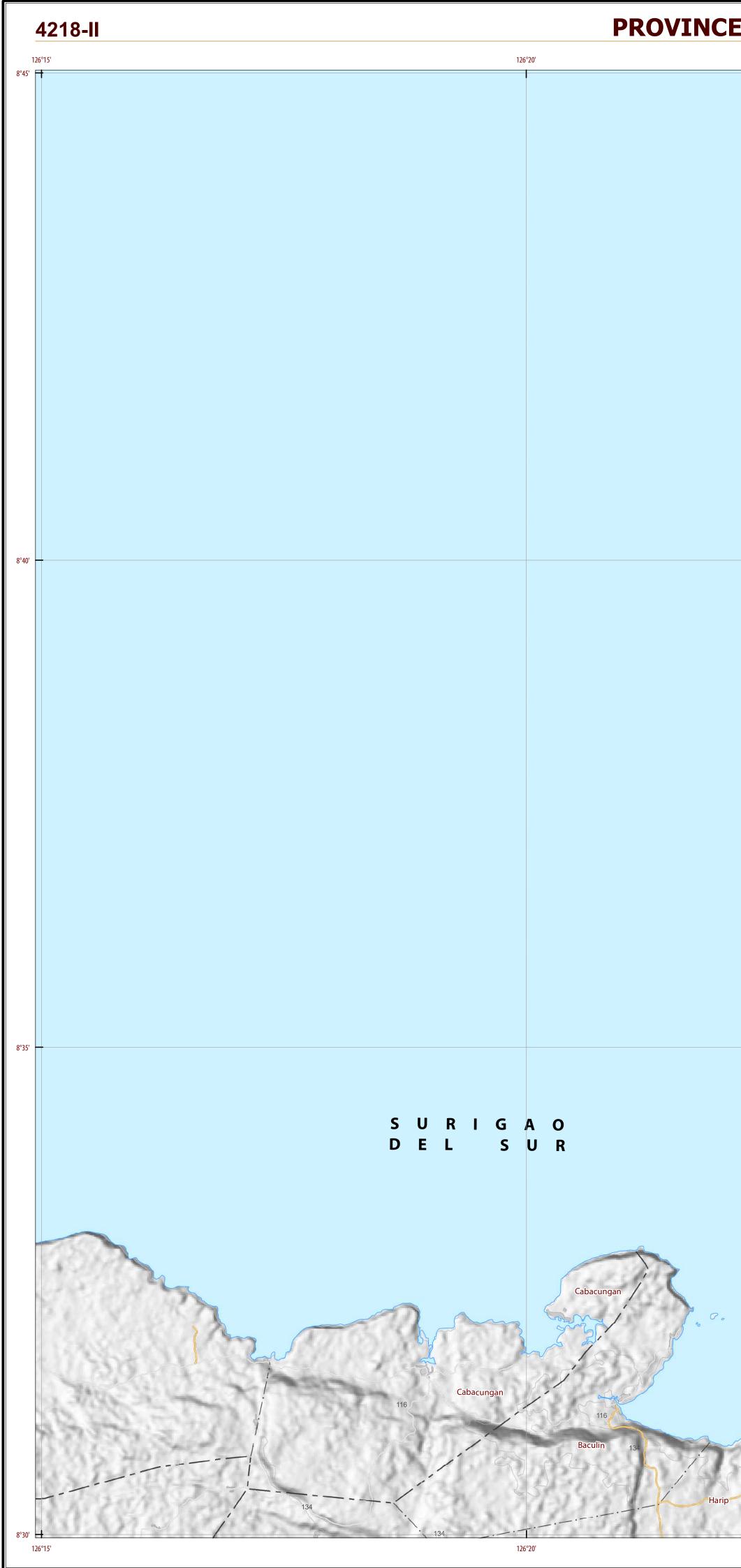
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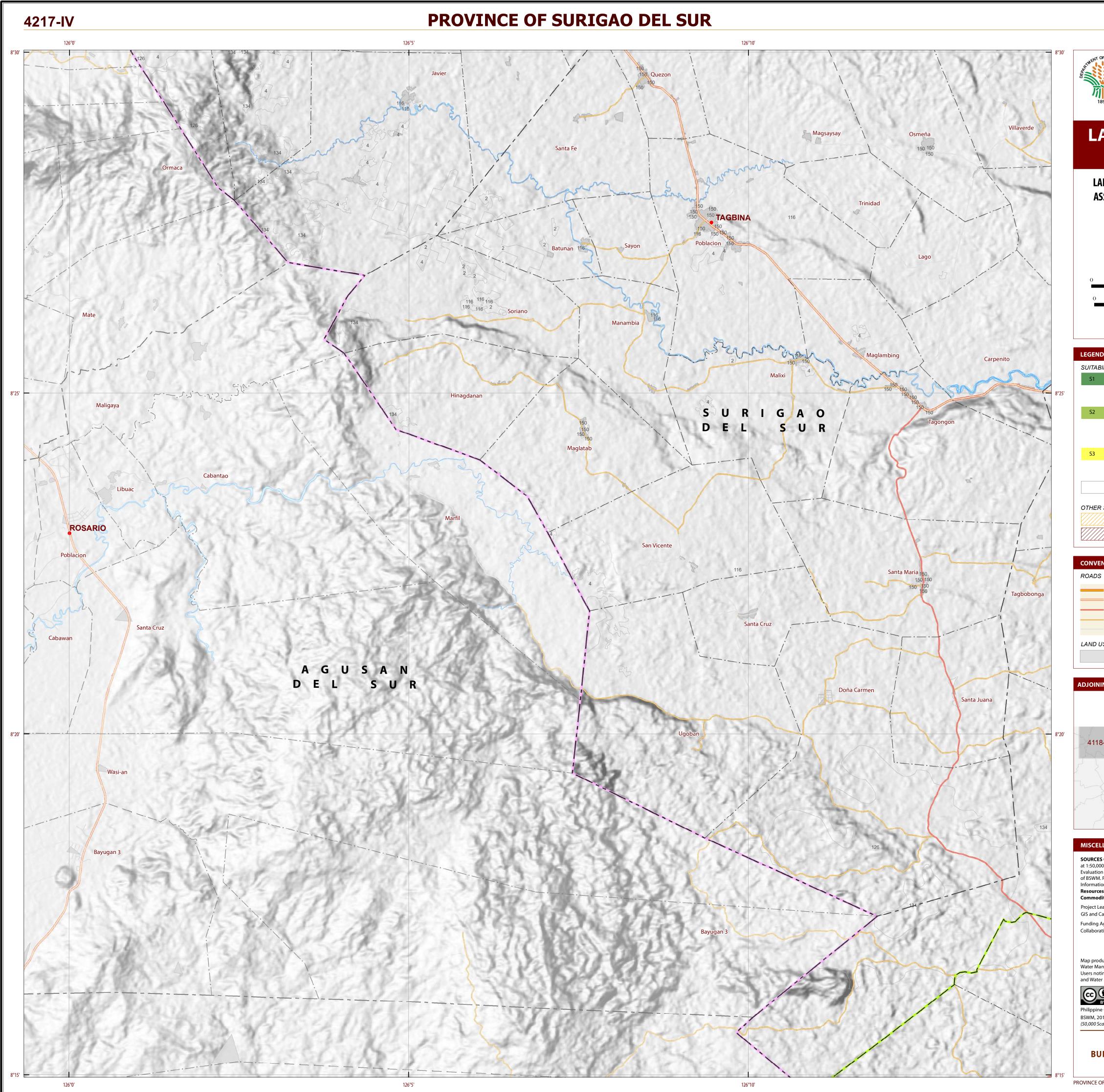


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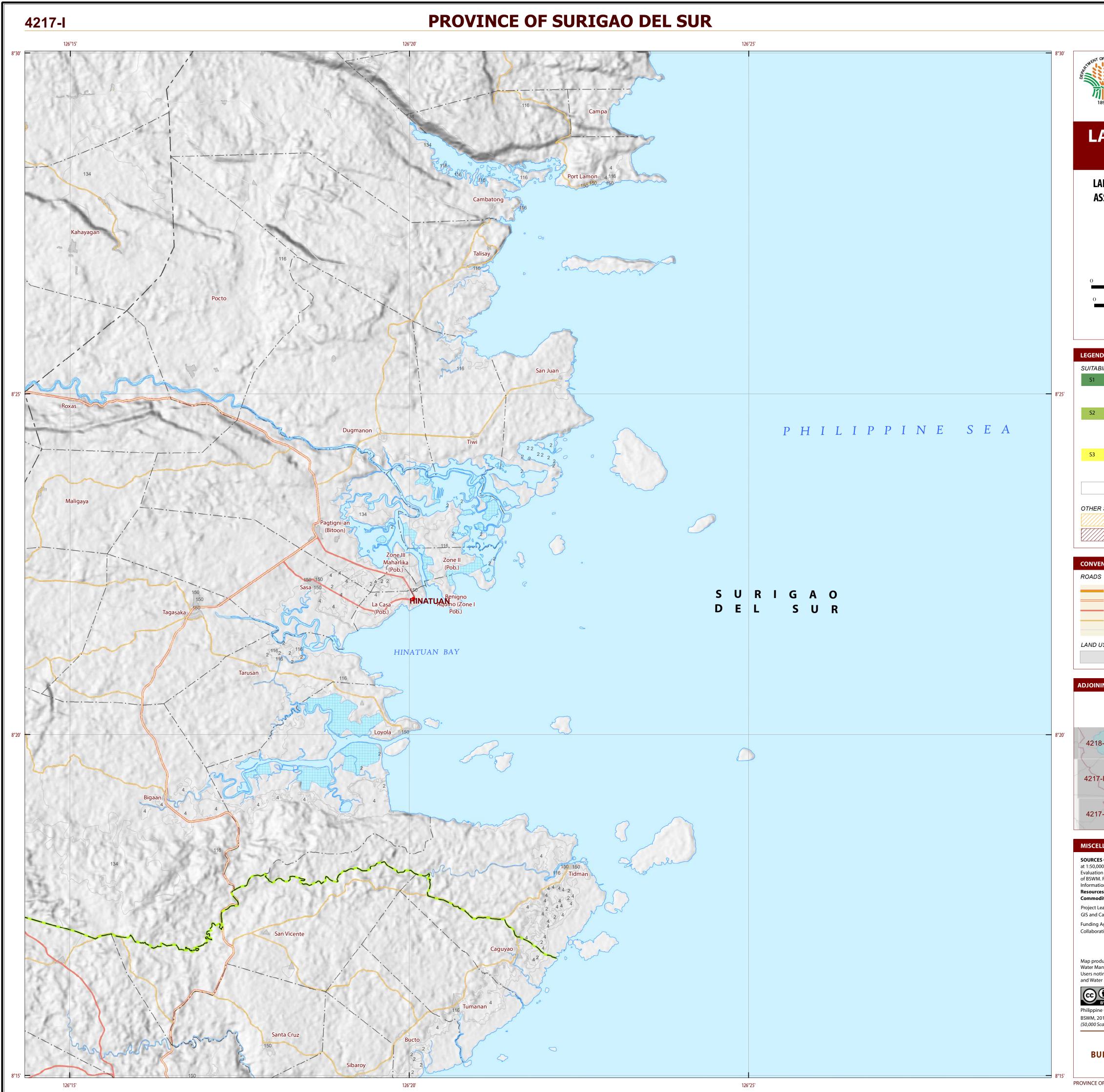


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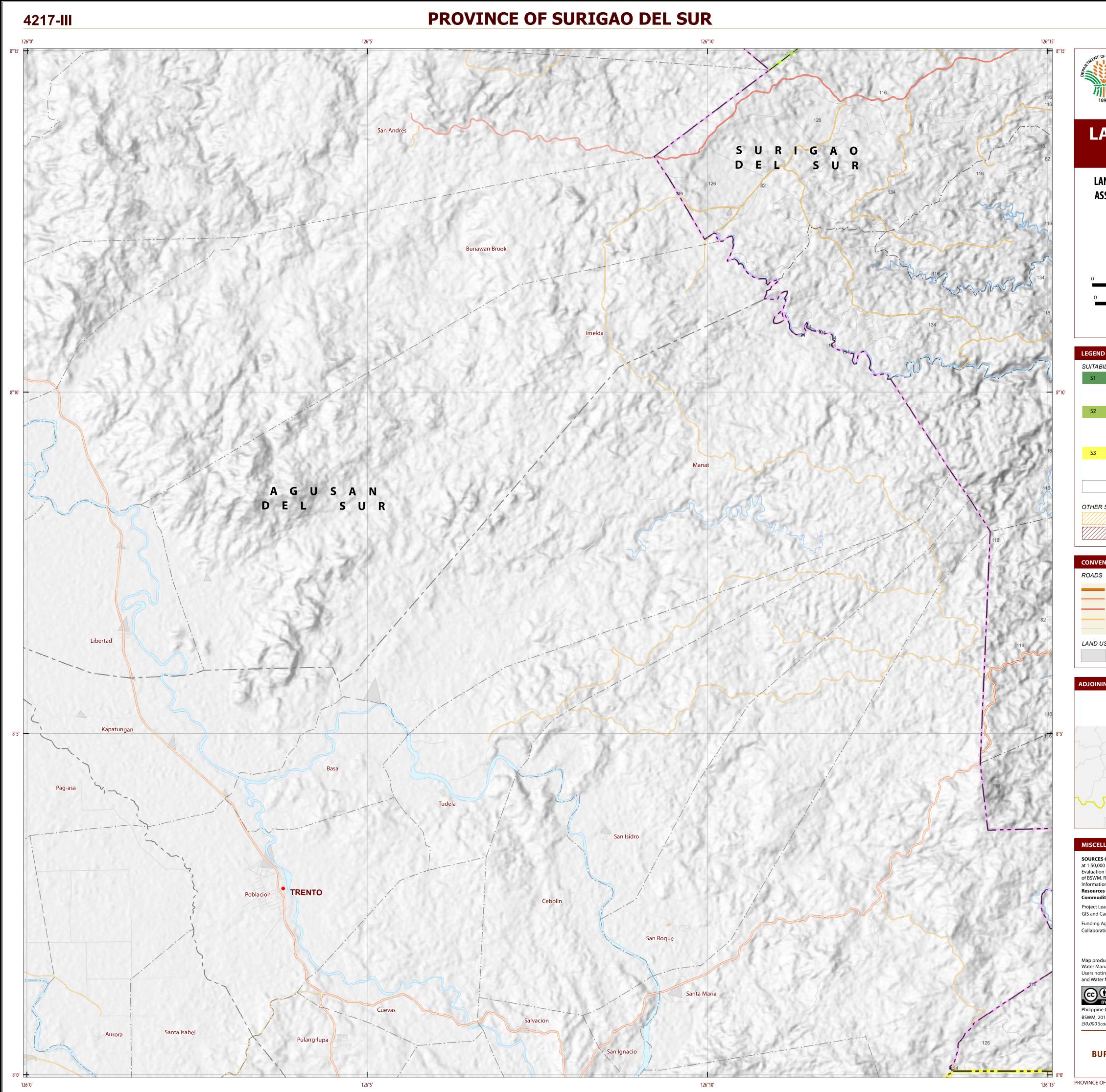
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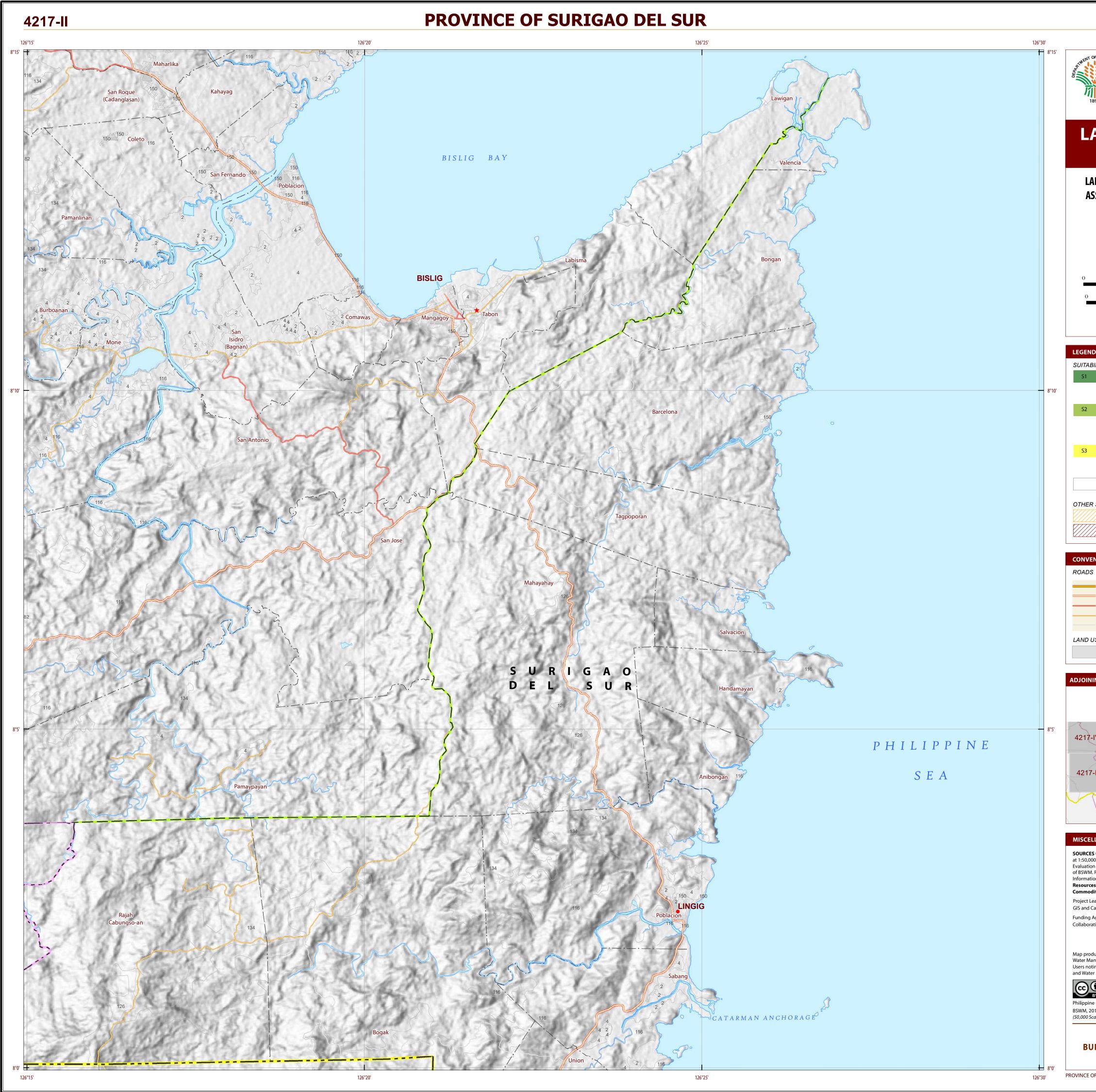
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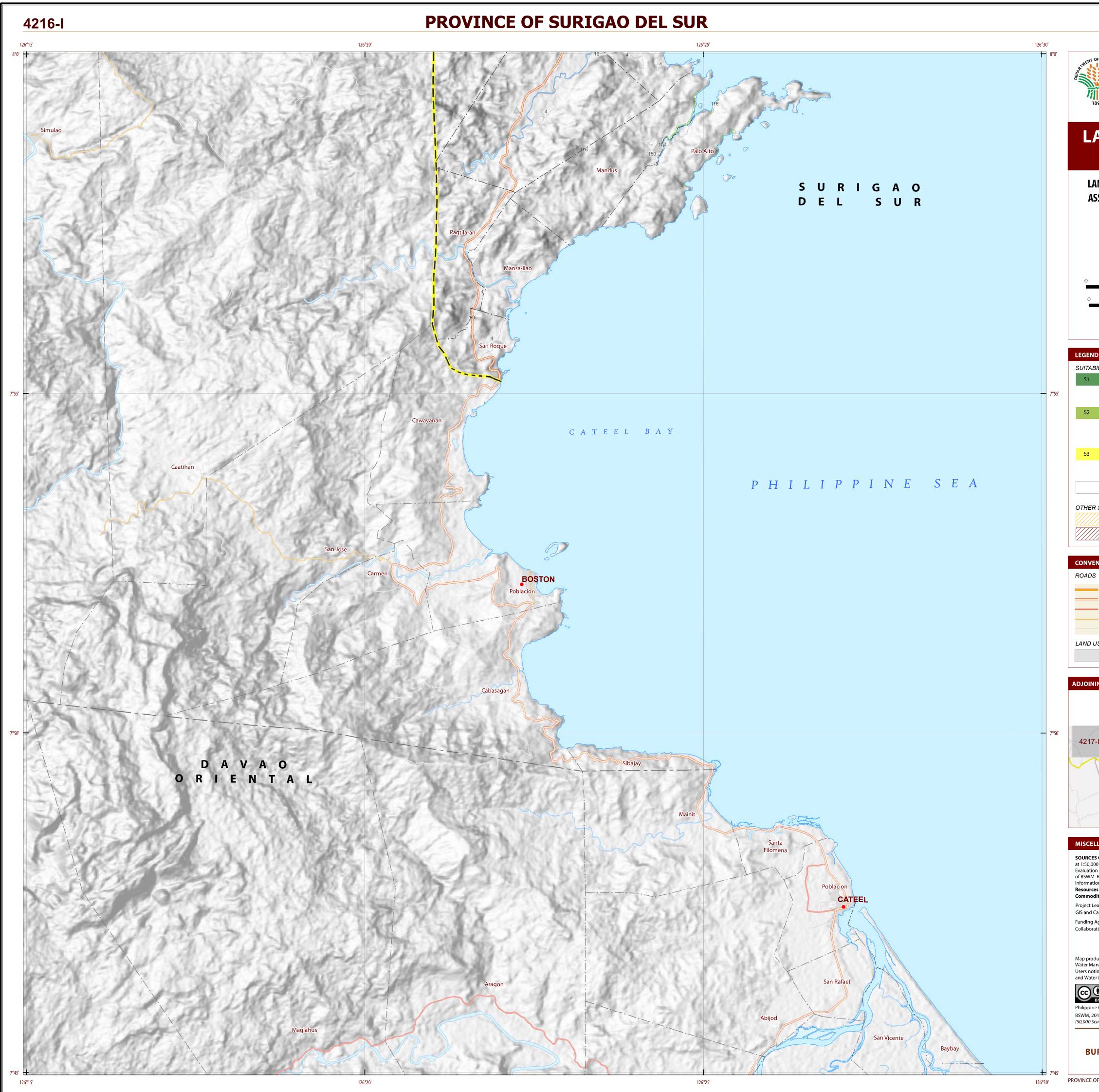
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